

GREENHOUSE GAS EMISSIONS AVOIDED IN OPERATIONS

Indicator Phrasing

English: total amount of CO2 equivalent (in tonnes) avoided during [specify the time frame] thanks to the implemented environmental mainstreaming measures

French: quantité totale d'équivalent CO2 (en tonnes) évitée pendant [préciser la période] grâce aux mesures d'intégration des questions environnementales mises en œuvre

Portuguese: quantidade total de CO2 equivalente (em toneladas) evitada durante [especificar o período de tempo] graças às medidas de integração das questões ambientais implementadas

Czech: celkové množství ekvivalentu CO2 (v tunách) jehož vypuštění se zabránilo během [uvedte časový rámec] díky zavedeným environmentálním opatřením

What is its purpose?

This indicator measures the extent to which an organisation (or one of its branches or a specific project) managed to reduce the amount of carbon dioxide equivalent (CO2-eq) emitted due to its operations over a specific period. Reductions can be achieved by minimising the use of electricity, gas, fuel, and other resources whose production or use emits significant amounts of greenhouse gasses.

How to Collect and Analyse the Required Data

The following text describes the **3 key steps** that need to be taken to measure the operations-related emissions of carbon dioxide equivalent (CO2-eq). To make the calculations easier, **consider using the [Humanitarian Carbon Calculator](#)** (see details in the Important Comments below).

1) **Quantify how much of the emission-releasing activity was reduced or avoided:** Consuming electricity (for lighting, heating, air conditioning, powering devices, etc.), using gas (e.g. for heating), travelling (by plane, car, etc.), transporting goods and disposing of general waste are operations-related “activities” which tend to emit the most greenhouse gasses (GHG). Your task is to quantify such activities (e.g. kWh of electricity or gas, tonnes of general waste) that were **reduced or avoided thanks to the implemented environmental mainstreaming measures** (i.e. the reduction was not due to other factors – e.g. an organisation implementing fewer projects which result in having less staff and therefore having fewer flights). [This site](#) provides practical recommendations for making such measurements. Remember that the amount of the activities (e.g. kWh of electricity, litres of fuel, tonnes of waste) must be for the entire period stated in your indicator.

2) **Determine the GHG emission factor for the given activity:** the GHG emission factor is a coefficient that allows you to convert activity data into GHG emissions. It is the average emission rate of a given activity. For example, an emission factor for electricity can be expressed as X kg of CO2-eq per kWh. The emission factor for general waste can be expressed as X kg of CO2-eq per ton.

The emission factors for many activities differ from country to country. For example, the emission factor for electricity in a country with many renewable sources of electricity will be much lower than in a country where most electricity comes from coal. Therefore, using country- or region-specific emission factors will make your calculation more precise. Unfortunately, emission factors specific to many countries or regions are hard to find (or simply unavailable), so calculations frequently use global or regional averages. As of early 2023, the most reliable source of emission factors include the following:

- emission factors included in the [Humanitarian Carbon Calculator](#) tool (see [video guidance](#))
- Defra's [database of emission factors](#) (use online search to find the latest version)
- Greenhouse Gas Protocol's Emission Factors from Cross-Sector Tools ([download worksheet](#))
- high-quality studies that measured GHG emissions from the activity you are interested in, ideally in the same country or at least in the same region

Using the emission factors provided by the Humanitarian Carbon Calculator (HCC) is recommended, as an increasing number of humanitarian and development agencies use these factors, which allows for data comparisons. If you intend to use an emission factor that is not included in the HCC (e.g. you have a more accurate emission factor), you are encouraged to share it with the HCC team using [this form](#) so that the Calculator can incorporate it.

3) To **calculate the emissions of CO₂-eq reduced / avoided**, multiply the total amount of the reduced / avoided emission-releasing activity by the relevant emission factor. If your intervention has replaced one activity with another activity with fewer emissions (e.g. replacing a petrol vehicle with an electric vehicle), you must **deduct the CO₂-eq that was emitted by the new activity from the calculation** (within the same measured period).

Disaggregate by

[Disaggregate](#) the data by the type of implemented measures.

Important Comments

1) In early 2023, ICRC, in collaboration with several organisations, released the [Humanitarian Carbon Calculator tool that makes it much easier to measure operations-related carbon emissions](#). You only need to enter the amount of resources / activities saved (and some other basic information), and it automatically calculates how much CO₂-eq was emitted. While the tool focuses on measuring how much CO₂-eq was emitted, it is also possible to use it to calculate how much CO₂-eq was saved thanks to the introduced measures (just enter the amount of the emissions-releasing activities that were avoided thanks to the measures introduced). Using such tools **can save a considerable amount of time**, so it is worth exploring them and the accompanying User manual and Methodological guide (see below).

2) A **carbon dioxide equivalent (CO₂-eq)** is a way of expressing all the different greenhouse gases (GHG) as a single number. For any quantity and type of greenhouse gas, CO₂-eq shows the amount of CO₂ which would have the equivalent global warming impact. An amount of GHG can be expressed as CO₂-eq by multiplying the amount of a given GHG by its global warming potential (GWP). According to IPCC's Fifth Assessment Report, the GWP of methane is 28 (i.e. 1kg of methane equals 28kg of CO₂e),

and the GWP of nitrous oxide is 265 (see IPPC's report attached below, page 87, for the GWP of these and other gases).

Access Additional Guidance

- EcoAct & ICRC (2022) [Methodological Guide: Humanitarian Carbon Calculator](#)
- EcoAct & ICRC (2022) [User Guide: Humanitarian Carbon Calculator \(HCC\)](#)
- [IPCC's Fifth Assessment Report](#)