



UK Supermarkets

2009 carbon benchmark report

Executive summary

in association with



UNIVERSITY OF EDINBURGH
Business School

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The Project Partners

ENDS Carbon is a new initiative established in April 2009 by the University of Edinburgh Business School and the ENDS Report, the UK's leading monthly journal for environmental policy and business. ENDS Carbon works with companies to measure and compare corporate performance on climate change and to identify best practice, enabling more effective carbon management.

The University of Edinburgh Business School runs an innovative Carbon Management MSc programme with the School of Geosciences, and a Foreign and Commonwealth Office funded programme for Finance and Investment for a Low Carbon Economy. It is developing a centre for research in business and climate change

ENDS Carbon builds on the success of the Business School's Carbon Benchmarking Project, launched in 2007 and guided by an advisory board with representatives of Carbon Disclosure Project, Climate Group, DEFRA, FTSE, GRI, Insight Investment, Aviva Investors and WWF.

ENDS Carbon is developing carbon index and benchmarking projects with *Management Today*, the *ENDS Report*, *Marketing* magazine, and other partners, as well as providing the analysis for the Green Business Awards.

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In the design of the benchmark we benefited from comments from an expert reference panel comprising: Rachel Crossley, Insight Investment; Jane Milne, British Retail Consortium; James Northen, Institute of Grocery Distribution; Kathryn Vardy, Carbon Trust; and Oliver Greenfield, WWF-UK.

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Executive summary

Supermarket companies have a very important role to play in climate change mitigation. Their direct greenhouse gas emissions (GHG) are modest but significant (perhaps 1% of UK total emissions). Their indirect influence via supply chains and customers is even greater.

This provides supermarket companies with a large opportunity to make a contribution to reducing GHG emissions. Benchmarking is a well established tool used by the business sector to improve business efficiency and effectiveness. This project aims to apply benchmarking methods to carbon management and support supermarket companies' activities in this area.

The benchmark evaluates supermarket company performance in a number of categories. Benchmarking each was not always straightforward and difficulties were found in accurately comparing supermarket companies with differing business models and practices.

The seven largest supermarket retailers in the UK were included in this benchmark survey – ASDA/Wal-Mart, Co-operative, Marks and Spencer, Morrisons, Sainsbury's, Tesco and Waitrose. The focus was on UK food retail operations mostly using data from 2007.

All companies were assessed on the basis of public domain information reported on their websites and in their CSR and sustainability reports. For many of the more qualitative indicators, this data alone provides a reasonable basis for making comparisons between companies.

In addition, all companies were invited to complete a confidential questionnaire that asked for additional data. This was primarily to enable a detailed analysis of energy efficiency, fuel/logistics efficiency, and refrigerant gas management efficiency. ASDA/Wal-Mart, Marks & Spencer, Tesco and Waitrose provided a response. This data has been provided on a confidential basis and where this data is used, individual company performance been anonymised.

Energy efficiency

We compared company electricity usage by looking at supermarket companies' most energy intensive practices: refrigeration, lighting, and HVAC (heating, ventilation and air conditioning). In each case the energy use attributed to the use-type was normalised using a quantity factor such

TABLE E.1 Performance categories used to compare supermarkets

Direct carbon management	Indirect carbon management
• Energy efficiency	• Supply chain carbon management
• Low carbon electricity supply	• Customer carbon management
• Refrigeration gas management	• Advocacy and capacity building
• Distribution efficiency	
• Internal carbon management quality	

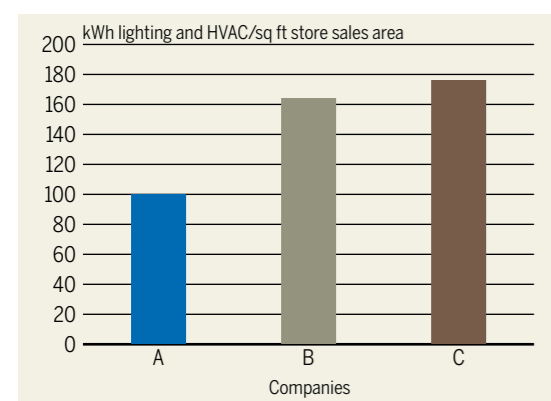
Source: ENDS Carbon

as linear metres or square feet. Overall energy efficiency in refrigeration was quite similar between companies. In contrast, energy efficiency levels for lighting and HVAC varied a great deal – the most energy efficient company used 50% less energy for lighting than the least; the most energy efficient company for HVAC used half as much energy as the least.

Electricity supply

Companies can also improve the carbon performance of their stores by reducing the carbon content of the electricity they use. Working out the carbon ‘content’ of electricity is complicated by questions of double counting and ‘additionality’. For this reason, we do not consider renewable electricity paid for by the Renewable Obligation subsidies to count as having reduced carbon content (this follows the Department for Environment Food and Rural Affairs’ (DEFRA) recent ruling). As a result, the only way companies in the sector have so far successfully reduced the carbon content of electricity is via combined heat and power (CHP). One company purchased nearly 75% of its electricity from this source, greatly reducing the carbon emissions associated with its energy use.

FIGURE E.1 Combined lighting and HVAC efficiency



Source: ENDS Carbon

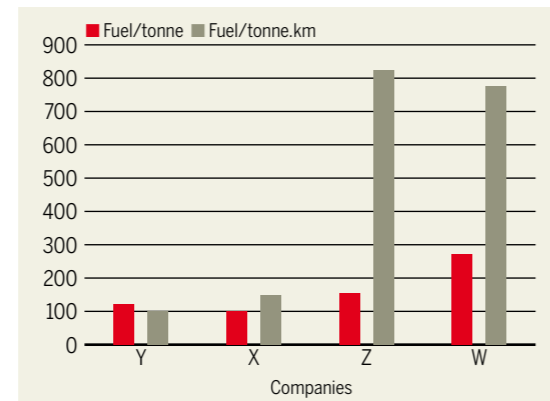
F-gas

Fluorinated greenhouse gases (f-gases), used in refrigeration are the second biggest source of direct GHG emissions for the sector. The benchmark compared companies’ f-gas leakage (weighted for global warming potential) per linear metre of refrigeration. The most carbon efficient company was 25% better than the least efficient.

Distribution

Transporting goods from distribution centres to stores is the third highest source of direct carbon emissions for supermarket companies. There are opportunities for efficiency gains from fuel switching, driver training, vehicle choices, transport methods, logistical partnerships, and distribution strategy. Companies were benchmarked on the efficiency of their distribution using fleet fuel efficiency (fuel/km), as well as logistics efficiency (fuel/tonne delivered), and fuel/km.tonne. Supermarket companies have similar average fleet fuel efficiency, but have very different levels of logistics efficiency. Larger companies are much more efficient than smaller ones due to economies of scale. The most efficient companies used 80% less fuel per kilometre-tonne as the least.

FIGURE E.2 Logistics efficiency



Source: ENDS Carbon, IGD

TABLE E.2 Areas of substantial difference in carbon performance

Management of direct emissions	Management of indirect emissions
<ul style="list-style-type: none"> Energy efficiency (lighting and HVAC) Logistics efficiency Strength of targets for reduction in carbon emissions and other related areas 	<ul style="list-style-type: none"> Depth of involvement with supply chains in carbon management Use of farm assurance standards to drive low-carbon farming practice Customer-focused product information relating to carbon Support for external research Interaction with government on legislation

Source: ENDS Carbon

Corporate carbon management

We evaluated the quality of companies’ approaches to managing their own carbon emissions by comparing policy, targets, integrating carbon management into performance management systems, and public carbon reporting. Most companies demonstrate substantial action in all areas. However, some companies have more stretching and ambitious targets than others over the next few years. Tesco has an annualised target of 5.6% compared to the sector average of 3.7%. M&S also aims to go carbon neutral by 2012.

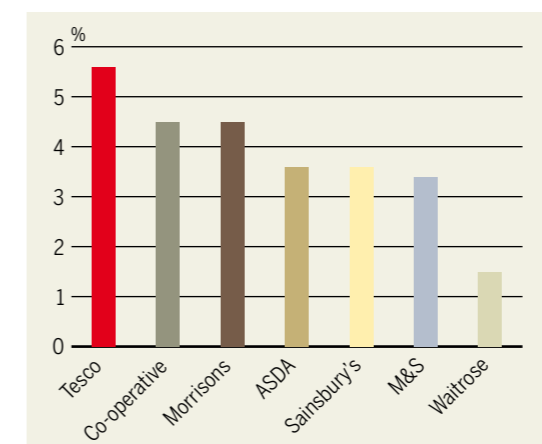
Supply chain carbon management

The carbon emitted by supermarket companies’ supply chain dwarfs their own direct emissions, by as much as seven times. They offer the greatest opportunity for long-term reductions. We compared companies by looking at their efforts to gather supply chain carbon data, to identify carbon hotspots, to use farm assurance standards to drive farmer behaviour, and to reduce supply chain packaging. Asda and Tesco are beginning to systematically ask their suppliers for carbon information. Waitrose uses an independent environment-focused assurance scheme for its farmers.

Customer carbon management

Customer choice and behaviour have big climate change impacts. Supermarkets have significant ability to inform and influence customers. We evaluated company activities in customer awareness campaigns, recycling, waste avoidance, enabling low carbon choices, customer travel avoidance, and providing information on the carbon embedded in specific products. Tesco and M&S have gone furthest on air-freight labelling, but Co-operative and Waitrose argue against this approach because of the trade benefits to poor countries it brings. All companies encourage customer bag reuse – M&S makes customers pay for them. Tesco, ASDA and Waitrose lead on home delivery services, which reduce emissions associated with customer travel.

FIGURE E.3 Carbon targets: annualised reductions



Source: ENDS Carbon

Advocacy and capacity building

Mitigating climate change will require strong action from government and other social actors. It is important that companies support this. We compared each company's involvement in lobbying and engagement with government on this issue; we also looked at employee and public education programmes, and the extent to which companies were supporting external research activity. Most companies in the sector are engaged in the political process, often at CEO-level, calling for more action on climate change. Several companies have mounted public and employee-focused campaigns, and are funding various research programmes – Tesco's £25m for a sustainable consumption research initiative stands out.

Conclusions

As a whole, we found that the supermarket sector is taking climate change seriously and is demonstrating proactive management across the full range of carbon management activities. However, there are substantial differences in the relative performance of companies, in the areas identified in Table E.2.

It is apparent there is a strong desire by this sector to continue to improve their carbon management and minimise their business impacts; this benchmark is designed to help these processes.