The legality of climate-related marketing claims by the aviation sector under EU Directive 2005/29/EC

Study accompanying the external alert submitted by BEUC to the CPC-Network

Dr. Clemens Kaupa (Vrije Universiteit Amsterdam)

June 2023

Disclaimer:

This study was commissioned by BEUC – the European Consumer Organisation. The opinions expressed in this document are the sole responsibility of the author and cannot be attributed to his research institution. They do not necessarily represent the official position of BEUC or its members.

Table of contents

Executive summary

Airlines and other actors of the aviation sector such as airports frequently promote air travel with environmental marketing claims that relate, directly or indirectly, to the climate impact of air travel. While climate-related marketing claims by the aviation sector differ significantly in their details, they typically all rely on one or more of the following propositions: (1) that greenhouse gas (GHG) emissions from aviation could be "offset", "compensated" or "neutralized" through the use of offset credits; (2) that the use of alternative aviation fuels (biofuels and synthetic fuels) is "sustainable", as expressed in the often-used term "sustainable aviation fuel"; and (3) that air travel is or can be "sustainable", "responsible" or "green", in either relative or absolute terms.

Climate change is caused by the emission of greenhouse gases (GHG). To meet the objective of limiting global warming to 1.5-2°C as prescribed by the Paris Agreement, deep GHG emission reductions are required within this decade, and in all sectors. The aviation sector is a significant emitter of GHG, and emissions are projected to grow significantly over the next decades. The aviation sector is "difficult to decarbonize", which means that there are no technological solutions available to significantly reduce greenhouse gas (GHG) emissions in the short- and medium term, apart from flying less.

A growing number of judgments and decisions by advertising authorities shine light on the legality of climate-related claims made by the aviation sector, especially in regard to the use of offset credits. They show, in particular, that climate-related marketing claims based on carbon offsets have a high risk of deceiving consumers. EU Directive 2005/29/EC (the Unfair Commercial Practices Directive - "UCPD") prohibits marketing claims that are factually incorrect or otherwise deceptive for the average consumer. It applies to claims that are liable to influence the average consumer's commercial choices. This is typically the case for climate-related marketing, as consumers become increasingly concerned about the matter.

This study comes to the following three conclusions on the legality of the main propositions typically underlying climate-related marketing claims by the aviation sector:

1. The claim that offset credits could "offset", "compensate" or "neutralize" emissions from aviation is factually incorrect, and therefore misleading. The average consumer is liable to understand compensation claims as meaning that the climate harms associated with CO2 emissions from aviation are fully counterbalanced or undone. However, compensation claims do not stand up to scientific scrutiny, as the climate benefits of offsetting activities are significantly more uncertain than the climate harm caused by GHG emissions, which means that the former cannot compensate for the latter. Moreover, offsetting is an accounting instrument only, and does not actually decarbonize the aviation sector. Airlines have recently begun to add disclaimers to their compensation claims. However, the study shows that these disclaimers frequently create a contradictory overall impression, and thereby add to the misleading potential of compensation claims.

2. The claim that the use of alternative aviation fuels is sustainable is factually incorrect, and therefore misleading. In a climate context, the term "sustainable" must be assumed to refer to the absence of GHG emissions, or to net-zero GHG emissions. While alternative aviation fuels cause significantly less GHG emissions than fossil aviation fuel, they are not GHG emission-free. Consequently, it is factually incorrect to describe them as "sustainable" in a climate context, and therefore misleading. The description is also incorrect in a broader, non-climate context, as the large-scale production of alternative aviation fuels is liable to be unsustainable, especially due to its large resource requirements.

Moreover, alternative aviation fuels are currently produced only in very small quantities, and it is difficult to sustainably scale up their production in the short and medium term.

3. Claims that air travel is or could be "sustainable, "green" or "responsible", in either absolute or relative terms, are factually incorrect or otherwise deceptive. Air travel cannot be described as "sustainable" or similar absolute terms because it causes significant GHG emissions, which is unsustainable. The use of relative terms suggesting an environmental benefit of air travel is deceptive, inter alia because it obscures the fact that the only effective strategy to decarbonize the aviation sector is to fly less. Airlines increasingly employ disclaimers that admit that flying is unsustainable. However, these disclaimers usually create a contradictory overall impression, and therefore increase the misleading potential of sustainability-related marketing claims.

Based on these findings it can be concluded that climate-related marketing claims by the aviation sector have a high and systematic potential of misleading consumers. It is therefore recommended that the aviation sector abstains from making climate-related marketing claims completely.

Introduction

Air travel is among the most climate-damaging means of transport, and it is projected to grow considerably over the next decades. It causes both CO2- and non-CO2 greenhouse gas (GHG) emissions. The aviation sector is considered "difficult to decarbonize," which means that there are no technological solutions available to significantly reduce greenhouse gas (GHG) emissions in the short- and medium term, apart from flying less. At the same time, GHG emissions must be reduced drastically within this decade to meet the objectives of the Paris Agreement.

Airlines and other actors of the aviation sector (such as airports) continue to promote flying, and frequently do so with marketing claims that relate, directly or indirectly, to the climate impact of aviation. While climate-related marketing claims by the aviation sector differ significantly in their details, they typically all rely on one or more of the following propositions: 1) that CO2 emissions from aviation could be "offset" through the use of offset credits; 2) that the use of alternative aviation fuels (biofuels or synthetic fuels), often termed "sustainable aviation fuels" (SAF), would enable "sustainable" air travel; 3) that air travel can be "sustainable", "responsible" or "green", in either relative or absolute terms.

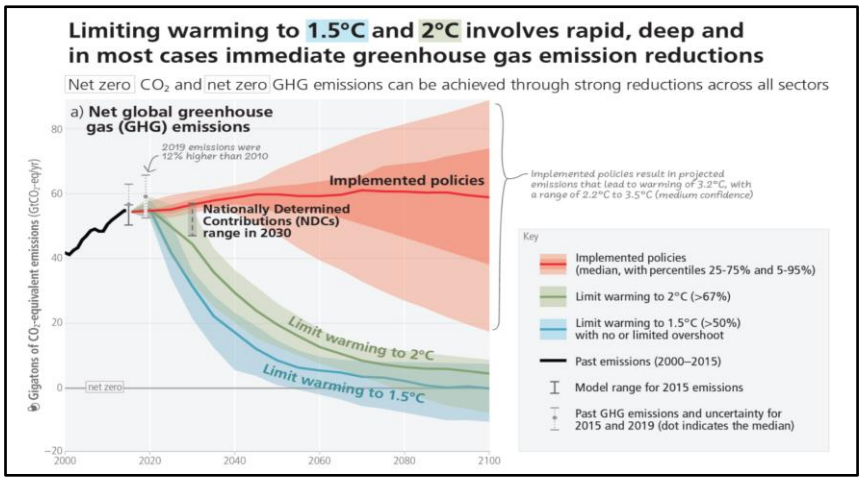
The Unfair Commercial Practices Directive (UCPD) prohibits marketing claims that are factually incorrect, or otherwise misleading for the average consumer. This study investigates whether climate-related marketing claims of the aviation sector are liable to violate the requirements of the UCPD.

The study first provides the factual context within which these marketing claims are made. Drawing from the latest report of the Intergovernmental Panel on Climate Change (IPCC) it establishes the main facts on climate change and on how aviation contributes to it. It also reviews the main options to decarbonize the sector in the short- and medium term. The second part provides an overview over current climate-related marketing claims by the aviation sector. The third part describes the relevant rules of the UCPD, and their application to environmental marketing claims. The fourth part provides an overview over relevant case law from national courts and advertising authorities. The fifth part evaluates the legality of climate-related marketing claims of the aviation sector under the UCPD.

1. The factual context: climate change, GHG emissions from aviation and options to decarbonize the sector

1.1. Climate change

Climate change inflicts widespread damage to nature and people already today.[1] It is caused by emissions of GHG.[2] According to the IPCC report, these arise from "unsustainable energy use, land use and land-use changes, lifestyles and patterns of consumption and production."[3] Global GHG emissions continue to increase, so that 1.5°C of global warming will be reached in the near term.[4] Currently implemented policies are projected to lead to warming of 3.2°C by 2100.[5] This temperature increase is associated with major threats to human health and well-being, and a large risk of weather extremes and of species loss.[6] The risks are increasing with every increment of warming.[7] Climate change "can be limited by deep, rapid and sustained global greenhouse gas emissions reduction."[8] However, the window of opportunity is rapidly closing.[9] For a chance to stay below the threshold of 1.5-2°C warming prescribed by the Paris Agreement, deep GHG emission reductions are required within this decade, and in all sectors.[10] It is estimated that emission reductions of at least -45% (from 2019 levels) are necessary by 2030.



According to the IPCC report, limiting global warming to 1.5-2°C requires "rapid, deep and [...] immediate greenhouse gas emission reductions."[1]

To achieve the necessary emission reductions, a systemic transformation is necessary. According to the IPCC report, "[f]easible, effective, and low-cost options for mitigation and adaptation are already available."[11] Important system transitions include the deployment of existing low-, or zero-emission technologies, as

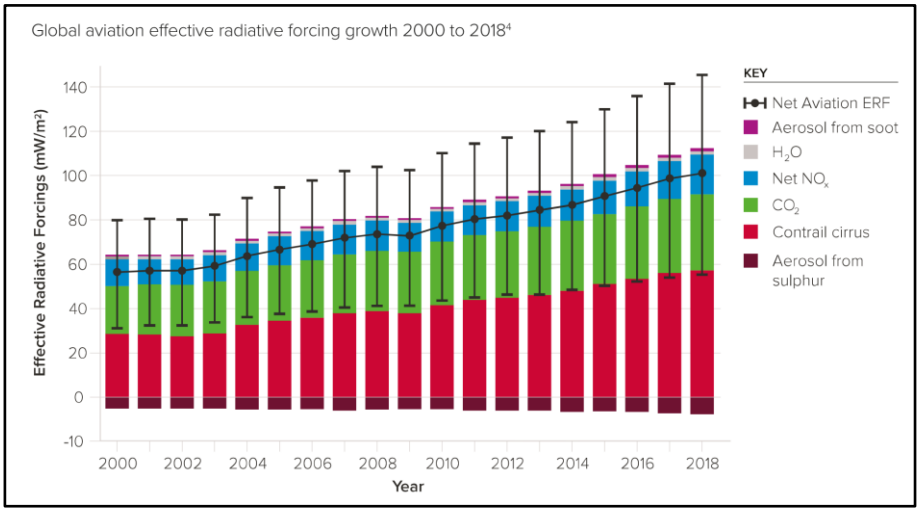
[1] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6, 2023), Summary for Policymakers, A.2.
[2] ibid A.1.
[3] ibid A.1.
[4] ibid B.1.
[5] ibid A.4.4.
[6] ibid B.2.2.
[7] ibid B.1.
[8] ibid B.3.
[9] ibid C.1.
[10] ibid B.6.
[11] ibid C.3.1.

well as "reducing and changing demand through infrastructure design and access, socio-cultural and behavioural changes."[12] Reducing demand for carbon-intensive products can lead to emission reductions of 40-70% by 2050.[13] Demand-side mitigation strategies comprise measures to *avoid* demand, to *shift* demand and to *improve* efficiency in existing technologies.[14] The greatest potential to avoid emissions comes from reducing air travel.[15] A significant obstacle in the reduction of emissions is advertising that promotes and normalizes unsustainable, carbon-intensive consumption patterns.[16] Advertising regulation constitutes an important intervention to reduce carbon-intensive consumption, as the IPCC report holds.[17] Moreover, it can act as a "social tipping intervention", i.e., a relatively small intervention that triggers the rapid transition to a state of net zero emissions.[18]

1.2. Aviation and climate change

Aviation is a significant contributor to climate change. To date, aviation's total contribution to human-induced global warming (CO2 and non-CO2 emissions) is estimated to be 4%.[19] Currently, aviation is responsible for 2.4% of global CO2 emissions.[20] In the EU, emissions from aviation are higher, making up 3.8% of CO2 emissions.[21] Additionally, aviation also causes significant non-CO2 emissions such as nitrogen oxides, sulphur dioxide, soot and water vapour.[22] Soot and water vapour trigger the formation of contrails, which have a significant warming effect. Non-CO2 emissions are responsible for 66% of the total warming effect of aviation.[23] In other words, the total warming effect of aviation is three times that of its CO2 emissions alone.

[12] ibid C.3.1.
[13] ibid SPM.7
[14] Minal Pathak and others, *Climate Change 2022: Mitigation of Climate Change. Working Group III Contribution to the IPCC Sixth Assessment Report (AR6)* (IPCC 2022), 5-8.
[15] ibid 5-3.
[16] ibid 2-67.
[17] ibid 4-73 and 15-19.
[18] 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, 2358.
[19] M Klöwer and others, 'Quantifying Aviation's Contribution to Global Warming' (2021) 16 Environmental Research Letters 104027, 1.
[20] ibid.
[21] 'Reducing Emissions from Aviation' (*europa.eu*) <https://climate.ec.europa.eu/eu-action/transport-emissions/reducing-emissions-aviation_en> accessed 30 May 2023.
[22] Pathak and others (n 15), 10-59.
[23] ibid, 10-59; European Union Aviation Safety Agency, 'Updated Analysis of the Non-CO2 Climate Impacts of Aviation and Potential Policy Measures Pursuant to the EU Emissions Trading System Directive Article 30(4)' (2020) 7.



The total warming effect of aviation is caused by its CO2- and non-CO2 emissions. Non-CO2 emissions are responsible for two thirds of the total warming effect. [1]

Air travel has increased steadily over the last decades, and so have the associated GHG emissions.[24] Between 2010-2019, emissions from aviation grew particularly fast, on average at 3.3% per year.[25] The International Civil Aviation Organization (ICAO) estimates future growth in air travel at 4.3% per year.[26] CO2 emissions are projected to more than double by 2050 even for the most optimistic set of mitigation assumptions.[27]

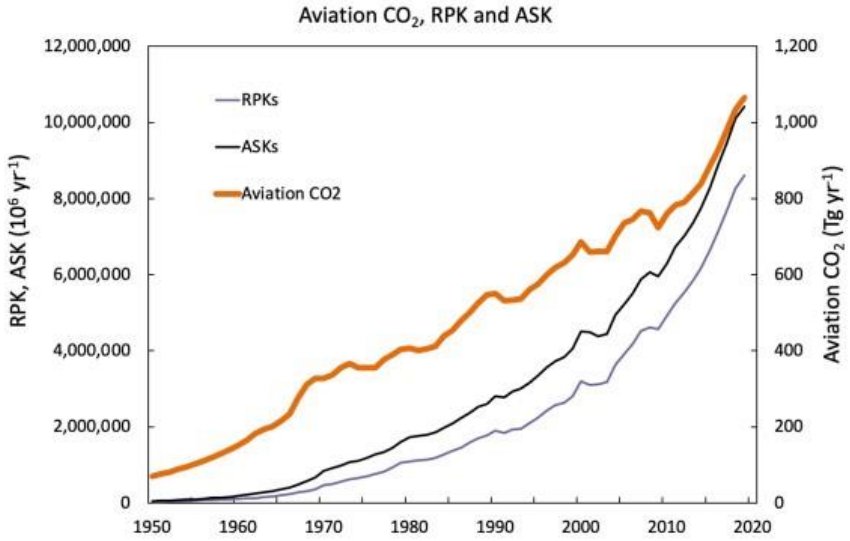


Figure 10.10 | Historical global emissions of CO_2 from aviation, along with capacity and transport work (given in available seat kilometres, ASK; revenue passenger-kilometres, RPK). Source: adapted from Lee et al. (2021) using IEA and other data.

Air travel has grown steadily over the past decades, and so have the associated GHG emissions.[28]

[24] Pathak and others (n 15), 10-58.
[25] ibid TS-24.
[26] ibid 10-65.
[27] ibid 10-64.
[28] ibid 10-58.

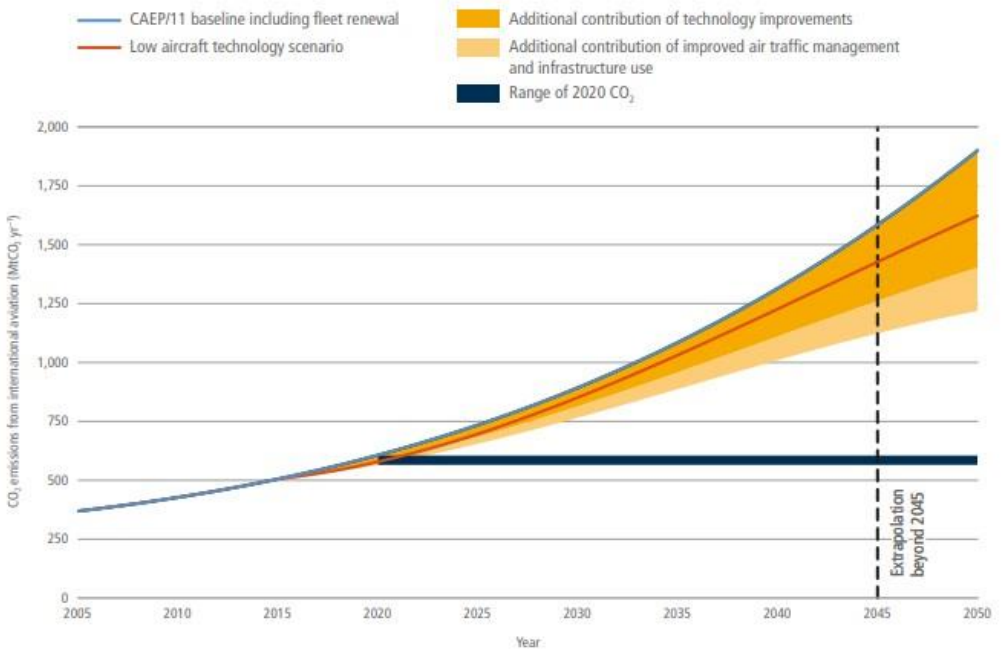


Figure 10.11 | Projections of international aviation emissions of CO_2. Data in Mt yr^{-1}, to 2050, showing contributions of improved technology and air traffic management and infrastructure use to emissions reductions to 2050. Data from Fleming and de Lépinay (2019); projections made pre-COVID-19 global pandemic.

GHG emissions from aviation are projected to more than double by 2050 even for the most optimistic set of mitigation assumptions.[1]

1.3. Options to decarbonize the aviation sector

Currently discussed options to decarbonize the aviation sector include efficiency improvements, new technologies, alternative aviation fuels, and the reduction of demand for air travel. With the exception of demand reduction, none of these strategies are available at scale in the short- and medium term, and can therefore not achieve the immediate and steep GHG emission reductions within this decade that the IPCC report calls for. Consequently, the aviation sector is considered "hard to decarbonize."[29] The IPCC report holds in this regard: "Aviation is widely recognised as a 'hard-to-decarbonise' sector having a strong dependency on liquid fossil fuels and an infrastructure that has long 'lock-in' timescales, resulting in slow fleet turnover times."[30]

Efficiency improvements

Efficiency improvements are achieved mainly through fleet renewal, increasing seat density and load factor, and fuel-efficiency programs.[31] In the past, GHG emission reductions from efficiency gains have been outpaced by emission increases due to sector growth.[32] Future efficiency gains are estimated at no more

[29] Pathak and others (n 15), 10-58.
[30] ibid 10-58.
[31] 'Fuel Efficiency: Why Airlines Need to Switch to More Ambitious Measures' (*mckinsey.com*, 1 March 2022) <https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/future-air-mobility-blog/fuel-efficiency-why-airlines-need-to-switch-to-more-ambitious-measures> accessed 22 May 2023.
[32] Pathak and others (n 15), TS-68.

than 1.3% per year[33], which also falls short of the emission increases associated with the projected growth in air travel. The IPCC report states: "[T]he scope for reducing CO2 emissions from aviation through improved airplane technology or operations is limited and unable to keep up with the projected growth, let alone reduce beyond the present emission rate at projected levels of demand."[34]

New technologies

New technologies to decarbonize the aviation sector that are currently researched include hydrogen- and ammonia-powered aviation and electrification. According to the IPCC report, electrification of aviation will only play a niche role.[35] Research in hydrogen and ammonia as aviation fuel are at a very early stage of research, and will consequently also not be significant for decarbonizing aviation in the short- and medium term.[36] Additional obstacles to the deployment of hydrogen and ammonia as aviation fuels even in the long term include the need for substantial modification and replacement of aircraft and supporting infrastructure before deployment, as well as a "challenging" demand for renewable energy.[37] Furthermore, the potential of new technologies to decarbonize the aviation sector in the short- and medium term is significantly limited by the fact that a large proportion of currently operating aircraft will still be in use in 2040-2050.[38]

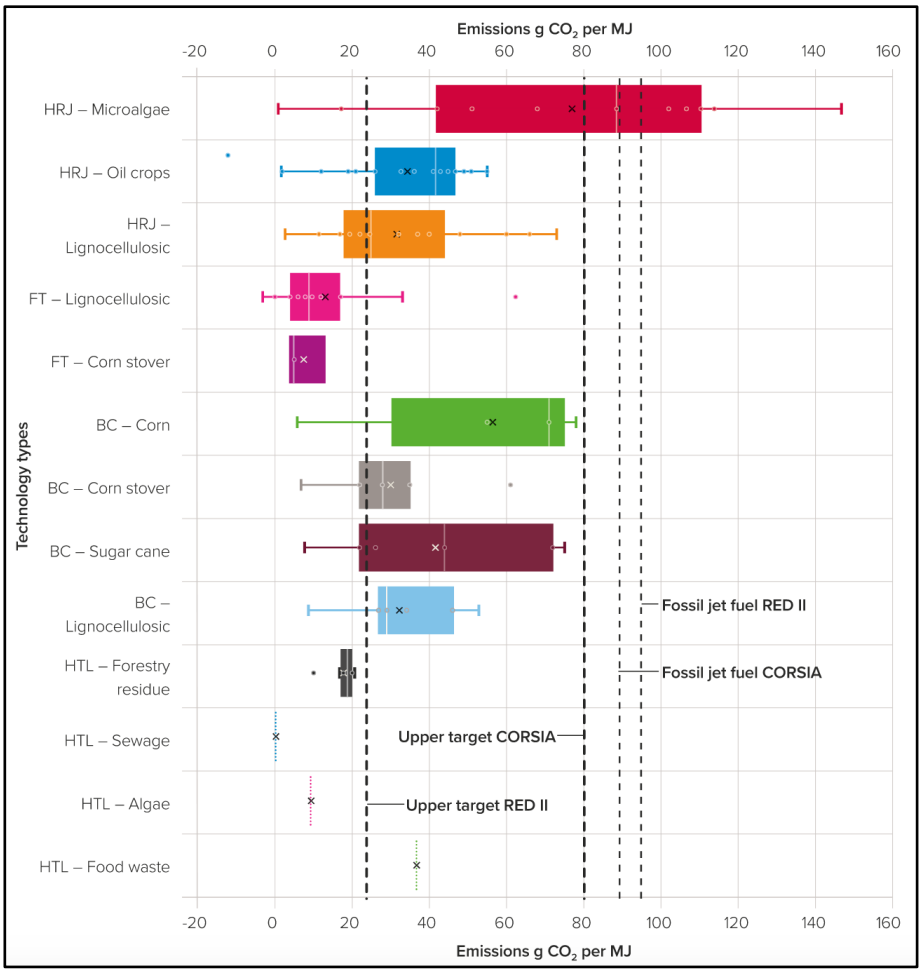
Alternative aviation fuels

Biofuels and synthetic fuels are alternative, non-fossil aviation fuels that are compatible with existing aircraft and infrastructure.[39] These fuels are frequently termed "sustainable aviation fuels" (SAF), although the term is controversial[40] and also factually incorrect, as will be shown below. Biofuels are produced from organic matter such as energy crops, crop residues, municipal solid waste, waste fats and oils, wood products and forestry residues.[41] Synthetic fuels are produced from hydrogen and CO2.[42]

The overall climate impact of alternative aviation fuels is assumed to be significantly lower than that of fossil aviation fuel, but it is not zero. Bio- and synthetic fuels cause direct CO2 emissions when burned but are assumed to achieve CO2 emission reductions over their life cycle. For biofuels the estimated CO2 emission reduction ranges between 2-70%, depending on the type of organic feedstock employed.[43] In theory, bio- and synthetic fuels can be assumed to achieve life cycle CO2 emissions that are lower than their direct CO2 emissions under the conditions that their production reduces atmospheric CO2. For (some) biofuels this is suggested to be the case because they are produced from biomass, which takes up CO2 while growing. For synthetic fuels this is the case if the CO2 employed in the production process stems from direct air capture. However, the life cycle analysis is complex, and outcomes depend significantly on methodical choices.[44] Most importantly, life cycle analyses typically exclude emissions from indirect land use changes, even though the GHG impact increases significantly when they are included.[45] They usually also assume that the CO2 uptake through biomass regrowth takes place at the same time as the CO2 emissions from combustion,

[33] ibid 10-59.
[34] ibid 10-60.
[35] ibid SPM-42, 10-60, 10-61 and 10-94.
[36] The Royal Society (n 25) 4–5.
[37] ibid.
[38] ibid 6.
[39] ibid 4-5.
[40] ibid 14.
[41] Pathak and others (n 15), 10-60.
[42] The Royal Society (n 25) 17.
[43] Pathak and others (n 15), 10-61.
[44] The Royal Society (n 25) 35.
[45] ibid 42.

even though this effect will be realized only years or decades into the future, if at all.[46] No uniform methodology is currently employed to calculate life cycle emissions, which makes reliable comparisons between fuel types difficult.[47] The extent to which the use of alternative aviation fuels leads to actual CO2 emission reductions is therefore subject to significant uncertainty.[48] Bio- and synthetic fuels also cause non-CO2 emissions.[49] Non-CO2 emissions may be significantly lower than those of fossil aviation fuel. However, according to a recent study by the Royal Society, this finding is "very preliminary and largely based on a single model [...]."[50]

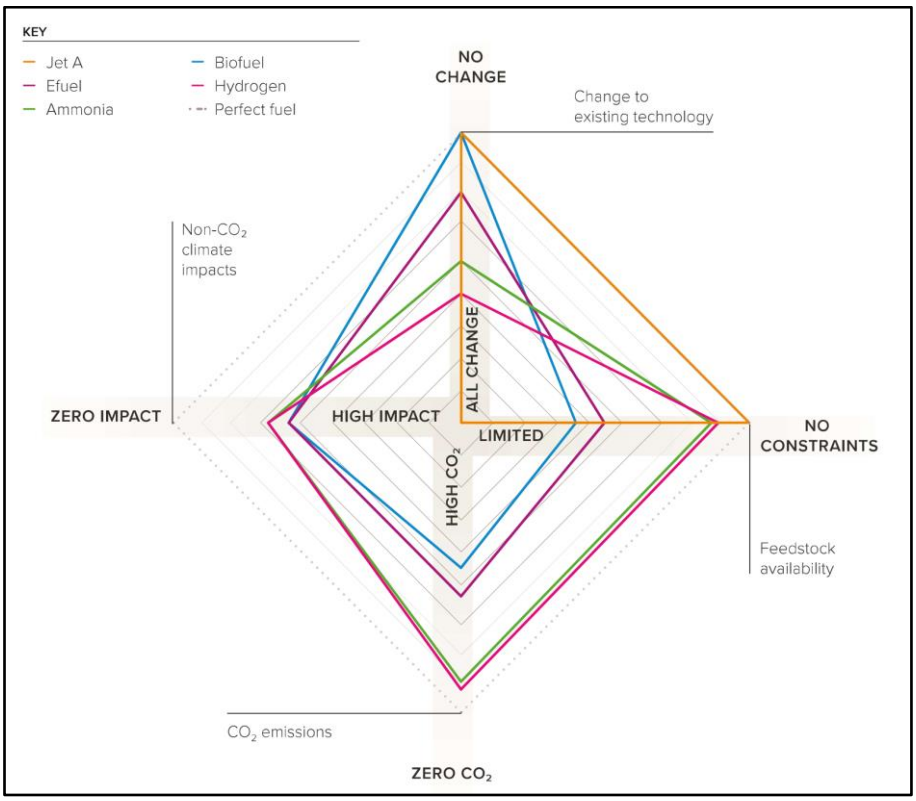


CO2 emissions of biofuels made from different feedstocks.[51]

The development of synthetic fuels is still in its infancy and will therefore not play a significant role in decarbonizing the aviation sector in the short- and medium term.[52] Biofuels are available today, but only in very limited quantities.[53] Scaling up the production of biofuels creates an enormous demand for resources, most notably for land. For example, to produce the quantity of biofuels necessary to meet the UK's current

[46] ibid 37.
[47] ibid 35.
[48] Pathak and others (n 15), 7-79.
[49] ibid 51-53.
[50] The Royal Society (n 25) 53.
[51] ibid 41.
[52] Pathak and others (n 15), 10-61.
[53] The Royal Society (n 25) 15.

consumption of jet fuel would require 30-68% of the total agricultural land in the UK.[54] However, biofuel production competes with other land uses, including food production and climate-related afforestation. The overall impact of biofuel production on GHG emissions as well as on food security, biodiversity and other sustainability factors may therefore be negative. The higher the scale of production and the expansion rate the higher is the risk of negative outcomes.[55] Producing biofuels from organic waste is possible, but is subject to major quantity constraints.[56]



Biofuel and synthetic fuel ("efuel") are assumed to reduce, but not eliminate CO2- and non-CO2 emissions. Moreover, they are subject to major quantity constraints.[1]

Demand reduction

Strategies to alter consumer demand have a significant potential to reduce emissions from aviation, and already in the short- and medium term.[57] Avoiding long-haul flights and shifting to trains wherever possible can contribute 10-40% to the reduction of emissions from aviation by 2050.[58]

[54] ibid 23.
[55] Pathak and others (n 15), 7-81.
[56] ibid 24-29.
[57] Pathak and others (n 15). TS-98 and 10-82.
[58] ibid 5-40

Projected efficiency gains in the aviation sector will be outpaced by projected capacity growth. New technologies such as electrification and hydrogen fuel will not be deployable at the necessary scale to decarbonize aviation in the foreseeable future. Bio- and synthetic aviation fuels are not GHG-neutral and are subject to significant capacity constraints. Biofuels also have major adverse land use effects. Only demand reduction strategies have a significant potential to reduce GHG emissions from the aviation sector in the short- and medium term.

Offset credits

The concept of "offsetting" describes the notion that GHG emissions that are reduced or avoided by one entity can be transferred to another entity in the form of "offset credits."[59] The second entity uses the credits to "compensate", "neutralize" or "offset" its own emissions. However, "offsetting" is an accounting concept only, and does not affect actual emissions. Consequently, the use of offset credits created in a non-aviation sector reduces emissions in the aviation sector only in a nominal sense but does not actually contribute to the decarbonization of the aviation sector.[60]

The creation, trade and use of offsets is unregulated and not subject to public oversight.[61] Private operators generate offset credits for purported emission reductions or removals through many different activities. These include the protection of existing forests ("avoided deforestation") or the planting of new forests (afforestation), measures increasing energy efficiency, renewable energy production as well as the capture or destruction of gases from industrial processes, waste and resource extraction.[62] Offset credits are usually generated according to a standardized methodology. Various such methodologies exist, including the "Verified Carbon Standard" (VCS) by Verra or the Gold Standard.[63] The effectiveness of these private governance frameworks is highly contested.[64]

Whether offset credits represent actual emission reductions or removals is highly uncertain. The research literature highlights at least four major sources of uncertainty. First, quantifying the mitigation effects of offset projects is highly subjective, and prone to manipulation.[65] The quantity of emission reductions or removals claimed by an offset project is not based on direct measurements. Instead, it is calculated by comparing estimated actual emissions with the "baseline scenario", a hypothetical scenario in which the offsetting activity does not take place. Claimed emission reductions or removals can differ significantly depending on the assumptions that inform the baseline scenario and the emissions estimation.[66] This inherent subjectivity of the process of quantifying the mitigation effects of offset projects makes it prone to

[59] On the following see Clemens Kaupa, 'Peddling False Solutions to Worried Consumers. The Promotion of Greenhouse Gas "Offsetting" as a Misleading Commercial Practice' Journal of European Consumer and Market Law 139.
[60] Pathak and others (n 15), 10-63.
[61] Heather C Lovell, 'Governing the Carbon Offset Market' (2010) 1 WIREs Climate Change 353, 354–357.
[62] 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 31 May 2023.
[63] Derik Broekhoff and others, 'Securing Climate Benefit: A Guide to Using Carbon Offsets' (Stockholm Environment Institute & Greenhouse Gas Management Institute 2019) 8–9 <Offsetguide.org/pdf-download/> accessed 11 March 2022.
[64] Nina Lakhani, '"Worthless": Chevron's Carbon Offsets Are Mostly Junk and Some May Harm, Research Says' *The Guardian* (24 May 2023) <https://www.theguardian.com/environment/2023/may/24/chevron-carbon-offset-climate-crisis> accessed 31 May 2023; Patrick Greenfield, 'Revealed: More than 90% of Rainforest Carbon Offsets by Biggest Certifier Are Worthless, Analysis Shows' *The Guardian* (18 January 2023) <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe> accessed 31 May 2023.
[65] Clemens Kaupa, 'Scrutinizing Net Zero: The Legal Problems of Counting Greenhouse Gas Emissions, Removals and Offsets Together' (2022) 31 Review of European, Comparative & International Environmental Law 447, 451.
[66] 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.

manipulation. The research literature has documented many cases of "baseline manipulation."[67] "Baseline manipulation" describes the practice by project operators of maximizing the quantity of reduced or removed emissions by modelling an artificially high-emissions baseline.[68]

Second, offset projects frequently trigger feedback loops that can partly or fully neutralize their climate benefits, or even cause an overall increase in emissions.[69] This phenomenon is termed "leakage" in the research literature. For example, offset credits for renewable energy projects are claimed on the basis of the assumption that the produced energy will replace energy from fossil fuels. However, market processes will typically prevent a full substitution in practice, instead leading to a price decrease and an increased demand for energy that effectively neutralizes the emission reductions.[70] The replacement rate of fossil energy has been estimated to be less than 25%.[71] Market dynamics may undermine the climate benefits of offsetting activities also by merely displacing, rather than eliminating harmful activities. For example, offset credits for protecting a specific forest area from deforestation are claimed on the basis of the assumption that this reduces logging in absolute numbers. However, logging is driven by global demand for timber, wood pulp and pellets.[72] This demand is not reduced by the offsetting project. Consequently, a reduction of logging in one area will likely lead to an increase of logging elsewhere.

Third, offset credits can only be assumed to be causally responsible for specific emission reductions or removals if these had not occurred in the absence of the offset project.[73] This requirement is termed "additionality" in the research literature. If the reduction or removal would have happened even without the prospect of selling carbon credits, then the requirement is not fulfilled. The requirement of additionality is very difficult, if not impossible to meet in practice. Studies have shown for a wide range of offset activities that additionality claims are not reliable.[74]

Fourth, the temporal effects of the emission reductions or removals of offset projects cannot be assumed to match those of CO2 emissions.[75] 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."[76] In order to effectively compensate for the harm caused by these emissions, offsetting activities need to remain operational for a comparable timeframe, and must therefore be quasi-permanent. However, 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

[67] 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.
[68] Xiaoyu Liu and Qingbin Cui, 'Baseline Manipulation in Voluntary Carbon Offset Programs' (2017) 111 Energy Policy 9.
[69] Kaupa (n 69) 451.
[70] 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.
[71] Richard York, 'Do Alternative Energy Sources Displace Fossil Fuels?' (2012) 2 Nature Climate Change 441.
[72] 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.
[73] Kaupa (n 69) 451.
[74] Barbara Haya and others, 'Managing Uncertainty in Carbon Offsets: Insights from California's Standardized Approach' (2020) 20 Climate Policy 1112; Cames, Martin and others, 'How Additional Is the Clean Development Mechanism?' (2016) <https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf> accessed 29 September 2021; Lambert Schneider, 'Assessing the Additionality of CDM Projects: Practical Experiences and Lessons Learned' (2009) 9 Climate Policy 242.
[75] Kaupa (n 69) 452–453.
[76] David Archer and others, 'Atmospheric Lifetime of Fossil Fuel Carbon Dioxide' (2009) 37 Annual Review of Earth and Planetary Sciences 117, 131.

change, all of which may turn a land-based sink into a GHG source at any point in time.[77] Furthermore, offset programs are typically set up only for a period of 20-30 years, and consequently cannot guarantee permanence. Moreover, the carbon takeup potential of forests under conditions of intensifying climate change is increasingly at risk.[78]

Due to these uncertainties there is a consensus in the research and policy literature that offset credits are not equivalent to genuine emission reductions.[79] For example, the EU's Environmental Footprint methods reject the use of offsets in the calculation of the carbon footprint.[80] Similarly, the ISO standard 14067:2018 on the carbon footprint of products recommends accounting separately for biogenic and fossil carbon.[81] Separate accounting has also been advocated by numerous researchers in the fields of climate science, climate policy and life-cycle analysis.[82] It is also required by the relevant policy processes on corporate climate mitigation.[83]

Offset credits are an accounting instrument to reduce an entity's GHG emissions on a nominal level, but do not affect them in a practical sense. Consequently, offset credits cannot contribute to the decarbonization of the aviation sector. Moreover, it is highly uncertain whether offset credits represent genuine emission reductions or removals.

[77] 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.

[78] 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.

[79] 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 <https://www.frontiersin.org/article/10.3389/fclim.2021.664130> accessed 24 September 2021; Lauren Gifford, '"You Can't Value What You Can't Measure": A Critical Look at Forest Carbon Accounting' (2020) 161 Climatic Change 291; Haya and others (n 78); Duncan P McLaren and others, 'Beyond "Net-Zero": A Case for Separate Targets for Emissions Reduction and Negative Emissions' (2019) 1:4 Frontiers in Climate; Julia Dehm, 'One Tonne of Carbon Dioxide Equivalent (1tCO2e)' in Jessie Hohmann and Joyce Daniel (eds), *International Law's Objects* (Oxford University Press 2018); Judith Ajani and others, 'Comprehensive Carbon Stock and Flow Accounting: A National Framework to Support Climate Change Mitigation Policy' (2013) 89 Ecological Economics 61; Larry Lohmann, 'The Dyson Effect: Carbon "Offset" Forestry and the Privatisation of the Atmosphere' (2001) 15 International Journal of Environment and Pollution 51.

[80] European Commission, 'Recommendation on the use of the Environmental Footprint methods' C(2021) 9332 final, Annex, para 4.4.10.

[81] ISO 14067:2018, 'Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification', 6.4.9.2; See Arendt, Rosalie, Bach, Vanessa, and Finkbeiner, Matthias, 'Carbon Offsets: An LCA Perspective' in Stefan Albrecht and others (eds), *Progress in Life Cycle Assessment 2019* (Springer International Publishing 2021) 196.

[82] Carton, Lund and Dooley (n 83); Arendt, Rosalie, Bach, Vanessa, and Finkbeiner, Matthias (n 85); McLaren and others (n 83); 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.

[83] 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, 'Net Zero Initiative - A Framework for Collective Carbon Neutrality' (2020) 7 <http://www.carbone4.com/wp-content/uploads/2020/04/Carbone-4-NZI-Guidelines-april-2020-1.pdf> accessed 6 December 2021.

2. Climate-related marketing claims by the aviation sector

Airlines and other actors in the aviation sector frequently make environmental marketing claims. An illustrative example is the following slogan by Air Baltic: "Green by nature. A smaller footprint in the sky. Think green, fly green."[84] Environmental marketing claims by the aviation sector usually refer, directly or indirectly, to the climate effects of aviation, rather than to other sustainability-related harms such as air and noise pollution. Based on an overview of recent climate-related marketing claims by the aviation sector the following case groups can be identified.

First, airlines claim that the CO2 emissions (but not non-CO2 emissions) for certain fares are counterbalanced through emission reductions from alternative aviation fuels, the use of offset credits, or both. For example, the Lufthansa group offers the product "green fares."[85] The product is described as follows: "The choice of our Economy Green and Business Green fares will reduce 20% of flight-related CO2 emissions by the use of sustainable aviation fuels (SAF) and offset the remaining 80% of the CO2 emissions by an equivalent contribution to high-quality climate protection projects. This 20/80 combination of reduction and offsetting is firmly linked to our Green Fares on European flights and enables more sustainable flying." According to the undertaking, this product will contribute to reaching the target of "carbon neutral by 2050."

Second, airlines offer the reduction or compensation of CO2 emissions from flying in the form of a supplementary service, usually using offset credits. For example, TAP Portugal offers the service "Carbon offset compensation." Ryanair offers a compensation service with the following slogan: "Compensate your estimated share of CO2 emissions for this flight." Airlines also offer consumers to reduce emissions by paying for alternative aviation fuels. For example, Vueling offers the following service to consumers: "Contribute 2% of sustainable fuel. Together we'll help to reduce CO2 emissions on the day of your flight." It further states: "This type of fuel helps to cut greenhouse gas emissions by up to 80%." And: "Your donation is equivalent to 2% of sustainable fuel for your booking, which we'll load on the day of your flight."

Third, airlines claim that passengers can contribute to the development of alternative aviation fuels that will reduce future emissions. For example, Air France offers the following option to consumers: "Contribute to the development of sustainable aviation fuel and reduce CO2 emissions of our future flights by XXkg." It further explains: "We are actively involved in the development of sustainable aviation fuel (SAF), which reduces CO2 emissions by an average of 80% throughout its life cycle compared to fossil fuel. Manufacturing SAF costs significantly more than conventional fuel. Your contribution allows us to invest more in developing these alternative fuels and incorporate more in our future flights."

Fourth, airlines claim that emissions from a specific flight are relatively lower than those of a selected benchmark. For example, Norwegian claims that a certain flight causes "34% less CO2 emission than the industry average."

Fifth, airlines promote themselves as moving towards net-zero GHG emissions. For example, Austrian Airlines claims: "Together with all Lufthansa Group companies, Austrian Airlines is on its journey to become carbon-neutral by 2050."

[84] 'Think Green, Fly Green - Sustainability in AirBaltic' (*airbaltic.com*) <https://www.airbaltic.com/sustainability/?lang=en> accessed 30 May 2023.
[85] 'Green Fares: Fly More Sustainably' (*lufthansa.com*) <https://www.lufthansa.com/xx/en/green-fare> accessed 31 May 2023.

While climate-related marketing claims by the aviation sector differ significantly in their details, the preceding overview shows that they all rely on one or more of the following propositions: 1) that GHG emissions from aviation could be offset through the use of offset credits; 2) That the use of alternative aviation fuels (biofuels or synthetic fuel) is "sustainable"; 3) That air travel can be "sustainable", "responsible" or "green", in either relative or absolute terms.

3. The applicable rules

3.1. Directive 2005/29/CE – the Unfair Commercial Practices Directive (UCPD)

The Unfair Commercial Practices Directive (UCPD) prohibits commercial practices that mislead consumers, either by action or by omission. The UCPD applies to all business-to-consumer commercial practices, including advertising. Commercial practices are defined as "any act, omission, course of conduct or representation, commercial communication including advertising and marketing, by a trader, directly connected with the promotion, sale or supply of a product to consumers."[86]

Article 6 UCPD prohibits misleading actions. A commercial practice is prohibited if it fulfills three criteria. 1) It "contains false information and is therefore untruthful or in any way, including overall presentation, deceives or is likely to deceive the average consumer, even if the information is factually correct." 2) It relates to characteristics of the promoted product or of the trader that are listed in Article 6(1) UCPD. This includes "the existence or nature of the product" and the "main characteristics of the product." 3) It "causes or is likely to cause [the consumer] to take a transactional decision that he would not have taken otherwise."

Article 7 UCPD prohibits misleading omissions. A commercial practice is prohibited if it fulfills two criteria. 1) It "omits material information that the average consumer needs, according to the context, to take an informed transactional decision." Whether this is the case must be established within the broader factual context of the commercial practice, "taking account of all its features and circumstances and the limitations of the communication medium." 2) The omission "causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise." According to Article 7(2) UCPD, a trader misleads through omission if material information is provided in "an unclear, unintelligible, ambiguous or untimely manner."

According to Article 12 UCPD, the trader must have the evidence to support their claims. The burden of proof thus rests with the trader. The European Commission has published a "Guidance on the interpretation and application of Directive 2005/29/EC" (the Guidance).[87] National consumer authorities have also issued guidelines.

[86] Article 2(e) UCPD.
[87] European Commission, '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).

3.2. The application of the UCPD to environmental marketing claims

The UCPD prohibits all misleading marketing claims, including misleading environmental claims.[88] The Guidance provides detailed instructions on the application of the UCPD to environmental claims. It defines environmental claims as "the practice of suggesting or otherwise creating the impression (in a commercial communication, marketing or advertising) that a good or a service has a positive or no impact on the environment or is less damaging to the environment than competing goods or services."[89]

The Guidance identifies the following core principle for environmental claims: "Based on Articles 6 and 7 UCPD on misleading actions and omissions, green claims must be truthful, not contain false information and be presented in a clear, specific, accurate and unambiguous manner, so that consumers are not mislead."[90] According to the Guidance, "[e]nvironmental claims are likely to be misleading if they consist of vague and general statements of environmental benefits without appropriate substantiation of the benefit and without indication of the relevant aspect of the product the claim refers to."[91] Illustrative examples provided by the Guidance for vague environmental claims are the terms "green", "climate friendly", "reduced CO2 emissions", "carbon neutral", "climate neutral" and "responsible."[92]

The burden of proof to substantiate environmental claims lies with the advertiser.[93] According to the Guidance, environmental claims "should be based on evidence which can be verified by the relevant competent authorities."[94] And: "[C]laims should be based on robust, independent, verifiable and generally recognised evidence which takes into account updated scientific findings and methods."

When assessing environmental claims, "the product's main environmental impacts over its lifec ycle, including its supply chain, are relevant. An environmental claim should relate to aspects that are significant in terms of the product's environmental impact."[95] And: "[C]laims should be clear and unambiguous regarding which aspect of the product or its life cycle they refer to. If a trader makes an environmental claim by highlighting just one of several impacts the product has on the environment, the claim could be misleading within the meaning of Article 6 of the UCPD."[96] Environmental claims must relate to the product's main environmental impacts. [97]

Advertisers need to relate relative environmental claims ("more sustainable", "more responsible", "lower CO2 emissions") to the absolute environmental impact of their products, especially in the case of highly polluting industries. According to the Guidance, "[h]ighly polluting industries may be required by courts or authorities to make it clear to the consumer in their environmental claims that the product has an overall negative impact on the environment."[98]

According to the Guidance, comparative environmental claims are misleading if they do not enable the average consumer to make meaningful comparisons. This is the case, for example, when the method of

[88] ibid 90.
[89] 89
[90] European Commission (n 91) 93.
[91] ibid 95.
[92] Guidance on the implementation/application of Directive 2005/29/EC on unfair commercial practices [2016] SWD(2016) 163 final 95.
[93] European Commission (n 91) 93 and 101.
[94] ibid 101.
[95] ibid 96.
[96] ibid 97.
[97] ibid 100.
[98] ibid 96.

calculation is not uniform, or when a relative advantage is obscuring an absolute disadvantage. For example, a claim that an airline has the lowest CO2 emissions per passenger-km could be misleading "if the airline's total CO2 emissions are higher than other airlines and if emissions have increased significantly over the past years."[99] Comparative environmental claims can also be misleading if the chosen benchmark is too narrow. The Guidance provides the following illustrative example:

> *"[C]omparison across all relevant transport modes, not just air travel, would be even more objective and informative. Consumers' mobility needs may be met not only through a flight but with other means of transport, depending on the route. Therefore, a comparison of average passenger-km emissions between rail, road and air modes would prevent misleading consumers that their choice is "green", when viable alternatives with lower emissions exist."*[100]

4. Case law

A growing number of court judgments and decisions by advertising authorities shine light on the legality of climate-related claims made by the aviation sector, especially regarding the use of offset credits.

On 24 March 2023 the Düsseldorf district court ruled on a lawsuit by the German environmental NGO Deutsche Umwelthilfe (DUH) against TotalEnergies.[101] The judgment is based on the German Unfair Competition Act (Gesetz gegen den unlauteren Wettbewerb), which transposes the UCPD. The judgment concerns the promotion of fuel oil as "CO2 compensated." Claims made by the advertiser included the following: "The CO2 emitted during combustion is compensated elsewhere in the same amount with the help of climate protection projects. Thus, you keep the burden on the environment as low as possible and can make your fuel oil requirements climate neutral." The court found the claims to be misleading. According to the court, the defendant failed to provide clear information as to whether the compensation covered all life cycle emissions, or merely direct CO2 emissions from combustion. Moreover, it failed to provide clear evidence as to how the promoted forest offset project would verifiably lead to emission reductions. The court ordered the defendant to cease and desist from advertising fuel oil as "CO2 compensated."

On 2 February 2023, the Stockholm district court ruled on a lawsuit by the Swedish consumer ombudsman against Arla Foods, a multinational dairy producer.[102] The judgment is based on the Swedish Marketing Act (marknadsföringslagen), which transposes the UCPD. The judgment concerns the promotion of dairy products as having a "net zero carbon footprint." According to Arla, this result was achieved through offset credits from forest-based offset projects. However, the court found the claim to be misleading. According to the court, the claim gives the impression that the products in question have no carbon footprint at all, or that it has been fully offset. However, offset credits cannot achieve that result. The marketing claim is based on a specific metric, namely the Global Warming Potential 100 (GWP 100), which establishes the climate impact over a period of 100 years. However, "net zero" is not achieved if metrics are employed that address shorter time periods. Furthermore, it is uncertain whether the climate benefits will be permanent over a period of 100 years. Finally, it is not clear to the consumer that the promised result will be achieved only in 100 years. It prohibited Arla from making the marketing claim, also covering similar claims that give the

[99] ibid 103.
[100] ibid.
[101] *Landgericht Düsseldorf, DUH v TotalEnergies [2023] ECLI:DE:LGD:2023:032438O922200.*
[102] *Stockholms tingsrätt, Konsumentombudsmannen v Arla Foods AB [2023] PMT 17372-21.*

impression that the product does not give rise to any climate impact at all or that the climate impact caused by the product has been fully compensated when this is not the case.

On 26 August 2021 and on 28 June 2022 the Dutch advertising authority (Reclame Code Commissie, RCC) ruled on complaints against Shell.[103] Shell appealed the second decision, which was subsequently confirmed on 20 October 2022 by the appeal body (College van Beroep).[104] The RCC is a self-regulatory body of the advertising industry, and decides on the basis of the Dutch advertising code (Nederlandse Reclame Code), which is effectively based on the UCPD and the Commission Guidance. The first decision concerned an advertising campaign for the product "CO2 compensation", which Shell 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 scientific proof to support the claim that the product "CO2 compensation" could in fact realize the promised result. Consequently the claim "Drive CO2 neutral" was found to be misleading. After the first decision, Shell continued to offer the product, but replaced the phrase "CO2 neutral" with "CO2 compensated" in its promotional materials. The new slogan was "Make the difference. Compensate CO2 emissions." After a new complaint, the RCC decided that Shell had still not provided the necessary scientific evidence to prove the veracity of its claims, and concluded that the claim "compensate CO2 emissions" is misleading for consumers.

On 8 April 2022 the RCC ruled on a complaint against KLM.[105] The decision concerned the promotion of the service "CO2ZERO", for example with slogans like the following: "Offset CO2 emissions. Neutralize your impact on the environment with the CO2ZERO service." Referring to its decisions on Shell's promotion of offsetting, the RCC found that KLM had not proven that the carbon credits it had acquired actually led to a full and permanent removal of emissions that could compensate for the emissions from air travel. Consequently, the claim was found to be misleading for consumers.

On 20 June 2022 the Austrian advertising authority (Werberat) ruled on a complaint against the airline Austrian. The Werberat is the self-regulatory body of the advertising industry.[106] The decision concerned the promotion of a service where consumers could "fly CO2-neutral" if they paid for "100% SAF." The Werberat found the marketing claim to be misleading. In particular, it pointed out that "sustainable aviation fuels" could currently achieve only an emission reduction of max 80%, which means that CO2-neutral flying is impossible.

[103] *Reclame Code Commissie, Shell - 'Drive CO2 neutral' [2021] 2021/00190*; *Reclame Code Commissie, Shell - 'Compensate CO2 emissions' [2022] 2022/00100*.

[104] Reclame Code Commissie - College van Beroep, Shell - 'Compensate CO2 emissions' [2022] 2022/00100.

[105] *Reclame Code Commissie, KLM - 'CO2ZERO' [2022] 2021/00553*.

[106] 'Misleading Ad about Flying CO2 Neutral on SAF from Vienna to Venice - AUA' (*werberat.at*) <https://www.werberat.at/beschwerdedetail.aspx?id=7374> accessed 30 May 2023.

5. Evaluating climate-related marketing claims by the aviation sector under the UCPD

This section evaluates climate-related marketing claims by the aviation sector under the UCPD. It first notes that information about the climate impact of air travel falls within the scope of Articles 6 and 7 UCPD because it relates to a main product characteristic, and is material for the average consumer's decision-making. It then establishes that this information is also liable to influence the average consumer's transactional decisions. Finally, it evaluates the misleading potential of three core propositions that underlie most climate-related marketing claims by the aviation sector.

5.1. Information about the climate impact of air travel falls within the scope of Articles 6 and 7 UCPD

Article 6 UCPD applies to commercial practices that misinform consumers about core information, including "the existence or nature of the product" and "the main characteristics of the product." Article 7 UCPD applies to omissions of information that is "material", i.e., "information that the average consumer needs, according to the context, to take an informed transactional decision."

Information about the GHG footprint of air travel and of supplementary services like offsetting concern a main product characteristic within the meaning of Article 6 UCPD. This is manifestly the case when the product's climate impact is its distinguishing feature. For example, the "green fares" offered by the Lufthansa Group differ from other fares exclusively due to their allegedly lower GHG footprint. Similarly, the alleged ability to offset GHG emissions is the central characteristic of "offsetting", when offered as a supplementary service.

Moreover, information about the climate impact of air travel must be assumed to concern a main product characteristic whenever airlines themselves make it a central element of their marketing communications. This is the case, for example, when Air Baltic promotes the slogan "Fly green"[107], or when the Lufthansa Group claims on social media to be "on its journey to become carbon-neutral by 2050", using the hashtags "#MakeChangeFly #Sustainability #Aviation #Technology."

For the same reasons such information is also material for the consumer within the meaning of Article 7 UCPD. Taking a similar view, the Düsseldorf district court held in regard to TotalEnergies' promotion of "CO2-compensated" fuel oil:

> *"If the advertiser [...] directs the consumer's attention in his commercial communication to certain circumstances attributable to his sphere, of which the consumer typically has no (closer) knowledge, the advertiser is to be expected to put the consumer in a position to be able to check the accuracy of the advertising statement and to assess its meaning. This also and especially applies when environmental terms are used. Such advertising is associated with an increased risk of misleading the consumer in view of the often vague terminology associated with different expectations and perceptions, as well as the widespread low level of factual knowledge of the general public about scientific relationships and interactions, which justifies an assessment according to strict standards and the assumption of far-reaching obligations to provide*

[107] 'Think Green, Fly Green - Sustainability in AirBaltic' (n 88).

information, which take into account the need of the addressed public to be informed about the meaning and content of the terms used and require clearly visible explanatory information."[108]

Consequently, information relating to the climate impact of air travel and of supplementary services such as offsetting fall within the scope of Articles 6 and 7 UCPD.

5.2. Information about the climate impact of air travel is liable to influence the average consumer's decision-making

Articles 6 and 7 UCPD apply when the provision or omission of information "causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise."

Climate-related product information is relevant to a large segment of consumers. 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.[109] 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.[110] Information relating to the climate impact of air travel and supplementary services like offsetting is therefore capable of influencing the consumer's decision-making.

Such information is liable to influence the average consumer's decision-making particularly when the advertiser makes it a main element of its marketing communications. This is manifestly the case when air travel is promoted as "sustainable" or "carbon neutral", or when carbon offsetting or the use of "sustainable aviation fuel" are promoted as a supplementary service. In this context, the Düsseldorf district court held in its judgment on the promotion of "CO2 compensated" fuel oil by TotalEnergies:

> *"Taking into account all circumstances, information on the scope and realization of the advertised compensation is of considerable weight for the consumer's decision [...]. The importance of the information for the consumer's decision already follows from the way the fuel oil is advertised. The advertiser addresses the environmental consciousness of potential customers with the designation of its product as 'thermoplus CO2 compensated' and as 'CO2 compensated fuel oil.' The advertiser emphasizes compensation as the special advantage of the promoted product. The harmful environmental effects of fuel oil and the question of whether and how these can be neutralized are among the factors that the customers addressed by the advertiser will consider in their transactional decision."*[111]

Consequently, information relating to the climate impact of air travel and of supplementary services such as offsetting are liable to influence the average consumer's transactional decisions.

[108] *DUH v TotalEnergies* (n 105), paras 27-28.
[109] Eurostat, 'Climate Change' (2021) Special Eurobarometer 513 6–7..
[110] ibid 39.
[111] *DUH v TotalEnergies* (n 105), paras 24-25.

5.3. Evaluating the misleading potential of climate-related marketing claims by the aviation sector

According to Article 6 UCPD, information that is factually incorrect or otherwise deceptive for the average consumer is misleading, and therefore prohibited. Article 7 UCPD prohibits the omission of material information, and the provision of information in an unclear, unintelligible or ambiguous manner.

This section evaluates the misleading potential of three propositions that underlie most climate-related marketing claims made by the aviation sector: 1) that CO2 emissions from aviation could be "offset" through the use of offset credits. 2) That the use of alternative aviation fuels enables "sustainable" air travel; 3) That air travel can be "sustainable", "responsible" or "green", in either relative or absolute terms.

Claims that offset credits can "offset", "neutralize" or "compensate" CO2 emissions are factually incorrect, and therefore misleading

Airlines frequently make offsetting claims, i.e., they suggest that CO2 emissions from air travel are "offset" , "compensated" or "neutralized" through offset credits.

The average consumer is liable to understand these claims as meaning that the climate harms associated with CO2 emissions from aviation are fully counterbalanced or undone. In this regard, the RCC held in regard to Shell's claim of "CO2 neutral" driving:

> *"The average consumer will generally understand the term 'neutralize' to mean that a certain effect is nullified by exerting an opposite force or effect against it. In relation to Shell's campaign, this means that 'CO2 neutral' will be understood to mean that the harmful effect of CO2 emissions on the environment is neutralized in its entirety by compensatory measures which Shell puts in place to offset them."*[112]

Terms like "CO2 offsetting" and "CO2 compensated" are likely to be understood by the average consumer in similar ways, as the RCC held in its decision on Shell's marketing claim "Compensate CO2 emissions."[113] The underlying premise of offsetting claims is that the climate benefits of offset credits are equivalent to the climate harm associated with the CO2 emissions from air travel, so that the former can effectively offset, compensate or neutralize the latter. Whether this is indeed the case is for the advertiser to prove. In this context, the RCC stated in its decision on KLM's promotion of "CO2 neutral" air travel: "KLM must demonstrate with solid, independent, verifiable and generally recognized evidence that in practice full offsetting of (a passenger's personal share of) a flight's CO2 emissions is guaranteed."[114]

It has been shown in section 1 that offsetting claims do not stand up to scientific scrutiny. The climate benefits that can be attributed to offsetting activities are significantly less certain than the climate harm caused by the CO2 emissions associated with air travel. This means that no equivalence between the two can be assumed. Drawing the same conclusion, the RCC held in its decision on Shell's marketing claim "Drive CO2 neutral":

> *"The complainants have substantiated their challenge to the accuracy of the claim, using a large number of (scientific) publications and climate reports, from reputable bodies. In doing so, they*

[112] *Reclame Code Commissie, Shell - 'Drive CO2 neutral' [2021] 2021/00190* (n 107), para 4.
[113] *Reclame Code Commissie, Shell - 'Compensate CO2 emissions' [2022] 2022/00100* (n 107), para 3.
[114] *Reclame Code Commissie, KLM - 'CO2ZERO' [2022] 2021/00553* (n 109), para 4.

> *have succeeded in at least casting doubt on the comparability of emissions and compensation measures and on (measuring) the effects of these measures. In view of the firmness of the claim 'drive CO2 neutral', it would have been Shell's responsibility to demonstrate (on the basis of e.g. measurement data) that emissions and offsetting are comparable and that CO2 neutrality can actually be achieved. For this purpose Shell should have demonstrated that the effect of Shell's compensatory measures can be measured so precisely that this measurement can serve as substantiation for the claim that by paying an extra cent per liter the adverse effect on the environment with regard to the use of the fossil fuel tanked is guaranteed to be neutralized. Shell has not demonstrated this."*[115]

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 CO2-emitting activities. Similarly, the RCC concluded in its decision on KLM's promotion of "CO2 neutral" air travel:

> *"[T]he average consumer will assume that participation in the CO2ZERO program or booking a KLM Holidays package holiday will result in complete neutralization of the (personal) CO2 emissions of the flight while it has not been demonstrated that this promised result is guaranteed to be achieved in practice. Thus, a too rosy picture is painted of the benefit obtained with KLM's compensation measures and KLM's contribution to the promotion of a clean environment, and the expressions are for this reason misleading [...]"*[116]

Airlines use offset credits to support their offsetting claims. These offset credits are, as already explained in section 1, typically generated according to a standardized methodology, such as the "Verified Carbon Standard" (VCS) by Verra. However, the fact that the offset credits used have been created according to a standardized methodology does not suffice as evidence that the carbon credits actually represent genuine emission reductions or removals that can effectively neutralize the climate harm from CO2 emissions. As shown in section 1, these offset credits are highly controversial, and they have frequently been proven to be ineffective. In this regard, the RCC stated:

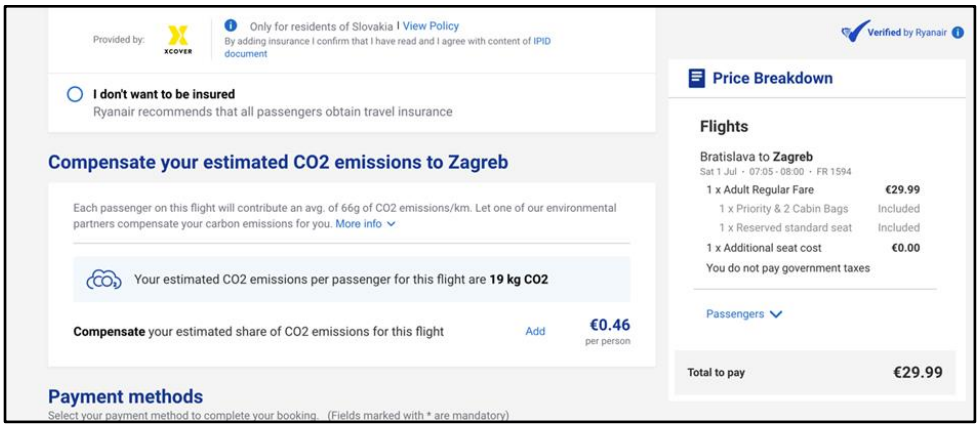
> *"The fact that the reforestation program in which KLM is investing meets certain recognized theoretical standards does not mean that it is beyond doubt that the offset credits purchased by KLM in practice fully and permanently achieve the promised result of offsetting 'to zero.' Therefore, without solid, independent, verifiable and generally recognized evidence that in practice full compensation is also guaranteed, this is not sufficient to serve as substantiation of the absolute environmental claims 'CO2 neutral' and 'CO2ZERO.' The Commission also takes into account that, in general, there appears to be no complete scientific consensus on the degree of offsetting by forest projects."*[117]

Various statements by business leaders from the aviation- and travel industry show that there is clear awareness that the climate benefits of offset credits are not equivalent to the harm caused by air travel. For example, Wizz Air CEO Jozsef Varadi described offset credits and "sustainable aviation fuels" as

[115] *Reclame Code Commissie, Shell - 'Drive CO2 neutral' [2021] 2021/00190* (n 107), paras 6-7.
[116] *Reclame Code Commissie, KLM - 'CO2ZERO' [2022] 2021/00553* (n 109), para 6.
[117] ibid, para 5.

"greenwashing", which do little to reduce the aviation industry's contribution to climate change.[118] United CEO Scott Kirby described offset credits as "a fig leaf for a CEO to write a check", stating that "the truth is that most carbon offsets aren't even real."[119] And the Dutch travel company Sunweb announced: "We are reminded by our customers, by public opinion and by experts that carbon offsetting is a dead end. Experts say it contributes too little to climate change. And customers are not waiting for it."[120]

Over the past years, airlines have increasingly used vague language to describe the effects of offsetting, or have added disclaimers to their offsetting claims. However, these devices do not affect the finding that offsetting claims are misleading for consumers. An illustrative example for the use of disclaimers and of vague language is Ryanair. Ryanair offers CO2 compensation as a supplementary service, using the following marketing claim: "Compensate your estimated CO2 emissions to X. Each passenger on this flight will contribute an avg. of XXkg of CO2 emissions. Let one of our environmental partners compensate your emissions for you." And: "Your estimated CO2 emissions per passenger for this flight are XXkg CO2. - Compensate your estimated share of CO2 emissions for this flight." The service offered to consumers is therefore the (full) compensation of CO2 emissions that are attributable to the individual passenger, and for which a precise estimate is given.

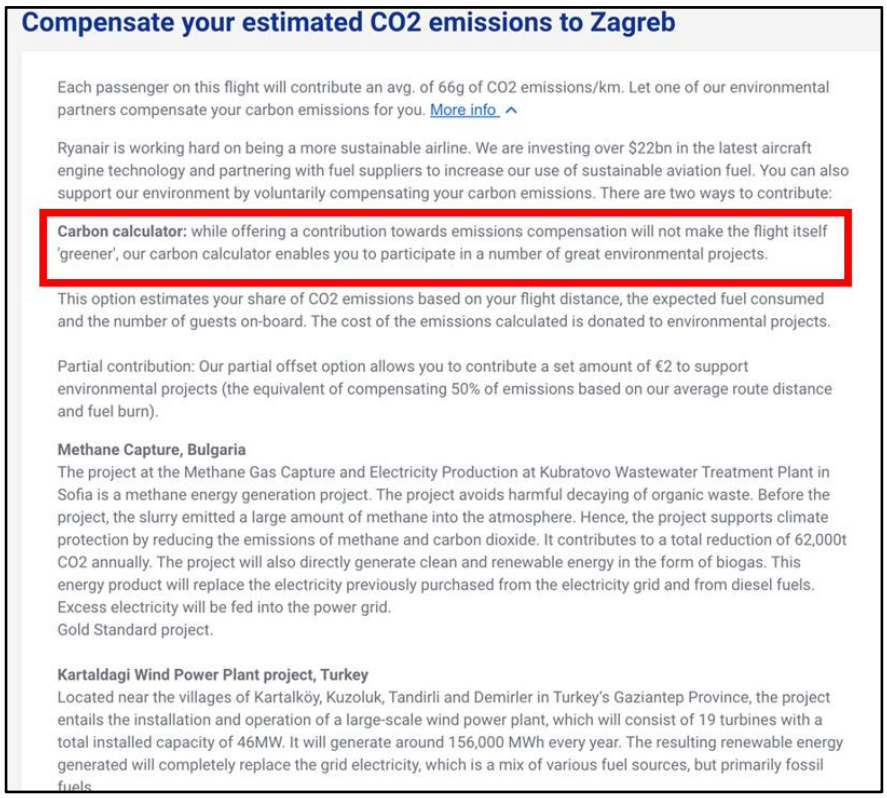


Ryanair offers CO2 compensation as a supplementary service during the booking process (Screenshot 31 May 2023).

[118] 'Wizz Air CEO Knocks Sustainable Fuel, Offsets as "Greenwashing" - Bloomberg' (*Bloomberg*, 30 September 2021) <https://www.bloomberg.com/news/articles/2021-09-30/wizz-air-ceo-says-green-jet-fuel-offsets-are-greenwashing> accessed 30 May 2023.

[119] 'United's Kirby: Carbon Offsets "a Fig Leaf for a CEO to Write a Check"' (*CAPA*, 21 March 2021) <https://centreforaviation.com/analysis/reports/uniteds-kirby-carbon-offsets-a-fig-leaf-for-a-ceo-to-write-a-check-555398> accessed 30 May 2023.

[120] 'Topman van Vakantiegigant Sunweb Ziet Maar Één Toekomst: Minder Vliegen' (*Het Parool*, 3 January 2022) <https://www.parool.nl/nederland/topman-van-vakantiegigant-sunweb-ziet-maar-een-toekomst-minder-vliegen~bd7caec1/> accessed 30 May 2023.



Ryanair's disclaimer (screenshot 31 May 2023).

If the consumer clicks on "more info", the following disclaimer is provided: "While offering a contribution towards emissions compensation will not make the flight itself 'greener', our carbon calculator enables you to participate in a number of great environmental projects." Three observations must be made in regard to the disclaimer. First, the meaning of the disclaimer text is unclear in at least two instances. a) The meaning of the phrase "contribution towards emission compensation" is highly ambiguous. It may suggest that the CO2 emissions of the flight are *not* (fully) compensated, thereby revoking or correcting the headline promise. If this is indeed the meaning of the phrase, then it is unclear what the precise effect of the "contribution towards emission compensation" is. "Contribution towards" could refer to anything from 1% to 99%. b) It is unclear what is meant by the phrase "will not make the flight itself 'greener'." The term "greener" could refer to direct CO2 emissions, to life cycle CO2 emissions, to non-CO2 emissions or even to non-climate sustainability effects, such as air and noise pollution. The disclaimer consequently violates the requirement under the UCPD that environmental claims must be "clear, specific, accurate and unambiguous."[121]

Second, a disclaimer in the fine print cannot revoke or adapt a clear promise an advertiser makes to the consumer through its headline marketing claim. The main promise Ryanair makes to consumers is that its offsetting service will "compensate [their] estimated CO2 emissions." Moreover, it gives a precise estimation of the quantity of CO2 emissions associated with the passenger, and suggests that they will be compensated. The average consumer is therefore liable to understand the claim as meaning that the climate harm caused by CO2 emissions from flying is fully undone. If the disclaimer is interpreted as acknowledging that this promise cannot actually be fulfilled, then the advertiser is making contradictory claims. This violates the requirement that environmental marketing claims must be unambiguous.

[121] European Commission (n 91) 93.

Third, it has been shown that offsetting is a controversial accounting concept that relies on complex assumptions and entails major uncertainties. The average consumer may be assumed to understand the general idea of offsetting, but not its complexities and shortcomings. In this regard the Stockholm district court held in its judgment on offsetting claims by Arla: "Although some consumers may have knowledge of what climate compensation means, the Court considers that the average consumer lacks more detailed knowledge on the subject."[122] The advertiser is consequently subject to a strict obligation to provide the necessary information that enables the average consumer to make an informed transactional decision. A marketing claim that makes a bold and simplistic promise to consumers, only to qualify or revoke it through a vague disclaimer in the fineprint does not meet this requirement. Consequently, Ryanair's offsetting claim, including the disclaimer, must be assumed to be misleading for the average consumer.

The average consumer is liable to understand offsetting claims as meaning that the climate harm caused by CO2 emissions from air travel are fully undone. The advertiser is required to prove this claim. However, offsetting claims do not stand up to scientific scrutiny, because the climate benefits of offsetting activities are not equivalent to the harm caused, so that the former cannot actually offset, compensate or neutralize the latter. Consequently, offsetting claims by the aviation sector have a high potential of misleading consumers. Airlines increasingly use vague language and disclaimers in conjunction with their offsetting claims. These devices tend to increase the misleading potential of offsetting claims, rather than reducing it.

Compensation claims suggest that the climate harm caused by CO2 emissions from air travel are effectively "neutralized", "offset" or "compensated" through offset credits. However, the climate benefits of offset credits are significantly more uncertain than the harm caused by emissions, which means that the former cannot effectively compensate for the latter. Compensation claims are therefore factually incorrect, and thus misleading.

Claims that the use of alternative aviation fuels is "sustainable" are factually incorrect, and therefore misleading.

Airlines frequently claim that the use of alternative aviation fuels is "sustainable", most notably when using the term "sustainable aviation fuels" to describe these alternative fuels. In a climate context, the term "sustainable" must be assumed to refer to the absence of GHG emissions, or to net-zero GHG emissions. The continued emission of GHG is not sustainable because the effects of GHG on climate change are cumulative, meaning that every additional increment of emissions increases the risks associated with climate change. According to the IPCC report, GHG emissions are caused by "unsustainable energy use, land use and land-use changes, lifestyles and patterns of consumption and production." Activities that cause significant GHG emissions can therefore not be described as "sustainable."

As shown in section 1, alternative aviation fuels are not GHG-free. When burned, they cause both CO2 and non-CO2 emissions. While the CO2 emissions of alternative aviation fuels can be significantly lower than those of fossil aviation fuel when calculated on a life cycle basis, they are not zero. Moreover, their calculation is complex subject to significant uncertainties, and outcomes depend on the chosen methodology, which frequently exclude significant sources of CO2 emissions. Non-CO2 emissions of aviation are significant, and their warming impact is up to three times that of CO2. Non-CO2 emissions of

[122] *Konsumentombudsmannen v Arla Foods* (n 106).

alternative aviation fuels may be significantly lower than those of fossil aviation fuel, but the research on the subject is only in early stages. Moreover, alternative aviation fuels are currently available only in very small quantities, and scaling up their production in a sustainable manner is difficult both in the short and medium term. This is illustrated by the fact that the targets for alternative aviation fuels laid down by the RefuelEU aviation initiative are very low.[123] Consequently it is incorrect to describe alternative aviation fuels as "sustainable" in a climate context, and therefore misleading.

Using the term "sustainable" to describe alternative aviation fuels is also incorrect if understood in a broader, non-climate context. As shown in section 1, biofuels have major resource requirements, most notably in land use. These requirements compete with other resource uses, such as food production or reforestation for purposes of climate change mitigation and biodiversity protection. Whether the overall effects of biofuels on sustainability is positive or negative depends on the context. In this context, the IPCC report holds:

> *"It is therefore not possible to precisely determine the scale of bioenergy [...] deployment at which negative impacts outweigh benefits. Important uncertainties include governance systems, future food and biomaterials demand, land use practices, energy systems development, climate impacts, and time scale considered when weighing negative impacts against benefits. [...] [I]mplications of deployment for climate change mitigation and other sustainability criteria are context dependent and influenced by many factors, including rate and total scale. While governance has a critical influence on outcome, larger scale and higher expansion rate generally translates into higher risk for negative outcomes for GHG emissions, biodiversity, food security and a range of other sustainability criteria"*[124]

Consequently, it is factually incorrect to describe the production of biofuels as sustainable also in a non-climate context. Moreover, the average consumer cannot be expected to know that the use of aviation fuel that is promoted as "sustainable" actually causes significant GHG emissions. They also cannot be expected to know that the claimed reductions of life cycle CO2-emissions rely on complex assumptions and calculations that entail significant uncertainties, and typically ignore major adverse climate impacts, for example from land use change. Furthermore, they cannot be expected to know that the claimed GHG reductions from using "sustainable" aviation fuels concern CO2-emissions only. In both scientific and general discourse, terms like "CO2" and "carbon" are frequently employed as a shorthand for all GHG emissions. In this context the Düsseldorf district court held: "[I]n public debate the term CO2 emissions is often used as a proxy for the total emission of climate-damaging greenhouse gases, and greenhouse gas emissions are widely expressed in metric tons of carbon dioxide equivalent [...]"[125] Finally, the average consumer cannot be expected to know that the share of alternative aviation fuels used is very low. Promoting alternative aviation fuels as "sustainable" is therefore liable to be deceiving for the consumer.

That alternative aviation fuels are not "sustainable" is well-recognized in the aviation industry. For example, Wizz Air CEO Jozsef Varadi described the concept of "sustainable aviation fuels" as "greenwashing" in the above-cited interview.[126]

---

[123] 'EU Agrees to World's Largest Green Fuels Mandate for Aviation' (*Transport & Environment*, 25 April 2023) <https://www.transportenvironment.org/discover/eu-agrees-to-worlds-largest-green-fuels-mandate-for-aviation/> accessed 9 June 2023.

[124] Pathak and others (n 15), 7-78 and 7-81.

[125] *DUH v TotalEnergies* (n 105), para 36.

[126] 'Wizz Air CEO Knocks Sustainable Fuel, Offsets as "Greenwashing" - Bloomberg' (n 122).

The claim that the use of alternative aviation fuels is "sustainable" is factually incorrect, as these fuels cause GHG emissions, and also have other adverse environmental impacts.

Claims that air travel can be "sustainable", "responsible" or "green" in either relative or absolute terms are deceptive.

Airlines frequently describe air travel with terms such as "sustainable", "green" or "clean", in either absolute or relative terms. Claiming that air travel is or could be "sustainable", "responsible" or "green" in absolute terms are factually incorrect as it causes significant GHG emissions. It has already been shown at length that none of the strategies employed by the aviation sector are currently capable of preventing these emissions. Offsetting does not actually reduce the emissions of the aviation sector. Moreover, its benefits are not equivalent to the harm caused by air travel, so that offsetting cannot actually be assumed to offset, compensate or neutralize its GHG emissions. Alternative aviation fuels cause both CO2 and non-CO2 emissions when burned. That their CO2 emissions are lower than those of fossil fuel when calculated over their life-cycle does not change this fact. Moreover, these calculations frequently exclude significant climate impacts related to the production of alternative aviation fuels. While efficiency improvements can reduce emissions, section 1 showed that these reductions have been outweighed by increases in air travel in the past, and are also projected to be outweighed in the future. As air travel causes significant GHG emissions, and as there are no strategies available to decarbonize the aviation sector in the short- and medium term, it is factually incorrect to claim that air travel is, or could be "sustainable, "responsible" or "green" in absolute terms.

Airlines also use terms such as "sustainable", "green" or "responsible" in relative terms to describe air travel. For example, Air France asks consumers to "join us in making air travel more responsible." Lufthansa states that it "want[s] to continue connecting people [...] but in a more sustainable way." Wizz Air and Norwegian claim that their flights have "lower CO2 emissions" than the industry average.

These relative (or "comparative") claims are liable to be deceptive for consumers for at least four reasons. First, air travel is responsible for a significant amount of GHG emissions, and the sector is "difficult to decarbonize" within the short and medium term. The only viable solution to reduce emissions from aviation is to reduce air travel. The average consumer cannot be expected to know that the impact of strategies promoted by airlines such as offsets, alternative aviation fuels and efficiency improvements have only a minor impact on the overall climate harm caused by aviation. According to the Commission Guidance, highly polluting industries must "make it clear to the consumer in their environmental claims that the product has an overall negative impact on the environment."[127] Promoting air travel as "more sustainable", "more responsible" or having "lower CO2 emissions" deceives consumers about the fact that GHG emissions from the aviation sector are significant, and can only be reduced in a meaningful manner by reducing air travel.

Second, when airlines claim that they can make air travel "more sustainable" or "more responsible", or that their flights have "lower CO2 emissions" than a chosen benchmark, they refer to CO2 emissions only. However, aviation also causes non-CO2 emissions, and their warming impact is up to three times that of CO2. By referring to CO2 emissions only, airlines do not address the most relevant environmental impact of air travel, which is deceptive for consumers.[128]

[127] European Commission (n 91) 96.
[128] Guidance, 100, 103

Third, when airlines claim that air travel is "more sustainable" due to the use of alternative aviation fuels, they typically do not address the fact that the quantity of alternative aviation fuels used is still minuscule in comparison to fossil aviation fuel. The average consumer is therefore liable to overestimate the environmental benefits of the promoted use of alternative aviation fuels.

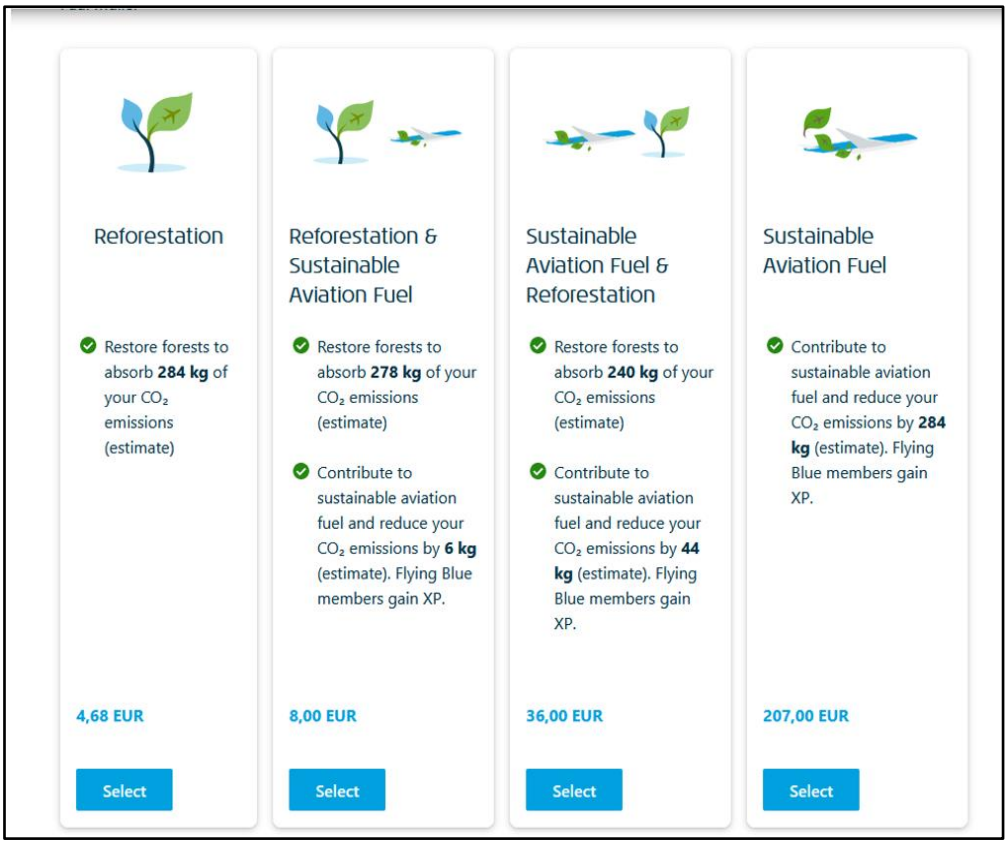
Fourth, comparative environmental claims by airlines exclusively use the aviation sector as the benchmark, even though alternative means of transport are often available. The Commission Guidance states in this regard:

> *"Consumers' mobility needs may be met not only through a flight but with other means of transport, depending on the route. Therefore, a comparison of average passenger-km emissions between rail, road and air modes would prevent misleading consumers that their choice is "green", when viable alternatives with lower emissions exist."*[129]

Statements by business leaders from the aviation and travel industry show that there is full awareness that "sustainable" air travel is factually impossible, and that the only available strategy to reduce emissions from the aviation sector is to reduce air travel. The CEO of the Dutch travel company Sunweb and ex-CEO of airline Transavia Mattijs ten Brink stated: "We are at a turning point. And if I'm wrong, that turning point should come as soon as possible. I say that both as Mattijs and as the boss of Sunweb. The number of kilometers flown has to come down no matter what."[130] And: "My generation will not live to see completely clean flying. Initiatives with biofuel and electric flying are incredibly important but not the big answer. The only solution is to fly less."

Airlines are increasingly adding disclaimers to their climate-related marketing claims that recognize the harm caused by aviation in some form. However, these disclaimers are usually creating a contradictory overall impression, therefore adding to the misleading potential of climate-related advertising claims by the aviation sector. An illustrative example is KLM. KLM was subject to legal challenges against the promotion of its service "CO2ZERO", and its claims of "CO2 neutral" air travel. In response to these challenges, KLM altered its marketing claims, and added a number of disclaimers. KLM now promotes the "CO2 Impact Programme." According to KLM, passengers can get their CO2 emissions "absorbed by reforestation" (i.e., with offsetting credits) and/or "reduced by SAF" (i.e., alternative aviation fuels). KLM provides both a numerical estimation of the associated CO2 emissions per passenger, and the estimated amount of CO2 "absorbed" or "reduced." This creates the impression that the harm caused by CO2 emissions from aviation is outbalanced through offsetting credits and alternative aviation fuels. This understanding is also reinforced through visual means, which show green leaves emitted by an aircraft engine, and trees growing leaves with a superimposed aircraft icon.

[129] European Commission (n 91) 103.
[130] 'Topman van Vakantiegigant Sunweb Ziet Maar Één Toekomst: Minder Vliegen' (n 124).



KLM represents the climate impact of so-called "sustainable aviation fuel" with green leaves emitted by the aircraft engine, and the effects of reforestation as green leaves with a superimposed aircraft icon (screenshot 30 May 2023).

At the same time, KLM makes a number of disclaimers that recognize the harmful climate impact of aviation. For example, it states: "Flying is not sustainable. At KLM, we invest in a series of initiatives to help reduce our footprint, and you can also contribute by joining our CO2 Impact Programme." And: "As an airline, we realize that our industry is far from sustainable. We are committed to reducing CO2 emissions, step by step, introducing operational improvements, more fuel-efficient aircraft and air-rail connections. We hope to contribute the most by replacing our fossil-based jet fuel with Sustainable Aviation Fuel (SAF)." And: "Our reforestation programme lets you compensate (part of) your flight's environmental impact. It doesn't impact the direct emissions of the flight itself, but your contribution will help restore forests that absorb CO2." The following four observations can be made in regard to the disclaimer. First, KLM continues to promise to consumers that the harm caused by CO2 emissions from air travel is effectively counterbalanced through offsetting or alternative aviation fuel, which is factually incorrect. Added textual disclaimers recognizing the environmental harm of aviation cannot revoke the headline promise made to consumers. Second, the graphics showing green leaves emitted from the aircraft engine create the impression that alternative aviation fuels do not have negative environmental impacts or even positive impacts, which is also factually incorrect. Third, KLM suggests that alternative aviation fuels and efficiency increases could play a significant role in making aviation sustainable, which is also factually incorrect. Fourth, each statement that recognizes the climate harm caused by aviation is directly followed by a statement suggesting that the harm from CO2 emissions could be reduced. They thereby create the impression that the main environmental harm caused by air travel is limited to its CO2 emissions, which is also factually incorrect.

Taken together, KLM's marketing claims and disclaimers create a contradictory impression: on the one hand, KLM correctly states that air travel is unsustainable. On the other hand, KLM incorrectly suggests that its CO2 emissions can effectively be outbalanced through offsetting, and that other strategies such as efficiency improvements and alternative aviation fuels contribute significantly to the decarbonization of aviation. It also incorrectly insinuates that CO2 emissions are the main, or even the only environmental harm caused by air travel. Such contradictory environmental messaging is liable to have a deceptive impact on the average consumer and is therefore prohibited.

Claims that air travel is or could be "sustainable, "green" or "responsible", in either absolute or relative terms, are factually incorrect or otherwise deceptive. Air travel cannot be described as "sustainable" or similar absolute terms because it causes significant GHG emissions, which is unsustainable. The use of relative terms suggesting an environmental benefit of air travel is deceptive, inter alia because it obscures the fact that the only effective strategy to decarbonize the aviation sector is to fly less.

Conclusion

Airlines frequently make environmental marketing claims, which directly or indirectly refer to the climate impact of aviation. This study evaluated the legality of these claims under the UCPD.

The main findings are: 1) the claim that offset credits can actually "offset, "compensate" or "neutralize" the climate harm from CO2 emissions is factually incorrect, and therefore misleading; 2) the claim that alternative aviation fuels are "sustainable" is factually incorrect, and therefore misleading; 3) the absolute claim that air travel can be "sustainable", "responsible" or "green" is factually incorrect, and therefore misleading. Relative claims that air travel can become "more sustainable", or that certain airlines or flights have "lower CO2 emissions" are deceptive for the average consumer.

As one or more of these three propositions underlie most, if not all climate-related marketing claims by the aviation sector, it must be concluded that the misleading potential of such marketing claims is systemic in nature. It is therefore recommended that the aviation sector abstains from making climate-related marketing claims completely.


GREEN LYING
#GreenFlyingIsLying