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published in

Journal of European Consumer and Market Law
2022

document version

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citation for published version (APA)

Kaupa, C. (2022). Peddling false solutions to worried consumers: The promotion of greenhouse gas “offsetting” as a misleading commercial practice. *Journal of European Consumer and Market Law*, 2022(4), 139-146.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4157810

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Clemens Kaupa*

Peddling False Solutions to Worried Consumers

The Promotion of Greenhouse Gas “Offsetting” as a Misleading Commercial Practice

I. Introduction

European citizens are deeply worried about the climate crisis.¹ Responding to this concern, corporate advertisers increasingly claim that the greenhouse gas (GHG) emissions related to their products have been “offset”, or sell GHG “compensation” as an additional service.² Corporations also market their entire business activities as “carbon neutral”, or communicate their ambitions to achieve “net zero emissions” at some point in the future.³ The concept of GHG “compensation” (as well as the synonyms “offsetting” and “neutralization”) describes the idea that the climate harm caused by GHG-emitting activities could be undone by engaging in “offsetting activities”, such as afforestation. The underlying premise is that the climate impact of such offsetting activities is equivalent to that of GHG-emitting activities, thereby counterbalancing them.

Consumer law such as the EU Unfair Commercial Practices Directive (UCPD) requires advertising to be factually accurate.⁴ The problem with offsetting claims is that the equivalence assumption on which they are based does not stand up to scientific scrutiny. The climate benefits attributed to offsetting activities is significantly less certain than the climate harm caused by GHG-emitting activities, which means that no equivalence between the two can be assumed. Offsetting claims must therefore be considered to be factually incorrect: In the absence of equivalence, offsetting activities do not, and cannot achieve the promoted “compensation”, “neutralization” or “offsetting” of the climate harm caused by GHG-emitting activities. Offsetting claims are liable to influence the choices made by consumers who are concerned about the climate, and therefore constitute misleading commercial practices. Recent decisions by the Dutch advertising authority confirm this view. In the past year the European Commission and national consumer authorities have issued guidelines on the subject. While these guidelines correctly highlight the deceptive potential of offsetting claims, they fail to identify the scientifically flawed equivalence assumption as its source. Consequently, they do not provide the necessary clarity about the fact that all offsetting claims are misleading.

This article examines the legality of offsetting claims in advertising. It proceeds as follows: The second section will discuss the ban on misleading advertising and its application to environmental marketing claims. It will focus on the UCPD, but also discuss analogous provisions from other jurisdictions and relevant soft law regimes. It will be shown that the core obligation of advertisers prescribed under all these regimes is to provide factually correct information that is supported by objective evidence. The third section will discuss concrete examples of offsetting claims. It will be argued that the various types of offsetting claims have a common denominator, namely the assumption that the climate effect of offsetting activities is equivalent to that of GHG-emitting activities, which would enable the former to counterbalance the latter. The fourth section will show that this assumption of equivalence is factually incorrect, as the benefits attributed to offsetting activities are significantly less certain than the harm caused by GHG-emitting activities. Three areas of uncertainty highlighted in the relevant academic literature will be dis-

cussed: Mitigation uncertainty, feedback uncertainty, and accounting uncertainty. Applying the UCPD to offsetting claims, the fifth section finds that they are misleading.

II. The Ban on Misleading Advertising and Its Application to Environmental Marketing Claims

This section introduces the ban on misleading advertising under the UCPD and analogous provisions from other jurisdictions and relevant soft law regimes and discusses their application to environmental marketing claims.

The UCPD applies to business-to-consumer commercial practices, which includes advertising and marketing.⁵ The CJEU interprets its scope broadly.⁶ Both product-specific advertising and corporate reputation advertising are covered if they are liable to influence the average consumer’s transactional choices.⁷ Excluded from the scope of the UCPD are only business-to-business commercial practices and commercial communication aimed at investors.⁸

The UCPD prohibits commercial practices that are misleading, either by action or by omission.⁹ A misleading action is the provision of information that is either incorrect, or factually correct but liable to deceive the average consumer.¹⁰

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1 Eurostat, ‘Climate Change’ (2021) Special Eurobarometer 513 7.

2 European Commission (EC), Guidance on the Interpretation and Application of Directive 2005/29/EC of the European Parliament and of the Council Concerning Unfair Business-to-Consumer Commercial Practices in the Internal Market [2021] 95.

3 Carbone 4, ‘Net Zero Initiative – A Framework for Collective Carbon Neutrality’ (2020) 5 <<http://www.carbone4.com/wp-content/uploads/2020/04/Carbone-4-NZI-Guidelines-april-2020-1.pdf>> accessed 6 December 2021.

4 Article 6 Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council [2005] OJ L 149/22 (Unfair Commercial Practices Directive, UCPD).

5 Articles 3(1) and 2(d) UCPD.

6 Case C-632/16 *Dyson Ltd gegen BSH Home Appliances NV* ECLI:EU:C:2018:599, para 30; Case C-304/08 *Zentrale zur Bekämpfung unlauteren Wettbewerbs eV v Plus Warenhandels-gesellschaft mbH* ECLI:EU:C:2010:12, para 36.

7 See EC, UCPD Guidance (n 2) 35–36.

8 Recitals 6 and 7 UCPD; See also EC, UCPD Guidance (n 2) 7–8.

9 Articles 6 and 7 UCPD; On the UCPD’s focus on consumer information see Hans-W Micklitz, ‘Unfair Commercial Practices and Misleading Advertising’ in Hans-W Micklitz, Norbert Reich and Peter Rott (eds), *Understanding EU consumer law* (Intersentia 2009) 72.

10 On the concept of the ‘average consumer’ see Hanna Schebesta and Kai P Purnhagen, ‘Island or Ocean: Empirical Evidence on the Average Consumer Concept in the UCPD’ (2020) 2 European Review of Private Law 293; Hanna Schebesta and Kai P Purnhagen, ‘Is the “Behavioural Turn” in Consumer Law Taken by Dutch Courts?’ *Tijdschrift voor Consumentenrecht en Handelspraktijken* 272; Hanna Schebesta and Kai P Purnhagen, ‘The Behaviour of the Average Consumer: A Little Less Normativity and a Little More Reality in the Court’s Case Law? Reflections on Teekanne’ (2016) 4 European Law Review 590; Bram Duivenvoorde, *The Consumer Benchmarks in the Unfair Commercial Practices Directive* (Springer 2015); Vanessa Mak, ‘Standards of Protection: In Search of the “Average Consumer” of EU Law in the Proposal for a Consumer Rights Directive’ (2011) 1 European Review of Private Law 25; Rossella Incardona and Cristina Poncibò, ‘The Average Consumer, the Unfair Commercial Practices Directive, and the Cognitive Revolution’ (2007) 30 Journal of Consumer Policy 21.

The spectrum of information that is considered material to the consumer and therefore covered by the UCPD is broad: It includes information about the product's nature and its main characteristics, as well as information about the advertisers themselves, such as the “extent of the trader's commitments” and their “motives for the commercial practice.”¹¹ A misleading omission describes the absence of material information, i. e., information that the average consumer needs to make an informed decision.¹² The action or omission must be liable to influence the average consumer's transactional decision.¹³ This requirement is to be understood broadly, covering all practices that may raise the average consumer's interest and trigger a decision to take further action.¹⁴ This includes, for example, the decision to visit a website, or to remain on the website longer.¹⁵ Importantly, advertisers are required to substantiate the accuracy of their factual claims.¹⁶ If the evidence is absent or insufficient, these claims are to be considered inaccurate.¹⁷

Bans of misleading advertising comparable to that under the UCPD exist in many jurisdictions. For example, the US Federal Trade Commission (FTC) Act bars “unfair or deceptive acts or practices in or affecting commerce,” including advertisement.¹⁸ The New York City Consumer Protection Law bans “any deceptive [...] trade practice [...] in the offering for sale [...] of any consumer goods or services.”¹⁹ The Canadian Competition Act prohibits persons from making “a representation to the public that is false or misleading in a material respect” for the purpose of promoting a product or a business interest.²⁰ Misleading advertising is also banned under various soft law regimes. This includes, most notably, the OECD Guidelines for Multinational Enterprises.²¹ Additionally, in many countries the advertising industry has created instruments of self-regulation.²² For example, the British Advertising Standards Authority (ASA) decides on the basis of the Codes on Broadcast and Non-broadcast Advertising, and the Dutch Reclame Code Commissie (RCC) rules on the basis of the Nederlandse Reclame Code.²³ The common denominator of all mentioned instruments, hard- and soft-law alike, is that marketing claims are required to be factually correct.

Specific instruments on environmental marketing claims exist under many of these regimes. They either take the form of specialized law or of interpretative guidelines, such as the Green Guides of the US FTC.²⁴ The European Commission's UCPD Guidance also contains a section on environmental claims.²⁵ Guidelines on environmental claims have also been issued in the context of advertising industry self-regulation.²⁶ All of these instruments put a particular focus on the requirement that environmental marketing claims must be truthful and supported by scientifically sound evidence. For example, the guidelines on sustainability claims by the Dutch consumer authority ACM stipulate: “Companies must be honest about sustainability in their communications, and are only allowed to use clear, correct, and relevant sustainability claims.”²⁷ Some guidelines also include specific provisions on offsetting claims, which will be discussed further below.

The specific instruments on environmental marketing claims do not alter the general requirement that marketing claims must be factually correct. Instead, they highlight the particular importance of regulatory oversight in this field, which is characterized by pervasive informational asymmetries.²⁸ Environmental performance data, unless provided by the trader, is usually not available to consumers.²⁹ Moreover, data provided by the trader cannot typically be verified independently. In essence, the consumer is required to trust the

environmental claims made by advertisers, as the European Commission acknowledges.³⁰ Moreover, environmental performance information is highly complex and cannot be processed without advanced scientific knowledge and technical skills, which the average consumer does not have.³¹ As a consequence, incorrect or deceptive environmental claims cannot be assumed to be easily recognizable by consumers themselves, which heightens the need for regulatory oversight.³² This point is underscored by the European Commission in its European Green Deal Communication, which holds that it is “consumer policy [that] will help to empower consumers to make informed choices and play an active role in the ecological transition.”³³ The Commission emphasizes that “[r]eliable, comparable and verifiable information [...] plays an important part in enabling buyers to make more sustainable decisions.”³⁴ However, these preconditions are rarely met in practice, as the Commission acknowledges in

11 Articles 6(1)(a-c) and (f) UCPD.

12 On the concept of ‘material information’ see EC, UCPD Guidance (n 2) 62.

13 On the concept of the ‘transactional decision’ see Micklitz (n 9) 86.

14 EC, UCPD Guidance (n 2) 38–40; See also Micklitz (n 9) 91–94.

15 EC, UCPD Guidance (n 2) 40.

16 Article 12(a) UCPD.

17 Article 12(b) UCPD.

18 15 USC § 45(a)(1).

19 NYC Administrative Code § 20-700.

20 Canadian Competition Act s 52(1) and s 74.01(1)(a); For a recent complaint based on these provisions see Cloe Logan, ‘Greenpeace Says Shell Is Tricking Drivers with Its Carbon Neutral Campaign’ (*Canada's National Observer*, 10 November 2021) <<https://www.nationalobserver.com/2021/11/10/news/greenpeace-says-shell-tricking-drivers-its-carbon-neutral-campaign>> accessed 13 December 2021.

21 OECD, ‘Guidelines for Multinational Enterprises’ (2011); See also the complaint submitted by Clientearth under the OECD Guidelines against misleading advertising by BP: Clientearth, ‘Our OECD Complaint against BP Explained’ <<https://www.clientearth.org/latest/latest-updates/stories/our-oecd-complaint-against-bp-explained>> accessed 13 December 2021.

22 James Nehf, ‘Misleading and Unfair Advertising’, *Handbook of Research on International Consumer Law* (Edward Elgar Publishing 2018) 104–107.

23 Advertising Standards Authority, ‘The UK Codes of Broadcast Advertising and of Non-Broadcast Advertising and Direct & Promotional Marketing’ <<https://www.asa.org.uk/codes-and-rulings/advertising-codes.html>> accessed 13 December 2021; Stichting Reclame Code, ‘Nederlandse Reclame Code’ <https://www.reclamecode.nl/wp-content/uploads/2018/08/SRC_Code_Opmaak-CodeJaarverslag_2021_V3.pdf> accessed 13 December 2021.

24 16 CFR § 260 (FTC Guides for the Use of Environmental Marketing Claims).

25 EC, UCPD Guidance (n 2) 89–107.

26 See, eg, European Advertising Standards Alliance, ‘Statement of Common Principles and Operating Standards of Best Practice’ (2002) <<https://www.easa-alliance.org/sites/default/files/EASA%20Common%20Principles%20and%20Operating%20Standards%20of%20Best%20Practice.pdf>> accessed 13 December 2021, Chapter D.

27 See Autoriteit Consument en Markt, ‘Guidelines Sustainability Claims’ [2021] 2 <<https://www.acm.nl/sites/default/files/documents/guidelines-suistainability-claims.pdf>> accessed 13 December 2021.

28 On the following see Clemens Kaupa, ‘Smoke Gets in Your Eyes: Misleading Fossil Fuel Advertisement in the Climate Crisis’ [2021] *Journal of European Consumer and Market Law* 21, 26–28.

29 Carmen Grebmer, *The Challenge of Green Marketing Communication: Consumer Response to Communication Channel in Environmental Friendliness Perceptions and Product Evaluation* (Dphil thesis, University of Munich 2020) 1.

30 EC, UCPD Guidance (n 2) 94.

31 Béatrice Parguel, Florence Benoit-Moreau and Cristel Antonia Russell, ‘Can Evoking Nature in Advertising Mislead Consumers? The Power of “executional Greenwashing”’ (2015) 34 *International Journal of Advertising* 107, 113.

32 Pervasive informational asymmetries are liable to undermine informed decision-making, as the CJEU has highlighted in *Canal Digital*; See Case C-611/14, *Criminal proceedings against Canal Digital Danmark A/S* [2016] EU:C:2016:800, para 41.

33 EC, ‘The European Green Deal’ (Communication) COM(2019) 640 final 8.

34 Ibid.

the UCPD Guidance: “The coordinated screening of websites (‘sweep’) that the Commission and national consumer authorities carried out in 2020 confirmed the prevalence of vague, exaggerated, false or deceptive green claims.”³⁵

III. Offsetting Claims in Practice

This section discusses practical examples of offsetting claims in advertising. While the variety of such claims is broad, a common denominator can be identified, namely the assumption of equivalence between the supposed benefits of offsetting activities and the harm caused by GHG-emitting activities. For analytical purposes, three main types of offsetting claims can be distinguished.

First, advertisers promote “carbon neutrality” as an intrinsic quality of their goods or services, often as their distinguishing feature. An example is the promotion of “carbon neutral business meetings” by the hotel chain Hilton.³⁶ In this context the offsetting claim refers to a main characteristic of the product “business meetings”, namely their “carbon neutrality.”³⁷ Second, advertisers promote offsetting activities as a product that consumers can either acquire in conjunction with a GHG-emitting product, or as a standalone service. Examples include KLM’s promotion of the product “CO₂-Zero”, which it claims to enable consumers to “fly CO₂ neutral.”³⁸ In this constellation the offsetting claim relates to the nature of the product.³⁹ Third, companies promote their entire activities as “carbon neutral”, or with comparable phrases. Such claims may be limited to scope 1 and scope 2 emissions (direct emissions of the company and emissions from the company’s energy consumption), or extend to scope 3 emissions (emissions up and down the value chain, ranging from resource extraction to final consumption).⁴⁰ An example is the fashion company Gucci, which claims: “We are now carbon neutral in our own operations and across our entire supply chain, accounting for all the Greenhouse Gas (GHG) emissions we generate.”⁴¹ Companies may also promote an ambition to become carbon neutral in the future. For example, Shell promotes a “target to be a net-zero emissions energy business by 2050.”⁴²

“Carbon neutrality” claims may be based, partly or fully, on genuine emission cuts in the company’s operations and supply chains. To a larger extent, however, they rely on offsetting by means of so-called “voluntary carbon credits.”⁴³ These are certificates created by private operators and are claimed to represent a certain volume of emissions that is avoided or removed by means of offsetting activities. Activities that are promoted as capable of offsetting climate harm from GHG emissions include the protection of existing or the planting of new forests, measures increasing energy efficiency, renewable energy production as well as the capture or destruction of gases from industrial processes, waste and resource extraction.⁴⁴ Voluntary carbon credits are created outside of public regulation and oversight.⁴⁵

A distinction can be drawn between those offsetting activities which are supposed to avoid emissions, and those which are supposed to remove them. Avoided emissions are claimed for activities that are assumed to reduce emissions as compared to a counterfactual (or “baseline”) scenario in which this activity is not undertaken.⁴⁶ This means that avoided emissions are a hypothetical concept and cannot be measured, only modeled.⁴⁷ Examples include the hypothetical emission reductions claimed for protecting forests against an alleged deforestation threat. By contrast, removed emissions are assumed to be transferred from the atmosphere into a system

that stores them. The only currently available removal technology that is deployable at scale is afforestation.⁴⁸ In principle, removed emissions should be measurable; In practice, however, this is currently neither technically nor financially feasible.⁴⁹ Instead, removed emissions are modeled the same way avoided emissions are.⁵⁰

Offsetting claims may suggest either a partial or the full compensation of the climate harm caused by GHG-emitting activities. Partial compensation claims suggest that the harm caused by GHG-emitting activities are counterbalanced to some, often undetermined extent. Full compensation claims suggest that the climate harm of a GHG-emitting activity can be neutralized in its entirety.

The common denominator of the various types of offsetting claims is the presumption that the climate benefits from offsetting activities are equivalent to the climate harm caused by GHG-emitting activities. Logically, this presumption of equivalence is necessary to claim that the former could neutralize, compensate or offset the latter, either partially or fully. Whether it is factually correct will be examined in the next section.

IV. Are the Effects of Offsetting Activities Equivalent to Those of Emission Cuts?

The climate harm caused by GHG-emitting activities is scientifically certain.⁵¹ The climate benefits attributed to offsetting activities can be assumed to be equivalent if they accrue at a similar level of certainty. This section will show that this is not the case. The reason is that the climate benefits of offsetting activities are more uncertain than the climate harm caused by GHG-emitting activities. For analytical purposes, three areas of uncertainty may be distinguished: mitigation

35 EC, UCPD Guidance (n 2) 89–90.

36 Hilton, ‘Hilton Launches Carbon Neutral Business Meetings in Europe, Middle East and Africa’ <<https://newsroom.hilton.com/corporate/news/hilton-launches-carbon-neutral-business-meetings>> accessed 13 December 2021.

37 Article 6(1)(a) UCPD.

38 KLM, ‘Kleine stappen, groots effect’ (*KLM Flying Dutchman reismagazine*, 2021) <<https://flyingdutchmanmagazine.klm.nl/magazine/voorjaar-2021/klm-for-you-fly-responsibly/>> accessed 13 December 2021.

39 Article 6(1)(b) UCPD.

40 World Resources Institute, ‘The Greenhouse Gas Protocol’ (2004).

41 Gucci, ‘We are now carbon neutral in our own operations and across our entire supply chain.’ <<https://www.gucci.com/de/de/stories/gucci-equilibrium/article/carbon-neutral>> accessed 13 December 2021.

42 Shell, ‘Shell Accelerates Drive for Net-Zero Emissions with Customer-First Strategy’ <<https://www.shell.com/media/news-and-media-releases/2021/shell-accelerates-drive-for-net-zero-emissions-with-customer-first-strategy.html>> accessed 8 December 2021.

43 Nicolas Kreibich and Lukas Hermwille, ‘Caught in between: Credibility and Feasibility of the Voluntary Carbon Market Post-2020’ (2021) 21 *Climate Policy* 939, 939.

44 Ecosystem Marketplace, ‘Markets in Motion. State of the Voluntary Carbon Markets 2021, Installment 1’ (2021) 9–14 <<https://www.forest-trends.org/publications/state-of-the-voluntary-carbon-markets-2021/>> accessed 13 December 2021.

45 Heather C Lovell, ‘Governing the Carbon Offset Market’ (2010) 1 *WIREs Climate Change* 353, 354–357.

46 UNFCCC, CDM Methodology Booklet (12th edn, 2020) 42–267.

47 Matthew Brander and others, ‘Carbon Accounting for Negative Emissions Technologies’ (2021) 21 *Climate Policy* 699.

48 European Academies Science Advisory Council (EASAC), ‘Negative Emission Technologies: What Role in Meeting Paris Agreement Targets?’ (2018) EASAC policy report 34 7.

49 See Edward TA Mitchard, ‘The Tropical Forest Carbon Cycle and Climate Change’ (2018) 559 *Nature* 527.

50 UNFCCC (n 46) 273–277.

51 IPCC, Summary for Policymakers, *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2021) 5–14.

uncertainty, feedback uncertainty, and accounting uncertainty.

1. Uncertainty about the Mitigation Performance of Offsetting Activities

The mitigation performance of offsetting activities is significantly more uncertain than that of direct emission cuts. The literature identifies at least three types of mitigation uncertainty. First, uncertainty exists as to whether the climate effects that are attributed to offsetting activities correspond to actual, measurable effects. For example, energy efficiency measures are claimed to avoid emissions by reducing energy consumption. Because they are calculated by means of a comparison to the hypothetical baseline scenario, the quantity of avoided emissions depends on the assumptions underlying that baseline scenario. Depending on these assumptions, the outcomes can be very different.⁵² This can give rise to “baseline manipulation”, in which project operators maximize the quantity of allegedly avoided emissions by modeling a high-emissions baseline.⁵³ Many cases of such baseline manipulation are documented in the research literature.⁵⁴ Moreover, it has been shown that the methodologies employed to establish the emissions that are supposedly avoided or removed by offsetting activities do not consider emissions in all phases of the product life-cycle.⁵⁵ The most broadly used methodologies only take emissions at a certain phase into account, ignoring up- and downstream emissions.⁵⁶

Forest-based offsetting activities such as forest conservation (“avoided deforestation”), which is the most widely promoted offsetting activity, illustrate the problem of mitigation uncertainty. Forest carbon fluxes constitute the least known factor of the global carbon balance.⁵⁷ The uptake and release of carbon is subject to high variability, depending on factors such as tree species and age, soil composition, region and temperature.⁵⁸ Additionally, high variability over time exists. As Ajani et al state, “biocarbon stocks vary temporally and spatially to such an extent that statistically reliable estimation is difficult.”⁵⁹ It is, moreover, impossible to distinguish in a solid manner between those fluxes that are directly caused by human actions (such as offsetting activities) and those which are not. Estimates of the overall uptake potential of forests vary significantly, illustrating the lack of scientific consensus.⁶⁰ Consequently, the mitigation performance of forest-based offsetting activities is highly uncertain, as van Kooten states: “The upshot is that any trade in forestry related carbon credits is likely to involve unwarranted acts of faith.”⁶¹ And Mackey et al conclude that “considering carbon storage on land as a means to ‘offset’ CO₂ emissions from burning fossil fuels [...] is scientifically flawed.”⁶²

Second, uncertainty exists about the temporal dimension of the mitigation effects that are attributed to offsetting activities. According to Archer et al, the “climate effects of CO₂ releases to the atmosphere will persist for tens, if not hundreds, of thousands of years into the future.”⁶³ In order to effectively compensate for the harm caused by these emissions, offsetting activities need to remain operational for a comparable timeframe. In essence, their effects need to be permanent, but no offsetting activity currently meets this requirement. For example, the climate benefits of forest-based offsetting activities are always reversible: Potential causes for such reversal are fires, pest, degradation and land use change, all of which may turn a land-based sink into a GHG source at any point in time.⁶⁴ Moreover, the carbon uptake potential of forests under conditions of intensifying

climate change is increasingly at risk.⁶⁵ The withholding of a certain percentage of credits as a buffer by project operators does not adequately address the genuine uncertainty of future reversals, not least because a 100 % loss is always possible.⁶⁶

A third uncertainty factor is addressed in the relevant literature as the problem of “additionality”, which describes the difficulty of proving that an offsetting activity was causal for a specific quantity of emission reductions. Logically, emission reductions can be attributed to offsetting activities only if they had not occurred in the absence of the latter. However, it is commonly agreed in the relevant literature that additionality is difficult, if not impossible to prove.⁶⁷ Studies on offsetting projects show that emission reductions would frequently have occurred even in absence of offset-related pay-

- 52 Rosalie Arendt, Vanessa Bach and Matthias Finkbeiner, ‘Carbon Offsets: An LCA Perspective’ in Stefan Albrecht and others (eds), *Progress in Life Cycle Assessment 2019* (Springer International Publishing 2021) 195.
- 53 Xiaoyu Liu and Qingbin Cui, ‘Baseline Manipulation in Voluntary Carbon Offset Programs’ (2017) 111 *Energy Policy* 9.
- 54 Thales AP West and others, ‘Overstated Carbon Emission Reductions from Voluntary REDD+ Projects in the Brazilian Amazon’ (2020) 117 *Proceedings of the National Academy of Sciences* 24188; G Cornelis van Kooten, ‘Forest Carbon Offsets and Carbon Emissions Trading: Problems of Contracting’ (2017) 75 *Forest Policy and Economics* 83, 84–85.
- 55 Arendt, Bach and Finkbeiner (n 52) 195.
- 56 *Ibid* 200–205.
- 57 Edward TA Mitchard, ‘The Tropical Forest Carbon Cycle and Climate Change’ (2018) 559 *Nature* 527.
- 58 Julia K Green and others, ‘Large Influence of Soil Moisture on Long-Term Terrestrial Carbon Uptake’ (2019) 565 *Nature* 476; Mitchard (n 49); Giacomo Grassi and others, ‘Reconciling Global-Model Estimates and Country Reporting of Anthropogenic Forest CO₂ Sinks’ (2018) 8 *Nature Climate Change* 914; Valentin Bellassen and Sebastiaan Luysaert, ‘Carbon Sequestration: Managing Forests in Uncertain Times’ (2014) 506 *Nature* 153.
- 59 Judith Ajani and others, ‘Comprehensive Carbon Stock and Flow Accounting: A National Framework to Support Climate Change Mitigation Policy’ (2013) 89 *Ecological Economics* 61, 70.
- 60 See Jean-Francois Bastin and others, ‘The Global Tree Restoration Potential’ (2019) 365 *Science* 76; See however Shawn D Taylor and Sergio Marconi, ‘Rethinking Global Carbon Storage Potential of Trees. A Comment on Bastin et al. (2019)’ (2020) 77 *Annals of Forest Science* 23; Simon L Lewis and others, ‘Comment on “The Global Tree Restoration Potential”’ (2019) 366 *Science* eaaz0388; Pierre Friedlingstein and others, ‘Comment on “The Global Tree Restoration Potential”’ (2019) 366 *Science* eaay8060; Eike Luedeling and others, ‘Forest Restoration: Overlooked Constraints’ (2019) 366 *Science* 315; Andrew K Skidmore and others, ‘Comment on “The Global Tree Restoration Potential”’ (2019) 366 *Science* eaaz0111.
- 61 van Kooten (n 54) 83.
- 62 Brendan Mackey and others, ‘Untangling the Confusion around Land Carbon Science and Climate Change Mitigation Policy’ (2013) 3 *Nature Climate Change* 552, 552.
- 63 David Archer and others, ‘Atmospheric Lifetime of Fossil Fuel Carbon Dioxide’ (2009) 37 *Annual Review of Earth and Planetary Sciences* 117, 131.
- 64 Craig D Allen, David D Breshears and Nate G McDowell, ‘On Underestimation of Global Vulnerability to Tree Mortality and Forest Die-off from Hotter Drought in the Anthropocene’ (2015) 6 *Ecosphere* art129; S Fuss and others, ‘Betting on Negative Emissions’ (2014) 4 *Nature Climate Change* 850.
- 65 Rupert Seidl and others, ‘Forest Disturbances under Climate Change’ (2017) 7 *Nature Climate Change* 395; Markus Reichstein and others, ‘Climate Extremes and the Carbon Cycle’ (2013) 500 *Nature* 287.
- 66 Arendt, Bach and Finkbeiner (n 52) 199.
- 67 Charlotte Streck, ‘Ensuring New Finance and Real Emission Reduction: A Critical Review of the Additionality Concept Thematic Focus: Climate Change Governance – The International Regime Complex’ (2011) 2011 *Carbon & Climate Law Review* 158; Lambert Schneider, ‘Assessing the Additionality of CDM Projects: Practical Experiences and Lessons Learned’ (2009) 9 *Climate Policy* 242; Lambert Schneider, ‘Is the CDM Fulfilling Its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvement’ (Oeko-Institut 2007) <<http://www.monitoringmatters.org/ppdf/cdm.pdf>> accessed 7 December 2021; Sven Bode and Axel Michaelowa, ‘Avoiding Perverse Effects of Baseline and Investment Additionality Determination in the Case of Renewable Energy Projects’ (2003) 31 *Energy Policy* 505.

ments, thereby failing to meet the additionality criterion.⁶⁸ According to a study of Clean Development Mechanism (CDM) projects by Cames et al, this applies to 85 % of the projects.⁶⁹

2. Uncertainty about Climatic and Socio-Economic Feedbacks to Offsetting Activities

A significant source of uncertainty arises from the fact that it is difficult to predict how the climatic, the economic and the socio-political systems will react to the offsetting activity. It is possible that feedback loops exist which partly or fully neutralize their potential climate benefits, or even cause an overall increase in emissions. For analytical reasons we can distinguish between climate, market, and socio-political feedback uncertainty.

Major uncertainties exist in regard to how the climate system reacts to the large-scale deployment of “carbon dioxide removal” (CDR) practices, such as forest-based offsetting activities.⁷⁰ Feedback loops may weaken or even reverse their climate benefits.⁷¹ An important source of uncertainty is the fact that the climate system may react asymmetrically to emissions and to removals.⁷² The IPCC Report states that “[t]his asymmetry implies that an extra amount of CDR is required to compensate for a positive emission of a given magnitude to attain the same change in atmospheric CO₂.”⁷³ The magnitude of this difference is uncertain.⁷⁴

Uncertainties also exist about market responses to offsetting activities, which may undermine their climate benefits. For example, green energy from renewable energy projects is assumed to eliminate energy demand from fossil sources, and thereby lead to an emission reduction. However, market processes will typically prevent a full substitution in practice, instead leading to a decrease of the fossil fuel price.⁷⁵ The replacement rate of fossil energy has been estimated to be less than 25 %.⁷⁶ Market dynamics may also undermine the climate benefits of offsetting activities by merely displacing, rather than eliminating, harmful activities. This issue is discussed in literature as the problem of “leakage.”⁷⁷ It is illustrated, for example, by offsetting activities that claim emission reductions from avoidance of deforestation. An operator protecting a forest from logging may claim that the project prevented the emission of the CO₂ held by that forest. However, logging is driven by global demand for timber, wood pulp and pellets.⁷⁸ It will therefore likely not be prevented, but merely be displaced to a different location, which means that the offsetting activity cannot be assumed to influence the overall level of emissions. Moreover, the commodification of offsetting activities by means of carbon credits has been shown to create a perverse incentive to increase GHG-emitting activities. The most notorious example is the awarding of carbon credits for the destruction of HFC-23. HFC-23 is a GHG that is emitted during the production of HCFC-22, a refrigerant. In order to generate carbon credits from the destruction of HFC-23, producers increased the production of HCFC-22.⁷⁹

Finally, uncertainties also exist about the socio-political responses to offsetting activities. Offsetting activities frequently have adverse side effects that may lead to political and social opposition. For example, forest-based offsetting activities require large amounts of land and water.⁸⁰ Their resource demands may compete with those of other activities, most notably food production. There is, consequently, a significant risk that offsetting activities are economically and socially unsustainable, which may undermine their long-term viability.⁸¹ Moreover, offsetting activities may

have the perverse effect of preventing genuine emission reductions, a phenomenon that has been described as “mitigation deterrence.”⁸² This is the case when engaging in offsetting activities, or the mere possibility of it, is viewed as a license to continue engaging in GHG-emitting activities.⁸³ The promotion of offsetting may “normalize” the continued use of fossil fuels.⁸⁴

3. Uncertainty about Accounting

Uncertainty is also caused by accounting difficulties that arise when the climate effects of GHG-emitting activities and those attributed to offsetting activities are offset against each other.⁸⁵ The offsetting process combines different data that are methodically not fully compatible. GHG inventories of entities (such as states and corporations) are established by attributional methods, which record the (absolute) emissions that can be ascribed to them on the basis of an attributional factor.⁸⁶ By contrast, the climate impact of offsetting activities is recorded by consequential methods, which aim to establish the relative, but system-wide changes caused by a policy or a project.⁸⁷ The emission data recorded by consequential methods (e.g. credits claimed by offsetting projects for avoided emissions, which are calculated as changes to a hypothetical baseline scenario⁸⁸) is not easily translatable into

68 Philippe Delacote, Gwenolé Le Velly and Gabriela Simonet, ‘Revisiting the Location Bias and Additionality of REDD+ Projects: The Role of Project Proponents Status and Certification’ (2022) 67 *Resource and Energy Economics* 101277; Schneider (n 67).

69 Martin Cames and others, ‘How Additional Is the Clean Development Mechanism?’ (2016) 152 <https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf> accessed 29 September 2021.

70 IPCC, *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* (2018) 38; Fuss and others (n 64) 852.

71 CD Jones and others, ‘Simulating the Earth System Response to Negative Emissions’ (2016) 11 *Environmental Research Letters* 095012.

72 IPCC, Technical Summary, *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2021) 64.

73 Ibid 65.

74 Ibid 64–65.

75 Edward Foster and others, ‘The Unstudied Barriers to Widespread Renewable Energy Deployment: Fossil Fuel Price Responses’ (2017) 103 *Energy Policy* 258; See also Knut Einar Rosendahl and Jon Strand, ‘Carbon Leakage from the Clean Development Mechanism’ (2011) 32 *The Energy Journal* 38.

76 Richard York, ‘Do Alternative Energy Sources Displace Fossil Fuels?’ (2012) 2 *Nature Climate Change* 441.

77 See, eg, Charlotte Streck, ‘REDD+ and Leakage: Debunking Myths and Promoting Integrated Solutions’ (2021) 21 *Climate Policy* 843; Rosendahl and Strand (n 75).

78 Meghan O’Brien and Stefan Bringezu, ‘European Timber Consumption: Developing a Method to Account for Timber Flows and the EU’s Global Forest Footprint’ (2018) 147 *Ecological Economics* 322.

79 Lambert Schneider, ‘Perverse Incentives under the CDM: An Evaluation of HFC-23 Destruction Projects’ (2011) 11 *Climate Policy* 851.

80 IPCC (n 70) 38.

81 Ibid 118.

82 Duncan McLaren, ‘Quantifying the Potential Scale of Mitigation Deterrence from Greenhouse Gas Removal Techniques’ (2020) 162 *Climatic Change* 2411, 2412.

83 Kreibich and Hermwille (n 43) 944.

84 See Kaupa (n 28) 24; Ilona M Otto and others, ‘Social Tipping Dynamics for Stabilizing Earth’s Climate by 2050’ (2020) 117 *Proceedings of the National Academy of Sciences* 2354, 2361.

85 Julia Dehm, ‘One Tonne of Carbon Dioxide Equivalent (1tCO₂e)’ in J Hohmann and D Joyce (eds), *International Law’s Objects* (Oxford University Press 2018) 313–317.

86 Matthew Brander, ‘Transposing Lessons between Different Forms of Consequential Greenhouse Gas Accounting: Lessons for Consequential Life Cycle Assessment, Project-Level Accounting, and Policy-Level Accounting’ (2016) 112 *Journal of Cleaner Production* 4247, 4247.

87 Ibid 4249.

88 Ibid 4251.

an attributional accounting system. Accounting relative, system-wide changes in the GHG inventory of absolute emissions attributed to a specific entity delivers incoherent, effectively meaningless results.⁸⁹

Another source of accounting uncertainty that is frequently discussed in the relevant literature is the problem of double counting.⁹⁰ Double counting arises when more than one entity claims a reduction from an offsetting activity.⁹¹ Double counting can occur in indirect ways that are difficult to identify and to prevent.⁹² A 2018 study by Gold Standard found that “there will be few, if any, cases where a project can be demonstrated as clearly not double counted [...]”⁹³ According to Schneider et al, the prevention of double counting would require an internationally uniform system of creating emission reductions by means of offsetting activities, of accounting for them, and of tracking and verifying them.⁹⁴ However, none of these requirements is currently met.

Accounting uncertainty also arises from the governance structure of the voluntary carbon market. Operators of offsetting projects are financially incentivized to overstate the quantity of avoided or removed emissions.⁹⁵ Verification bodies, in turn, are incentivized to verify such claims as they are paid by the project operator, and not subject to public regulation and oversight.⁹⁶ Studies show that verification bodies do not prevent the overstating of mitigation outcomes by project operators.⁹⁷ Due to the existence of a principal-agent problem, the buyer cannot ascertain whether the acquired carbon credits actually represent any real emission reductions.⁹⁸ While improvements in monitoring are possible in principle, they significantly increase transaction costs. As this would reduce competitiveness, both project operators and verification bodies are incentivized to minimize monitoring requirements.⁹⁹

4. Intermediate Summary: The Non-Equivalence between Emissions and Offsets

This section has shown that the climate benefits of offsetting activities are more uncertain than the climate harm caused by GHG-emitting activities. Consequently, no equivalence between the two can be assumed. This is not a controversial finding: There is a complete consensus in academic and policy discourse that offsetting activities are not equivalent to emission cuts.¹⁰⁰ The non-equivalence between the climate harm caused by GHG-emitting activities and the supposed benefits of offsetting activities implies that the two should not be counted together. Following this, the EU’s Environmental Footprint methods reject the use of offsets in the calculation of the carbon footprint.¹⁰¹ Similarly, the ISO standard 14067:2018 on the carbon footprint of products recommends accounting separately for biogenic and fossil carbon.¹⁰² Separate accounting has also been advocated by numerous researchers in the fields of climate science, climate policy and life-cycle analysis.¹⁰³ It is also required by the relevant policy processes on corporate climate mitigation.¹⁰⁴ For example, the Science Based Targets initiative (SBTi) explicitly rejects counting offsets towards a company’s emission target.¹⁰⁵

V. Offsetting Claims as Misleading Commercial Practices

This section evaluates the legality of offsetting claims under the UCPD. As discussed, offsetting claims imply that the climate benefits attributed to offsetting activities are equivalent to the climate harm caused by GHG-emitting activities.

However, it has been shown that such equivalence cannot be assumed, as the climate effects of offsetting activities are significantly more uncertain than the climate harm caused by GHG-emitting activities. Consequently, it is factually incorrect to claim that offsetting activities could offset, compensate or neutralize the harm caused by GHG-emitting activities. Furthermore, offsetting claims concern complex environmental performance information, as for example the FTC Green Guides state.¹⁰⁶ As such, they are characterized by significant informational asymmetries between advertisers and consumers. The average consumer cannot be assumed to have the scientific and technical expertise necessary to fact-check such claims or prevent being influenced by them. As Polonsky et al hold, “even environmentally aware consumers do not necessarily understand the complexities of carbon offsets.”¹⁰⁷

⁸⁹ Brander and others (n 47) 701-702; Brander (n 86) 4249.

⁹⁰ Kreibich and Hermwille (n 43); Lambert Schneider and others, ‘Double Counting and the Paris Agreement Rulebook’ (2019) 366 *Science* 180; Lambert Schneider, Anja Kollmuss and Michael Lazarus, ‘Addressing the Risk of Double Counting Emission Reductions under the UNFCCC’ (2015) 131 *Climatic Change* 473.

⁹¹ Discussing the climate effects of double counting: Harry Fearnough and others, ‘Future Role for Voluntary Carbon Markets in the Paris Era’ (2020) 44–51 <https://www.carbon-mechanisms.de/fileadmin/media/dokumente/Publikationen/Bericht/2020_11_19_cc_44_2020_carbon_markets_paris_era.pdf> accessed 14 December 2021.

⁹² Schneider, Kollmuss and Lazarus (n 90) 485.

⁹³ Gold Standard, ‘Future Proofing the Voluntary Carbon Markets – Double Counting Post-2020’ (2018) 16 <https://www.goldstandard.org/sites/default/files/documents/future_proofing_the_voluntary_carbon_market_double_counting_final_report.pdf> accessed 14 December 2021.

⁹⁴ Schneider, Kollmuss and Lazarus (n 90) 485.

⁹⁵ Arendt, Bach and Finkbeiner (n 52) 195; van Kooten (n 54) 86.

⁹⁶ Schneider (n 67) 20.

⁹⁷ van Kooten (n 54) 85.

⁹⁸ Ibid 85–87; See also United States Government Accountability Office, ‘Carbon Offsets. The U.S. Voluntary Market Is Growing, but Quality Assurance Poses Challenges for Market Participants’ (2008) GAO-08-1048 23.

⁹⁹ van Kooten (n 54) 86; See also Taskforce on Scaling the Voluntary Carbon Markets, ‘Final Report’ (2021) 2 <https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf> accessed 25 February 2022.

¹⁰⁰ Joeri Rogelj and others, ‘Net-Zero Emissions Targets Are Vague: Three Ways to Fix’ (2021) 591 *Nature* 365; Wim Carton, Jens Friis Lund and Kate Dooley, ‘Undoing Equivalence: Rethinking Carbon Accounting for Just Carbon Removal’ (2021) 3 *Frontiers in Climate* 30; Lauren Gifford, ‘“You Can’t Value What You Can’t Measure”: A Critical Look at Forest Carbon Accounting’ (2020) 161 *Climatic Change* 291; Barbara Haya and others, ‘Managing Uncertainty in Carbon Offsets: Insights from California’s Standardized Approach’ (2020) 20 *Climate Policy* 1112; Duncan P McLaren and others, ‘Beyond “Net-Zero”: A Case for Separate Targets for Emissions Reduction and Negative Emissions’ (2019) 1 *Frontiers in Climate*; Dehm (n 85); Ajani and others (n 59); Larry Lohmann, ‘The Dyson Effect: Carbon “offset” Forestry and the Privatisation of the Atmosphere’ (2001) 15 *International Journal of Environment and Pollution* 51.

¹⁰¹ EC, ‘Recommendation on the use of the Environmental Footprint methods’ C(2021) 9332 final, Annex, para 4.4.2010.

¹⁰² ISO 14067:2018, ‘Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification’, 6.4.9.2; See Arendt, Bach and Finkbeiner (n 52) 196.

¹⁰³ Carton, Lund and Dooley (n 100); Arendt, Bach and Finkbeiner (n 52); McLaren and others (n 100); Kate Dooley, ‘Misleading Numbers – The Case for Separating Land and Fossil Based Carbon Emissions’ (2014) <<https://www.fern.org/publications-insight/misleading-numbers-the-case-for-separating-land-and-fossil-based-carbon-emissions-578/>> accessed 18 February 2021.

¹⁰⁴ Science Based Targets Initiative (SBTi), ‘SBTi Criteria and Recommendations’ (2021) TWG-INF-002, Version 4.2 7 <<https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>> accessed 24 February 2022; Carbone 4 (n 3) 7.

¹⁰⁵ Science Based Targets Initiative (SBTi) (n 104) 7.

¹⁰⁶ § 260.5 FTC Green Guides (n 24).

¹⁰⁷ Michael J Polonsky, Stacy Landreth Grau and Romana Garna, ‘The New Greenwash?: Potential Marketing Problems with Carbon Offsets’ (2010) 18 *International Journal of Business Studies* 49, 52.

Factually incorrect marketing claims are prohibited under the UCPD if the information is liable to influence the average consumers' transactional choices. Climate-related information meets this requirement. According to a 2021 Eurostat survey, 93 % of Europeans believe that climate change is a serious problem, and 96 % have taken at least one action to tackle climate change.¹⁰⁸ This includes a broad spectrum of activities, including the reduction in consumption of disposable items, lowering energy use and considering energy efficiency in buying household appliances, buying less meat, considering the carbon footprint of food purchases and of transportation, using climate-friendly transportation options, and switching to renewable energy.¹⁰⁹ Information relating to the climate performance of products is therefore capable of influencing the consumer's decision-making. This particularly applies when the product's climate performance is promoted as one of its core features, e.g., when products are marketed as "carbon neutral" or offsetting activities are sold as additional or stand-alone services.

Climate performance information that relates to the activities of a corporation in general can also be assumed to be material to the consumer's decision-making. As the Commission notes in the UCPD Guidelines, consumers are increasingly concerned about the social, ethical and environmental dimensions of business activities.¹¹⁰ The OECD Guidelines for Multinational Enterprises confirm that "many consumers are increasingly interested in knowing the position and activities of enterprises on a broad range of economic, social and environmental issues, and in taking these into account when choosing goods and services."¹¹¹ That corporate climate information is material for consumers is also confirmed by the fact that corporations prominently promote their present performance and future ambitions to the general public.¹¹² It can therefore be concluded that climate performance information relating to both products and corporate activities is liable to influence the average consumer's decision-making. This finding is confirmed by the fact that the European Green Deal Communication attributes a central role to informed consumer choice as a driving force in the transition towards a carbon-free economy.¹¹³

As offsetting claims suggest an equivalence between the climate effects of offsetting activities and of GHG-emitting activities that is factually incorrect, and as such information is liable to influence the average consumer, they must be considered to violate the prohibition of misleading commercial practices. Recent decisions by the Dutch advertising authority (Reclame Code Commissie, RCC) against the promotion of offsetting by Shell and by KLM confirm this view.¹¹⁴ The decision against Shell concerned an advertising campaign for its product "CO₂ compensation", which the company promoted with slogans such as "Make the difference. Drive CO₂ neutral." With a payment of 1 cent per liter of gasoline, Shell claimed, consumers could offset the CO₂-emissions from driving. The RCC found that Shell had not been able to provide sufficient proof to support the claim that the product "CO₂ compensation" could in fact realize the promised result. Consequently, Shell's promotion of "CO₂ compensation" was found to mislead consumers.¹¹⁵

Offsetting claims are also misleading if the advertiser does not claim the full neutralization of the harm caused by GHG-emitting activities, and instead suggests that offsetting activities contribute to compensating the climate harm of GHG-emitting activities in a less specified form. However, even partial compensation claims suggest equivalence between the

climate harm of GHG-emitting activities and the climate benefits of offsetting activities. As shown, such presumption lacks scientific support, and must therefore be considered factually incorrect. Moreover, the various guidelines on environmental marketing claims agree that environmental claims must be precise.¹¹⁶ Consequently, marketing claims that remain vague about the concrete climate effects that are ascribed to the promoted offsetting activities violate the prohibition of misleading commercial practices.

In the past year the European Commission and national consumer authorities have issued new guidelines on offsetting claims.¹¹⁷ For example, the Commission's updated UCPD Guidance states: "Traders increasingly make claims about carbon neutrality by investing in projects that compensate for CO₂ emissions. [...] This practice may be problematic if the underlying carbon credits are of low environmental integrity or are not accounted for appropriately, so that they do not represent real and additional emission reductions. Carbon removals claims should be authentic, robust, transparent, reported, monitorable, verifiable, credible, certified, should not undermine near-term emission reduction action in emitting sectors, should guarantee additionality and should ensure an appropriate accounting of carbon removals in national GHG inventories."¹¹⁸ The Commission correctly highlights the deceptive potential of offsetting claims. Moreover, the long list of conditions enumerated by the Commission will be difficult, if not impossible to meet in practice, as the previous section showed. However, the Commission fails to clarify that all offsetting claims are misleading, as the equivalence assumption on which they are based is scientifically flawed.

VI. Conclusion

Offsetting claims in marketing are not a new phenomenon. The first offsetting projects were set up in the late 1980s, and by the 1990s they were promoted to consumers at a major scale.¹¹⁹ Since the beginning, offsetting activities were highly controversial, and their mitigation effects were always in doubt.¹²⁰ Over the course of the 2000s, a flood of damaging reports confirmed these critiques, and revealed the fundamentally flawed state of the voluntary carbon market. They highlighted offsetting forests that had never been planted or had died off after a few years, landfill operators who claimed carbon credits for measures that they were legally required to take, and industrial plants that increased the production of

108 Eurostat (n 1) 6–7.

109 Ibid 39.

110 EC, UCPD Guidance (n 2) 36.

111 OECD (n 21), I.VIII., commentary 82.

112 See, eg, BP, 'Getting to Net Zero' <<https://www.bp.com/en/global/corporate/sustainability/getting-to-net-zero.html>> accessed 8 December 2021; Shell, 'Our Climate Target' <<https://www.shell.com/energy-and-innovation/the-energy-future/our-climate-target.html>> accessed 8 December 2021.

113 EC, European Green Deal (n 33) 8.

114 Reclame Code Commissie, 2021/00553 ('KLM – CO₂ZERO'); 2021/00190 ('Shell – Drive CO₂ neutral'); Further decisions are currently under appeal.

115 Ibid, considerations 7 and 9.

116 EC, UCPD Guidance (n 2) 93–95.

117 Ibid 95; Autoriteit Consument en Markt (n 27) 14–15.

118 EC, UCPD Guidance (n 2) 95.

119 For examples see Transnational Institute, 'The Carbon Neutral Myth: Offset Indulgences for Your Climate Sins' (Transnational Institute 2007); Lohmann (n 100).

120 See, eg, Kevin Anderson, 'The Inconvenient Truth of Carbon Offsets' (2012) 484 *Nature* 7; Eva Löfbrand, 'Bridging Political Expectations and Scientific Limitations in Climate Risk Management – On the Uncertain Effects of International Carbon Sink Policies' (2004) 67 *Climatic Change* 449.

GHGs to subsequently claim additional carbon credits for their destruction.¹²¹ A 2006 report by the British life insurer Standard Life warned that offsets “have the capacity to disguise the failure to achieve actual reductions in overall greenhouse gas emissions.”¹²² And a 2007 Financial Times investigation into the voluntary carbon market came to the following results: “Widespread instances of people and organisations buying worthless credits that do not yield any reductions in carbon emissions; Industrial companies profiting from doing very little – or from gaining carbon credits on the basis of efficiency gains from which they have already benefited substantially; Brokers providing services of questionable or no value [...]”¹²³ Government investigations further confirmed the fundamental deficiencies of the voluntary carbon market.¹²⁴ Consumer authorities highlighted the highly deceptive potential of offsetting claims, and a number of court cases were lodged.¹²⁵ These developments critically undermined the credibility of offsetting in the public eye, and contributed to the near-total collapse of the voluntary carbon market after 2010.¹²⁶

In the past years a revival of the voluntary carbon market can be observed.¹²⁷ Among the reasons for this development is the renewed interest of corporations in promoting climate-related claims, in particular in the context of net-zero targets adopted in the wake of the Paris Agreement.¹²⁸ Multiple initiatives seek to improve the credibility of offsetting, not least because the voluntary carbon market is viewed as a major business opportunity.¹²⁹ However, none of the problems that had plagued the voluntary carbon market before its collapse a decade ago have been adequately addressed. The concerns expressed in academic and policy literature today are, in all relevant aspects, identical to those voiced two decades ago.¹³⁰ Some of the problems are even more difficult to solve today than they were in the past, given the mitigation requirements under the Paris Agreement.¹³¹

The fundamental flaw of carbon offsetting has been and continues to be that it incorrectly presumes an equivalence

between the climate harm caused by GHG-emitting activities and the climate benefits attributed to offsetting activities. The present article has shown that this presumption is not valid, as the latter are much less certain than the former. In other words, offsetting activities do not actually offset emissions: By promoting the “compensation”, “neutralization” or “offsetting” of the climate harm caused by their activities, corporations are promising an outcome that is impossible to achieve. Advertisers marketing an ostensibly easy, yet false solution for the climate harm caused by their activities are deceiving consumers, who are increasingly alarmed about the climate crisis. ■

121 Fiona Harvey, ‘Beware the Carbon Offsetting Cowboys’ *Financial Times* (26 April 2007) <<https://www.ft.com/content/dcdefef6-f350-11db-9845-000b5df10621>> accessed 23 June 2021; Fiona Harvey and Stephen Fidler, ‘Industry Caught in Carbon “Smokescreen”’ *Financial Times* (25 April 2007) <<https://www.ft.com/content/48e334ce-f355-11db-9845-000b5df10621>> accessed 23 June 2021; Tom Robbins, ‘The Great Green Rip-Off?’ *The Observer* (10 December 2006) <<http://www.theguardian.com/travel/2006/dec/10/ethicalholidays.escape>> accessed 23 June 2021.

122 Standard Life Investments, ‘Carbon Management & Carbon Neutrality in the FTSE All-Share’, cited in Transnational Institute (n 119) 6.

123 Harvey and Fidler (n 121).

124 United States Government Accountability Office, ‘Climate Change Issues: Options for Addressing Challenges to Carbon Offset Quality’ (2011) GAO-11-345; United States Government Accountability Office (n 98); House of Commons Environmental Audit Committee, ‘The Voluntary Carbon Offset Market’ (2007) Sixth Report of Session 2006–07.

125 Australian Competition and Consumer Commission, ‘ACCC Addresses Carbon Claims’ (27 June 2008) <<https://www.accc.gov.au/media-release/accc-addresses-carbon-claims>> accessed 15 December 2021; United States Government Accountability Office (n 98) 22–23; For a lawsuit against a misleading offsetting claim see *Australian Competition and Consumer Commission v GM Holden Ltd* (2008) FCA 1428; See also Jen Quraishi, ‘Fiji Water Sued for Greenwashing’ *Mother Jones* (7 January 2011) <<https://www.motherjones.com/politics/2011/01/fiji-water-sued-greenwashing/>> accessed 15 December 2021.

126 Taskforce on Scaling the Voluntary Carbon Markets (n 99) 41.

127 Ecosystem Marketplace (n 44) 3.

128 Taskforce on Scaling the Voluntary Carbon Markets (n 99) 2.

129 Ibid 2–3.

130 See, eg, Haya and others (n 100) 1112.

131 Kreibich and Hermwille (n 43).