Supply Chain Management

A SPECIAL REPORT

The carbon factor moves to centre stage

The obligation to lower carbon emissions is obvious but calculating the importance of carbon in supply and demand is challenging, writes **Peter McGuire**

CARBON HAS long been intimately bound with supply chains. Every tangible purchase made, whether by a private consumer or a company, expends energy. The product has to be farmed or manufactured, packaged, transported, and ultimately disposed of.

Without carbon emissions, of course, there would never have been an industrial revolution, nor would the complex and interconnected supply chains that enable our civilisation have emerged. But now – despite the failure of global governments to agree on a deal in Copenhagen – there is an agreed need to urgently decrease carbon emissions in order to prevent runaway climate change and, potentially, an economic catastrophe dwarfing the worst we've seen in recent years.

A recent Accenture survey found that 90 per cent of 11,000 customers worldwide would be willing to switch to a new product if they knew that it had a minimal climate change impact. But as the recession bites deep into people's incomes, are consumers saying one thing and doing another?

Gary Hanifan, senior executive in Accenture's supply-chain management division, believes that price – and other factors such as quality, convenience and availability – clearly remain the main drivers of consumer preference. "However, there is evidence that this is evolving. Consumer awareness and concern about carbon has already led some retailers to apply carbon labels to a growing section of their product range – for example, Tesco and Boots work with Carbon Trust – and this begins to replicate some of the trends already seen in other areas, such as nutritional information, sustainability of source, and the recyclability of packaging."

Big and small companies have many motivations to change the amount of carbon used in the supply chain, says Hanafin: "One is the environmental imperative; scientific and governmental consensus has suggested that we are on an unsustainable trajectory, particularly on carbon emissions, and many firms are keen to make a step-change in their environmental impacts as a result."

Several companies have taken tentative steps in this direction, ranging from tactical initiatives to broader strategic responses. Telecoms firm Vodafone has worked on potential opportunities to use mobile technology as an enabler of change.

Global transport and distribution company TNT is building a large-fleet of revenue earning battery-run vehicles. Tesco has rolled out a sequence of transport mode switches, including moving from road to rail for Scottish store deliveries, road to sea for bulk liquid imports, and electric vehicles for urban home delivery. Retail giant Walmart, one of the world's largest corporations, recently announced a new set of programmes and goals for reducing the greenhouse gas emissions of its extended supply chain.

In 2007, Walkers crisps, owned by PepsiCo, became the first company in the world to display a carbon logo on a consumer product. The logo contains information on the amount of carbon each packet uses from seed to store and through to disposal, and has driven Walkers towards a more sustainable energy model.

Bartley O'Connor, head of sustainability and climate change at PricewaterhouseCoopers, believes that suppliers and retailers must ultimately stop charging a premium for environmentally sustainable products. Instead, he says, they need to build the cost into their business; one UK company, Respectful, produces free-range eggs for Asda and has removed costs from the production process by using renewable energy.

"Consumer awareness is growing and they want to do the right thing," he says. "To reach those consumers, the producer has to get to the retailer, and that's where the power lies. The retailer decides what's on the shelf, and they're keeping an eye on what the consumer wants: to buy local and ethically produced products. The whole concept of sustainability is about more than carbon: it's about not damaging the planet or harming workers. Does a company pay its producers a fair wage for the raw materials in chocolate? Do they use child labour?"

The global economic system has for many years focused on delivering value to shareholders. Until recently, the environmental, social and cultural impacts of corporations' activities were largely excluded from the equation, with global companies from Nike to Coca-Cola and Walmart presenting clear targets for critics.

O'Connor believes the shareholder focus is shifting, with a growing emphasis on both internal and external stakeholders: employees, owners, suppliers, society and government, customers, and shareholders. "The reality is that organisations today impact on the planet in every way, from how they employ people to how they treat the local environment. Sustainable development movement is about money making being done in the right way."

According to Hanifan, there is also a growing awareness of a direct business rationale for curbing corporate emissions.

"Firstly, carbon emissions are largely equivalent to energy consumption, so there is often a win-win on carbon reduction and cost. For some industries, reducing emissions is mandated, either by legislation, or by reporting requirements from investors. An example of this would be the extension of the EU Emissions Trading Scheme to European airlines, which will bring a direct legislative and cost burden on firms. But carbon is also becoming a competitive issue – we have seen Walmart state that carbon will be one factor under consideration when making supplier decisions – and there has been an upswing in requests from customers for carbon-emissions data in the transport sector. Overall, firms are looking for the best balance of cost, service and sustainability in their investments, rather than just cost and service."

The demand for information about carbon emissions will grow in coming years. O'Connor and PwC have been helping Bord Bia, the Irish Food Board, to understand the impact of sustainability on the food industry now and into the future.

"It's an extremely complex area," he says. "We might assume, for example, that a cucumber wrapped in plastic is more environmentally damaging than an unwrapped one, but a cucumber with packaging might last longer, reducing food waste and lessening its carbon footprint. Getting these complexities across to consumers in a message on a tiny label is very difficult."

Higher prices for carbon are coming, O'Connor believes, and this will ultimately force supply chain managers to reduce the carbon emissions in moving a product or service from first supplier to final consumer. Soon, he says, every individual will measure their carbon footprint and will be incentivised on that basis.

"This is what will be required for the planet. We have to move towards a low-carbon world and the only way is to put a high value on it."

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World Economic Forum Carbon Reporting Guidelines

RECENTLY, THE World Economic Forum's (WEF) Logistics and Transport Industry Group outlined standard guidelines for calculating consignment level carbon emissions from logistics and shipping operations.

Member firms of the WEF have agreed to pilot the guidelines during 2010. The organisation is also involved in wider global discussions about placing carbon footprint information on individual products.

"Ultimately, the guidelines are the product of a request from the main players in the industry for a solution, and so we would hope they would drive through," explains Gary Hanifan of consultancy firm Accenture, which helped establish the guidelines.

The WEF is an international organisation that brings together world business leaders, international politicians, and selected journalists and academics. It is funded by 1,000 global corporations who have played a key role in directing global economic policy over nearly four decades.

The story behind Walmart's war on emissions

It might have one of the worst reputations in global commerce, but the US retail giant is staking its future on drastically reducing carbon emissions along its supply chain, writes **Peter Maguire**

WALMART'S CRITICS are legion. The world's largest retailer has been accused of violating labour laws, ruining local businesses and reducing consumer choice.

Earlier this month, Walmart announced a set of programmes and goals for reducing the greenhouse gas emissions of its extended supply chain by 20 million metric tons by the end of 2015. It will do so by working with its suppliers to reduce their greenhouse gas emissions, paying particular attention to high-carbon items such as bread, milk, meat and clothing, and pressuring its suppliers to take a fresh approach to sourcing, manufacturing, packaging and transportation. Is the much maligned hypermarket turning an ethical corner?

Sean Darcy, managing director of global logistics company DSV, says major retailers such as Walmart and Tesco should set an example by reducing their carbon footprint. "Walmart is in such a dominant position that there will always be a lot of eyes on their supply chain. They know they have to take positive steps."

Marks & Spencer led the way towards a sustainable model. In 2007, Plan A was announced to great fanfare. Notably, representatives from Oxfam flanked M&S chief executive Stuart Rose as he announced the company's ultimate goal of becoming the world's most sustainable retailer by 2015.

Despite the recession, and political setbacks at Copenhagen, consumers and legislators are demanding both retailers and suppliers reduce their environmental impact. "Companies are repositioning themselves," says Bartley O'Connor, head of sustainability and climate change at advisory firm PricewaterhouseCoopers.

"They want to differentiate themselves from their competitors and they know that a consumer faced with two similar or identical products at around the same price are more likely to go for the environmentally friendly option. Most retailers have begun the process of change, although some are making more noise than others."

Walmart operates in the US, the UK (as Asda), Japan (as Seiyu) and India (as Best Price). The company has already taken internal steps towards sustainability, such as committing to 100 per cent renewable energy and reducing its waste down to zero.

Now, it can use its market dominance to effectively force suppliers to reduce carbon from their production by favouring those producers with a lesser carbon footprint.

"It can advise its suppliers on steps to reduce its carbon footprint," says O'Connor. "It's more carrot than stick at the moment, but if Walmart's suppliers start working with them on ideas, they'll build up a better relationship in the long-term."

Darcy agrees: "Suppliers and customers are looking to build deeper and better relationships, not just over one year but over 15 to 20. The customer, in this case Walmart, is able to indicate what they require from their supplier. If that's a reduction in CO_2 emissions, and they have the financial clout to dictate these terms, suppliers will inevitably have to take note. Large retail companies have the power to set the agenda."

Any costs related to making products more energy-efficient – redesigning packaging or using a different fertiliser – will be the responsibility of each supplier, not of Walmart.

Other retailers, such as Tesco, are likely to look at what Walmart is doing and adopt similar practices. If Walmart stays true to its word, even global behemoths such as Coca-Cola may have to change. Although the drinks giant has made significant advances towards sustainability, it has been criticised for failing to prevent human rights abuses of union members in Colombia and for depleting water tables to the serious detriment of farmers in India.

Ultimately, companies such as Walmart are looking at their bottom line and realising they can save money by reducing the carbon emissions of their supply chain.

The costs involved in making more energy-efficient products will be borne by the supplier, rather than Walmart, whose profits will be jealously guarded. The company could potentially use its cost savings to lower prices to the consumer, drawing further criticism from smaller local businesses that cannot compete.

In 2007, Walmart's then chief executive Lee Scott said the sustainability agenda offered one of this century's greatest opportunities for competitive advantage. O'Connor says companies can save money by cutting carbon from their supply chains: "It takes waste out of the business. Companies soon realise that by rationalising their logistics, they are improving efficiency."

Walmart is the world's largest purchaser of goods from China, so it seems inevitable Walmart's move towards sustainability will impact on the emissions coming from some Chinese suppliers. "China is not asleep to the implications and opportunities of a more sustainable supply chain," says O'Connor. "They've been focusing heavily on clean technologies and bringing solutions to some of the world's environmental problems."

Darcy, however, says China's internal market is growing and he is uncertain as to how influential Walmart, despite its enormous power, will be in directing Chinese policy. Nonetheless, he says carbon and sustainability will become central issues in supply chains.

"At the moment, companies are trying to survive the economic crisis, while the Copenhagen climate-change conference last year laid bare the difficulties in securing a worldwide agreement on environmental issues. When things improve, this issue will be more firmly back on the agenda. Companies will have to come up with action plans to reduce CO_2 emissions."

Large corporations such as Walmart have a role to play in tackling the issue of global carbon emissions through a mix of voluntary action and enforced legislation.

Bartley O'Connor of PwC

Shoppers leaving Wal-Mart in Fairfax, Virginia, after the Black Friday discount sales Photograph: Getty