

Basic Carbon Calculators CarbonConnect

FAQs and Methodology for
clients and end
customers/users

CARBONQUOTA®



Basic Carbon Calculator for JICMail

Frequently Asked Questions

What is a product carbon footprint, and why is it important?

The manufacturing process for most products requires energy-intensive processes, which traditionally rely on burning fossil fuels such as oil, gas and coal. This releases greenhouse gases into the atmosphere which trap more heat than normal in the atmosphere, which accelerates global climate change. Understanding and reducing a product's carbon footprint means you can then do something about climate change.

What does this carbon footprint include?

JICMail's free Carbon Calculator covers what is known as a "cradle-to-grave" product carbon footprint. It includes all raw materials, production, transport to warehouses, distribution to the end customer or consumer, and disposal at end-of-life. It is considered there is zero energy consumed in using the product by the end user or consumer due to the nature of the product.

What is CO2e?

CO2e is the standard measure for carbon footprints. It includes carbon dioxide as well as the other most important greenhouse gases created by human activities that contribute to climate change. These are converted to a much simpler to understand 'carbon dioxide equivalent', or CO2e.

What is the biggest factor in this carbon footprint?

Paper is usually the dominant contributor to a carbon footprint, accounting on average for approximately 50% of its impact.

How do I know if this is a good carbon footprint?

There is no "good" or "bad" carbon footprint. JICMail is helping the industry take its environmental impact seriously, and the calculator is helping to bring transparency to the carbon footprint of everyday print jobs.

What is the purpose of JICMail's Carbon Calculator?

This calculator is designed to give you a starting point for understanding the environmental impact of your product and provides an indicative carbon footprint based on a typical UK supply chain.

How can I reduce my carbon footprint?

Your suppliers can help by reducing their use of fossil fuels in the manufacturing process, as well as providing alternative materials produced by lower-carbon raw material providers. Reducing transport distances and enabling the end user to recycle the item all contribute to a lower environmental impact.

What sources do you use to calculate this carbon footprint value?

The Carbon Calculator accesses a specific sub-set of CarbonQuota's range of databases and studies relating to the print industry.

How do I know I can trust this value?

Carbon footprints are independently calculated and verified by CarbonQuota using their real-time engine. As specialists in the environmental impact of the print sector, CarbonQuota has developed a bespoke carbon footprint calculator powered by a unique database and algorithm which is externally verified against all relevant international standards.

How accurate is it, and what assumptions have you made?

JICMail has worked with CarbonQuota to adapt their model to represent a typical UK supply chain that typically consists of raw materials mostly from Europe, along with road and/or sea transport, and final manufacturing in the UK itself.

What if I am outside of the UK?

At the moment, the Carbon Calculator only represents the UK market.

Is there a limit to the number of queries I can send?

This Carbon Calculator is provided free of charge and a fair use policy applies. Users are forbidden from adapting, changing or reverse engineering the carbon footprints in any way.

Can I share this with my customers?

Absolutely! It is intended to provide an indication of the carbon footprint of the job, and demonstrate that the industry is working together to bring transparency to the sector.

Can my organisation or my customers use this carbon footprint for official corporate reporting?

How it can be used for reporting will depend on individual circumstances. Please discuss this with the relevant auditor or with your carbon management partner.

Where can I find out more?

Please visit www.carbonquota.co.uk or get in touch via support@carbonquota.co.uk

Who is CarbonQuota?

CarbonQuota is a specialist in carbon management for the print, packaging, marketing and media sectors, helping businesses to comply with regulatory requirements, meet customer demands and reduce environmental impact through accurate, automated carbon footprints and customised carbon reduction strategies.

Basic Carbon Calculator for JICMail

Basic Methodology Statement

Approved statement to be displayed on website alongside the start of the calculator

As specialists in carbon management for the print, packaging and media sectors, CarbonQuota are proud to support JICMail by providing a bespoke carbon footprint calculator that provides the basic environmental impact of printed items – powered by our unique database and algorithm.

Disclaimer: Carbon footprints independently calculated and verified by CarbonQuota. Assessments cover cradle-to-grave greenhouse gas emissions of the product from materials, production, distribution and end-of-life waste. It is considered there is zero energy consumed using the product. For more information including assumptions made, please refer to the Frequently Asked Questions.

CarbonQuota Product Carbon Footprints

Methodology Part A: General Principles

In carrying out carbon footprint calculations, CarbonQuota follows the general principles of the Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard, with further guidance from ISO 14040/14044 (Lifecycle Assessment), ISO 14067 (Carbon Footprint of Products) and PAS 2050:2011.

Within each study boundary, a consistent approach is used to quantify and to document greenhouse gas emissions and removals from operational activity, and purchased goods and services, by completing, as applicable, the following steps:

1. Identification of greenhouse gas sources and sinks are carried out using CarbonQuota's industry expertise, previous experience, and guidance from Product Category Rules (PCR) alongside international publications such as the Greenhouse Gas Protocol, ISO14040/14044, ISO 14067 & PAS 2050.
2. The selected quantification method is based on the multiplication of greenhouse gas activity data by greenhouse gas emissions or removal factors, which is thought to be the most appropriate approach.
3. The greenhouse gas activity data are collected from activity data that is consistent with the quantification methods.
4. The most appropriate and current greenhouse gas emission factors are selected from industry leading

greenhouse gas emissions factor databases including but not limited to the latest versions of: ADAME; Defra/BEIS; ecoinvent; Global LCA Data Access Network; ICE database by Circular Ecology; IEA Emissions Factors; International Aluminium; NGA; ÖKOBAUDAT; Plastics Europe; USLCI; WorldSteel. Known or assumed locations are considered when selecting emission factors. The emissions factor selected depends on our assessment of its quality, license restrictions and use case. More details can be provided upon request.

5. The calculations of the greenhouse gas emissions and removals are carried out by multiplying the greenhouse gas activity data by greenhouse gas emissions or removal factors. These calculations are either undertaken in our proprietary codebase*, in SimaPro, or in Excel.

All IPCC greenhouse gases are considered in the calculation of the Product Carbon Footprint, which are converted to carbon dioxide equivalents using AR5 (2014) or AR6 (2021) depending on the dataset.

As standard the IPCC 100-year GWP is used, with an attributional methodology allowing a 1% cut-off, with a total of 5%.

Where available, primary activity data from the client's systems and/or suppliers is used to calculate the carbon footprint. We seek the best available data including full

specification, transportation profile, manufacturing place (including energy profile), quantities, and end of life scenarios. Where primary activity data is not available, secondary data is substituted with direction from CarbonQuota's subject matter experts.

Calculations are verified by independent third-party experts (limited assurance) to confirm they are materially correct and align with the stated methodology.

The CarbonQuota Protocol provides more details of CarbonQuota's general practices, principles, boundaries, data quality criteria, ISO compliance, calculation methodology, best practices, company opinion and external assurance. More details can be provided upon request.

***CarbonConnect** and **CarbonConnect+** calculations are undertaken in our proprietary codebase. Where manufacturing production records are available that record estimated or actual usage of raw materials time spent on processes, and distribution details, they are processed directly in CarbonQuota systems. Where production records are not available, such as with a buying organisation, the finished specification is processed via a CarbonQuota adaptor to simulate a production record for the specific product which is in turn processed via CarbonQuota systems. This is further described under Methodology Part B.

Basic Carbon Calculator for JICMail

Methodology Part B: Boundaries, Scope, and Assumptions

How we process calculations in our algorithm to create a Cradle-to-Grave Product Carbon Footprint based on a buyer's specification from JICMail's online Carbon Calculator.

We receive the primary specification data via API from a standalone Print Product Carbon Footprint Calculator using a JavaScript Object Notation (JSON) file. This carries a pre-determined minimum amount of required data to calculate a footprint for the job.

The data contains the specification of the finished printed product as the main source of activity data. We adapt this to create a typical manufacturer specification based on the quantity, finished size, extent, materials used, locations of activity and complexity. This creates a model of what would typically happen in the manufacturing environment including set-up, machinery usage, waste and consumables.

We use our industry expertise to add reasonable assumptions to the model where necessary, which varies according to the information available for selection on the source calculator.

This model is subsequently run through our CarbonConnect engine, which is our one of our specialist algorithms to create a product carbon footprint based on manufacturing calculations. This uses secondary emissions factor data because we do not know the actual

manufacturing locations, materials or transportation.

Raw materials selected in the calculator are based on one of our substrate groups, with emissions factors linked to typical UK print production.

Production processes are broken down by type (for example printing and finishing) and the model applies an Intensity Ratio Factor multiplier derived from our UK models.

Consumables (e.g. plates, boxes, pallets) use a global value and are added where relevant based on assumptions.

1st Stage Delivery 1st stage delivery from the manufacturing site to the business customer is calculated using our models for average distance in the UK using population densities and road data, and is based on product weight and typical modes of UK transport. It assumes domestic delivery only, using an overnight or direct delivery model.

2nd Stage Delivery is included. If a direct mail pack, we apply our direct mail model. This models the zig-zag journey in different modes of transport, from fulfilment house to letterbox,

All other products are based on the 1st stage delivery being to a warehouse, and a national distribution from there assuming a retail style distribution.

Use phase considers there is zero energy consumed in using the product by the end user or consumer due to the nature of the product.

Product end-of-life is included and based on average amount of print items recycled, landfilled and incinerated in the UK.

Use of emissions factors. As this calculator is provided free of charge, only a restricted sub-set of emissions factor databases are used depending on licensing restrictions.

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