



Carbon Offset Calculators - SUNY Best Practice Guide

SUNY CIE Sustainability Committee

1. Introduction:

Carbon offsets allow individuals a practical and effective way to address climate change and encourage sustainable practices. This is done by counteracting your personal carbon emissions, or carbon footprint, to reduce the environmental harm that comes from certain activities, such as international travel.

In simple terms: when you fly somewhere, the plane emits carbon dioxide by burning fuel. This is a carbon emission and harms the environment. The longer the flight, the higher the carbon emissions. The more frequent flying you do (for example: weekend trips through Europe), the higher the carbon emissions. A carbon offset is thus a way to achieve carbon neutrality by paying a small fee that can help to improve the environment, balancing out the harm caused from your estimated carbon emissions.

2. What is a Carbon Offset Calculator and How to Use Them:

Carbon offset calculators are tools used to determine the carbon emission for an individual traveler or for a group of travelers. Depending on the calculator, you may enter a roundtrip or one way flight, and may also enter the hours in the air or the departure and destination points. The calculator will then give your estimated aircraft fuel burn as measured in CO₂ emissions based on the length of the flight and number of flights. It should be noted that carbon offset calculators can only provide estimations of your carbon emissions. A good carbon offset calculator will also be able to translate a carbon emission estimate into a dollar amount. The dollar amount thus represents the carbon offset value that one would need to pay in order to achieve carbon neutrality.

Once you have your carbon offset estimate (\$), one easy step is to make a donation in a dollar amount towards an organization devoted to environmental sustainability such as the [Finger Lakes Climate Fund](#). Equally, you could also decide to instead translate that dollar amount into action if so desired. For example: planting trees in your community, improving energy efficiency in local homes, or supporting a local sustainable business.

Note: beware of carbon offset calculators that provide monetary carbon offset amounts and recommended organizations to donate towards. While many of these tools may be harmless, others could be biased towards specific organizations or even present fraudulent organizations. Always be aware of which organization you are donating to and ensure your offset is being put to proper use.

3. Carbon Offset Calculator Examples:

Note: SUNY CIE does not specifically recommend or approve any carbon offset calculators over others. There are many calculators that exist, most with their own individual benefits. The below three options are listed as examples that other SUNY universities have utilized in the past.

ICAO Carbon Emissions Calculator:

<https://www.icao.int/environmental-protection/Carbonoffset/Pages/default.aspx>

- Pros and Cons:
 - The ICAO Carbon Emissions Calculator is a free resource provided by ICAO, a specialized agency of the United Nations focused on informing and researching new air transport policy.
 - The benefit of this calculator is that it is internationally recognized while still being relatively simple to operate. The calculator enables you to enter multiple flights, passengers, classification of flight (one-way vs roundtrip; economy vs premium; etc.) and more.
 - The downside of this calculator is that it calculates only into carbon emissions values and not a monetary value for a carbon offset. As such, the user will need to make this calculation on their own.
- When you might want to use this calculator:
 - This calculator can be a great resource for an office or unit within a university. It's ability to calculate multiple flights and passengers all at once means that an office could theoretically use the calculator to calculate their entire international travel carbon emissions over a given time frame. Faculty-led trips and other programs where the office is responsible for multiple airfare purchases are a prime example of usage for this calculator.
 - This may not be the best calculator for student-use as the carbon emissions value is not translated into dollars. For many laypersons, the estimated CO₂ value can be difficult to understand if there is no scientific background for reading the output.

Sustainable Travel International Calculator:

https://sustainabletravel.org/our-work/carbon-offsets/calculate-footprint/#gf_27

- Pros and Cons:

- The Sustainable Travel International Calculator is extremely simple and friendly to use for persons without a background in carbon emissions. It's primary benefits are the ability to quickly enter flights and generate both a carbon emissions value as well as a monetary carbon offset value. The downside of the Sustainable Travel International Calculator is that it's simplicity means that the estimated carbon emissions and carbon offset are truly estimates. This may be the best calculator for someone with an interest in truly understanding the scientific reasoning behind carbon offsets or carbon footprints.
 - When you might want to use this calculator:
 - Because of its simplicity, this calculator can be a great resource for individuals (study abroad students; faculty travelers; etc.) to gain a quick understanding of their carbon footprint. Consider providing this resource to study abroad students who may travel independently on the weekend or to faculty on sabbatical taking multiple trips. It likely however, will not be the best tool for any formal reports such as institutional claims of carbon neutrality.

Global Footprint Network: <http://www.footprintcalculator.org/>

- Pros and Cons:
 - The Global Footprint Network Calculator is a much different tool than the two previously mentioned calculators. While it is simple to use, it is a far more extensive carbon offset calculator. While the previous two options primarily focus on carbon emissions through travel, the Global Footprint Network Calculator aims to estimate a more complete carbon footprint based upon travel, lifestyle, diet, energy output, and more. This comprehensiveness can be both a benefit in understanding a more complete carbon footprint, but also a hindrance as it takes far more data to complete the calculator and thus more time too.
- When you might want to use this calculator:
 - This calculator can be a great resource for any individuals looking to expand their understanding of their carbon footprint. It may not be the best resource for anyone beginning to understand carbon emissions and likely is not the best resource for anyone looking for a quick calculation either. Instead, consider using this calculator after someone has a base understanding of carbon footprints such as during a returnee event or a more comprehensive Sustainable Living presentation.

4. Carbon Insetting:

Psst! Zoom in on this secret below....

- Generally an in-house or on-site version of carbon offsetting.
 - Making an impact at the location you are actually visiting rather than a third location.
 - Using your time/energy/resources on an offsetting project that you can control rather than one that is outside your purview.

5. Glossary of Terms:

- a. Carbon Emissions - a measurement of carbon dioxide produced by a single action such as a plane flight or train ride.
- b. Carbon Offset - a response aimed at countering carbon emissions such as planting trees or donating to a sustainable organization.
- c. Carbon Offset Calculator - a tool used to estimate both carbon emissions and carbon offsets.
- d. Carbon Neutral - a state of reducing carbon emissions equivalent to the amount produced.
- e. Carbon Footprint - a measurement of the amount of carbon dioxide a person produces.

