

# Significantly reduce academic air travel

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Open letter to rectors of the Flemish universities;

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*In the academic world, a lot of air travel takes place. Ironically, scientific research has shown that emissions from aircraft, among other things, irreparably disrupt the climate. In addition, kerosene fuels the war chest of many a dictator.*

*In this open letter, we denounce current service flight guidelines for 1) failing to align with universities' climate ambitions, 2) relying too heavily on controversial carbon offsets, and 3) failing to account for the urgency of the war in Ukraine.*

*A rational flight policy does not have to stand in the way of international collaborations and the quality of the research conducted.*

*We are therefore asking the university boards for uniform, ambitious and binding guidelines to significantly reduce academic air travel.*

On February 28, the latest IPCC report on the impact of climate change was published.<sup>i</sup> More than ever, it paints an alarming picture. Climate change is affecting the planet heavily and the main cause is the emission of greenhouse gases from the combustion of fossil fuels (coal, oil and gas). If the emission of greenhouse gases is not drastically reduced now, ecological and human tragedies are unavoidable. A few days earlier, Putin invaded Ukraine. The Russian war machine runs largely on income from fossil fuels.<sup>ii</sup> Petroleum and fossil gas together account for 60% of Russian exports, and account for 40% of state revenues.<sup>iii</sup> As much as 27% of the oil imported by the EU comes from Russia.<sup>iv</sup> Most of that oil is processed into fuels such as diesel, gasoline and kerosene. It can therefore be said roughly that one in four aircrafts taking off within the EU is filled with kerosene from Russia.<sup>v</sup>

Conclusion: we urgently need to get rid of fossil fuels. It is now all hands on deck to accelerate the energy transition. Large investments in renewable energy are crucial, but they are not enough. Given the urgency of both climate action and the war in Ukraine, fuel consumption should soon be limited as well. Flying less can make an important contribution, especially given the limited alternatives to kerosene.<sup>vi</sup>

## **Academic air travel mortgages universities' climate ambitions**

Scientists have built a tradition of international cooperation. There is a lot of travel all over the world for internships, education, field research, meetings, and conferences. Before the

corona epidemic, no less than 30% of Ghent University's emissions came from air travel.<sup>vii,viii</sup> By reference, building heating accounts for 32% of emissions and commuting for 18%.

However, Flemish universities do not lack ambitions. Ghent University, KU Leuven and VUB are committed to the EU's goals: 55% less emissions by 2030.<sup>ix</sup> UAntwerp goes one step further and wants climate neutrality by 2030.

The knowledge institutions are also aware of the impact of air travel and are taking measures to reduce the number of aircraft flights. Ghent University prohibits flying to destinations that can be reached within 8 hours by train. For flights to further destinations, a CO<sub>2</sub> contribution of 50 euros per tonne of CO<sub>2</sub> equivalents is collected to finance climate-friendly measures.<sup>x</sup> For this contribution, not only the CO<sub>2</sub> from the combustion of kerosene is taken into account, also the CO<sub>2</sub> equivalents from non-CO<sub>2</sub>-related processes such as the formation of condensation clouds.<sup>xi, xii</sup> KU Leuven is trying to reduce the impact of business trips, including through a voluntary CO<sub>2</sub> contribution of 40 euros per tonne of CO<sub>2</sub>.<sup>xiii</sup> At KU Leuven only CO<sub>2</sub> from the combustion of kerosene is taken into account, not the CO<sub>2</sub> equivalents from non-CO<sub>2</sub>-related processes. VUB works with a non-binding ABC principle: avoid flights, book an alternative mode of transport and compensate for 12 euros per tonne of CO<sub>2</sub> equivalent.<sup>xiv</sup> UAntwerp has non-binding guidelines to avoid flights and look for alternatives, and works with a mandatory CO<sub>2</sub> contribution of 25 euros per tonne of CO<sub>2</sub> equivalent.<sup>xv</sup> Hasselt University has not yet developed a policy to limit the number of flights.

Each of the initiatives taken is valuable and necessary. Unfortunately, they are insufficient, especially given the current urgency of the climate crisis. Moreover, they are not in line with the climate ambitions of the universities. Of all the Flemish universities, Ghent University is the furthest along in restricting air travel. However, the mandatory measure at Ghent University to replace short air journeys with a train ride has a limited impact: it reduces CO<sub>2</sub> emissions caused by air travel by 9%.<sup>xvi,xvii</sup> A long flight emits more than a short flight, and many short journeys already occurred by train in the past.

Moreover, the initiatives are based on questionable CO<sub>2</sub> compensations, on a 'what is feasible' policy in which the feasibility criteria are based on a meeting culture that dates back to before the corona epidemic, and the guidelines are too non-binding.<sup>xviii</sup> In what follows, we take a closer look at our theorem that the current guidelines are not sufficient.

### **CO<sub>2</sub> contributions have a limited effect**

The CO<sub>2</sub> contributions for air travel that the universities introduced serve two purposes. A first purpose is that a higher financial cost of air travel would limit the number of air trips. This is an effective strategy: provided that the total travel budget is not increased, more expensive trips will indeed result in less flying. A first problem with the current strategy is that there are no guarantees that the total travel budget will be kept stable. The second problem is that the current CO<sub>2</sub> contribution is too low to make a substantial difference. A return flight Brussels – New York will be about 102 euros more expensive due to the CO<sub>2</sub> contribution at Ghent University, about 50 euros at KU Leuven and UAntwerp, and about 24 euros at VUB. At an average ticket price of about 500 euros, such an amount is

too small to bring about a change in behavior. With a fixed total travel budget, at most 17%, 9%, and 5% of the flights, respectively, could no longer take place.

A second purpose for the CO<sub>2</sub> contributions is to compensate for the CO<sub>2</sub> emissions of an aircraft through projects that remove CO<sub>2</sub> from the atmosphere (e.g. reforestation) or projects that reduce CO<sub>2</sub> emissions elsewhere (e.g. insulating buildings or installing solar cells). The effectiveness of CO<sub>2</sub> compensation is very controversial.<sup>xxix</sup> For example, there is a real risk that the carbon emitted will not be fixed.<sup>xx</sup> It is also possible that projects are financed that would otherwise also be carried out. Think, for example, of the construction of a windmill or the installation of solar cells in Flanders. These are projects that generate money and for which sufficient investment capital can be found. Financing such projects with a CO<sub>2</sub> contribution does not accelerate the energy transition. There is, however, something positive to be said about compensation through strictly controlled reforestation.<sup>xxi</sup> Even then, however, compensation must be used as a last resort. The first goal should be to consume less kerosene.

A side effect of a CO<sub>2</sub> contribution that should not be underestimated is that it can give a false picture of CO<sub>2</sub> neutrality. One buys oneself, as it were, a clean conscience, and that puts a brake on the necessary reduction in the number of flights.<sup>xxii</sup>

In addition, Putin's war chest is not affected by CO<sub>2</sub> compensation. Only a reduction in the use of fossil fuels can have an effect on this, as the recent EU strategy also mentions.<sup>xxiii</sup>

### **Lessons from corona**

So what do universities have to lose? Physical encounters are ingrained in the research culture. Looking each other in the eye and conversations during a meal create bonds and trust. Flying considerably less will therefore require a major adjustment for many researchers. On the other hand, not flying does not need to inhibit collaborations or internationalization. Many places in Europe can be reached by train. Sometimes a stopover with overnight stay will be necessary.

Less air travel also does not have to stand in the way of the quality of the research. Canadian research showed that the number of air trips and the number of kilometers flown do not have a positive effect on the scientific successes.<sup>xxiv</sup>

A first lesson from the corona epidemic is that researchers have found their way to digital platforms en masse. International collaborations happened differently. Sometimes a bit more difficultly, sometimes more efficiently.<sup>xxv</sup> In any case, international cooperation has not come to a standstill. Now that the corona epidemic is fading into the background, participation in certain conferences again requires a physical presence. The challenge is to maintain the online and successful hybrid meeting culture, because this new meeting culture is not only good for curbing the spread of a virus, but also beneficial in the fight against climate change and war.

A second lesson from corona: we can change our behavior quickly and drastically. Such adjustments require the necessary efforts from everyone. Efforts that – in our view – can be justified in view of the urgency of the climate and geopolitical crisis. Knowledge institutions have an exemplary role to play in this.

## **Do not leave collective responsibility to individual choices**

The support for a substantial reduction in the number of air trips is bigger than ever due to the climate crisis and the war in Ukraine. However, leaving a substantial reduction to individual choices is doomed to fail. If everyone is responsible, no one is responsible.<sup>xxvi</sup>

British research also shows that climate-conscious people on average fly no less than people who don't lose sleep over the climate.<sup>xxvii</sup> This research shows that – on average – an individual fails to choose to fly less, and that flying less can therefore only succeed with binding institution-wide guidelines.

## **International mobility is not an end in itself**

Universities and funding institutions currently assess academics not only on their scientific achievements (number of articles, patents,...) and teaching tasks, but also on their international mobility. Someone who has participated in (many) international conferences has higher chances of obtaining funds and to grow in an academic career. However, this checkbox of international mobility wrings with the aim of phasing out air travel, because it forces many scientists to go to conferences or short internships 'for their academic career', even if their added value is limited. If the checkbox continues to exist, academics from the universities with the strictest travel policy risk being disadvantaged compared to their colleagues in institutions that do not set limits on the number of air trips.

In order to gain further support for significantly reducing air travel, it is essential that international (or more correctly intercontinental) mobility is no longer regarded as a quality mark. We would like to go a step further. Give academics the opportunity to indicate on their CV that they have not flown from a certain year, or have followed the strict guidelines of their host university.

## **Our question**

In concrete terms, with this open letter, we ask the university authorities to draw up more decisive and uniform measures in consultation with the fund providers, in order to drastically reduce air travel at the Flemish universities.

The measures ultimately chosen are subordinate to the goal, as long as they are binding and effective, and in line with climate ambitions. The measures may take the form of a mandatory and substantial CO<sub>2</sub> contribution to discourage air travel, whereby travel budgets are frozen. A doubling of the cost price would then ensure that only half as much can be flown. The measures can also be in the form of an annual carbon budget per department or faculty. Another important measure is to stop acknowledging intercontinental mobility for short stays as a plus for an academic career.<sup>xxviii</sup>

Let's take the lead here as Flemish knowledge institutions, and take the scientists in tow and thus also inspire governments,<sup>xxix</sup> companies and families that excessive flying is no longer of this time.<sup>xxx</sup>

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<b>195</b>	Bert	Reubens	Dr.	ILVO	
<b>196</b>	Robbe	Lamers	Student	HOGENT	Agro- en biotechnology
<b>197</b>	Roos	Steeman	Docent	Odisee	Educatieve bachelor kleuteronderwijs
<b>198</b>	Tom	Haerinck	Student	Vives	Industriële wetenschappen en technologie
<b>199</b>	Michel	HUART	Dr.	ULB	Faculty of Science
<b>200</b>	Sarah	Di Giglio	Research Manager	ULB	Sciences
<b>201</b>	Stefano	Pironio		ULB	
<b>202</b>	Marie	Dufrasne	Prof.	UCLouvain et Saint-Louis Bruxelles	
<b>203</b>	Maximilien	Charlier	Dr.	Université de Mons	Sciences
<b>204</b>	Matthias	Demuzere	Dr.	Ruhr-University Bochum,	Geography
<b>205</b>	Thomas	Verbeek	Prof.	TU Delft	
<b>206</b>	Laurent	Francis	Prof.	UCLouvain	
<b>207</b>	Alain	Jonas	Prof.	UCLouvain	
<b>208</b>	Xavier	Fettweis	chargé de cours	ULiege	Département de géographie Climatologie et Topoclimatologie Sphères

#### **Alumni and others**

<b>209</b>	Marleentje	Jageneau		
<b>210</b>	Filip	Bauwens		
<b>211</b>	Veerle	Roosens		
<b>212</b>	gert	willemen		
<b>213</b>	Geert	Slotmans		
<b>214</b>	Jurgen	Verreyt		
<b>215</b>	Simon	Couvreur		
<b>216</b>	Lisa	Breyer		
<b>217</b>	Annelies	Storme		
<b>218</b>	Max	Thulliez		
<b>219</b>	Willy	Dreesen		
<b>220</b>	Steven	Vromman		
<b>221</b>	Myriam	Saenen		
<b>222</b>	Patrick	Vanholme		
<b>223</b>	Jonas	Timmerman		
<b>224</b>	Gretel	Vanholme		
<b>225</b>	Vincent	De donde		
<b>226</b>	Eva	Van Hende	Dr.	
<b>227</b>	Babs	Verhoeve		
<b>228</b>	Eduard	Dauwe		
<b>229</b>	Werner	Verhoeven		
<b>230</b>	Nele	Vanholme		
<b>231</b>	Tristan	Van Camp		
<b>232</b>	Katrijn	Van Huffel		
<b>233</b>	Harry	van der Velde		
<b>234</b>	Evelyne	Lecoutere	Dr.	

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- <sup>i</sup> Working Group II contribution to the IPCC Sixth Assessment Report, *Climate Change 2022: Impacts, Adaptation and Vulnerability* via <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>
- <sup>ii</sup> We take Russia as a current example of how a regime uses fossil fuel revenues to wage war and oppress its own people. However, a similar argument also applies to other oil-producing countries such as Saudi Arabia (7% of EU oil imports), Syria, and Iran.
- <sup>iii</sup> Figures for 2019. Due to the strong increase in gas and oil prices, that share is now probably even higher. Markov, 2022, *Does resource abundance require special approaches to climate policies? The case of Russia*. via <https://link.springer.com/article/10.1007/s10584-021-03280-0>
- <sup>iv</sup> Eurostat. *From where do we import energy?* via <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html>
- <sup>v</sup> Note: Even if the kerosene on three out of four flights does not come directly from Russia, it follows from the economic law of supply and demand that this air traffic pushes the oil price up. These flights also provide more income for Putin's war chest.
- <sup>vi</sup> The IPCC classifies climate mitigation strategies according to the Avoid-Shift-Improve (ASI) principle. The greatest avoid potential comes from reducing long-haul flights. *IPCC Sixth Assessment Report, Climate Change 2022, Chapter 5: Demand, services and social aspects of mitigation* via [https://report.ipcc.ch/ar6wg3/pdf/IPCC\\_AR6\\_WGIII\\_FinalDraft\\_Chapter05.pdf](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter05.pdf)
- <sup>vii</sup> "Carbon Footprint of Ghent University" short report, August 2020 via <https://www.ugent.be/nl/univgent/waarvoor-staat-ugent/duurzaamheidsbeleid/klimaatplan/co2footprint>
- <sup>viii</sup> Calculated per professor (FTE ZAP) as a measure of the size of the university, the emissions of air traffic per year are (CO<sub>2</sub>e stands for CO<sub>2</sub> equivalents):  
12,8 ton CO<sub>2</sub>e for Ghent University (1110 FTE ZAP in 2021, 14200 ton CO<sub>2</sub>e by air traffic in 2019),  
11,6 ton CO<sub>2</sub>e for KU Leuven (1430 FTE ZAP in 2021, 16633 ton CO<sub>2</sub>e by air traffic in 2010),  
22,9 ton CO<sub>2</sub>e for VUB (425 FTE ZAP in 2021, 9749 ton CO<sub>2</sub>e by air traffic in 2018), and  
8,0 ton CO<sub>2</sub>e for UAntwerp (509 FTE ZAP in 2021, 4076 ton CO<sub>2</sub>e by air traffic in 2018).  
There are no figures available for air traffic for the Hasselt University.  
Staff figures 2021 available via <https://vlir.be/publicaties/personielsstatistieken/>  
Figures air traffic:  
-Ghent University: Climate Lab, *Carbon Footprint of Ghent University short report*, 2020 via <https://www.ugent.be/nl/univgent/waarvoor-staat-ugent/duurzaamheidsbeleid/klimaatplan/co2footprint>  
-KU Leuven: Metaforum Leuven, *KU Leuven climate neutral 2030*, 2013. Study performed by Futureproofed via <https://www.kuleuven.be/metaforum/visie-en-debatteksten/beleidstekst-2013-kuleuven-klimaatneutraal-2030>  
-VUB: Ecolife, *The Carbon Footprint of the VUB 2018*, 2019 via [https://www.vub.be/sites/vub/files/nieuws/users/mipers/footprint\\_vub\\_2018.pdf](https://www.vub.be/sites/vub/files/nieuws/users/mipers/footprint_vub_2018.pdf)  
-UAntwerp: Ecolife, *UAntwerp's Carbon Footprint 2018*, 2019 via <https://www.uantwerpen.be/nl/projecten/uantwerp-climate-team/klimaatstrategie/nulmeting/>
- <sup>ix</sup> compared to reference year 1995. Initially the EU target was 40% reduction, but due to the delay and lack of action, the reduction must now be accelerated.  
via [https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan\\_en-ambition](https://ec.europa.eu/clima/eu-action/european-green-deal/2030-climate-target-plan_en-ambition)  
-ambition Ghent University: Energy policy plan 2020-2030 via <https://www.ugent.be/nl/univgent/waarvoor-staat-ugent/duurzaamheidsbeleid/leidraad/energie/energiebeleidsplan.pdf>  
-ambition KU Leuven: brochure policy plan via <https://www.kuleuven.be/duurzaamheid/doc>  
-ambition VUB: action plan transversal sustainability policy 2021-2024 via [https://www.vub.be/sites/vub/files/nieuws/users/mipers/asp4\\_-\\_sustainability\\_action\\_plan\\_synthese.pdf](https://www.vub.be/sites/vub/files/nieuws/users/mipers/asp4_-_sustainability_action_plan_synthese.pdf)  
-ambition UAntwerp: Climate action strategy 2020-2030 via <https://www.uantwerpen.be/nl/projecten/uantwerp-climate-team/klimaatstrategie/>  
-ambition Hasselt University: unknown
- <sup>x</sup> Transition plan sustainable travel policy 2020-2030 via <https://www.ugent.be/nl/univgent/waarvoor-staat-ugent/duurzaamheidsbeleid/klimaatplan/transitieplanreizen.htm>
- <sup>xi</sup> The total climate impact of air travel and CO<sub>2</sub> equivalents.

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When fossil fuels such as kerosene are burned, CO<sub>2</sub> is added to the atmosphere. Since CO<sub>2</sub> is a greenhouse gas, extra CO<sub>2</sub> in the atmosphere causes the earth to warm up and the climate to change. Besides CO<sub>2</sub>, there are also other things that can warm the earth. In air traffic, the formation of cirrus condensation clouds and the formation of NO<sub>x</sub> mainly cause additional global warming.

-*IPCC Sixth Assessment Report, Climate change 2022, Chapter 10: transport, 10.5.2 Short lived climate forcers and aviation*

via [https://report.ipcc.ch/ar6wg3/pdf/IPCC\\_AR6\\_WGIII\\_FinalDraft\\_Chapter10.pdf](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_Chapter10.pdf)

In order to be able to compare the warming caused by things that are not CO<sub>2</sub> with the warming caused by CO<sub>2</sub>, all warming effects are expressed in CO<sub>2</sub> equivalents, or CO<sub>2</sub>e for short. The formation of cirrus condensation clouds and their warming effect depend on a variety of factors, including the temperature of the troposphere, humidity, and whether it is day or night. Calculations estimate that the CO<sub>2</sub> formed during the combustion of kerosene is responsible for 1/3 of the warming and the other matters (including the formation of cirrus condensation clouds and NO<sub>x</sub>) are responsible for 2/3 of the warming caused by aviation.

-Lee et al., 2021, *The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018.*

via <https://www.sciencedirect.com/science/article/pii/S1352231020305689?via%3Dihub>

KU Leuven, UAntwerp, Ghent University and VUB use the *Bilan Carbone*<sup>®</sup> method to calculate the climate impact of air travel. This method assumes that the CO<sub>2</sub> formed during the combustion of kerosene and the non-CO<sub>2</sub> items each account for half of the warming caused by the flight. In other words, by multiplying the amount of CO<sub>2</sub> formed by the combustion of kerosene during flight by 2, one knows the climate impact of the flight in CO<sub>2</sub> equivalents.

In addition, there are scope-3 emissions of kerosene. The extraction, production and transport of kerosene require (fossil) fuels. CO<sub>2</sub> is therefore released during these processes. These exempted CO<sub>2</sub> are also referred to as upstream emissions. The scope-3 emission of kerosene depends, among other things, on the country of origin and the production process. Expressed in kg CO<sub>2</sub> per kilometer, these emissions also depend on the length and the flight. The average upstream emission factor used for the Ghent University footprint according to the *Bilan Carbone*<sup>®</sup> method is 0.027 kgCO<sub>2</sub>e/passenger kilometer. In order of magnitude, this means that for every 1 kg of CO<sub>2</sub> released by burning kerosene, approximately 0.2 kg of CO<sub>2</sub> (20%) of scope-3 emissions took place.

<sup>xii</sup> Ghent University takes CO<sub>2</sub> equivalents and scope-3 emissions into account for calculating the CO<sub>2</sub> contribution. However, when calculating the CO<sub>2</sub> equivalents and scope-3 emissions, Ghent University uses a lower factor than the one used for calculating the climate impact of air travel. (For the climate impact, Ghent University works according to the *Bilan Carbone*<sup>®</sup> method with a factor of 1.2 on top of the CO<sub>2</sub> released from the combustion of kerosene, see footnote xi). For the calculation of the CO<sub>2</sub> contribution, Ghent University works with the factor 0.7 as proposed by *Milieu Centraal*. This is likely an underestimate of the climate impact. *Milieu Centraal* itself states "[...] for long flights, [using a factor of 0.7] underestimates the climate impact of non-CO<sub>2</sub> emissions." This while Ghent University uses this factor for long flights. *Milieu Centraal*, September 2021, Aviation Factsheet  
via <https://www.co2emissiefactoren.nl/wp-content/uploads/2022/01/Factsheet-luchtvaart-Milieu-Centraal.pdf>

<sup>xiii</sup> The CO<sub>2</sub> contribution for air travel is the standard option at KU Leuven. However, individual researchers can choose not to pay the CO<sub>2</sub> contribution (opt-out).

<https://nieuws.kuleuven.be/nl/2020/ku-leuven-breidt-vliegbijdrage-uit-naar-alle-medewerkers>

<https://www.kuleuven.be/duurzaamheid/duurzaam-reisbeleid/witte-en-grijze-lijst>

<sup>xiv</sup> <https://today.vub.be/nl/artikel/vub-met-nieuw-dienstreizenbeleid-op-weg-naar-klimaatneutraliteit>

<sup>xv</sup> UAntwerp compensates for CO<sub>2</sub> equivalents, so not only the CO<sub>2</sub> emissions from the combustion of kerosene, but also the effects caused by the formation of cirrus condensation clouds and NO<sub>x</sub>. UAntwerp works with CO<sub>2</sub>Logic <https://www.co2logic.com/en/services/co2-calculator> and this links to Greentripper <https://www.greentripper.org/en>

<sup>xvi</sup> The stated 9% reduction is an estimate based on the following data:

1) *Green Office* Ghent University calculated that in 2019, 58% of business trips by air took place within the EU, and that these flights together accounted for less than 18% of the total CO<sub>2</sub> emissions caused by air travel at Ghent University.

2) As a rule, Ghent University forbids flying to destinations that can be reached by train within 8 hours. The map <https://academictravel.ugent.be/map> shows that it mainly concerns cities in the United Kingdom, the Netherlands, Luxembourg, Germany, France and Switzerland. Train travel times to cities in other EU countries (notably Ireland, Portugal, Spain, Italy, Slovenia, Croatia, Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Poland, Czech Republic, Austria, Slovakia, Hungary, Romania,

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Bulgaria, Greece and Cyprus) take longer than 8 hours, so flights can still be flown to those destinations according to the current travel policy.

Since it is still allowed to fly to a large part of the countries within the EU according to the guidelines of Ghent University, we have halved the 18% (CO<sub>2</sub> emissions for all flights within the EU). This is how we arrived at the estimate of 9% savings.

- <sup>xvii</sup> On average, air travel has a greater climate impact than travel over the same distance by bus or train. Transport & Mobility Leuven (TML), for example, has calculated that the climate impact of a flight from Brussels to Vienna is four times greater than the same journey by bus, and seven times greater than that by (night) train.  
*Transport & Mobility Leuven, 2022, Comparison of the climate impact of short-haul flights and alternatives via <https://www.bondbeterleefmilieu.be/artikel/de-trein-bus-nemen-plaats-van-het-vliegtuig-het-maakt-wel-degelijk-een-groot-verschil>*
- <sup>xviii</sup> The willingness to pay a voluntary CO<sub>2</sub> contribution is very low. A study evaluating 63,520 bookings through a European airline showed that only 4.46% of the flights were paid a voluntary CO<sub>2</sub> contribution. The contribution that travelers are willing to pay was on average 1 euro per tonne of CO<sub>2</sub>, median zero euro per tonne of CO<sub>2</sub>. These figures are in stark contrast to what people say about their willingness to pay a CO<sub>2</sub> contribution (the so-called hypothetical CO<sub>2</sub> contribution).  
Berger et al., 2022 *Willingness-to-pay for carbon dioxide offsets: Field evidence on revealed preferences in the aviation industry*  
via <https://www.sciencedirect.com/science/article/pii/S0959378022000085>
- <sup>xix</sup> 85% of the compensating projects examined have a low probability of effectively reducing (future) emissions or are projects whose estimated reductions are overestimated. Only 2% of the projects examined lead with a high degree of certainty to reductions in (future) emissions that are not overestimated.  
In Öko-institut, 2016, *How additional is the Clean Development Mechanism? Analysis of the application of current tools and proposed alternatives.*  
via [https://ec.europa.eu/clima/system/files/2017-04/clean\\_dev\\_mechanism\\_en.pdf](https://ec.europa.eu/clima/system/files/2017-04/clean_dev_mechanism_en.pdf)
- <sup>xx</sup> A specific example of a dubious CO<sub>2</sub> compensation mechanism is that of the Fund for Scientific Research (FWO). The CO<sub>2</sub> contributions for air travel are used at the FWO to finance climate research, something the FWO should in any case finance. So what the FWO does is not real compensation, but reallocating money within its own organization.  
via <https://www.fwo.be/nl/het-fwo/onderzoeksbeleid/duurzaam-reisbeleid/>
- <sup>xxi</sup> Reforestation projects without a substantial financial return can only be carried out through donations. Trees absorb CO<sub>2</sub> from the atmosphere. With CO<sub>2</sub> compensation through reforestation, it is calculated that the newly planted trees absorb the CO<sub>2</sub> emissions of a flight over the course of a few decades. A condition for a successful absorption is that this forest is not planted in areas prone to fire, because in the event of a fire, all CO<sub>2</sub> is released back into the atmosphere and you are back to square one. Furthermore, it is also important to take into account the original natural value and natural vegetation of a location, as well as socio-economic conditions.  
Forests that had to compensate for emissions reduced to ashes, August 4, 2021, De Standaard  
via [https://www.standaard.be/cnt/dmf20210803\\_97515523](https://www.standaard.be/cnt/dmf20210803_97515523)  
More about compensation on the website of Zomer Zonder Vliegen, with the right to reply from BOS+ about reforestation projects.  
via <https://zomerzondervliegen.be/vragen/co2-compensatie>  
Holl and Brancalion, 2020, Tree planting is not a simple solution  
via <https://www.science.org/doi/10.1126/science.aba8232>
- <sup>xxii</sup> Jocelyn Timperley, 2019, *Why 'flight shame' is making people swap planes for trains*  
via <https://www.bbc.com/future/article/20190909-why-flight-shame-is-making-people-swap-planes-for-trains>
- <sup>xxiii</sup> *"Employers should encourage train journeys instead of short-haul flights for employees' business travel or promote virtual meetings instead of travelling."* Is one of the tips in *playing my part - How to save money, reduce reliance on Russian energy, support Ukraine and help the planet*, the report of the European Commission and the International Energy Agency published in April 2022.  
via [https://energy.ec.europa.eu/topics/markets-and-consumers/eu-energy-prices/playing-my-part\\_en](https://energy.ec.europa.eu/topics/markets-and-consumers/eu-energy-prices/playing-my-part_en)
- <sup>xxiv</sup> Wynes et al., 2019, *Academic air travel has a limited influence on professional success.*  
via <https://www.sciencedirect.com/science/article/pii/S0959652619311862?via%3Dihub>
- <sup>xxv</sup> Personal experiences show that online meetings can be very efficient, if only because the planning of the trip and the travel time are saved. On the other hand, meetings via the screen are more distant and there is less opportunity for casual conversation. Scientific research shows that there is less creativity in an online

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meeting, compared to a physical meeting. According to this research, the focus on a screen hinders the generation of ideas. The same research shows that decisions about the strategy to follow are no less effective (and possibly even more effective) during an online consultation compared to a face-to-face consultation.

Brucks and Levav, 2022, *Virtual communication curbs creative idea generation*

via <https://www.nature.com/articles/s41586-022-04643-y>

<sup>xxvi</sup> We refer here to the concept of tragedy of the commons, clearly explained in the WRM article 'Why are environmental problems so difficult to solve?'

via <https://www.wrmmagazine.nl/milieuproblematiek-oplossen/>

<sup>xxvii</sup> Alcock et al., 2017 '*Green' on the ground but not in the air: Pro-environmental attitudes are related to household behaviours but not discretionary air travel.*

via <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5373105/>

Another study found that academics with expertise related to sustainability fly no less than their colleagues with other expertise.

Wynes et al., 2019, *Academic air travel has a limited influence on professional success.*

via <https://www.sciencedirect.com/science/article/pii/S0959652619311862?via%3Dihub>

<sup>xxviii</sup> Additional inspiration for decisive action in following sources:

- De Jonge Academi, 2020. *Flying high but flying less – Hoogvliegers vliegen minder*

via <https://dejongeakademie.nl/publicaties/2015998.aspx>

- Die Junge Akademi, 2020. *Proposal for promoting sustainability in academia through the reduction of travel.*

via [https://www.diejungeakademie.de/fileadmin/user\\_upload/Bilder/publikationen/20201028\\_Stellungnahme\\_Nachhaltigkeit\\_EN.pdf](https://www.diejungeakademie.de/fileadmin/user_upload/Bilder/publikationen/20201028_Stellungnahme_Nachhaltigkeit_EN.pdf)

- *Flying Less in Academia: A Resource Guide*

via <https://sites.tufts.edu/flyingless/resources/>

- *Stay Grounded, Nine Concrete Steps towards a Climate Friendly Travel Policy*

via [https://stay-grounded.org/wp-content/uploads/2020/10/SG\\_Guide\\_Travel-Policy\\_final-1-3.pdf](https://stay-grounded.org/wp-content/uploads/2020/10/SG_Guide_Travel-Policy_final-1-3.pdf)

- *No Fly Climate Sci, How to reduce flying related pollution*

via <https://noflyclimatesci.org/resources>

- *Time To Explain, The Explane Toolkit*

via <https://www.timetoexplain.com/index.php/the-explane-toolkit/>

<sup>xxix</sup> Politicians played an important role in helping society through the corona crisis through, among other things, financial support and the roll-out of an extensive vaccination campaign. Even in the current crisis, politicians must support society, for example by developing a better train network in the EU. There is currently no comfortable and affordable alternative to a flight for many trips within the EU. Universities can lead the way in demanding politicians.

<sup>xxx</sup> Finally, we cannot shake off coal, oil and gas with a single measure. Stopping excessive air travel is only part of the solution.