Implementing a Carbon Strategy

With money getting tighter, now is a good time to look at ways to cut costs. Fortunately for the planet, going green is a great way to do this, but sometimes it's easier said than done. One of the largest printers in the UK is St. Ives, with a group turnover of €200 million and approximately 4,500 employees across its 22 sites, all of which are ISO 14001 compliant. (This is the standard that specifies the requirements for an environmental management system.)

The company has recently undergone a carbon management and reduction exercise that could provide other printers, large and small and in all geographies, with a roadmap towards carbon footprint reduction for their businesses and for their clients.

It all begins with measuring carbon footprints, but deciding how to do this and whose carbon calculator to use is complicated. St. Ives chose to use a British Standards Institute's specification as a starting point, and have since developed their own carbon calculator that largely follows the PAS 2050 standard.

PAS 2050 is a Publically Available Specification available from the BSI website (www.bsi-global.com) for free to anyone who wants to use it. PAS 2050 describes a method for measuring the carbon footprint of goods and services across their lifecycle, and 'to deliver improved understanding of the GHG (Greenhouse Gas) emissions arising from their supply chains, and to provide a common basis for the comparison and communication of results'.

There are many companies keen to promote their own carbon calculators, however for the most part these calculators reflect the vested interests or bias of their developers. The PAS 2050 methodology is the only thing we have come across that is generic and relevant for all aspects of print media supply chains.

It is also supported by the UK's Carbon Trust and DEFRA (department for the Environment, Food & Rural Affairs) even though as a PAS it is not an officially recognised standard. If it gets put forward as an international standard it will be withdrawn as a free download, so now is the time for anyone interested in following this methodology to get with it.

Geoff Court, St Ives' safety and environmental officer.

Central to developing a programme of carbon footprint reduction is overall carbon management, rather than a focus on specific footprints. However the complexities of this for large organisations can be pretty daunting. The British government set up the Carbon Trust to provide a partner to industry to help the country achieve its targets as outlined in the European Emissions Trading Directive and which helps individual European countries achieve their commitments as outlined in the Kyoto Protocol.

An investment of £25,000 has yielded St. Ives savings of £157,000 in its first year, a saving which should continue to grow over coming years. So how did they do it?

Working with the Carbon Trust

St. Ives has worked with the Carbon Trust to come up with a plan to help reduce the group's environmental impact. The Carbon Trust Carbon Management plan for St. Ives cost around £50,000 altogether, provided 50/50 by the two organisations. The £50,000 was mostly spent

on consultants from ICF International, referred by the Carbon Trust to help St. Ives reduce energy and CO2 emissions in 2008 by 3% over the previous year.

The consultants measured energy, raw materials and vehicle mileage, and saved St. Ives some 1821 tonnes of CO2. The programme followed the WRI/WBCSD (World Resources Institute and the World Business Council on Sustainable Development) GHG (Greenhouse Gas) Protocol, which is a standardised protocol for voluntary corporate greenhouse gas inventories.

This image shows St Ives marketing suite.

There are three parts to this protocol. Scope 1 refers to a company's direct emissions, Scope 2 refers to energy purchased offsite and Scope 3 is anything else, from individual employee travel, through to transport and recycling. Working with ICF International, St Ives has implemented all of Scope 1, some of Scope 2 and a bit of Scope 3. The net result is that gas and energy usage are down by 4,834,141 kilowatt hours across all sites and St. Ives has saved £157,000 in energy costs based on July 2008 UK energy prices. The calculation today would show far high savings given the fall in oil prices from a high of $147 to $41 per barrel since last summer.

The tool developed by ICF for St Ives calculates emissions on a lifecycle basis, so for each printed product it takes into account a wide range of criteria. Top of the list are emissions arising from the transportation of a printed product from the production site to the client. This calculation is based on the transported weight and the distance travelled, using average assumptions for the transport vehicle's overall carrying capacity compared to the actual load, empty returns, and truck diesel consumption. St Ives does not use rail for any print deliveries.

Obviously, all non-transport related energy consumption emissions make up the next big number, and these are based on actual gas, fuel oil, and electricity consumption at each St Ives production site for the previous fiscal year. The St Ives calculation assumes that each square metre of printed paper coming out of a given site has a correlating figure. For each site ICF calculated the average input of gas and electricity per square metre of paper printed. This was equal to the ratio of annual energy consumption for that site's annual square metre usage of paper.

This assumes that all print products have the same energy consumption, which may not be true. In order to clarify this ICF could improve their data accuracy for a specific print product by monitoring the time required for a given print run, or measuring the energy consumption for individual presses.

Embodied Emissions

The calculation includes what ICF and St Ives describe as 'embodied emissions in the paper used, resulting from manufacturing processes and transport'. This means emissions associated with the manufacturing and transport of the paper, up to the point of its entry into a print factory. These calculations are not product specific, but could be made so in cooperation with a paper supplier.

The same principle applies to what the ICF calls 'embodied emissions in materials used', which includes how much aluminium is used for a given print product based on the number of plates required and their dimensions, plus the plastic, paper, cardboard and wood packaging. It does not include a calculation for inks or coatings.

The primary source for working out these various emissions factors is the GHG protocol. However, it is increasingly clear that the problem with carbon

footprinting is that it always seems to include some intangible or subjective value. Unavoidable as this may be it has the effect of reducing the relevance of these calculations for other applications. Clearly we need some broadly accepted basis for calculating the emissions factors for different presses, papers, inks and plates if we are truly to get to the heart of this.

These 3D printed items, constructed from cardboard for Marks & Spencer's Plan A campaign, are a good example of St Ives' environmentally-friendly approach to problem solving.

That criticism aside, the St Ives calculator is a huge step forward because it can be used to provide print buyers with print facts that they can use in their media purchasing plans. And what about St Ives' customers? Has the carbon calculator been well received? Geoff Court, St Ives' safety and environmental officer, says: "Yes it has – we have had interest from our customers who've asked us to use it. We can tell them the carbon footprint of individual products." Progress indeed.

Meeting Objectives

Customer confidence is obviously a key driver for a project of this kind, and it gives St Ives some competitive edge. However, once the company is happy with how the tool is working, it is considering sharing its work with the rest of the industry. Court says: "There is still some concern with credibility of the tool so we're not making it public yet, because we want to be sure we've done it right."

Having achieved its primary objective, which was to establish a functional carbon management programme, St. Ives is now looking for a 12% year-on-year energy consumption reduction. This ought to be readily achievable as the company's 22 sites are now consistent in how they measure and manage energy efficiency. Each site operates as an autonomous entity within the group, responsible for its own profit and loss and for going beyond the corporate emissions guidelines, should it so choose.

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St Ives is now at the end of its programme with the Carbon Trust. It is working independently to build on the work it has done with ICF. As Geoff Court explains: "St Ives is going forward alone to develop our own carbon footprinting tool which will be PAS 2050 compliant."

The St Ives work with the Carbon Trust marks an important step forward for the printing industry. It obviously helps provide media buyers with information they can use as part of their media planning and purchase. It's also a great example of what can be achieved when companies start thinking about their carbon footprint and environmental management in general.

Laurel Brunner