

# Making Advances in Carbon Management

Best practice from the Carbon Information Leaders

*A Joint CDP and IBM Study*



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## Foreword

Climate change is an issue which business can ill afford to ignore. Those who do risk getting a nasty surprise – the UK government is currently considering mandatory carbon reporting for British-based business and as regulation increases, more and more companies will be affected by carbon pricing. But for those who get in ahead of the crowd, there are huge commercial benefits in understanding the opportunities and risks associated with climate change. To secure your position at the front of the crowd, you need to have good carbon management systems in place.

For six years, companies globally have been reporting their carbon emissions data and climate change strategies to the Carbon Disclosure Project (CDP), a collaboration of 385 investors, holding \$57 trillion in assets under management.

CDP and IBM are partnering together for the first time to investigate how some of the world's leading companies on climate change are actually collecting this data and how they are addressing issues of carbon management across their business. Through interviews with leading companies across a range of sectors, CDP and IBM have uncovered some fascinating insights into best practice and the key drivers in successful carbon management.

This report will serve as an important guide to any company wishing to improve its understanding of what's involved in developing and implementing a successful carbon management strategy. From setting measurement criteria, to gaining buy-in from senior and board-level management, to a highly informative best practice matrix, it will help guide you through the 'do's' and 'don'ts' of carbon management. Whatever your company's position on the path to carbon management, by sharing best practice from some of the leaders in this field, this report will provide valuable insight to the carbon leaders, as much as to the carbon novices.



**Paul Dickinson**

CEO Carbon Disclosure Project (CDP)

*Companies who participated in this study include Aviva, Centrica, HBOS, IBM, Lloyds TSB, Thomson Reuters, Scottish and Southern Energy, Tesco, TNT, Unilever and United Utilities*

## Introduction

### Objectives of the study

This study covers one of the biggest long term campaigns facing business leaders today. A campaign recognised as vital in government, in industry, and among the general public. Across the corporate world, managers are drawing up strategies to measure and manage greenhouse gas (GHG) emissions and to use that intelligence to cut their carbon footprint. During March and April 2008, eleven carbon leaders co-operated in sharing information about how they gather their GHG emissions data, what they measure, how far they have gone in the process, and what the experience has been like. Their insights and discoveries will help other companies to follow where they have led.

In publishing these insights, it is our intention to stimulate debate about the new business process of carbon information management and to further the development of creative carbon information management strategies.

At first sight, the task of carbon information management might seem straightforward: to collect data and then use standard methods to calculate carbon dioxide and other GHG emissions. Yet collection and calculation are only part of the process. We have found that good carbon data is not an end in itself; it is the actions taken as a result of having good information that really count.

Nonetheless, meaningful and reliable data is of paramount importance in underpinning decision making. It also facilitates the development of a practical environmental strategy which can be executed across the organisation.

This report aims to address a number of key areas for carbon information management by considering five key themes which emerged during the research: correct definitions are vital; engaging with stakeholders is key; carbon information management is a process in development; the emerging role of the carbon information manager; and control and influence.

### *Defining carbon leadership*

Carbon leaders have decided that climate change is an important issue and that their organisations will do their part to reduce and minimise their carbon dioxide and GHG emissions. They have set targets for emissions reduction; they have tools in place to collect and manage information; and they publicly disclose their findings and commitments and may share their data with one or more organisations such as CDP.

Such organisations appear to have realised that the cost of carbon management is far outweighed by the benefits and opportunities it creates.

Behind the carbon leaders, are many thousands of other organisations which may be termed, variously, 'carbon novices', 'carbon agnostics' or 'carbon unversed' according to their experience and outlook. All of them can learn from the 'carbon leaders'.

This report is intended for all organisations, leaders and managers with an interest in carbon information management, from those measuring emissions for the first time, others required by suppliers to report and reduce and those organisations required to comply with early emissions legislation.

Both CDP and IBM would like to thank the participants for their honesty and openness in contributing their experience to this report. Our participants were usually involved within the corporate and social responsibility function and in some sectors, such as utilities, there were specific carbon management roles. Industry's corporate social responsibility and carbon managers play a heroic role and deserve a chapter of their own.

**Analysis**

**Theme 1: Correct definitions are vital**

**Understand your data**

One of the key messages from the research was that being clear about the accuracy and reliability of carbon information is absolutely vital, as is being clear and precise about terminology. This is becoming even more important as business executives take a greater interest in carbon footprints, the impact of climate change legislation, and how their organisations can position themselves as carbon leaders.

*“Having a full understanding of your data is essential to make informed decisions, especially as carbon rockets up the executive agenda”*

*United Utilities*

Terms such as ‘green issues’ were rejected by most of our respondents, because they lack the specific definitions needed to manage carbon and/or other GHG emissions. The term ‘green’ may prove an employee or consumer-friendly way of introducing climate change topics, but it lacks authority and may leave organisations open to suspicion of so-called ‘greenwash.’ We found a wide range of terms in use, including: environmental risks; sustainability; carbon; decarbonising; environmental

management; corporate responsibility; carbon mitigation and CO<sub>2</sub>. This range may give some indication of how unregulated the area of carbon information currently is. As standards and regulation increase, we expect to see consensus in terminology emerging which will bring greater clarity to the carbon information debate.

**Categorising data, methodology and reporting**

All respondents categorise GHG emissions in broadly the same way, even though the exact basis of measurement and calculation may vary. Broad categories are:

- *Direct emissions from onsite heating or electricity generation, split by fuel type*
- *Direct emissions from onsite industrial use or manufacturing process*
- *Direct emissions from owned transportation fleets (which may include non-leased car fleets)*
- *Indirect emissions from energy purchased, usually split by fuel type or generation method. Where possible, renewable and non-renewable sources should be identified*
- *Indirect emissions from business travel by rail, air, taxi*
- *Indirect emissions associated with supply chain which may include logistics and transportation, or production of goods.*

Whilst there is still not one generally accepted global standard for GHG emissions reporting, these categories clearly need to form the basis for such reporting standards of the future.

Choice of methodology and reporting impacts both the calculation of emissions and how they are communicated. The most common methodology found in the study was the GHG Protocol, defining emissions in Scope 1, 2 and 3 and covering ‘direct’ and ‘indirect’ emissions.

Examples of methodological choice	GHG Protocol Defra, ISO and others
Examples of reporting choice	CDP, Dow Jones Sustainability, GRI, FTSE and others

Adopting internationally recognised methodologies for calculating emissions helps to bring credibility to organisational communications. This is even more important to demonstrate that an organisation’s targets are credible and respected – and may save the organisation from making rash commitments that cannot be sustained.

*“There’s a lot of confusion amongst consumers, opinion formers and government about what makes a credible target”*

*Centrica*

## Setting targets

Increasingly, targets are being driven by legislation:

*“The Government’s Carbon Emissions Reduction Target scheme which runs from 2008 to 2011 effectively doubles our efficiency target”*

*Centrica*

Many organisational factors need to be taken into account when considering setting emissions targets, such as choice of country for manufacturing, outsourcing and organic and non-organic growth strategies. Being specific about emissions relating to a recent acquisition can be important when communicating total emissions.

Many of our respondents emphasised the importance of thinking through emissions management in the context of business growth. ‘Carbon intensity’ targets, which express emissions relative to increases in output or scale of operations, are preferred to absolute targets or percentage reductions in energy use.

There are few standard ways to set targets and these vary considerably by sector, scope, timescale and base year. Examples we found in the study include:

- 50% reduction in carbon emissions by 2020
- 30% reduction in carbon emissions by 2012
- Halving fleet emissions by 2012
- 100% renewable energy in the UK
- Combustion reduction of 20% by 2016
- Reduce carbon emissions by 5% per annum.

Carbon leaders acknowledge that it will be very difficult to standardise targets across industries not least because of the differences in carbon reduction programmes even between companies in the same sector. However, standardised methods and processes are needed to allow comparability of underlying emissions data between organisations.

There are some valuable cautionary notes, however, from the experienced leaders. For example, while accuracy is important, it is even more important to not lose sight of the overall goal.

*“Measurement is not the end game in itself; management and reduction of carbon is”*

*Unilever*

And priorities need to be made which are consistent with organisational goals which may be a mix of business, social and moral values:

*“You have to understand it and understand what you can afford to change”*

*United Utilities*

Most carbon leaders agreed, however, that setting targets without developing a carbon strategy makes little sense.

## Theme 2: Engaging with stakeholders is key

### **Stakeholders are diverse and exert different pressures**

Carbon leaders recognise a range of stakeholders with an interest in developing and using carbon information. Internal to the organisation, key stakeholders are those engaged at all levels – from executive management to the wider employee base – in the data collection process and the drive for change. Additionally, specific functions, including procurement, energy management, audit and external communications, are closely involved.

Externally, a large number of bodies help in the acquisition and sharing of data. Some of these are:

- *Government legislative bodies and consultation panels*
- *Government agencies such as Defra*
- *Consumers*
- *Other members of the supply chain*
- *Industry associations*
- *Investors*
- *Service providers such as energy companies and outsourced service providers for travel, IT and so on.*

Carbon information communications need to be carefully thought through to meet the expectations of all the above stakeholders. That is why communications are a key element of carbon management strategy. Because of growing pressure from external stakeholders with interest in specific areas of a company's GHG emissions, a balance needs to be struck between collection for internal purposes and external reporting. This has proved to be a challenging area for the Carbon Information Manager. While meaningful and accurate information is necessary to develop sound strategy, there is a debate as to the extent to which information overload impacts the organisation's ability to maintain focus, prioritise scarce resources and achieve real results.

### ***Leadership and sponsorship is paramount***

*“In my experience, data flows when the issues are taken seriously”*

*HBOS*

Senior executives are aware that carbon can positively affect profitability and that reducing GHG emissions often equates to reduced fuel, energy, and manufacturing costs. It is clear that this support from senior leaders is essential for effective carbon information management. It helps to position the challenge of carbon information collection and management within the context of business as usual goals of growth, profitability, innovation, costs and so on. The commitment and support of the executive team demonstrates that emissions reduction is not just a side-show, but is central to the future of the company.

But more is needed than a CEO statement of support if the necessary information is to flow. We found that the commitment to managing emissions needs to be shared by first tier managers who play a more direct role and take leadership in the day to day operations of their business units. Sometimes, participation in internal environmental responsibility panels or external industry forums proves an effective way of influencing behaviour and policy for the Carbon Information Manager. A procurement forum in the financial services sector, for example, has recently developed a standardised set of environmental credentials to be used by members in their procurement processes.

Without such leadership, the commitment and enthusiasm of a Carbon Information Manager may be worn down by organisational apathy.

### ***Influencing employee behaviour is key***

The discussion around senior leadership may sound as though the only approach for internal stakeholders is 'top down'. However, good carbon data is often found at well below business unit management level so information needs to flow in the other direction, too.

People at all levels of the organisation need to appreciate their role and contribution to carbon information management. When staff are enthusiastic and engaged, data gathering is more accurate and reliable – whether it comes from staff working at a desk or in the maintenance department. We found that employee engagement and communication was surprisingly effective and could lead to creative new ideas for reducing office emissions. One example of 'carbon weeks' held throughout an organisation has led to a flood of ideas, creating a crossover between domestic and corporate lives.

Engagement with employees becomes harder when choices are more complex than, say, turning off a desktop computer at night. Business travel, for example, is a difficult area to tackle. Choices in this area are probably the most difficult in which to engage employees because the considerations are not straightforward. The choice to fly may be influenced by the need to get home to family within a single business day, or the choice to use rail

may depend on the ease of connection and ability to work whilst travelling. Company car travel and car choice are intertwined with personal status, and private car use for business travel is loaded with emissions assessment problems. It has been suggested that if you start influencing behaviour now, you might see changes by 2012. Business travel is being approached by many in imaginative ways – some organisations, for instance, count minutes used in video conferencing as part of a travel emissions reduction program.

**Scottish and Southern Energy** has been particularly creative in addressing these issues. For instance:

*“Since a centrally funded cost centre was set up for train travel, it has seen a two-fold increase with large reductions in air and car travel. A £20 fine is charged for each flight made which goes towards a carbon sequestration fund and ‘no fly’ months have been introduced. Sponsorship for these changes has come from the company’s Chief Executive.”*

There are other internal stakeholder barriers to overcome; since it is harder to gather carbon data from remote operations, local champions are needed to offset the impression that carbon management is an ‘HQ’ initiated idea.

This can occur within the UK but is a problem especially in countries where environmental issues figure less in the national agenda. Some of our respondents audit the process to ensure that responsibility is not delegated. Without this assurance, emissions data may be gathered and submitted by a receptionist role in one country and an experienced procurement manager in another.

*“In some countries, even if you have a good relationship internally, it’s the external relationship with governments and other authorities that makes all the difference in terms of data release and verification”*

Thomson Reuters

Perhaps the most significant of our findings in the area was that personal networks and relationships underpin the formal data acquisition process. Whilst companies may use computer technology and automated data feeds to some degree, surprising numbers of people are involved across the organisation and beyond at different stages of the process.

*“In collecting carbon data there are a lot of personal relationships to manage – it’s absolutely essential.”*

Aviva

It may be argued that emissions data gathering which relies entirely on personal relationships is potentially inefficient and unreliable, but we found that people were inextricably linked with the emissions data gathering process.

#### ***Influencing and communicating with the supply chain and end users***

Stakeholders in the supply chain are of growing importance to understanding, managing and communicating emissions data. For this reason, they deserve separate investigation here. Two distinct areas emerge:

1. *Upstream – building a better picture of data from the supply chain*
2. *Downstream – influencing and communicating with organisations in the sales process and end users.*

Carbon leaders recognise that data quality will vary once they move beyond the boundaries of their own organisations. In certain sectors like consumer packaged goods and retail, initiatives are already underway to count the carbon cost of transportation, chilling and warehousing. Involving stakeholders in the calculation of emissions reduces the reliance on estimation but risks exposing the cost structures within the supply chain – which may make true data acquisition more difficult.

Carbon leaders also recognise that the end user has a substantial impact on carbon in the lifecycle of a product. Engaging with consumers as stakeholders may be as simple as encouraging them to wash their clothes at a lower temperature, or it could mean increasing a general awareness of carbon costs of various types of product. The entire area of carbon labelling is being given careful thought and positioning, though there remain sharply divided views about the feasibility of generating accurate data for labelling purposes, and concerns over its accuracy and value to the end customer.

Some respondents make a connection between emissions management, climate change and risk not only to their own business but to their end customers. Some organisations have explored the risk of climate change at a customer level to enhance relationships – for example, management of flood exposure for clients in the insurance and banking industries.

*“Risk is still there whether you talk to the customer or not. If we can address it upfront with them and help them find a solution to it, that’s good.”*

*Lloyds TSB*

### **Theme 3: Carbon information management is a process in development**

There are many diverse drivers behind initiatives to create a carbon data management system. The principal motivators discussed in the study are:

- *Cost reduction*
- *Risk mitigation (e.g. be ahead of any legislation, avoid any negative press)*
- *Enhancing reputation*
- *Competition*
- *End-user pressure*
- *Evaluating opportunities*
- *Doing the right thing.*

Key here is having a clear idea of why carbon information is being collected and developing a process and strategy to support data collection.

### **Making the process work**

Once the reasons for taking an active interest in carbon data have been established, it becomes easier to set out how to establish targets and take measurements, how the data should be checked and verified, and how often internal and external reports need to be prepared. But establishing a carbon information management system is not straightforward: several of our carbon leaders are only just beginning to set up formal management systems and processes, such as those in ISO 14001 and 14064-1.

*“Learning by doing is the way forward.”*

Comparability is set to be a challenge: as new energy measurement technologies emerge and more accurate and exhaustive approaches are adopted across the organisation, it will become harder to compare one year’s figures with the next. Expectations need to be set that there may not be linear improvements year on year. Acquisitions and divestitures can also impact baseline data.

*“Transparency is much improved and is absolutely critical – even if you don’t agree with my boundaries at least I understand and can explain them”*

*United Utilities*

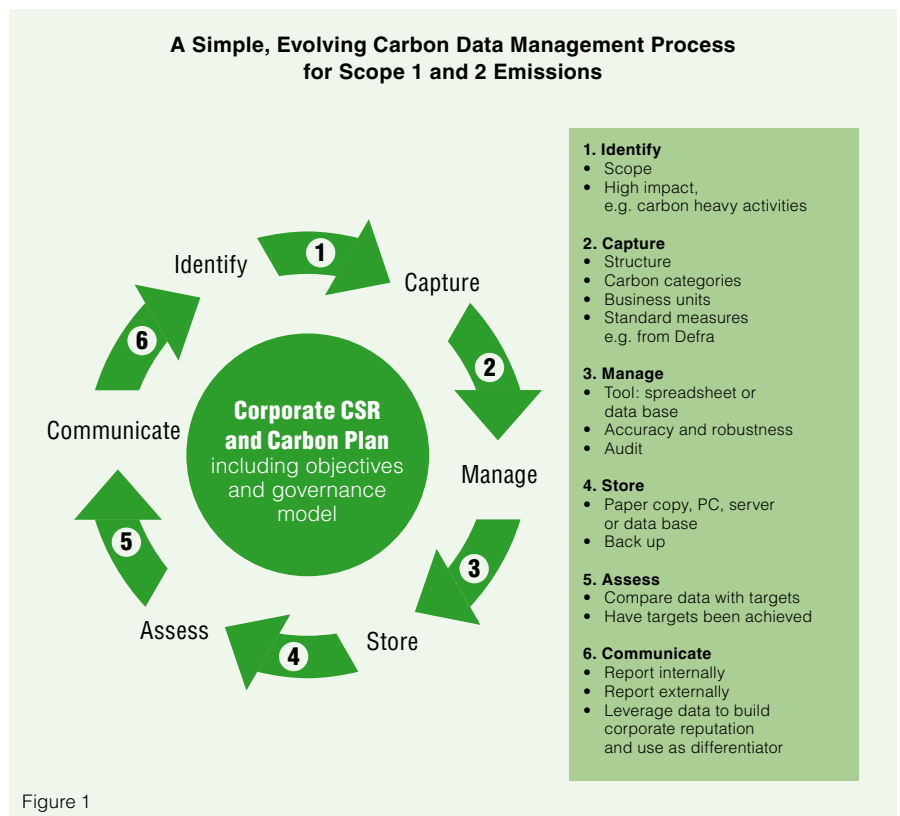
Nonetheless, developing an underlying structure for carbon information is important. And a carbon data 'archive' needs to be established which can support the ever increasing range of enquiries and reporting requirements. The carbon information team can expect to be asked to look at business units and processes and to report on their performance through a carbon lens. For example:

*“Our telephony operation wanted to know what their carbon footprint was”*

Lloyds TSB

It is encouraging when different groups and departments within an organisation become interested in their own contribution to overall emissions. However, care needs to be taken to make sure that the time of the carbon team is spent on activities that address the specific carbon management goals that the organisation has adopted. Otherwise, there is a risk that the carbon or energy team become overwhelmed with requests for carbon data to be analysed by business unit, process, facility etc.

The chart (Figure 1) illustrates a generic carbon data management process for GHG Protocol Scope 1 and Scope 2 emissions. This process needs to evolve to cover the broader content of Scope 3 emissions data management.



**Starting the carbon data management process is the hardest stage**

Most carbon leaders have developed their own ways of collecting data, often starting from a blank sheet of paper and a pile of energy bills. They may have learnt more by networking with, or engaging, organisations such as Defra or the Carbon Trust. Not all the companies we spoke to have worked with consultants or auditors to build a data collection structure.

Some organisations recommend starting with measuring current carbon use rather than setting targets for the future; others set internal targets early, establish employee commitment and establish some momentum behind change before going public on targets.

Carbon leaders also recognise the need for balancing actual measurements with estimates. Where possible, using available information – ‘piggybacking on existing data streams’ – seems to make the process of starting carbon measurement easier, faster and gives more accurate results.

As part of a wider strategy on climate change, most carbon leaders said that acquiring data for water use and waste were more difficult areas than for energy and therefore did not include these when they started. Similarly, they recommended not including data from suppliers, outsourced processes and other operating countries at the outset due to issues surrounding the ability to acquire consistent and accurate information in a timely way (Figure 2).

As companies increase their experience in data gathering, they increase their reporting scope to include some GHG Protocol Scope 3 items, such as suppliers' carbon emissions data associated with outsourced processes. Some respondents called this 'raising the bar'. They also extend the geographical scope from UK (or single country) to global.

*“All of the time, we’ve been widening the scope of what we capture and improving the quality.”*

HBOS

Carbon leaders advise that a 'settling in' period of at least 2-3 years is needed for the carbon information process to develop. For some, this is the minimum period needed before anomalies can be detected and accuracy verified. Internal and external communications plans also need time to be piloted and tested.

**Setting a baseline**

Perhaps one of the greatest contributors to variability in carbon data is the continuing improvement in accuracy and scope of baseline data. This may occur because of more accurate measurement through new technology or because of extension of the range of data collected.

*“In 2007 we extended our scope to include the CO<sub>2</sub> footprint of our subcontractors...”*

TNT

All the companies we spoke to recognise and address the challenges in improving emissions data. The challenges appear to be connected to a series of factors. For example:

- *It can be difficult to assess year-on-year progress and decide if targets were truly achieved. Causes are typically:*
  - *Acquisition of companies which either did not measure carbon or used different methodologies and standards*
  - *Increased data accuracy, as a function of continuous improvements*
  - *Expansion of scope through:*
    - *Adding new categories of emission data e.g. Scope 3*
    - *Geographical expansion e.g. from measuring a single country to measuring at a global level*
    - *Adding suppliers and distributors in order to provide a full life cycle view*
    - *Adding outsourced processes and leased property.*

One of the biggest challenges our respondents faced was to devise a methodology which offered a consistent view despite these changes, and allowed the company to measure year-on-year achievements against targets.

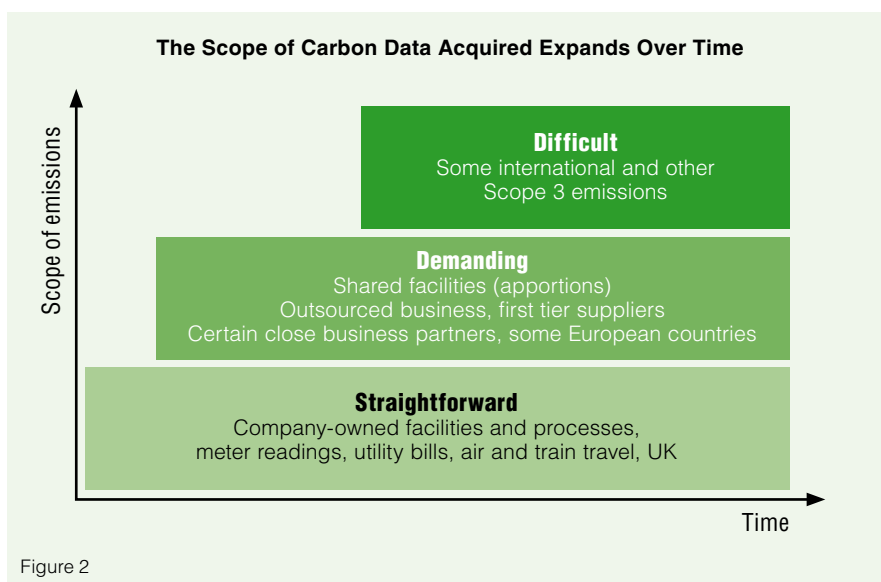


Figure 2

### **Significant potential to automate with software tools**

Most carbon leaders currently manage their carbon emissions data in a spreadsheet which is circulated by e-mail or held on an intranet and used as a kind of database. A number had more sophisticated and computerised environmental management systems or IT tools that track electricity bills. Some have a paper energy data archive stretching back many years, enabling 'back calculations' of carbon data to be made. Some data capture is already semi-automated such as information from utility bills. And some owned vehicle fleets are set up for daily electronic reporting of fuel consumption and energy efficiency.

Carbon leaders would like to automate the data collection process and many have investigated software applications. However, these were often found to be too complex or not to fit with their reporting requirements. Carbon information does not yet flow around an organisation like accounting or financial information. This means that existing accounting or ERP systems do not readily provide carbon data. As we've observed, internal collaboration is the key to mining existing data to generate GHG information.

There may also be issues of scale in automating the process – an application that is practical for an organisation with 30 buildings may not work for one with 300 or even 3000.

Preferred applications are those which standardise the form in which data is captured, permit the attachment of documentation to aid verification, set out the schedules for the submission of data and send reminders to data gatherers.

*“I do expect automation to come along, but success is also dependent on people understanding that it’s part of their day job, starting to manage this information as part of their normal work and getting used to handling and interpreting the data. This in itself would allow data to flow more naturally.”*

*Tesco*

We found that carbon leaders expect automation to start with improved energy billing and smart metering. Some predict that carbon data capture will become an integral part of their company’s business accounting reporting system. We expect that software tools and systems built on SOA principles will be used to automatically feed data into a series of ‘carbon information dashboards’, each designed to deliver key performance data tailored to the needs of the individual organisational user. The utility sector, by the nature of its business, is probably closer than others to achieving this. For most organisations, it is a long way off. Again, agreement on principles and standards is a prerequisite.

### **Audit**

Most of the carbon leaders we spoke to employed an external carbon auditor or advisor but not always in the same way. There appear to be two distinct forms of engagement:

1. Random checks to assess the accuracy of energy and CO<sub>2</sub> emissions data collected
2. Auditing the effectiveness of the carbon data process as a whole, to find system gaps or to make recommendations on automation.

Companies engaging auditors all agreed that this external input reassured them about the robustness and accuracy of the data. This was especially valuable where carbon information was to be published externally, and the traceability and transparency of information were important considerations.

### **Benchmarking**

Aspiring to produce carbon information which can be benchmarked against and between organisations is a challenging goal for all organisations. Comparisons are routinely made on many different business performance indicators between companies in the same sector and across sectors. Why is it so difficult to benchmark carbon information?

With each choice that is made about what carbon data to include in a particular project or programme, comparisons become more difficult. The number of variables affecting final carbon emissions data is also very high. For example, one utility company might encounter higher emissions than another because it has to pump water further because of radical differences in geography or business model. Or it may have a generating portfolio which is largely dependent on fossil fuels. Similarly, attempts to compare organisational measures, for example on emissions per head, can show up massive and unaccountable differences, suggesting that the data needs careful understanding and contextualisation.

When asked how best to solve these issues, most carbon leaders agreed that the way forward is through external collaboration – with suppliers and with organisations interested in carbon management – to set standard methods and measurements to ensure fair benchmarking in the future. But others disagreed, believing that, even with standards, comparisons between organisations are subject to too many variables to ever be effective and reliable.

**Theme 4: The emerging role of the Carbon Information Manager**

All our respondents commented that building carbon information is especially hard work in the beginning when trying to establish data flows.

At the outset, the process relies more on soft, ‘people’ skills than numeric or IT ability. Additionally, Carbon Information Managers are at the centre of an extended network, with their sights on the legislative and regulatory horizon, and maintaining focus on the needs of diverse stakeholder groups (Figure 3).

**Critical success factors**

A number of factors emerged as key:

1. *Co-operation from the very top, and consistent support from a variety of building managers and onsite engineers*
2. *Authority to explain what is and what is not a viable target, and access to skills that help model the risks and opportunities*

3. *A data structure that is deep enough and flexible enough to meet different methods of calculation and respond to different reporting requirements.*

The role of the Carbon Information Manager involves a surprising level of detailed understanding of business operations – for example, understanding the impact of a refrigerator that isn’t working properly or a pump that doesn’t get maintained. Or appreciating the challenges of 20-year-old lighting or the spikes in emissions due to seasonal production. Carbon Information Managers are keen to do much more than just extract and present data. They want to tackle one of the most persistent challenges – explaining changes in carbon data.

**The Network of Relationships Emerging from a Carbon Information Management Role**

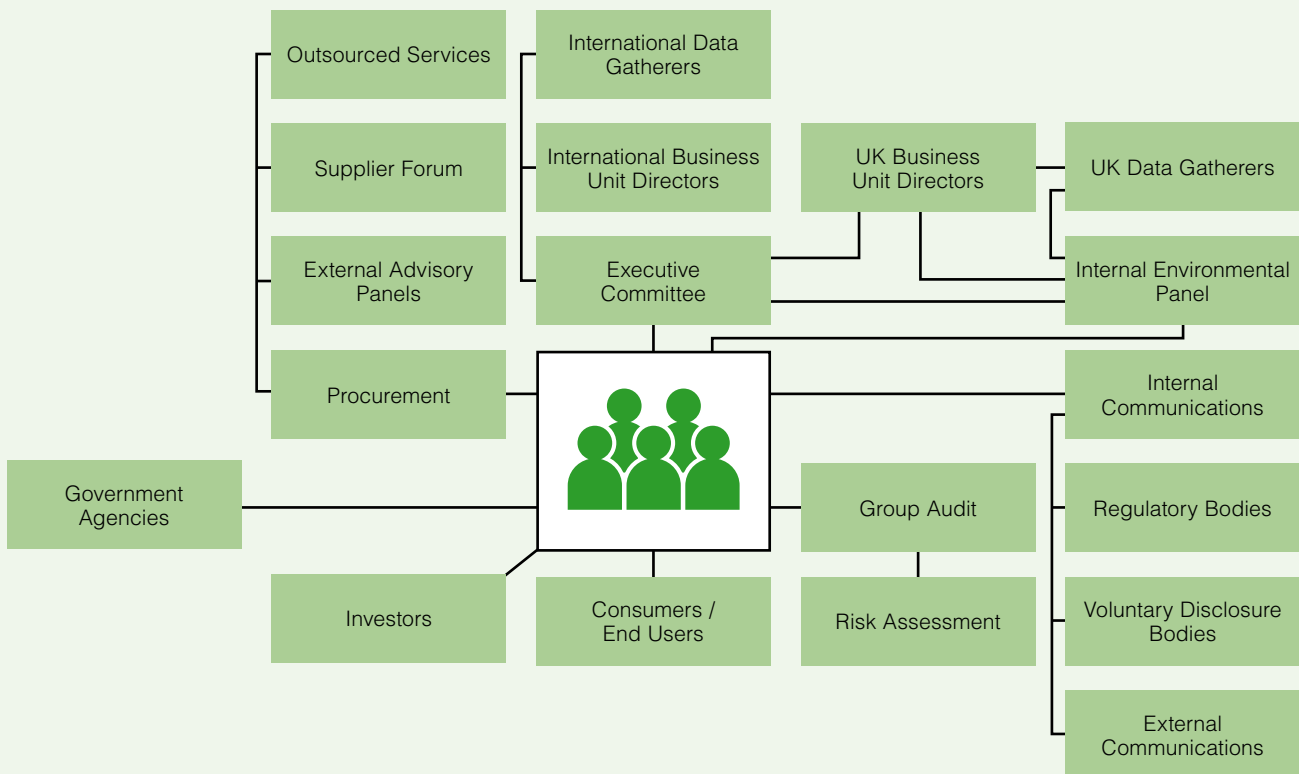


Figure 3

*“The big issue is data acquisition and clarity... there can be a mindset that there’s one box where things go in and one thing comes out. But actually it’s a massive jigsaw with bits missing”*

*“I want to move on from accountancy to what’s driving the numbers”*

*United Utilities*

The most abiding impression was the difference people experienced between companies where the CEO was interested and involved – usually the case for carbon leaders – and those in which it was difficult for the carbon team to engage with the board. This reinforces our earlier finding that senior sponsorship is absolutely vital for success.

## **Theme 5: Control and influence**

*“If you can’t measure it, you can’t control it...”*

*Unilever*

The Carbon Information Manager will be able to control some aspects of carbon emissions – but other aspects will be susceptible only to influence, rather than direct control. For instance, while an organisation has direct financial control over energy spend, an effective energy policy relies on influencing employee behaviour rather than controlling it. Similarly, influencing

suppliers is a result of cooperation and collaboration with supply chain partners rather than immediate control. Outsourcing may mean that facilities and manufacturing are moved out of direct control, but future outsourcing contracts may contain provisions for carbon information reporting. Clearly, the right balance between the need to collect and report data and obligations on suppliers will form the basis of successful partnerships.

Influence and control are issues at the heart of every type of carbon information. For example:

- *Buildings – ownership or leasehold, what share of the building to occupy?*
- *Travel – what are the most effective policies to influence employee behaviour?*
- *Group functions – how to measure and account for emissions associated with the shared resources of our outsourced payroll or IT functions?*
- *Manufacturing – insource or outsource? How to balance the need for lower cost production countries with lower carbon emissions?*
- *Logistics – own or lease, how to encourage transportation companies to trial new fuels? How to encourage suppliers to turn off their engines when idling?*
- *End user – what is each organisation’s role in influencing the end user to cut energy consumption and put a personal carbon reduction strategy in place – especially beyond the ‘niche’ segments of environmentally concerned citizens?*

It is worth returning briefly here to the discussion of employee behaviour change. To those planning programmes to change how employees behave at work, a range of control and influence measures – or carrots and sticks – can be adopted. What’s key is that long-term, sustainable change can best be brought about by a combination of control and influence. Each organisation needs to consider the desired rate and speed of change and devise a tailored programme to achieve its own goals.

### **Supply chain**

Carbon leaders recognise that they cannot require or order suppliers or customers to pursue carbon reduction. However, our respondents wanted suppliers to begin thinking about carbon, even if they didn’t feel they had all the answers.

*“The environmental elements are now part of the supplier’s code of conduct”*

*Aviva*

It would be easy to assume that acquiring carbon data from the supply chain is just like any other certification or verification process which might be required, for example, in product safety. However, assessing carbon information is proving to be a different matter – what makes carbon data so special?

In reality, as we’ve already observed, carbon data is not a simple ‘tick in the box’ but a complex variable and this is no less true for suppliers’ carbon data. The challenges of a continually moving baseline, complex layers of detail, little automation and the challenges of benchmarking all apply equally to

suppliers when they, too, begin their emissions data collection processes. A well-formed strategy for carbon information in the supply chain can enable organisations to request data clearly and meaningfully from suppliers without overburdening key partners with an ever increasing need for information.

We found that carbon leaders are making substantial efforts to go beyond legislative compliance and work with their suppliers and customers. Such capital investments include hydro-power at Scottish and Southern Energy, carbon labelling by Tesco, and TNT's innovative 'Planet Me' to create awareness amongst employees, their families and customers. The supply chain elements of carbon information introduce some novel challenges:

The carbon information management process is unlikely to control this data directly, but it will need to establish influence, and demonstrate why data is being collected for both upstream and downstream emissions.

This complexity underlines how significant scale is when it comes to acquiring carbon information from the supply chain. The right focus is to identify key performance indicators and influence suppliers to drive actions that lead to adherence with those indicators.

*“The whole issue of data management increases both in terms of complexity and accessibility as you go up and down the supply chain. For example, each factory may have different distribution centres, wholesale and retail destination points, so the emissions data assessment potential multiplies exponentially”*

*Unilever*

*“By working with our suppliers to measure product carbon footprints we have gained a lot of practical experience. We now know that it is more challenging to calculate product footprints for complex products such as those with multiple ingredients, products which have multiple or overseas suppliers (particularly if language is a barrier) and products which are manufactured on site which also make many other products – particularly as sub-metering is still uncommon.”*

*Tesco*

#### **Best practice**

Carbon leaders are pioneering the way forward in carbon information management. Their aim is to be both competitive and co-operative. In contributing to this report, they have shared some of their experience in order to help other organisations who are only now setting out on the carbon information journey.

We've set out overleaf a summary of best practices found in the course of this research, in the hope that this will speed up the process for the carbon uninitiated.

## Best practice

Theme	Best Practice
#1 Correct definitions are vital	<ul style="list-style-type: none"> <li>• Write a short strategy paper, setting out objectives and how they will benefit the business. Communicate across the organisation and review once a year</li> <li>• Set targets and measurement criteria</li> <li>• Prioritise the areas of carbon emissions that you want to control and target areas where reduction in emissions will have a high impact on the overall measure e.g. energy consumption</li> <li>• Consider monitoring carbon emissions for a period before setting targets</li> <li>• Allow for growth and change in the business when setting targets</li> <li>• Incorporate carbon management targets into general business Key Performance Indicators</li> <li>• Consider alternatives to the word 'green'</li> </ul>
#2 Engaging with stakeholders is key	<ul style="list-style-type: none"> <li>• Get board level sponsorship and accountability for the carbon management task</li> <li>• Make the links between CO<sub>2</sub>, carbon and climate change for employee engagement – people don't always understand them</li> <li>• Where appropriate, setting business-unit level targets can generate enthusiasm, participation, and commitment</li> <li>• Involve employees in a focus week on carbon, the environment or CO<sub>2</sub> reduction</li> <li>• Set up a climate change action group led by a senior manager and representatives from people in the business, not just HQ functions</li> <li>• Help customers understand the risks and implications of climate change</li> <li>• Don't dictate – get buy-in from parts of the organisation and suppliers before setting targets</li> <li>• Report back to business units on how they can improve their performance</li> <li>• Engage with industry organisations to discuss best practice and agree on standards</li> </ul>
#3 Carbon information management is a process in development	<ul style="list-style-type: none"> <li>• It takes time to identify and improve the accuracy of your carbon dioxide and GHG emissions data – allow at least 2-3 years to allow the data to settle</li> <li>• Clearly define terms and boundaries and use templates to make data collection easier and more consistent</li> <li>• Develop the template with business units to ensure buy-in</li> <li>• Consider using an external auditor to verify your approach and to get guidance on your next steps</li> <li>• If you have a large property estate to manage, target a percentage for special focus with smart metering model upwards for the remainder</li> <li>• Consider cost of CO<sub>2</sub> emissions as part of your capital investment reviews – as a return on investment calculation</li> <li>• Piggyback on existing data streams where possible, and automate whatever can be automated</li> <li>• Use a system which reminds people to complete their carbon data submissions – it saves time and a great deal of effort</li> <li>• Capture and log energy bills – this helps verification</li> <li>• Run a carbon 'league table' by business unit or individual to illustrate the emissions associated with travel</li> <li>• Predict the impact of new climate and waste legislation on business risks and costs, and include in group audit or other risk assessment functions</li> <li>• Implementing an environmental management system is hard work – build it up gradually</li> <li>• Consider engaging external organisations such as CDP, the Carbon Trust, Defra, and industry organisations to help</li> </ul>
#4 Emerging Carbon Information Manager role	<ul style="list-style-type: none"> <li>• Split the task of data gathering and data management across sensible business units</li> <li>• Make the target owner responsible for accuracy</li> <li>• Assess in advance the company's need for granularity in its carbon data</li> </ul>
#5 Control and influence	<ul style="list-style-type: none"> <li>• Concentrate on energy reduction in the short term, travel in the medium to long term</li> <li>• Request more detailed energy billing from landlords and utility providers</li> <li>• Depending on what local competitive dynamics allow, use your industry groups and affiliations to establish common carbon-related procurement terms</li> <li>• Use cost / reward incentives on different modes of carbon intensive travel with the aim of broadening the range of travel modes available</li> <li>• Use meeting technologies such as video conferencing and instant messaging to reduce travel: show their adoption and use in your reporting</li> <li>• Consider increasing mobile working to reduce travel</li> <li>• If you run a fleet, use available technologies to measure individual vehicle efficiency</li> <li>• Make the effort to show what is achieved beyond compliance to legislative requirement</li> <li>• Recognise that 'reputational risk' will be one of the greatest to your business and branding</li> </ul>

## Addressing challenges

During the research interviews, respondents articulated many of the challenges they face in collecting and reporting carbon information. The following tables set these out by theme.

Theme	Challenges being addressed
#1 Correct definitions are vital	<ul style="list-style-type: none"> <li>• <i>Comparable data standards are the big issue – affecting definition of targets, scope of data gathered and reporting</i></li> <li>• <i>Maintaining carbon neutral status where this is a chosen strategy; its ongoing costs and availability of renewable energy</i></li> </ul>
#2 Engaging with stakeholders is key	<ul style="list-style-type: none"> <li>• <i>Supply chain participants may fear that their cost structures will be exposed by carbon reporting, so a balance needs to be struck</i></li> </ul>
#3 Carbon information management is a process in development	<ul style="list-style-type: none"> <li>• <i>Accuracy is less of an issue than completeness for some, depending on the stage of data maturity</i></li> <li>• <i>Different regulations and reporting bodies require different reports – risking miscommunication without careful explanation and positioning</i></li> <li>• <i>Understanding why data changes year to year often requires a lot of manual investigation</i></li> <li>• <i>Differences between absolute and relative reductions are a real crunch point</i></li> <li>• <i>Benchmarking – even within industries it can be comparing apples with pears</i></li> <li>• <i>For some properties, energy billing accuracy may be a problem without resort to smart metering which some regard as expensive</i></li> <li>• <i>Developing the most efficient way to calculate carbon data – for example, on an estate by estate basis or as a 'national' number?</i></li> </ul>
#4 Emerging Carbon Information Manager role	<ul style="list-style-type: none"> <li>• <i>The carbon manager/CSR role should be to check robustness and propose strategy, not chase people for data</i></li> </ul>
#5 Control and influence	<ul style="list-style-type: none"> <li>• <i>Employee behaviour is probably the hardest to change, especially with regard to business travel</i></li> <li>• <i>Cooperation of property management companies, especially amongst shared estate, to establish apportioned emissions</i></li> <li>• <i>Varying levels of commitment and data accuracy in countries with a different outlook on climate change</i></li> <li>• <i>Accounting for the first 80% of emissions is relatively straightforward, the remaining 20% of the footprint is harder</i></li> <li>• <i>Security of electricity supply is an issue for data-intensive companies; not just in emerging nations</i></li> </ul>

## Future outlook

We believe the need for specific carbon data management skills and strategies will gain momentum as legislative pressure increases and business awareness of carbon intensifies in the supply chain and with consumers.

We expect to see management processes and data accuracy shift to where business impact can be demonstrated, both now and in the future. The difference between where organisations find themselves today and where they may wish to be is illustrated below.

It should also be recognised that much of the work done to date around carbon information has been to manage current carbon emissions and that this work is far from finished.

*“We believe the way forward is to establish relative targets, across our supply chain and to do everything we can to reduce our emissions”*

*Centrica*

Future activities are likely to include assessments of how the organisation may have to adapt itself to a different climate and ecology. This will present a new data challenge because of the broader scope and objectives it requires.

*“Data for adaptation might be harder to acquire than for mitigation”*

Today, carbon management can be...	In future, carbon management may become...
Optional unless required by legislation	A 'need to have' and likely to be influenced by legislation
Perceived as a business cost	Perceived as a business asset which can create new opportunities
Carbon calculations performed in spreadsheets, emissions data fed into it from a mix of automated, semi-automated and manual processes	Part of an automated process and becoming an integral part of the business reporting system
Scope: Scope 1 and 2 (GHG Protocol) Internal or entities the company has control over	Scope: Scope 3 emissions information that is relevant, meaningful and specific to business strategy, operations and targets
Scope: Country of HQ	Scope: Global
About creating awareness	Managed professionally as a KPI with targets and results
Of variable data quality	Increasingly robust and reliable
Collected using variable methods	Collected using standardised auditing methods and reported accordingly
Difficult to compare between companies/benchmarking	Comparable data but question marks remain over viability of comparable benchmarks
Sometimes dismissed as 'greenwash'	Published following set rules and transparency but – more importantly – emissions reduction results key to avoid perception of 'greenwash'
Available at business unit and corporate level	Modular and granular. It may be possible to dissect the data into projects, processes and sub categories
CSR driven project	Integrated into the company's values, attitudes and behaviours
About control and influence within the company and immediate stakeholders.	Increasingly larger to include external stakeholders to harmonise areas such as procurement, legislation and standards e.g. through industry organisations.

## **Conclusions**

This study, which we believe to be the first of its kind, has found that carbon data is a relatively new type of information which is of strategic importance to the organisation and its various stakeholders. The pursuit of accuracy needs to be balanced by the need for more complete data on emissions versus business value, both within the organisation and outside it. To begin working with carbon information, organisations need to get their basic data collection process right and establish a network of cooperative internal and external relationships. Continual improvement is the aim. At present, as might be expected, carbon data does not flow within organisations with the same ease as long-established data like financial information – but all our participants expect this to change for the better.

## **Background**

The CDP and IBM are working in partnership to conduct research into how organisations manage carbon information. We set out to explore how leading organisations are capturing and managing carbon data. We also wanted to find out more about the journey of establishing a carbon information management system and process.

11 FT500 organisations representing a broad spectrum of industries kindly participated in this study to help gain greater insight into this emerging and previously unexplored area. The interviews took place during March and April 2008.

It is our hope that some experience of carbon leaders has been captured in a Best Practice Guide for companies wanting to improve their carbon management.

## **Methodology**

CDP supplied a sample of companies with several years of experience in carbon data management. All companies are respondents to it.

IBM provided research professionals to guide a discussion with the 11 carbon leaders. The interviewees were senior professionals and executives, primarily in corporate and social responsibility roles.

Findings are intended to provide a qualitative insight into how carbon leaders capture and manage carbon data and may form a useful basis for further, more quantitative work across a wider range of organisations.



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**To find out more please contact:**

Gill Hall  
Director, Climate Change Centre of Excellence  
IBM Global Business Services  
gillrhall@uk.ibm.com  
+44 (0)20 8818 4979

Joanna Lee  
Director, Communications and Corporate Partnerships  
joanna.lee@cdproject.net  
+44 (0)20 7415 7083

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**IBM United Kingdom Limited**

76 Upper Ground  
South Bank  
London  
SE1 9PZ

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