

Carbon Disclosure Project Supply Chain Report 2011

Migrating to a low carbon economy
through leadership and collaboration



Report written for
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CDP Supply Chain Member Companies¹

CDP Supply Chain Program

The CDP Supply Chain Program is designed to promote information sharing and innovation between CDP Supply Chain members – companies that have begun to integrate carbon management strategy into their supply chains – and the companies that provide goods and services to them as we transition to a low-carbon economy. To learn more about becoming a member, please contact us or visit the CDP Supply Chain section of www.cdproject.net.

Accenture Ireland	Hynix Semiconductor South Korea
Acer Inc. Taiwan	Imperial Tobacco Group United Kingdom
ASUSTeK Computer Taiwan	IBM United States
Babcock United Kingdom	Johnson & Johnson United States
Banco Bradesco Brazil	Johnson Controls United States
Bank of America United States	Juniper Networks United States
Barclays United Kingdom	KAO Japan
Baxter International United States	Kellogg Company United States
Becker Underwood United States	Kimberly-Clark Corporation United States
Biogen Idec United States	Kraft Foods United States
BT Group United Kingdom	L' Oreal France
Chicony Power China	Logica United Kingdom
Colgate Palmolive Company United States	Merck & Co., Inc. United States
Coloplast Denmark	Millipore Corp. United States
ConAgra Foods United States	Molson Coors Brewing Company United States
Danone France	National Australia Bank Australia
* Dell United States	National Grid United Kingdom
Diebold United States	Nestle Switzerland
* EADS Netherlands	* PepsiCo United States
Elopak Norway	Royal Philips Electronics Netherlands
EMC Corporation United States	Reckitt Benckiser United Kingdom
Endesa Spain	Rolls-Royce United Kingdom
ENEL Italy	Royal Mail Group United Kingdom
* Eni Italy	Sony Corporation Japan
* FIBRIA Celulose Brazil	Unilever United Kingdom
Ford Motor Company United States	Vivendi Universal France
Google United States	Vodafone Group United Kingdom
H.J. Heinz Company United States	* Walmart United States
Hewlett-Packard Company United States	

¹ Of the 57 listed Member companies, 55 invited their suppliers to participate
* Lead members

Executive Summary

Climate change and supply chains

Over 50% of an average corporation's carbon emissions are typically from the supply chain rather than within its own four walls. Managing supply chain emissions is therefore critical if we are going to address climate change effectively.

The Carbon Disclosure Project's Supply Chain program is a unique collaboration of 57 global corporations who are members of CDP Supply Chain. These companies recognize the significance of the supply chain in carbon management. They are actively engaged in working with their suppliers to manage carbon and have the power and influence to really make a difference. This report is based on this work and is the most significant study of how business is managing supply chain emissions. The insights are informed by detailed data and research conducted with 1,000 participating suppliers across industries all over the world.

There are three core results from this year's research:

- 1. Supplier carbon reduction ambition still does not meet global carbon reduction requirements to limit the rise of global surface temperature.** Only one third of responding suppliers have a target for carbon reduction and even the targets that are in place are not sufficient. Should this status continue, this would mean global emissions by 2015 will increase by 6% instead of the necessary 20% reduction.
- 2. But there is hope...** Compared to last year, companies have improved in assembling the building blocks for dramatic change – including improved reporting, increased board level responsibility and greater realization that carbon management presents a wider cost and revenue opportunity rather than being a pure risk mitigation activity.

- 3. CDP Members are leading the way** - they have started a chain reaction for engagement in the supply chain – they are increasingly using their influence and power to drive change. They do this by deploying differentiated levers to engage with their suppliers. These include redesigning products, directly reducing demand for carbon intensive purchases, working collaboratively with suppliers to cut emissions and making effective carbon management a supplier selection criterion.

The report highlights that it is still early days in the quest to reduce emissions. While progress has been made, a major step change is required if business is to meet the global requirements. Increased engagement and commitment in the supply chain is indispensable for achieving this. This report highlights that although there is work to do, through leadership - as demonstrated by CDP Members in working with their suppliers - a positive snowball and domino effect in the supply chain can bring about the change needed.

Companies' carbon reduction ambition still does not meet global carbon reduction requirements

The Intergovernmental Panel on Climate Change (IPCC)² provides compelling evidence that global surface temperature will rise significantly by 2100 if business as usual continues. The IPCC has calculated an annual reduction of emissions by 3.9% is necessary to achieve an 80% carbon reduction by 2050.

In 2009, only one third of suppliers had a reduction target. Those that did targeted an average reduction of 3.6% per annum, approximating the required reduction. However, two thirds of the companies did not have a target. This 'business as usual' attitude meant that by 2020 overall carbon emissions would actually increase by 9%.

The 2010 results are similar. Only one third of suppliers have a target, with an average of 3.5% per annum. Another fifth of the companies are developing a target, but even if these targets are implemented next year, still only half of the companies will have a target in place. If this situation persists, with only a portion of global businesses setting a target, global carbon emissions controlled by business will actually increase by 12% by 2020.

More positively, almost 90% of the members have committed to targets. At the same time, their ambition has increased from 2.2% to 3.4% per annum since 2009. Members explain these increases as being due to increased insights into their own baseline emissions coupled with a growing level of expertise regarding what they can do to reduce emissions. This is a change in the right direction, but there are only 57 members. The members face a real challenge when it comes to addressing the lack of target setting by over 50% of their suppliers.

Urgent change is therefore required to meet the necessary economy-wide carbon reduction requirements. However, many companies are working very hard to set the building blocks for dramatic change. Significant successes have been achieved, and members are now forcing a chain reaction, putting pressure on their supply chains and business partners to commit to targets and implement emission reduction practices to drive change.

² Intergovernmental Panel for Climate Change (IPCC) Quarter Assessment Report, 2007 (www.ipcc.ch).

There is hope...companies are assembling the building blocks for dramatic change

We evaluated the building blocks of change that accompany ambition: strategic awareness, reporting capabilities and implementation practices. The positive conclusion is that overall carbon management capabilities have increased.

Strategic awareness – climate change increasingly seen as a business opportunity

All members and half of suppliers now have a formal strategy for climate change. These strategies indicate that climate change is increasingly perceived as a business opportunity to drive top line growth. The drivers are recognized as going beyond risk management and compliance to include brand management, product differentiation and employee motivation.

Reporting capabilities – a significant increase

The reporting capabilities of companies have increased. Around 80% of suppliers report on scope 1 and 2, which is a significant improvement over last year's figure of around 60%. This is a very important and significant increase, because it is a building block for setting meaningful targets against a baseline that can then be tracked and monitored.

Reporting on scope 3 emissions remains a challenge for most companies. There is a lack of standardization, the data gathering process is intensive, and most members don't require the reporting of scope 3 emissions from their suppliers. However, significantly more members now track and report their own supply chain emissions – this more than doubled in 2010 to 45%.

Data accuracy remains an area that needs improvement. Almost all suppliers report a level of uncertainty in their emission reporting, mostly due to data gaps, assumptions, extrapolation and measurement constraints. They also find it difficult to allocate emissions to a single customer. Companies are working to improve this by integrating emission tracking into a standardized reporting process to ensure data accuracy which is necessary for measuring results.

Implementation practices – Suppliers respond to member pressure

More than 60% of suppliers describe activities to reduce carbon emissions, and 40% of those have reported that they achieved real cost savings as a result. Almost all members also deployed detailed activities to reduce carbon and for half of those activities cost reductions were also achieved. This demonstrates that real changes are being made and that the benefits are being recognized.

Almost half of the members are integrating sustainability criteria into their evaluation of suppliers. Most members now use sustainability scorecards and awards for suppliers, and their level of sophistication is increasing. Today, most evaluation criteria are qualitative, and measure supplier awareness and commitment. However, all members are working with the data to evolve more quantitative Key Performance Indicators (KPIs) and real target setting. These sustainability criteria will become increasingly important in the area of supplier selection, and more than half of the members are willing to deselect suppliers based on these criteria. A small number of members already do this today.

At the same time, the vast majority of suppliers now have a board committee or other executive body responsible for climate change; last year it was 60% of suppliers; it grew to 69% of the suppliers in 2010. Also 40% of suppliers now provide employee incentives to reduce emissions compared to 28% last year, encouraging commitment throughout the enterprise.

Members have started a 'Chain Reaction'

The other good news is that members have a big influence on their suppliers and they are increasingly using their power to enforce a chain reaction. In 2010 supplier response to CDP grew by 40% to a total of 1,000 participating companies. In the emerging markets (e.g. India & China), the response rate for the CDP Supply Chain questionnaire was twice as high as for the Investor CDP questionnaire. This demonstrates the impact members have.

Internally, members are extending commitment and responsibility for carbon management from board level to employees by training their procurement staff and giving awards to staff that exceed climate change targets. In 2009, just 11% of members rewarded their staff – this has now more than doubled to 25%. Through this overall commitment, pressure on suppliers is increasing and engagement is delivering more tangible results for reducing carbon emissions. One third of suppliers are now following this example, and are in turn working with their suppliers to reduce emissions, thereby engaging the next link in this chain reaction.

Differentiated levers for reducing supply chain emissions

Around 90% of members engage with their suppliers to manage carbon. To do this, they are using differentiated levers for categories of suppliers. These levers

depend on the demand and supply power playing field. The approach assumes that suppliers will respond to business drivers rather than appeals to pure altruism.

- 1. Reducing external demand for carbon.** When both member demand power and supplier power are low then the most effective strategy is often simply to reduce demand. Travel is an example of a category area that meets these conditions. Rather than direct negotiations with suppliers, the most effective lever is to change the mix and amount of travel. Video conferences can be used instead of flights, and rail travel is substituted in place of plane travel where appropriate.
- 2. Using sustainability criteria to select suppliers.** When members have more demand power, and suppliers have relatively little, sustainability requirements are integrated into Requests for Proposal (RFPs), and there are opportunities to deselect suppliers that do not meet target expectations.
- 3. Jointly improving carbon performance with suppliers.** When both supply and demand power are high, then diktats are not effective. Here, leading companies use a collaborative process to jointly improve performance and manage sustainability with a selection of suppliers. These are often intensive programs in which members implement best practices from their own organization with their suppliers, while also creating sustainable cost/value partnerships for innovative and structural improvements. There are examples where members have moved

their supplier's production in-house which have resulted in significant emission and waste reductions and cost savings. This requires a high level of commitment from both members and suppliers, but it is leading to big improvements in emissions reduction.

- 4. Re-designing products to reduce carbon impact.** When supplier power is high and demand power low then suppliers may not willingly collaborate to reduce emissions. Here, the most effective lever is often to redesign the end product. Low temperature washing powder, low-energy electronic devices and easy to rinse shampoos are being developed to reduce emissions across the entire value chain, having a big impact in reducing emissions in the use phase.

A way forward – three areas of development

Although there is still a gap between members and suppliers, good overall improvement has been made in the building blocks for carbon management. Moving forward, to achieve a major step change, members are expected to focus on three main areas of development:

- Deploying differentiated levers for carbon management
- Improving baseline data accuracy to enable target setting
- Setting challenging targets across the external supply chain

By doing this, members can continue to push reduction ambitions and align reduction targets with global requirements.

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1

The A.T. Kearney Perspective

After the failure of the Copenhagen UN Climate Change Conference a year ago, continued economic uncertainty across the globe, and the inability of the US Congress to pass meaningful climate change legislation, one might think that the reduction of carbon emissions is no longer a priority for businesses. Nothing could be further from the truth. Forward-thinking companies across the globe are finding that a focus on sustainability has both top and bottom line benefits in addition to addressing a pressing global need – carbon emission reduction.

Consider that the emissions of about 2,500 of the largest global corporations account for roughly 20-25% of the world's GHG emissions. Many of these companies are already taking significant action to report, manage and reduce their GHG emissions as well as improve their overall sustainability performance in accordance with a triple bottom line approach. Most have done so not out of a legal obligation, but out of good business sense. When managed correctly, sustainability is a profitable strategy that helps to reduce costs, increase revenue and bolster a brand image.

The Carbon Disclosure Project (CDP) is the leading global organization addressing carbon emissions reduction. The Carbon Disclosure Project Supply Chain Report 2011 (third annual) is the most comprehensive study measuring corporate progress against carbon emission goals in the supply chain. It is also a key source of best practice. Data from the 57 global corporations that are members of the program and the more than 1,000 suppliers to these companies, provided the comprehensive information for this Report. The CDP Supply Chain Report 2011 shows that major companies and their suppliers

are focused on implementing strategies and programs that address carbon emissions across their global supply chains. The “greening of the supply chain” will have a tremendous impact both in environmental and economic terms, and defines new standards for procurement in all sectors of the economy.

A.T. Kearney has had the privilege of working first-hand with a number of global companies on projects to address carbon emissions in a way that makes business sense. We worked with a major consumer packaged goods company to develop an approach that included a base-case forecast for the company to attain end-to-end life-cycle sustainability. The forecast was used to develop individual targets for each business unit, ultimately helping the company reduce its overall environmental impact. We also worked with a global medical device company to develop a strategic plan for the company to conduct its business in a more environmentally sustainable way – within its four walls, across the value chain and throughout the product life cycle. The plan outlined a governance structure and new business processes for the company to achieve their sustainability goals. In addition to the environmental benefits, the program identified cost savings of between \$23 and \$77 million with a potential revenue increase of \$225 million.

In line with the goals of our clients, A.T. Kearney has a commitment to reducing our own carbon emissions. We feel that if we are to provide sound counsel to our clients on these issues, we need to take an aggressive stance to address our own carbon emissions. In 2007 the A.T. Kearney Board of Directors made a commitment to achieve carbon

neutrality in all aspects of our operations by 2010. We knew that our biggest challenge would be in addressing carbon emissions from travel. It typically comprises 80% of our carbon footprint. We achieved carbon neutrality on July 19, 2010. We are proud of the fact that we were the first global consulting firm to achieve this goal.

Our carbon neutrality is built on four planks that reach across our entire organization: defining and measuring a rigorous set of carbon indicators, empowering employees globally to develop greener office protocols, innovating new models for client-service delivery and investing in climate-protecting projects meeting the highest international quality standards. The firm's carbon neutrality is part of a broader initiative designed to deliver sustainable, environmentally sound results to A.T. Kearney's global client base.

To reduce our carbon footprint related to travel, we developed advanced tools to calculate carbon emissions for all travel criteria including airline, hotel, rental car, rail, public transportation and taxi use and measured the carbon impact of travel by employee, office location and client project. A.T. Kearney's efforts to measure and track business-travel emissions have been recognized as pioneering and best practice by numerous travel industry groups.

As the results of the CDP Supply Chain Report 2011 show, much progress has been made by global businesses to address carbon emission reductions, but much remains to be accomplished to achieve the reduction goals necessary to reverse global climate change.

Daniel Mahler
Vice President at A.T. Kearney

Stephen Easton
Vice President at A.T. Kearney

2

About CDP Supply Chain

“The need for commonality is incredibly important. Individual companies may often lead the way, however we need to use a common approach via an established independent and cross-sector organization like CDP; so that we can work in partnership with peers both within-sectors and across-sectors in a wholly transparent manner to achieve more sustainable supply chains. We need to minimize different companies asking the same questions to the same suppliers multiple times and/or in different ways! It is important that we seek a common international basis otherwise it will overwhelm suppliers with paperwork rather than enabling them to take real action.”

Reckitt Benckiser

The Carbon Disclosure Project (CDP) launched in 2000 to accelerate solutions to climate change by putting relevant information at the heart of business, policy and investment decisions. We further this mission by harnessing the collective power of corporations, investors and political leaders to accelerate unified action on climate change. Over 3000 organizations in some 60 countries around the world now measure and disclose their greenhouse gas (GHG) emissions and climate change strategies through CDP, in order that they can set reduction targets and make performance improvements. Data is made available for use by a wide audience including institutional investors, corporations, policymakers and their advisors, public sector organizations, government bodies, academics and the public.

CDP collects and provides information to the marketplace on behalf of two main groups:

- **Investment Market:**
534 institutional investors controlling US\$64 trillion in assets request disclosure from listed companies in whom they invest
- **Purchasing Organizations:**
Over 80 global purchasing organisations from the public and private sectors request disclosure from their suppliers

CDP has become the global standard for corporate climate change disclosure.

CDP Supply Chain

In 2010, CDP worked with 57 major global corporations to implement supplier engagement strategies around greenhouse gas emissions and risk

management in a changing climate. Using CDP’s annual Information Request, 55 of these member companies gathered information in a single format, reducing the time and resources spent by suppliers on multiple requests. This also resulted in streamlined, comparable results which were then analyzed and benchmarked by CDP’s report writer, A.T. Kearney.

CDP Supply Chain has evolved from an awareness gathering exercise to a mature, integrated business process. From the pilot in 2007, the process has become increasingly embedded in the procurement functions of member companies. This change has been supported by improving members’ access to supplier response data. Members receive a ‘Custom Report’ based on their supplier performance; this report also looks at how each member’s sustainable procurement practices compare to the other members. CDP’s new analytical tool, developed in partnership with SAP, has given member companies unprecedented access to supplier response data and powerful analytic tools.

The future

The ambition for CDP Supply Chain is to solidify its position as the global standard for carbon emissions reporting in the supply chain. CDP has developed the reporting tools to empower members to use the information gathered from suppliers and members are incorporating these data points in their overall supplier assessments. Member companies have shown that, as their ability to measure and report emissions data improved, their opportunities to drive emissions reductions in their own operations increased. An improved understanding of emission sources will enable members and suppliers to work together to reduce emissions and create low carbon products and processes.

3

Methodology Followed

Assessing Member and Supplier performance

The CDP Supply Chain Program

CDP Supply Chain is a collaboration of 57 global corporations who have extended their climate change and carbon management strategies beyond their direct corporate boundaries. They are now engaging with their suppliers via CDP's annual information request – a standardized format to report in a streamlined, unified way. This year, 55 member companies reached out to 1853 of their suppliers, and 1000 (54%) responded to the request.

This report synthesizes the key findings extracted from the CDP Supply Chain 2010 information request responses. It contains:

- An analysis of the GHG emissions and climate change management performance of CDP Supply Chain member companies – referred to as **members** in this report
- An analysis of CDP Supply Chain supplier companies – referred to as **suppliers** in this report – across the four dimensions of carbon management
- The way forward

A glossary at the end of the document provides definitions of the technical terms used throughout this report.

Multi-modal Member Evaluations

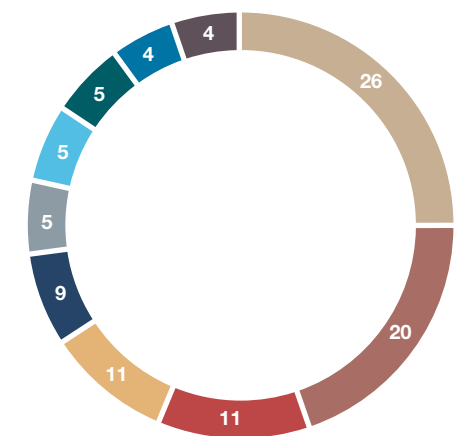
The following sources were used to evaluate the behaviour of the 55 members with regard to GHG emissions and climate change management:

- The CDP information request
- The Supplementary Member Questionnaire
- Interviews with selected members

The CDP information request was completed by all members, representing ten different sectors of the Global Industry Classification Standard (GICS)³ (Figure 1).

One third of the members responded to the A.T. Kearney Supplementary Member Questionnaire. This was designed to complement the original CDP Supply Chain information request by focusing on how members interact with suppliers to drive improvements in carbon management. Member interviews were also held with selected companies in order to confirm the hypotheses, analyses and conclusions that were extracted from the other sources.

Figure 1 – Members per industry %



■ Industrials	26%
■ Materials	20%
■ Information Technology	11%
■ Consumer Discretionary	11%
■ Financials	9%
■ Telecommunication Services	5%
■ Consumer Staples	5%
■ Health Care	5%
■ Utilities	4%
■ Energy	4%

Evaluating members and suppliers across the four dimensions of carbon management

The CDP Supply Chain Report 2011 analyzes data from the information request to assess member and supplier performance regarding GHG emissions and climate change management along four distinct dimensions:

1. **Strategic awareness about climate change** evaluates how aware the supply base is of existing and future climate change risks. Do suppliers have the ability to provide solid and precise information about risks related to climate change? Can they derive specific implications from their findings?
2. **Carbon reduction ambition** evaluates the level of sincerity of suppliers' reported emissions reduction ambitions. How high is their level of ambition to reduce GHG emissions measured by emissions reduction targets? How detailed is the information that they provide about their ambition? What is their time frame for achieving these targets?
3. **Reporting capabilities** evaluates suppliers' willingness and capability to report GHG emissions and climate change-related activities. Are they pro-actively creating transparency for the public, investors and other stakeholders about GHG emissions? What are their capabilities when it comes to reporting the main emissions categories: Scope 1, Scope 2 and Scope 3 emissions?
4. **Implementation practices** evaluates the approaches used to reach established emissions reduction targets and whether they are sustainable. What governance mechanisms are in place to ensure implementation? What is the suppliers' level of commitment to reach their targets? Will these implementation practices be sustainable in the long run?

³ Global Industry Classification Standard
www2.standardandpoors.com/spf/pdf/index/GICSIndexDocument.PDF

“Johnson Controls uses its sustainability strategy to consistently outperform its peers through three traditional approaches: by earning the support of institutional investors, by managing its risk exposure to sustainability-related performance surprises, and by regularly measuring and managing its sustainability initiatives”

Johnson Controls

“In Europe, PepsiCo has worked with their CDP Account Manager to support integration of climate change and carbon emissions in the activities of the buying teams. We discussed the potential impacts of climate change on suppliers (physical and regulatory risks) and outlined the possible opportunities to be garnered from engaging with them – gathering together a bank of best practices to disseminate.”

PepsiCo

This year the number of participating suppliers, from a significantly larger target audience, grew by 30%. Out of the 1,853 suppliers contacted, 1,000 (54%) participated, 59 (3%) formally declined to participate and 794 (43%) did not respond or failed to submit a complete response (Figure 2). Of those who responded, 51% authorized their responses to be disclosed publicly. In terms of company size, 22% of the responding suppliers were SMEs⁴.

Figure 2 – 2009 and 2010 Number of Suppliers participating

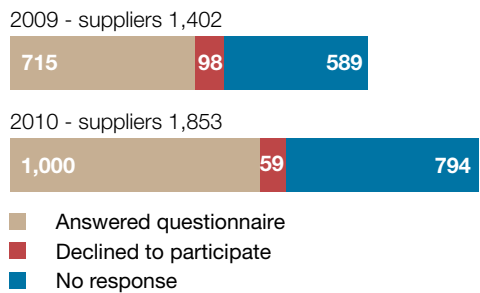
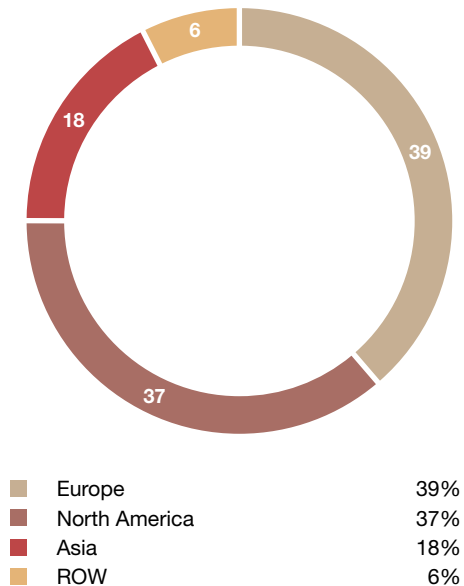
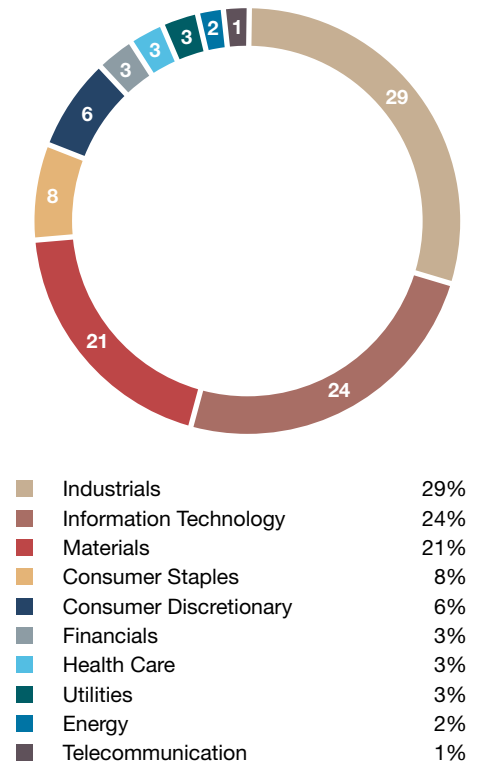


Figure 3 – Suppliers by geography %



Most of the suppliers who responded were from Europe (39%) and North America (37%). Asia was represented by the same percentage as 2009 (18%), while suppliers from the rest of the world made up the remaining 6% (Figure 3). From a sector point of view (Figure 4), Industrials and IT companies represented more than half (54%) of the respondents. Materials (21%), Consumer Staples (8%) and Consumer Discretionary companies (7%) were also well represented. Financials, Healthcare, Utilities, Energy and Telecommunication combined represented a tenth (10%) of the respondents.

Figure 4 – Suppliers by industry %



⁴ Small to Medium Enterprises. See glossary for a detailed definition.

4

CDP Supply Chain Member Analysis

Members have improved their capabilities and are causing a chain reaction

Overall, members have increased their carbon management capabilities. They have improved their strategic awareness, reporting and implementation practices and have achieved significant successes as a result. Clearly, they are working on the building blocks for change. By doing this, members are causing a chain reaction, putting pressure on their supply chains and business partners to commit to targets and implement emission reduction practices to drive change.

Strategic awareness is increasing

In 2010, an increasing number of members from different sectors engaged in the CDP Supply Chain request. This year, 55 members asked their suppliers to participate – an increase of 25% compared to last year. Over three quarters of them are in Industrials (26%), Materials (20%), IT (11%), Consumer Discretionary (11%) or Financials (9%). Members in Utilities (4%) and Energy (4%) are not highly represented.

Members now leverage opportunities for top line growth

More members are recognizing climate change as a key risk, and almost 80% have a formal strategy to deal with it, compared to 63% last year (Figure 5). While the objectives of climate

change strategy were more risk and compliance driven in previous years, we now see real changes in these objectives. Employee motivation and brand improvement have more than doubled, and product differentiation has also become more important (Figure 6). This means that members have moved from an attitude of obligation to address the risks of climate change driven by

investors, to increasingly leverage opportunities of climate change for top line growth.

Carbon reduction ambition is growing

The vast majority of members (78%) have become more willing to commit to increasingly ambitious and detailed targets to reduce emissions (Figure 7). Last year, members had an average annual reduction target of 2.2%, while this year it increased to 3.4% (Figure 8). Members explained this by stating that increasing awareness has caused them to realize the reductions they could achieve. The most ambitious members have reduction targets of over 10% per annum.

Figure 6 – Objectives cited by members for corporate climate change strategy

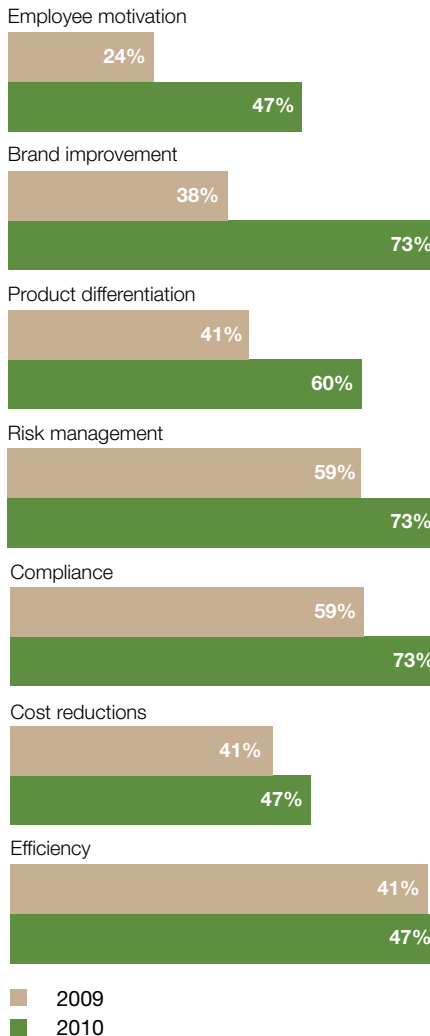


Figure 5 – Members with a corporate climate change strategy

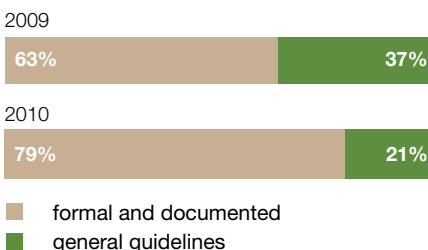


Figure 7 – Members with a detailed GHG emission reduction target



Figure 8 – Members' average annual GHG emission reduction target



The Changing Workplace

One of the challenges all corporations face is to balance the long-term health of the organization with short-term vitality and profitability. Executive remuneration programmes, business strategy and goal orientated performance management practices all focus resolutely on the short term – and yet there are also long term challenges that have to be addressed. Nowhere is this more apparent than in the long-term challenges of carbon use.

To understand this balance between the short term and the long term, my research team and I created The Future of Work Consortium. This is a group of over 200 executives from 43 businesses with a team of researchers and academics tasked with understanding the forces that will shape their world and their responses to these forces. We looked at the five most powerful forces that over the next two decades will fundamentally transform the everyday working lives of employees across the world. Their lives will be transformed by technological advances and connectivity; by ever advancing globalization and the rapid industrialization of many regions across the world; by demographic advances which will see the populations of many countries in the world aging rapidly whilst at the same time, many of the children born now will live to over 100 years; and societal forces in which people will want to be more individualistic and also become less trusting of corporations. Many aspects of these four trends will have a significant impact on the fifth trend – the use of energy and of carbon. As globalization and industrialization increases, more regions across the world will want a standard of living until recently only available in the west.

During the consortium, the executives talked about their companys' strategies for carbon use over the coming two decades. The group was also fortunate to have Shell as a member and they shared the Blueprint and Scramble scenarios they had developed for 2050. This is what they found:

Energy conservation and issues of carbon reduction are indeed seen to be crucial for 2025, but right now there is insufficient action taking place. The general belief is that this is in part because it is difficult to know what path to take.

However, despite the lack of joined-up strategies, many companies are taking the first steps to understanding more deeply their current carbon footprint. This was seen to be a crucial first step to increase awareness and to act as a starting point for conversation and action taking. Taking a view of carbon usage had become in some companies a rallying call for action. For example, at Tata Consulting Services we saw how teams had begun to take an active part in monitoring and making action plans.

Moreover, the speed of technological developments, particularly around connectivity, could have significant impacts on carbon footprints by reducing two of the major creators of carbon – the commute to work and overseas travel. There are pilot schemes running across all the consortium members in each of these areas. For example, one of our consortium members, BT Group, is making rapid developments as many thousands of people are working from home, and they are also creating town 'hubs' in which local workers can meet without making the long commute into a major

city. Technological connectivity is also becoming part of daily work. We heard from the executives at Cisco, how rapid developments in video conferencing are enabling them to build full wall video's to connect one team with another. We also saw how webinar developments are making the connectivity between virtual teams ever more efficient. It is clear that these new ways of working will over time reduce the carbon footprint of those that adopt them.

We believe that developments in carbon reduction will come bottom-up rather than top-down. They will come as individual team members begin to think about their carbon usage, and as individual business units monitor and take action. In the past these pilots and experiments often languished unknown beyond their immediate circle. However, now with Open Innovation and hyper-connectivity it is possible for communities across the world to take a closer look at these pilots and to rapidly disseminate their findings.

It is clear to me that when it comes to an issue as large and global as carbon use, it will be the connectivity between thousands of pilots and experiments that will make the greatest impact.

Lynda Gratton is Professor of Management Practice at London Business School

You can follow her work at her weekly blog www.lyndagrattontofutureofwork.com and connect to her work at www.hotspotsmovement.com

Reporting capabilities remain a challenge

Suppliers are disclosing more data, but obtaining reliable supply chain emissions data is still a challenge for members. The percentage of members who track and report supply chain emissions more than doubled to 45% in 2010 (Figure 9). While 72% of members have at least some of their data verified externally, only 39% of suppliers do so, mainly due to high costs associated with this process. Members also struggle to compare the data they get from suppliers, and they are looking for ways to use the data they get to further drive reductions. Compounding these difficulties is the fact that suppliers with multiple customers have difficulties in allocating emissions.

Figure 9 – Members reporting figures or estimates for supply chain GHG emissions

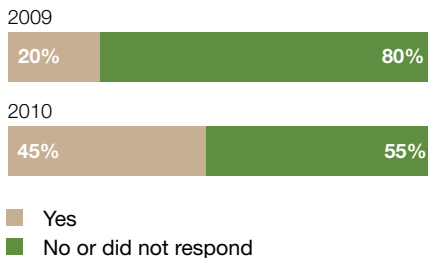
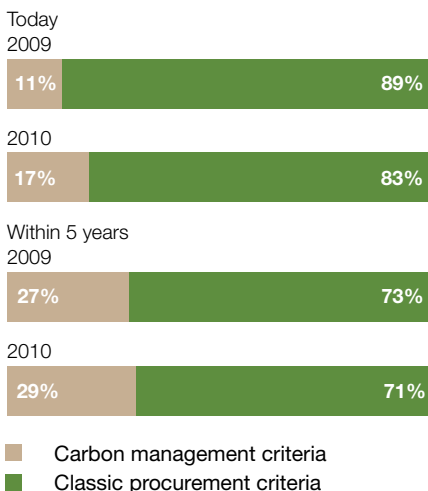


Figure 10 – Importance granted to classic procurement criteria vs. carbon management criteria

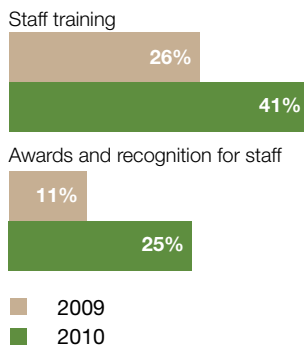


Implementation practices

The use of carbon management selection criteria is growing
Members are currently developing internal capabilities to support their carbon management goals and to manage the reductions in their supply chain. This year, members give an average weight of 17% to carbon management criteria in the selection of their suppliers, up from 11% last year. Within five years, members expect these criteria to weigh 29% in their supplier selection (Figure 10).

The use of internal rewards and recognition is increasing
As they develop their internal capabilities, an increasing number of members now train their procurement staff, and are providing awards and recognition if they exceed climate change targets (Figure 11).

Figure 11 – Procurement actions related to carbon management



“National Grid wants to be an employer of choice. If you look at the new generation of graduates, it is not only the salary they take into account, your position as a company is becoming increasingly important and we now explain our sustainability strategy in recruitment activities.”

National Grid

“Now that we have a system in place to obtain accurate data of our own emissions we feel we can commit to a target to reduce our global footprint by 5% in 2011.”

Juniper Networks

PepsiCo: Realizing Efficiencies through A Collaborative Approach

PepsiCo has been working with CDP Supply Chain since 2007 to encourage suppliers to measure and manage their carbon emissions.

When PepsiCo first began developing its GHG inventory in 2005, the company discovered that the majority of its GHG emissions came from process-related energy consumption. PepsiCo's own operations have seen a 16 percent reduction in per-unit energy use in beverage plants since they have begun implementing more than \$60 million in energy savings opportunities. Given that the majority of PepsiCo's emissions lie in the supply chain, the next step for PepsiCo was to share this information with suppliers. PepsiCo used the CDP Supply Chain process to discuss the importance of emissions management with suppliers. "Suppliers are much more willing to overcome any scepticism on how measuring their GHG emissions and developing a reduction strategy will benefit their businesses if they see firsthand how other companies reaped tangible financial benefits" says Rob Meyers, Group Manager, Environmental Sustainability, PepsiCo.

PepsiCo worked to educate and inform suppliers about these potential cost reduction opportunities. PepsiCo now provides strategic suppliers with access to a proprietary energy assessment tool, which has been used by PepsiCo to improve the energy efficiency of its own operations. This tool highlights a supplier's top 10 to 15 energy conservation opportunities.

PepsiCo has developed a 3-day training course around this assessment tool that is conducted at a supplier's manufacturing facility. In addition to learning how to use the assessment tool, attendees are provided with some basic education around environmental sustainability and given a practical demonstration of how to use the tool to conduct an energy assessment of the training site. The site is left with a list of actionable items that employees can implement to drive energy, water, and waste reductions. Because of the dual benefits of hosting a training event – training plus an action plan to improve performance – PepsiCo typically does not have any difficulty identifying host sites for the training. The host is required to open the training up to other suppliers. Multiple training events are conducted every year.

PepsiCo currently has a team of two full-time engineers that support the program, plus a subject matter expert on waste elimination who spends about a third of his time supporting suppliers. This team delivers the energy assessment tool training and visits supplier sites to support their efforts. The team has focussed the support visits to sites of strategic importance that have the greatest need. Participation in the CDP Supply Chain process has been helpful in developing PepsiCo's supply chain sustainability strategy. The CDP Supply Chain process can assist in identification of strategic suppliers that are most likely to benefit from this level of support and guidance from PepsiCo, and can also be used to monitor the progress of suppliers that have received direct support from PepsiCo.

Dell: Putting Suppliers on the path to Greater Efficiency

CDP Collaboration Helps Dell Put Its Suppliers on the Path to Greater Efficiency

The information and communications technology (ICT) sector is responsible for approximately 2-4% of the world's greenhouse gas (GHG) emissions. As a global ICT company, Dell is well aware of this — and also of the tremendous power for productivity gains enabled by technology to sharply curtail net GHG emissions across the planet.

Dell's own operational carbon intensity is among the lowest in the Fortune 500, but as Mark Newton, the company's executive director of sustainable business, puts it, "Managing carbon emissions across our value chain is another lever for reducing waste and driving efficiencies. We're also inspired to help others lessen their impact on the planet and do more using our efficient products and services."

Dell, which has been reporting to the CDP since 2006, takes a holistic view of its GHG impacts. To that end, it streamlines operations, innovates ever more sustainable and energy-efficient product and packaging designs, and offers productivity services and responsible product take-back and recycling programs that are among the industry's most convenient and progressive. A key aspect of that holistic view is its supply chain, whose carbon emissions exceed that of Dell's own operations.

When it first heard about the CDP's Supply Chain program in 2007, Dell had already been engaging with its primary suppliers and asking them to start identifying their GHG emissions impacts in their ISO 14001 or EMAS quality management programs and to disclose their emissions using Greenhouse Gas Protocol standards. Not meeting these expectations, suppliers were told, would mean a lowered quarterly business review score and a potentially diminished ability to compete for Dell's business.

In 2008, Dell became the first ICT company to join the CDP's Supply Chain program, which encourages suppliers to measure and disclose climate change information, as well as to assess climate-related business risks and opportunities, and invited its primary suppliers to participate. The following year, when Dell set the expectation for its primary suppliers (representing 95% of its direct spend) to complete the CDP's carbon disclosure questionnaire, it got a higher response rate than is typical for most companies: 94%. That's because "we chose to use the program to help us partner more deeply with our suppliers and involve them at the beginning stages of the transparency process," Newton says. "The idea is that this is a partnership, not a mandate."

Dell has found the CDP's technical support to be a valuable aspect of that partnership. For example, a CDP training in China for Dell suppliers gave them a broader understanding of their carbon footprints, of climate change risks and opportunities, and of tools to enable more effective reporting.

Results have been tangible, with 100% of Dell's primary suppliers reporting to the CDP in 2010.

Beyond asking its primary suppliers to report their emissions impacts to the CDP, Dell has also set two other expectations: that suppliers establish public goals for reducing their operational GHG impacts, and that they compel their own suppliers to manage and publicly disclose their emissions impacts using Greenhouse Gas Protocol standards as well.

With an eye toward the future, Dell reviews suppliers' year-on-year data to ensure progress is being made. Sharing Dell's ever-evolving expertise in energy efficiency with suppliers and continuing to rely on the CDP's vast knowledge and tools are keys to strengthening the collaboration between the company, its suppliers, and the CDP in the years ahead.

Ultimately, reduced carbon emissions across the value chain mean improved efficiency, which in turn means lower operating costs. Those are wins for everyone involved — Dell, its suppliers, its customers, and, of course, the environment.

“We have raised the awareness of our suppliers to these issues by setting business requirements for them to disclose and reduce their GHG impacts – and to set expectations for their suppliers to do the same. Next challenge is to make sure the information they are disclosing is accurate and allocated consistently, and to really use the CDP data to help our supply partners identify climate risks and opportunities material to their operations.”

Dell

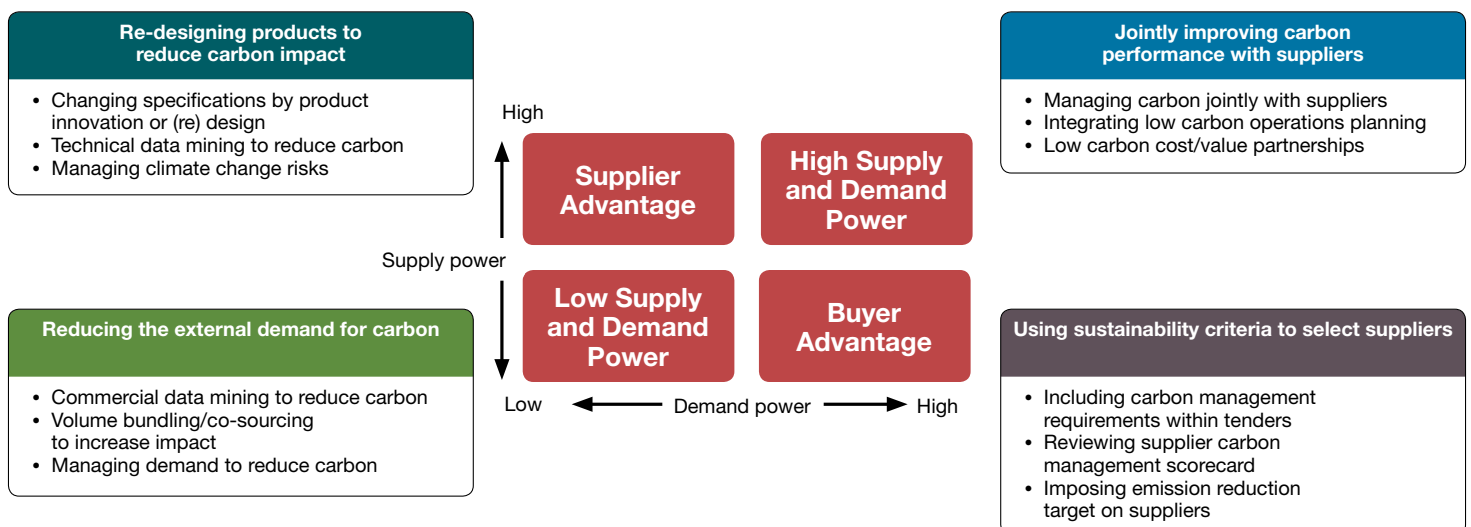
Improved supplier scorecards will help members take the next step

Members are now willing to take the next step: actually challenging suppliers to set targets and measure their performance on a more quantitative basis. However, this means that members have an increasing need for accurate and comparable data to give them the understanding they need. They are therefore developing and improving scorecards, either on their own or with the support of CDP, to enforce supplier commitment. These are mostly based on KPI's such as CDP participation, emissions reporting, setting a reduction target and engaging with their own suppliers. Few members are yet able to set a specific CO₂ emissions reduction target across significant portions of their supply base.

Increased engagement by deploying differentiated levers

Members have engaged over 1,000 suppliers this year to respond to CDP. This is an increase of 40% compared to 2009. Also the response rate increased, showing the impact that members have on their suppliers. In emerging markets, such as India and China, the response rate to the CDP Supply Chain request is almost twice as high as for the Investor CDP request. The power members have to make a difference by engaging with their suppliers is acknowledged and members are starting to deploy different strategies to engage with their suppliers. However, defining the appropriate engagement strategy requires a clear understanding of the demand and supply power playing field (Figure 12).

Figure 12 – Levers for supplier engagement in carbon management



Explaining the Levers for Supplier Engagement

1. Reducing the external demand for carbon

Members' knowledge of sustainable options in areas such as travel, office supplies and construction is increasing to manage demand. For instance, videoconferencing is reducing travel-related CO₂ emissions, and the purchase of energy efficient IT is reducing carbon emissions.

2. Using carbon management criteria to select suppliers

When competition can be leveraged, some members are willing to deselect suppliers based on sustainability criteria. However, this number is still relatively low. Within five years, however, the majority of members will be willing to do this if they have the assurance that the data they have is accurate and comparable (Figure 13).

3. Jointly improving carbon performance with suppliers for tangible results

Members who seek a joint advantage with suppliers are achieving tangible results. This year, 86% of members worked closely together with their suppliers to jointly improve performance, up from 46% in 2009 (Figure 14).

These members are sharing their own best practices with suppliers and are providing a program around implementation. This ensures joint benefits, and makes clear to suppliers what is in it for them. At the same time, members are also encouraging suppliers to broaden their scope and to engage with their suppliers as well.

4. Re-designing products to reduce carbon impact

Where the supplier power is high, product redesign in an end-to-end life cycle approach will change the playing field. A.T. Kearney research confirms that up to 80% of a company's overall emissions are in the supply chain. Over half of these emissions are actually generated at the use and disposal of products. Members are already developing – often with their suppliers – new product innovations to reduce emissions along the entire product life cycle. Examples include low temperature washing powder, easy to rinse shampoo and energy efficient electronic devices.

This supplier engagement approach is causing a chain reaction. Members are making suppliers aware of their carbon emissions while enforcing their emissions reduction goals. If this chain reaction in carbon management capability improvement continues annually, total emissions will eventually be reduced.

“We are still in the process of evaluating the data we receive from our suppliers through the CDP request. Since it is hard to compare companies, an industry-specific overview would be a good start to put the data into perspective.”

National Grid

“As we make use of non-financial sustainability data to evaluate the performance of our suppliers and mitigate areas of risk in our supply chain it is important that the underlying data carries with it a level of accuracy on par with financial data.”

PepsiCo

Figure 13 – Member willingness to deselect suppliers for failing to meet carbon management criteria

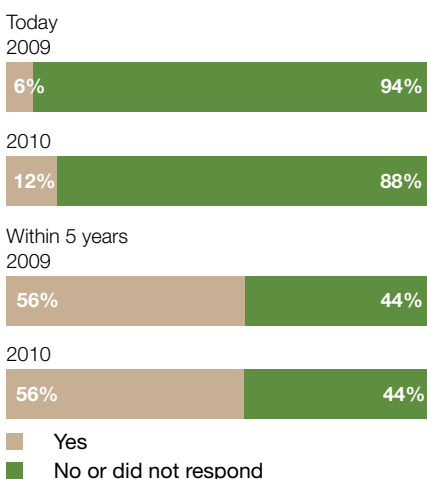
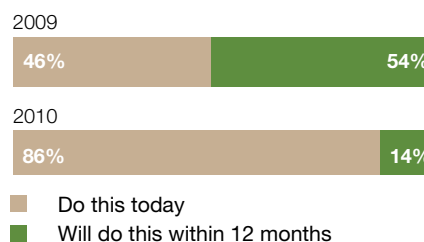


Figure 14 – Members having a collaborative process in place to jointly improve performance



5

CDP Supplier Analysis

“Bloomberg’s long term goal is to reduce its carbon footprint (total emissions minus allowances, including RECs and potential offsets) by 50% by 2013 against the 2007 baseline. We believe we will achieve the majority of this goal via actual emissions reductions, and make up the shortfall with allowances as needed.”

Bloomberg

“At the Copenhagen Conference, IATA pledged on behalf of all its member airlines to play its part in combating climate change...In an unprecedented move, manufacturers, airlines, airports and air traffic control bodies have jointly and globally committed to specific goals to cut aviation-related emissions.”

Air France-KLM

Despite improved capabilities, supplier reduction ambition is not high enough to meet global requirements

In 2010, only one third of suppliers reported a carbon reduction target, and the average is 3.5%, compared to the IPCC requirement of 3.9% per annum. One fifth of the companies are developing a target, but even if they implement it next year, still only half of all suppliers will be committed to a target. If this situation persists, with only a fraction of global businesses becoming serious about reducing their carbon emissions, then these emissions will actually increase by 6% by 2015 compared to 2010. Overall, supplier capabilities have improved, but they still show a performance gap when compared to members. Over two thirds of suppliers can give a detailed description of reduction activities that contributed to overall emission reduction.

Strategic awareness

More suppliers are participating in CDP
In 2010, the number of participating suppliers increased by 40% to a total of 1,000 (Figure 15). Most responding suppliers are European (39%) or North American (37%). Industrials (29%), IT (24%) and Materials (21%) represent three quarters of all supplier industries.

Half of suppliers have a detailed strategy for climate change

Half of the suppliers have a detailed strategy for climate change, and are aware of the related opportunities and risks (Figure 16). The main types of physical risks cited are extreme weather events and regulatory risks such as cap and trade schemes and carbon taxes. This perspective is comparable to last year.

Figure 15 – Supplier participation

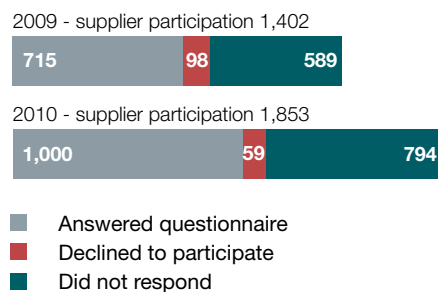
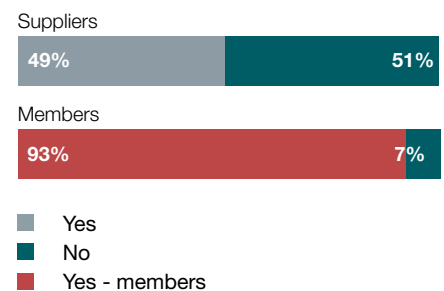


Figure 16 – Companies having a business strategy related to the risks and opportunities of climate change



Reduction ambition

Supplier commitment to targets is low

While the absolute number of suppliers who have committed to a target has increased, they still only represent about one third of the group, which is in line with last year. Another quarter of suppliers do not have a target, but are currently developing one, so we can expect an increase in the future. The gap between suppliers and members in this area remains (32% compared to 87%) (Figure 17). Suppliers who don't commit to a target say they find emissions difficult to quantify and influence. Interestingly, the ones that do commit have an average emission reduction ambition figure 12% by 2020.

Suppliers are not meeting global reduction targets

In 2007, the IPCC stated that developed economies must reduce GHG emissions by 80-95% by 2050 in order to avoid dangerous climate change⁵. The percentage of annual absolute reduction required in order to achieve the IPCC recommended reduction of 25-40% by 2020 and 80-95% by 2050 against the 1990 baseline has been calculated⁶.

The result is a global reduction rate per annum of 3.9% required to reach an 80% reduction by 2050.

We calculated the average reduction targets of all suppliers to see if they are meeting this requirement. The analysis was based on two conservative assumptions. First, we assumed 2010 as the starting point for reductions, since there is a lack of corporate data from 1990 levels. Second, we assumed that companies cut yearly emissions at a rate identical to the one indicated in their current plans. For the suppliers without a reduction target we have assumed they will keep their emissions constant.

Existing reduction targets are in line with last year. The average annual reduction target is 3.5% (3.6% last year), which is a bit lower than the required 3.9%. However, 68% of suppliers do not have a target. The average change in emissions for all suppliers with and without a stated target is actually a net increase of 1.2% per annum. This means that global emissions will slowly increase by 6% in 2015 and 12% 2020 (Figure 18).

“Dell views climate change as a business opportunity by providing products and services that help our customers realize energy and productivity gains and to help them to meet cost and potential compliance needs.”

Dell

“Through an internal Juniper Networks initiative, we are working with our suppliers and internal product groups to establish a mechanism to assign a GHG footprint to the manufacture of our products which will allow us to quantify the carbon footprint attributable to the products sold to each of our customers.”

Juniper Networks

Figure 17 - Companies with a detailed GHG emissions reduction target

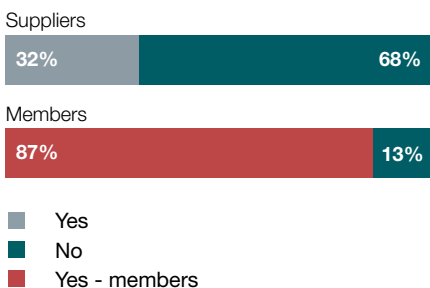
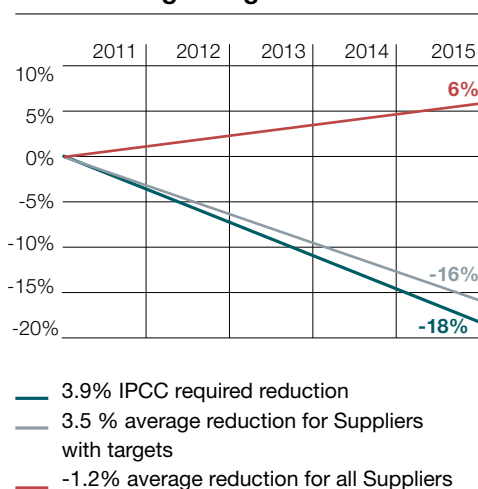


Figure 18- Estimated carbon percentage reduction over time for all suppliers and those having a target



⁵ Statement from the Intergovernmental Panel for Climate Change (IPCC) Quarter Assessment Report, 2007.
⁶ These requirements apply to Annex 1 under the Kyoto Protocol – industrialized countries and countries in transition.

“We strive to empower all employees to contribute to – and be accountable for – the company’s sustainability performance. This responsibility is increasingly anchored in the personal targets and remuneration packages of managers and employees. From 2009, half of the conditional grant of shares for Board Members and all executives is based on AkzoNobel’s performance on the Dow Jones Sustainability Index over a three-year period.”

Akzo Nobel

Targets are broadly similar across regions and industries

A higher percentage of Asian and European suppliers have a target compared to those in North America. Across regions, however, the average annual reduction targets are comparable, with Asian companies acting more conservatively and North American companies showing slightly more ambition (Figure 19).

Almost half of the companies in the Financial sector are committed to targets. On the other hand, only a quarter of suppliers in Consumer Staples and Health Care commit to a target. Carbon-intensive industries such as Energy and Utilities are in the middle, with 35% and 39% having a target respectively.

Suppliers in Energy, although not well represented (only seven companies with targets), are most ambitious in their reduction targets, with an average of 7.7% per annum (Figure 20).

Figure 19 - Suppliers having GHG emission reduction targets and average annual reduction target by region

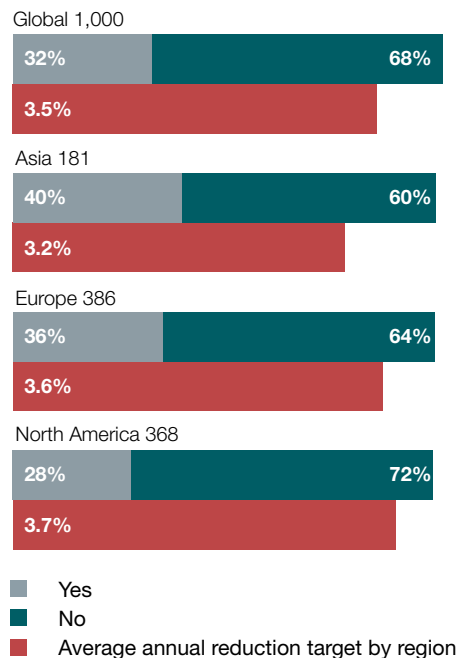
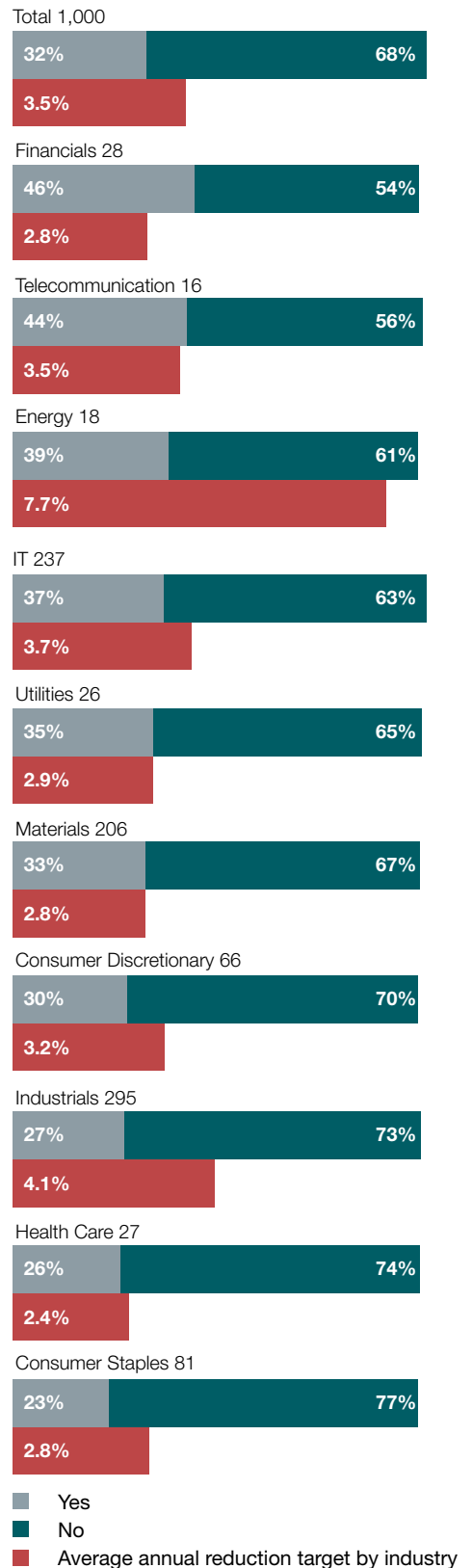


Figure 20 - Suppliers having GHG emission reduction targets and average annual reduction target by industry



Reporting capabilities

Significant improvement on scope 1 and 2 reporting

Reporting on scope 1 and 2 emissions has significantly increased by about one third, and approximately 80% of suppliers now report at least some emissions data (Figure 21). The reporting of scope 3 emissions is still a challenge due to the lack of a reporting standard, the resource intensiveness of the process (it often has to be extracted from other parties), and suppliers' low interest as it is optional in most protocols. The second draft of the WRI/WBCSD Scope 3 Reporting Standard was published in December of 2010 and should lead to improvements in the coming years.

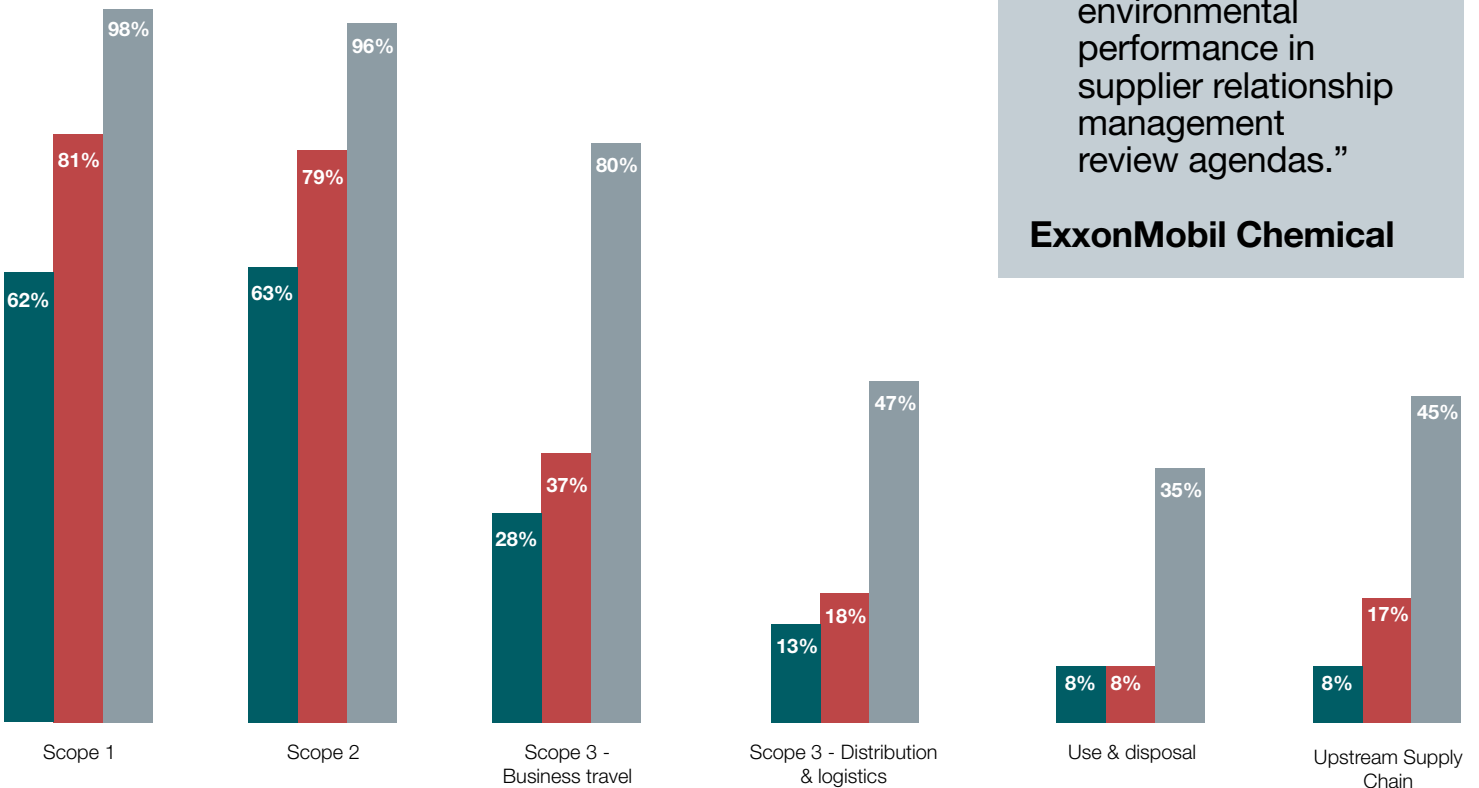
Suppliers indicate uncertainty about their data

The reliability and accuracy of reported data is still an area of improvement opportunity for suppliers, and 86% of suppliers state a range of uncertainty within their reported emissions. The sources of this uncertainty include data gaps, assumptions, extrapolation and measurement constraints. Three quarters of the estimates of the uncertainty range are equal to or smaller than 10%, so overall the level of uncertainty is constrained.

Compared to members, a relatively small number of suppliers have their data verified externally, mostly because of the high costs involved. Suppliers are working on more standardized reporting systems to assure data accuracy, and historic records of Investor CDP questionnaire responses indicate that companies who respond to the request improve their data each year.

Figure 21 –Scope 1, Scope 2 and Scope 3 emissions reporting

■ Suppliers 2009
■ Suppliers 2010
■ Members 2010



“Our third party engagement includes:

- Linking procurement resources into the development of environmental business plans developed by the specific lines of business.
- Enhancing supplier qualification and selection criteria processes to include consideration of environmental factors based on business line input (e.g. packaging, recycled materials usage, supplier environmental management systems, etc.).
- Including environmental performance in supplier relationship management review agendas.”

ExxonMobil Chemical

“The 3M Energy Excellence Award recognizes individuals and project teams for superior work that demonstrates significant energy reduction and continuous improvement... A project was nominated that resulted in the reduction of energy costs by more than \$600,000. This also improved the work environment for plant employees by eliminating over-conditioning of the air, reducing air flow and improving overall industrial hygiene.”

3M

“We had the ambition to improve our energy efficiency and carbon footprint by 25% in 2012. We will already reach that this year, that is why we set ourselves an even more ambitious target of 50% for 2015.”

Philips

New GHG Protocol Standard for the Supply Chain

As GHG accounting expertise has grown, so has the realization that significant emission sources linked to business activities are often outside scope 1 and scope 2. While a company's scope 1 and scope 2 inventory represents emissions related to the company's operations, a company's scope 3 inventory represents all other indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 includes emissions from upstream activities such as the production of goods and services purchased by the company, as well as downstream activities such as consumer use and disposal of products sold by the company.

Scope 3 emissions are often the largest source of emissions for companies and therefore often represent the largest opportunity for greenhouse gas reductions. A comprehensive approach to corporate GHG emissions measurement, management and reporting – incorporating scope 1, scope 2, and scope 3 emissions – enables companies to focus on the greatest opportunities to reduce emissions and manage associated risks within the full value chain, leading to more strategic decisions about the products companies produce, buy, and sell.

As this awareness has grown, so has the need from businesses and other stakeholders for a common approach to measuring and reporting scope 3 emissions.

WRI and WBCSD are in the final stages of a three year process to develop the Scope 3 Accounting and Reporting Standard which provides a step-by-step approach for companies to quantify and report their scope 3 GHG emissions. This standard is intended as a tool and framework to help businesses develop effective strategies to reduce their scope 3 emissions by making informed choices about their value chain activities, and support consistent public reporting of corporate value chain emissions according to a set of consistent reporting requirements.

The new Scope 3 standard will enable companies to develop an organized understanding of the impacts, risks, opportunities, and considerations from energy and other sources of GHG emissions throughout business networks and relationships. As a comprehensive accounting and reporting framework, it will facilitate identifying GHG reduction opportunities, setting reduction targets, and tracking performance in value chains. In turn, it will provide a sophisticated framework for reporting value chain performance to the Carbon Disclosure Project, U.S. Securities and Exchange Commission, annual CSR reports, and other GHG transparency programs and B2B initiatives. It also may lead companies to develop stronger relationships with suppliers by reducing waste and improving efficiency through GHG management in their supply chains.

Our vision is that in the next decade performing scope 3 inventories and integrating them as a key component of a climate change management strategy, will become a standard business practice world-wide including major economies such as China, India, and Brazil. We also expect that the Scope 3 standard, along with the new GHG Protocol Product Accounting and Reporting Standard, will create a common language for the practice of value chain GHG management. As this practice evolves, data quality will improve, the availability of supplier data will increase, and value chains will become more transparent. Ultimately, scope 3 and product inventories will achieve sufficient quality to support decision making by businesses, governments, and consumers that will transform the marketplace through creating demand for low carbon goods and services world-wide.

Pankaj Bhatia, Director, GHG Protocol Initiative.

Figure 22 - External verification of emissions data

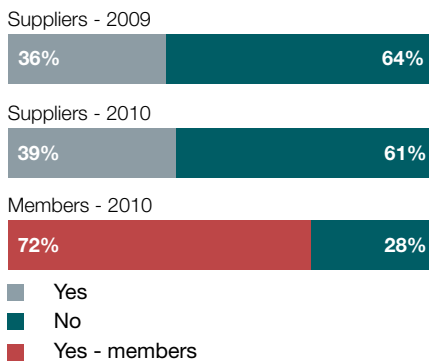
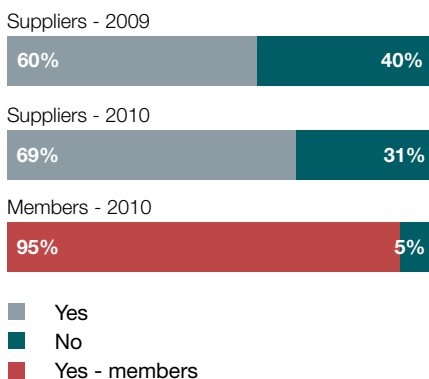


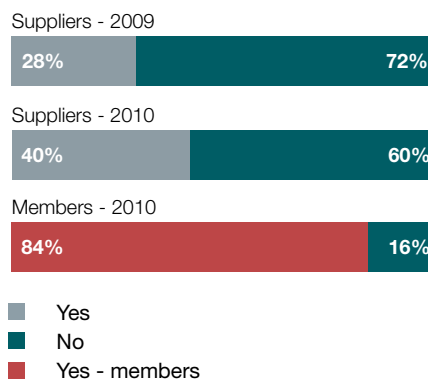
Figure 23 - Companies with a board committee/executive with overall responsibility for climate change



Implementation practices

Supplier commitment at the board level has increased
 Supplier commitment at the board level increased this year to 69% (Figure 23). Member experience shows us that commitment at the highest level of the organization sets the stage for implementing changes. This type of top level commitment drives initiatives to motivate employees and set actual targets at an employee level (Figure 24). When commitment to targets is shared among the entire company, real implementation changes can happen.

Figure 24 - Suppliers providing incentives for attainment of climate change targets



“We use a ‘Carbon Calculator’ internally which allows us to identify hotspots of carbon emissions along the product lifecycle during the product development process, in this way we can assess and seek to reduce our products’ lifecycle carbon footprint as part of that product development process.”

Reckitt Benckiser

“We have recently launched our “Supplier Group Projects” activities... As part of these activities we are providing project management support as well as diagnostic and analytical tools. Savings in energy consumption, fuel usage, raw materials and consumables will occur from improvements in yield and machine utilization, and from reductions in scrap, re-work, operating hours and transportation requirements.”

Rolls-Royce

“KLM has included sustainable development objectives in the action plans of all its business lines and operations. All senior management levels have specific and individual CSR targets included in their annual target setting. Building this priority into all corporate projects has an extremely shaping effect, since it forces each department and entity to align its action plans on the project priorities. Each department is responsible for implementing the plans and achieving the targets set.”

Air France - KLM

Some suppliers do have best practices for reducing emissions
 While almost all members have detailed actions to implement practices to reduce emissions, only 63% of suppliers describe these types of actions in their CDP response. One quarter of suppliers and half of the members report cost savings related to reduction activities (Figure 25). Best practices for implementing activities include implementing a corporate-wide energy management program, coordinating activities, using industry benchmarking and engaging employees to identify opportunities for energy efficiency and reduction. Prioritizing energy savings and opportunities according to their cost/ease of implementation is also used, as well as guaranteeing quick-wins by sharing best practices between sites.

Members are encouraging suppliers to engage their own suppliers
 One third of suppliers now engage with their own suppliers (Figure 26). Members are starting to support suppliers in this area by developing programs and enforcing reduction targets. One fifth of suppliers are considering engaging with their own suppliers in the next couple of years, so we can expect this number to rise in the near future to approximately 50%.

Figure 25 - Companies reporting emission reduction activities and related cost savings

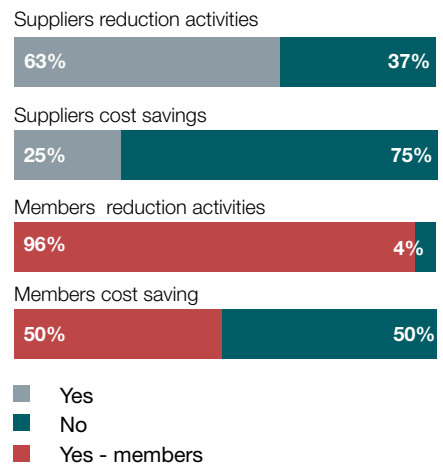
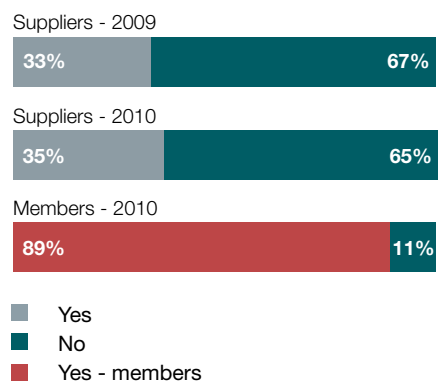


Figure 26 - Strategy for engaging with own suppliers on their GHG emissions



“It is encouraging to see the big increase in the number of suppliers disclosing scope 1 and scope 2 emissions data. In the early days of the Carbon Disclosure Project we saw very few of the Global 500 companies reporting emissions data: In 2003 only 19% of the Global 500 companies were reporting any scope of emissions data, and only 12.4% of companies disclosed reduction targets. In seven years over 73% of the Global 500 had reported emissions data to CDP and over 50% had disclosed reduction targets. These are the very companies that now constitute the membership of CDP Supply Chain. These leading companies are now encouraging their own suppliers to follow in their footsteps. It would seem from the considerable increase in the number of suppliers reporting scope 1 and 2 emissions data in 2010 that there is an increasing sense of urgency for companies to get a handle on emissions management. In line with the evolution of the Global 500 companies responding to our Investor request, I would expect to see more suppliers reporting emissions data next year. I would also expect to see more suppliers using this baseline data to set reduction targets. It seems that if member companies can deploy the right levers, CDP Supply Chain could be a catalyst for massive emissions reductions in the supply chain, greater efficiency and a brighter future for all.”

Paul Dickinson – Executive Chairman, Carbon Disclosure Project

“Through our training program our operations staff has become much more aware of the importance of sustainability. Putting supplier commitment to CDP as a target for account managers has led to active input from their side, as asking for contractual restrictions and operations came up with the suggestion of KPIs in the supplier scorecard”

Juniper Networks

“We have integrated sustainability criteria into our supplier scorecards, but these are not in the contracts. We are a big player and we make it clear we think this is really important, but it is too early to use it as a de-selection criteria. We need to be sure we are measuring them against the right criteria.”

Bank of America

Guest Commentary

The 2011 CDP Supply Chain report may be likened to the proverbial glass containing water – depending on the reader’s sense of optimism, it may be considered half-full or half-empty.

First, optimists who see the glass as half-full have something to cheer about. When compared to the year before, the number of companies with a formal and documented climate change strategy has increased by 25%. Emissions reduction targets have also become 50% more aggressive, rising to 3.4% per year on average. The percentage of companies tracking supply chain carbon emissions has more than doubled to 45%, while those who have initiated a collaborative process with their suppliers has almost doubled to 86%. Many companies are moving from qualitative scorecards to quantitative measurements using targets and performance measurements.

Yet, proponents of the half-empty perspective may also be justified in their skepticism. For example, not more than a third of suppliers have emissions reductions targets. Since only a third of suppliers are engaging with their own suppliers regarding emissions reductions, the number of Tier-2 suppliers with emissions reductions targets is significantly less than a third. The product of these two numbers – currently much less than 10% – provides us with a sense of supply chain coverage across the Tier-1/Tier-2 supply chain universe. The consequences of this low coverage are clearly pointed out by the report. By 2015, instead of an 18% reduction in emissions as required by the IPCC target, we may expect a 1.2% increase, if present trends continue.

We need a framework to measure where we are currently – and where we need to be headed – that can be used as a starting point for both optimists and pessimists. As an initial attempt, we can map Supply Chain Coverage (SCC) against average annual Targeted Emissions Reductions (TER) (Figure 27). As the data suggests, we are currently in the incremental zone where SCC is much less than 10% and average annual TER is around 3.5%. Through greater adoption of measurement protocols (such as the new GHG Scope 3 protocols) and industry-specific standards, supplier education, incentives and regulation, we can pursue a SCC broadening strategy that emphasizes greater coverage across the supply chain universe. Through better emissions reduction technologies and solutions, greater managerial attention to emissions reductions, and better methods at justifying these investments, we can pursue a deepening strategy of more aggressive average annual TER in a company.

However, what we need are “next practice” transformational solutions that combine broadening and deepening strategies in innovative

ways that multiply their effects. What would it take to target SCC levels in excess of 50% and average annual TER of at least 10%? The practices of CDP members who have achieved these 10% TER in the last year need to be disseminated to others. The clues for such transformative seeds are scattered throughout this CDP Supply Chain 2011:

1. Currently, 60%-73% of CDP respondents think that sustainability is an opportunity for improving their brand and differentiating their products, and almost half think it is an opportunity for motivating employees. Moreover, 60-70% of carbon emissions in the value chain are recognized to be in the usage/disposal phase, which emphasizes an end-to-end life cycle approach. How can this view be extended so that supply chain emissions reduction is considered integral to the channel leader’s overall brand and competitive differentiation?
2. How can transformative solutions take advantage of regional/national regulations? For example, the tax cut deal that was approved in the waning days by the US Congress

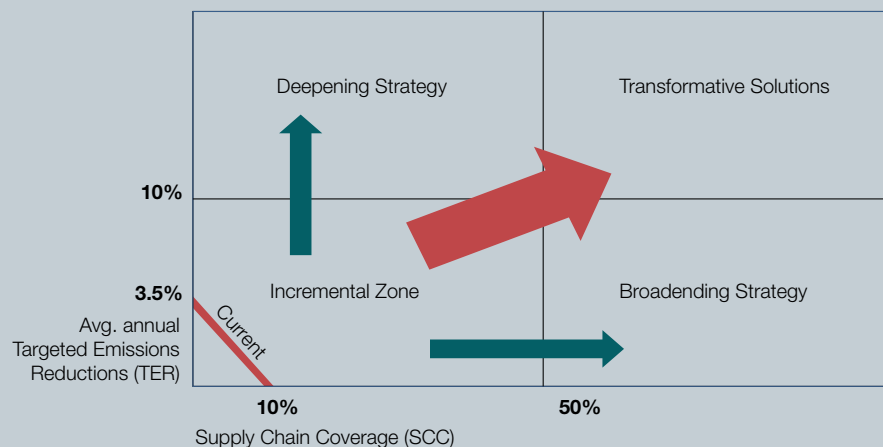
extended clean energy tax grants and provided 100% bonus depreciation on investments for 2011. How can this be leveraged by US firms and investors to accelerate SCC and TER goals?

3. Our research has shown that new business models and “next practices” platforms are the most advanced class of innovations that lead to transformative solutions (“Why Sustainability is Now the Key Driver of Innovation”, Harvard Business Review, Sept 2009). What are the industry-specific opportunities for such innovations that combine revenue models, supplier partnerships, delivery logistics, material sourcing, and industry collaboration in scalable new ways?

Of course, it is easier to raise these questions currently than to answer them. But by including them in the discussion, we will be able to identify a surer path to meeting the IPCC goals identified in the report. From this perspective, the question is not whether the glass is half-full or half-empty, but whether we are using the right container at all to hold the water.

Ram Nidumolu, PhD.
Founder and CEO
InnovaStrat, Inc

Figure 27 - Framework for Supply Chain Emissions Reductions



6

The Way Forward

The CDP Supply Chain 2010 report led to the following overall conclusions:

- There was a big gap in performance between members and suppliers
- Members were facing significant challenges when putting their good intentions into practice
- The overall reduction ambition was not enough to meet global requirements for carbon reduction

The overall reduction ambition is still not enough, but there is hope

Although the overall reduction ambition is still not enough to meet requirements and there is still a gap between members and suppliers, good overall improvement has been made in setting up the building blocks for carbon management. Members have also overcome some of their challenges. They are better able to report and track supplier emissions and their ability to assess suppliers has significantly improved. Even better, a chain reaction has been started by members because of these improved capabilities. The scorecards they are using to assess their supply base and the different engagement strategies they are deploying is encouraging suppliers to engage with their suppliers to reduce emissions.

Members are focusing on three main areas to move forward

All this is promising. However, there has been no increase in the ambition level of suppliers this year. They still are not meeting the necessary reduction levels. Despite the increased level of carbon management capabilities, suppliers need to change their target setting and ambition dramatically in the coming years. Increased pressure from members on their supply chain is a key driver for this – and consumer demand for action in isolation will not be enough. Insights into current developments show that real changes require a sophisticated approach to create real change.

Members are focusing on:

- Deploying differentiated levers for managing carbon
- Improving baseline data accuracy to enable target setting
- Setting challenging targets across the external supply chain

Deploying differentiated levers

Today, members face challenges to set priorities and defining the right approach. They aim to find a balance between setting minimum sustainability criteria and placing real pressure on suppliers, even to the point of deselecting them. Members need to define their supplier engagement strategy in terms of the demand and supply power playing field, deploying different levers and approaches to drive changes (Figure 12).

Where members have low demand power and supply power is also low.

, they can use reduction targets as a minimum requirement for selecting new suppliers. They can even invest in more low-carbon products and switch suppliers and reduce their demand.

Where members have high demand power, they can actually require suppliers to set a specific target, and can deselect suppliers that don't meet the commitment criteria.

Where members have high demand power and supply power is also high.

they can use best practices from the leading company to track and report emissions, sharing the benefits and commitment from both parties.

If supplier power is high, a more long term vision on changing specification is required. Here, product redesign will enforce a more sustainable product from an end-to-end perspective. This means lower emissions for suppliers, members and end-users.

Improving baseline data accuracy

Improved baseline data accuracy will enable suppliers in setting targets, and commit to them. This increased accuracy can be achieved in part if companies integrate carbon emission reporting into their standard reporting systems. The good news is that participating in the CDP is making companies more aware of their data gaps and the need to improve so that they can define their current level of emissions. For 2011, CDP has focused on reducing the reporting burden on responding companies, and worked to ensure that the questions asked in 2011 will be more specific than they have been in the past. CDP expects that the shorter and more specific questionnaire will improve the quality of reported data.

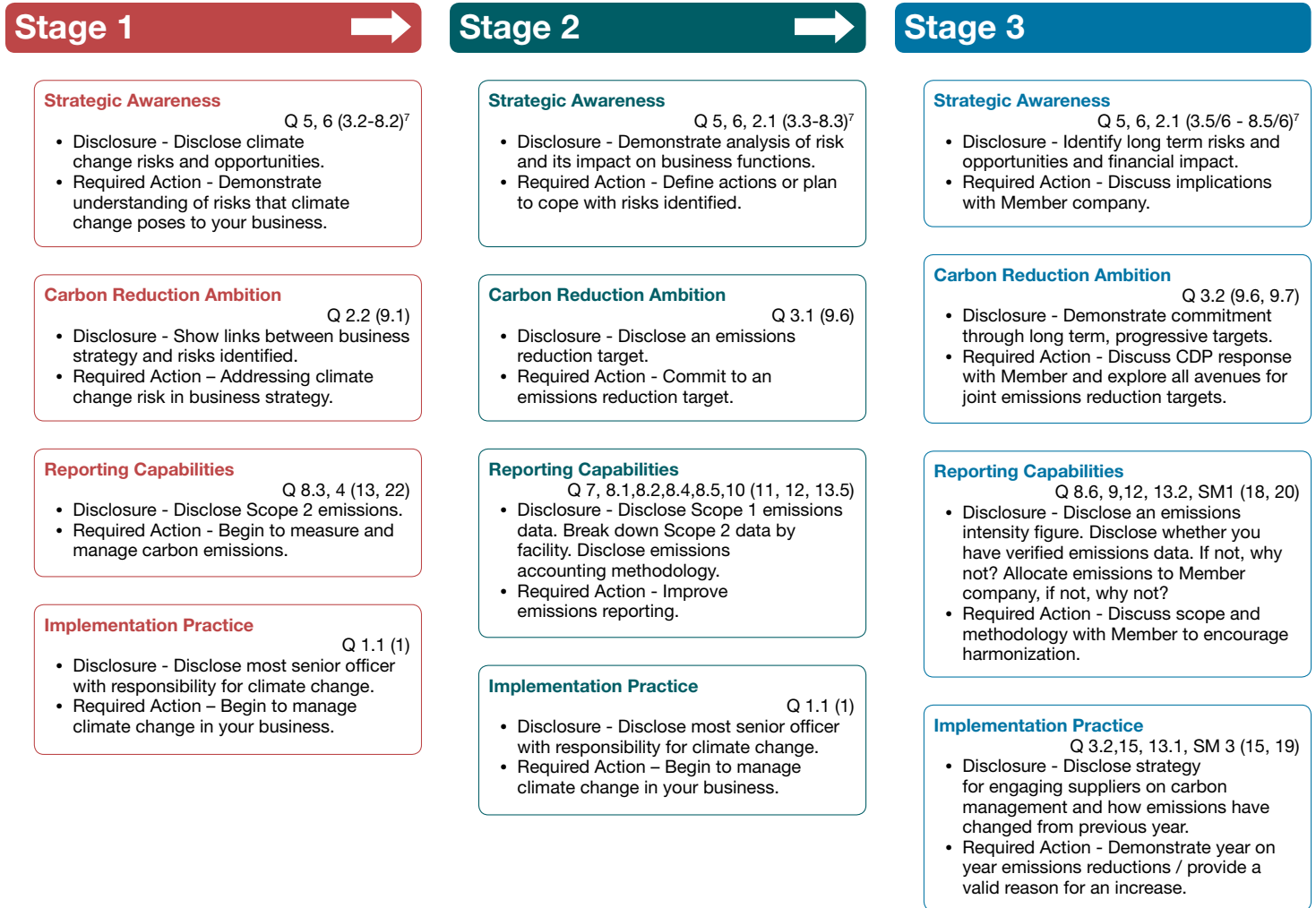
Setting challenging targets

Companies are currently facing difficulties in setting the right quantitative reduction targets for suppliers, and they are benchmarking and aligning suppliers' targets with their own. This is a good development, because members must challenge suppliers on the targets they set – it is the only way to push reduction ambitions and align reduction targets with global requirements.

In 2011, member companies will have a greater ability to evaluate the quality of targets by asking companies to specify the percentage of total emissions to which the target applies. CDP has also enhanced comparability across companies' responses by asking responding companies to provide the target as a percentage reduction from a base year. Companies will also be asked to provide details on their progress against their targets. As members become increasingly empowered to compare an individual supplier's performance against peers or against sector averages, based on increasingly reliable data, we can expect to see more members talking to their suppliers about

their carbon management and insisting on more ambitious targets. Driven by the Lead Members of CDP 2010 Supply Chain (Dell, EADS, Eni, Fibria, PepsiCo) and in conjunction with all members, CDP Supply Chain has developed a roadmap for supplier assessment. Members from across industry sectors have agreed on a common sub-set of questions that will be used to assess a supplier's performance in carbon and climate change management against three stages. This Supplier Roadmap (Figure 28) communicates a clear vision for how a supplier can progress from stage 1 to stage 3. It is important that CDP does not just ask for increased disclosure, but also works to drive emissions reductions. CDP analytics (via SAP) provides a dynamic reporting environment to evaluate supplier performance, providing members with a way to baseline and conduct target benchmarking for suppliers. This tool will continue to be enhanced to support them in developing appropriate measures for their sustainability criteria.

Figure 28 - Supplier Roadmap



⁷ Required question number(s) for 2011 (2010) in top right hand corner. All aspects of Stage 1 must be completed before progressing to Stage 2 and 2 for 3.

7

Glossary of Key Terms

Absolute emissions reduction

targets: Absolute targets are targets that are not linked to any other measure such as revenue or sales. They are most frequently expressed in percentages or in tons of CO₂-e. For example:

Reduce CO₂-e emissions by 50% by 2020 based on 1990 levels;
Reduce CO₂-e emissions by 120 million tons by 2012 based on 2004 levels.

CO₂, Metric Ton of: A metric ton (metric tonne in British English) of carbon dioxide. Please note that a metric ton is equivalent to 2,204.6 lbs (1,000 kg).

CO₂-e (CO₂ equivalent), Metric Ton of: Emissions under the “Scopes” must be reported in metric tons of CO₂-e. CO₂-e stands for carbon dioxide equivalent. This is the universal unit of measurement used to indicate the global warming potential (GWP) of a greenhouse gas (GHG), expressed in terms of the GWP of one unit of carbon dioxide. A metric ton of CO₂-e means one metric ton of carbon dioxide or an amount of any of the other GHGs with an equivalent GWP.

GWP or Global Warming Potential:

The GHG Protocol defines a global warming potential (GWP) as “...a factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂.” By using GWPs, GHG emissions can be standardized to a carbon dioxide equivalent (CO₂-e). GWPs allow the effect of different GHGs to be expressed using carbon dioxide as a reference. For example, the impact on the atmosphere of one unit of methane over a 100-year time span is 21 times greater than one unit of CO₂. Hence, methane’s global warming potential (GWP) over a 100-year period is 21.

Intensity emissions reduction

targets: Intensity-based targets are targets that are relative to a financial measure such as revenue or sales, or to a measure of activity such as unit of output. They are usually expressed per unit of physical, financial or economic output. For example:

Reduce CO₂-e emissions by 0.1 tons per ton of crude steel produced;
Reduce CO₂-e emissions by 5% per employee by 2015.

IPCC: Intergovernmental Panel on Climate Change. The IPCC is the leading body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences. The IPCC is a scientific body. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change.

Scope 1 emissions: Direct emissions from GHG sources owned or controlled by the reporting organization.

Scope 2 emissions: Emissions that do not physically occur from within the organization’s reporting boundary and are therefore ‘indirect’ emissions. Scope 2 emissions are caused by the organization’s consumption of electricity, heat, cooling or steam brought into its reporting boundary. This category is often called ‘purchased electricity’ because it represents the most common source of Scope 2 emissions.

Scope 3 emissions: An organization’s indirect emissions other than those covered in Scope 2. They are from sources that are not owned or controlled by an organization, but which occur as a result of its activities. A company’s scope 3 inventory represents all other indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 includes emissions from upstream activities such as the production of goods and services purchased by the company, as well as downstream activities such as consumer use and disposal of products sold by the company.

SMEs: Small to Medium Enterprises. Companies are considered SMEs (European Union definition) when the following four conditions are met: (1) the organization is engaged in economic activity, (2) the organization has fewer than 250 employees, (3) the annual turnover does not exceed €50 million or the balance sheet total does not exceed €43 million, (4) the organization is autonomous. SME companies received a shorter version of the 2010 CDP Supply Chain Information Request, and are therefore excluded from some statistical calculations.

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