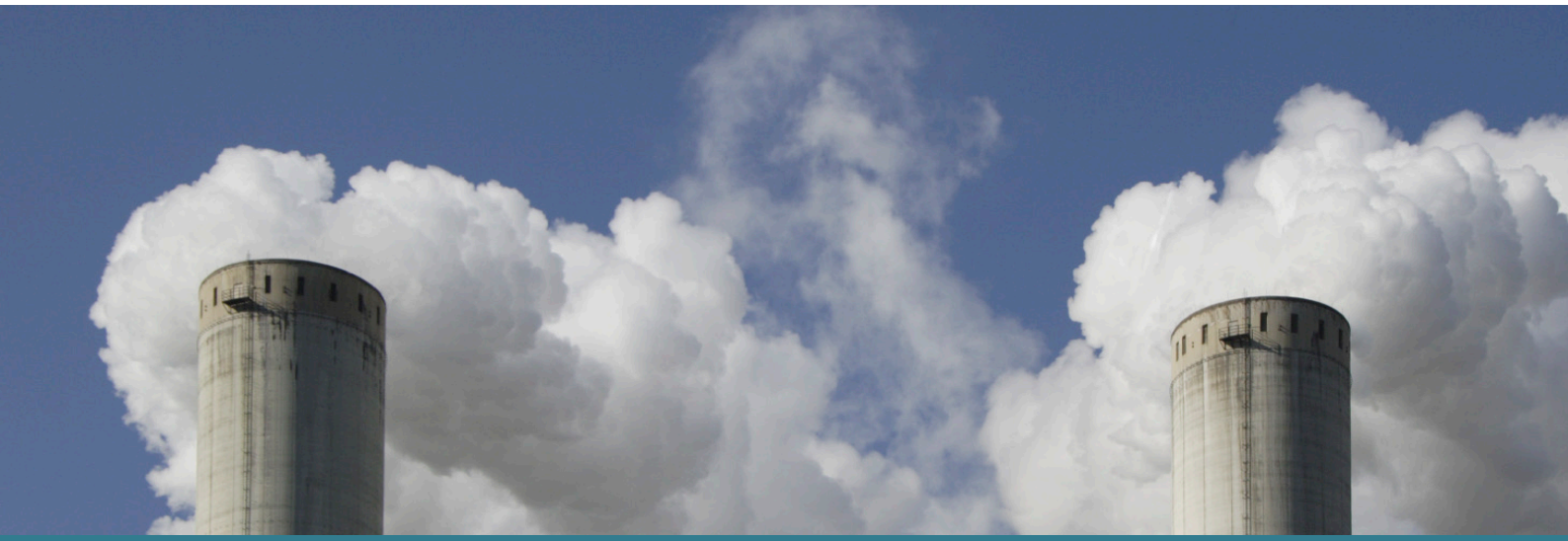


Carbon Management: A Connected Approach

Carbon Accounting poses unfamiliar challenges for the business world. As part of its drive for improved company sustainability, Cisco is developing an internal framework to measure, monitor and manage its emissions. It is known as Connected Carbon Management – an emerging methodology shared here in the hope of providing fresh insight for customers.

Introduction

Understanding where greenhouse gas emissions come from in your business and acting to reduce them quickly are unavoidable issues for every major enterprise. The task will involve tackling not just direct company emissions from fuel consumed in buildings and vehicles, but also those produced indirectly by generating its electrical power and in the supply chain.

A clear sign of mounting time-pressure is that starting in mid-2009, some 5,000 UK-based organisations in the public and private sectors will be required to submit energy audits under new Carbon Reduction Commitments (CRCs). The country's first mandatory emissions cap-and-trade scheme will take effect from 2013, putting a price on every tonne of CO_2 emitted.

While the UK may be ahead of the curve, the legislative trend to obligatory disclosure will gather pace elsewhere. Hence there is a strong need for effective carbon management strategies. As large organisations wrestle with the complexities of carbon accounting – which is still a developing and in many instances an imprecise science – it makes sense to build a strategic framework to accelerate progress.

Carbon Accounting – a Developing Science

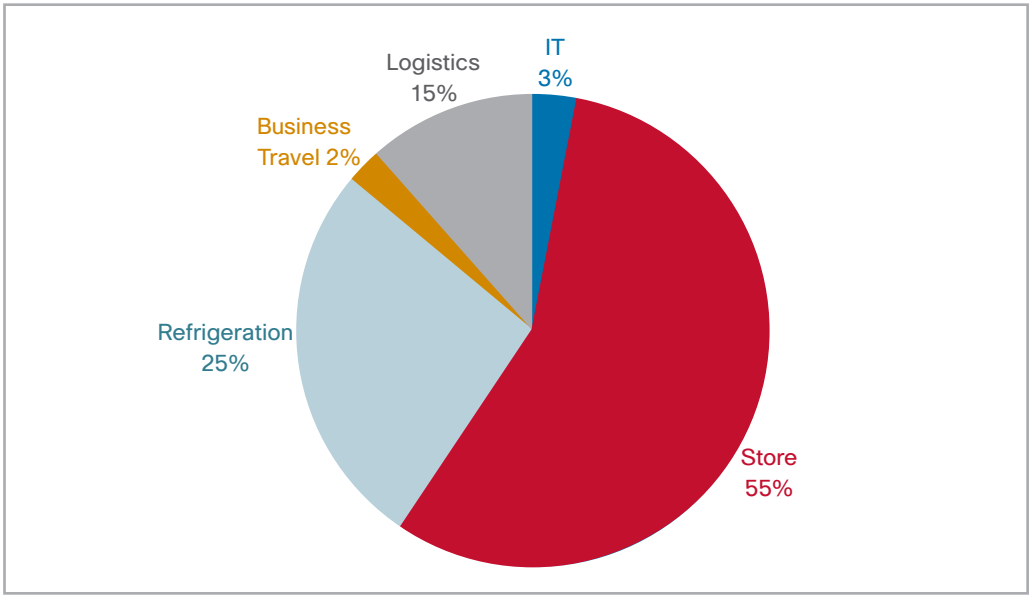
Enterprise Carbon Accounting combines techniques from process and input-output lifecycle analysis with those of financial accounting. It aims to give businesses the same visibility and control over environmental performance as they have in their financial systems; only now is it evolving beyond financial data in spreadsheets and utility bills towards automated models. Yet gathering data is just a starting point. The key is to find practical ways to make use of it.

Cisco's Connected Carbon Management (CCM) is designed to build enterprise-wide carbon management programmes supported by intelligent, network-enabled controls. It offers a strategy for tracking major emissions sources, setting up routine reports of metrics and identifying carbon reduction opportunities. Projected outcomes are regulatory compliance, investment decision support, and operational excellence in a low carbon world.

How Cisco is Tackling its Carbon Issues

For each sector and enterprise, emissions profiles vary, as do the opportunities to achieve significant, sustainable carbon reductions. The same holds true from country to country for different parts of a single business. In this retail example, stores and refrigeration comprise an 80 per cent share of all emissions; the share attributable to each gives a pointer on where to seek reductions. Each customer is different and needs to start by defining its own challenges.

A typical retail company carbon footprint



Cisco's initial approach to the new world of carbon management was to take an all-round view. It was critical to start with a clear picture, so the first step was to identify the chief sources of carbon emissions across the business as a whole. That task was undertaken in partnership with independent environmental consultancies to ensure impartiality.

The audit helped identify three key areas in which to develop emissions reduction programmes: electricity usage in buildings, air travel and road travel. These were selected because their emissions rates were high, and because each afforded an opening for changes in management and employee behaviours that could make a measurable difference.

Cisco's early strategy was to source as much power as possible from renewable sources; this now stands at 100 per cent in the UK and an average of about 80 per cent across Europe. It championed the replacement of business travel across the company with more telecommuting and a wider use of Cisco Unified Communications tools, such as WebEx or TelePresence. And it sought to start cutting power usage in its buildings by the strategic deployment of Cisco solutions such as Cisco Connected Workspace and Cisco Connected Real Estate

To arrive at the more systemic approach of Connected Carbon Management, however, the company has had to look deeper into issues of energy measurement and monitoring. Raw data requires conversion into a carbon database; carbon statistics need to be understood in the light of actionable business strategies.

In this way, Cisco has been able to distinguish more clearly the various emissions streams it needs to manage, and to launch three carbon reduction work-streams. They include centrally coordinated projects focused on buildings, air travel and road travel; projects to address those company carbon emissions the workforce cannot directly influence; and central co-ordination, direction and carbon measurement for Cisco's operational teams. It is now deploying an external software platform for comprehensive sustainability management.

The Value of Setting a Target

John Chambers, Cisco chairman and CEO, galvanised company efforts to develop a connected approach to carbon management when, in June 2008, he announced a plan to cut Cisco's emissions by a quarter in five years. "By deploying innovative information technology solutions and using the network as a platform for 21st Century environmental management, we believe we can significantly alter our greenhouse gas footprint and help our customers meet their sustainability goals," he added.

The 2012 target spurred Cisco's environmental teams to consider the cumulative impact of all carbon reduction measures from a more unified perspective. In Europe, it is enabling Cisco to track each country's performance against the straight downward line over time of the target; to assess the ongoing contribution of each initiative to overall company objectives; and to gauge the interaction of all programme elements in a more connected way.

Controlling Energy Use in Buildings

Buildings produce around 50 per cent of emissions worldwide; naturally, the proportion of business emissions from buildings tends to be higher in data-intensive sectors such as financial services. Cisco has developed an application to record organisational power usage data consistently and then convert it quickly and easily into its carbon equivalent.

Cisco's Environmental Data Tool (EDT) stores cost and energy usage data, using a built-in calculator to convert the information into the emissions they represent via the Greenhouse Gas Protocol. Today, data is manually collected for each building leased or owned by Cisco globally on a monthly basis, but in many parts of the world much more frequent metering is available – up to half-hourly – via IP submeters.

Sub-meters can be installed in specific, energy-intensive areas of a building to monitor electricity consumption in greater detail. Cisco is exploring ways to automate the meter-reading process, so the data can be fed into the EDT database electronically, or exported directly to the company's sustainability management platform. Additionally, this near-real-time data could also be fed to Cisco Digital Signage – to educate employees on current carbon footprint and energy usage in a given building for the day or year prior, and share information on what they can do to reduce both energy usage and emissions.

At the other end of the scale, Cisco is launching Cisco EnergyWise to track electricity use in individual devices over the network. Starting with Cisco IP phones and network access points, Cisco EnergyWise will extend to other platforms, such as buildings management, to include heating, lighting and air conditioning. This will provide a much more granular view of energy usage. It promises a high degree of management control over routine energy usage practices, often unexamined at present. For example, it will enable managers selectively to monitor and power down defined building areas or devices not in use at the time.

When the two are combined with sustainability management, the network will open up the possibility of end-to-end carbon management – from upstream monitoring and reporting of power consumption in each building and each device on the network to rapid downstream implementation of energy reduction management policies. It is a journey analogous to the evolution of Cisco Unified Communications, which grew from simple voice gateways to the unified system of today, embracing a comprehensive range of devices and applications.

Reducing Emissions from Road and Air Travel

Measuring and managing the contribution to overall company emissions from business travel poses a different set of challenges – and the challenges vary widely between, say, a transport and logistics company or an academic campus. But here too, a connected approach helps organisations define how to focus their sustainability efforts for optimal carbon reduction.

A connected approach helps explore how existing travel policies support the business and understand how to reduce emissions from business travel while maintaining or improving on levels of business performance. Cisco can also draw on a range of relevant technology options and analyse which would have the greatest impact on the company's carbon footprint at the lowest cost, leaving the business free to grow and develop as it needs.

At Cisco, these interconnected processes have led to careful consideration of whether it makes more sense to replace a small number of long-haul flights or a larger number of shorter flights, for example. In road travel, where carbon data can be difficult to define with precision, analysis has revealed better ways to gauge the carbon performance of the company car-fleet and provide a benchmark to assess whether or not it is improving.

Using Carbon Scorecards to Change Behaviour

Cisco uses carbon scorecards for each country in its European theatre to provide a regular snapshot of carbon performance against the overall company target, reflecting the relative contribution of different emissions streams to the total. Just as importantly, the scorecards aim to convert the headline carbon statistics into direct, real-world business insight.

They show the relationship between management decisions, changes in employee behaviour, and the ongoing impact of such changes on the company's carbon footprint. It is a connected approach that facilitates setting up pilot projects in individual countries which can be rolled out more widely if successful and scales up learning quickly through the company.

Connected Carbon Management – the Benefits

Cisco's Connected Carbon Management provides a mechanism to report back to country managers on the company's carbon footprint within each territory in such a way as to empower business decisions that bring about measurable reductions in emissions. As the framework develops, it will offer a broader perspective on emissions reduction by:

- Connecting sustainability efforts with normal business goals, such as lower costs, increased efficiency, regulatory compliance and collaborative innovation
- Gathering 'live' carbon data across buildings, departments and devices to provide key performance indicators, thus paving the way to real-time carbon management
- Linking multiple initiatives to shared environmental performance targets and tracking their relative contribution to organisational objectives
- Creating cross-functional links between facilities, operations, logistics, procurement, production, finance, CSR, sustainability and others to promote shared learning
- Using the power of the network to create systems and environments that result in lower greenhouse gas emissions and sharing best practice with customers.

Next steps

- Audit or review your carbon emissions profile, using outside agencies if necessary, to get a comprehensive overview of which business activities produce most emissions
- Define how carbon-intensive activities relate to operational needs and focus on those where there may be opportunities to achieve reductions by adopting new approaches.

For more information

To learn more about Connected Carbon Management and how it can accelerate your company's drive for improved sustainability, please talk to your Cisco account manager.

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