

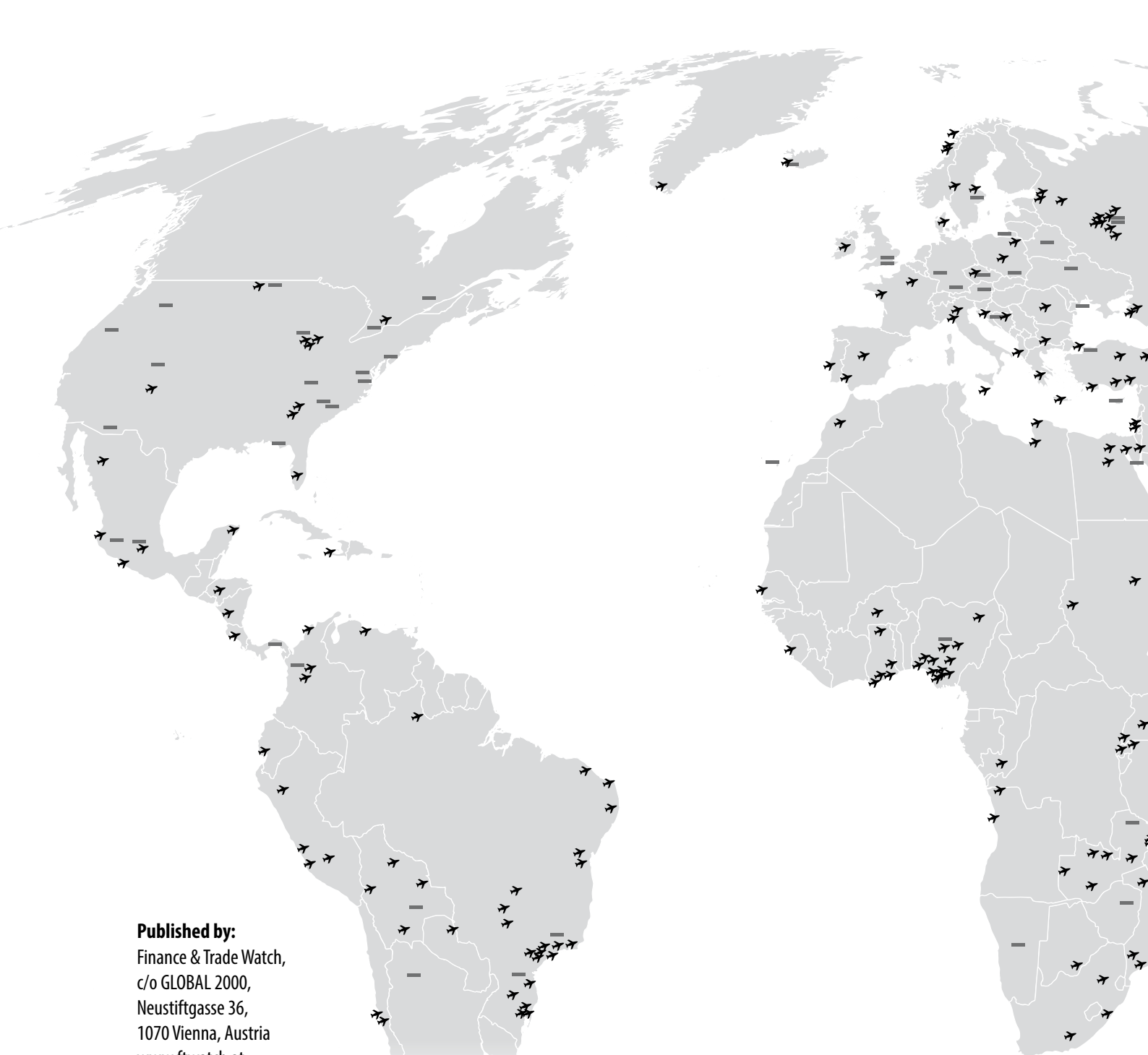
The Illusion of Green Flying



Aviation is the fastest way to the climate crisis. Yet air travel is growing rapidly, with hundreds of new airports currently planned – despite local resistance and an urgent need to abate the climate crisis.

The aviation industry has announced its intention to become greener in the future. Do its strategies deliver on their promises? Is carbon-neutral growth a realistic goal?

Or do we need to set a limit – a red line – for air travel?



Published by:

Finance & Trade Watch,
c/o GLOBAL 2000,
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Print: Gugler, Vienna

Release: November 2017

Translation: Christopher Hay

Download: www.ftwatch.at/flying_green (English) and www.ftwatch.at/gruenes_fliegen (German)

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Many thanks to Jutta Kill for the support with the writing.

Thanks to Paco Yoncaova for the help with the research on the diagrams. And thanks to everyone else for the helpful feedback.

Thanks for the financial contribution by the Heinrich Böll Foundation, Lush and the Dreikönigsaktion Austria.



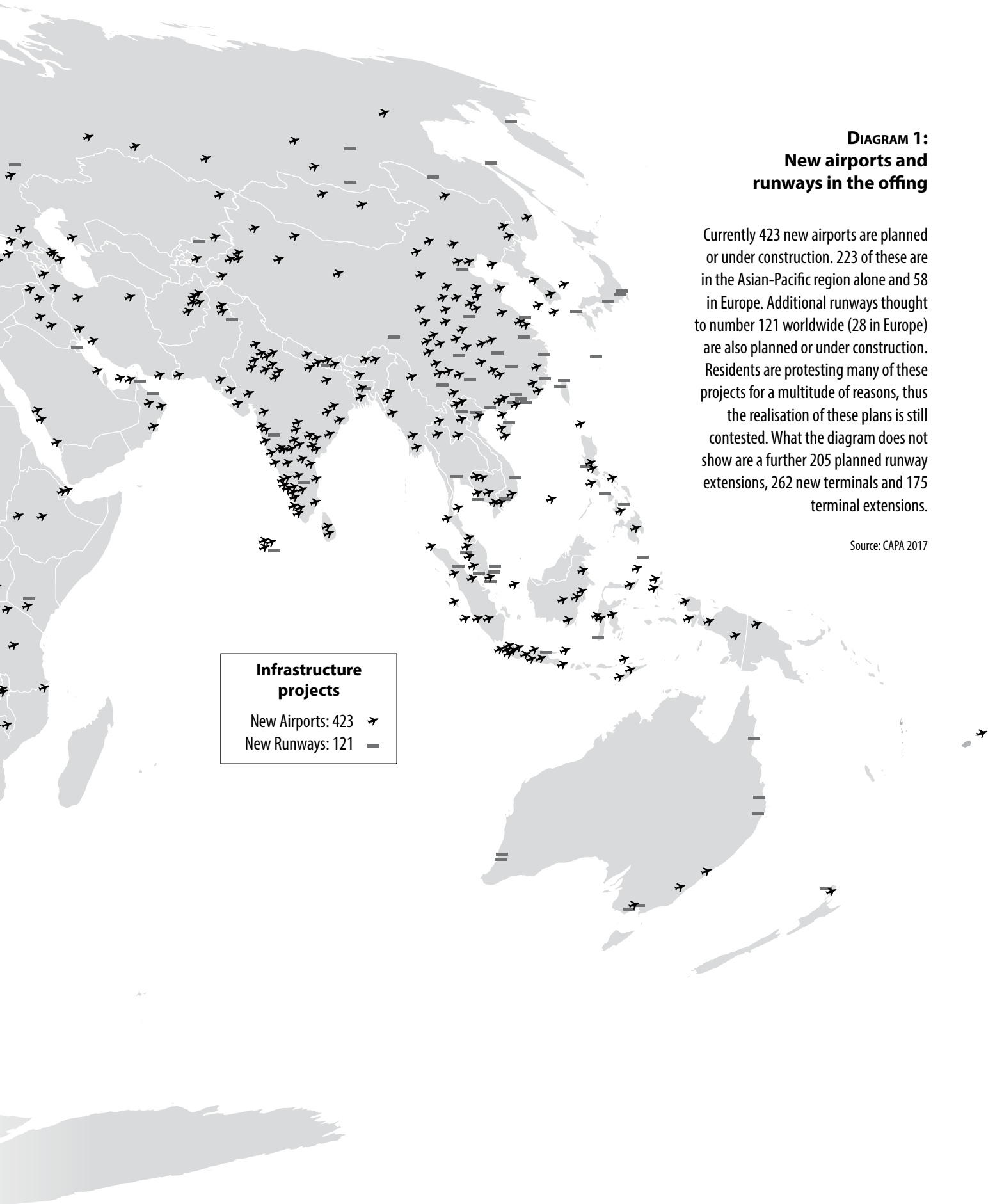
DIAGRAM 1:
New airports and
runways in the offing

Currently 423 new airports are planned or under construction. 223 of these are in the Asian-Pacific region alone and 58 in Europe. Additional runways thought to number 121 worldwide (28 in Europe) are also planned or under construction. Residents are protesting many of these projects for a multitude of reasons, thus the realisation of these plans is still contested. What the diagram does not show are a further 205 planned runway extensions, 262 new terminals and 175 terminal extensions.

Source: CAPA 2017

Infrastructure
projects

New Airports: 423 ✈
New Runways: 121 —



Headlong growth in a green guise

Right now, at this very moment, at least half a million people are in the air.¹ Over the past 25 years, air travel has transformed from a luxury to a common means of transport. Low-cost carriers have made it affordable to quickly discover the world and have spawned an ongoing boom in weekend breaks by air. For a growing middle and upper class, this convenience has become a seemingly natural part of their holiday plans, of their choice of where to live and work and which relationships they foster. But how normal is it really to fly, and for whom? And who bears the cost?

Aviation is the mode of transport with the biggest climate impact by far: per 1000 passenger-kilometres travelled, a flight generates on average 18 times as much carbon dioxide (CO₂) as a journey by rail (see DIAGRAM 5). Yet, air travel is growing faster than any other sector. The industry has successfully resisted emission reductions in absolute terms because any such limitation would impact on the

industry's profits. This is why airlines, airports, transport ministries and lobbyists are claiming to have found the perfect solution: *green growth*.

High in the sky: an industry ascendant

From 1990 to 2010, global CO₂ emissions rose by an estimated 25%. Over the same period, the CO₂ emissions of international aviation rose by more than 70%.² Within the European Union, as elsewhere, emissions from aviation rose more rapidly than those from other sectors of the economy.³

The number of aircraft and the number of passenger-kilometres flown is expected to double over the next 20 years – entailing hundreds of new infrastructure projects around the world (see DIAGRAM 1). The international aviation industry anticipates annual growth of 4.3% throughout the next decades.⁴ This could cause the greenhouse gas emissions from aviation to increase four- to eight-fold by 2050.⁵

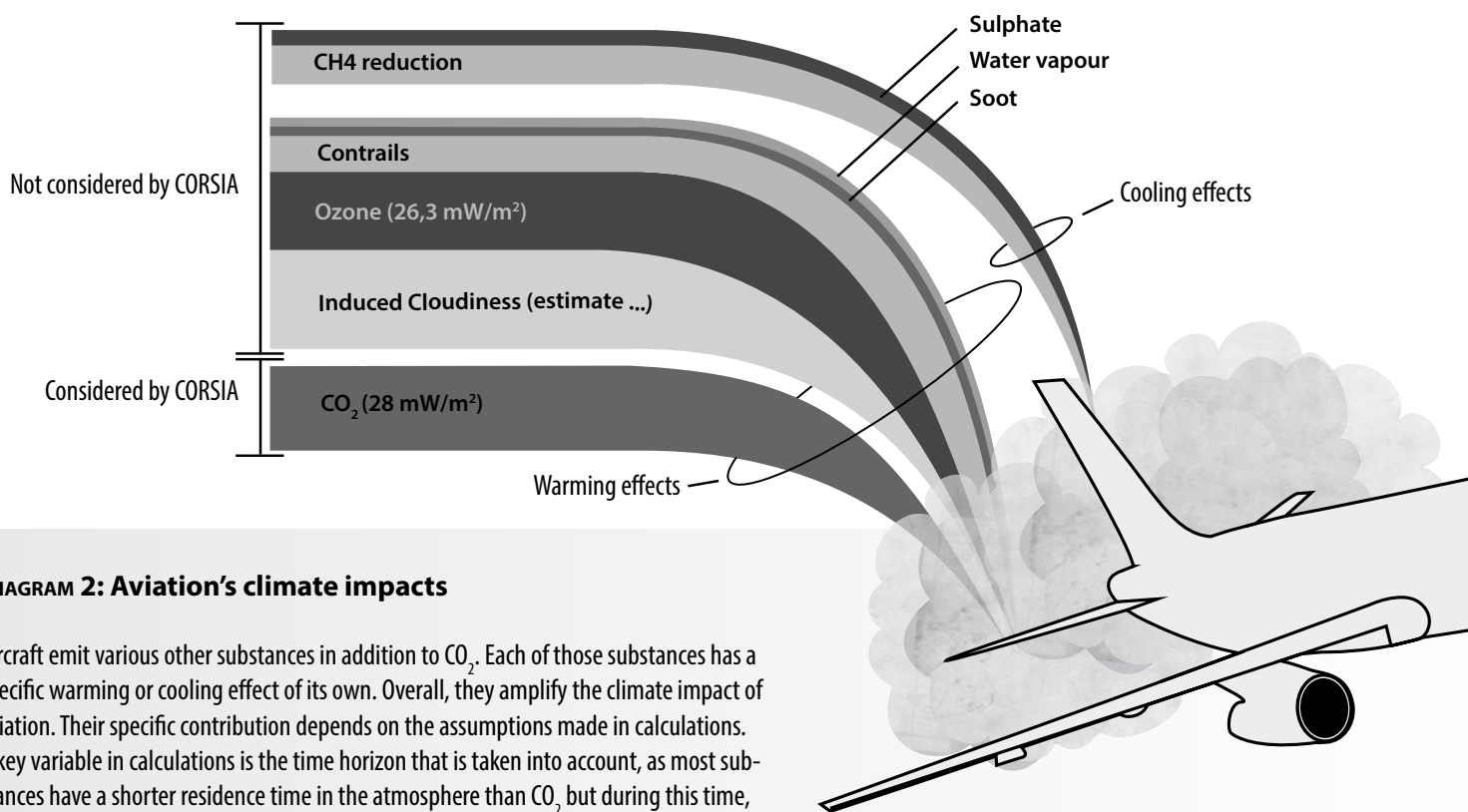


DIAGRAM 2: Aviation's climate impacts

Aircraft emit various other substances in addition to CO₂. Each of those substances has a specific warming or cooling effect of its own. Overall, they amplify the climate impact of aviation. Their specific contribution depends on the assumptions made in calculations. A key variable in calculations is the time horizon that is taken into account, as most substances have a shorter residence time in the atmosphere than CO₂ but during this time, their impact on the climate is particularly strong. Austria's Environment Agency recommends assigning a Radiative Forcing Index (RFI) factor of 2.7 to these additional effects, meaning 2.7 times the impact of CO₂. Germany's Federal Environment Agency uses an Emission Weighting Factor (EWF) of 2.

Sources: Lee/Fahey et al. 2009, UBA Deutschland 2012, UBA Deutschland 2016, UBA Österreich 2016

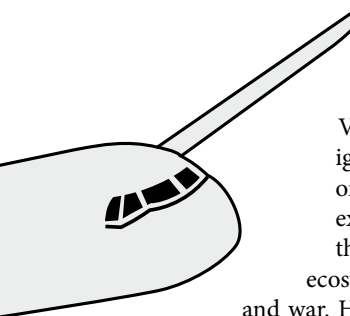
Aviation: the fast way to fry the planet

The problem is that every tonne of CO₂ emitted causes about three square metres of Arctic summer ice to disappear, as a recent study has found.⁶ For instance, if one person flies from Vienna to the Canary Islands and back, about four-and-a-half square metres of Arctic ice melt as a result.⁷ And climate change is not just a matter of glaciers and polar bears. It is not a marginal environmental nuisance. Climate change means rising sea levels and regions around the world that will become uninhabitable. It means increased risk of forced displacement of human populations, extreme weather events, potential health crises, threats to agriculture and the food supply, and conflicts over access to water and fertile land.⁸ Climate change is increasingly becoming climate crisis – and thus a crisis for local as well as global economies, threatening livelihoods and human lives.

Industry representatives like to point out that emissions from aviation account for only 2% of global CO₂ emissions, and that international flights account for only 1.3%. What they conveniently omit is that the share of emissions from the aviation sector is increasing rapidly. In a 2015 report to the European Parliament, the research organisation Öko-Institut warns that CO₂ emissions from international aviation may reach a share of 22% of global emissions by 2050.⁹ An even larger share is probable for the aviation industry in some individual countries: For the United Kingdom, projections indicate that if the goal of limiting global warming to 1.5 degrees is taken seriously, and the controversial expansion of London's Heathrow Airport goes ahead anyway, aviation will consume up to 71% of the national emissions budget in 2050.¹⁰

It is not just about CO₂

The aviation industry not only ignores its growing share in emissions compared to other sectors. Its statistics and climate strategies also fail to mention that CO₂ is just one dimension of the climate impact of flying (see DIAGRAM 2). The latest scientific studies estimate that in 2005, aviation's contribution to human-induced climate change amounted to 5%.¹¹



Various other impacts of aviation are often ignored: The combustion of fossil fuel is not only a principal cause of global warming; its extraction and transport also contributes to the broader environmental crisis through ecosystem degradation, geopolitical conflict and war. Huge amounts of materials such as metals and cement will be consumed if the plans to build hundreds of airports and double the fleet of aircraft over the next 20 years from 21,633 to 43,560 are carried out.¹²

And that is not all: People living near airports are exposed to higher health risks, notably high blood pressure and heart disease – some of the effects of aircraft noise and high particulate levels in ambient air.¹³ The planned additional airports and runways degrade ever more habitats of people, animals and plants (see on this p. 21-22). The economic impacts on host regions are not all positive – transport infrastructure and hotel chains displace small shops and farmers, while real estate prices rise.¹⁴ At the same

time, protests mount in regions inundated by mass tourism driven by cheap flights and luxury cruise travel. Water reserves dwindle under the dual pressure of climate crisis and tourism. Landfills grow, meanwhile culture becomes an attraction and a commodity.¹⁵ The annual number of passengers carried by airlines totals 3.6 billion¹⁶ – but this does not mean that half of the world's population flies.

Who flies, who does not? Inequity in airspace

At the turn of the millennium, less than 5% of the world's population had ever sat in an aircraft.¹⁷ Latin America and Africa account for only 11% of passenger traffic by air, while North America and Europe together account for half, despite their smaller populations.¹⁸ Products such as electronic goods, perishable foods and semi-luxuries, cut flowers and 'fast fashion' products are increasingly being carried by air and are mostly consumed in the Global North.¹⁹

Within countries, too, there are major disparities in who uses air transport and who does not. These are linked directly to income disparities within societies. It is therefore less paradoxical than it appears at first sight that voters of The Greens are the most frequent flyers when compared to voters of other parties in Germany.²⁰ They tend to be among those with higher incomes. Those in the highest income bracket in Germany fly 6.6 times on average per year, those in the lowest 0.6 times – the latter still being a very high figure on a global scale.²¹

So, flying is by no means normal. Rather, this fossil mobility system is highly exclusive and imperial: those who travel by plane or opt for certain products do so at the expense of others: residents exposed to noise and particle pollution from the planes, local ecosystems, future generations and of those in the Global South who are already bearing the brunt of the impacts of climate change.²²

EXAMPLE BOX 1:

London City Airport: who bears the consequences?

On 6 September 2016, a dozen activists of the Black Lives Matter group blockaded a runway at London City Airport. Their message: 'Climate Crisis is a Racist Crisis'. This act of civil disobedience was directed against the expansion of the business airport, which is located in a workers' district of London. People living in the flight paths of the airport – many of whom are Black British Africans – have incomes that are far lower than those of the passengers in the aircraft above.¹ In Great Britain, Black British Africans are exposed to particulate levels in the air they breathe that are 28% higher than those to which white Britons are exposed, for white people are more likely to be able to afford housing in less polluted areas.² Black Lives Matter also highlighted through its action that Great Britain contributes substantially to exacerbating the climate crisis, yet is scarcely affected by its impacts. Africa, in contrast, is the continent most jeopardised by the climate crisis.³

1 The Guardian 2016

2 The Endsreport 2011

3 UN 2006



Making flying artificially cheap

The aviation industry lobby claims that lower prices make flying more democratic. The costs of air travel are 60% lower today than they were in 1970 – through efficiency gains, low-cost carriers, wage dumping and, above all, sector deregulation from the 1980s onwards.²³ While the aviation industry is making ever greater profits, the pressure on its employees is mounting. This sparked a protest on 1 June 2016 by staff at more than 30 airports worldwide. In the USA, for instance, the wages of airport staff fell by 19% between 1991 and 2001. Qualified staff are increasingly being replaced by inexperienced, cheaper part-time labourers. While quality and safety decline, stress and burnout are on the rise.²⁴

Another major reason for the falling prices of air travel is that states massively subsidise the sector: aviation kerosene is the only fossil fuel apart from maritime heavy oil that is not taxed. Many governments abstain from levying value-added tax on tickets and property tax on airports. In the European Union alone, the losses in state revenue due to such subsidies of aviation amount to 30 to 40 billion Euros annually.²⁵

Also aircraft manufacturers and airlines benefit from major subsidies.²⁶ Everyone – including those who don't fly – pays for these subsidies in order that the mode of transport of the better-off remains cheap. All the downsides set out above – from climate change to population displacement by airport expansion – raise the question of whether the goal really can be to make frequent flyers out of everyone, or whether air travel in fact needs to be limited.

Lifting the green mask: this brochure in brief

On the following pages, we examine various strategies advertised currently by ICAO (the United Nations specialised Organisation for International Civil Aviation, see INFO BOX 1), airlines and airports as their contribution to climate change mitigation. But do they actually tackle the problems generated by aviation as a mode of mass transport? Do they point the way to a future we want? The brochure shows that the aviation industry's strategies rely above all on technological innovations and green fuels – expectations that prove to be highly unrealistic (p. 7). For that reason, the offsetting of emissions is set to play an increasingly important role in the industry's climate strategies (p. 9). This is being pursued at various levels: UN bodies promote the 'carbon-neutral growth' of international aviation (p. 11), airports advertise themselves increasingly as green and sustainable (p. 14), and individuals are offered ostensibly climate-neutral flights for a small mark-up (p. 17).

This brochure reveals that the minor efficiency gains and emissions savings delivered by such measures will not prevent the massive rise in emissions that the envisaged growth rates will produce. The mounting demand for agrofuels and offset credits presents a serious risk that injustice will be amplified and new ecological problems and conflicts will be generated. There need to be – and there are – alternative paths, as highlighted by initiatives that tackle the causes of climate change at root and seek effective climate action in aviation by reducing overall flights (p. 21).

Footnotes

- 1 The Guardian 2014 – This number was reported in 2014; in view of the growth in flights, we can assume that in 2017 the current number is just as high or higher.
- 2 Öko-Institut 2015 a: 12
- 3 EEA [n.d.]
- 4 ATAG 2016: 18; ICCT 2017: 1
- 5 European Commission 2017
- 6 Notz/ Stroeve 2016
- 7 Atmosfair [n.d.]
- 8 Watts et al. 2017
- 9 Öko-Institut 2015 a: 28
- 10 Carbon Brief 2016
- 11 Fahey/ Lee 2009
- 12 ATAG 2016: 66
- 13 Schlenker/ Walder 2016
- 14 Bridger 2015; Gössling/ Peeters 2009
- 15 The Guardian 2017; TWN 2017
- 16 ATAG 2016: 5
- 17 Wuppertal Institut 2005: 81; Gössling/ Peeters 2007: 408
- 18 ATAG 2016: 5
- 19 ATAG 2016: 21
- 20 Heinrich-Böll-Stiftung / Airbus 2016: 14 f
- 21 Aamaas/ Borken-Kleefeld 2013
- 22 ILA-Kollektiv 2017
- 23 ATAG 2016: 22
- 24 ITF 2009; ITF 2016; Airports United 2016
- 25 Korteland/ Faber 2013
- 26 Gössling/ Fichert 2017

Fantasy technologies and *green kerosene*

In late July 2016, the SI2 solar plane's completion of the final stage of its round-the-world trip sent the champagne corks popping. The project message was clear: flying can be clean and silent. But this light aircraft only had space for its two pilots. Taking this successful round-the-world flight as heralding the advent of solar-powered passenger and freight aircraft would be wide of the mark. But in recent decades, the aviation industry and the media alike have seized on these attention-grabbing events to fuel hopes of large-scale innovations in green aviation. So, how much truth is there behind the stories of super-efficient aircraft or the proposed substitution of 'sustainable alternative fuels' for petroleum-based kerosene?

Flights of fancy

A 2016 study analysed media reports to identify the dominant trends in the discourse about innovations in aviation technology.¹ It concluded that promises of green aviation generally turn out to be illusions, and that expectations about the promised technologies maturing keep being pushed further into the future. Translating these concepts into reality would require quantum leaps in technology: radically new, low-weight energy storage systems to allow electrification of aircraft, for example, or superconductivity. Even the industry itself is now predicting that it will take at least 25 years to bring this type of innovation to technological maturity. And as aircraft themselves have a lifespan of around 25 years, energy-intensive planes are likely to remain in use until at least the 2060s – and perhaps beyond, if the hoped-for quantum leaps do indeed prove to be illusions and far out of reach.² The planned efficiency gains of around 1.5% p.a. in kerosene use in new aircraft might well materialize. However, efficiency gains tend to be driven by cost reductions and competitiveness rather than an acknowledgement of ecological limits. Efficiency gains therefore usually lead to intensified production and growth. This is called the 'rebound effect'. Given that the industry's annual growth rate is currently 4.3%, savings from efficiency gains barely scratch the surface.³

Food in the fuel tank?

As realistic technological innovations can only achieve minimal reductions, the aviation industry is placing its hopes in the increased use of biokerosene – an agrofuel derived from biomass – as a substitute for climate-damaging petroleum-based kerosene. Until recently, ICAO (see INFO BOX 1) was still planning for 50% replacement of conventional aviation fuel with so called 'sustainable alternative fuels' by 2050.⁴ This would mean that international aviation has to burn three times more agrofuels in a year than the entire transport sector does at present.⁵ In October 2017, 97 organisations sent an open letter to ICAO, condemning the plan and showing how unrealistic and dangerous it was.⁶ Faced with opposition from civil society and some of its own member states, ICAO has now dropped the proposal. There are no longer any specific tar-



INFO BOX 1:

ICAO – a United Nations specialised agency on international aviation

The International Civil Aviation Organization (ICAO) was set up by 52 states in 1944 in order to develop a governance regime for the world's civil aviation sector. The founding members adopted the Convention on International Civil Aviation (Chicago Convention), which establishes standards and recommended practices for the industry.

Those are not legally binding, but member states are expected to treat them as such. ICAO, which now has 191 member states, became a UN specialised agency in 1947 and is headquartered in the Canadian city of Montreal.

Almost all the countries participating in the UN climate negotiations are ICAO members and, within ICAO, often adopt positions which conflict with their commitment to keep global warming to 1.5-2 °C in accordance with the Paris Agreement. Organisations that lobby on behalf of the aviation sector have a strong position inside ICAO.

Although they do not have formal status as ICAO members, they send experts to working groups, where they have considerable influence in discussions and decision-making. Aircraft builders, for example, proved to be highly influential in the working groups which, in 2016, adopted unambitious carbon standards for new aircraft: they provided all the data and insisted on strict confidentiality in the debates.

The International Coalition for Sustainable Aviation (ICSA) is the only civil society group accredited as an observer by ICAO. The alliance of environmental organisations, including WWF and the US-based group Environmental Defense, supports ICAO's proposal for a system of traded carbon offsets to tackle aviation emissions, as it believes that it is 'better than nothing'. There are various restrictions on the information that may be shared by observers. Positions adopted by ICAO members and arguments presented by industry may not be made public. The information released by ICAO itself about the progress of negotiations is sparse, and in many cases, is only published retrospectively, after decisions have been taken.

gets, but the ambition is still to replace the highest possible proportion of conventional fuel with alternatives.⁷ Shortly afterwards, ICAO removed ten from originally twelve sustainability criteria for bio jet fuel, such as rules on land rights, food security, labor rights and biodiversity protection.⁸

»» *Even at the current level of consumption of agrofuels, the negative impacts are impossible to ignore: harmful industrial monocultures, land grabbing, loss of food sovereignty and rising food costs.*⁹«

In response to this situation, industrial consumers are now emphasising that they are only prepared to promote 'sustainable alternative fuels'. But less harmful fuels from agricultural waste (e.g. maize residues and straw) are already in short supply and are certainly not enough to satisfy the high demand from a variety of sectors.¹⁰ And although the aviation industry often draws attention to the development of algae-based fuels, this too is a distant hope at present, and would also require vast cultivation areas. Meeting the EU's entire kerosene needs from algae would require a production area roughly the size of Portugal.¹¹ What's more, if genetically modified algae are grown in the sea, this would likely have devastating impacts on the marine ecosystem.¹² Given that substitution with genuinely sustainable fuels is not a realistic prospect, there is a risk that kerosene blends

will, in reality, consist mainly of highly controversial raw materials such as palm oil.

Less climate-friendly than assumed

What's more, recent studies show that not all alternative fuels are better for the climate than conventional kerosene.¹³ Many agrofuels (notably maize and sugar cane) offer negligible emissions reductions. Oilseed crops such as palm oil, rape, jatropha and soya produce much higher emissions once land-use change, associated emissions, fertiliser and pesticide use, transport and processing are factored. For example, the burning of fuels containing palm oil produces up to seven times more greenhouse gases than petroleum-based kerosene.¹⁴ Oil palm plantation monocultures often involve the destruction of rainforest, causing biodiversity loss.

No doubt about it: with or without agrofuels, international aviation is likely to badly fail in its goal of *carbon-neutral growth*. The offset concept is therefore the last strategy for the aviation industry to maintain the illusion that flying can ever be *green*.

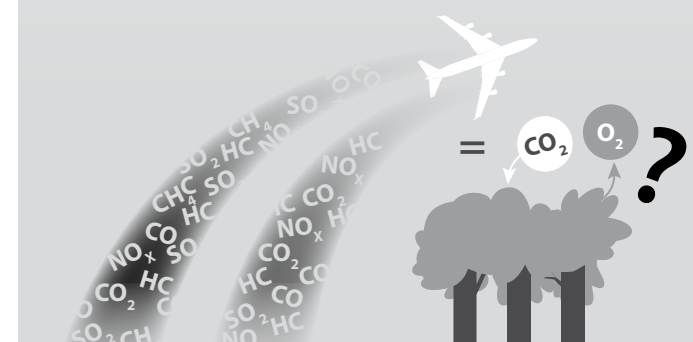
Footnotes

- 1 Peeters/ Higham 2016
- 2 Heinrich Böll Stiftung/Airbus 2016: 16 f
- 3 ATAG 2016: 18, 29
- 4 ICAO 2017
- 5 Biofuelwatch 2017 b
- 6 Biofuelwatch 2017 b
- 7 Transport & Environment 2017 b
- 8 Transport & Environment 2017 c
- 9 European Commission 2013; Boysen/ Lucht 2017; Malins 2017
- 10 Valin/ Peters et al. 2015; ICCT 2017: i, 9 ff
- 11 Heinrich Böll Stiftung/ Airbus 2016: 13
- 12 Biofuelwatch 2017 a; Friends of the Earth 2017
- 13 Valin/ Peters et al. 2015; ICCT 2017
- 14 ICCT 2017: 9 ff

DIAGRAM 3

Offsetting: comparing apples with pears

The market for carbon credits enables forests and their carbon storage function to be placed on the same footing as aviation emissions. At least on paper.



Offsetting emissions: a licence to pollute

» *With the growth in air travel demand forecast to outstrip fuel efficiency improvements, the aviation industry's CO₂ emissions goals can only be achieved through the purchase of carbon offsets.*«

Green Air Online 1

For years, the aviation industry dragged its feet over concrete plans for reducing greenhouse gas emissions in international aviation. Finally, in October 2016, the 39th Assembly of ICAO adopted a package of measures entitled CORSIA, the Carbon Offsetting and Reduction Scheme for International Aviation (see p. 11). At the heart of this climate strategy is the concept of offsetting emissions through savings by others elsewhere. Airports (see p. 14) and airlines (see p. 17) also engage in offsetting and advertise green, carbon-neutral flights.

Offsetting – what's behind it?

The offsetting of emissions is usually outsourced to the countries of the Global South, where most offsetting projects are located. Those projects involve cutting emissions or using waste heat in industrial facilities, generating energy from methane (which is produced in large quantities in industrial livestock farming), or building hydropower plants that claim to prevent production of energy from fossil fuels. Forest conservation projects and operators of tree plantations can also sell such offset credits representing supposedly achieved emission savings to the aviation industry. Credits from organisations that sell or distribute climate-friendly cooking stoves to women in rural parts of the Global South are popular, too (see p. 17).

Such offsetting projects often cause conflict locally or even lead to what has become known as 'green grabbing'.² Offsetting is unjust: To enable a small portion of the world population to continue taking more and more flights with a clear environmental conscience, others have to reduce their greenhouse gas emissions. Yet these others are people whose emissions are often already very low, whose historical contribution to climate change is negligible and who are often receiving the worst impacts of the climate crisis on their lives.³

A modern sale of indulgences

» *Aircraft pollute the atmosphere, but, with a small part of the cost of the ticket, they will plant trees to compensate for part of the damage created. [...]. This is hypocrisy!*«

Pope Francis⁴

The trade in compensation credits is often compared to the selling of indulgences by the Catholic church. 'As soon as the gold in the casket rings, The rescued soul to heaven springs.'⁵ So said the notorious preacher of indulgences, Johann Tetzel, around 1500: money can buy absolution from sin. Of course this didn't prevent the sin in the first place, but the money could be used to build cathedrals

and keep the Vatican going. The situation with regard to air travel is similar. On balance, offsetting does not reduce emissions: the additional emissions in one place are at best balanced out by additional prevention of emissions elsewhere. Offsetting is thus *at best* a zero-sum game – and that is not enough to avert a climate crisis.

Figures from the Öko-Institut⁶ highlight the inadequacy of the ICAO proposal: to limit the average global temperature rise to significantly less than two degrees centigrade, emissions from international aviation must, by 2030, be at least 39% lower than they were in 2005. Yet, the result of buying carbon credits is often not even a zero-sum game: Since offset credits often do not rely on additional emission savings, offsetting in reality will lead to higher emissions to the atmosphere. This is due to the way the credits are generated.

Promises from the crystal ball

An offset project must prove that it prevents planned greenhouse gas emissions. If the emissions reduction would have occurred anyway, the offset project does not prevent any additional emissions from being released.⁷ The carbon credit stands for the emissions saved as a result of allegedly not performing a planned activity. Thus, carbon credits always represent a saving by comparison with hypothetical future emissions: tonnes of CO₂ that would have been released in the absence of the project; trees that would not have been planted if the offset project had not existed. This means it is impossible by definition to verify whether a carbon credit represents an additional emission reduction, because the supposed saving is based on a comparison with hypothetical emissions.

Two other points are also worth making. Firstly, the external auditors who are supposed to confirm this additionality are usually paid by the project operator. And secondly, the higher the hypothetical emissions would allegedly have been without the offset project, the more credits the project can sell. Unsurprisingly, many project documents predict that, under a hypothetical future scenario in which no offset project exists, vast quantities of greenhouse gases would be released or enormous tracts of rainforest destroyed. Because of the offset project, this future scenario will not occur, so it's impossible to verify the prediction. A study conducted by the Öko-Institut for the European Commission investigated the effectiveness of existing offsetting projects. It specifically considered projects linked to the best-known offset instrument under the Kyoto Protocol (see INFO Box 2), the Clean Development Mechanism or CDM. Buying CDM credits permitted companies in the Global North to legally exceed the emission caps imposed by the Kyoto Protocol. The study concluded that for

more than 80% of the CDM projects, it is highly unlikely that they reduced additional emissions. Only for 2% of the offset projects it is highly likely that they resulted in actual additional emissions reduction.⁸

Particularly problematic: offset projects involving forests and plantations

Carbon credits from land-based projects also entail other risks to the climate and to people living in the project area. Most land-based projects involve preventing deforestation, planting new trees or pursuing 'climate-smart' agriculture.⁹ The best-known forms of these land-based projects come under the heading of REDD+ projects. REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation¹⁰ and is being implemented in most countries of the Global South (see EXAMPLE BOX 4).

Carbon credits from REDD+ projects represent the promise that emissions from planned deforestation have been prevented. As a result of the REDD+ projects, the carbon stored in trees is not released – at least, that's the idea. But how can this carbon be balanced against the carbon released by burning oil, coal or gas – carbon deposits that have been locked away underground for millions of years? For that to work, the carbon in the tree would have to be fixed for at least as long as the combusted fossil carbon affects the climate – which is thousands of years.¹¹ If it is released sooner, the offsetting effect is nullified. But what

happens if the forest suddenly burns down some years after the credits were sold or if the next generation has other plans for the forest? Also, if the tree dies naturally, carbon is released back into the air.

Studies therefore show that carbon in trees and carbon in fossil fuels cannot be equated with each other.¹² A guarantee of carbon storage in forests over such long periods is neither realistic nor reasonable from the point of view of our responsibility to future generations. The only way forward is therefore to stop burning fossil fuels.

Smallholder land use is restricted

One of the results of REDD+ projects is that people living in or from the forest are often no longer able to use it as they did previously: the restrictions are supposed to ensure that there is no risk to carbon storage. These people are often prevented from collecting firewood for cooking, or from felling trees to build canoes or use in their small-scale farming activities. Invasive drones may even be used to monitor land use in the project area from the air; this is the case in a project run by the environmental organisation WWF and Air France.¹³ In some cases, REDD+ projects have also led to families being expelled from the forests they called home.¹⁴

While the offset mechanism REDD+ shifts the blame for deforestation onto communities in the Global South, the main agents of large-scale deforestation continue their destruction. Not one of the REDD+ projects that sell credits on the voluntary carbon market curbs the large-scale deforestation resulting from industrial agriculture, illegal logging, mining, oil palm plantations or infrastructure projects. The same applies to many projects that generate compensation credits by planting trees – often in industrial monoculture plantations.¹⁵

New instruments such as REDD+ and offsetting schemes enable us to systematically wash our hands of responsibility for the destruction of nature and the climate crisis by buying our way out of the situation.

INFO BOX 2:

The special status of international aviation

Emissions from international aviation are excluded from the Kyoto Protocol, and are not explicitly mentioned in the UN Paris Agreement on climate change. Instead, in 1998 governments commissioned ICAO, a UN body (see INFO BOX 1), to draw up plans for reducing international aviation emissions.

This special situation is often explained by referring to the historical importance of the aviation industry for national security. There are indeed close links between the two. Military equipment sales account for 20% of the turnover of the aircraft manufacturer Airbus and a full 50% of Boeing's turnover.¹ The two corporations dominate international aircraft construction and airplanes built by them are responsible for as much as 92% of air traffic emissions.²

International flights account for around 65% of the fuel used in civil aviation.³ Some governments justify the special position of international civil aviation (and maritime shipping) by pointing out that the mitigation targets of the UN Climate Agreement relate to emissions released within a country's borders. It is therefore claimed that the emissions of these flights do not need to be allocated to individual countries. This argument is inconsistent: after all, many of a country's products are exported and their emissions are still allocated to the country of production. The kerosene taken on board at airports could be included in national emission inventories.

With the necessary political will, a plausible and practical solution for regulating emissions from international aviation could have been found even within the UN scheme geared to national responsibility for emissions.

Footnotes

- 1 Green Air Online 2017
- 2 Fairhead/ Leach 2012
- 3 WRM 2015; GRAIN 2016; Heinrich-Böll Stiftung 2017
- 4 Catholic World News 2017
- 5 Wikipedia [n.d.]
- 6 Öko-Institut 2015a: 40
- 7 WRM 2017
- 8 Öko-Institut 2016
- 9 FDCL/ FT Watch 2015:15 f
- 10 WRM 2017; Fern 2017
- 11 Becken/ MacKey 2017: 6
- 12 Fern 2014; Boysen/ Lucht 2017
- 13 Basta! 2013
- 14 WRM 2015, GRAIN/ WRM 2016, Chomba 2016
- 15 REDD Monitor 2013

1 Heinrich Böll Stiftung/Airbus 2016: 32; Akkerman 2016 2 Transport & Environment 2017a: 2
3 ICAO 2016 b: 79

International aviation's climate plan: CORSIA

» *The industry believes that a simple carbon offsetting scheme would be the quickest to implement, the easiest to administer and the most cost-efficient.*«

Air Transport Action Group (ATAG)¹

On 7 October 2016, the 39th Assembly of ICAO (see INFO BOX 1) at last agreed a global climate strategy for aviation – 18 years after the organisation was commissioned to find ways of reducing the emissions from international air traffic (see INFO BOX 2). For ICAO, it was an opportunity to proclaim the ‘global aspirational goal of keeping the global net CO₂ emissions from international aviation from 2020 at the same level’ – so-called ‘carbon neutral growth from 2020’.² The announcement was met with praise from many quarters. Even now, many aircraft manufacturers, airlines, airports and ministries are advertising the goal of carbon-neutral growth to reject tighter regional regulation.

But not everyone was celebrating. In Mexico City, Vienna, London, Istanbul, Notre-Dame-des-Landes, Frankfurt, Montreal and Sydney, climate activists and opponents of airport infrastructure projects sent a clear message to ICAO: ‘Stay grounded. Aviation growth cancelled due to climate change!’³ In addition, more than 100 organisations signed an open letter and a petition objecting to the new ICAO climate strategy.⁴ What is the issue?

‘Carbon Offsetting and Reduction Scheme for International Aviation’

The proclaimed goal of carbon-neutral growth is supposed to be achieved by a variety of means: a) new technologies, b) improved operating procedures and better management of air traffic, c) increased use of agrofuels to replace kerosene and d) a market-based mechanism involving trade in compensation credits.⁵ Because the first three of these measures have very little savings potential, the ICAO plan relies almost entirely on offset measures (see DIAGRAM 3) under which airlines will be required to cover the increase in their emissions by submitting a carbon credit for each tonne of CO₂, starting in 2021. They are able to buy the credits from various state and private operators of offset projects.

CORSIA starts in 2021 with a voluntary pilot phase. It becomes compulsory only from 2027 (and is currently scheduled to end by 2035) – but even then it is not compulsory for everyone: 118 out of 191 countries will still be exempt, mainly because they are classed as ‘Least Developed Countries’, ‘Small Island Developing States’ or ‘Landlocked Developing Countries’.⁶ From a climate justice perspective, that seems understandable: after all, these countries have historically contributed very little to the climate crisis. But the exemption applies to all flights of all airlines that take off or land in these countries. For example, if a TUI charter flight flies a planeload of tourists from Berlin to Nepal or Haiti, TUI does not need to submit any carbon credits for the flight. Seventy-two countries (as at 23 August 2017)

representing 87.8% of international aviation’s CO₂ emissions have agreed to participate voluntarily from 2021.⁷

It is worth emphasising the fact that CORSIA covers only the effect of CO₂ on the climate: ICAO continues to ignore the other scientifically proven effects of aviation emissions on the climate, which are at least twice as big (see DIAGRAM 2 and 4b).

Too cheap to be effective

The increased costs arising from the purchase of credits are supposed to encourage airlines to use technology that has less impact on the climate, or to result in higher ticket prices and falling demand for flights – at least, that is what supporters of the emission trade claim. But carbon credits are far too cheap to have this effect. The average cost of CDM credits from the UN has for some years been less than one US dollar per tonne of emissions; in the voluntary carbon market, too, prices average around three to five dollars per tonne.⁸ It is unlikely that costs will rise significantly through CORSIA: in a special paragraph⁹ CORSIA caps the costs. ICAO forecasts that by 2025, operator costs will range from 0.2% to 0.6% of total revenues from international aviation; by 2030, the range will be from 0.5% to 1.5%.¹⁰ This is significantly less than the normal price fluctuations of kerosene in the industry.¹¹

Even prominent supporters of CORSIA, such as the engineer Parth Vaishnav, therefore believe that offsetting has a different purpose: ‘Measures such as the early replacement of aircraft would cost many times more per tonne of CO₂ emissions avoided than offsetting emissions in other sectors. Instead, the goal of the market-based mechanism should be to give the industry the means to meet its goal of carbon neutral growth after 2020 in the most cost-effective manner.’¹² Thereby painting itself green in the cheapest way possible, one might add.

Carbon-neutral from 2020: a weak and problematic objective

Drastic emission reductions are needed in all countries and sectors if the Paris Climate Agreement targets are to be met. But the international aviation industry is insisting on further growth, largely without restriction and even until 2020 without the green guise of offsetting. It has already been shown in the previous chapter that, overall, offset projects do not reduce or compensate emissions, and often infringe human rights or fuel local conflict. Carbon-neutral growth will not happen: there is no alternative to limiting air travel.

DIAGRAM 4. Planned emission reductions as a result of CORSIA

Sources: ICAO 2016 e; ICAO 2016 b: 17, 97; UBA Germany 2016

Diagram a: Official chart from CORSIA

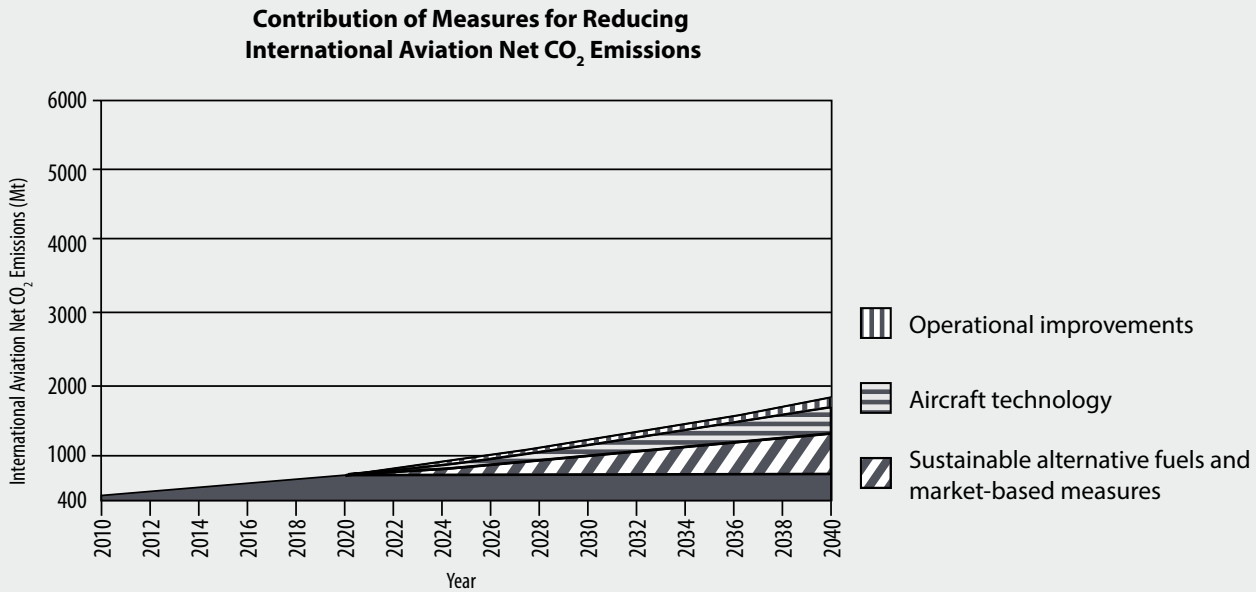
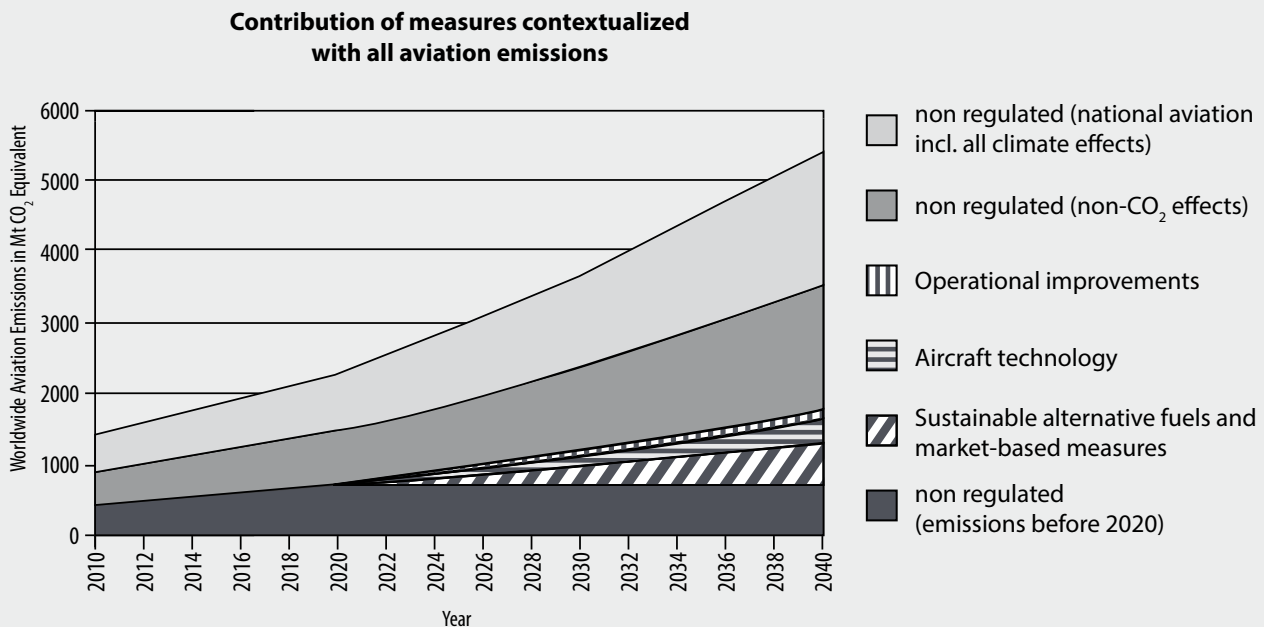


Diagram b: Authors' chart including all unconsidered emissions.



The official ICAO diagram (e.g. in the explanatory CORSIA video) has the growth in emissions starting only at 400 megatonnes of CO₂ emissions and does not show the level of the CO₂ emissions accumulated up to 2020 that CORSIA ignores. The ICAO climate strategy also ignores all non-CO₂ emissions that affect the climate and which are calculated in Diagram b with a factor of 2. In addition, Diagram b includes the emissions of national flights. Overall, the limited effectiveness of current climate plans for the aviation industry becomes clear – quite apart from the fact that the planned reductions from the use of 'alternative fuels' and offsetting do not result in carbon neutrality. Neither of the two diagrams includes the aviation emissions of non-civil, that is military, air traffic.

It is likely that the implementation of CORSIA from 2021 will result in a significant increase in demand for carbon credits. It is not yet clear whether – and if so what – eligibility criteria will apply for the use of carbon credits under the CORSIA scheme. Experts believe that ICAO will opt for a wide range of project categories and providers. This would mean that airlines can use both credits from CDM projects (see p. 10) and credits from providers on the ‘voluntary’ carbon market. Without clear exclusion criteria, CORSIA also runs the risk of creating a new demand for particularly controversial project categories such as REDD+ (see p. 10). Many indigenous peoples’ organisations and social movements in the Global South are calling for CORSIA to specifically exclude such compensation credits; some reject REDD+ altogether. They want to prevent CORSIA giving the controversial instrument new impetus.

The risk of ‘double counting’

The Paris Climate Agreement does not make the trade in carbon credits any less problematic. It increases the risk that emissions compensated with carbon credits will be offset only on paper. This is because from 2021 all countries – not just industrialised nations – have emission targets known as Nationally Determined Contributions (NDCs). They will be required to produce national greenhouse gas inventories. These inventories document a country’s contribution to reducing greenhouse gases. Once countries in the Global South also have to produce such national inventories, a mechanism is needed to ensure that a reduction in emissions is not claimed both by the offset project and the national accountants. If this happens, the same reduction would be counted twice and double counting occurs.¹³ One example is that an investor from California who operates a REDD+ project in Brazil sells carbon credits to a European airline at the same time as Brazil counts the same emission reduction in its national greenhouse gas inventory. Currently, no mechanism is in place or in preparation to prevent such double counting.

CORSIA hinders effective action on climate change

The unobtainable promise of carbon-neutral growth in international aviation diverts attention away from the kind of measures that are actually needed, such as action to halt the expansion or building of new airports and a drastic reduction of aviation subsidies. It is already evident from debates about the controversial expansion of London’s Heathrow airport, national taxes on flight tickets and the role of the EU emissions trading system in aviation that CORSIA hinders more effective regional and national measures and leads to existing measures being abolished or cut back.

For example, a few years ago – after strong public protests – the British government decided against construction of a third runway at Heathrow airport. Based on the projected construction of the runway and the resultant additional flights, the government calculated the United Kingdom’s CO₂ emissions would exceed the 2050 limit laid down by the national Committee on Climate Change by 15%. In 2017, the Minister of Transport questioned the decision against expansion, arguing that the additional emissions as a result of the expansion could be offset through CORSIA.¹⁴ The airport is itself campaigning and is advertising the new runway as being green (see EXAMPLE BOX 2).

In Sweden, the International Air Transport Association (IATA), which represents 265 airlines, lobbied against the planned introduction of a tax on flight tickets: ‘Last year, ICAO’s member States, including Sweden, agreed that CO₂ emissions are best addressed through a single global market-based measure and recognised that CORSIA should be the market-based measure for international aviation. The implementation of national or regional taxes on top of CORSIA is not only redundant, it also goes against the ICAO agreement and risks alienating States from implementing CORSIA’, said Rafael Schwartzman, European Vice-President of IATA.¹⁵ The tax is likely to be introduced after all, but at a significantly lower level than was planned.¹⁶ Governments, for example in Austria and Scotland, are reducing existing ticket taxes, and a proposal to this effect is being discussed in Germany.¹⁷

In the European Union, aviation emissions are partly regulated through the European Emissions Trading System (EU-ETS). Airlines are required to submit emission permits for flights within and between EU countries. However, international flights outside the EU are excluded. They were due to be included from 2017, but the exemption has now been extended until 2021 – and potentially beyond that, if the EU is satisfied with the implementation of CORSIA. This is another example of how an existing regional measure could be replaced by CORSIA. That said, the EU-ETS itself as a trading mechanism is beset by fundamental flaws and contradictions and blocks the debate on other measures such as a kerosene tax, ticket taxes and fixed limits to aviation growth¹⁸

It would be highly counterproductive to replace regional regulation of air traffic with a single, weak global instrument like CORSIA. CORSIA tries to hinder implementation of effective measures, gives new impetus to problematic offset projects and will not result in the carbon-neutral growth the industry has promised from 2020 onwards. ICAO’s focus on offsetting also ignores the fact that the current state of the climate crisis does not permit an ‘either/or’ approach: it is essential to reduce emissions where they arise (for example, in aviation) and at the same time to support truly climate friendly initiatives and protect forests (not trade the carbon they store as offset credits).

Footnotes

- 1 ATAG 2013
- 2 ICAO [n.d.]
- 3 System Change, not Climate Change 2016a
- 4 System Change, not Climate Change 2016b
- 5 ICAO 2016a: 2
- 6 ICAO 2016a: 4f; CE Delft 2016: 6f
- 7 ICAO [n.d.]
- 8 World Bank 2016: 11, 37
- 9 ICAO 2016a: 5
- 10 ICAO 2016c: 19
- 11 ICAO 2016d: 142
- 12 Vaishnav 2016: 123
- 13 Fern 2016; Öko-Institut 2015b
- 14 WWF-UK 2017
- 15 IATA 2017
- 16 Magnusson 2017
- 17 FT Watch 2017 a; BBC News 2017; BMVI 2017: 23 f
- 18 TNI et al. 2013

Green airports? Offsetting emissions and biodiversity

219 airports – 117 in Europe alone – are currently marketing themselves as sustainable. *Airport Carbon Accreditation* is the magic wand. Another approach that airport operators use to polish their public image is biodiversity offsetting – the promise to compensate for the plants and animals lost due to airport infrastructure. Yet neither of the programmes live up to their promises.

Airport Carbon Accreditation (ACA)

This initiative by Airports Council International (ACI, a lobby group representing more than 600 members worldwide) was launched in 2009 and has been endorsed by various United Nations institutions – UNFCCC, UNEP and ICAO – and the European Union.

The ACA certification initiative assesses measures to reduce CO₂ emissions and offers four levels of ambition. At the initial ‘Mapping’ level, the greenhouse gas emissions at the airport company are inventoried. At the next level, airports can advertise that they have prepared a carbon reduction plan and are implementing actions to cut emissions. At the last two levels, they widen the scope of the inventory to include third parties operating at the airport (caterers and food suppliers, for example), and work towards the goal of becoming an ostensibly *carbon-neutral* airport. Of the 117 European airports participating in 2017, 28 have already reached the goal of purported *carbon-neutrality*. All 28 rely on carbon *offset* purchases to achieve this.¹

One way to purchase compensation credits is ‘Climate Neutral Now’ – a UN initiative that offers, on the so-called voluntary compensation market, compensation credits generated by CDM projects (see fake website p. 17). The websites of airports and that of Airport Carbon Accreditation fail to provide comprehensive information about the actual compensation projects from which offset credits were purchased.

The largest source of emissions is not covered: flights

»» *Around 5% of the CO₂ emissions from aviation are attributable to airport operations² – Airport Carbon Accreditation only addresses this 5%! «*

What makes this problematic is that the wider public generally makes no distinction between emissions at airports and emissions during flights. Thus, if an airport operator claims to be carbon-neutral, this statement creates a false impression among the public – not least, because the wording used by airports in their advertising promotes such confusion. A case in point is the way that London Gatwick presented its designation as carbon-neutral airport by *Airport Carbon Accreditation*. Its press release of May 2017 proclaims that annual energy consumption ‘per passenger’ has been reduced – not ‘per airport visitor’.

Blindsiding resistance

The emission reduction measures airports undertake as part of their ACA programmes address, for example: operating solar-energy facilities or combined heat-and-power units to meet the energy demand of airport buildings; replacing conventional incandescent light bulbs with energy-efficient LED lamps; using electric vehicles within the airport perimeter; cutting overall energy consumption in airport buildings; or improving the provision of public transport services for travel to the airport. The image gain provided by marketing an airport as green is priceless. This is all the more important for operators facing public criticism because their airport is being expanded or new runways are being built.

This is shown particularly clearly by the examples of Heathrow in London (see EXAMPLE BOX 2) and Schwechat near Vienna. In both cases, the airport operators and the proponents of airport or runway expansion use references to the airport’s participation in the *Airport Carbon Accreditation* scheme to deflect public criticism of their plans. In Vienna, a consultant is cited in the court decision, proposing that approval of a third runway be linked to the airport’s achievement of *carbon-neutral* status.³

Offsetting biodiversity: Making unique nature fungible in order to destroy it

Airports take up large areas of land, often sited in socially marginalised parts of a city where green spaces are in short supply, or in peri-urban areas where remnants of nature are vital to people’s recreation, air quality and well-being. Such green spaces are not only habitats for animals and plants, but also perform important social functions for people. Pressure on airport operators to compensate for the loss of nature is correspondingly high. In particular, when biologically diverse habitats such as wetlands or forests are to be paved over for an airport, there is often a statutory duty to provide compensation, or approval to build the airport can be linked to the presence of compensation sites.

Schemes to offset biological diversity give rise to major controversy, as is the case with the offsetting of emissions. Methodological flaws are widespread, but rarely cause biodiversity offset schemes to be rejected by the authorities (see EXAMPLE BOX 3). Furthermore, the approach is awash with contradictions and is based on very reductionist assumptions about ‘nature’. In order that corporations can submit biodiversity offset plans and public authorities can approve these, nature must first be rendered comparable at different locations. This, in turn, can only be done by abstraction: the unique character of nature in a given place is turned into units of habitat housing an identifiable set of animal and plant species that can be compared and compensated with units in other places.



That is absurd, for each place is unique, characterised by the interplay at this particular place between human and non-human influences. The abstraction allows for the destruction of biologically diverse and intact wetlands, by restoring a larger area of less diverse, degraded wetlands elsewhere. It would go beyond the scope of this brochure to set out in depth why such equivalencies do not protect but rather aid destruction of nature. Yet, two key aspects in the debate on methodological conundrums and contradictions are worth mentioning⁴: For one thing, biodiversity offsets justify immediate destruction in return for a promise of 'restoration' later and elsewhere, yet experience teaches that such compensation often fails. In those cases, nature has been destroyed without compensation.⁵

Another key point is that in biodiversity offsetting, only ecological losses are considered, while the social losses as a consequence of destruction of nature are ignored by definition in biodiversity offsetting, and thus rendered invisible. The loss to well-being for residents around an airport cannot be compensated through restoration of an area tens or even hundreds of kilometres away.

Footnotes

- 1 ACA 2017
- 2 Spence 2015
- 3 BvwG 2017: 57
- 4 FT Watch 2015
- 5 Counter Balance/ Re:Common 2017

EXAMPLE BOX 2:

London – Trees and peatlands to compensate for emissions through airport expansion

In the competition between the operators of London Heathrow and Gatwick Airport to get approval for an expansion, the promise to compensate for the loss of biodiversity plays a key role. The loss of woodland as a result of an expanded Gatwick Airport is to be compensated for by tree plantings elsewhere. Moreover, the operators go so far as to promise a 'net gain' in biodiversity if Gatwick airport were expanded.¹ Biodiversity offsetting is often used to portray the destruction of biodiversity as something of a benefit for nature and to dismiss conservation-based arguments against airport expansion.

Similarly, the operators of Heathrow Airport promise a net gain for biodiversity from measures designed to more than compensate for biodiversity loss resulting from the construction of a third runway,² pledging the creation of 'Green spaces four times the size of Hyde Park'.³

In addition to their promise to recreate destroyed habitats elsewhere (as if it was that simple!), they also promise a carbon-neutral airport – while ignoring, however, the increase in emissions resulting from doubling the flight volume as a result of the third runway. They claim that the additional ground-based emissions will be neutralised by the restoration of peatlands that had been drained for extraction and are releasing large quantities of greenhouse gases. The problem here are not the measures in themselves, like the rewetting of peatlands, emissions reductions in airport operation, and the use of electricity from renewable resources at airports. The problem lies with the operators' questionable attempt to portray expansion as harmless for climate and nature, even though the vast majority of the impact is not included in the calculations. But that fact is lost in the marketing campaign...

1 Gatwick Airport Limited 2015

2 Amec 2014

3 Your Heathrow 2016



EXAMPLE BOX 3:

Notre-Dame-des-Landes – Activists expose contradictions in biodiversity offsetting

The proposal to replace the existing airport in Nantes, France, with a larger newly built airport was first mooted more than 40 years ago, and it has been controversial from the outset. The multinational company Vinci – the new airport's major proponent and planned operator – has been pushing for a decision on the planned construction since the year 2000. So far, local resistance has prevented the controversial project which would destroy more than 1000 ha of wetland and grasslands under agricultural use that are also home to protected plant and animal species.

A broad alliance against the new airport engages in a variety of actions and activities of resistance (see p. 21). One example are actions against the biodiversity offset plans that Vinci is legally required to present. Groups informed peasant families cultivating land in the area around the proposed new airport about Vinci's biodiversity offset plans and the connection to the proposed new airport. Their information focused on areas Vinci had identified as priority areas for inclusion into their biodiversity offset plans. Several dozen peasant families refused participation in the biodiversity offset activities, and in the end, Vinci was unable to find sufficient land for its biodiversity offset proposal. Direct actions and demonstrations exposed companies, organisations and universities involved in the biodiversity offsetting. Actions included a demonstration in front of the faculty of the University of Angers and at the offices of the consultancy Biotope, which developed the biodiversity offset plan. The aim of these actions was to expose publicly how these entities support an absurd compensation system with their scientific data and methodologies and help Vinci comply with its legal requirement for biodiversity offsetting when such compensation really is not possible. A group of conservationists under the name of 'Naturalistes en lutte' presented a comprehensive assessment of a consultancy firm's proposal in which they set out in detail the contradictions and insufficient nature of biodiversity compensation, using the example of Notre-Dame-des-Landes.¹

The group themselves mapped the area and documented the presence of more than 2000 species of flora and fauna including 146 protected species, ten of which are protected under EU law. They even found five species not previously recorded in France as well as numerous species the presence of which had not previously been recorded in the region. 'They ensure us that there will be compensation, but how can you compensate for something you don't even know is there?'; argue 'Naturalistes en lutte'.

Apart from incomplete species mapping, 'Naturalistes en lutte' also criticise the method for calculating the compensation area as proposed by the contracted consultancy firm 'Biotope'. 'Biotope' had assigned incomprehensible value ratings to different types of habitats which were then set off against value ratings of proposed compensation measures, resulting in a requirement of a mere 600 ha of compensation area to be created by Vinci. Despite the fact that a scientific commission established by the French government explicitly rejected this method in 2013, local governments authorised the compensation plan presented.

Creative resistance offered by a broad local alliance has as yet prevented permission from being granted for the new airport and the alliance has convincingly documented that the proposed biodiversity compensation measures would not prevent biodiversity loss for an unnecessary airport project.²

¹ Naturalistes en lutte 2013; Astier 2015

² Naturalistes en lutte [n.d.]



Flying with a clear conscience?

Individual offsetting of air travel



» *Help prevent climate change! Many believe that we can only prevent climate change if we change our economy and our lifestyle – fly less, drive less, shop less. Isn't there an easier way? Climate Neutral has the solution: With only a few clicks, you can redeem yourself and become CO₂-neutral!*«
www.climate-neutral.org

Climate Neutral is not a real company. It will not actually sell you a clear conscience for a few Euros. Yet, offers like this, which the website Climate Neutral lampoons, do exist. The UN initiative Climate Neutral Now, for example, engaged in publicity at the climate conference in Bonn in 2017 to offset one's personal flight emissions: 'Want to make a difference? Want to travel and still be green? It's easy. Go Climate Neutral Now'. Other marketing forms are more subtle, focusing on the message that 'offsetting is better than nothing'.¹

From the outset, air passengers have been a popular target for companies offering carbon credits.

» *Almost a third of airlines have already been offering their customers carbon-neutral or climate-neutral travel for several years.*²«

In reality, of course, flying always harms the climate. The fact that offset projects cannot really neutralise emissions is evident from the points made on previous pages. The Mai N'dombe REDD+ project (see EXAMPLE BOX 4), from which Austrian Airlines customers can buy carbon offset credits, is a typical example of the way in which these projects are set up and why they are controversial. While Airlines market the carbon credits, their websites provide few details of the projects in their portfolio.

Researchers looked at 44 flight operators offering green air travel. 34 of these offer an offset option on their own websites, while others direct customers to other providers of emissions credits such as MyClimate and Climate Neutral Now. Only 18 airlines publish details of the certification obtained by offset projects, and carbon calculation methods are inconsistent and incomprehensible. Half the projects about which information could be found relate to energy consumption; at the top of the list come energy-efficient cooking stoves.³ These are given away or sold in communities in the Global South and are intended to replace traditional wood-fired cooking stoves.

Trading cooking stoves with flights

In their 2016 research for the European Commission, the Öko-Institut found that cooking stove projects have a particular tendency for inflated calculations of supposed emissions savings and have a high risk of not being backed by additional savings.⁴ One positive aspect, of course, is

that the smoke pollution which women in particular are exposed to when cooking on traditional stoves is reduced. However, the fact that improvements like these in the lives of very money-poor families with minimal carbon footprints are linked to payments allowing airline customers with far bigger carbon footprints in industrialized countries to carry on flying with a clear conscience is not merely absurd but also unjust and neo-colonial.

Carbon-neutral air travel: a dubious concept on the increase

Only few air travellers make use of the offset offer. A study shows that in 2010, only 2.5% of international visitors to Australia paid to fly supposedly carbon-neutral. Leisure-travellers appear to use offset schemes more often than frequent flyers travelling on business.⁵ In this case, airline customers' offsetting is voluntary and does not represent a licence for growth. This will be different with airlines' offset purchases in the context of CORSIA. Yet, even voluntary offsetting is problematic. It does fund dubious projects in the Global South. Moreover, it provides a reason why some travellers may decide against using the train or missing out on a trip altogether.

For years, the offer of climate-neutral flights has helped to nurture the illusion that green air travel and carbon offsetting are possible. Offers of individual credits thus prepared the way for programmes such as CORSIA, which relieve a whole industry of the responsibility for reducing greenhouse gas emissions: if ten years ago, a promise of carbon-neutral growth from the airlines industry would still have produced frowns and protest, today people are more likely to react with just a shrug of the shoulders – after all, they may have used such offsets themselves. That is why individual carbon credits are not 'better than nothing' – they have made the concept of offsetting socially acceptable.

Footnotes

- 1 FT Watch 2017 b
- 2 Becken/ MacKey 2017: 5 ff
- 3 Becken/ MacKey 2017: 19 f
- 4 Öko-Institut 2016: 133 ff, 137
- 5 Mc Lennan/ Becken 2014

EXAMPLE BOX 4:

Hot air from Mai N'dombe REDD+ project (DR Congo)

The REDD+ Mai N'dombe project is run by the Californian company Wildlife Works Carbon. Its stated aim is to prevent rainforest deforestation in the project area. Wildlife Works Carbon claims that in 2010, a logging licence was just about to be re-issued for the area. At that time, however, it was illegal to issue new licences anywhere in the country, as a moratorium on the award of new concessions had been in place since 2002.

Wildlife Works claims that opening up the forest with roads to transport the timber that was allegedly to be felled would have led to further clearing through small-scale farming and for food production. It says that without REDD+, the result would have been total deforestation similar to that taking place in a reference area 600 km away. The problem here is that the two locations are not comparable.¹ The reference area lies much closer to the capital Kinshasa, in one of the most important agricultural districts. In contrast, the Mai N'dombe REDD+ project is in a very remote region. Offset credits like this, which in all probability represent no additional emissions savings, are often described as 'hot air'.

To combat deforestation, Wildlife Works has prohibited forestry within the concession and limits small-scale farming to a two-kilometre radius around the villages.² Amongst other things, this restricts subsistence farming by families who are already struggling to survive. The issue of land-use rights in the whole region in which the Mai N'dombe REDD+ project is situated is unresolved. Following independence, the state adopted the colonial view that the land is owned by the state, which claims the exclusive right to issue land use licenses. However, this ignores longstanding traditional rights also recognised in Congolese law.³ Families who have traditionally farmed land throughout the territory now inside the conservation concession face restrictions imposed unilaterally by the REDD+ project. These restrictions hit families with extremely precarious existences, who produce food almost exclusively for their own needs and have virtually no monetary income.

(How) does Climate Austria check?

Climate Austria is an initiative offering offset credits for businesses. Its description of the Mai N'dombe REDD+ project raises the question of how carefully the initiative checks projects funded by the sale of offset credits. The description refers to a 'rainforest project that has been set up on the west coast of the Democratic Republic of Congo'. Even a cursory glance at the map shows that the DR Congo has only a very narrow strip of 'coast'. The Mai N'dombe REDD+ project, on the other hand, is situated inland. It seems somewhat unlikely that staff have first-hand knowledge of the project, given such obvious inaccuracies in the description. The claim that the project involves the 'introduction of sustainable agriculture and forestry' is also astonishing.⁴ Leaving aside the question of whether Wildlife Works Carbon's argument that the REDD+ project has avoided planned deforestation through imminent industrial logging is credible, the REDD+ credits from the project are based on the argument that 'forestry' has been prevented by a conservation concession to the project!

1 Seyller/ Desbureaux et al. 2016

2 REDD-Monitor 2017

3 Rainforest Foundation UK 2017

4 Climate Austria [n.d.]



What now?

Summing up and looking ahead



Leaps in technological efficiency, agrofuels in aircraft tanks, or offsets for emissions and biodiversity – the current strategies of the aviation industry sound a lot more promising than they are. A closer look has shown:

1 There is no such thing as carbon-neutral growth:

The green plans are far from realistic. If any quantum leaps are to occur in aviation technology, they will be decades from now. Research on improvements is valuable, but insufficient. Given the urgency of addressing the climate crisis, relying on uncertain utopias as a substitute for actual emission cuts is far too risky. Substituting kerosene by agrofuels is an empty promise, for the land required to cultivate the biomass in quantities needed is already used for other purposes. Experience with offset projects, finally, shows that these very rarely deliver additional emissions reductions, while biodiversity losses are not really compensable at all. The seemingly promising strategies to decarbonise aviation remain illusory.

2 Focussing on CO₂ distracts from the other impacts of aviation:

Most green strategies are blind to a large part of the climate impacts generated by aviation. Furthermore, they do little to address the noise and health problems caused by the industry and ignore the degradation of agricultural land and natural habitats for construction of airport infrastructure.

3 Green strategies cause new problems and are neo-colonial:

Offset projects such as tree plantations, hydroelectric power dams or carbon protection forests often lead to increased land grabbing, habitat degradation and risk displacement of indigenous peoples and their traditional land use practices. It is for good reason that offset projects are viewed by many of those affected and by representatives of indigenous peoples and social movements in the Global South as a form of 'CO₂ colonialism' or 'green colonialism'. 'We view this as a shameful initiative designed to secure the right of the countries of Europe and North America to continue the same rhythm of consumption and pollution' states Pedro Landa, coordinator of the National Coalition of Environmental Associations in Honduras.¹

4 Green strategies are a trade in indulgences and diversionary manoeuvre:

With its lobbying for market-based mechanisms (offsets) and occasional voluntary implementation of their own green projects, airlines and airport operators greenwash their public image. They do this to avoid or prevent more effective strategies that would curtail the aviation industry's profit. Such approaches to reduce growth of aviation, however, are needed urgently to address the climate crisis effectively and equitably.

What is really needed: less air travel, not more

Lobbying for sustainable aviation that is unachievable is thus counterproductive. But that is precisely what civil society organisations from the International Coalition for Sustainable Aviation (ICSA) do. Some conservationists and Green parties advocate the green strategies with the argument that they are 'better than nothing'. Yet 'nothing' is no longer an option in the first place. Knowledge about the severity of the climate crisis is too profound, public pressure too great. This is therefore not the time to argue about whether the climate crisis can be averted, but how. Green Economy strategies, which not only the aviation sector but also the automobile industry and other energy-intensive industries favour, limit responses to eco-efficiency and offsetting. Instead, sufficiency should have priority, which means avoiding harmful economic activities from the outset. The dream of decoupling endless growth from materials consumption, greenhouse gas emissions and pollution will not come true. Instead of greenwashed growth, reduction of air travel is needed. This is no easy undertaking. Not only sham manoeuvres stand in the way, but further obstacles.

Overcoming the obstacles: the power of the aviation industry,

The aviation industry will not forego profits voluntarily. It has huge influence within policymaking institutions such as ICAO, and upon many governments. There are reasons why many old demands – which continue to be valid – have fallen by the wayside: that kerosene be taxed, that value-added tax on tickets be introduced and that subsidies to the industry be halted. Schemes have also been proposed under which tickets of frequent flyers would be taxed more heavily and thus would be more expensive than those of passengers who fly rarely.² It is essential to insist on approaches of this kind instead of being fooled by greenwashing. To be in a position to take decisions that are against the interests of corporations, there is also a need to take steps to counter the worrying curtailment of space for citizens to exert democratic pressure on their parliaments and governments. States, or alliances of states such as the EU, should not abdicate responsibility to ICAO, an institution heavily influenced by corporate interests. It is therefore important to fight for additional, stricter rules governing national and international flights.

... the power of habits and desires,

But would a majority of the people support restrictions of aviation and an increase in the cost of flying? Flying continues to be invested with very positive associations. It promises speed, freedom, flexibility – a globalised, cool lifestyle. Even if this is only obtainable for a tiny percentage of the world's population – the belief in the promise counts.

It is therefore essential that more groups and networks communicate more vigorously that flying is the fast track to the climate crisis and that green aviation is an illusion.

This may involve stepping up educational work, campaigns, intensified networking and activities – especially at the more than 600 sites where airports are currently planned or to be expanded. For it is there that abstract issues such as emissions and trade in carbon credits become tangible.

Statutory restrictions on advertising for unsustainable practices can help to ensure that climate-damaging desires do not arise in the first place. Challenges in this discourse include the difficult question of ‘wishes’ of some that curtail the ‘needs’ of others – and the question of where the limits to unrestricted freedom of the individual to pursue his or her patterns of consumption lie in times of climate crisis. The freedom of some to take frequent flights builds substantially on the curtailment of the freedom of others.

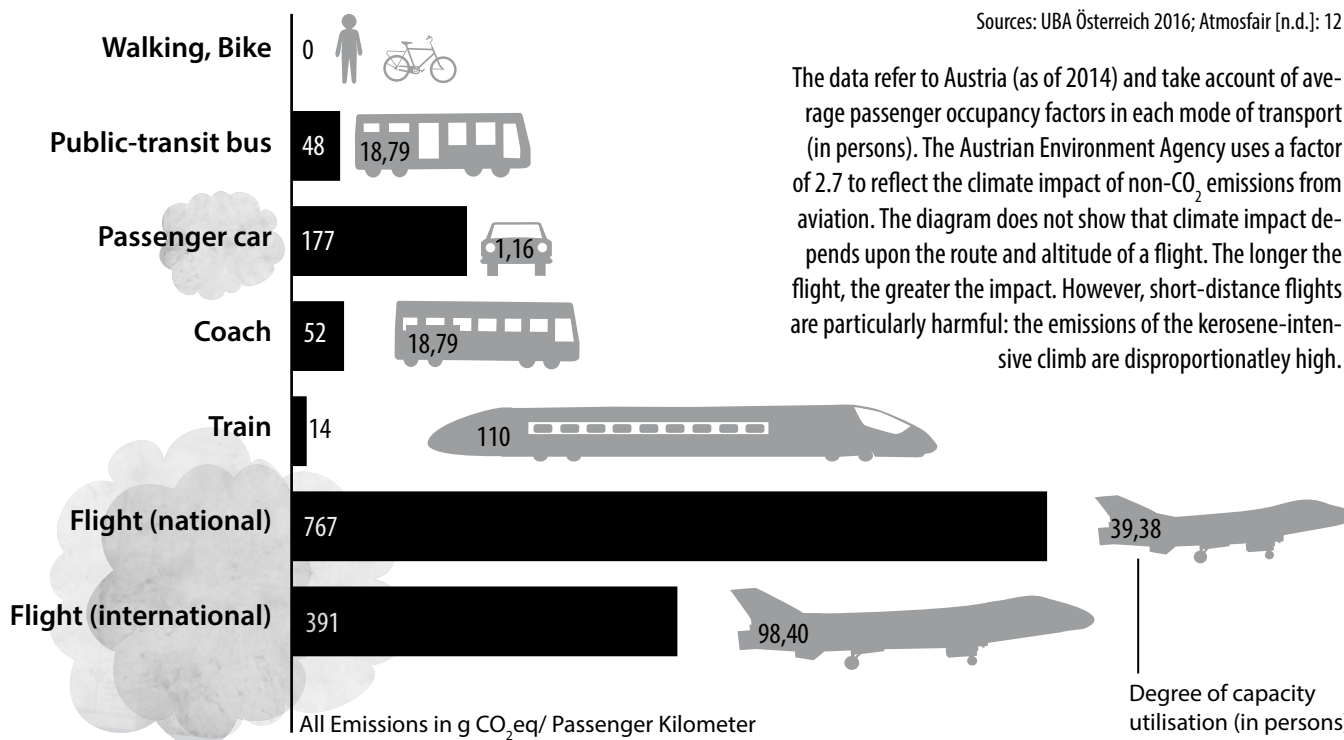
It is also vital that finding purpose in one’s life happens less through consumption and that people conceive themselves not only as consumers but also as citizens endowed with rights, responsibilities, and diverse scope to act – for instance to build alternatives and voice protest. Clearly, transformations in everyday patterns of life also play a role. The goal must be that flying comes to be perceived as ‘uncool’; that more use is made of online conferencing; that slower modes of transport such as rail and sea passage become more commonplace again because they offer a different quality of travel and experience – and that the very preconditions for this are put in place. For the stock of built infrastructure is a further barrier beside the power of the aviation industry and the power of habit. Change that purely addresses the consumption side therefore rapidly comes up against limits.

... infrastructural lock-in,

If the only transatlantic passenger ships are luxury cruiseliners, night trains no longer run and booking train tickets for cross-border journeys becomes increasingly difficult, flying will remain the preferred option for many. It is therefore hugely important to stand up for these alternatives. At the same time, resistance against airport projects can prevent lock-ins into an emissions-intensive, destructive form of mobility for decades into the future. Once the additional runway has actually been built, all efforts will be directed to attracting airlines and boosting flight volumes – including state subsidies, permits for night flights, and all the rest. Often, it is not even aviation growth that drives airport expansion but vice versa: Airports frequently inflate projections in order to push arguments for expansion. Once the infrastructure is built, industry demands public support to fill airplanes and airports for which there was no actual demand in the first place. In the end, the prophecy is self-fulfilled.

... knockout arguments about employment, growth and competition

A significant barrier is the aviation industry’s propaganda about creating new jobs through more air travel – and the real and understandable interests and concerns of employees. It is thus important to engage with labour unions to find solutions that bring about a transformation of mobility patterns that is not at the expense of the workforce. This is what is meant by just transitions – from unsustainable to future-oriented sectors of the economy. If short- and medium-distance flights are shifted to rail, this means less jobs at the airport but more in the rail system. Similarly, the requisite expansion of decentralised renewable energy



generation and of organic farming can create purposeful employment – as long as it is not as precarious as has often been the case. In general terms, a regionalisation of economic cycles is needed in order to reduce the freight traffic that is increasingly happening by air. Civil-society organisations have been debating concrete ways to go about this for years.³

It becomes clear that aviation is embedded in a globalised capitalism that will not become sustainable and equitable through sham solutions such as offsetting, nor alone through modifying some individual consumption patterns, building railways or introducing a new tax. The social-ecological transformation of mobility patterns and economic systems is complex – but necessary. Greenwashing is a step in the wrong direction, a further barrier on the path towards a socio-ecological transformation. The purpose of this brochure is to prompt ever more individuals,

movements and networks to embark on this path – ever more stakeholders and players who are locally grounded and who network to build pressure jointly and bring about change. Exchanging experience, showing solidarity, rendering support and undertaking joint activities are all essential. The initiators of this brochure look forward to feedback and new contacts for this growing movement to halt the growth of aviation and tackle the climate crisis.

Footnotes

- 1 Heuwieser 2015: 172
- 2 A Free Ride [n.d.]
- 3 Alternative Trade Mandate 2013

On the move: resistance highlights

Resistance against expansion of Heathrow airport, London

Heathrow's proposed third runway would force up to 10,000 local people to move house, send another 260,000 flights over London, require £18bn of public money, worsen already illegal levels of air pollution, and make the government's own climate targets effectively impossible to meet. Long-term opposition to the project has been fierce but varied, including political lobbying, petitions, rallies, growing a garden on the affected land, and direct action in the form of both road and runway blockades. This broad-based approach has united community groups, green organisations, councils, MPs, trade unions, and climate activists.

reclaimthepower.org.uk/aviation-flashmob-critical-mass/press-coverage
www.no3rdrunwaycoalition.co.uk
www.aef.org.uk/campaigns/campaigning-against-unsustainable-expansion
www.planestupid.com
www.transitionheathrow.com/grow-heathrow

Zone A Défendre: Zone to be defended at Notre-Dame-des-Landes

For over 50 years, farmers and locals are resisting the building of a new airport for the French city of Nantes in France to replace the already existing one. This new airport is planned on 1600 ha of fields and wetlands. The project came back in the 2000s and is now to be run by the multinational Vinci. In 2009, inhabitants of the area called for help and that's how abandoned houses and lands were occupied. Squatters and climate justice activists, local farmers and villagers, citizen groups, trade unionists, naturalists and many others are now trying to organise together to protect this area (now called 'Zone A Defendre').

www.acipa-ndl.fr
zad.nadir.org
naturalistesenlutte.wordpress.com

Vienna: System Change, not Climate Change!

In February 2017, a unique court ruling made headlines: it prohibited the construction of a third runway at Vienna-Schwechat in Austria. The public interest in climate protection and the conservation of fertile soil were deemed to be more important than securing an industrial site and jobs. The supreme court, however, overturned that ruling. The 'System Change, not Climate Change!' movement is continuing to work with citizens' initiatives to resist the expansion of the airport – both in court and through climate camps, creative campaigns, educational activities and public awareness-raising work.

www.systemchange-not-climatechange.at
www.drittepiste.org (German)

Back on Track!

Back on Track is a network with members in various European countries. It formed in 2014/2015 to protest the cessation of night train services. By means of campaigns, advocacy and contacts to rail experts, politicians and the media, Back on Track seeks to ensure that rail services remain publicly owned and benefit passengers and staff – instead of shareholders. Long-distance routes and night trains are to be promoted rather than wound down, in order to create a real alternative to aviation.

back-on-track.eu
www.nachtzug-bleibt.eu
ouiautraindenuit.wordpress.com



A trade union against airport expansion: PCS

The Public & Commercial Services Union is a trade union in the UK with members in the aviation sector, and specifically at Heathrow where expansion is proposed. PCS opposes a third runway at Heathrow but its members locally support this for long-term security of their jobs. To address this, PCS is developing an alternative transport strategy for mass public transport run on renewable energy.

www.pcs.org.uk/news/pcs-warns-on-jobs-and-climate-change-after-heathrow-expansion-decision

Northern Forest Defence against 3rd Airport Istanbul

Work has already started on Istanbul's third airport, an aerotropolis, which is expected to destroy a staggering 76 km² of farmland, forests and lakes in the Northern Forest, known as the lungs of Istanbul. Forced evictions are expected. Poor working conditions at the construction site have violated labour rights and led to fatal accidents. The airport is being celebrated as the biggest in the world by politicians but strongly opposed by a coalition called the Northern Forest Defence (NFD), a movement that advocates for the protection of the ecologically interconnected and diverse area. A mining project to provide granite for the new airport already started in 2016 in the middle of the northern forest.

www.kuzeyormanlari.org/category/english
www.kuzeyormanlari.org/wp-content/uploads/2015/05/3rd_airport_project.pdf
Video: <https://vimeo.com/123657571>

Watching and resisting biofuels

Biofuelwatch is a UK/US campaigning organisation founded in 2006. It carries out research, education, advocacy and campaigning in relation to the impacts of large-scale bioenergy, including biofuels for transport (including aviation) and wood-based bioenergy for electricity and heat. It supports communities opposing destructive bioenergy developments, and works towards a shift in energy policies away from burning carbon and towards no-burn renewable energy and lower energy use in the global North.

www.biofuelwatch.org.uk

Stop new airport in Mexico City!

Five years ago, indigenous peoples and NGOs of the Valley of Mexico initiated actions in defence of the territory and of the common goods of nature. In 2014, the revival of the New Mexico City International Airport project (NA-

ICM) with six runways was announced, which would lead to land and water contamination and the final desiccation and death of the Texcoco Lake. The support and solidarity of scientific specialists in different areas demonstrated the high risk of water collapse, subsidence and flooding. While the New Airport project is demonstrably unfeasible, the Mexican government intends to impose it because it strictly has a business purpose.

Coordination of Peoples and Organisations from Eastern Mexico in Defense of Land, Water and Culture:
www.facebook.com/Coordinadora-de-Pueblos-y-Organizaciones-del-Oriente-del-Estado-de-México-153068474842928/

Stop evictions! Yogyakarta in Indonesia

Resistance against eviction from homes and farmland for New Yogyakarta International Airport (NYIA), on the south coast of Java, Indonesia, dates back to 2011. The site comprises six villages with 11,501 residents. Repression of farmers resisting loss of their land and livelihood is recognised as one of Indonesia's key land rights related human rights abuses. An 'airport city' is planned around the new airport, comprising shopping malls, hotels and industrial zones. A new organisation opposing the airport, Paguyuban Warga Penolak Penggusuran Kulon Progo (PWPP-KP), is supported by many citizens and activist groups.

Jogja Darurat Agraria:
www.facebook.com/Jogja-Darurat-Agraria-285078471847327

GAAM: Fighting Aerotropolis

Global Anti-Aerotropolis Movement (GAAM) works to research and raise awareness of aerotropolis projects, support affected communities and build an international campaign community. An 'aerotropolis', also referred to as an 'aerocity' or 'airport city', is an airport surrounded by commercial and industrial development. Aerotropolis projects are designed to support aviation growth and frequently entail displacement of rural communities.

<https://antiaero.org>



World Rainforest Movement

The World Rainforest Movement (WRM) is an initiative set up in 1986 by a group of activists from different countries to facilitate, support and reinforce the struggle against deforestation and land grabbing in countries with forests and forest-dependent communities. Its International Secretariat is in Montevideo, Uruguay. WRM exposes how international initiatives and policies presented as solutions to halt or reverse deforestation, like REDD+ and carbon offsetting, are failing to conserve forests and meet the demands of forest peoples.

wrm.org.uy



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