# Offsetting Air Travel

## How it works

### What is offsetting in relation to aircraft travel?

We know aircraft travel has a significant impact in terms of emissions which contribute to climate change; however, we also know reducing emissions of aircraft travel is difficult as we are yet to develop technological solutions such as zero-carbon jet fuel or electric planes. Offsetting aircraft emissions involves calculating the emissions released into the atmosphere from a particular journey and then funding a project that removes exactly the same quantity of emissions elsewhere.

### What are the benefits of offsetting?

Offsets help us understand our contribution to climate change and the impact of our actions on climate and society. Offsetting helps to fund projects with the wider benefits of Sustainable Development Goals that might not have otherwise received funding.

### Which projects are the offsets supporting?

Each metric ton of flight emissions provides 7 EUR of funding for two offset projects certified by Gold Standard and Verra. Both certification schemes set stringent quality and tracking criteria to monitor the real impact of the projects.

The first project in Uganda provides clean cookstoves to replace rudimentary practices such as open fires. The UgaStove project sees a number of cascading benefits across the Sustainable Development Goals including improved health due to better indoor air quality, reduced deforestation for fuel as well as improving the lives of those responsible for cooking due to speedier cook times and reduced time spent collecting fuel – a responsibility that is often placed on women and children.

The second project supports an 8.5 Mega Watt wind energy scheme in Tamil Nadu, India which feeds its renewable electricity into the national grid. This reduces reliance on fossil-fuel powered electricity, improving air quality and health for residents.


## How are the emissions calculated?

CO2logic are assisting FENS with calculating emissions from aircraft travel to the FENS Forum 2020. Exact emissions for a particular flight may vary slightly due to the age of aircraft, fuel mix, flight speed and level of occupancy, which is why they are using best practice conversion factors from the British Department for Environment, Food and Rural Affairs.

The calculations are based on the flight time, with an average flight speed of 800km/hour. Emission factors are higher for business class flights since fewer people are travelling for the same environmental impact. The calculations take into account direct emissions from the fuel burnt, as well as additional impacts from other elements that cause global warming – these elements are called “radiative forcing”.

## What is radiative forcing and why is it included in the calculation?

The simple answer is that flying has a greater impact than the direct emissions from the burning of the jet fuel. Further radiative forcing occurs in the upper atmosphere such as contrails (the white stripes you see behind planes), which can trap more heat and cause additional rises in temperature. Therefore, to best account for the environmental impact of aircraft travel, we need to look at emissions from the fuel burnt and the radiative forcing from the contrails and other elements.

## Why do shorter flights have such high emissions?

Taking off and landing use up very large volumes of fuel making up a significant proportion of a flight’s emissions. This is why you will notice a 1 hour economy flight only emits slightly less than a 2 hour flight – because for such short flights the bulk of the emissions comes from take off and landing rather than the actual distance travelled.

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