

Working with Continental Clothing

Product carbon footprinting in practice



Continental Clothing was the first business-to-business (B2B) company to participate in the Carbon Trust's product carbon footprinting and labelling initiative. The project gave new insights about how carbon footprint assessment and communication can uniquely benefit B2B companies; how the analysis can be done cost-effectively by a smaller business; and how a textile company can reduce carbon emissions across its supply chain. It is also an early example of a company rolling out the initial pilot to other product lines in their portfolio and even to partners up and down the supply chain.

Company background

Established in 1994, Continental Clothing is a B2B wholesaler of blank printable t-shirts, polo shirts and sweatshirts for corporate, leisure and promotional wear, with customers primarily in the music and advertising industries. Continental Clothing employs 45 people and operates in the UK, US and Germany.

Continental is differentiated by its direct distribution model and fast bespoke service, combined with an ethically-driven mission: "To inspire and implement solutions to the environmental crisis". It has four sustainable apparel lines including its leading brand EarthPositive® launched in 2007 as: "Apparel to combat climate change".



Continental's supply chains vary by product line. Some products are manufactured using a vertically-integrated supply chain in which certified organic cotton farming, spinning, dying and clothing production all take place in wholly-owned sites; others are produced using a more traditional, disaggregated supply chain.

The pilot project: motivation

Continental Clothing has a strong commitment to sustainable production, and the fight against climate change is central to its strategy. It had already initiated several measures to reduce carbon emissions as part of this broader sustainability agenda. The purpose of participating in the initial Carbon Trust pilot and using the Carbon Reduction Label was to certify Continental's in-house assessments of product-level carbon emissions and to provide customers with independent, credible verification to prove it.

The EarthPositive® line of shirts was a natural choice for Continental's product carbon footprinting pilot since it already minimises environmental impact in all production stages:

- Organic farming – all shirts are 100% certified organic cotton.
- Natural irrigation – cotton farms in India are located in areas where enough water occurs naturally through the monsoon rains to supply 95% of water.
- Renewable energy – production facility in India is powered by a nearby wind farm, generating verifiable renewable power.
- Waste:
 - Cotton waste generated (the production of a T-shirt requires five times its end weight in raw cotton) is either returned to the field as an organic fertiliser or used for other textile and upholstery products manufactured in the local area.
 - Dyes are made in a controlled environment where wastewater is thoroughly treated.
- Packaging – all shirts are packaged using biodegradable or 100% recycled materials.
- Transport – Continental has a 'no airfreight' policy – all goods are shipped by sea.

Given the considerable effort put in to make EarthPositive® sustainable, Continental wanted to assess the impact these measures have had on its product carbon emissions.

Product carbon footprint assessment process

Continental succeeded in calculating its initial product footprints in record time, at minimal cost, demonstrating the opportunity SMEs have to execute quickly. The company calculated the carbon footprint of its black and white apparel, and then asked the Carbon Trust to certify and provide the Label. The pilot progressed rapidly, beginning in November and finishing in December 2007. By January 2008, the company was able to release a brochure showing the EarthPositive® clothing range that included the Carbon Trust Carbon Reduction Label.

This tight deadline encouraged Continental to move fast and think creatively about how to conduct the footprint calculation. It hired a PhD graduate chemist who travelled to India where the EarthPositive® shirts are produced. Vertical integration and locally-sourced supply also contributed to the speed of the pilot: Continental owns its entire processing facility in the Tamil Nadu region of India, and sources 100% organic cotton from a single set of local producers.

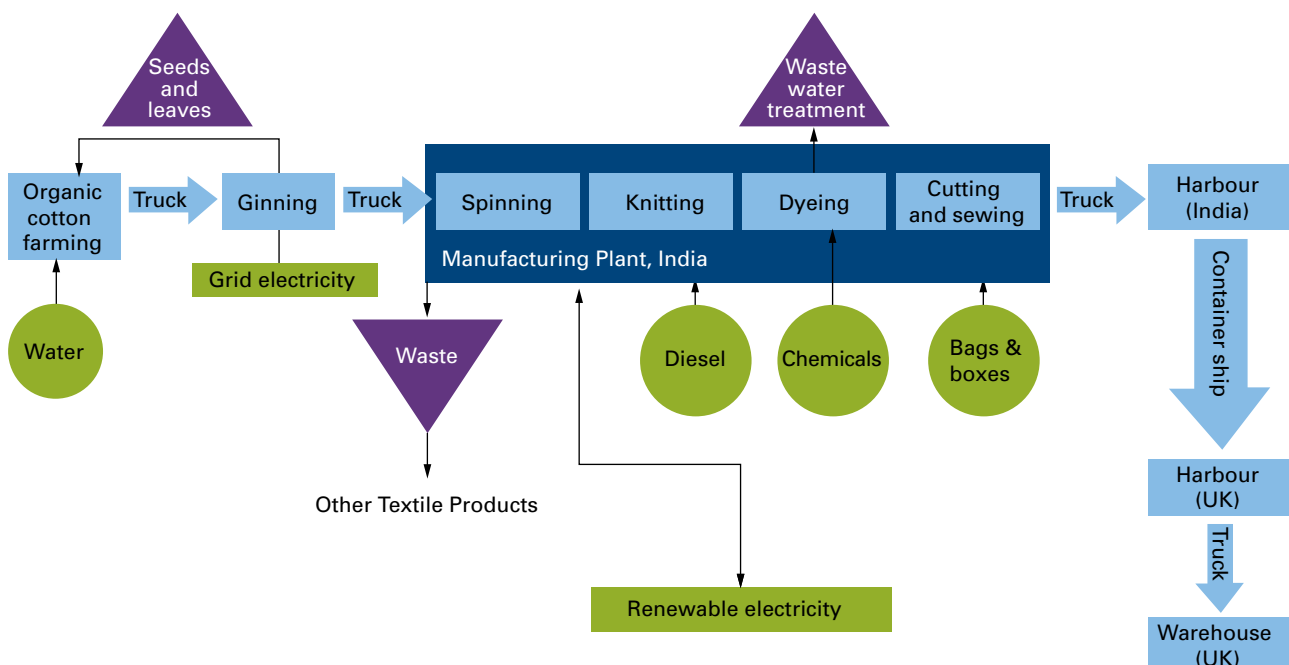
This made the data collection process very quick. A two-stage interview process – where the first day involved visiting a site and learning about the process and activities, and the second day focused on data collection – proved to be very effective. Armed with a data collection template and the support of the company to focus exclusively on carbon footprinting, the contractor was able to collect the data and calculate the footprint in only eight weeks and at a very low total cost.

Supply chain analysis

The carbon footprint calculation for EarthPositive® shirts reflects all stages of the shirt life cycle from growing organic cotton through to the arrival of the products in the UK. As specified in the PAS 2050¹, B2B companies like Continental Clothing can exclude the distribution, retail, use and disposal phases of their products' life cycles since these phases can be hard to predict as their products may be used by different customers in very different ways.

The supply chain of the EarthPositive® garments is illustrated in the Chart 1.

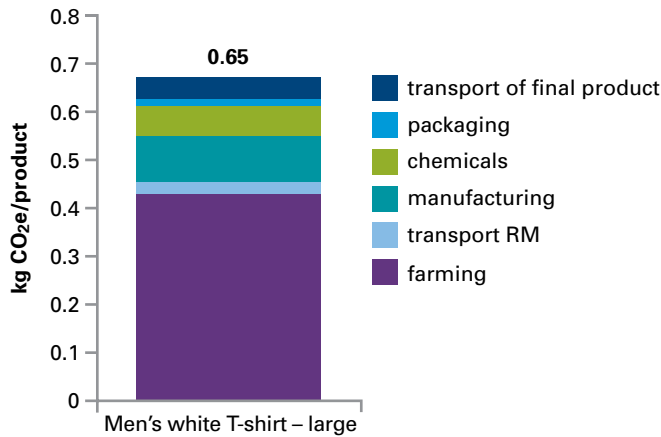
Chart 1 B2B process map: EarthPositive® shirt supply chain



¹ BSI Publicly Available Specification (PAS) 2050 is based on the product carbon footprinting method originally developed by the Carbon Trust and trialled with Walkers, Boots and innocent. The Carbon Trust later co-sponsored, along with the UK Department for Environment, Food and Rural Affairs (Defra), the development of PAS 2050 by BSI British Standards.

The breakdown of emissions for a Men’s white T-shirt (large size) is summarised in Chart 2.

Chart 2 Continental T-shirt carbon footprint



Source: Continental Clothing Company

The main sources of carbon emissions were farming and spinning. Emissions from raw materials, waste and manufacturing were lower than expected, reflecting the fact that Continental had already introduced good carbon management practices and received electricity from renewable sources.

Communicating the results: experience using the Carbon Reduction Label

Continental’s original pilot resulted in Carbon Trust Carbon Reduction Labels for seven products (see Chart 3 for an example). These Labels are displayed in B2B sales materials, including the website, catalogues and at tradeshows. The Carbon Reduction Label is also used in advertising, to support the catalogue release and in further communications to generate interest.

Continental believes the Carbon Reduction Label has provided the credibility it needed from an independent organisation like the Carbon Trust to ensure its customers believe its climate-related marketing is accurate and trustworthy. As a B2B company, having the Carbon Reduction Label also gives Continental a competitive advantage by providing business customers certified data up to the point of delivery, thereby making it significantly easier for customers to footprint and label garments for end consumers.

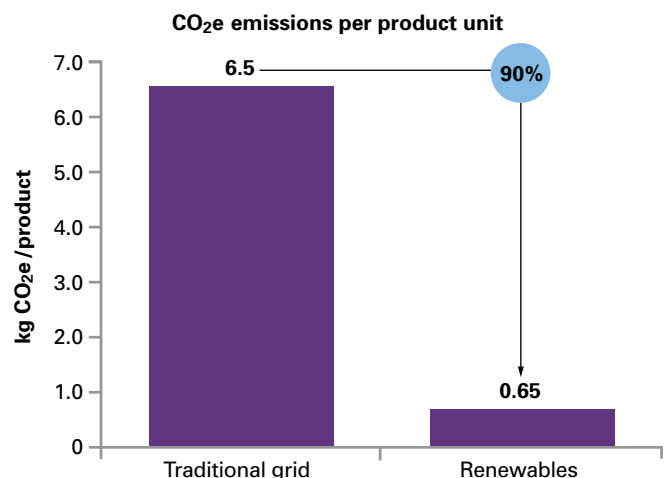
Chart 3 Carbon Trust Carbon Reduction Label used by Continental Clothing

<p>working with the Carbon Trust</p> <p>650g CO₂</p> <p>per garment</p>	<p>The carbon footprint of this product is 650g. This is the total carbon dioxide (CO₂) and other greenhouse gases emitted from the raw materials, production and transport to the UK</p>
	<p>This compares to the carbon footprint of an identical product manufactured without the use of renewable electricity which is 6.5kg per garment</p>
<p>We have committed to reduce this carbon footprint</p>	

Achievements

When calculating the carbon footprint of the EarthPositive® product range, Continental and the Carbon Trust also analysed what the carbon emissions would have been if standard Indian grid electricity had been used. They calculated that using renewable energy reduced the carbon footprint by nearly ~90%², from 6.5kg to 0.65kg for a Men’s large white T-shirt (see Chart 4).

Chart 4 Continental’s use of on-site renewable electricity enables ~90% lower carbon products



Source: Continental Clothing Company

² PAS 2050 requires that renewable energy be both additional and unique to ensure against double-counting. Because Continental’s wind farm met these criteria, it was allowed to claim the carbon benefit.

Using renewable energy also reduces the company's exposure to oil price rises. Continental can therefore offer price stability to customers during a time when competitors have had to increase their prices. The 'no airfreight' policy, in addition to its considerable carbon benefit, offers a substantial cost benefit as well.

Although the EarthPositive® range was already relatively low carbon, Continental identified further opportunities to reduce their products' carbon emissions and create new business opportunities as well:

- Increase energy efficiency of machines – old machines can be three times more energy intensive than newer ones.
- Change suppliers to ensure lower-carbon inputs – e.g. suppliers are introducing alternative energy and recycling to their UK warehouses.
- Understand low carbon alternatives in manufacturing sub-processes:
 - Spinning – potential to reduce energy use by a further 10%.
 - Water treatment – building larger vessels to increase efficiency; ~20% emissions reduction for this process step expected at completion.
 - Dyeing – reviewing alternatives, including new technologies with lower energy consumption and new generation of organic dyestuffs, which could reduce emissions of this stage by ~20%.
 - Finishing – potential to eliminate the use of diesel generators and replace old machinery for a possible 15% reduction of this step's carbon footprint.

Although many of these changes require capital investment, Continental feels these costs are offset by improvements in brand value. Continental believes: "Superficial sustainability investments will quickly become transparent; to protect brand value and reputation over the long term, only genuine measures taken – as the technology become available – will ensure the brand's credibility. These do require investment in research, time and money³".

Continental is currently expanding the footprinting model to include decorative options (e.g. screen-printing, embroidery, heat transfers) and more complex fabrics (e.g. blends, technical washes, distressing process), which will likely uncover additional opportunities to reduce carbon emissions.

Continental is also working with customers and the Carbon Trust to estimate the carbon emissions further down the life cycle chain. Realising that the bulk of carbon emissions from a T-shirt's life cycle actually comes from the use phase – through washing machine use – it is helping to educate consumers by sharing this information with tips to reduce emissions on its website and the labels themselves: "We label our garments SAVE THE CLIMATE – WASH COOL – LINE DRY in addition to standard wash care instructions".

As a pioneer in carbon labelling, Continental is vocal about its work on carbon footprint measurement and reductions, as well as other areas of sustainability. Continental has actively communicated its EarthPositive® case study to others in the industry and is proactive about raising awareness of climate change among its peers. It seeks to demonstrate that a business model based on sustainability can be profitable and offer a competitive advantage.

International

Continental is leading the way in introducing the Carbon Reduction Label to countries outside the UK. It is using the Carbon Reduction Label online and in its sales catalogue as part of its market entry strategy in countries including France, Italy, Germany, Holland, Finland, Sweden, Iceland and Japan. There is significant interest from customers in other countries, and the Label may soon be introduced in Australia.

One of the key drivers for using the Label internationally is that Continental sees its market evolving to increasingly value lower-carbon products. Continental's Director, Phillip Gamett explains that: "Climate change – and thus carbon reduction – is a global problem, and it is irrelevant whether markets are ready for the Carbon Reduction Label: the sooner we introduce it, the sooner it will become of value".

Continental acknowledges that there are different levels of understanding of the carbon issue across different markets. While this means in some markets they have to educate their buyers, it also gives them a clear first mover advantage which they are looking to capitalise upon by furthering the carbon label concept from the wholesale buyers through to the end consumers.

³ Source: quote from Philip Gamett, Continental Clothing Director, 15/08/2008.

The way forward

Continental is building on its experience with the Carbon Reduction Label pilot in several ways:

- New supply chains:
 - Continental recognised that the footprinting analysis offers a systematic approach to identifying carbon reduction opportunities.
 - They are now extending it to other supply chains, such as those in Turkey, and plan to roll it out to the rest of their portfolio.
- Certified model:
 - Building on the initial footprint analysis, Continental has developed an easy-to-use model that allows it to understand the carbon impact of different product configurations, i.e. different combinations of raw materials, colours and sizes.
 - It is currently working with the Carbon Trust to certify the entire model, making future product footprinting and labelling even faster and cheaper.
- Better management and sales practices:
 - Continental is using the insights gained from its carbon footprint model to inform decisions about new product development, i.e. future T-shirt configurations, with the goal of continuous improvement and carbon reductions over time.
- Customer engagement:
 - Continental sees the Carbon Reduction Label as a key differentiator not only for themselves, but also for their customers.
 - It plans to use the certified model as a sales tool to help its customers understand the carbon implications of their purchase decisions.
- Carbon footprinting 'industry' evolution – Continental sees a future revolution in carbon labelling and is determined to play a leading role in:
 - Developing 'component' labelling of products (where B2B organisations pass the certified carbon footprint of their products to the next stage in the supply chain) to make life cycle footprinting easier and more cost-effective, as well as contributing to better supply chain coordination.

- Promoting these pre-footprinted component products as a source of competitive advantage for B2B companies.
- Driving forward the vision to establish a global supply network of footprinted raw materials, components and end products that will ultimately facilitate emissions reductions across the entire chain.

Key lessons

The Continental pilot offers practical lessons to companies wanting to footprint and label:

- The first B2B pilot, thereby offering the chance to test PAS 2050 on a B2B supply chain and proving the viability of the Carbon Reduction Label as a marketing tool to business customers.
- The first SME pilot, Continental demonstrates the applicability of PAS 2050 for smaller companies, and offers lessons for how small companies can take advantage of their size and focus to achieve results quickly and cheaply.
- First pilot partner to calculate product footprints independently, only involving the Carbon Trust at the end for independent verification of the results and for labelling. This showed that product carbon footprinting to the standard required by the PAS 2050 can be internalised, thereby significantly driving down costs.
- The first textile/clothing pilot company, providing insights on carbon reduction opportunities in this sector, such as the impact of renewable power on otherwise carbon-intensive activities.

The Carbon Trust was set up by Government in 2001 as a private company.

Our mission is to accelerate the move to a low carbon economy by working with organisations to reduce carbon emissions and develop commercial low carbon technologies.

We do this through five complementary business areas:

Insights – explains the opportunities surrounding climate change

Solutions – delivers carbon reduction solutions

Innovations – develops low carbon technologies

Enterprises – creates low carbon businesses

Investments – finances clean energy businesses.

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