

The myclimate Company Calculator

The company calculator quantifies the relevant greenhouse gas emissions for your company and, using your activity data, creates a corresponding carbon footprint for the period under review. The calculated greenhouse gas emissions are based on current emission factors, scientific publications, international statistics and internal values established empirically by myclimate.

The goal is to provide users with a simple application that enables them to specify the annual greenhouse gas emissions associated with their company by inputting a small amount of data and that allows them to use the calculated result to raise awareness among their employees, to plan effective measures for reduction or for the purpose of offsetting emissions. The resulting greenhouse gas emissions correspond to the amount of CO₂ equivalents that can be offset in myclimate carbon offset projects.

myclimate aims to map the greenhouse gas emissions caused in full. In addition to energy consumption pertaining to buildings, commuting and business travel as well as purchased materials, the current version of the calculator offers the option of recording refreshments and waste volumes. An overview of the methodology applied can be found in this document.

For a more specific and detailed analysis, evaluations and calculations with an adapted data basis, please contact info@myclimate.org. myclimate will be happy to support you within the framework of a service order.

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1. Overview of the Calculation Steps

The following diagram (Illustration 1) shows the various input options and calculation steps used in the company calculator. The diagram also shows which categories (for example, energy) can be estimated using empirically established figures.

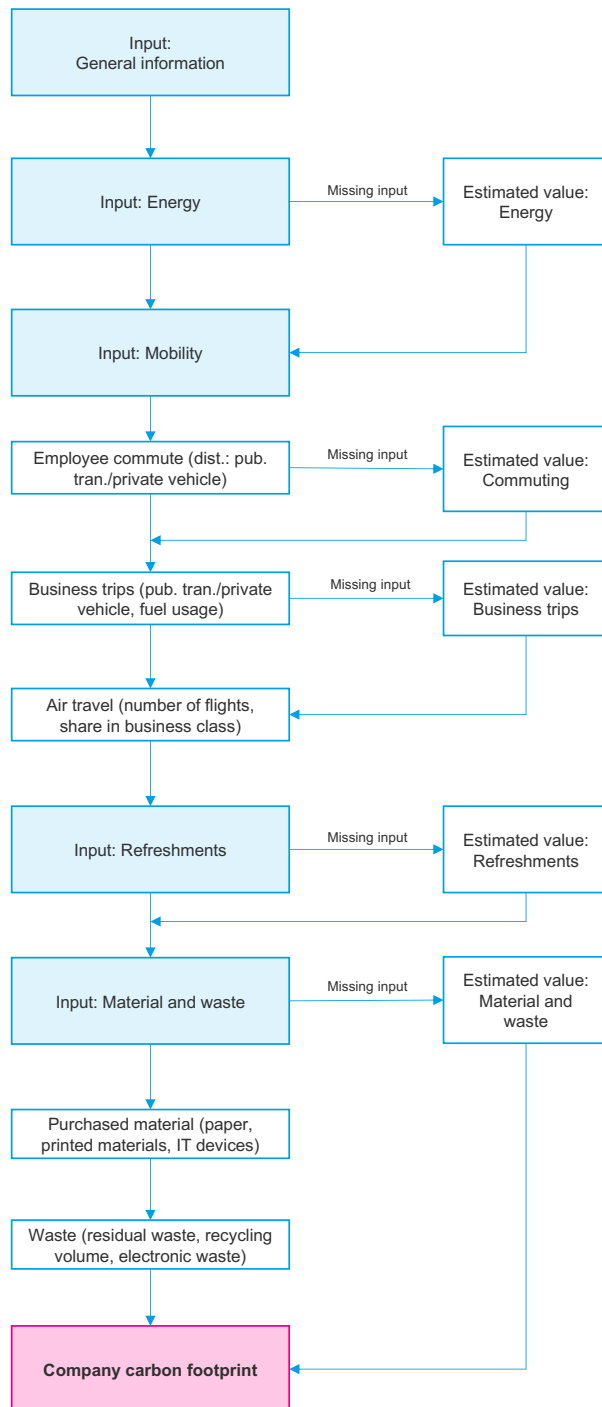


Illustration 1: Company calculator calculation steps.

2. Methodology

General Information

The carbon footprint includes the relevant activities, materials and energy flows that are generated directly or indirectly in a company (Illustration 2). The greenhouse gas emissions generated through activities and the use of resources are calculated throughout their entire lifecycle.

The dataset used to calculate the climate balance comes from the ecoinvent 3.6 database and follows the IPCC 2013 (Intergovernmental Panel on Climate Change) evaluation method. This method uses greenhouse gas potential over a 100-year time horizon (GWP 100a).

The climate impact is generally indicated with the unit “t CO₂e”, i.e. “tonne of CO₂ equivalents”, which adds up the effects of all greenhouse gases. The most common greenhouse gas is carbon dioxide (CO₂), which is produced when fossil fuels are burned, for instance. Besides CO₂, other greenhouse gases such as methane (CH₄) and nitrous oxide (N₂O) are emitted during numerous processes.

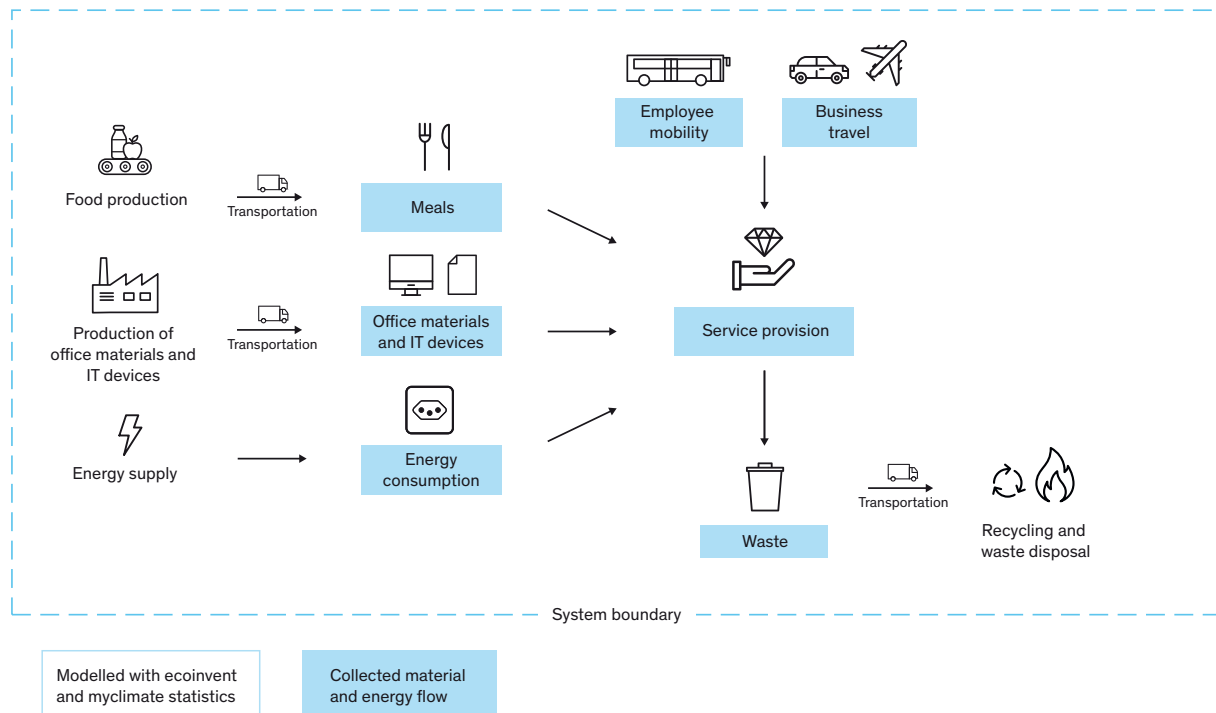


Illustration 2: System boundary of a company with the relevant energy and material flows.

System Boundary

myclimate aims to map the resulting greenhouse gas emissions as fully as possible. This includes all relevant activities and sources of resource consumption for the company. These comprise both emissions directly generated by activities as well as emissions caused by upstream and downstream processes, namely through raw material extraction, production and transport, as well as through the use and disposal of resources (Illustration 2). Direct emissions are those caused, for example, by the combustion of fuel in the company’s own vehicles as well as by on-site fuel consumption for heating purposes (heating oil). Indirect emissions may arise through the manufacture and rendering of products

and services that are made use of by the company. Examples of such products and services include the acquisition of electronic devices such as smartphones, notebooks or printers and can likewise include the provision of drinks to employees during breaks. Further examples include commutes made using public transport or the production of the annual report at a printing shop. Also considered are indirect emissions that stem from the generation of purchased electricity or combustible fuels.

Calculation Methodology

The information provided by users, such as the consumption of building energy, employee mobility, flights and overnight stays, as well as materials and waste are combined with background data and then used to calculate the greenhouse gas emissions using current emission factors. The database used is ecoinvent 3.6, the world's largest internationally recognised database for eco-inventories, as well as scientific studies, internal empirically established values and other publicly available statistics.

To calculate the energy emissions at an office location, both energy consumption and heating requirements are calculated. To calculate power emissions, the emission factor of the country-specific production mix is used in the calculation logic. In addition, the user can indicate whether certified green energy is used. For the calculation of heating emissions, the user can input the consumption of heating oil, natural gas or an alternative such as wood energy or district heating. In addition, users can indicate whether heating needs are covered by a heat pump. If information on energy demand is unavailable, the emissions for the building energy can be estimated using values established empirically by myclimate.

Employee mobility is roughly divided into commuting and business travel. For the calculation of commuting emissions, the user can input the number of commuted kilometres, both for public transport and cars. For the former, a country-specific (only for Austria, Switzerland and Germany) emission factor is used for the calculation. With business travel too, the user has the option of inputting the distance travelled by public transport and by car. Alternatively, it is possible to give the precise fuel consumption of company vehicles and calculate the emissions this way. In addition, for business travel, both the number of overnight stays in hotels and the number of flights are recorded. In the mobility section, emissions can be estimated both for commuting and for business travel. Flights are excluded from the estimate and should be input separately.

Refreshments are roughly divided into food and drinks. Food is subdivided into the categories vegetarian, non-vegetarian and snacks. In the drinks category, mineral water, soft drinks, coffee and tea are recorded. Food and drink is generally recorded if provided by the company. Typical examples of such provision include an in-house canteen or a daily fruit basket in the break room. Nevertheless, external meals in restaurants or takeaway orders can also be recorded. If there is no information available, emissions associated with refreshments can be estimated.

In the final category, users can record purchased materials and the resulting waste. Material consumption such as paper for printing, printed materials like annual reports or marketing material, in addition to newly acquired electronic devices such as notebooks or scanners can be recorded here. Users can also record recycling volumes and electronic waste if applicable. The emissions are calculated in just the same way as for the other categories using input data and the corresponding emission factors. An estimate of the emissions is also possible here.

Because statistical values and well-thought-out assumptions are sometimes used in individual calculations, while nonetheless, in the case of offsetting, the result should at least show the full climate impact, an uncertainty margin of 20 per cent is added to the emission result.

For a more specific and detailed analysis of your company with an individually adapted data basis, please contact info@myclimate.org. myclimate will be happy to support you within the framework of a service order.

3. Data Sources

- Agribalyse 3.0, 2020.
- ecoinvent database, 2020. <https://www.ecoinvent.org>
- Deutsche Bahn – *Facts and Figures*, 2018.
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