



Association pour la santé environnementale du Québec
Environmental Health Association of Québec

ECO-JOURNAL

July 2021

Julien Lanouette-Babin

Going Green: The Carbon Footprint Concept

Every day, humans emit greenhouse gases (such as carbon dioxide and methane) while doing their daily activities. But the buildup of these gases is causing problems around the world. One of the tools used to represent these mostly human-caused emissions is the carbon footprint concept. In this article, you can read about the origins of this concept and its representation around you. Also, you will be able to read about reducing the industrial carbon footprint and how to minimize your personal footprint.

As mentioned in the introduction, the carbon footprint is the total greenhouse gas (GHG) caused by an individual, event, organization, service, or place. GHGs can be emitted through the use of ecological resources such as the burning of fossil fuels, land clearing, and food production and consumption. This concept is part of a family of ecological footprint indicators which compare the resource demands of individuals, governments, and businesses against the Earth's ability to regenerate biologically. Note that the Earth Overshoot Day 2020, the date on which humanity's demand for ecological resources and services in any given year exceeds what the Earth can regenerate that year, falls on August 22, a little later than under non-pandemic conditions (July 29). However, this day should arrive earlier every year!

Calculated in carbon dioxide equivalent (CO₂-eq), this concept is a measure of the total quantity of carbon dioxide (CO₂) and methane (CH₄) emissions from a defined population, system, or activity, considering all relevant sources, sinks and storage within the spatial and temporal limits of the population, system, or activity of interest. Note that carbon emissions are classified as direct (burning a fuel), indirect upstream (transport of material) and indirect downstream (waste production and transport).

Measuring the carbon footprint of an industry, product or service is a complex task. Performing a life cycle analysis or a supply chain carbon footprint study provides useful data that helps the business in critical areas to improve. Carbon offsetting, which is the neutralization of carbon dioxide emissions by an equivalent reduction of carbon dioxide





in the atmosphere, can help reduce the company's overall carbon footprint by offering credits in the carbon market. Another method is with the concept of carbon capture, a chain of different technologies that can prevent the carbon dioxide produced by large factories and power plants from reaching the atmosphere and contributing to global warming. Finally, the development of alternative electricity projects, such as wind or solar energy, can contribute to reducing the carbon footprint of industries and companies.

Many carbon footprint calculators exist online, are free, and are available to consumers. These are useful to help you offset your carbon emissions generated by an activity. But individuals have several other ways to mitigate their own carbon footprint:

- Forego air travel and choose less energy-intensive modes to transportation (for example, walking or public transit);
- Apply the concepts of reduction, reuse and recycling that are included in the 3RE theory (for more details, see articles written in the ASEQ-EHAQ newsletters from April to June 2021);
- Adopt a plant-based diet or a diet producing a low carbon footprint (e.g., by favoring local purchases or buying minimally processed and packaged foods);
- Use less air conditioning and heating in your home.

Online links:

- The climate mitigation gap: education and government recommendations miss the most effective individual actions, by Seth Wynes and Kimberly A Nicholas, Environmental Research Letters, published July 12, 2017, <https://iopscience.iop.org/article/10.1088/1748-9326/aa7541/pdf>
- What is carbon capture, usage, and storage - and can it trap emissions? by Jillian Ambrose, Carbon capture and storage, The Guardian, published September 24, 2020, <https://www.theguardian.com/environment/2020/sep/24/what-is-carbon-capture-usage-and-storage-and-can-it-trap-emissions>
- Earth overshoot day, copyright in 2021, <https://www.overshootday.org/>
- Global footprint network, copyright in 2021, <https://www.footprintnetwork.org/>
- Refrigerant, Wikipedia, the free encyclopedia, last modified May 3, 2021, <https://en.wikipedia.org/wiki/Refrigerant>
- Carbon footprint, Wikipedia, the free encyclopedia, last modified May 6, 2021, [https://en.wikipedia.org/wiki/Carbon footprint](https://en.wikipedia.org/wiki/Carbon_footprint)