



Sustainability
Purchasing Network

**Reducing Supply Chain Carbon
Backgrounder**

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Draft

REDUCING SUPPLY CHAIN CARBON

BACKGROUNDER

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The following backgrounder was compiled by the Sustainability Purchasing Network (www.buysmartbc.com) and is to be used to provide a context for why and how an organization would consider responsibly managing the carbon in its supply chain. It provides a definition and a business case and includes 8 case studies (3 UK, 1 US, 1 Denmark and 3 Canadian) providing examples of how firms and governments are reducing their supply chain carbon.

Supply chain carbon

Supply chain planners Barloworld Optimus estimate that “over 80% of carbon savings are only achievable at the supply chain design stage.”¹ For firms that target the embedded carbon footprint of their products to the point of sale, they need to look up the value chain and engage their suppliers in carbon reducing programs.

Product carbon footprint defined

“Managing the carbon footprint of a product means minimizing the carbon emissions required to deliver that product to the end consumer. The carbon footprint of a product is the carbon dioxide emitted across the supply chain for a single unit of that product. [...] This approach, often called carbon life-cycle analysis, helps to understand the reasons why emissions are generated across the economy. Processes and their emissions do not occur in isolation but are always part of the supply chains for different products or services.”²

Business case for reducing carbon in the supply chain

“There are several issues driving business to take action, including:

- Increases in direct energy costs and the energy costs of suppliers
- Existing and planned legislation which penalizes high energy consumption and rewards emissions reductions
- Changing consumer attitudes to climate change, presenting forward-thinking companies with an opportunity to develop and market low-carbon products.

[...] As we move to a more carbon-constrained world, business will ultimately have to meet customer needs in a way that generates fewer carbon emissions.”³

¹ From SPN Sustainable Purchasing Trends Study, 2007, p. 30.

² From “Carbon footprints in the supply chain: The next step for business”, Carbon Trust, p. 3, 2006.

³Ibid., pp 2 – 3.

A “supply chain approach has the potential to find significant emissions reduction opportunities and large financial benefits by reducing the carbon footprint of the product. It can help individual companies to understand the carbon emissions across their supply chains and allow them to prioritize areas where further reductions in emissions can be achieved. It can ultimately help all companies make better informed decisions in product manufacturing, purchasing, distribution and product development by considering the costs and liabilities that exist whenever carbon emissions are generated. As consumer attitudes change, it also allows forward-thinking companies to develop low-carbon products to capture new markets and generate higher profits over time. This is the next step in the evolution of efforts to reduce carbon emissions and mitigate climate change.”⁴

Case studies

The following are 8 case studies from the UK, US, Denmark and Canada that provide background on different approaches to supply chain carbon management.

Walkers and Trinity Mirror *UK*

Two UK pilot projects were conducted with Walkers and Trinity Mirror to determine how best to reduce their supply chain carbon. With Walkers, the study focused on the supply chains of Quavers, Doritos and Walkers Crisps, while with Trinity Mirror the focus was the Daily Mirror and weekend *Celebs on Sunday* magazine. “Each pilot:

- 1) Built a picture of the carbon footprint of each product by measuring the life-cycle emissions across the entire supply chain;
- 2) Identified the largest emissions sources both within their own operations and across the activities of other companies operating in the supply chain;
- 3) Developed and prioritized opportunities that will reduce emissions, cut costs, and create new commercial opportunities.”⁵

These two pilot projects identified savings opportunities worth 28,000 tonnes of CO₂ and £2.7 million per annum, and developed an understanding of the carbon implications of different business decisions across each supply chain. This carbon saving was deemed equivalent to the total annual emissions from 5,000 UK households.

“The report concludes that companies can use a supply chain approach to look for new ways of reducing carbon emissions, just as they have been using supply chain analysis to deliver financial benefits for decades.”⁶

Marks & Spencer *UK*

⁴ Ibid., p. 3.

⁵ Ibid., p. 3

⁶ Ibid., p. 1.

UK retailer Marks & Spencer committed to become carbon neutral by 2012. To help achieve this goal, it is working with its 1,500 suppliers worldwide. It has determined that emissions associated with its raw materials, manufacturing and importing of goods amount to approximately 2.6 million tonnes CO₂ annually.⁷

Its sustainable development manager stresses the importance of addressing carbon impacts in the supply chain: “Our contention is that, for retailers, the footprint of stores and lorries probably accounts for less than 10% of your actual carbon footprint. The true impact lies in your supply chain, and in the use and disposal of products.”⁸

To manage its emissions, Marks & Spencer uses the ‘Acorn’ model. Acorn breaks the ISO 14001 environmental management standard down into six steps, and aims to make high levels of environmental management achievable for all suppliers. Energy intensive suppliers such as dye-houses are encouraged to progress through all six stages. Suppliers with less of an environmental footprint do not have to progress as far.

To complement this work on the ground, the company is carrying out research into the economic, social and environmental footprint of sourcing decisions. Evaluating the climate impact of flying food in from overseas, ‘food-miles’, is a key part of this study.

Marks & Spencer has been working with specialist consultants to conduct energy lifecycle assessments and green accounting projects to quantify the impacts of over 95% of its products. Future priorities for the retailer include developing a coherent climate strategy and rolling out step-by-step environmental management requirements for suppliers.⁹

Wal-Mart US

With as many as 61,000 suppliers and operations in 71 countries, Wal-Mart’s supply chain currently emits as much as 200 million tonnes of carbon dioxide equivalent per year.¹⁰ Wal-Mart has a declared goal to remove non-renewable energy from its products. It sees this as an opportunity to spur innovation and efficiency throughout its supply chain that will both help protect the environment while saving money at the same time.

With an eye toward minimizing its carbon footprint, Wal-Mart Stores partnered with the Carbon Disclosure Project (CDP) to measure the amount of energy used to create products throughout its supply chain. By engaging its supply chain in the CDP process, Wal-Mart plans to encourage its suppliers to measure and manage their greenhouse gas emissions, and ultimately reduce the total carbon footprint of Wal-Mart’s indirect emissions.

An initial pilot project focuses on seven commonly used product categories -- DVDs, toothpaste, soap, milk, beer, vacuum cleaners and soda -- and examines the energy used during the procurement, manufacturing and distribution processes. It is being

⁷ Source: www.theclimategroup.org/index.php?pid=425

⁸ From SPN Sustainable Purchasing Trends Study, 2007, pp. 30 – 31.

⁹ Source: www.theclimategroup.org/index.php?pid=425

¹⁰ Source: www.europeanleaders.net/news/latestnews/Wal-Mart-carbon-supply-chain

conducted in partnership with a group of Wal-Mart suppliers interested in finding new and innovative ways to make the entire process more energy-efficient.

For example, News Corp.'s Twentieth Century Fox Home Entertainment, which is a Wal-Mart supplier for DVDs, initiated an analysis of the carbon impact of the production, manufacture and distribution of its DVDs throughout its supply chain, with participation from more than 20 of its own key suppliers. That analysis led to an industry standard for measuring the carbon impact of DVDs and instructed the methodology for other consumer packaged goods.

Wal-Mart's efforts to reduce its carbon impact extends to its product packaging program as well. The firm has developed a product packaging scorecard that evaluates the sustainability of product packaging based on greenhouse gas emissions related to production, material value, product to packaging ratio, cube utilization, recycled content usage, innovation, the amount of renewable energy used to manufacture the packaging, the recovery value of the raw materials, and emissions related to transportation of the packaging materials. Wal-Mart's electronic products will also be under the microscope this year. Plans are underway to have electronics suppliers fill out a scorecard that assesses the sustainability of their products. This scorecard will evaluate electronics on energy efficiency, durability, upgradability, end-of-life solutions and the size of the package containing the product. (Products will also be evaluated on their ability to use innovative materials that reduce the amount of hazardous substances, such as lead and cadmium, contained in the product.) The end result will be a score that shows suppliers where improvements can be made and allows Wal-Mart to evaluate the environmental sustainability of the product. The information will also be made available to shoppers. Furthermore, to encourage suppliers to start implementing the scorecard metrics, Wal-Mart co-sponsored a design contest with the Green Electronics Council in which suppliers are encouraged to submit a consumer electronics product that puts the scorecard metrics into practice. The winner's product will be carried in Wal-Mart stores throughout the US.¹¹

The retailer's supply chain carbon reduction efforts are part of its Sustainability 360 approach to extend sustainability to products, suppliers, associates, communities and customers.

*Novo Nordisk
Denmark*

Novo Nordisk recognizes that a critical component to the company's objective of producing pharmaceutical products to be available worldwide is transporting those products to consumers. Although the company is not directly responsible for the environmental impacts associated with transporting its goods, this stage in the supply chain ultimately leads to a significant quantity of fossil fuel emissions which ultimately impact global warming, acidification, and photochemical smog.

One of the general targets towards which progress has been made is the improvement of methods for reporting transport emissions, and then using the results to reduce the environmental impact, in cooperation with transport suppliers. Novo Nordisk has pledged

¹¹ Environmental Leader, "Wal-Mart Plans to Rate Sustainability of Electronics", March 13, 2007.

to assess the environmental and social performance of 90% of key raw material suppliers and a range of key suppliers in service and engineering. Truckers of raw materials are the initial supplier group prioritized by Novo Nordisk. As transport data from trucks pours in, Novo Nordisk is beginning to require strict environmental guidelines to reinforce the message to suppliers to cut down on emissions. One of the new requirements is efficient refrigeration and heating controls inside trucks.

In working towards its target to report on transport by ship and by aircraft, Novo Nordisk entered in a partnership with Scandinavian Airlines Systems to define the measurement methodology for the environmental impact of air transport. Emissions are calculated on the actual average figures per route/flight, and all cargo is taken into account.

In addition to tracking, measuring, and analyzing the environmental impacts of individual suppliers, such as these trucking and other transportation suppliers, Novo Nordisk also challenges suppliers to provide environmental labels for their products. Since labeling is already becoming a popular practice in Scandinavia, in part thanks to the work of the Swedish Society for Nature Conservation and Eco-labelling, this was deemed to be a reasonable request to make of suppliers.¹²

*Translink
Canada*

Among examples of local good practice, TransLink recently purchased 228 new, more efficient electric trolleys for their downtown Vancouver routes to replace their existing fleet of electric trolleys. Once in service, these new electric trolleys are expected to reduce the current use of electricity by 33.3% on each route. What's more, the entire trolley fleet runs on electricity offset by 100% BC Hydro Green Power Certificates (GPCs). The use of GPCs alone represents 7,560 tonnes of carbon dioxide (CO₂) avoided, which is equivalent to removing 2,100 cars off the road per year.¹³

*City of Vancouver
Canada*

The City of Vancouver formally adopted a Corporate Climate Change Action Plan in early 2004 as part of the City's commitment to climate change and the Kyoto Accord. The City and Council made a commitment to reduce emissions from its own facilities, fleets, and operations, with a target of 20% below 1990 levels by or before 2010.

The City's purchasing department encourages suppliers to convert their fleets to fuel efficient models and alternative fuels, mandates "idle free driving behaviour," and educates vendors on building retrofits that will save energy and money. The City recently awarded a courier cartage service contract to a company that committed to fuel efficient

¹² Source: www.climatebiz.com/sections/bestpractices_detail.cfm?LinkAdvID=41767

¹³ SPN Newsletter Feb. 2007. "Reducing Your Carbon Footprint Through the Supply Chain", by Charlene Easton.

vehicles, measurable emission reduction targets, an idle free program, the use of bicycle service in the downtown core, and ongoing continuous improvement, including driver training programs.¹⁴

*Vancity Credit Union
Canada*

In 2005, Vancity Credit Union introduced a new corporate target to become carbon neutral by 2010. As part of its strategy to do so, Vancity included a performance standard in 'requests for proposals' which requires suppliers to specify how they and their services work to minimize their carbon footprint.¹⁵

*Novex Couriers
Canada*

Since 2003, Vancouver-based Novex Couriers has added 17 Honda hybrid vehicles and three natural gas vans to their fleet. Novex states that the greener fleet saves over one kg of CO₂ per delivery, which represents a total savings of over 270 kg of CO₂ per day when compared to a traditional fleet (Novex, 2006).¹⁶

Purchaser collaboration

Last October six of the world's largest companies, including Procter & Gamble, Unilever, Tesco, Cadbury Schweppes, Imperial Tobacco, and Nestlé, formed the Supply Chain Leadership Coalition, an organization whose mandate is to press suppliers to release data about their carbon footprints and climate change relevant information, such as greenhouse gas emissions data, emissions reduction targets and climate change strategies. The group was formed in partnership with the Carbon Disclosure Project which plans to survey suppliers about their carbon emissions on behalf of the Coalition.

These corporations will work together to create one single standardized mechanism, through the CDP questionnaire process, to measure their carbon footprint throughout the supply chain. By creating one standardized system, one single request for disclosure will be sent on behalf of all the members of the Coalition. This will decrease the burden on suppliers who might otherwise receive a number of separate requests.¹⁷

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ From: www.cdproject.net/viewrelease.asp?id=12 accessed January 13, 2008.