A Case for Supply Chain Carbon Management in the Consumer Packaged Goods Industry

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Summary

In the face of global climate change altering the physical and business landscapes, the question for the Consumer Packaged Goods (CPG) industry is no longer whether or not to develop a corporate climate change policy, but what that policy should be and how it should be implemented. A comprehensive carbon management strategy requires consideration of a company’s full emissions, including direct emissions from operations (Scope 1), indirect emissions from energy production (Scope 2), and all other indirect emissions from a company’s value chain (Scope 3).

This report outlines ways in which managing Scope 3 emissions can create competitive advantage, in the form of mitigating risks, decreasing costs, differentiation and increasing top line growth. It presents approaches for measuring Scope 3 emissions, including employee travel and upstream and downstream emissions from the value chain. It also presents multiple strategies for managing these emissions, including product design, supplier engagement, best value evaluation, supply chain optimization, employee engagement, consumer engagement, and sales and marketing. Key strategies are illustrated with examples of initiatives from industry leaders and the report culminates with general recommendations for how to approach developing a carbon management strategy.
Scope 3 Emissions Management: Motivation & Practice

INTRODUCTION

The issue of global climate change is positioned to strategically impact companies on two fronts. First, the physical effects of climate change will forever shift the natural environment, affecting the means of production, availability of resources, ability to do business as usual, and the needs of society. Second, there will be a host of secondary effects, from government regulation to changing consumer preferences, which will also dramatically affect the business landscape. With climate change estimated to decrease global economic output by 5-20%, the question is no longer whether or not to develop a corporate climate change policy, but what that policy should be and how it should be implemented.¹

Corporate climate change strategies that focus on managing and reducing carbon are diverse and continually evolving. In the absence of U.S. government mandates for this work, companies in the consumer packaged goods (CPG) industry are free to chart their own paths. The majority have implemented programs to target the direct emissions from their operations, namely Scope 1 emissions, and the indirect emissions from purchased electricity, heat or steam, namely Scope 2 emissions. Measuring and managing these emissions is relatively straightforward as they result from activities within the company’s direct control. Furthermore, the case for reduction can easily be made, as there is a clear return on investment from increasing energy efficiency. As a result, over the last five years, many CPG companies have set carbon reduction targets and implemented programs to achieve and track progress on their Scope 1 and 2 emissions goals.

When measuring and managing Scope 3 emissions, the emissions from a company’s full value chain, is significantly more challenging because of the complexity of modern day value chains and the diminished access and control firms have over activities beyond their own operations, such as the production methods of their suppliers or use habits of their customers. However, as methodologies to measure Scope 3 emissions improve and standards for measuring and reporting are established, more firms are venturing to measure their Scope 3 emissions. Often, the sobering realization is that Scope 3 emissions comprise the majority of companies’ carbon footprint, often up to 80-90% of the total. As a result, target-

Figure 1: Greenhouse Gas Emissions by Scope²
ing Scope 3 emissions is becoming the new frontier of carbon management, with proactive companies emerging as new environmental leaders in addressing climate change.

This report documents the actions of some of these leaders as illustrations of cutting edge practices for addressing Scope 3 emissions. It also presents general approaches to measuring and managing Scope 3 emissions, in service of providing companies with a road map for how to engage with this work, as well as specific recommendations for the CPG industry. This report outlines ways in which managing Scope 3 emissions creates competitive advantage, in the form of mitigating risks, decreasing costs, differentiation and increasing top line growth, strengthening the business rational to Scope 3 management.

Increasingly, stakeholders from investors to customers are demanding transparency about corporate emissions, putting companies at risk of losing brand value or market share if they do not have this data.

THE BUSINESS CASE FOR SCOPE 3 CARBON MANAGEMENT
Carbon management can increase a company’s competitive advantage through four primary methods: risk mitigation, cost reduction, differentiation, and top-line growth.

Risk Mitigation. Early identification and mitigation of risks, including reputational, regulatory, and operational risk, is often the most immediate deliverable from measuring Scope 3 emissions; 73% of companies participating in Carbon Disclosure Project’s (CDP) Supply Chain Program cite this as a primary reason for engagement in 2010.

There is limited but growing reputational risk for companies who are not measuring and managing their Scope 3 emissions. Increasingly, stakeholders from investors to customers are demanding transparency about corporate emissions, putting companies at risk of losing brand value or market share if they do not have this data.

Companies are also at risk of increasing regulatory burden from carbon legislation, such as cap and trade schemes, emissions reporting requirements, or product labeling. While current carbon legislation is piecemeal and often undefined, especially in the United States, companies cannot expect this current situation to remain stagnant. Change will come in the future whether from legislation, supply chain pressure or pressure from the market pricing of carbon sources. By understanding their full carbon footprint, companies gain the opportunity to begin reduction efforts in anticipation of regulations, supply chains or price, giving them a competitive advantage over less forward-thinking competitors.

In a carbon-limited world, the price of high-carbon materials and services throughout the supply chain will increase, introducing instability into cost structures. Price volatility will also increase as the physical effects of climate change affect the means of production, resulting in shortages of key commodities, such
as the 2010 cotton shortage caused by the combination of unusually extreme droughts and flooding in Asia. For all these reasons, in its 2009 Chief Supply Chain Officer Survey, IBM identified supply chain visibility and risk management as the two greatest threats to global supply chains. By gaining transparency into their supply chain emissions, companies are better situated to avoid and adapt to future global supply chain changes.

**Cost Reduction.** When companies reduce the carbon in their supply chains, they decrease both present and future costs. In 2010, 50% of CDP Supply Chain Program members and 25% of their suppliers demonstrated a reduction in supply chain costs due to managing their carbon emissions. Similarly, Walmart’s experience saving $3.5 million in transportation costs due to reduced packaging has been a clear driver of their supply chain engagement program; they hope their suppliers will find similar carbon and cost saving measures and that some of the savings will be passed along to Walmart. Examples of potential cost and carbon saving measures are increasing suppliers’ energy efficiency, decreasing their material usage (such as packaging) or changing material usage to products that are cheaper in cost and carbon. Downstream, companies can design more energy efficient products, reducing emissions while saving their customers money. Carbon reduction activities may entail further benefits if carbon capping and/or pricing schemes are established. Forward-thinking companies can anticipate such regulations and preemptively decrease their carbon exposure through their value chain.

**Differentiation.** Companies are increasingly recognizing carbon reduction as a business opportunity for strengthening brand loyalty and increasing differentiation, objectives which are especially relevant for CPG companies. In 2010, 73% of CDP Supply Chain Member companies identified differentiation as a primary business case for managing Scope 3 emissions, up from 35% in 2009. The business gains of sustainability-based differentiating will only increase as more customers, investors, NGOs and the media take an interest in comprehensive corporate and product carbon footprints.

Companies have the opportunity to differentiate on both a corporate and product level. They can enhance their corporate brands by demonstrating leadership in measuring and reporting emissions, setting targets, and implementing reduction strategies. For business-to-consumer (B2C) companies, these actions are viewed favorably by sustainably-oriented consumers, increasing customer satisfaction and loyalty as well as attracting new customers. Walkers, a PepsiCo subsidiary, found that their carbon labeling scheme created a positive feeling about their products in 63% of “social influencers,” people who discuss brands with others. Similarly, Carbon Trust found that 67% of customers are more likely to buy products with low carbon footprints. For B2B companies, corporate buyers are also increasingly interested in carbon footprints, because it saves these buyers the time and money associated with footprinting each product themselves.

A strong corporate sustainability commitment can also provide a signal to investors of a company’s competitive advantage and stability as an investment. In 2010, global investors with assets totaling over $15 trillion signed a statement calling for companies to build a low-carbon economy. The competitive advantage of these efforts is already being demonstrated, with companies on climate-related indexes consistently outperforming non-rated competitors. In 2010, the top 350 companies on the Climate Innovation Index outperformed the S&P 100 by up to 3.5%.

Companies may also focus on differentiating specific products to capture market-share in the green product market, as customers look for products to meet new needs, such as energy efficiency, and new motivations, such as leading a sustainable lifestyle. This is
especially relevant for products such as personal care, home cleaning, and food products.

However, differentiating on the basis of low-carbon production also has risks. For example, Dell’s 2008 claim to carbon neutrality was unexpectedly met with significant criticism since they were not accounting for any of their Scope 3 emissions, the majority of their footprint. Companies may risk facing criticism if they fail to meet their targets or verify their emissions data, or may simply confuse customers with low-carbon claims. Kraft, which began measuring its Scope 3 emissions in 2008, chooses not to use the results in consumer communications to avoid having the results misinterpreted or confusing its consumers.

**Top-Line Growth.** Differentiation and building green market share both drive top-line growth. Internally, these efforts may inspire employees, who are increasingly shown to be motivated by sustainability in the workplace. The process of measuring and managing Scope 3 emissions is particularly likely to bring employees in contact with corporate sustainability efforts because the process requires the participation of many departments. Engaging employees around sustainability improves productivity as well as corporate recruiting and retention, all contributing to top-line enhancement.

Externally, differentiation drives growth through increasing sales. However, CPG companies must be strategic in their marketing and pricing to take advantage of their low-carbon brands. In a weak global economy, performance and cost are still the primary considerations for consumers and, while they may prefer a low carbon product if all other attributes are equal, they often will not pay a premium. One exception may be when a product is low carbon in its use phase and promises financial savings, such as lowering energy costs through increased efficiency. Thus, CPG companies must drive revenue through increasing sales volume, not price.

**CPG companies who can provide product carbon footprints gain preferential treatment from retailers, enhancing top-line growth.**

Beyond consumers’ preference for low-carbon products, retailers are playing a growing role in increasing the sales of these products. A 2010 study of 220 CPG companies found that of the highest performing group, 89% actively leveraged relationships with large retailers, especially Walmart, compared to only 64% of others. These relationships led to “increased distribution, more promotional support, additional secondary placement in stores, and better shelf placement.” As retailers gain interest in decreasing the carbon footprint of the products they sell, they are increasingly soliciting carbon footprint information from their suppliers. CPG companies who can provide product carbon footprints gain preferential treatment from such retailers, enhancing top-line growth.

**MEASURING SCOPE 3 CARBON EMISSIONS**

**Scope 3 Overview and Standards.** When companies commit to reducing their Scope 3 emissions, the first step is to gain transparency into what those emissions are. However, inventorying Scope 3 emissions is a complicated task, especially for companies with large, complex, international value chains. As a result, companies have historically taken a piecemeal approach to Scope 3 inventories, quantifying emissions only for certain aspects of their value chain, such as employee commuting or business travel. Reporting Scope 3 emissions to registries such as the CDP has been optional and there has been no inventory standard.

In June 2011, WRI and The World Business Council for Sustainable Development (WBCSD) released its Corporate Value Chain (Scope 3) and Product Stan-
standards, which aim to bring guidance and standardization to Scope 3 inventories and reporting. As the standards approach Scope 3 emissions from different viewpoints, companies are urged to use both as compliments in Scope 3 reduction activities. For external stakeholders, the Product Standard is more oriented to buyers and consumers whereas the Scope 3 standard is more oriented to investors interested at the organizational level.

Collecting direct data on supplier emissions is most commonly accomplished through supplier surveys.

The Product Standard focuses on a single product across its entire life cycle. The inventory boundary includes all “attributable processes,” or the processes directly connected to the product and its ability to perform its function, though firms may justify omitting use-phase and disposal related emissions from their report. “Cradle-to-gate” inventories include emissions from material acquisition and processing, production, distribution, and storage while cradle-to-grave inventories extend to the use and end-of-life phase of the product. Emissions from the transportation between activities must be included, but companies have the choice to exclude emissions from capital goods, overhead, corporate activities, employee commute and delivery to the retail location.

The Scope 3 standard applies to enterprise level inventories, which include all activities and products across the full value chain. Companies must first map all upstream and downstream inputs, outputs and activities of their value chains. They then set a boundary for their inventory based on what aspects they decide are the most “material” or what aspects they believe offer the highest potential for reduction. Currently, boundary setting is a company-specific decision, although it may evolve to be standardized by sector. For both standards, companies must specify their methodology, including how much of their calculations relied on primary versus secondary data, and how emissions were allocated.

In 2010, 60 companies tested the standards as part of the development process. Common challenges included collecting the data efficiently while ensuring data quality, measuring uncertainty, and allocating emissions. Companies also raised questions about how to choose their inventory methodologies and emissions factors. In spite of these challenges, the majority concluded that annually updating their Scope 3 inventory would be possible, a conclusion also shared by the members of CDP’s Supply Chain Program.

Quantifying Scope 3 Emissions from the Supply Chain. Quantifying a company’s upstream supply chain emissions or a product’s emissions from material acquisition, processing, transportation and production requires significant data collection and analysis of activities outside a company’s gate. Companies must choose their approach based on the type of data available, the cost and time of data collection, and their business goals.

Direct Reporting from Suppliers
The most direct approach is to require all suppliers to measure and report their emissions. In order to capture full supply chain emissions, suppliers at all tiers of the supply chain must measure their Scope 1 and 2 emissions and report this data forward through the supply chain, a difficult feat to accomplish in complex, multi-tier international supply chains.

Collecting direct data on supplier emissions is most commonly accomplished through supplier surveys. These are created and administered by either individual companies or reporting agencies, such as CDP. These surveys request both quantitative data on Scope 1, 2 and sometimes Scope 3 emissions as well
As qualitative data describing the supplier’s carbon reduction policies and progress. Survey response rates vary widely, with the Electronics Industry Citizenship Coalition (EICC) reporting a 26% response rate to its 2009 supplier survey\textsuperscript{15} compared to IKEA reporting a 70% response rate in 2010.\textsuperscript{16}

For companies with extensive, complex, international supply chains, collecting data by survey is a daunting task. Walmart’s sustainability index initiative has been highly publicized because the company’s size and reach give it sufficient influence over suppliers to encourage wide-scale participation in their Supplier Sustainability Assessment and emissions reporting to the CDP. The hope is that Walmart’s initiative will create a sea change among suppliers, making measuring and managing emissions common practice. For example, Walmart’s 2007 initiative to reduce packaging spurred P&G to reformulate their detergent to achieve carbon and cost savings through decreased transportation costs. Three years later, P&G implemented a scorecard for its suppliers, potentially a ripple effect from Walmart’s actions.\textsuperscript{17}

While supplier response rate can hinder these efforts, in 2008 Dell demonstrated that it is possible to achieve a 100% response rate to a CDP Supplier survey. Their recipe for success included integrating the request into their overall supplier engagement initiative, leveraging contacts from their ISO 14001 program, giving suppliers advance notice, and tracking reporting. Dell also clearly communicated to suppliers how the survey would be used in their procurement decision-making and affirmed the survey’s importance by distributing the survey directly, rather than through CDP.\textsuperscript{18}

The increasing requests for emissions reporting put time and cost pressure on suppliers, who may be responding to 10-20 surveys a year.\textsuperscript{19} Companies can reduce this pressure by using standardized surveys or scorecards. In 2010, 55 major global corporations in CDP’s Supply Chain Program used a single format to gather emissions data from their suppliers. They were met with a 54% response rate, up 30% from 2009.\textsuperscript{20} P&G is also encouraging standardization by releasing its Supplier Environmental Sustainability Scorecard as open source to encourage other manufacturers to use or adapt it. General Mills has since adopted P&G’s scorecard as the basis of their own, both to avoid “reinventing the wheel” and to decrease survey overload so suppliers can focus on their business and reducing its emissions.\textsuperscript{21} SC Johnson is also considering this approach.

While supplier reporting continues to improve, response rates, data quality and completeness remain issues for companies using this method to inventory their supply chain emissions. Some companies are going as far as sponsoring energy audits for their suppliers but, even then, only Scope 1 and 2 data are gathered. Of suppliers reporting in CDP’s Supply Chain program, only 8% reported Scope 3 supply chain emissions compared to 62% who reported Scope 1 emissions and 63% who reported Scope 2 emissions.

It is important to note, however, that only full supply chain reporting truly allows for supplier comparison. Reported Scope 1 and 2 emissions from suppliers is not comparable data, as it does not capture the degree to which a supplier may be outsourcing their activities, and thus their emissions.

Life Cycle Assessments
Conducting a Life Cycle Assessment (LCA) is the
methodological response to limitations of supplier reported data because they can be completed with the company’s own data and outside databases. Bottom-up LCAs take a process-focused approach, relying as much as possible on primary data, the direct measurements of material flows and consumption. These data are ideally collected for all stages of the life-cycle though, in practice, boundaries for analysis must be set based on what data is available or deemed relevant. Emissions are then either directly calculated or pre-calculated emission factors are assigned to materials and processes from software tools and databases such as GaBi, Ecoinvent, and SimaPro. The databases are created with both primary and secondary data, in accordance with ISO 14044.22

An alternative LCA method is to take an approach that combines process LCA with input-output (IO) databases that link economic activity to environmental impacts. There are multiple hybrid LCA approaches; however they can be thought of in simple terms as either bottom-up or top-down hybrid LCAs. The bottom-up approach is similar to a process LCA and utilizes IO databases in addition to process LCA databases. The top-down approach relies primarily on secondary data, such as industry averages, financial data, or other extrapolated data and then hybridizes results with primary data in strategically chosen areas. Called financial hybrid LCAs, they initially assign emissions per dollar sales factors to company financial data. These factors are calculated using economic input-output, IO, tables and industry-level environmental data. Example IO databases are Economic Input-Output LCA (EIOLCA) and CEDA. Results are then analyzed to identify hotspots and for these, primary data is collected, emissions data quantified by process LCA, and results compared to IO calculated data.23

LCA methods must be evaluated based on trade-offs of scope, specificity, time, and cost. Bottom-up LCAs are most appropriate when primary data is accessible at an acceptable time and cost, and specificity is valued over comprehensiveness.24 They are often preferred when reduction targets are being set and are necessary when the goal is to track emissions for specific companies or activities. Top-down LCAs are appropriate when collecting primary data is cost or time prohibitive or when comprehensiveness is highly valued, as they capture minor emissions associated with the interrelations of economic sectors. Hybridizing IO-LCA calculated emissions increases the specificity of the results without sacrificing comprehensiveness. They are particularly useful for efficiently identifying the suppliers, activities or products that have the highest impact. However, pure IO-LCA data cannot be used to compare individual suppliers as it provides only aggregate, industry-level data and is limited by the granularity or the level of detail in its underlying databases. However, a financial hybrid LCA can be used to set and track progress on reduction targets if annual LCAs are conducted with a consistent methodology. Inventories from any LCAs can also be used to set directional strategies.

Quantifying Scope 3 Emissions from Capital Goods. International standards differ as to whether Scope 3 inventories should include emissions from capital goods, such as equipment and facilities. Under WRI’s standards, companies have discretion as to whether to include these emissions for product level inventories but should endeavor to include the upstream Scope 3 emissions when reporting at the enterprise Scope 3 level. In contrast, the UK’s Publicly Available Specifications (PAS) states that capital goods should not be included.25 In all cases, the use phase emissions from capital goods are reported as Scope 1 and 2 emissions.
SC Johnson’s Enterprise Carbon Inventory

PROJECT
SC Johnson’s decision to “road test” the WRI Scope 3 standard in 2010, was a logical extension of its long-term commitment to sustainability and its successful efforts to decrease absolute Scope 1 and 2 emissions by 32% since 2000.

PROCESS
In 2010, SC Johnson partnered with Clear Carbon to complete its Scope 3 inventory, using a combination of supplier-reported data and process LCA techniques. The project took 6 months and enlisted 10-25% time for a total of about 25 employees across the procurement, operations, and logistics departments, who supported Clear Carbon in data collection and analysis. By spreading the carbon inventorying responsibilities out across such a large span of employees, the project work was manageable and numerous employees were engaged and informed as to why the company was interested in Scope 3 inventorying.

The Scope 3 inventory was eye-opening, showing that SC Johnson’s Scope 3 emissions equaled a full 90% of its total. The company estimates that the inventory is 80-90% accurate, with the most uncertainty in measuring emissions coming from logistics, which tend to be the most variable.

RESULTS
By having Scope 3 results to analyze, a cross-functional SC Johnson team was able to meet with the CEO and decide to do the following:

• Add percent reduction targets for upstream and downstream emissions to SC Johnson’s pre-existing operational efficiency targets. The new targets were set using indexed metrics, out of recognition that calculations would change each year as SC Johnson improved its processes.

• Commit to conducting a Scope 3 inventory annually, to improve upon the company’s data and tracking progress, recognizing that it may need to reset the baseline numbers as the business shifts to new supplier and customers, and as products come and go from its offerings.

• Expedite the process of developing a supplier scorecard, with a procurement department focus on improving response rates from suppliers in developing markets, where confidentiality and transparency issues often limited participation.

• Accelerate the development of products that had a significant potential for Scope 3 improvement in use-phase emissions (for instance, the engineering department sped up its analysis on the energy efficiency of air freshener these plug-ins).
Companies have the same methodological options for calculating emissions from the capital goods they purchase in a reporting year as for other purchased goods and services. They may look to suppliers of these goods to provide product-level emissions data, complete their own process LCA for each good, or use IO LCA methodology to assign emissions based on the type of capital good purchased. Standard or hybridized IO LCAs are advantageous in this context. Not only are they more cost and time efficient, allowing hotspots to be identified quickly, but they also ease the challenge of allocating emissions of capital goods used over multiple years. These goods are recorded on financial statements as property, plant and equipment and their depreciation values indicate the allocation of these goods to a year of corporate operations. Thus, because emissions are tied to financial data in IO LCAs, the Scope 3 inventory calculated for these goods reflects the allocation of emissions for the company’s activities of that year. Because IO databases capture capital goods emissions throughout the supply chain, researchers have developed versions that either include or preclude these data, to allow companies to select where they want to draw the boundary of their inventory.

Quantifying Scope 3 Emissions from Employee Business Travel and Commute. For some sectors, such as financial, IT and public services, employee business travel and commute emissions constitute a large share of Scope 3 emissions. Public agencies are at the forefront of quantifying emissions from employee-related transit, following President Obama’s Executive order 13514 that requires federal agencies to report Scope 3 emissions from commute and business travel, as an initial step to develop reduction strategies. Web-based surveying tools are widely available, asking employees to detail their commute habits, such as transport mode, distances travelled and number of weekly trips. After data are collected from employees, carbon factors are assigned based on mode of transportation and emissions are calculated based on distance traveled. Such surveys are commonly used by sustainability and footprint consultants and can be used internally by companies who choose to directly measure the emissions associated with employee commute.

Business travel, namely business air travel and car rentals, can be easily tracked by analyzing company’s financial records. The direct cost-saving component in reducing travel emissions, as well as the availability of technological solutions that substitute travel, make it an area of action for many companies. While relatively simple to quantify and affect, travel emissions in the CPG industry are likely to be secondary to other sources of Scope 3 emissions. As such, CPG firms may choose to engage with employees in raising awareness and providing transport and work-space alternatives, but focus reduction efforts in areas of greater impact.

Quantifying Scope 3 Emissions from Product Delivery. Shipping of raw materials to point of production and shipping finished goods from Asia and Eastern Europe to consumers in North America and Western Europe can be a notable source of Scope 3 emissions for the CPG industry, which relies heavily on global production. Cutting emissions associated with product delivery is therefore an essential component of greening the supply chain for the CPG industry.

Measurement of third-party transport emissions can be a challenging task and requires a high degree of collaboration with shipping and distribution compa-
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Optimizing Unilever’s Laundry Detergent Products for Emissions Reductions

PROJECT
Unilever has a well-known track record in developing strong-selling detergent products. On a journey towards sustainability for the past several decades, the company has been striving to reduce the environmental impact of its products. For instance, Unilever invested in a new ingredient to deliver comparable performance at lower temperatures in 1975, concentrated its powders to reduce material use, waste and transportation in 1990, increased marketing efforts of its refill packs in 1992, introduced detergent tablets in 1998 and introduced concentrated liquid detergent in 2006.

RESULTS
According to Unilever, sales of its concentrated liquid detergent Persil Small&Mighty saved 33 million liters of water and plastic equivalent to 262 million shopping bags and 665 tons of CO2 in 2007\(^2\). In order to track and report such results, Unilever has used regular surveying methods as well as “loggers” or washing machine monitors that allow the company to evaluate user habits and ultimately impact consumers’ washing habits. Another finding, according to Unilever, was that the use of tablets, which control the dose and the consumer tendency to overdose, reduced nearly 53,000 tons of extra chemicals in detergents from reaching the environment in 1999 alone. As the use of tablets grows, this reduction in environmental burden will also grow.

PROCESS & NEXT STEPS
By systematically evaluating its products, their use, the supply chain and how products are delivered to the consumer, Unilever is making significant progress in reducing the environmental footprint and improving the sustainability profile of their products. Unilever aims to reformulate its detergent products to reduce GHG emissions by 15% by 2012, releasing an even smaller Persil product, which contains three times more concentrated detergent than before.
plex and trying to quantify direct emissions associated with each delivery may be inefficient and time consuming. Relying on aggregate data is likely to be more cost-effective. For instance, using shipping companies’ aggregate fuel use or Scope 1 & 2 emissions, when available, CPG companies can calculate their share of transport emissions, based on net spending or distances travelled.

**Quantifying Scope 3 Emissions from Product Use Phase.** The next step for companies that are extending their Scope 3 analysis past cradle-to-gate is assessing the emissions released from the actual use of their product. In fact, many companies in the CPG sector have found that a large portion of their Scope 3 emissions can be attributed to product use. Unilever has determined that 35% to 68% of the greenhouse gas footprint for all their products (not to mention 95% of their water footprint) is emitted during consumer use phase.²⁷

Companies have been employing two main methods to estimate the Greenhouse Gas (GHG) associated with product use. The first method, often used during the product design phase, is laboratory testing. Laboratory testing can provide estimates on energy and water usage, but these estimates can vary significantly from a real-world setting, where consumers’ habits have a significant effect on the actual performance and resource consumption associated with a specific good. The other method, user surveys, gathers information on consumer’s habits and general use. User surveys can raise awareness to actual practices of consumers but often suffer from selection biases and non-response issues. Using either method or both, companies have to establish their own guidelines as to how they will use the results. The leading trend among CPG companies is to perform a product use analysis as part of a single-product LCA. For such analysis, the amount of emissions associated with product use relative to other stages in the life-cycle may be a more significant finding than the accuracy of the results.

One useful approach is to estimate an associated CO₂ release per usage of product. For example, when looking at laundry detergents, a company can determine the amount of effective loads per one bottle of detergent and then estimate the amount of CO₂ emitted per load, including additional determinants such as water temperature, electricity consumption of a laundry machine, and so forth. By using this method one quickly realizes that washing in cold water is the most effec-

![Figure 3: Carbon Management Opportunities, Cradle to Grave](image-url)
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Quantifying Scope 3 Emissions from Product End-of-Life Phase. At the end of a product’s useful life, if it’s not recycled or reused it can be either composted, combusted, or landfilled. Quantifying the amount of GhG emissions at this step is difficult for an individual company. A rough estimate can be calculated by quantifying the total tonnage of disposable materials remaining after the use phase, factoring in recycle rates, and then determining total emissions using aggregate data from local compost, combustion, and/or landfill sites. However, given that customers’ recycling rates are ambiguous, CPG companies must derive recycling rates from national or state averages. Additional factors to take into account are the GhG emissions associated with the transportation of wasted products and the energy used during the actual disposal process; both of these also involve using data averages.

Take-back programs, still relatively rare in the U.S.-based CPG industry, are another way for firms to estimate their landfill impacts. Take-back programs such as Preserve’s toothbrush recycling initiative offer companies the ability to facilitate better product stewardship and assess consumer interest and engagement levels by measuring the quantity of goods recycled.

Given the challenges associated with managing end-of-life emissions, most companies to-date have chosen to focus on managing that which is under their control in the product design phases only, such as selecting recyclable or compostable materials, reducing packaging amounts, and eliminating hazardous materials from packaging. Quantifying a company’s impact in this area is usually an ex-post accounting of the positive impact(s) of increased carbon emissions efficiencies or raw material saved, rather than an exact quantification of end-of-life impacts.

MANAGING SCOPE 3 EMISSIONS

CPG firms can have a tremendous impact on the reduction of Scope 3 emissions at all the stages of production through product design, supplier choice and the promotion of efficiency and sustainability throughout their supply chain. As the Walmart experience shows, just prompting suppliers to report the sustainability policies they employ can have a far-reaching effect.

The challenge with Scope 3 management is to set priorities and attainable targets. Firms may choose to act in different areas of the supply chain, based on what constitutes the majority of their Scope 3 emissions as well as where they have the most influence. A common approach among CPG companies is to identify product-specific carbon emissions through LCA. By narrowing down the scope of analysis, CPG companies are able to craft emission-reduction targets and strategies that are visible, feasible and efficient.

Target Setting and Metrics. The initial Scope 3 inventory establishes a company’s baseline, from which targets can be set and progress tracked. Companies must then identify the metrics they will use to track progress, and there is a relatively even split between those who look at absolute versus indexed metrics for tracking and reporting. Absolute metrics reflect the company’s full carbon exposure, while indexed metrics, such as carbon by dollar sales, unit sales, use, or calories, are useful for setting internal targets or benchmarking alongside the emissions of other companies.

While many companies have Scope 1 and 2 reduction targets, only a few industry leaders have Scope 3 targets. These targets are usually stated generally as a percentage of emissions reductions in a critical area of a product life-cycle, allowing companies some flexibility around the strategies used to reach these goals. Unilever, for example, publicly set the goal of a 50% reduction in product footprints and launched projects to reduce use-phase, transport, manufac-
A Case for Supply Chain Carbon Management in the Consumer Packaged Goods Industry

**Approaches to Carbon Management**. The approaches to carbon management differ greatly according to corporate structure, the degree of decision-making concentration, as well as the degree of flexibility and overall attitude toward design and production changes.

For example, one of IKEA’s core values is design innovation. As such, the company’s attitude towards incorporating product design changes is likely to be different than a company that promotes consistency of its products. IKEA’s approach to carbon management can be characterized as a bottom-up approach, where targets and tasks are determined by each company’s specific goals and strategies.

**CASE STUDY #3**

Which is the Greenest Bottle of Them All? 

**PROJECT**

In response to environmental concerns and the growing market demand for greener products and brand differentiation, Coca-Cola introduced its new “PlantBottle”™ at the Climate Change Summit in Copenhagen in 2010. Contrary to what the name might imply, the bottle itself is made entirely out of PET plastic, although 30% of the ingredients to make the PET comes from sugar-cane-based materials. This announcement came after PepsiCo’s introduction of its plant-based compostable bag made from for SunChips snacks.

**RESULTS**

Research sponsored by Coca-Cola suggested that the new “PlantBottle”™ has the potential for much smaller carbon footprint than their previous bottles (12-19% smaller carbon footprint, according to an Imperial College London LCA). While some CPG companies have cast doubts on whether or not the PlantBottle™ is actually better than the current 100% hydrocarbon derived bottles, it is interesting to note that PepsiCo quickly announced its own plans to introduce a 100% biobased PET bottle in the near future.

**PROCESS & NEXT STEPS**

Coca-Cola knows that it needs to listen to its customers around the global and they are beginning to understand that alternatives to traditional hydrocarbon (oil & natural gas) based products need to be developed. Given the scale of Coca-Cola’s global use of PET, it quickly realized that it need to start its journey now and that it couldn’t wait for the market to develop these products. Instead it chose to work with its supply chain partners to drive the development to learn how to improve the economics and minimize the carbon footprint of this new PET product. Nestle has continued to pursue packaging reductions while PepsiCo is pursuing a catch-up strategy.

30% of Coca-Cola’s PlantBottle™ is bio-based, representing the potential for large footprint reductions.
IKEA's sustainability team, driven by the principle that IKEA can manage and therefore affect any type of its Scope 3 emissions, sets goals to increase department and employee commitment to IKEA's long-term sustainability vision. The sustainability group serves as a mediator between the executive level, which has strong commitment to sustainability, and the different departments, which are driven by profitability and efficiency considerations. The Sustainability group offers each department tools and strategies to reduce emissions, including Scope 3 emissions. It is then the responsibility of each department to develop reduction projects and set its own targets. Only then the projects are brought back to the executive branch for approval.

To contrast with IKEA's approach, SC Johnson's approach can be characterized as a top-down process. Driven by the principle that measuring and addressing all Scope 3 emissions is not efficient, nor feasible, SC Johnson created a sustainability steering committee that included representatives from all departments. Looking at enterprise-level financial data, the committee, with the participation of the CEO, developed projects that were then delegated to each department. Each project's success was measured not by actual emissions reductions, but by whether the department completed its assigned project.

As these examples illustrate, there is no one prescription to Scope 3 emissions management. Similarly to other business decisions, the targets and the strategies set by each company depend on corporate values, business objectives and management structure.

**Emissions Reduction Through Product Design.**

The design of a product undeniably affects its total GHG emissions, from the choice of material used for production to how these materials are acquired, to how the product can be efficiently used and then disposed. There are many methods in designing a carbon-efficient product, including but not limited to reducing the amount of raw material that goes into the product, changing the materials that compose the product, increasing the life of the product for effective landfill avoidance, making the product easier to disassemble at the end of life, or simply making the product more efficient.

A notable trend in the CPG industry is the development of products that are promoted for their environmental benefits as well as the savings they...
P&G’s Supplier Engagement Through Surveys

PROJECT

As P&G evaluated the actions it was taking to reduce carbon, water, and waste within its own operations, it quickly realized the need to focus on its supply chain in order to multiply efforts. The company has implemented a supplier sustainability scorecard, which assesses the environmental footprint of its suppliers, enabling P&G to partner and help reduce the environmental impact along the supply chain. This tool provides a powerful means of tracking and improving the footprint of the products P&G sells. Analysis of all stages of a product’s life (raw material, manufacturing, packaging, distribution, use, and end-of-life) make it clear where the biggest areas for improvement exist.

PROCESS

Step 1: Gain Supply Chain Transparency. After conducting LCAs on selected products, P&G recognized it had significant emissions outside of its own operations and chose to survey its suppliers.

Step 2: Identify Opportunities. P&G identified 400 suppliers who were the largest contributors to the company’s environmental footprint, considering data on carbon emissions, water and hazardous waste.

Step 3: Internal Engagement. P&G’s sustainability group engaged the procurement team, whose director assumed responsibility for the supplier engagement program.

Step 4: Internal Action. P&G’s internal engagement was extensive and iterative.

• 2009: P&G’s procurement department developed a supplier engagement survey and a plan for using environmental data to gain efficiencies. A “scorecard” was developed to be user-friendly, GRI compliant, and applicable to suppliers of all sizes, locations, and industries.

• 2010: An automatic scoring function was added to the survey; ratings would be used by the procurement team to compare customer value and award business accordingly. Suppliers were also encouraged to leverage the surveys in order to increase transparency in P&G’s upstream Scope 3 footprint and create a holistic view of the entire value chain through increased data collection.

Step 5: External Action. P&G’s external engagement was extensive and varied.

• 2009: An initial pilot was completed for 20 suppliers, with P&G receiving feedback during the “scorecard” development process.

• 2010: P&G’s voluntary second scorecard pilot, administered to P&G’s top 383 suppliers, received an 81% response rate. Participation was encouraged by providing direct support to all suppliers and ensuring that data would not be used to evaluate them. Even in their first year measuring impacts, some suppliers reported achieving instant reductions with ROI. P&G requested supplier feedback again, resulting in requests to exclude non-material environmental flows and clarify methodologies for measurement, allocation and validation. Finally, P&G met with suppliers to co-develop strategies for carbon reduction.

• 2011: A fresh version of the survey was released to all 75,000 of P&G’s suppliers, with the expectation that results would be used in procurement decisions.

RESULTS

Having supplier data allowed P&G to begin making purchasing decisions based on new environmental footprint data that they did not previously have. It also provides motivation for significant improvements to be made globally; the company expects to see the results in coming years as survey results are compared year-over-year.
provide consumers. For example, P&G’s Tide Cold-water product line is designed to deliver the same amount of cleaning ability, at cold washing temperatures. P&G advertising emphasizes that consumers “can save energy and money when switching loads to cold.” Designing controlled release units, such as automatic-dispensing units for dishwashers or clothes washers, can also be an effective method of reducing Scope 3 emissions in the design phase. Companies can decrease the amount of product needed per designated task, though the ultimate amount used is determined by the consumer.

Another source of carbon management in the product design phase is packaging design. The majority of CPG products are delivered to retail stores and consumers in some form of packaging. This packaging plays an important function in preventing damage that can occur through shipping and handling, but packaging also contributes to the overall environmental footprint of a product.

As packaging changes can often be accomplished without affecting product design, many companies are targeting packaging improvements as an initial step to address Scope 3 emissions. Following Amazon’s reduced packaging initiative, Philips switched to recyclable packaging for its Essence toothbrush (reducing cardboard amount from 160g to 140g and plastic amounts from 60g to 2g) gaining both environmental and cost-savings benefits. Philips has also adopted MeadWestvaco’s Natralock, which uses 70% less plastic compared to traditional clamshell packaging. Similarly, Kraft has reduced its packaging by nearly 100,000 tons since 2005; P&G has avoided over 312,000 tons since 2007; and Nestle has saved over 58,995 tons in 2009 alone.

Enhancing packaging efficiency and efficacy are direct and common approaches to reducing Scope 3 emissions. However, there lies the persistent trade-off between reducing packaging material and ensuring product quality, which is unique to each product. Careful analysis and investigation is recommended when balancing efficiency with efficacy. A successful example of this is Nestle’s Eco-Shape bottle, which has been designed and redesigned to use less plastic to hold the same amount of water. Since this program’s inception, Nestle has saved more than 195 million pounds of resin (by 2009), which translated to the avoidance of over 356,000 million tons of CO2eq emissions (the equivalent of taking 78,000 cars off the roads for an entire year).

Changing packaging materials can provide an advantage in making the overall packaged product lighter or more environmentally friendly when discarded. For example, Panasonic has reduced more than 15% in the amount of foamed polystyrenes used in its packaging. Incorporating recyclable materials and eliminating hazardous chemicals from packaging are also commonplace practices.

**Emissions Reduction Through Supplier Engagement.** Engaging suppliers is a powerful way for companies to increase transparency in their supply chains. Companies often begin the process by collecting data from suppliers through surveys. They use supplier-reported data on emissions and, in some cases, material flows to increase the accuracy of their Scope 3 inventories and distinguish suppliers by performance. For efficiency, companies may choose to focus their engagement strategies on a subset of key
suppliers. They can leverage their carbon footprints to select these suppliers, by identifying those with the highest carbon impacts or impact intensities. The procurement department has an essential role to play in selecting suppliers, implementing surveys, and tying the results to supplier performance, often in the form of scorecards.

Increasingly, companies are viewing “supplier engagement” as an approach that goes beyond increasing supply chain transparency and identifying opportunities to also allow for active management of supply chain emissions. Some are developing green procurement programs while others are considering carbon in their chain optimization strategies, such as supplier clustering. These strategies require companies to take action internally and externally, and thus companies must focus on engaging relevant departments and decision-makers as much as engaging suppliers.

**Emissions Reduction through Best Value Evaluation.** One strategy to reduce emissions through supplier engagement is to integrate a best value evaluation approach to procurement, considering carbon in decision-making alongside cost and quality. For these “green procurement strategies,” the procurement department’s buy-in and leadership is essential. Out of recognition for this, 41% of CDP Supply Program members gave carbon management training to their procurement staff in 2011, and 25% offered them award or recognition.43

In a green procurement program, companies may use supplier footprint data in different ways depending on their relationships with the supplier. If the company has high leverage because there are multiple alternative suppliers, the company has the potential of selecting and deselecting suppliers based on the carbon management criteria. If the company has high influence over a single supplier, they may be able to compel that company to improve their carbon measurement and management processes. Alternatively, if a company has less leverage or influence, it may choose a joint carbon management approach, where suppliers and companies share best practices or partner to implement a reduction program. Alternatively, a company may partner with other companies working with the same supplier(s), to increase their collective impact based on shared influence. The apparel industry is taking this approach, in recognition of the fact that most each supplier works with many companies, and collaborating on green procurement initiatives increases their efficiency and effectiveness.

The quality of supplier footprints affects the possibilities for carbon management through procurement. Supplier footprints can only be compared effectively if the data is comparable. This is challenging due to differences in the methodologies, boundaries, and data quality provided by suppliers inventorying their emissions. As a result, some companies are taking more active roles to support suppliers in gathering accurate, comparable data. For example, PepsiCo provides key suppliers with access to a proprietary energy assessment tool as well as a three-day training about the benefits of carbon management and how to develop an action plan.44 Other companies are developing carbon inventory tools or may go as far as paying for supplier energy audits or LCAs.

Some companies are choosing to use qualitative metrics, such as whether a supplier has a carbon
Emissions Reduction through Supply Chain Optimization. Beyond green procurement, there are other approaches to reducing emissions from the supply chain. One approach is “supplier clustering”. After gathering data using P&G’s supplier scorecard, General Mills implemented a supplier clustering strategy to decrease emissions from the transportation of goods. P&G sources rice from suppliers closer to its cereal production facilities and closer to its packaging facilities for its Green Giant vegetable products.

Companies also often leverage supplier data to identify targeted areas for partnering with suppliers to achieve greater emissions reductions. For example, suppliers reporting high Scope 1 and 2 emissions are candidates for energy management training, which can lead to direct cost-savings for the supplier and can be partially passed through to the company. It is also common for companies to provide suppliers support in optimizing their packaging practices, which leads to carbon and cost savings that get shared through the value chain. Reducing carbon and cost through packaging design was one of Walmart’s first sustainability successes, and one it plans to extend through its entire supplier initiative.

CDP’s Supply Chain Program documents increases in the number of suppliers reporting to CDP (up 40% in 2010 versus the previous year) and developing a detailed strategy for climate change. Many of the strategies for optimizing supply chains for carbon impact align with existing trends in supply chain management, and thus are a natural fit with existing company initiatives. These include a movement to sourcing locally, consolidating spending to fewer, more strategically chosen suppliers, and working towards increased transparency and communication between manufacturers and suppliers. Some of the challenges companies face in these efforts may also decrease due to larger trends in supply chains; for example, as suppliers upgrade technologically, tracking emissions will likely become easier. Also, as suppliers receive an increasing number of requests for emissions data from multiple buyers as well as consumers, their participation is likely to rise.

The degree to which a company can affect transportation-related Scope 3 emissions, depends upon its level of engagement with its shippers. Companies such as IKEA and Walmart who have greater visibility into their shippers’ activities, take a more aggressive approach and may optimize shipping distances,
PG&E’s Supplier Engagement Through LCAs

**PROJECT**

In 2010, Pacific Gas and Electric Company (PG&E) became the first American utility company to measure its Scope 3 emissions gases. The company recognized that an LCA approach was the most realistic one for quantifying emissions at scale and at this level of complexity.

**PROCESS**

**Step 1: Gain Supply Chain Transparency.** PG&E created a public-private partnership with UC Berkeley and Climate Earth to complete a hybrid IO-LCA of its $4 billion purchasing budget, for 8,000 suppliers.

**Step 2: Identify Opportunities.** PG&E ranked its’ materials and suppliers by impact, and refined these rankings based on 1) analyzing supplier reduction potential and 2) their impact intensity by spend.

**Step 3: Internal Engagement.** PG&E created cross-department collaboration for both completing the inventory and completing a pilot supplier engagement program.

**Step 4: Internal Action.**
- Pilot Supplier Engagement Program 2010-2011: PG&E’s program managers brought together upper management, the procurement department, and finally its sourcing managers to jointly define supplier choice based on criteria such as the availability of alternative suppliers, degree of influence, and the schedule and terms of contracts.
- Green Procurement Program: As of mid-2011, green criteria determined 5% PG&E’s procurement-related decisions and plans for extending the company’s supplier engagement were under development.

**Step 5: External Action.**
- Supplier Board Convensing - 2010: PG&E convened a committee to educate suppliers about the case for decreasing emissions, communicate PG&E’s commitment to reducing emissions, gauge supplier interest, and solicit feedback.
- Supplier Engagement Pilot - 2011: To ensure supplier engagement and quality of the LCAs, PG&E implemented a pilot program that sponsored four selected suppliers to receive free LCAs for the products or services they supply to PG&E. The supplier board explained that carbon footprint analyses can lead to the identification of opportunities for cost and risk reductions, and can also result in increased favor in PG&E’s procurement processes. Finally, PG&E provided participating suppliers with recommendations for reducing emissions, both directly as well in collaboration with PG&E.

**RESULTS**

As a result of taking its scope 3 emissions inventory, PG&E learned that it must incentivize its suppliers in some cases to conduct the type of detailed life cycle analysis it desires. By helping offset the cost, PG&E plans to learn from the results and take action to encourage improvement within its supply base.

**LCAs**

= knowledge = the ability to make strategic, cost-effective improvements
reduce weight in transit, and similar. For example, in 2010 Walmart partnered with its suppliers to deliver 57 million more cases, while driving 49 million fewer miles. Other companies, such as Unilever, work to decrease the number of shipments by optimizing procurement practices.

Generally the rise and fluctuation in crude oil prices, has resulted in better logistical management that aims to reduce transportation between producers and markets. Sustainability directors can find ways to extend these policies, reducing Scope 3 emissions. For example, IKEA has changed its overall shipping weight by combining low weight and high-weight products. It also designs flat box packaging, to take advantage of shipping space.

P&G has focused on eliminating inefficiencies and reducing its shipments, by altering its ordering practices as well as the mode of transport to freight and rail, when possible.

Finally, Walmart has taken a direct approach by introducing hybrid engines as it works towards a more fuel-efficient fleet, and powering its stores with the use of biodiesel created from oil used its the food facilities.

Emissions Reduction Through Employee Engagement. Companies are increasingly engaging their own employees, professing their overall commitment to sustainable practices internally in order to optimize results and raise employee loyalty and retention rates. Many firms have instituted internal “employee engagement” campaigns that encourage resource conservation in the form of printing double-sided (or not at all), turning off unnecessary lights, and similar – which results in reduced Scope 1 and 2 emissions.

Particularly in the IT sector, several companies have put policies in place and adjusted cultural norms to improve work conditions and reduce travel emissions. Encouraging the use of natural versus artificial lighting in offices, incentivizing employees to use public transportation or carpool, supporting flexible work schedules, providing on-site showers and bike-lockers are among the common actions undertaken. Some companies, such as Clif Bar, have gone as far as assisting employees in the purchase of hybrid cars or providing shuttle services to and from major public transportation nodes.

Business travel can be reduced when companies provide virtual collaboration tools such as web-based conferencing. For example, financial services software company Intuit invested $5 million in a web-conferencing facility, which contributed to a reduction in its air travel-related emissions by 20% within two years.

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In general, taking action to reduce business and employee travel emissions does not require many resources. The extent to which firms invest in creating work conditions that are good for both employees and the environment is an internal decision that depends on corporate values as well as its business rationale. In the IT sector, where travel-related Scope 3 emissions can be as high as a third of a company’s total emissions and firms have been competing each other for employee retention, these policies are generally more widely-spread than in other sectors.

Emissions Reduction Through Consumer Engagement. Consumer education often plays a big role in a successful Scope 3 emissions reductions strategies. Even when companies incorporate more
recyclable materials, optimize energy efficiencies in their product designs, or undertake other product-focused sustainability efforts, they can be unintentionally negated when used by uninformed consumers. As a result, providing consumers with information on a product’s proper use and disposal options has become another benchmark in measuring a company’s commitment to reduce its GHG emissions.

Companies are utilizing several strategies to educate consumers:

1. Informative product labeling: Through the use of informative labeling on its products, Unilever is encouraging consumers to wash at lower temperatures and use the correct dosage for their detergent products, with the goal of achieving a 70% response rate by 2020.51

2. Increasing transparency via on-line tools and websites: Several consumer electronics companies are raising consumers’ awareness via websites such as DigitalTips.org, which provides the location of electronics recycling sites across the U.S.. According to DigitalTips.org’s surveys, awareness among adults of where to recycle electronic products has increased to 58% since the website came into existence.52

3. Affecting consumer behavior through marketing and campaigning: in 2009, Nestle launched global campaigns to raise consumer awareness about recy-
cling PET bottles (see Case Study #6).

A major challenge to these approaches is evaluating the effectiveness of passive consumer education. Interaction with consumers or enhanced brand reputation (via positive media impressions, for instance) can often be more easily quantified than the number of users or consumers reached.

Take-back programs, another method of boosting recycling rates and raising consumer awareness, are becoming a common practice for much of the consumer electronics industry. For example:

- **Best Buy** diverted over 100 million pounds of e-waste from landfills, utilizing more than 1,200 take-back store locations in 2009.53
- **Dell** partnered with Goodwill in over 2,200 US and Canadian locations, diverting over 170 million pounds of electronics from landfills in 200x.54

Companies across other industries are campaigning and partnering to increase recycling rates of their products as well. Other examples include:

- **Nike’s “Reuse-A-Shoe” program** has recycled more than 23 million pairs of shoes since 1990.55
- **Xerox** partnered with Close the Loop, LLC to give customers the ability to ship used supplies free-of-charge, which has resulted in the diversion of over 143 million pounds of waste from landfills.56
- **Nestle** began a global initiative for recycling PET in 200x (see Case Study #6).
- **Kraft** sponsored Recyclebank, a company that rewards customers for recycling, in 2008 and 2009, and partnered with TerraCycle in 2007. The TerraCycle partnership led to the collection of post-consumer and post-industrial packaging, which was turned into merchandise. This kept nearly 3.7 metric tons of waste from 800 million packages from going to landfills.57
- **Preserve** is a collection program that works with companies like Clorox’s Brita® and Stonyfield Farms to create new products such as razors and toothbrushes from recycled #5 plastics.58

**Emissions Reduction through Sales and Marketing Initiatives.** When a company’s sales shift from higher to lower-carbon products, total Scope 3 emissions are reduced. The sales and marketing departments can use product-level carbon footprints to identify products that are low-carbon and thus should be marketed more aggressively. For example, Tesco found that the carbon footprints of its three laundry detergents varied by 25%, giving it the option of reducing emissions through promoting the low-carbon detergent over the others. Carbon footprint data can often be used directly in marketing initiatives, through either environmental product declarations or carbon certification and labeling.

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Multiple carbon labeling schemes are in development, from organizations such as Carbon Trust and Carbon Fund as well as governments such as those in France and the state of California.60 One challenge of using carbon footprints in sales and marketing is that there is limited comparability of analogous products across companies. However, because few companies are currently reporting product footprints, it is the reporting itself that is noteworthy; comparison between analogous products is a question for the future.

Comparability is possible between products of the same company and increasingly, consumers now have...
the option of, for example, comparing the footprints of two different types of orange juice and learning why they are different.\textsuperscript{61} Demonstrating commitment to measuring and managing carbon has been shown to enhance brand and consumer loyalty.

One reason why companies may hesitate to place carbon labels on their products, even when they have the data, could be the potential liability these claims present to the company. As credible 3rd party organizations emerge to verify data, we can expect to see more labels on products. If and when we see widespread use of carbon labels, we can also expect to see companies that exploit the trend and use it for greenwashing their products.

**RECOMMENDATIONS FOR CPG COMPANIES**

Measuring and managing Scope 3 carbon emissions can be challenging tasks. Nonetheless, addressing Scope 3 emissions is the new frontier of business environmental accountability and can lead to improved understanding of supply chains, liabilities and opportunities to significantly improve ones carbon-footprint. We propose five recommendations for CPG companies to consider when moving forward.

1. **Define goals:** Perhaps the most important step in this process is gaining a clear understanding of the main motivation(s) behind a company’s pursuit of Scope 3 carbon emissions management. The choice of carbon management strategies will vary widely, whether the objective is to address inefficiencies throughout the supply chain or to devise a long-term sustainability vision. Clarity around goals, timelines, and the business case for actions will inform choices over the scope of analysis and the data collection practices for a Scope 3 inventory.

2. **Gain transparency:** The adage “you can’t manage what you can’t measure” truly holds. Companies should work to gather data and gain transparency into their Scope 3 impacts. Decisions about the size, scale and methodology of measuring these impacts should be made after considering the business goals, as well as resources available for such investigations.

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**Figure 5: Summary of Recommendations**

1. **IDENTIFY BUSINESS GOALS**
   - Identify the motivations for scope 3 analysis and management
   - Set short-run objectives and a long-run sustainability vision

2. **GAIN TRANSPARENCY**
   - Set clear boundaries for data collection
   - Conduct consumer, employee and supplier surveys
   - Conduct external carbon accounting

3. **IDENTIFY OPPORTUNITIES**
   - Identify areas that provide cost and carbon savings, while addressing additional business goals
   - Identify where the most impact is

4. **ESTABLISH PARTNERSHIPS**
   - Collaborate internally with the sustainability steering committee and any cross-departmental projects
   - Collaborate externally with suppliers, environmental advocacy organizations, governmental agencies

5. **PRIORITIZE AND TAKE ACTION**
   - Maintain flexibility and learn as you go
   - Choose a measuring stick for success
3. **Identify opportunities**: Data should be analyzed for insights into where a company’s most strategic opportunities are. Many opportunities to create competitive advantage and manage Scope 3 emissions may be “quick” wins. Exploring the business case for long-term, as well as short-term, carbon management actions is essential.

4. **Establish partnerships**: Partnerships can advance efforts to measure and manage Scope 3 Carbon emissions, in the following ways:

   **Internal Engagement**: Creating ownership and commitment to a company’s sustainability vision is essential at all levels of operations. As more departments are involved in quantifying emissions, setting targets and creating projects, the more likely it is that a company will be successful in finding the most effective methods to address Scope 3 emissions.

   **External Engagement**: External engagement is crucial in the CPG industry, where product suppliers, shipping companies and retailers provide many services that account for what often amounts to a large proportion of CPG industry Scope 3 emissions. By encouraging and even funding resource efficiency audits and teaching suppliers about the benefits of cutting carbon, CPG companies can extend their emissions impacts. Additionally, CPG companies can recognize supplier efforts by incorporating green criteria into procurement choices, making sustainability practices a source of differentiation for suppliers. Furthermore, the more CPG companies coordinate their efforts and initiatives across the industry, the more they reduce the burden on suppliers, who can use standardized forms and metrics. Finally, establishing productive collaborations between industry, environmental consulting firms and environmental NGO’s will ensure that carbon management strategies are more efficient and have greater reach, not only among the boundaries of a single firm, but also among consumers, suppliers and retailers.

5. **Set priorities and establish specific projects**: Effective management rely upon a clear strategy. Companies should establish priorities and build ownership of these priorities in partnership with decision-makers throughout the business. Projects should be clearly articulated with stated carbon and financial metrics ideally tied together, and performance on these metrics should be measured throughout the project’s execution.
About the Authors

The authors of this report come from a variety of backgrounds and were brought together to write this report based on a small grant from the Sustainable Products & Solutions Program, a Project of the Center for Responsible Business at UC Berkeley. The team consists of Devon Lake, a Graduate Student working on her MBA (now a consultant with Blu Skye); Calanit Kamala, a lecturer in the International & Area Studies Program at UC Berkeley; Jack Wang, a Masters of Chemical Engineering student at UC Berkeley; and Tony Kingsbury, Executive-in-Residence at UC Berkeley where he manages the Sustainable Products & Solutions Program and teaches graduate-level sustainability classes.

About the Center for Responsible Business

The Center for Responsible Business at The University of California–Berkeley is an “action tank” that builds on the Haas School of Business’ culture of innovation and UC-Berkeley’s tradition of catalyzing social progress. Recognized by the Financial Times as the #2 ranked MBA program globally in corporate responsibility, the Center for Responsible Business brings together over 100 influencer companies and 1,000 top students with world-renowned faculty to redefine good business.

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