



**Questions**

**&**

**Answers**

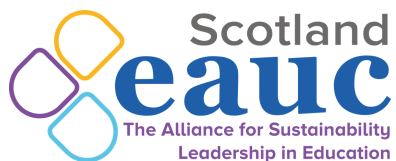
Your concerns, our answers.

## Acknowledgements

Questions & Answers has been authored and designed by Sonya Peres. The resource was developed between October 2019 and March 2020.

The work has been made possible through funding from the University of Edinburgh and the University of Strathclyde.

Thank you to everyone who looked over drafts of the resources and provided invaluable feedback.



Questions & Answers addresses concerns you may have when attempting to reduce your air travel while working in the further and higher education sector (FHE). To use this tool, think about why you may face difficulty in reducing your air travel- check the summaries of each question to see if your concerns may be addressed. Hyperlinks to sources are embedded in the document, simply hover over a blue word and the term boxes.

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This section discusses why it is important to address air travel on both individual and institutional scales. Referencing works by Dr. Joseph Nevins, Jonathen Franzen, Dr. Kimberly Nicholas and others.

**Key words:** privilege, social justice, influence, top-down changes

### "What if I reduce my environmental impact in other ways?"

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Here, we discuss how air travel has a larger impact on the environment than most individual behaviours and ask you to be wary of moral licensing.

**Key words:** carbon budget, lifetime emissions, moral licensing

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This section addresses the demand for travel outpacing any technological advancement, going into detail about biofuels and electric planes.

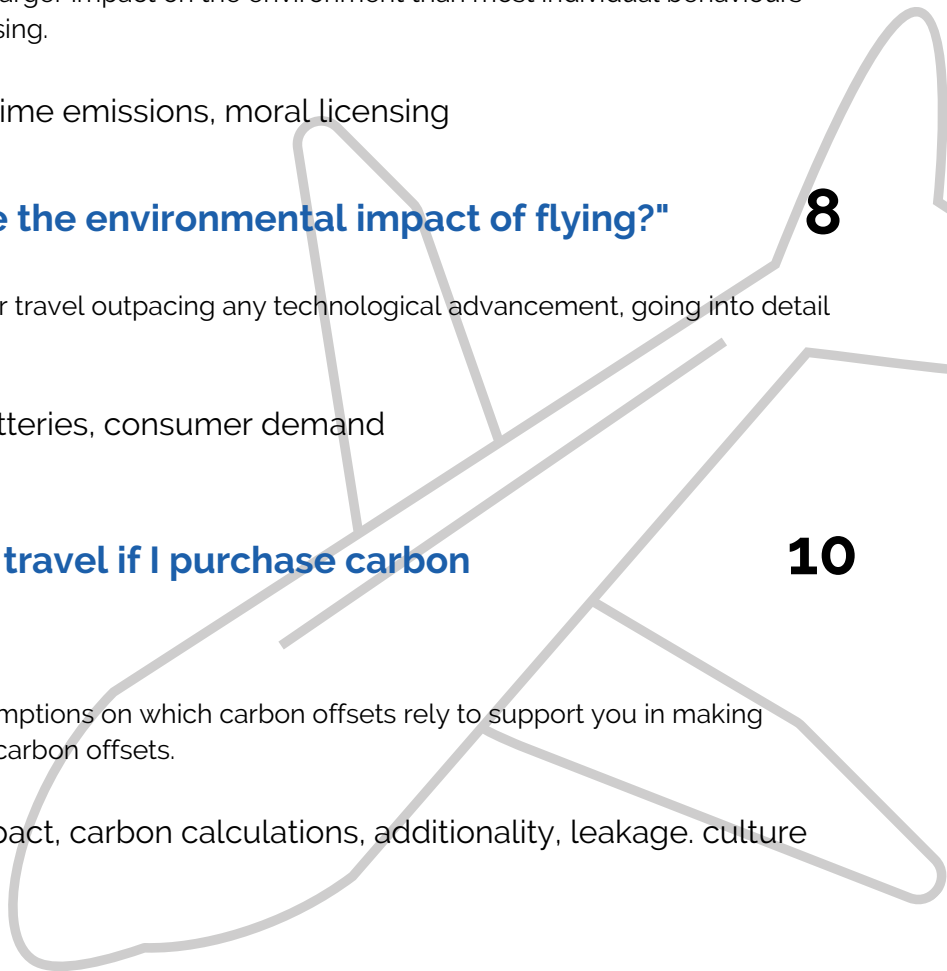
**Key words:** biofuels, electric batteries, consumer demand

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This section sheds light on some assumptions on which carbon offsets rely to support you in making informed decisions about purchasing carbon offsets.

**Key words:** net-zero carbon impact, carbon calculations, additionality, leakage, culture change



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Here we highlight important research from the University of British Columbia and elsewhere, studying how air travel impacts careers in the FHE sector.

**Key words:** hla index, credibility

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**key words:** hypermobility, benefits to saving time

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**Key words:** substitute vs. supplement, rethinking collaboration

## "Will reducing air travel in universities and colleges affect women and groups underrepresented in the sector?"

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In this section, we discuss the implications our reliance on air travel can have for marginalised groups, and begin to re-think the sector with more equity and diversity from reducing flying.

**Key words:** gender inequality, gender roles, visas, accessibility

### Please note

In this tool, we use the term carbon emissions in place of greenhouse gas emissions. Flying produces carbon dioxide, nitrous oxide, methane and water vapour.

# Questions & Answers and the Sustainable Development Goals



The Travel Better Package and Questions & Answers support the realisation of multiple Sustainable Development Goals (SDGs), as highlighted below:



**SDG 5: Gender Equality** seeks to dismantle structures that create barriers to opportunities, rights and empowerment for women. Women are underrepresented in managerial and senior positions and often shoulder more domestic tasks than men. Questions & Answers highlights how a reduction in air travel may reduce barriers to career progression for female academics who seek to also have families.



**SDG 12: Responsible Consumption and Production** seeks to reduce material consumption and the over-extraction of natural resources. Questions & Answers encourages a reduction in flights and consequently a reduction in the consumption of kerosene used to fuel aircrafts. It also highlights the differences between consumption across individual behaviours and countries and knowledge to live "in harmony" with nature.



**SDG 13: Climate Action** seeks to mitigate and adapt to climate change. Questions & Answers contributes to this goal by sharing knowledge about carbon intensive activities and impact reduction.



**"What if my individual impact makes no difference?"**

It is natural to feel that your individual carbon footprint is negligible when compared to global carbon emissions. Also, in our fight against climate change, it is important not to lose sight of the monstrous [environmental impacts](#) of structural systems and large, powerful institutions and industries and to continue working to confront these systems and institutions. That being said, it may take some reconsideration both of what flying and climate change mean to more clearly see the value in addressing individual air travel.

We must be aware of how we may participate in systems or activities that weaken certain demographics to better understand how we can change. Both flying and climate change serve to weaken certain demographics: flying affords the privilege of mobility (and the benefits that come with it) to an elite few, excluding the rest, and also contributes to climate change which disproportionately weakens the world's poor and marginalised. [Academic Dr. Joseph Nevins](#) argues that ignoring the individual impact of flying may be as unethical as ignoring individual acts of racism, even though racism, like climate change, is mainly enforced by powerful structures and institutions. He continues, stating that power, which inherently leaves some individuals and communities disadvantaged, flows from "interconnected scales ranging from that of the body to the global [so that] the everyday is of importance." Meaning, it is important to address power imbalances on individual and institutional scales as they work in tandem.

Thus, there is merit in addressing individual behaviours in order to recognise, and better understand how we may be implicated in systems and structures that weaken others so that we may mitigate the harm caused.

Writer [Jonathan Franzen](#) also addresses conceptions that individual actions are "meaningless," asking us to consider the ethics of perpetuating unsustainable behaviour and writing, "I can respect the planet, and care about the people with whom I share it, without believing that it will save me."

Aside from these considerations, by reducing flying, you may influence your friends, colleagues and family to do the same. A recent study commissioned by [Possible](#) (formerly 10:10 Climate Action) involved surveying 1,750 individuals in the United Kingdom. Amongst respondents who were concerned about climate change, 61% were willing to reduce the amount they fly. However, 69% were willing to reduce the amount they fly if they knew other people who were also taking action.

Also, climate change mitigation and adaptation campaigns to change individual behaviour tend to focus on single-use plastics and waste. Yet, the carbon emissions of individual flying [dwarf](#) all other areas of individual consumption and for that purpose alone, there are merits to addressing individual air travel. This idea will be covered in the next section.

Lastly, top-down changes, although crucial, disappointingly take decades to put in place due to red tape. Also, locked-in infrastructure [takes time](#) to transform and replace. Focusing on making individual actions more sustainable, especially when these actions would have a high-impact on reducing carbon emissions, is important for the time being.

#### Term Box

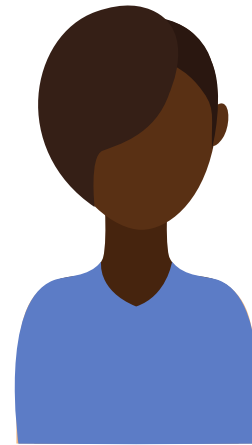
**Climate change mitigation:**

avoiding and reducing greenhouse gas emissions to prevent climate change and the warming of the planet.

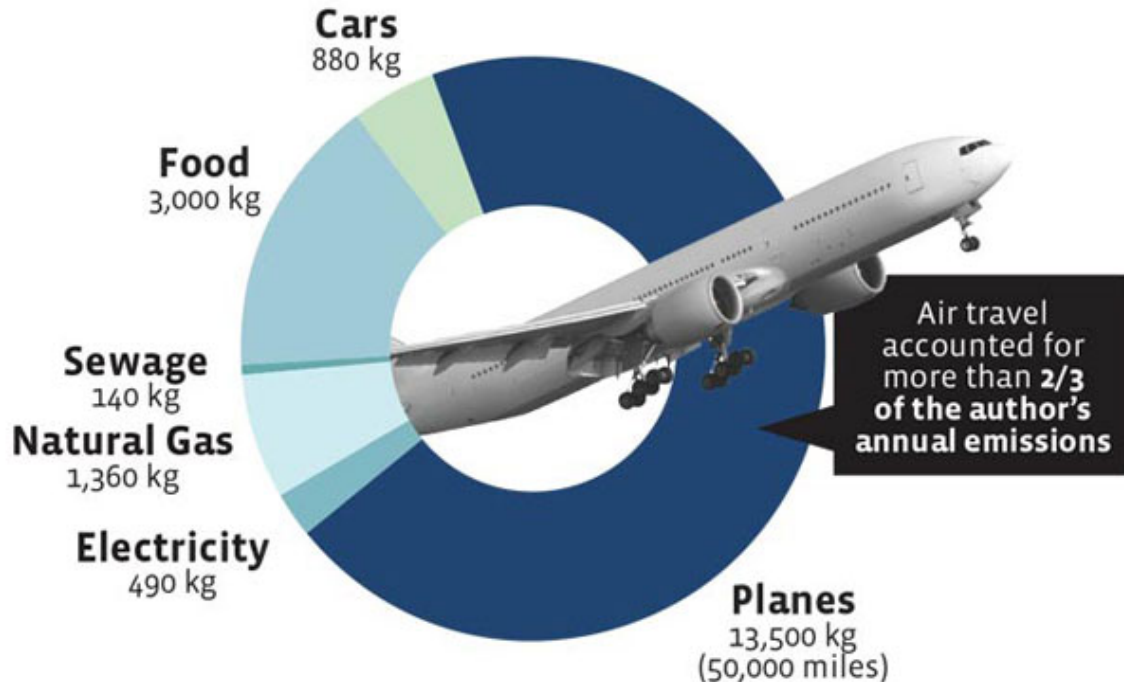
**Climate change adaptation:**

altering our practices, lifestyles and systems to protect ourselves, our communities and society as a whole from the effects of climate change.

**"What if I reduce my environmental impact in other ways?"**



It is commendable to lower individual carbon emissions through any means, like reducing your use of single-use plastics, walking or cycling to work and consuming less meat. However, for frequent flyers, in a year-long period, the environmental impact from individual air travel is far worse than other behaviours.



Scientist Peter Kalmus' carbon emissions in YES! In a 2016 article about reducing his flying



For example, one return flight from London to New York City accounts for **986 kg** of CO<sub>2</sub>, or for roughly around 30% of the CO<sub>2</sub> an individual **can emit** in a year, or our individual carbon budget, if we are meant to limit climate change to 1.5°C.\* Additionally, in one year, avoiding one transatlantic flight can prevent **8 times** the carbon emissions as switching to energy efficient lightbulbs.

Compared to lifetime emissions, avoiding one transatlantic flight is the **third most** impactful individual action one can take, after living car-free and having one less child.

We're not always aware of the differences in carbon emissions from our individual actions. And often, we're taught or encouraged to focus on addressing behaviours that may have less of an impact on carbon emissions than air travel.

For example, a **2017 study** of Canadian high school textbooks and government documents found that lower-impact carbon reduction activities like switching to more fuel efficient cars for a lifetime, were emphasised over higher impact activities like avoiding just one transatlantic flight. However, we should seek out information about the environmental impact of our individual actions and when we are aware, and try to address them.

At times, focusing on other avenues of sustainability may serve as a form of moral licensing. **Moral licensing** is justifying current behaviour through past moral decisions. **Studies** have found that academics and researchers in sustainable, or green disciplines may in fact travel more, thus increasing their carbon footprints, on the basis that they have "saved" emissions elsewhere. It is important to remember the sheer scale of air travel emissions when considering sustainable behaviours and options.

### Term Box

#### **Carbon budget:**

an estimated amount of additional emissions that can enter the atmosphere for our planet to stay within a 1.5 °C temperature increase. A carbon budget is calculated based on the relationship between temperature warming in climate models and cumulative carbon emissions.

\*This percentage was calculated roughly using Carbon Brief's tool to determine the size of each individuals "carbon budget" and the Guardian's estimate of CO<sub>2</sub> emissions from return flights.



**"Can technology decrease the environmental impact of flying?"**

It makes sense that we may look to technology to provide solutions to climate change; we are constantly told that technological fixes will allow us to go about our lives while also halting climate change. There is also a lot of conversation surrounding technological solutions to the environmental impacts of air travel, including the use of biofuels and electric batteries, instead of kerosene, to fly planes. Thankfully, media sources and academic literature on air travel have begun to address the misguided, albeit understandable, belief that technological advances and silver bullets will allow us to continue, and even increase air travel without harming the environment, also known as the "[technological hoax](#)".

Although there have been advances in technology that can theoretically reduce the environmental impact of air travel, one of the most important reasons why we cannot rely on technology to make air travel cleaner is that demand for flights is [accelerating](#) quickly and technological advancements can currently only work on smaller scales. To [quote](#) Dr. John Broderick, lecturer and chair of the Carbon Action Group at the University of Manchester, "increase in traffic has historically outpaced the improvements in technology."

**"increase in traffic has historically outpaced the improvements in technology."**

The aviation industry has committed to [cutting its emissions](#) in half by 2050 and relies on access to alternative jet fuels to help them reach this goal. Yet, this may not be realistic.

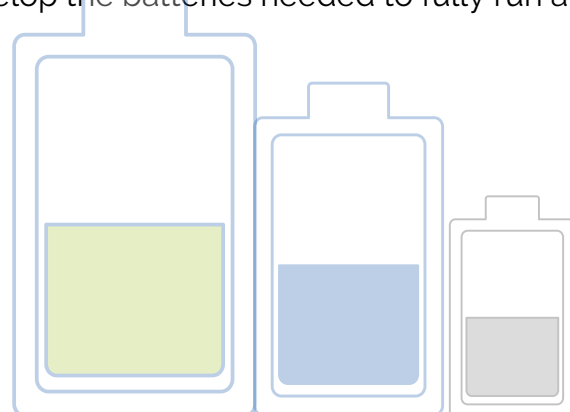
Biofuels made from plants, including corn and sugarcane, have been used since before the invention of automobiles. Biofuels have been used for [150,000 flights](#) since 2008. yet, the amount of biofuels produced for aviation in 2018 accounted for only 0.1% of fuel consumption in air travel. A [rough calculation](#) shows that switching our global, overall consumption of kerosene fuel to biofuels would require an expansion of global agricultural land by around 7%. Evidently, we may not have enough land to grow plants for food and also to produce enough biofuels to curb carbon emissions from air travel. It is [estimated](#) that the production of alternative jet fuels in North America, which has lots of land, may still only account for 5% of carbon emissions from international flights by 2030.

However, research is ongoing.

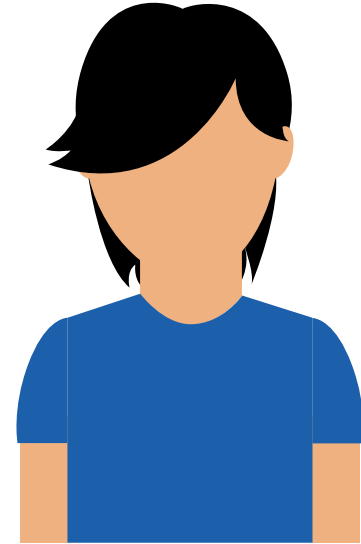
While there have been some advances in [electric](#) planes, airplanes are very sensitive to weight and mass (think about how airlines meticulously weigh check-in luggage), and batteries that would store enough energy for a longhaul flight would be very heavy, making it nearly impossible for longhaul flights to run off electricity. There are currently batteries that can provide energy for a small, air taxi to carry 4 passengers for around 100 kilometers.

Lastly, technological solutions to the environmental impact of air travel take time. [Scientists](#) are still trying to understand how we can produce enough biofuel to meet increasing consumption of goods and services without compromising food supply or more greatly contributing to climate change through deforestation. Additionally, batteries improve on average 3-4% per decade; Academics writing for [the Conversation](#) estimate that at this rate, we may only develop the batteries needed to fully run a commuter plane by 2050.

We don't have that much time.



**"Can I continue regular air travel if I offset my emissions?"**



Carbon offsetting is controversial. There is a plethora of literature both praising and criticising carbon offsets. Yet, despite the range of conflicting opinions, interest in, and purchases of carbon offsets have **risen** in the past year.

Put simply, carbon offsetting involves paying money into a scheme that is undergoing or developing a project, like planting trees or providing communities with clean-burning stoves, that will remove, or in the future prevent the amount of carbon associated with your individual travel. In theory, purchasing carbon offsets hopes to make your action have a net-zero carbon impact.

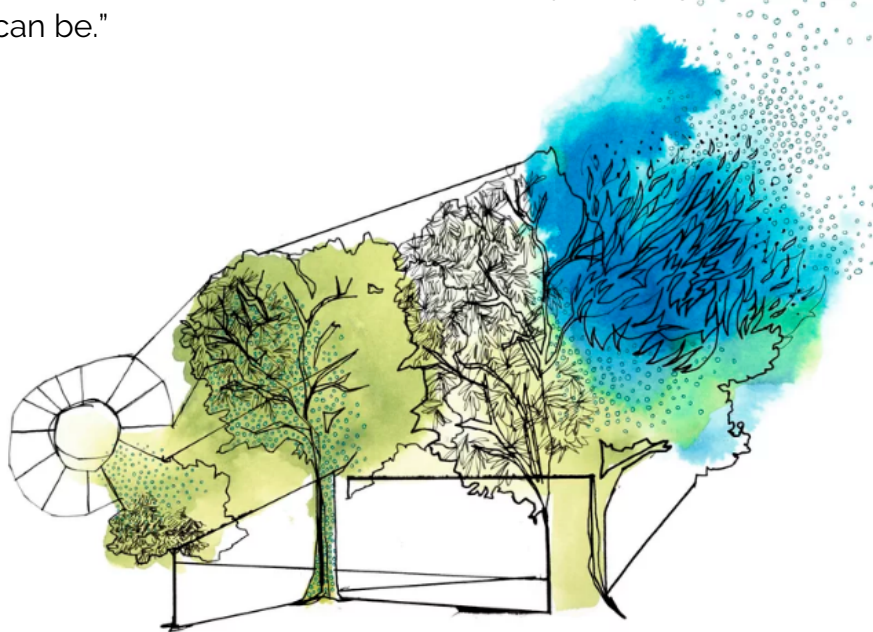
There are many reasons why carbon offsetting is not an ideal solution to the negative impacts of air travel on the environment. This answer will focus on a few (false) assumptions on which carbon offsetting relies.

The first assumption on which offsetting stands is that calculating carbon emissions from air travel and then measuring carbon storage from offsetting is straightforward and that the data is completely accurate. It's not. Calculating carbon emissions from most activities is complicated, but calculating the emissions from one flight is especially **difficult** due to differences in aircraft, weight of passengers and luggage, business and economy seats and radiative forcing, or the additional warming caused by water vapour and nitrous oxide in higher altitudes.

Additionally, calculating how much carbon has been stored by projects, like [planting trees](#), is also complicated. It is difficult to know exactly how much carbon trees are storing much without cutting them down and burning them (which defeats the purpose of planting them, of course).

Also, an important part of carbon offsets is proving [additionality](#), meaning, proving that a project, like installing wind turbines would not have happened without the scheme and money paid into the scheme to offset existing carbon; this is frustratingly difficult to prove, yet, without proving additionality, we cannot say for certain that an action has had its carbon truly offset.

We should also worry about leakage- or the idea that a carbon offsetting project in one area may cause extra carbon emissions elsewhere. Dr.Barbara Haya, a researcher at the University of California Berkley, told [ProPublica](#) that it is a "delusion" to believe we can accurately measure the impact of carbon offsetting. She instead hopes these programmes help the climate in unmeasurable ways, saying "I think that's the best of what offsets can be."



**When a tree is destroyed, all the carbon accumulated over its lifetime is released back into the atmosphere.**

Image from ProPublica's 2019 [piece](#) on unsuccessful offsetting schemes in Brazil

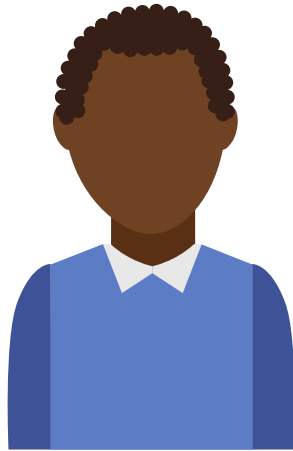
The second assumption on which carbon offsets operate is that we have time to find solutions to, or slow the rate of climate change- we don't. Climate change is happening and we are in the midst of a climate emergency.

Carbon storage takes time. Carbon stays in our atmosphere for 100 years, meaning, trees storing carbon need to stay standing for a century to effectively ensure a true carbon offset- and we can't guarantee that. We also can't guarantee that projects that will prevent further carbon emissions will be developed quickly enough. Also, trees do not reach their [average carbon storage capacity](#) until 15-35 years old- that's a pretty significant lag between the carbon we've emitted now, and its supposed offset.

The third assumption carbon offsetting makes is that it is okay to fly regularly and that we can continue consuming resources as we please if we offset our carbon emissions. We need to reduce our consumption of non-renewable resources to stay within 1.5 °C of global warming; this involves shifts in culture, mindsets and goals and carbon offsetting does not contribute to that. According to [Professor Kevin Anderson](#), an engineer at the Tyndall Centre for Climate Change, carbon offsetting can weaken drivers propelling us toward meaningful climate change mitigation. Offsets can [advance our dependence](#) on carbon intensive-infrastructure and fossil fuels. This is the exact opposite direction we need to go in.

Some say carbon offsetting should be our last resort, after avoiding unnecessary flights and booking alternative, more sustainable forms of travel. While others, including Professor Anderson, say purchasing offsets, because of what they represent, is worse than doing nothing.

Projects developed by carbon offsetting schemes may have other benefits, like improving biodiversity and strengthening communities and are not inherently bad in themselves. However, a more straightforward option if you are trying to mitigate the impact of climate change may be to donate to community-building or disaster relief efforts rather than an initiative as murky as carbon offsetting. If we are to spend money on carbon offsetting, we should invest in these schemes in addition to reducing air travel, rather than as a way to continue travelling as we please.



**“Won't reducing air travel impact my research?”**

Our understanding of academic success points to regular travel to attend or present at conferences and events where academics network with future collaborators or funders. Travel is also synonymous with participating in or leading international research projects or representing the home institution abroad. Research addresses the increasing international benchmarks to which institutions in the sector must adhere to be successful; these international benchmarks inevitably involve air travel.

However, individuals in the FHE sector can still do meaningful work while reducing their air travel. Researchers at the University of British Columbia [published](#) preliminary findings from an analysis of 1,789 flights taken in an 18-month period by 997 travellers at the university in 2015. The findings illustrate the lack of relationship between emissions from air travel, distance of travel and number of flights taken and academic productivity, defined via the h1 annual index (h1a). The h1a considers a normalised citation count of an academic and also accounts for the length of they have spent in academia. The study also finds that increased air travel does not account for increased collaboration on papers, offering insight into internationalisation in the sector alongside reduced air travel.



In fact, other [research](#) highlights a lack in perceived credibility from the public when academics have a large carbon footprint, particularly for academics in climate science, sustainability and environmental fields. These findings can be insightful for institutions who aim to be carbon-zero and promote sustainability yet do not address or attempt to reduce emissions from air travel. Thankfully, credibility can be regained once behaviours change.

Although these findings are important in pushing for reduced air travel in the FHE sector, the Travel Better Package recognises that in the sector, it may be necessary for your career progression and research to fly occasionally. The package does not expect you to eliminate air travel entirely, but rather, to reduce air travel, make better travel decisions and challenge the notion that we must regularly fly to contribute meaningful work to the sector.

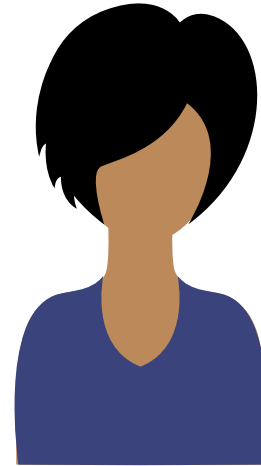
There are successful academics who have committed to not flying, or reduced their air travel, who continue to produce successful and meaningful work, including [Professor Parke Wilde](#), [Professor Joseph Nevins](#) and [Dr. Charlotte Rae](#), amongst many others. These academics often write about their experiences reducing their travel to show others that it is not only possible, but also enjoyable.

Also, as mentioned in the Travel Better Pledge Template, if you are in a position to create opportunities in the FHE sector, perhaps consider how to develop and promote opportunities that rely less on regular air travel or even reward a reduction in air travel.

**The package does not ask you to eliminate air travel entirely, but rather, to reduce air travel, make better travel decisions and challenge the notion that we must regularly fly to contribute meaningful work to the sector.**



**"Doesn't travelling by air save time?"**



Not necessarily. the University of Edinburgh has created a map (see page 15) showing that for journeys between closer cities, travelling by train actually takes less time than flying. From Edinburgh to Manchester, Birmingham and London, train journeys are on average shorter than taking a flight.

As part of their sustainable travel policy, Ghent University has compiled a list of "green cities" or cities where the travel time by train from Ghent is no longer than the travel time by plane (this includes estimates about travel to the airport, duration of check-in and duration of transfer as well length of flight). These cities are abundant and include Amsterdam, Brighton, Bristol, Cardiff, Oxford, Sheffield and many others.

Of course, there are times when air travel may be quicker than slower modes of transport, like train, bus or carpooling, and it is then that you must consider the actual benefits to saving time: are you saving time to do more work, to spend time with your family or simply because you do not want to spend a few more hours travelling by train. Decide which of these benefits is most important to you.

What may be helpful to think about is, if the ease of attending the meeting or conference influenced your decision to attend and if that meeting or conference is actually beneficial. The Air Travel Justification Tool can help you reflect on the importance of attending, which may save you even more time.

Another thing to consider is whether saving time is more important for you than other benefits slower travel may afford, including seeing more of a country and nearby areas and perhaps being able to work while you travel (with many trains being equipped with tables, sockets and even WiFi). Also, is saving time more important than some more negative consequences of frequent air travel? A 2015 [paper](#) discusses the "dark side" of hyper-mobility, or near constant movement that shapes identity, to shed light on the physical and emotional consequences of regular travel, like jet lag, isolation and potentially "weakening of ties at a local and community scale" from regular travel.

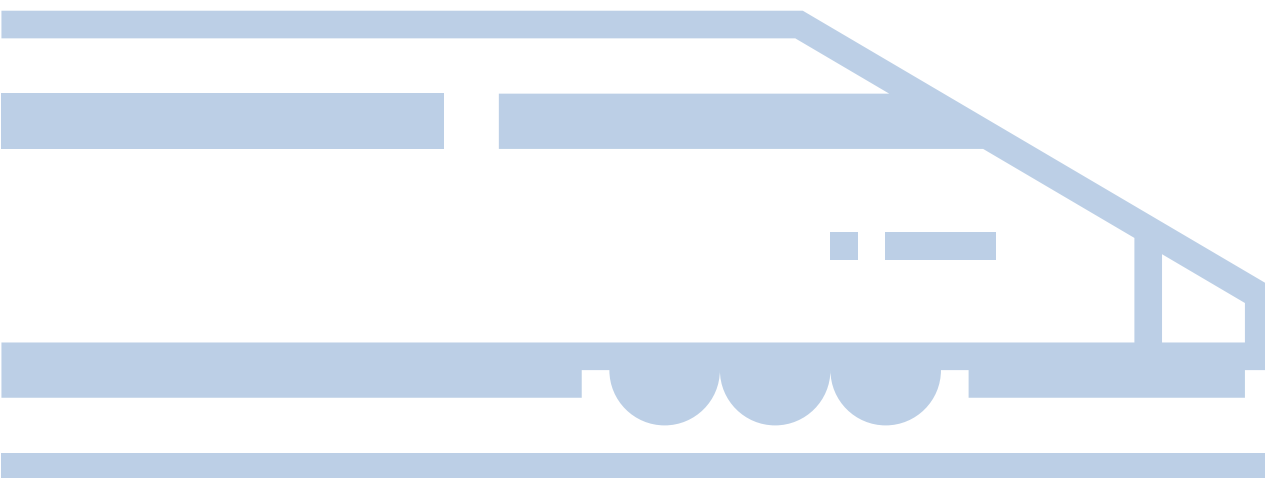
Lastly, there is an emergent literature and practice of "[Slow Scholarship](#)." The Slow scholarship movement is concerned with the increasing demands of academic life that can contribute to rushed research, anxiety and inequality in the sector. The movement advocates for the slowing down of work in the FHE sector to ensure our work and experiences are meaningful. Slow Scholarship may mean experiencing a train journey as part of research, as opposed to the means to an end.

Of course, engaging in slow scholarship may not be possible for many, but if you are in a position to engage in slow scholarship, perhaps it can allow you to reconsider what it means to save time by travelling by air and how important it may be for you to save time and instead engage in slower forms of travel that may be beneficial in other ways.

### Term Box

#### **Slow Scholarship:**

"A... response to hasty scholarship. Slow scholarship, is thoughtful, reflective, and the product of rumination – a kind of field testing against other ideas. It is carefully prepared, with fresh ideas, local when possible, and is best enjoyed leisurely, on one's own or as part of a dialogue around a table with friends, family and colleagues..."



Trains are, on average, faster, cheaper and lower in carbon emissions

**Time:** door to door

**London** figures are an average of 2,104 train journeys and 1,234 air journeys

**Birmingham** figures are an average of 302 train journeys and 418 air journeys

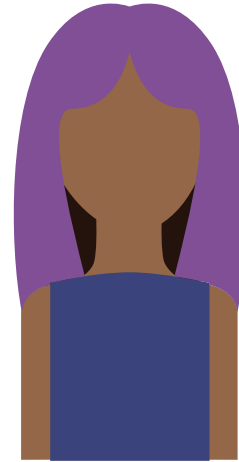
**Manchester** figures are an average of 466 train journeys and 173 air journeys



See more ways to reduce your travel carbon: [edin.ac/business-travel](http://edin.ac/business-travel)

Flying times include average time spent commuting to airport, checking-in, security checks etc.

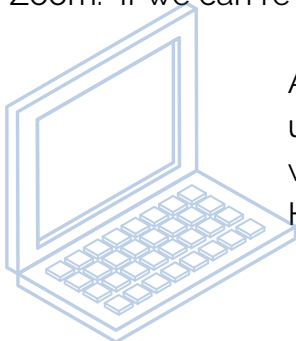
**"Isn't virtual conferencing technology difficult to use for meetings?"**



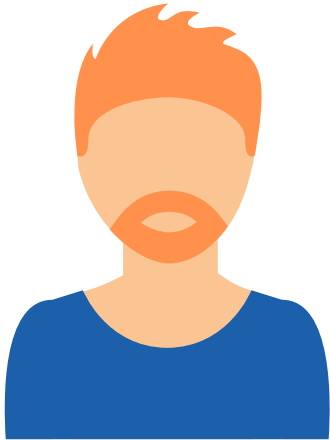
Virtual conferencing technology isn't perfect, but it works. Sure, there are a few hindrances to using virtual conferencing that can make one wish they had instead met in person, but it is useful to not see virtual conferencing as a substitute to in-person meetings, but instead, as a different form of collaboration or a supplement to in-person meetings.

At the University of Sheffield's [symposium](#) on Academic Flying, Dr. James Faulconbridge from Lancaster University discussed the synthetic fusion that has bound work in the higher education sector to air travel, remarking that we need to go beyond the idea of substituting in-person meetings facilitated by air travel and instead rethink what it means to collaborate and imagine fundamentally different ways to coordinate.

What if, instead of substituting in-person meetings with virtual conferencing, we closely consider the aims of meetings or our attendance at conferences? Sometimes, we need to work side-by-side, and this may entail travelling to destinations, other times we don't. In these instances, we can utilise online meeting technology like Skype and Zoom. If we can re-think the need to work in-person often, we can travel better.



Also, there are many online resources that can support you in using virtual conferencing technology to plan conferences, workshops or meetings including a [how-to document](#) by Dr. Ken Hiltner from the University of California Santa Barbara.



**"Will reducing air travel in universities and colleges affect women and groups underrepresented in the sector?"**

Research on how regular travel in academia may affect equity and diversity in the sector is sparse. However, there are some findings and news reports that indicate a reduction in air travel and an institutionalised inclusion of other forms of communication and collaboration may improve equity in academia.

Various articles have explored the demand for individuals working in FHEIs to regularly travel for business and the differing implications this expectation has for men and women. [Research](#) has found that at the early-career stage, male and female academics are equally mobile. However, after a certain point, on average the mobility of female academics lowers when they get married and/or have families as these events may enforce traditional gender roles, where women take on domestic duties including childcare and caring for elders.

A 2013 [book](#) on experiences in academia found through surveys that female graduate students or post doctorate researchers who have children are more than twice as likely than childless women and new fathers to leave their career in academia. They also found that amongst a sample of tenured academics, 70% of men were married with children versus only 44% of women.

### **Term Box**

#### **Traditional Gender Roles:**

Ideas that assign economic and public work to men while women take on domestic, private duties involving caring for dependents, cooking etc.

These findings highlight barriers female academics may face in accessing travel opportunities to advance their careers, including accumulating social capital from networking, exposure, research opportunities etc. If we were to reduce our reliance on air travel in the sector and encourage more varied and flexible forms of collaboration, women may be able to more easily participate in the FHE sector without having to decide between their careers and their personal ambitions.

It is important to note that although mobility for female academics has improved in the past few decades, this improvement is dependent on country, career stage and length of stay abroad. There is not much information about female academics in the Global South.

Additionally, with an increasingly prejudiced and unstable global political climate, difficulties in obtaining visas for academics and professionals may worsen.

Multiple [articles](#) in the past year have exposed incidences where academics, particularly those from the Global South, have struggled or been denied visas to enter the United States and the United Kingdom. A 2018 [study](#) commissioned by the Wellcome Trust looked at international movement amongst researchers and academics in science. Through surveying 2,465 academics from 109 countries, the study found that researchers from countries in Africa and Asia were 3 and 4 times more likely, respectively, to have issues obtaining a visa to travel for work than their European counterparts. Advancing different forms of collaboration, and relying less on in-person meetings through air travel, could mean more equal access to opportunities for all individuals in the global FHE sector.



Although there is not much research on the matter, it is important to note that recognising the value in multiple ways of collaborating, instead of placing emphasis on flying to non-local meetings, may improve academia's accessibility. For example, regular air travel is tied to concepts of hyper-productivity, which can [exacerbate](#) issues with mental well-being. Advancing the Slow Scholarship movement (see page 15) and taking the time to travel by train and conduct research may include many more voices in academia. Additionally, reducing air travel and consequently diversifying methods of research, networking and collaboration will improve accessibility for all individuals in the sector, including neurodiverse individuals or folks with disabilities.

It is important to emphasise that Questions & Answers accepts that a complete elimination of air travel is not possible, and may not be an option for many individuals in the sector, including those from underrepresented groups. Instead, we promote recognising the value in more varied forms of collaboration, networking and research and a reduced reliance on air travel to make academia as accessible, and thus equitable and diverse, as possible.

Version 1 of Questions & Answers was prepared and delivered by



With funding and support from

