

Working with innocent

Product carbon footprinting in practice



innocent was one of the three original pioneers working with the Carbon Trust to test the method for product carbon footprinting that subsequently became the base for BSI PAS 2050¹. This case highlights the potential for companies to play leadership roles in fighting climate change: innocent's proactive engagement both up and down the supply chain has led to material carbon savings, as well as business benefits derived from lower costs, enthusiastic employees and more loyal customers. It also demonstrates the value of product carbon footprinting in its ability to 'surprise' – generating findings that contradict conventional wisdom.

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.

Company background

Founded in 1998, innocent has risen to become a successful producer of natural drinks and fruit smoothies. The company, founded on the principle of using only ‘100% natural, healthy renewable ingredients’ has the fastest-growing product in the UK Grocery 100 list (2008). It is a privately-owned business with 250 employees.

innocent differentiates itself on the basis of taste, health and sustainability. The company produces only 100% natural products; uses ingredients sourced only from suppliers certified by Rainforest Alliance or meeting innocent’s own environmental and social standards; has pioneered use of 100% recycled plastic bottles, a first for a food product; and donates 10% of its profits to charity.

A core component of innocent’s sustainability strategy is its commitment to reduce its carbon footprint. Before becoming involved in product carbon footprinting, innocent had already been active in managing carbon emissions as part of its corporate sustainability ethos: “It’s part of our quest to become a truly sustainable business, where we have a net positive effect on the wonderful world around us”.

The company and its suppliers have worked to reduce emissions across several initiatives:

- Setting company-wide CO₂ emissions limits, reducing them year on year and tracking performance on a monthly basis.
- Cutting road miles wherever possible – even when this requires paying up to 10% premium over alternatives.
- Committing to a ‘no airfreight’ policy and minimising the number of employee flights.
- Investing in the latest green transportation available, with hybrid pool cars and vans customised to run on LPG.
- Incorporating sustainability criteria into mainstream business decisions such as purchasing.

innocent has also worked with the Rainforest Alliance to help suppliers cut back on agro-chemicals, leading to a Rainforest Alliance Award in recognition of its work.



The pilot project

innocent decided to become involved in a product carbon footprinting project with the Carbon Trust in late 2006. The initiative fit well with its ethos of sustainability and built on work it had already begun with the Edinburgh Centre for Carbon Management.

A high level description of the product life cycle for smoothies is described in Chart 1 below.

innocent was one of the first pilot partners and therefore used the first version of the method to assess the carbon footprint, which did not include the use phase. Data was collected for all smoothie flavours, but analysis was initially completed to a certifiable standard (conformity with the available PAS 2050 draft) only for 'mango and passion fruit'.

Over 120 suppliers contributed to the data gathering process. The company learned some valuable lessons about data collection (see Chart 2), which it has applied to subsequent exercises.

Chart 1 innocent smoothie life cycle

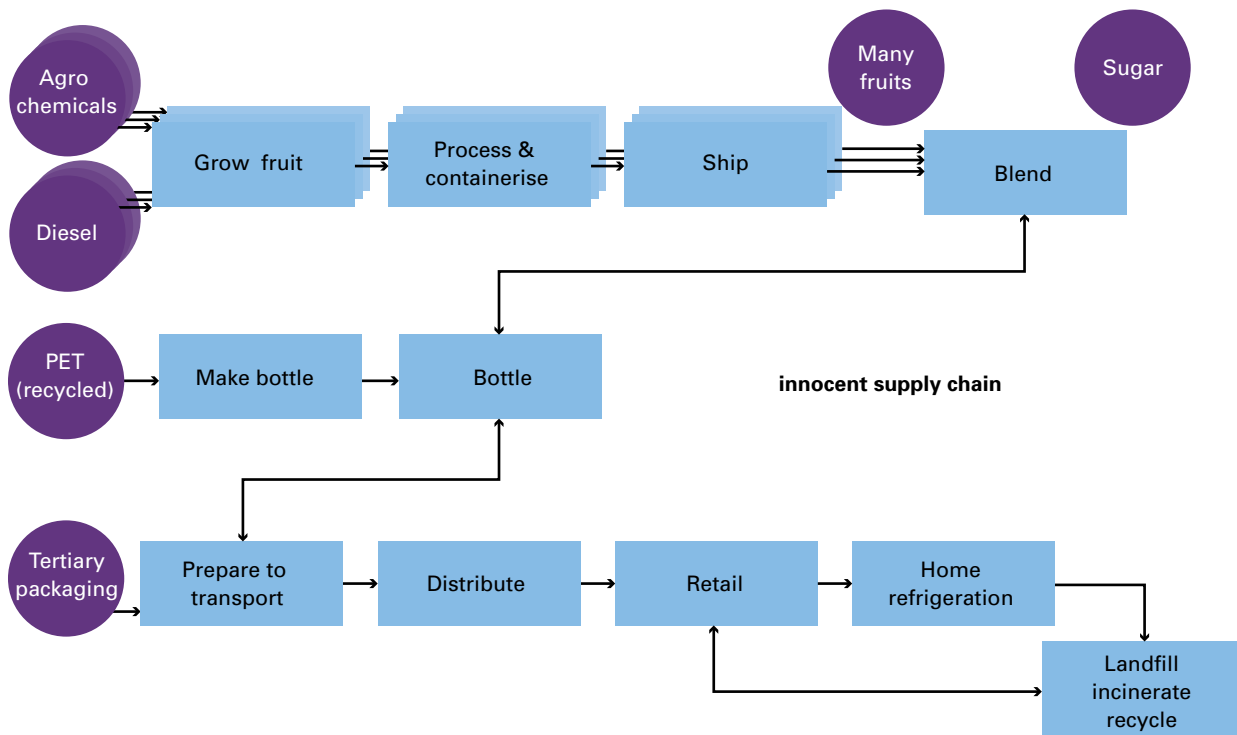
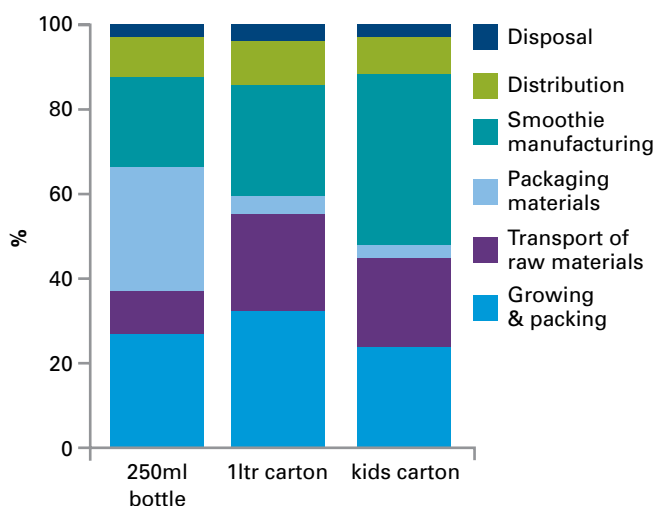


Chart 2

Process lessons: Data collection	
1	Invest time in explaining the purpose of the product carbon footprinting to suppliers – they need to be sure that the data will be used confidentially and purely for the stated purpose, not as part of commercial negotiations (e.g. fuel economy from transport companies)
2	Explain clearly what data is needed, how it is going to be used, and for what purpose – especially when dealing with foreign suppliers
3	Respect suppliers' time – get all the data you need from one set of questions, and never ask for something you don't need
4	Simplify the data request – break down data needed into its simplest and most available forms
5	Specify data formats, but be ready to accept data in the format suppliers have and manipulate it later (e.g. kJ not kWh for energy)
6	Remember that different countries have different concerns and that climate change may not always be as high on the agenda as it is in the UK

The product carbon footprint revealed that most carbon emissions were created during the agriculture, packaging and manufacturing stages (~60-80% depending on container and size). The relative impact of these stages on emissions varies by product type (see Chart 3).

Chart 3 Product carbon footprints of various smoothie sizes



One surprise coming from the assessment was the relatively small contribution of transport and distribution to product-level greenhouse gas (GHG) emissions, particularly for the 250ml bottle size. Given the conventional wisdom that 'food miles' generate high carbon emissions, innocent could have made expensive investments or sourcing decisions that would not necessarily have reduced carbon emissions as much as focusing efforts on manufacturing, packaging and growing processes.

Packaging emissions were higher than expected – especially for the smallest drinks size. Clearly, it made sense to invest in this area for carbon reduction. Similarly, given the impact that farmers have on the overall smoothie footprint, it also made sense for innocent to focus on engaging with fruit suppliers to reduce their emissions.

Communicating the footprint

innocent has taken steps to inform and empower consumers with product carbon footprint information, using the Carbon Reduction Label as part of the sustainability section on its website.

innocent is committed to educating consumers, not only on the carbon content of its products but on their role in fighting climate change more broadly. Its website describes ways in which consumers can reduce their carbon footprints, such as turning down thermostats, composting waste and turning off electrical appliances when not in use. In this way, innocent encourages consumers to take action by giving them information on which to make purchasing and other decisions.

In addition, innocent was one of the first pilot partners to inform its customers about the inherent uncertainty of a product carbon footprint analysis. Its website states:

"As you can imagine, doing a carbon footprint for the whole business system is a big and complicated piece of work. It is best to view our carbon footprint as a good start, some work in progress if you like. And we are continually improving our methods and measurements to get them more and more accurate".

Communications like this help consumers make sense of the product carbon footprint information.

Achievements

Armed with this information, innocent decided to focus its carbon management efforts on two areas: increasing the recycled material content of its plastic bottles and working with suppliers to reduce waste and improve energy efficiency. The project has focused attention and resources where they can generate the biggest savings – maximising business value and carbon efficiency simultaneously.

In September 2007 innocent became the first food company in the world to use 100% recycled plastic for its bottles. From January 2008, the entire drinks range is now packaged using 100% recycled plastic. The results of this initiative have been dramatic (all at no added cost):

- 14% reduction in materials due to light weighting the bottle.
- 55% carbon reduction from the bottle manufacturing process.
- Enabled the company to demonstrate that it is a leading edge investor in sustainable innovations (packaging).

In addition, innocent has been working closely with suppliers to improve energy efficiency and reduce waste. By creating a dialogue with one supplier in particular, innocent helped identify the following opportunities:

Reducing waste to landfill – the supplier set up a group of employees from different parts of the business to look at how they could increase the amount of waste materials being recycled throughout the factory. In the first month, waste to landfill was reduced by 15%, and within six months the reduction reached 54%. This was not the result of any new technology, just clearly labelled bins combined with educating and encouraging staff to separate the waste. Soon the company realised that not only were they achieving great recycling results but they were also saving money – about £1,000 per month from reduced waste disposal costs. As a result, the employee group was asked to choose a charity to receive 10% of the money saved.

Increased energy efficiency – an audit from the Carbon Trust’s Carbon Management programme identified opportunities for the supplier to reduce energy usage by 25%, resulting in savings of £150,000 per year within 2 years. Some of the actions suggested by the audit were straightforward, such as improved metering or small changes to current procedures – some required investment in new equipment for the production process. To ensure that the supplier truly understood the audit results and got the most out of the process, it requested a follow-up visit to help ensure its actions would meet business needs and financial constraints. The company’s engineering manager is currently working through the action plan with his team, and expects to achieve a 10% saving in energy by the end of 2008.

innocent now has key performance indicators in place with all manufacturing and logistics suppliers to measure energy and water usage, waste production and recycling.

Product emission reductions to date

innocent says the product carbon footprint assessment: “Has given us an understanding of the CO₂e emissions involved in each step of making our drinks, and enabled us to identify where we can make the biggest steps in reducing our emissions”.

Working with suppliers to improve energy efficiency and reduce waste has resulted in measurable, significant carbon and cost savings throughout the supply chain: “Our first focus has been to reduce our carbon footprint. We measured our carbon footprint from farm to fridge to the recycling bin, and are thrilled to say that in 2007 we reduced the footprint of our 250ml smoothie by 16%”.

The company now also has a reputation for influencing both its immediate and its wider supply chain. This in turn has increased business value on many levels, especially employee commitment and loyalty. innocent has also shared the information externally to help others learn from its experience, presenting its case study in multiple sustainability conferences and events, as well as through ongoing discussions with suppliers.

The road ahead

innocent is working to assess the product carbon footprint of the rest of its smoothie range. It is also striving to lower its direct carbon emissions further:

“Having successfully reduced our smoothie carbon footprint by (around) 15% in only six months, we are now in the process of setting our targets to reduce our carbon footprint even further in 2008. Our three main areas for taking out carbon for next year will continue to be focused mainly on our manufacturing, our packaging and our distribution in the UK”.

innocent is using its footprinting models to further understand certain aspects of the supply chain. For example, is it better to ‘follow the sun’ and stock fruit from where it is in season or to buy it locally and freeze it for when it is needed? Other potential opportunities include:

- Changing the mode of transport.
- Changing the location of operations.
- Full carbon cost comparisons of refrigerated vs. frozen vs. ambient transported fruit.
- Changing the source of fuels.
- Changing the number of processing plants to optimise manufacturing and transport efficiency.

In addition to specific reduction opportunities, the knowledge generated in the first product carbon footprinting exercise has now become ingrained into the company’s decision making. For example, carbon emissions impact is now a key determinant in choosing how much fruit to source and from where. A tool has been developed using data from the larger footprinting model and is used by the purchasing department to inform sourcing decisions, based upon choice of fruit transport and location. This tool is especially important given the impact of seasonality on the product carbon footprint.

The company is committed to putting the product carbon footprint in context for its customers, empowering consumers to take actions by giving them the information they need to make informed purchasing decisions.

Lessons learned

innocent and the Carbon Trust learned a considerable amount from this product carbon footprinting exercise:

- Carbon reduction initiatives accumulate into significant savings when multiplied across the supply chain – the combined impact of moving to recycled plastic packaging and working with suppliers to increase energy efficiency and reduce waste caused a meaningful reduction in product-level emissions of over 15%.
- Conventional wisdom can be wrong – the key contributors to carbon emissions across the supply chain are not always those expected, e.g. transport and distribution are only part of the equation and not as significant as the term ‘food miles’ implies.
- On the other hand, large emissions sources can be a surprise as well, opening up new opportunities for collaboration – innocent’s agriculture emissions were higher than expected, leading to previously unanticipated carbon saving initiatives to help suppliers reduce fertiliser and pesticide use.
- The knowledge gained in a product carbon footprinting exercise is not only useful at the time of the analysis but can provide a decision making structure for purchasing and other significant decisions going forward.

For the Carbon Trust, the innocent pilot offered an opportunity to learn more about the effect of seasonality on product carbon footprints, and we will continue to build on this knowledge as more seasonal products are studied.

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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ACT ON CO₂ is the Government's initiative to help individuals understand and reduce their carbon footprint. Visit <http://actonco2.direct.gov.uk> for more information.

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