

Regulation of the Voluntary Carbon Offset Market: Shifting the Burden of Climate Change Mitigation from Individual to Collective Action

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Carbon offsets are often emphasized as effective and easily accessible tools in the effort to mitigate the looming threat of climate change. Offsets can be a useful bridge mechanism to allow industries with processes that are emission-heavy to purchase carbon reductions elsewhere as cleaner technologies develop. But the current use of offsets as a primary tool for corporations to meet their emissions reductions goals, or for consumers to reduce their individual carbon footprints, will not be sufficient to meet climate change mitigation goals. This Note will examine two major issues with the voluntary offset system. First, there is no centralized regulatory system for carbon offsets. Second, set within the larger neoliberal framework of market-based climate solutions, carbon offsets do not promote the more aggressive policies that are needed to mitigate the disastrous effects of the climate emergency. Carbon offsets are a mechanism that place responsibility on individuals and the market, when there must be unified state and private action. This article will also explore some of the proposed legal and regulatory strategies to strengthen government regulation of the voluntary offset market.

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I. INTRODUCTION

“Discover how easy it is to start making a difference.”¹

The term carbon offset refers to a reduction in greenhouse gas (GHG) emissions (or an increase in carbon storage) which is used to account for emissions created elsewhere. Carbon offsets generally fall into four main categories.² The first category is “avoided nature loss,” such as avoided deforestation, which prevents the removal of a natural carbon sink.³ Second, “avoidance of emissions” involves the substitution of clean activities for GHG emitting activities (e.g., substituting the use of fossil fuels with renewable energy).⁴ “Nature-based sequestration or capture” can involve reforestation or improved forest management projects.⁵ The final category is “direct removal of CO₂ from the atmosphere.”⁶ In addition to these four categories, offsets can include the reduction of unregulated GHG emissions, such as methane leakage.⁷

Carbon markets exist under both mandatory (also called “compliance”) schemes and voluntary programs.⁸ Mandatory offset markets are aimed at facilitating compliance with emissions reduction objectives.⁹ The first and largest compliance market is the Clean Development Mechanism (“CDM”) established under the Kyoto Protocol. The CDM has uniform procedures and rules that attempt to ensure the quality of emission offsets: a centralized registrar, publicly accessible databases, and standards for accreditation.¹⁰ In contrast, voluntary offset schemes are not compliance instruments, but a

1. The results of a Google search of “carbon offsets” will include this sentence on the homepage of a well-known, direct-to-consumer carbon offset provider called TerraPass. TERRAPASS, <http://www.terrapass.com/make-a-difference> [<https://perma.cc/JT9C-7J2T>] (last visited Feb. 26, 2022).

2. *Carbon Offsets Grow in Importance as Producers Target Net-Zero*, 46 OIL & ENERGY TRENDS 4, 4 (2021).

3. *Id.*

4. *Id.*

5. *Id.*

6. *Id.*

7. Coalbed Methane Outreach Program, *U.S. Greenhouse Gas Emissions Trading Programs that Include Coal Mine Methane*, U.S. EPA (Jan. 2021), https://www.epa.gov/sites/default/files/2021-01/documents/ghg_registries_2021.pdf [<https://perma.cc/983A-PUXW>].

8. Esteve Corbera et. al., *How Do Regulated and Voluntary Carbon Offset Schemes Compare?*, 6 J. INTEGRATIVE ENV'T SCI. 25, 26 (2009).

9. *Id.*

10. *Id.* at 32.

method to reduce emissions above and beyond mandatory mitigation goals set by regulations.¹¹ Voluntary offset schemes are often created to respond to the interest of the public in environmental responsibility and the interest of corporations to demonstrate sustainability efforts.¹² For example, in 2019, Royal Dutch Shell launched a \$300 million forestry program where the company would restore large forests in the Netherlands and Spain and give customers the option of purchasing these offsets when they refuel their vehicles.¹³ Voluntary carbon credit transactions are generally structured as individual deals, and thus information is limited to the private sector entities that are specifically involved with the transaction.¹⁴ This decentralized system makes reliable data compilation a cumbersome process.¹⁵

The value of the voluntary market is significant, with historical cumulative transactions reaching 1.3 billion tons of carbon emissions and a value of \$5.5 billion USD.¹⁶ Carbon offsets are often emphasized as important and easily accessible tools in the effort to mitigate the looming threat of climate change. Offsets can be a useful bridge mechanism to allow industries with processes that are emission-heavy to purchase carbon reductions elsewhere as cleaner technologies develop. But the current use of offsets as a primary tool for corporations to meet their emissions reductions goals, or for consumers to reduce their individual carbon footprints, will not be sufficient to meet climate change mitigation goals.

This Note will examine two major issues with the voluntary offset system. First, it will show that there is no centralized regulatory system for carbon offsets. Due to limited federal regulation of the carbon market in the United States, consumers must rely on the Federal Trade Commission's (FTC) Green Guides or general consumer protection and disclosure regulations. This lack of consumer protection, combined with inherent technological and scientific uncertainties often involved in carbon offset calculations, creates a "buyer-beware" market which places the burden on consumers to

11. *Id.* at 26.

12. *Id.*

13. Leslie Hook, *Shell Launches \$300m Forest Plan to Offset Carbon Emissions*, FT.COM (Apr. 8, 2019), <https://www.ft.com/content/bae6481a-59da-11e9-939a-341f5ada9d40> [https://perma.cc/N5AV-WPUG].

14. Corbera, *supra* note 8, at 28.

15. *Id.*

16. STEPHEN DONOFRIO ET AL., ECOSYSTEM MARKETPLACE, VOLUNTARY CARBON AND THE POST-PANDEMIC RECOVERY 2-3 (2020).

decide whether their purchase will truly reduce GHGs as promised. Forestry-based offsets can be particularly imprecise, because unpredictable ecological responses make it difficult to place a value on the amount of carbon sequestered or emissions avoided.

The Note will then discuss the voluntary offset system within the larger neoliberal framework of market-based climate solutions, arguing that carbon offsets do not promote the more radical changes that are needed to make the huge emissions reductions necessary to alleviate the climate emergency. The narrative that carbon offsets are an “easy” way to “start making a difference” while continuing current consumption patterns may eventually cause more environmental harm because directly reducing consumption is equally as important. Furthermore, the market-based mechanisms which create primarily financial incentives for emissions avoidance can create perverse incentives for project developers to maximize profits at the cost of accurate carbon credits. Current methods of calculation make it possible to sell a carbon credit that over-represents the amount of avoided emissions, which actually *increases* the amount of carbon emitted into the atmosphere.

The lack of a strong and centralized regulatory system constructs considerable barriers to achieving significant climate change mitigation through the voluntary offset market. One barrier is ambiguous and inconsistent certification requirements which create latitude for unreliable offset claims (i.e., private sector actors have the leeway to exaggerate the impact of their carbon offset projects). The presence of confusing and possibly untrustworthy claims can dissuade consumers from participating in carbon markets at all. Another barrier is that carbon markets are a product of environmental neoliberalism,¹⁷ which encourages continuation of unsustainable consumption habits and places a disproportionately high burden on individual action to mitigate climate change. The narrative surrounding carbon offsets should emphasize that offsets are just one piece of a larger climate plan, and that they are not a permanent solution that will allow us to continue “business as usual”

17. Martin Lukacs, *Neoliberalism Has Conned Us into Fighting Climate Change as Individuals*, GUARDIAN (July 17, 2017), <https://www.theguardian.com/environment/true-north/2017/jul/17/neoliberalism-has-conned-us-into-fighting-climate-change-as-individuals> [<https://perma.cc/L2VZ-DQH4>] (defining environmental neoliberalism as a “greening [of] our personal lives” while “fossil fuel corporations [render] these efforts irrelevant.” Citizens are encouraged to “change [their] lightbulbs, buy local veggies, purchase eco-appliances, put a solar panel on [their] roof” while corporations obstruct green policies and “keep fossil fuel subsidies flowing”).

habits. Stricter regulation of corporate claims about carbon offsets should reduce the occurrence of profit-driven claims that portray offsets as a “quick and easy” fix. Increased government regulation will shift the credibility and disclosure burdens onto the corporations and powerful actors who are better positioned to make the large changes that are needed to effectively address climate change.

Part II of this Note will provide a broad overview of the current state of the voluntary carbon offset market and the relevant regulatory systems. Part III will discuss the difficulties in verifying the credibility of carbon offsets from both a regulatory and scientific perspective. Parts IV and V will examine how the carbon offset market, and environmental neoliberalism more generally, place disproportionate reliance on individual and private action to reduce GHG emissions. Part VI will summarize some of the proposed legal and regulatory strategies to strengthen government regulation of the voluntary offset market.

II. THE CURRENT REGULATORY LANDSCAPE

Current legal remedies for consumers navigating the voluntary market include state common law fraud claims, and state as well as federal consumer protection laws.¹⁸ However, there is no common standard for regulating offset measurement and verification.¹⁹ Federal administrative regulation would create a unified, binding legal norm which shapes the conduct of private individuals and firms.²⁰ Without such a regulatory scheme, market actors do not have access to a clear standard as to what constitutes a reliable offset. Furthermore, oversight power is diluted as regulatory authority is split between various federal agencies and common law rules which may be vague or conflicting among different cases, courts, and jurisdictions.

The closest legal mechanism to a regulatory scheme for voluntary offsets is the FTC Green Guides, which provide factors businesses should consider when making an environmental claim about a

18. 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).

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

20. Barak Orbach, *What is Regulation?*, YALE J. REGUL. (July 25, 2016), <https://www.yalejreg.com/bulletin/what-is-regulation/> [https://perma.cc/ZW9L-HURQ].

product.²¹ While the Green Guides themselves are not binding, they provide guidance for businesses to avoid environmental marketing practices that would be considered misleading and possibly in violation of Section 5 of the FTCA.²² The relevant portions of the Green Guides state that:

(a) . . . Sellers should employ competent and reliable scientific accounting methods to properly quantify claimed emission reductions and to ensure that they do not sell the same reduction more than one time.

(b) It is deceptive to misrepresent . . . that a carbon offset represents emission reductions that have already occurred or will occur in the immediate future . . . marketers should clearly and prominently disclose if the carbon offset represents emission reductions that will not occur for two years or longer.

(c) It is deceptive to claim, directly or by implication, that a carbon offset represents an emission reduction if the reduction, or the activity that caused the reduction, was required by law.²³

While this guidance provides baseline criteria for accurate marketing of carbon offsets, it is neither comprehensive, nor detailed enough, for effective regulation of the complicated process involved in assessing and quantifying carbon offsets.

The minimal regulation of the voluntary market creates a system where offsets are verified by a variety of third parties or external auditing entities.²⁴ Consumers who wish to participate in the carbon offset market are faced with an assortment of standards that use varied criterion to verify the offsets as genuine.²⁵ This can make it extremely difficult for consumers to make distinctions between high-quality and low-quality offsets.²⁶

TerraPass and Native are two popular providers of carbon offsets. The following figure compares features of their respective “personal carbon offset” purchase options:

21. Ken Markowitz et al., *Modernizing the Green Guides in the Age of Carbon Neutrality*, WESTLAW TODAY (Sept. 2, 2021), https://www.akingump.com/a/web/djq25RaskWkSGPzHBM9J3s/37kFsy/wlt_markowitz.pdf [https://perma.cc/PZ9T-D48A].

22. Margaret Peloso et al., *Is Your Green Marketing Deceptive? Look to the FTC Green Guides to Limit the Risk of an FTC Enforcement Action*, JD SUPRA (Mar. 24, 2021), <https://www.jdsupra.com/legalnews/is-your-green-marketing-deceptive-look-7474475/> [https://perma.cc/D43C-RNRE].

23. Federal Trade Commission Guides for the Use of Environmental Marketing Claims, 16 C.F.R. § 260.5 (2012).

24. Kanwalroop K. Dhanda & Patrick J. Murphy, *The New Wild West is Green: Carbon Offset Markets, Transactions, and Providers*, 25 ACAD. OF MGMT. PERSPECTIVES 37, 41 (2011).

25. *Id.*

26. *Id.* at 38–39.

	TerraPass	Native
Price	USD \$7.99 for 1,000 lbs. of carbon ²⁷	USD \$15.50 for one ton of carbon (USD \$7.75 for 1,000 lbs.) ²⁸
Reliability Requirements	“Real, additional, permanent, quantifiable, never double-counted or double-sold, and independently verified.” ²⁹	“Real, permanent, measurable, unique, verifiable, and additional.” There is also a “project-specific additionality assessment,” which asks questions such as “without offset revenues, is the return on project investment too low for the project owner to make the investment?” or whether there are “barriers to implementation . . . that offset revenues can overcome?” ³⁰
Certification Standards	Gold Standard, Verified Carbon Standard, Climate Action Reserve, and the American Carbon Registry ³¹	Gold Standard, Verified Carbon Standard, Climate Action Reserve, American Carbon Registry, Plan Vivo, or the Climate, Community, and Biodiversity Alliance. ³²

27. *Personal Carbon Offsets*, TERRAPASS, <https://terrapass.com/product/personal-carbon-offset-grouped> [perma.cc/W6AF-RCRE] (last visited Jan. 31, 2022).

28. *Buy Carbon Offsets & Reduce Your Carbon Emissions*, NATIVE, <https://native.eco/product/medford-spring-grassland-conservation-hb/> [https://perma.cc/8FFJ-ZGAA] (last visited Jan. 31, 2022).

29. *Project Standards*, TERRAPASS, <https://terrapass.com/projects/standards/> [https://perma.cc/XRL7-STRF] (last visited Jan. 31, 2022).

30. *Carbon Offset Certifications*, NATIVE, <https://native.eco/your-projects/certifications/> [https://perma.cc/2GZZ-5V75] (last visited Jan. 31, 2022).

31. *Project Standards*, TERRAPASS, <https://terrapass.com/projects/standards/> [https://perma.cc/3V7Y-CTHH] (last visited Jan. 31, 2022).

32. *Carbon Offset Certifications*, NATIVE, <https://native.eco/your-projects/certifications/> [https://perma.cc/2GZZ-5V75] (last visited Jan. 31, 2022).

Projects that the Personal Offset Funds	Project Portfolio includes: landfill gas capture, anaerobic digesters which capture methane as manure breaks down, wind farms, and methane capture at abandoned coal mines. ³³	No project choice. The offset funds go to a single designated project, which changes periodically. ³⁴
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Without making any substantive assessment of these particular providers, comparing the two provides an illustration of how the decentralized system creates difficulties for consumers. The most significant difference here was the variety of TerraPass' projects within its portfolio, in contrast with Native's series of single projects. To make an informed choice between offset providers, purchasers must navigate an assortment of third-party verification standards, "additionality" tests, and technical and scientific project descriptions.

III. OBSTACLES TO ACCURATE AND CONSISTENT EVALUATION OF CARBON OFFSETS

This section will discuss three main factors that make it difficult to accurately represent the value of carbon offsets. First, calculation of carbon offsets requires setting a "business-as-usual" baseline. Setting this baseline requires detailed information about the current state of emissions and this information is usually privately owned and may be inconsistent due to non-standardized reporting, if reported at all. Second, the calculation of offsets has inherent uncertainties. Particularly in forestry-based offsets, there can be volatile ecological conditions that can reverse the offset, thereby undoing the represented emissions reduction.³⁵ Third, offsets must be additional,

33. *Personal Carbon Offsets*, TERRAPASS, <https://terrapass.com/product/personal-carbon-offset-grouped> [<https://perma.cc/LC9M-TX4Z>] (last visited Jan. 31, 2022).

34. *Buy Carbon Offsets and Reduce Your Carbon Emissions*, NATIVE, <https://native.eco/product/medford-spring-grassland-conservation-hb/> [<https://perma.cc/8FFJ-ZGAA>] (last visited Jan. 31, 2022).

35. Brook J. Detterman & Kirstin K. Gruver, *Wildfires Burn Carbon Offsets*, 10 NAT'L L. REV. 1, 1 (Sept. 2020) (providing the example of "[t]he Confederated Tribes of Warm Springs [which] owned 24,000 of the 190,000 acres that burned [in the Lionshead Fire which started in Central Oregon], and operated the forest as a carbon offset project. California previously issued more

meaning that the reduction in emissions would not have occurred without the completion of the particular project. Additionality is often measured against a predicted scenario of what *would* have happened without the offset project. Counter-factuals create an inherent uncertainty in how much carbon emissions are *actually* avoided, but offsets are nonetheless sold as definitive emissions credits.

A. Discrepancy in Firm-Originating Carbon Data

Firms provide information about their carbon emissions in many forms, such as “corporate social responsibility (CSR) reports, annual filings, and information posted on company websites.”³⁶ When consumers and investors want to access this information, they often have to go through “third-party rating agencies,” which compile firm information into a more comprehensible format.³⁷ The rating agencies have their unique processes of analyzing firms’ carbon data, with the objective of “distinguishing high-carbon performers from low-carbon performers.”³⁸

Two parts of the firm-disclosure processes create concerns about accuracy. First, carbon data that is voluntarily disclosed is typically not evaluated for accuracy.³⁹ This increases the risk that firm-originated carbon data will continue to “display low levels of transparency and will remain largely dependent on voluntary disclosure.”⁴⁰ Second, there are inconsistencies in the “carbon accounting process,” which leave room for firms to present unreliable accounts of their carbon footprints.⁴¹ When firms voluntarily disclose carbon emission data, typically they are not required to include Scope 3⁴² emissions.⁴³ For firms that have chosen to include Scope 3 emissions, those disclosures still only “accounted for about 22% of

than 2.6 million offset credits for the carbon stored in those 24,000 acres” which are no longer viable).

36. Soh Y. In & Kim Schumacher, *Carbonwashing: A New Type of Carbon Data-Related ESG Greenwashing* 7 (July 2021) (working paper) (on file with the Stanford Sustainable Finance Initiative).

37. *Id.*

38. *Id.* at 11.

39. *Id.*

40. *Id.* at 12.

41. *Id.*

42. *Scope 3 Inventory Guidance*, U.S. EPA, <https://www.epa.gov/climateleadership/scope-3-inventory-guidance> [<https://perma.cc/TZM2-T3BA>] (last visited Jan. 31, 2022) (“Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization.”).

43. In & Schumacher, *supra* note 36, at 12.

their full Scope 3 emissions on average.”⁴⁴ This non-disclosure can be consequential as Scope 3 emissions often represent a significant portion of a firm’s total footprint.⁴⁵ Companies could be motivated to use these regulatory gaps to their advantage. A low carbon footprint is beneficial for reputation and corporate Environmental, Social, and Governance (ESG) ratings and scores, which demonstrate the organizations’ efforts to reduce energy emissions, combat climate change, and other beneficial social changes.⁴⁶

In relation to offsets, this system of voluntary and decentralized reporting leads to ambiguity in assessing “net zero” claims which involve carbon reduction projects. If companies are under-reporting their carbon emissions, “net zero” pledges may be inaccurate. In contrast, the next section outlines the concern that offset project developers may *over-report* emissions to gain more from offset programs.

B. Ambiguity in Determining Additionality

A large component of verifying an offset’s stated emission reduction hinges on the concept of additionality. The reduction is only legitimate if the “mitigation activity [associated with the particular offset] would not have taken place in the absence of the added incentive created by the carbon credits.”⁴⁷ In other words, “only projects that would not have occurred under a business-as-usual [“BAU”] scenario are considered additional.”⁴⁸ The “additionality test” means that all offset emission reductions must be calculated in

44. *Id.*

45. *Id.*

46. *Id.* at 5. ESG reports “disclose non-financial data that hold companies accountable for issues of ethical concern,” and “demonstrate the efforts that organizations make to reduce energy emissions, combat climate change, increase efficiency of waste management, improve employee health and well-being, support diversity, equality and inclusion (DEI) . . . on top of other concerns.” 6 *ESG Questions Answered: What Is ESG Reporting, and How Is It Changing?* Newstex Glob. Bus. Blogs (Aug. 3, 2021), [https://www.proquest.com/docview/2557416959?accountid=10226&parentSessionId=vGZPUSNkmchzB%2F1pbdTMt4xsbyh8yG67R%2BcPzE8P6VU%3D&pq-origsitummon\)e=summon](https://www.proquest.com/docview/2557416959?accountid=10226&parentSessionId=vGZPUSNkmchzB%2F1pbdTMt4xsbyh8yG67R%2BcPzE8P6VU%3D&pq-origsitummon)e=summon) [<https://perma.cc/Q8E8-FFHC>].

47. Dee Lawrence, *The Concept of Additionality in the Voluntary Carbon Market, Explained*, FORBES (Oct. 1, 2021), <https://www.forbes.com/sites/forbesnonprofitcouncil/2021/10/01/the-concept-of-additionality-in-the-voluntary-carbon-market-explained/?sh=1a2c384278ec> [<https://perma.cc/C8AL-QGV8>].

48. Xiaoyu Liu & Qingbin Cui, *Baseline Manipulation in Voluntary Carbon Offset Programs*, 111 ENERGY POL’Y 9, 9 (2017).

relation to the BAU baseline.⁴⁹ Carbon calculations are vulnerable to manipulation. It is technically difficult to quantify the impacts of an offset, and calculations often depend on estimates.⁵⁰ In general, each offsetting project requires a specific BAU baseline to assess its contribution to reducing emissions. However, accurately calculating this baseline is complicated by the difficulties of quantifying ecological processes, including “ongoing practices of interaction” between humans and the land.⁵¹ Furthermore, setting a BAU baseline requires detailed information that is usually privately owned and not easily accessible to regulators.⁵² This creates the risk that private firms, as the baseline developers, may take advantage of asymmetric information systems to receive more credits from an offset program due to inflated emission baselines.⁵³

Another additionality concern is whether or not the emission reduction was truly dependent on the offset purchase.⁵⁴ For example, the 2007 Academy Awards ceremony was promoted as a “green” event.⁵⁵ As part of its sustainability effort, the Academy partnered with TerraPass to offset “the amount of greenhouse gas that would be emitted by a standard celebrity over the course of a year.”⁵⁶ It was later determined that the relevant offsetting projects had been initiated years prior to TerraPass’ involvement and were not in fact dependent on the offsets purchased by the Academy.⁵⁷ The project developers revealed that selling offset credits to TerraPass did not play a meaningful role in the completion of the project: “It’s just icing on the cake. We would have done this project anyway.”⁵⁸

49. *Id.*

50. Steffen Dalsgaard, *Carbon Value Between Equivalence and Differentiation*, 5 ENV’T & SOC’Y 86, 96 (2014).

51. *Id.* See also Gerald Leach & Melissa Leach, *Carbonising Forest Landscapes? Linking Climate Change Mitigation and Rural Livelihoods*, 35 IDS BULL. 76, 81 (2004) (explaining “interaction with the landscape” as ongoing interactions between people, land and trees—including farming or forest management—which “make baseline projections not only un-constructible, but irrelevant”).

52. Liu & Cui, *supra* note 48, at 9.

53. *Id.*

54. K. Kathy Dhanda & Laura P. Hartman, *The Ethics of Carbon Neutrality: A Critical Examination of Voluntary Carbon Offset Providers*, 100 J. BUS. ETHICS 119, 127 (2011).

55. *Id.*

56. *Id.*

57. *Id.*

58. *Id.*

C. Unpredictable Ecological Responses

Two common carbon-offsetting tools used today are “deforestation prevented” and reforestation.⁵⁹ The world’s 3.92 billion hectares of forest (which cover approximately one-third of the total land area) continue to shrink.⁶⁰ Between 2000 and 2020, “the world experienced a net [decrease of] 101 million hectares in tree cover.”⁶¹ Deforestation contributes between 6% and 17% of global CO₂ emissions, making forest-related offsets a relatively low-cost opportunity for emission reductions.⁶² However, forest offsets are particularly vulnerable to offset reversal (defined as “the intentional or unintentional release of stored carbon back to the atmosphere”).⁶³ Millions of hectares of forest and wildlands are subject to natural disturbance each year, including “windthrow, ice storms, drought, pest and pathogen infestations, and fire.”⁶⁴ In the United States, the approximate annual forest loss from these disturbances includes 1,330,000 hectares from fire, 1,650,000 hectares from wind, more than 180,000 from ice, and 20,400,000 from insects and pathogens.⁶⁵

A study of carbon credits from voluntary deforestation-prevention projects for Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+)⁶⁶ found substantial differences between the deforestation baseline scenarios used by the REDD+ projects and the observed forest loss in the study’s “synthetic control models.”⁶⁷ The study concluded that a significant amount of

59. Benzinga: *Are Carbon Offsets Effective*, BENZINGA.COM (Apr. 28, 2021), <https://www.proquest.com/docview/2519028569?accountid=10226&pq-origsite=summon>.

60. *Global Summary*, GLOBAL FOREST WATCH, <https://www.globalforestwatch.org/dashboards/global/?category=summary&location=WyJnbG9iY> (last visited Nov. 14, 2022).

61. *Id.*

62. Sam Adelman, *Tropical Forests and Climate Change: A Critique of Green Governmentality*, 11 INT’L J. L. CONTEXT 195, 195 (2015).

63. Christopher S. Galik & Robert B. Jackson, *Risks to Forest Carbon Offset Projects in a Changing Climate*, 257 FOREST ECOLOGY & MGMT. 2209, 2210 (2009) (citations omitted).

64. *Id.*

65. *Id.*

66. *What is REDD+?*, U.N. CLIMATE CHANGE, <https://unfccc.int/topics/land-use/workstreams/redd/what-is-redd> [<https://perma.cc/LV9W-EGST>] (last visited Mar. 1, 2022) (explaining that “REDD+ is a framework created by the UNFCCC Conference of the Parties to guide activities in the forest sector that reduces emissions from deforestation and forest degradation, as well as the sustainable management of forests and the conservation of forest carbon stocks in developing countries”).

67. Thales A.P. West et. al., *Overstated Carbon Emission Reductions from Voluntary REDD+ Projects in the Brazilian Amazon*, 117 PROC. NAT’L ACAD. SCI. 24188, 24188–24189 (2020). <https://www.pnas.org/content/pnas/117/39/24188.full.pdf> [<https://perma.cc/98P8-FB4L>].

the carbon offsets issued by these projects may not have been genuinely additional.⁶⁸ The study attributed the inaccuracies to the use of baseline scenarios that assumed a “continuation of historical deforestation trends,” even though there has been substantial variation in rates of forest loss in, for example, the Brazilian Amazon throughout the past two decades.⁶⁹ Providers should incorporate these uncertainties into relevant calculations to ensure reliable forest carbon offsets that do not inflate the amount of emissions actually avoided.⁷⁰

D. Case Study: Voluntary Offsets in the Aviation Industry

Within existing research on carbon offsets, there is a focus on the aviation industry as an example of an industry that uses private and voluntary offset schemes that are directed toward individual consumers. One rationale for this focus is that the airline industry will be “one of the most difficult industries to decarbonize” and airline decarbonization thus far has heavily relied on offsets, in lieu of reducing actual emissions.⁷¹

The availability of research literature on airline offset programs provides a helpful illustration of the difficulties in determining offset reliability. Guix et al. conducted a study of thirty-seven airlines in response to the concerns that voluntary carbon offsets are vulnerable to greenwashing due to “poor communication and low transparency” in offset marketing.⁷² To address the specific concern of deceptive tactics regarding environmental information on websites across industries, this study was limited to airlines that provided a voluntary carbon offset to their customers directly on their website.⁷³ The study concluded that only 56% of the offsetting claims were “trustworthy.”⁷⁴ The reasons for the untrustworthiness of the remaining claims varied, but included: “vagueness” (not explaining or providing sufficient details on how the offset project will be

68. *Id.*

69. *Id.* at 24190.

70. *Id.* at 24188.

71. Tanya Powley et. al., *Airlines Face Long-Haul to Carbon-Free Flying*, FT.com (Nov. 24, 2019), <https://www.proquest.com/docview/2317469715?accountid=10226&pq-origsite=summon> [https://perma.cc/YYC4-LUR7].

72. Mireia Guix et. al., *Trustworthy or Misleading Communication of Voluntary Carbon Offsets in the Aviation Industry*, 88 TOURISM MGMT. 1, 6–7 (2022).

73. *Id.*

74. *Id.*

completed), using “complex jargon” which may mislead consumers, and using a “lesser of two evils” tactic—claims that are technically “true within their product category but that to distract consumers from greater environmental impacts.”⁷⁵ The finding that a large portion of the claims were deceptive in some manner shows the danger of having a weak regulatory system for voluntary offset marketing.

Another investigation, carried out by *The Guardian* and Greenpeace, found that “some of the world’s largest airlines were using offset schemes based on flawed information.”⁷⁶ The study looked into ten forest protection-based offset schemes which reduced emissions through avoided deforestation.⁷⁷ The claimed reductions stemmed from “predictions” of deforestation that would have occurred without the protection of the project.⁷⁸ The investigation found that these predictions often did not match up with deforestation data for the area.⁷⁹ In some cases, the predictions overestimated emission reductions which results in “phantom carbon credits.”⁸⁰ Offset developers often use land-use softwares, such as Dinamica EGO, to model levels of deforestation that would have occurred but for the project.⁸¹ However, the creator of this software, deforestation expert Britaldo Soares-Filho, intended for the models to help with policy-making, not to be a “crystal ball” to substantiate offset reductions.⁸² Alarmingly, all ten of the projects were certified by the U.S. non-profit Verra, under the widely-used “Verified Carbon Standard.”⁸³ The results of this investigation call the accuracy of offset calculations into question. Why should consumers trust offset marketing, when these

75. *Id.* at 4, 6 (discussing how the “lesser of two evils tactic” usually implies that voluntary offsets are the “best option” to mitigate emissions, or that they are an “easy solution to act green.”); *Soaring Toward a Carbon-Neutral Future*, JETBLUE, <https://www.jetblue.com/sustainability/offset-your-flight> [https://perma.cc/58HG-UPFB] (last visited Mar. 29, 2022) (stating that “offsetting your JetBlue flight is one of the simplest ways that you can reduce the impact of your air travel” and that carbon offset projects “essentially [cancel] the emissions from your flight”).

76. Patrick Greenfield, *Carbon Offsets Used by Major Airlines Based on Flawed System, Warn Experts*, GUARDIAN (May 4, 2021), <https://www.theguardian.com/environment/2021/may/04/carbon-offsets-used-by-major-airlines-based-on-flawed-system-warn-experts> [https://perma.cc/BCT5-KCEA].

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.*

83. *Id.*

projects were approved by the “world’s leading carbon credit standard?”⁸⁴

IV. ENVIRONMENTAL NEOLIBERALISM AND CARBON MARKETS

Voluntary carbon offsets are part of a larger neoliberal system of governance that encourages private, individual and market-based action in areas that are traditionally regulated by the state. Aspects of neoliberalism can be found in many of the narratives surrounding environmental issues: the “social cost of carbon”; emphasis on the capacity of renewable energy to create jobs⁸⁵ and revenue; and marketing toward individuals to do their part and “vote with their dollar” through actions such as purchasing reusable straws. This section is not intended to downplay the impact of individual or market-based actions, but to show that market-focused environmental neoliberalism can sometimes create barriers to broader, unified action.

A. A Brief History of Neoliberalism

A brief description of the current neoliberal era will provide background on some of the political forces that have limited collective action on environmental issues. For the purposes of this paper, neoliberalism involves:

A major retreat of the state in the area of corporate regulation and [t]he [sic] transfer of regulatory functions from state authorities to private companies, as part of a wider privatization agenda; a decline of the public good and dismantling of the public sector . . . ; a shift away from concerns for general social welfare; and an increased emphasis on individual responsibility and accountability—accompanied by disdain for the interventionist state and even greater disdain for those who seek any kind of assistance from government . . . or who seek any role for the government outside of national security, border security, and crime control.⁸⁶

84. *Id.*

85. Implementing the Social Cost of Carbon and creation of jobs through renewable energy have been very positive developments. These examples are included not to criticize their effects, but to show examples of other prominent environmental policies which center around economics and rely on market forces to prompt de-carbonization, rather than the inherent value of mitigating the climate emergency.

86. Avi Brisman, *Not a Bedtime Story: Climate Change, Neoliberalism and the Future of the Arctic*, 22 MICH. ST. INT’L L. REV. 241, 271–72 (2013) (citations and quotations omitted).

The defining characteristic of neoliberalism is that it combines the functions of the market, civil society, and the state.⁸⁷ The 1980s in the United States marked the beginning of this convergence through reductions to social welfare spending, deregulation of the economy, and tax cuts for the wealthy.⁸⁸ By deregulating the economy, neoliberalism purports to replace government intervention with market-driven “regulation” of all practices throughout society, even those which have not traditionally been market-based.⁸⁹ In order to function, the neoliberal regime requires citizens to behave in a “market-compliant” nature⁹⁰ and does so by emphasizing the role of private and personal responsibility in the absence of strong state policy. Since the 1980s, U.S. policy has shifted to a reliance on private providers for services that have traditionally been supplied by the state, while simultaneously deregulating and providing tax cuts for the corporate sector.⁹¹ One example of this phenomenon is the privatization of health care: The absence of universal government-provided health care coverage means that people are reliant on private health care companies and are subject to their policies.⁹²

B. Environmental Neoliberalism

At its core, neoliberalism is an anti-regulation and pro-business ideology—both of which are ideals that are not easily compatible with environmental regulation, which is viewed by many proponents of neoliberalism as detrimental to the profitability of U.S. business.⁹³ The specific concept of environmental neoliberalism is defined by the idea that the government should play a minimal role in the protection of our planet.⁹⁴ One impact of environmental neoliberalism is that government responses to environmental issues have encouraged

87. *Id.* at 308.

88. Sanford F. Schram, *Neoliberalizing the Welfare State: Marketizing Social Policy/Disciplining Clients*, in *THE SAGE HANDBOOK OF NEOLIBERALISM* 310 (Cahill et al. eds., 2018).

89. *Id.*

90. *Id.* (defining “market compliant behavior” as “practicing personal responsibility by applying economic logic to all forms of decision-making and thus less reliant on robust public policies and services”).

91. *Id.* at 312.

92. Vicente Navarro, *The Consequences of Neoliberalism in the Current Pandemic*, 50 *INT’L J. HEALTH SERVS.* 271, 272 (2020) (further providing that “almost 30 million people in the United States do not have any health insurance, and a further 27 million have extremely insufficient insurance coverage”).

93. ROBERT MACNEIL, *NEOLIBERALISM AND CLIMATE POLICY IN THE UNITED STATES: FROM MARKET FETISHISM TO THE DEVELOPMENTAL STATE* 4 (2017).

94. Brisman, *supra* note 86, at 275–76.

regulation through the privatization of resource management systems and the commodification of nature.⁹⁵ Another impact is a focus on individual and private action, rather than state action, as a solution to environmental degradation. Individuals have the duty to make efforts to curb GHG emissions, but also to continue participating in capitalism.⁹⁶ The focus on individual action, rather than centralized government regulation, can be used as a tool to maintain consumptive practices and markets.⁹⁷ Non-governmental entities have taken over traditionally governmental activities concerning environmental protection or natural resources, such as “managing the use of common pool resources, reducing negative externalities, and distributing environmental goods.”⁹⁸

Among environmental researchers, academics, and advocates, there is debate over whether the focus on individual action represents a beneficial or detrimental phenomenon. Some point to industry rhetoric emphasizing the individual consumer’s role in solving climate change. In the mid-2000s, the oil company BP promoted the concept of a “personal carbon footprint,” which has become a popular metric for evaluating individual consumers’ environmental impacts.⁹⁹ BP even created its own personal carbon footprint calculator as part of a marketing campaign which paradoxically attempted to portray BP as an “environmentally conscious oil company.”¹⁰⁰ In relation to the offset market, the ability to reduce personal carbon footprints can deflect attention from the need for companies to transition to more sustainable practices. Discourse which obscures the fact that large, powerful companies are responsible for huge share of emissions also shifts attention away from the need for systemic change and policy.¹⁰¹ However, it should be mentioned that the fundamental idea of personal carbon footprint calculation is not harmful (when the calculator is not provided by one of the biggest oil companies in the

95. MacNeil, *supra* note 93, at 5.

96. Rob White, *Environmental Harm and the Political Economy of Consumption*, 29 Soc. JUST. 82, 95–98 (2002) (explaining that production “creates the material for consumption, determines the manner of consumption, and creates the product in the form of a need . . . capital constantly seeks new areas for investment and consumption to maintain and increase profit.” Consumers are encouraged to buy “green” products, which ultimately does not impact capitalism’s perpetual expansion and strain on natural resources and the environment.)

97. Maria L. Banda, *The Bottom-Up Alternative: The Mitigation Potential of Private Climate Governance After the Paris Agreement*, 42 HARV. ENV’T L. REV. 325, 343 (2018).

98. *Id.*

99. MICHAEL E. MANN, *THE NEW CLIMATE WAR: THE FIGHT TO TAKE BACK OUR PLANET* ch. 4 (2021).

100. *Id.*

101. *Id.*

world). In fact, some argue that industry-level government regulation alone is not enough to create a sustainable economy.¹⁰² A shift in individual behavior is equally necessary to disentangle society from the entrenched habits of the “fossil fuel powered economy and lifestyle.”¹⁰³

C. The Marketization of Carbon

Climate policy requires the ability to systemically quantify carbon emissions.¹⁰⁴ Calculating the carbon emissions of a household, product, company, or forest quantifies one’s responsibility for climate change and makes it possible for that responsibility to be traded, bought, and sold.¹⁰⁵ Carbon accounting reduces environmental harm to the analysis of a single variable, anthropogenic GHG emissions, a metric that can be valued as a financial product.¹⁰⁶ The underlying assumption of this system is that carbon markets will facilitate emissions reductions at the lowest possible cost *while* development continues.¹⁰⁷

Carbon markets have been a huge opportunity for capital expansion and profit making. In 2010, the global carbon market was worth \$144 billion USD¹⁰⁸ and grew to a value of \$277 billion by 2020.¹⁰⁹ Large financial sector actors including “Goldman Sachs, Morgan Stanley, Barclays Capital, Deutsche Bank, Rabobank, BNP Paribas Fortis, Sumitomo, Kummunkredit, Cantor Fitzgerald, Credit Suisse and Merrill Lynch are all involved in creating complex financial instruments out of carbon credits.”¹¹⁰ Since the adoption of the Paris Agreement under the UNFCCC, the number of major companies that

102. KARL COPLAN, *LIVE SUSTAINABLY NOW: A LOW-CARBON VISION OF THE GOOD LIFE* 27 (2019).

103. *Id.*

104. Jerome Whittington, *Carbon as a Metric of the Human*, 39 *POL. & LEGAL ANTHROPOLOGY REV.* 46, 46 (2016).

105. *Id.*

106. *Id.* at 53.

107. Steffen Bohm et. al., *Greening Capitalism? A Marxist Critique of Carbon Markets*, 33 *ORG. STUD.* 1617, 1620 (2012).

108. Julia Dehm, *Tricks of Perception and Perspective: The Disappearance of Law and Politics in Carbon Markets; Reading Alexandre Kossov and Phillippe Ambrosi, ‘State and Trends of the Carbon Market 2010’*, 7 *MACQUARIE J. INT’L & COMPAR. ENV’T L.* 1, 5 (2011).

109. Nina Chestney, *Global Carbon Markets Value Surged to Record \$277 Billion Last Year*, *REUTERS* (Jan. 27, 2021), <https://www.reuters.com/article/us-europe-carbon-idUKKBN29W1HR> [<https://perma.cc/DVU4-7CS5>].

110. Julia Dehm, *supra* note 108, at 5.

have made net zero emissions pledges has grown significantly.¹¹¹ The vast majority of those companies pledging neutrality intend to utilize offsets for some remaining emissions.¹¹²

D. Perverse Incentives from the Carbon Market

The inherent uncertainty in additionality¹¹³ creates incentives for project developers to exaggerate carbon savings in order to cheat the system for additional credits. This phenomenon is particularly harmful because when polluters use exaggerated credits for new emissions, net emissions actually increase. The San Francisco non-profit CarbonPlan discovered an alarming pattern of evidence showing that participants in forest offset programs often overstate the number of trees they would have cut down in the absence of the carbon credit incentives—and this pattern even extends to organizations which have mission statements in *support* of environmental conservation.¹¹⁴ One example of this is the Massachusetts Audubon Society's (MAS) participation in California's forest offset program. MAS maintains its land as wildlife habitat, but in 2015, the non-profit presented the California Air Resources Board with a puzzling plan that would be in complete opposition to its conservation-focused mission: it could heavily log 9,700 acres of its forests over the next few years.¹¹⁵ The Air Resources Board accepted MAS's project into its program, requiring the non-profit to preserve its forests over the next century, and MAS received more than 600,000 offset credits in exchange for refraining from this alleged logging plan.¹¹⁶ MAS received about \$6 million USD from the sale of these credits which primarily went to fossil fuel companies.¹¹⁷

111. Nicolas Kreibich & Lukas Hermwille, *Caught in Between: Credibility and Feasibility of the Voluntary Carbon Market Post-2020*, 21 CLIMATE POL'Y 939, 939 (2021).

112. *Id.*

113. Lisa Song & James Temple, *A Nonprofit Promised to Preserve Wildlife. Then It Made Millions Claiming It Could Cut Down Trees*, PROPUBLICA (May 10, 2021), <https://www.propublica.org/article/a-nonprofit-promised-to-preserve-wildlife-then-it-made-millions-claiming-it-could-cut-down-trees> [<https://perma.cc/XU9D-PNUT>] (explaining that "it's nearly impossible to know what might have happened in the absence of the [offset] program").

114. *Id.*

115. *Id.*

116. *Id.*

117. *Id.*

Carbon markets are an example of technical processes that are complicated by competing social and political interests.¹¹⁸ Forest conservation offers “charismatic carbon development interventions that bring offset buyers more ‘brand value,’” creates opportunity for advertising, and looks good to shareholders and consumers.¹¹⁹ Forest management is evolving into an investor-led financial process propelled by profit incentives.¹²⁰ When “additionality” is the primary qualification for certifying carbon credits, this one-dimensional analysis can erase the other benefits of such projects, like the value of forest conservation itself, job creation, and biodiversity.¹²¹ Many land managers are not motivated by conservation or climate change mitigation, but simply view carbon projects as new profit streams.¹²² The use of financial incentives for climate mitigation encourages project developers to exaggerate potential for carbon credits, which can lead to the exact opposite of the desired effect: an increase in overall emissions.

V. PLACING THE BURDEN OF CLIMATE MITIGATION ON INDIVIDUAL ACTIONS AND MARKET MECHANISMS CREATES BARRIERS TO MEANINGFUL CHANGE

Consumers cannot independently verify whether a carbon offset truly reduces the promised amount of GHG emissions. Setting a uniform standard is important because “the essence of [certification] is that consumers can believe it, because it is not an unsubstantiated boast by the company itself but the result of an examination, against . . . accepted standards of best practice.”¹²³ So why is a significant portion of the burden of discerning the credibility of offsets placed on consumers, rather than the corporations which are owners of the relevant information? The lack of consistent regulation of voluntary carbon offsets and the associated market claims place the onus on the consumer to research a complicated topic to ensure that their money is going toward a credible offset. The uncertainties can be a deterrent for consumers to participate in offset programs at all. Second,

118. Lauren Gifford, “You Can’t Value What You Can’t Measure”: A Critical Look at Forest Carbon Accounting, 161 CLIMATIC CHANGE 291, 291 (2020).

119. *Id.* at 294.

120. *Id.*

121. *Id.* at 301.

122. *Id.* at 294.

123. Maria Savasta-Kennedy, *The Newest Hybrid: Notes Toward Standardized Certification of Carbon Offsets* 34 N.C. J. INT’L. L. 851, 875 n.98 (2009) (quoting JARED DIAMOND, COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED 474 (2006)).

unregulated marketing claims do not effectively portray offset programs as part of a larger climate change plan. Instead, they often portray offsets as an easy way to continue unsustainable rates of consumption in an “environmentally friendly” way. These portrayals further support the viewpoint of critics of carbon markets, who point out that the broader effect of offsetting is to allow consumers to avoid responsibility for their own consumption.¹²⁴

Stronger regulation of voluntary offsets would shift the burden from consumers to regulators, corporations, and offset providers. This would increase the overall effectiveness of offsets, as well as encourage more widespread consumer participation in the programs. It would also paint a more accurate picture of the climate change mitigation landscape, characterizing offsetting emissions as one small part of a greater effort.

A. A Lack of Trustworthy Information Discourages Consumer Participation in Voluntary Carbon Offset (VCO) Programs

Returning to the example of the aviation industry,¹²⁵ only a small portion of travelers participate in the available voluntary offset programs. A study of travelers among four Western countries indicated that there is widespread skepticism about carbon offset schemes among travelers.¹²⁶ Thirty percent of travelers interviewed as part of a study in Australia had previously bought offsets, and 31.9% of travelers surveyed in Germany were familiar with offsetting, but only 7.6% had actually purchased them in the past.¹²⁷

Beile Zhang and her colleagues identified two reasons for low participation rates: Consumers are ill-informed about how carbon offsets schemes function, and also perceive that offset programs lack transparency (specifically about the relationship between airlines themselves and the third parties involved in running the offset program).¹²⁸ This study of consumer attitudes towards VCO

124. Bohm, *supra* note 107, at 1622.

125. See National Geographic Staff, *Should You Buy Carbon Offsets for Your Air Travel?*, NAT'L GEOGRAPHIC (Jan. 21, 2022), <https://www.nationalgeographic.com/travel/article/should-you-buy-carbon-offsets-for-your-air-travel> [<https://perma.cc/XDZ4-D2DQ>] (providing an updated 2022 overview of direct-to-consumer offsets in the aviation industry).

126. Susanne Becken & Brendan Mackey, *What Role for Offsetting Aviation Greenhouse Gas Emissions in a Deep-Cut Carbon World?*, 63 J. AIR TRANSP. MGMT. 71, 76 (June 2017).

127. *Id.*

128. Beile Zhang et al., *Is the Airline Trustworthy? The Impact of Source Credibility on Voluntary Carbon Offsetting*, 58 J. TRAVEL RSCH. 715, 716 (2018).

programs showed a direct relationship between source credibility (the passengers' perception of the trustworthiness and expertise of the airline and third party offset organization) and air passengers' intentions to purchase offsets.¹²⁹ The study also showed that current carbon offsetting messages were not adequately clear and credible to enhance passengers' confidence in offset programs, nor to increase passenger intentions to purchase offsets.¹³⁰

Though source credibility was important for consumers when learning more about carbon offsets, some consumers participate in carbon offsetting even if they are uninformed. Another study found that "carbon offsetting was undertaken more frequently by consumers who are less knowledgeable."¹³¹ Well-informed consumers can be deterred from participating in the market because they are aware of the flaws of the current system (leakage, non-additionality, impermanence, and double counting).¹³² Consumers who are less knowledgeable about carbon offsets are undertaking carbon offset behaviors more frequently than those who are knowledgeable about carbon offsets.¹³³ This might suggest that these uninformed consumers are simply undertaking activities they perceive to be environmentally responsible, without fully evaluating the efficacy of these activities.¹³⁴

B. Current Voluntary Carbon Offset Marketing Portrays Offsets as a Method to Continue Current Unsustainable Consumption Habits

Offsets are an immediate solution—consumers can purchase offsets now, rather than undertaking the more difficult, slower change to corporate practices or individual behavior. There is an appeal to a quick fix approach where offsetting becomes integrated into a "normal" mode of consumption. This makes purchasing offsets simply part of our routine consumer choices (purchasing a flight, etc.) and does not require true contemplation of the more aggressive policies

129. *Id.* at 727.

130. *Id.*

131. Yohan Kim et al., *Can Companies Induce Sustainable Consumption? The Impact of Knowledge and Social Embeddedness on Airline Sustainability Programs in the U.S.*, 6 SUSTAINABILITY 3338, 3343–44 (2014) (citing Michael Polonsky & Romana Garma, *Are Carbon Offsets Potentially the New 'Greenwash?' in AUSTRALIA & N.Z.* MKTG. ACAD. CONF. (2008)).

132. *Id.*

133. Michael J. Polonsky et al., *The New Greenwash? Potential Marketing Problems with Carbon Offsets*, INT'L J. BUS. STUD. 49, 51–52 (2010) (SPECIAL ISSUE).

134. *Id.*

needed to address the climate emergency. “Quick fix” carbon offsets also allow businesses to easily fulfill some notion of corporate environmental responsibility without changing production practices. In other words, carbon markets often subsidize environmentally destructive activities.

Offsetting embraces consumerism in a fashion that could amount to a rejection of more comprehensive efforts. Offsets do not actually eliminate the harms of consumption. Offsetting is a way to correct for emissions from specific instances of consumption, but should not be thought of as a license to consume. Critics of carbon markets point out that the broader effect of offsetting is that consumers in developed countries can avoid responsibility for their own consumption and personal carbon footprint by pushing off the responsibility for sustainable development onto other people, and often other countries.¹³⁵ Warburg and colleagues used a randomized controlled trial design to “investigate how the availability of [carbon offsets] affects consumers’ choices for environmentally critical products.”¹³⁶ The results suggest that when offsets are available, the likelihood of environmentally harmful consumption increases.¹³⁷ This finding signals that carbon offsets could function as a “moral license”¹³⁸ to continue emission-producing behaviors. Additionally, this result indicates that consumers tend to underestimate the damaging impact of the environmentally harmful product and overestimate the effectiveness of carbon offsets for environmental protection, which could be “strategies for reducing cognitive dissonance and guilt.”¹³⁹

This point is not to argue against the presence of voluntary carbon offsets, but for stronger regulatory systems in lieu of unchecked profit-seeking marketing strategies that may frame carbon markets as a replacement for more radical or centralized change. For example, the JetBlue sustainability page shows how marketing often frames VCOs as an “easy” way to remove environmental concerns from

135. Bohm, *supra* note 107, at 1622.

136. Johan Warburg et al., *Voluntary Carbon Offsetting and Consumer Choices for Environmentally Critical Products—An Experimental Study*, 30 *BUS. STRATEGY & ENV'T* 3009, 3009 (2021).

137. *Id.*

138. *Id.* See also Irene Blanken et al., *A Meta-Analytic Review of Moral Licensing*, 41 *PERSONALITY & SOC. PSYCH. BULL.* 540, 590 (2015) (explaining that “the idea of moral licensing theory is that [a] prior good deed provides a ‘license’ that allows one to perform morally questionable behavior later on.” For example, “someone who has just spent some time volunteering for the local community center might later find it more acceptable to ‘forget’ to report some additional income when filling out their tax returns.”).

139. *Id.*

consumption: “Reduce the environmental impact of your travel for about the price of a cup of coffee.”¹⁴⁰ Along with ensuring credibility, regulation of VCOs should focus on minimizing the misleading “quick fix” narrative.

C. Imagining De-Carbonization Beyond the Market

True de-carbonization will require more than the incremental improvements of carbon pricing. Ideally, aggressive climate policy should begin with a reassertion of strong government intervention. This effort could begin by closing loopholes on corporate tax evasion, which will begin the process of reorganizing the economy.¹⁴¹ The government would recoup billions of dollars in funds for building renewable energy infrastructure and assisting vulnerable populations that will be directly affected by climate change.¹⁴² Corporate tax reform would additionally create more favorable conditions for *further* de-carbonization policies by decreasing corporate wealth that could influence the political process and advocate for deregulation.¹⁴³ The next step would be a fast and massive transformation of society’s economic, energy, and transportation infrastructures.¹⁴⁴ This transformation would require rapid mobilization and direction of all available resources toward climate adaptation and mitigation. Eventually, there would need to be an economic and cultural paradigm shift: Meaningful climate mitigation is largely incompatible with the pursuit of infinite economic growth.¹⁴⁵ Some express hope for the possibility of major technological developments, such as low-cost nuclear fusion which can meet global energy demands, which would reduce the need for drastic reforms. However, it would be dangerous to stay on our current economic path based on the “wishful thinking” that technology will save us from the climate crisis, rather than utilizing current renewable energy sources and working towards a more

140. Guix, *supra* note 72, at 10.

141. Jessica F. Green, *Beyond Carbon Pricing: Tax Reform is Climate Policy*, 12 GLOB. POL’Y 372, 372 (2021).

142. *Id.*

143. *Id.*

144. *Id.*

145. Minqi Li, *The 21st Century Crisis: Climate Catastrophe or Socialism*, 43 REV. RADICAL POL. ECON. 289, 299 (2011).

sustainable economy with the tools we already have.¹⁴⁶ Therefore, our economic systems must evolve to prioritize ecosystems over economic growth, and operate with levels of consumption consistent with the capacity of the environment.¹⁴⁷

VI. STRENGTHENING AND CENTRALIZING GOVERNMENT REGULATION OF THE VOLUNTARY OFFSET MARKET

A. California Case Study

Although the California Forest Protocol and cap-and-trade regulations are programs that exist outside the scope of the voluntary offset market, the programs provide a valuable example of what stricter regulations and standards for offsets could look like. Nation-wide adoption of these standards could significantly improve the credibility of the voluntary offset market.

The California Climate Action Registry (CCAR) was established in California in 2001.¹⁴⁸ The CCAR “[functions] as a non-profit entity that would partner with other non-profits as well as with businesses, energy generators, industries and the state itself.”¹⁴⁹ The CCAR also provides standard methods for quantifying the measurement of GHGs, and a centralized registry to which CCAR members can report their GHG emissions.¹⁵⁰ The CCAR provides specific requirements for forest-based offsets. The Forest Protocol defines “offsets” as:

[d]iscrete GHG reductions used to compensate for (i.e. offset) GHG emissions elsewhere, for example, to meet a voluntary or mandatory GHG target or cap. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project that generates the offsets. To avoid double counting the reduction giving rise to the offset, [it] must

146. See L. J. REINDERS, *THE FAIRY TALE OF NUCLEAR FUSION* 560-61 (2021) (stating that “this book shows beyond any reasonable doubt that all the remaining eighty years of this century will be far too short for [the development of commercially viable nuclear fusion] to happen” and that more likely nuclear fusion will be “hideously complex, hugely expensive and extremely unreliable, and can never compete with any of the carbon-free or low-carbon options that will [at the point of development of full nuclear fusion power stations] be at a mature stage.”)

147. *Id.*

148. James L. Olmstead, *Carbon Dieting: Latent Ancillary Rights to Carbon Offsets in Conservation Easements*, 29 J. LAND, RES. & ENV'T L. 121, 127 (2009).

149. *Id.*

150. *Id.*

occur at sources or sinks not included in the target or cap for which it is used.¹⁵¹

When the Forest Protocol was created, the CCAR “would accept only three types of forest project activities.¹⁵² First, “conservation-based forest management” projects that exceed the “applicable mandatory forest management laws used to characterize the project baseline.”¹⁵³ Second, reforestation projects are limited to areas which have “been out of forest cover for at least ten years and [where] governing land use statutes and regulations do not require the project area to be reforested.”¹⁵⁴ Finally, conservation or “avoided deforestation” offsets must come from projects which “but for” its act, “would have been converted to a non-forest use.”¹⁵⁵

The Forest Protocol also has requirements addressing leakage and permanence. The Protocol mandates assessment of “activity-shifting leakage,” which is defined as “the displacement of activities from inside the offset *project’s physical boundaries* to locations outside the offset project’s boundaries, as a direct result of the project activity, causing an increase in emissions outside of the [offset] *project’s physical boundaries*.”¹⁵⁶ The Protocol “strongly encourage[s]” assessment of “market leakage,” which occurs “when the project activity affects an established market for goods, thus causing the substitution or replacement elsewhere and causing GHG emissions that, in effect, offset or mitigate the project’s GHG reductions.”¹⁵⁷ To address permanence concerns, the Protocol requires that projects “be secured with an easement that dedicates permanently the project land area to forest use.”¹⁵⁸

In addition to the Forest Protocol, California has a cap-and-trade emissions scheme that was implemented in 2013.¹⁵⁹ The enabling legislation, the Global Warming Solutions Act of 2006, gives executive responsibility to an agency appointed by the state governor: the

151. *Id.* at 128 (quoting CALIFORNIA CLIMATE ACTION REGISTRY, CALIFORNIA CLIMATE ACTION REGISTRY FOREST PROJECT PROTOCOL (“FOREST PROTOCOL”) (Version 2.1 2007)).

152. *Id.* at 129 (citing FOREST PROTOCOL, *supra* note 151).

153. *Id.* (quoting FOREST PROTOCOL, *supra* note 151).

154. *Id.* (quoting FOREST PROTOCOL, *supra* note 151).

155. *Id.* (quoting FOREST PROTOCOL, *supra* note 151).

156. *Id.* at 130 (quoting FOREST PROTOCOL, *supra* note 151 (emphasis and bracketed material Olmstead’s)).

157. *Id.* (quoting FOREST PROTOCOL, *supra* note 151).

158. *Id.* at 131 (quoting FOREST PROTOCOL, *supra* note 151).

159. Christopher Arup & Hao Zhang, *Lessons from Regulating Carbon Offset Markets*, 4 *TRANSNAT’L ENV’T L.* 69, 88 (2015).

California Air Resources Board (CARB).¹⁶⁰ The California program is limited to offsets of six specified types.¹⁶¹ The following six activities have been recognized: (1) projects to destroy “ozone depleting substances,” (2) “livestock projects” (methane reductions), (3) “urban forest projects,” (4) “U.S. forest projects,” (5) “mine methane capture projects,” and (6) “rice cultivation projects.”¹⁶² The enabling legislation also contains strict regulatory standards. Offsets must be “real, additional, quantifiable, permanent, verifiable, and enforceable,” and quality assurance mechanisms should include “the application of standardized compliance offset protocols, the use of accredited third-party verifiers, and the approval and oversight of project registries.”¹⁶³

While these stricter standards for offsets provide a possible regulatory model for the voluntary market, there are still significant limitations to the California offset programs. As of 2020, the program had generated more than 130 million credits (each one representing one metric ton of CO₂), which are collectively worth \$1.8 billion at recent prices.¹⁶⁴ However, a study by CarbonPlan found that project forests are frequently earning more credits than actual decreases in carbon emissions—there have been 20–39 million “ghost credits.”¹⁶⁵ These ghost credits can actually *increase* the total amount of CO₂ emissions because “every time a polluter uses a credit [for a new source of emissions] that didn’t actually save a ton of carbon, the total amount of emissions goes up.”¹⁶⁶ One reason for these errors is imprecise “baseline” calculations representing “the average amount of carbon [storage]” on a given plot of forest.¹⁶⁷ For example, in the “Southern Cascades” region of California, the common practice is to divide forests into sections and average together the carbon sequestration potential for all the trees in that section.¹⁶⁸

Discrepancies arise when the numbers used in the program average together carbon-dense forest types like Douglas fir (average 122.5

160. *Id.* at 89.

161. *Id.* at 90.

162. CAL. CODE REGS. tit. 17, § 95975(e) (2015).

163. Arup & Zhang, *supra* note 159, at 91.

164. Song & Temple, *supra* note 113.

165. *Id.*

166. *Id.*

167. Grayson Badgley et. al., *Systematic Over-Crediting of Forest Offsets*, CARBONPLAN (Apr. 29, 2021), <https://carbonplan.org/research/forest-offsets-explainer> [<https://perma.cc/ZWQ8-SKZJ>].

168. *Id.*

tCO₂/acre) and Tanoak (average 192.4 tCO₂/acre) with less-carbon-dense forest types, like Ponderosa pine (average 60.4 tCO₂/acre).¹⁶⁹ If a project developer selects an area within the section that is composed primarily of the carbon-dense forest types, the project is automatically eligible to receive substantial credits due to the mismatch between the carbon sequestration potential of the species in the project and the regional average.¹⁷⁰ This mismatch does not represent true additionality, as the project developer did not take any action to increase the carbon sequestration potential of the forest. This method of calculation incentivizes developers and landowners to intentionally “cherry-pick” sites that have elevated carbon sequestration potential when compared to regional averages, and enroll these tracts in California’s system to earn excess credits.¹⁷¹ Where some regions meet, the forest on either side may be identical, but a project developer could earn far more credits and money by choosing a site on the side of the border that has been calculated to have a higher average.¹⁷² Developers are therefore motivated to seek out tracts with particular types of trees that store more carbon than the surrounding region, but this practice generally creates ghost credits.¹⁷³

Another complication comes from leakage, the phenomenon through which offset project reductions are cancelled out by an increase in logging at other locations which are not covered by the carbon offset program.¹⁷⁴ Though CARB’s protocol accounts for leakage, its incorporated leakage of 20% might be vastly underestimating the phenomenon.¹⁷⁵ Studies of reduced timber harvesting in the United States indicate leakage rates of 80% or higher, highlighting a potential discrepancy of more than 60%.¹⁷⁶ This is another mechanism that results in systemic over-crediting and thus a net increase in emissions.¹⁷⁷

169. *Id.*

170. *Id.*

171. Song & Temple, *supra* note 113.

172. *Id.*

173. *Id.*

174. BARBARA HAYA, CTR. FOR ENV’T PUB. POL’Y AT U.C. BERKELEY, POLICY BRIEF: ARB’S U.S. FOREST OFFSET PROTOCOL UNDERESTIMATES LEAKAGE 1 (2019).

175. *Id.*

176. *Id.*

177. *Id.*

B. Other Proposed Legal and Regulatory Tools

1. Strengthen the Green Guides

The FTC Green Guides are designed to help marketers avoid “greenwashing,” or the use of environmental claims that mislead consumers.¹⁷⁸ With relatively little effort, this already-existing guidance document could improve the reliability of carbon offset marketing claims. Inaccurate over-crediting of carbon offsets is addressed briefly within the Green Guides, but the FTC should provide more guidance in these sections and add clear-cut definitions for the terms “carbon offset” and “carbon neutral.”¹⁷⁹ The FTC should provide more detailed standards regarding the “offset criteria, recordkeeping requirements, verification procedures, or particular qualifications” marketers must use to substantiate carbon offset claims.¹⁸⁰ The FTC should also create an obligation to verify the additionality of carbon offsets.¹⁸¹

2. Regulate Through Federal Agencies

The Energy Policy Act authorized the Department of Energy to establish guidelines for voluntary emissions reporting, and the agency has exercised this authority through its Voluntary Reporting of Greenhouse Gas Emissions Program.¹⁸² A federally regulated program for emissions reporting could facilitate the calculation of more accurate “business-as-usual” baselines for evaluating additionality.

The Environmental Protection Agency (EPA) Climate Leaders program facilitated partnerships between EPA and individual businesses to assist in finding ways to reduce GHG emissions.¹⁸³ For businesses to use offsets to reach emission reduction goals, the offsets had to meet the Climate Leaders program’s verification requirements.¹⁸⁴ Participation in the program was subject to the

178. FTC, *Environmentally Friendly Products: FTC’s Green Guides*, <https://www.ftc.gov/news-events/topics/truth-advertising/green-guides> (last visited Oct. 14, 2022) [<https://perma.cc/HVP9-MDCQ>].

179. Cooke, *supra* note **Error! Bookmark not defined.**, at 138.

180. *Id.* at 139 (quoting FTC, *THE GREEN GUIDES: STATEMENT OF BASIS AND PURPOSE* 71 (2013)).

181. *Id.* at 140–41.

182. Thomas P. Healy, *Clearing the Air: Pursuing a Course to Define the Federal Government’s Role in the Voluntary Carbon Offset Market*, 61 ADMIN. L. REV. 871, 880 (2009).

183. *Id.* at 881.

184. *Id.*

completion of a detailed report of participants' carbon emissions, defined targets for emission reductions, and yearly updates to emission data.¹⁸⁵ In return, participants received technical assistance from EPA for calculating and tracking emissions, as well as specific guidance on properly calculating any reductions that came from carbon offsets.¹⁸⁶ Some of EPA's credibility requirements for the program included the following: the use of a "performance standard-based approach" to quantifying emissions reductions and specific accounting methods for different offset project types, including manure management, afforestation, and energy efficiency retrofits.¹⁸⁷ Although EPA eventually ended this program due to "a desire to re-allocate resources where they were more needed and could be more efficiently used," there can be lessons from Climate Leaders that can be applied to future programs.¹⁸⁸ To fill in the gaps of traditional regulatory systems, it can be helpful to have voluntary, "win-win" programs.¹⁸⁹ Here, the Climate Leaders program set standards for transparency and accuracy in emissions reporting. In return, firms received assistance with calculating and analyzing emissions, as well as the environmental credibility associated with participation in an EPA program. This could be a valuable framework for future voluntary environmental programs.

Another model could be the Organic Food Production Act of 1990 (OFPA), which was created to address the conflicting state and private marketing standards of organic agriculture claims.¹⁹⁰ The OFPA sets "uniform minimum standards for producers and processors of organic products."¹⁹¹ When a product is "Certified Organic," it means that its production complied with a "series of regulations mandating how that product is grown, harvested, raised, and prepared."¹⁹² These certification standards were developed through a "blended regulatory system" which "incorporate[d] the expertise of market participants in creating the certification standard."¹⁹³ The OFPA mandated that the

185. *Id.*

186. U.S. GOV'T ACCOUNTABILITY OFF., CARBON OFFSETS: THE U.S. VOLUNTARY MARKET IS GROWING, BUT QUALITY ASSURANCE POSES CHALLENGES FOR MARKET PARTICIPANTS 22 (2008).

187. *Id.*

188. VIVIAN FUTRAN, LESSONS LEARNED FROM EPA'S CLIMATE LEADERS PROGRAM: AN EVALUATION TO FORTIFY VOLUNTARY ENVIRONMENTAL INITIATIVES 30 (2011) (Master of Environmental Studies Capstone Project, University of Pennsylvania).

189. *Id.* at 37.

190. Savasta-Kennedy, *supra* note 123, at 871-73.

191. *Id.* at 873 (citation omitted).

192. *Id.* (citation omitted).

193. *Id.* at 879-80.

U.S. Department of Agriculture “include direct input from the organic foods industry through the creation of a National Organics Standards Board (NOSB)” which was comprised of industry representatives.¹⁹⁴ The carbon market is similarly technically complicated, so the creation of an advisory board could help to create a workable uniform standard by incorporating the expertise of project developers, certifiers, and other stakeholders into the regulatory process. The NOSB program also provides insight into the limitations of public/private collaboration in creating a certification standard. Organics standards are still often confusing to consumers: There are three different levels of organic labeling, and much of the regulation of organic production is “process based” rather than “product based,” making standards inaccessible to consumers who are not knowledgeable about organic farming and processing techniques.¹⁹⁵ However, the program was successful in reducing ten different certification protocols to a single, albeit complicated, standard.¹⁹⁶

The responsibility for enforcing carbon offset claims could shift from the FTC to the Commodity Futures Trading Commission (CFTC). In theory, the CFTC is well-suited for this type of regulation because its purpose is to “protect market users and the public from fraud, manipulation, and abusive practices related to the sale of commodities.”¹⁹⁷ The CFTC’s structure is already set up to create centralized registries to oversee commodities markets.¹⁹⁸ The CFTC could require all offset sellers to register their offsets in a central registry with protocols to ensure accurate registration statements.¹⁹⁹ Because the CFTC’s expertise does not extend to some of the technically and scientifically complex issues related to offsets, EPA could assist in establishing the registration standards.²⁰⁰ The CFTC would be an effective partner for EPA for two reasons: The CFTC is the institutional actor with the greatest experience in overseeing commodities markets, and because the CFTC currently monitors the

194. *Id.*

195. Erin Toomey, *How Organic is Organic? Do the USDA’s Organic Food Production Act and National Organic Program Regulations Need an Overhaul?*, DRAKE J. AGRIC. L. 127, 131–132 (Spring 2014).

196. Savasta-Kennedy, *supra* note 127, at 875–876.

197. Salter, *supra* note 18, at 72 (citation omitted).

198. *Id.*

199. *Id.* at 71.

200. *Id.*

Chicago Climate Exchange,²⁰¹ the agency has prior experience with the unique aspects of carbon offset regulation.²⁰²

Another possibility is stricter regulation by the Securities and Exchange Commission (SEC). In 2021, the SEC released new proposed climate disclosure rules to ensure that companies disclose information about their emissions, climate risks, and climate transition plans.²⁰³ The rule creates mandatory climate disclosure requirements, “including Scope 1 and 2 greenhouse gas emissions for all companies, and material Scope 3 greenhouse gas emissions for the biggest corporations.”²⁰⁴ If a company employs carbon offsets, it must provide “information as to how the offsets are used.”²⁰⁵ The SEC recognized that the “value of an offset may decrease substantially and suddenly if, for example, the offset represents protected forest land that burns in a wildfire and no longer represents a reduction in GHG emissions.”²⁰⁶ Under the proposed rules, “a registrant that purchases offsets . . . to meet its goals as it makes the transition to lower carbon products would need to reflect this additional set of short and long-term costs and risks in its Item 1502 disclosure.”²⁰⁷ Although these disclosures are related to financial risk, more thorough evaluation of offsets will have co-benefits for the environment.

3. Judicial Remedies

One judicial option is the “duty to update” doctrine that “polices forward-looking statements,” such as Emission Reduction Targets

201. The Chicago Climate Exchange (CCX) is a voluntary carbon exchange market where offset sellers can register their offsets for trade. U.S. GOV'T ACCOUNTABILITY OFF., GAO-08-1048, CARBON OFFSETS: THE U.S. VOLUNTARY MARKET IS GROWING, BUT QUALITY ASSURANCE POSES CHALLENGES FOR MARKET PARTICIPANTS 5 (2008). Offset providers may register greenhouse gas reduction projects on the CCX platform. *Id.* The CCX program ensures the validity of offsets within the exchange program by requiring verification by program-approved third-party firms. *Id.* The CCX program also involves a registry to “help track purchases and sales of offsets acquired or sold on the exchange.” *Id.*

202. Salter, *supra* note **Error! Bookmark not defined.**, at 72.

203. Danielle Fugere, *What Do the New SEC Rules Mean for Action on Climate Change?*, SIERRA (Mar. 24, 2022), <https://www.sierraclub.org/sierra/what-do-new-sec-rules-mean-for-action-climate-change> [<https://perma.cc/XBG5-7FR4>].

204. *Id.*

205. *Id.*

206. The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21334, 21355 (proposed Apr. 11, 2022) (to be codified at 17 C.F.R. §229.1500-1502).

207. *Id.*

(ERTs), that may become misleading over time.²⁰⁸ The duty to update stems from the guiding principle of U.S. securities law that “investors must have access to accurate information important to making investment and voting decisions” and mandates reporting companies to comply with “extensive periodic and event-specific disclosure requirements.”²⁰⁹

ERTs are generally found in company-issued sustainability reports or other voluntary climate disclosures, and therefore are outside the scope of the SEC’s regulatory scheme for mandatory disclosures.²¹⁰ However, even voluntary disclosures are subject to the anti-fraud provisions of the Securities Exchange Act section 10(b) and Rule 10b-5.²¹¹ Rule 10b-5 makes it unlawful to “make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading.”²¹² To be subject to Rule 10b-5 liability for nondisclosure, there must be an affirmative “duty to speak” such that the omission would mislead a reasonable investor.²¹³ The Supreme Court held that the “misleading” requirement of Rule 10b-5 can apply when the nondisclosure of information renders a *prior* statement misleading.²¹⁴ The applicability of Rule 10b-5 to prior statements thereby creates the duty to update. The duty to update could be used to regulate ERTs, which are not statements about the company’s present climate performance, but rather attestations to the market that a company will reach emission benchmarks by specified dates.²¹⁵ The “duty to update” doctrine can be applied because the truth of ERT statements cannot be assessed at the time of issuance, thus creating a need to disclose whether the company is adhering to the projected timetable.²¹⁶ Nathan Campbell explained the application of the doctrine with this example: A company pledges to cut its emissions by 50% by 2030, based on a 2015 baseline, and fails to make those reductions by 2030.²¹⁷ Under the duty to update

208. Nathan Campbell, *The Duty to Update Corporate Emissions Pledges*, 74 VAND. L. REV. 1137, 1137 (2021).

209. *Id.* at 1163–64.

210. *Id.* at 1164.

211. *Id.*

212. *Id.* (citing 17 C.F.R. §240.10b-5 (2020)).

213. *Id.* at 1165 (citing *Chiarella v. United States*, 445 U.S. 222, 235 (1980)).

214. *Id.* at 1166 (citing *Omnicare, Inc. v. Laborers Dist. Council Constr. Indus. Pension Fund*, 575 U.S. 175, 186–89 (2015)).

215. *Id.* at 1180–81.

216. *Id.*

217. *Id.* at 1182.

doctrine, that company must disclose that its pledge was not met. Failure to disclose this would make the prior emissions pledge misleading under Rule 10b-5.

The SEC has recognized that climate risks are intertwined with financial risks to companies, and investors must have access to accurate information about climate risks to make informed investment decisions.²¹⁸ Thus, the duty to update doctrine should apply to carbon offsets because many companies substantially rely on offsets to achieve “net zero” or “carbon neutral” emissions pledges. For example, many fossil fuel corporations have designed climate plans which “focus heavily on carbon removal and capture technologies and offsets while avoiding actual emissions reductions.”²¹⁹ Under the duty to update, companies could be required to disclose if, for example, a relied-upon forestry offset was reversed due to “leakage” with increases of timber harvesting elsewhere.

Another strategy is changing consumer fraud standards for carbon offsets. Under the Green Guides, environmental marketing claims must have a “reasonable basis substantiating the claim [which] will often require competent and reliable scientific evidence.”²²⁰ This standard can be problematic for evaluating carbon offsets because there are inherent uncertainties in the scientific evaluation of offsets and marketers calculate offset benefits using a variety of methodologies, many of which would be considered “reasonable” under this test.²²¹ The legal standard to evaluate carbon offsets should focus on the *consumer’s* mindset in order to adequately protect consumers from being misled.²²² To do so, courts could replace the “reasonable basis in the science” standard used in environmental marketing cases with the “likely to mislead” test from *Cliffdale Associates, Inc.*,²²³ which was adopted by the Ninth Circuit in *FTC v.*

218. SEC, Press Release No. 2022-46, SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors (Mar. 21, 2022), <https://www.sec.gov/news/press-release/2022-46> [<https://perma.cc/3YNL-W6VU>].

219. Campbell, *supra* note 208, at 1149.

220. Salter, *supra* note **Error! Bookmark not defined.**, at 66 (citing FTC Green Guides, 16 C.F.R. §260.5 (2009)).

221. *Id.* at 67.

222. *Id.*

223. *See id.* at 68 (explaining that “[i]n *Cliffdale*, the FTC held a manufacturer of a fuel efficiency device called the ‘Ball-matic’ liable for deceptive advertising. The manufacturer argued that its fuel efficiency claim had a reasonable basis because the manufacturer conducted a ‘controlled, supervised test’ that showed that cars installed with the Ball-matic improved their gas mileage between eight and forty percent.” While there was ample litigation debating the

Pantron.²²⁴ This test holds that a practice is deceptive if: “there is a representation, omission, or practice” that “is likely to mislead a reasonable consumer” and “the representation, omission, or practice is material.”²²⁵ Under the “likely to mislead” test, an offset seller could be held liable for claims that would likely mislead a reasonable consumer about a material aspect of the offset.²²⁶ A reviewing court may consider an offset seller’s scientific bases for the claim, but the deciding factor for the “likely to mislead” test is the consumer’s perception of the purchased offset.²²⁷ This approach would be useful for offset claims because it would prevent offset sellers from relying on technically correct, yet misleading claims about the benefits of offsets.²²⁸

A limitation here is that creating a new judicial doctrine is a slow and costly process. Despite the challenges of pursuing climate change-related claims, the ideas are still worth exploring if an opportune case arises.

4. Federal Legislation

Another avenue is that Congress could create a uniform, federal carbon offset certification process.²²⁹ This particular model for certification was suggested in response to the possibility of a national cap-and-trade program, but the proposal is still a helpful framework for a similar creation of federal standards for voluntary offsets as well.²³⁰ This model is centered around a certification process designed by EPA to ensure consistent protocols for evaluating offsets. Tier 1 offsets (or “Compliance Credits”) would be “certified by the EPA and will meet stringent measurement, verification, and permanence requirements via the application of rigorous EPA methodologies and

scientific credibility of this test, the FTC gave “scant attention to the ‘reasonable basis’ inquiry and focused much more on whether a reasonable consumer would be misled by the manufacturer’s claim.”)

224. *Id.* at 68 (citing *FTC v. Pantron I, Corp.*, 33 F.3d 1088, 1095–96 (9th Cir. 1994)).

225. *Id.*

226. *Id.* at 69.

227. *Id.*

228. *Id.* (using the example, “instead of categorically stating that an offset derived from a forest sequestration project will reduce GHGs by thirty tons, the offset sellers would be on safer ground to state GHG reductions as a range, such as stating that an offset will reduce GHGs by fifteen to thirty tons Given the uncertainty of measurements, [this] would be less likely to mislead the reasonable consumer about the benefit of the offset they are purchasing.”).

229. CTR. FOR AM. PROGRESS, *The U.S. Congress Should Pass a Carbon Offset Certification Process* (Debra A. Miller ed., 2009).

230. *Id.*

protocols.”²³¹ Tier 2 offsets (or the “Targeted Carbon Reduction Program”) would include program- or project-based activities that “may not satisfy the stringent tests to earn Tier 1 compliance credits but still reduce emissions.”²³² These activities would earn other financial rewards, including tax credits, rebates, grants, or other incentives.²³³

5. Lessons from International Environmental Law

Carbon offsets sold in one country often fund de-carbonization projects in other countries; therefore, it is important to consider international environmental justice and equity. The 1997 Kyoto Protocol established the first global framework for carbon markets.²³⁴ The Kyoto Protocol set legally binding emissions targets for the most industrialized countries, which led to the implementation of an emissions trading mechanism to assist industrialized countries in decreasing their emissions.²³⁵ The CDM enabled the developed countries and their companies to buy carbon credits from “clean development” projects, often located in the developing countries that were not legally bound to reduce their own emissions under the Kyoto agreement.²³⁶

The CDM was appealing to developed countries because it is often cheaper and easier to fund new development projects in the developing countries than to directly reduce domestic emissions.²³⁷ Although the CDM was not a formal social development program, it is essential that clean development projects do not inflict harm onto local environments and populations. One example of a CDM project that negatively impacted the local population was a biomass power generation project in Thailand that used rice husk as a renewable fuel.²³⁸ Agricultural communities in the area had “been using [this rice husk] as natural fertilizer and for brick manufacturing for generations.”²³⁹ Because of the CDM project, local farmers were forced to switch to chemical fertilizers, which are more expensive and

231. *Id.*

232. *Id.*

233. *Id.*

234. Bohm, *supra* note 107, at 1620.

235. *Id.*

236. *Id.* at 1621.

237. *Id.*

238. *Id.* at 1623.

239. *Id.*

contribute to climate change (the production of fertilizers generates carbon emissions).²⁴⁰ This example shows that it is important to consider the qualitative impacts of carbon trading as well as the quantitative calculations of emissions, especially for environmental justice purposes.

Article 6 of the Paris Rulebook addresses this issue. Both the Kyoto Protocol and the Paris Agreement require that a share of the proceeds from any carbon offset project shall be used to “cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.”²⁴¹ However, the Paris Agreement further elaborates on environmental justice considerations and directs Parties to “recognize the importance of... holistic and balanced non-market approaches... in the context of sustainable development and poverty eradication.”²⁴²

VII. CONCLUSION

The voluntary carbon offset market poses unique challenges due to unregulated marketing claims as well as scientific and technological uncertainties. Adopting a form of centralized regulation for the market is essential for carbon offsets to become a reliable piece of a larger climate change mitigation strategy that goes beyond the market. Utilizing the variety of available legal and regulatory tools to increase the transparency and reliability of offset marketing programs will have meaningful benefits for the climate movement. Stronger regulation will decrease any “gaming on the system” in favor of profits. Regulation will also increase consumer confidence and participation in the market because the burden will be on offset providers and firms to accurately portray the benefits of their offsets rather than on consumers to assess the credibility of marketing claims. The offset market must be repositioned as one of many regulated tools for climate change mitigation (with the eventual goal of simply eliminating greenhouse gas emissions altogether), rather

240. *Id.*

241. Paris Agreement to the United Nations Framework Convention on Climate Change Art. 6, ¶6, Dec. 12, 2015, T.I.A.S. No. 16-1104; Kyoto Protocol to the United Nations Framework Convention on Climate Change, Art. 12, ¶8, Dec. 10, 1997, 2303 U.N.T.S. 162.

242. Paris Agreement to the United Nations Framework Convention on Climate Change, *supra* note 245, Art. 6, ¶8.

than as a carbon subsidy for the unmitigated growth of capitalism and production.