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Stay Ahead of the GHG Curve

Despite a lack of cohesive global policies on carbon emission reduction, supply chain emissions continue to play a central role in corporate environmental initiatives.

Despite being considered one of the great achievements of modern science, the Keeling Curve usually means nothing to most supply management professionals. However, many supply management professionals are familiar with its ramifications: the ongoing debate on global warming.

In the 1950s, Dr. Charles David Keeling was able, for the first time, to accurately measure the amount of carbon dioxide in the atmosphere: 310 parts per million (ppm) during that time period. The curve that shows these values over time is now known as the Keeling Curve — when measured in December 2010, it read 390 ppm. For most of the planet's recorded history, Keeling estimated that this value has naturally fluctuated between 200 and 300 ppm. Therefore, we can conclude that a reading of 390 ppm is a significant, noticeable increase. Most scientists agree that for a stable long-term climate, 450 to 500 ppm is the limit for an acceptable range; if the amount of carbon dioxide continues to increase at the rate witnessed between 1950 and 2010, the atmosphere will quickly reach and surpass this zone.

And so, according to the Keeling Curve scale, the current atmospheric concentrations of carbon dioxide are already at record levels, and fast approaching zones of potentially irreversible environmental and human harm. Governments, consumers, corporations and society at large have taken notice of this risk and are taking action. And these actions are increasingly entering the supply chain domain.

The Government Policy Conundrum

Although there is currently no global policy, voluntary corporate reporting of greenhouse gas (GHG) emissions has been on the rise, led by the GHG Protocol.

The GHG Protocol provides a set of standards for corporations and government entities to inventory and report their carbon footprints. The protocol places emissions into three different categories, or "scopes":

- Scope 1 emissions are generated by direct combustion of company assets and operating activities.
- Scope 2 includes emissions produced by purchased electricity.
- Scope 3 is a catch-all category for remaining sources of emissions including, but not limited to, employee travel, waste disposal and sourced materials.

Although other guiding documents are available (for example, ISO 14064), the GHG Protocol is widely considered the global corporate standard. Numerous organizations have adopted this in their sustainability programs, including the U.S. EPA Climate Leaders, the Carbon Disclosure Project, the Chicago Climate Exchange and several government organizations. However, almost all of these programs include mandatory attention to Scope 1 and Scope 2 emissions, yet currently leave Scope 3 — which includes supply chain emissions — out.

Engaging the Supply Chain

By drawing the system boundary at country or corporate levels, traditional GHG reporting procedures fail to account for the flow of goods across the supply chain. When emissions are measured for the entire supply chain, there are incentives to explore all strategies that improve efficiency, not only local efficiency. Furthermore, supply chain emissions can ultimately be shared with end customers, tying the discussion to corporate product strategy and marketing.

With this in mind, two trends continue to expand the role of supply chain carbon footprint measurement: the increased sharing of emission information, and product labels that try to communicate emissions information to influence consumer purchasing decisions.

Information sharing. A group of collaborative organizations, including academic (Sustainability Consortium at University of Arkansas and LEAP at MIT), industrial associations (the EcoIndex of the Outdoor Industry Association and Clean Cargo from Businesses for Social Responsibility) and government initiatives (SmartWay from the EPA), are working to devise collaborative GHG information sharing and reduction across supply chains. The EPA SmartWay program is a great example in the transportation industry: By creating a common set of tools, incentives and information sources, shippers and carriers now have the resources to include GHG measurement in transportation contracting.

Product labels. Including carbon information on labels is not consistent, and is currently being led by individual corporate strategies to communicate environmental initiatives directly to customers. (Tesco and Wal-Mart, for example, have pledged to label their products, and Timberland and Patagonia are already labeling some of their products.) These are still early initiatives, and the underlying methodologies vary significantly in depth, breadth and precision. A notable exception is the Carbon Trust, supported by the U.K. government and Tesco. Since 2001, they have worked with 75 companies on more than 5,000 SKUs, as well as spearheaded the development of global open standards like the PAS 2050 in the U.K. and the upcoming GHG Protocol for product carbon footprint in the product/supply chain space.

There are strong, growing pressures for governments to take action once the economic downturn cycle stabilizes.

The Road Ahead

Overall, the atmospheric measurement capability provided by the Keeling Curve cascaded into a global policy debate on global warming, and a shifting social and consumer perception of the importance of climate change. It's also created a new set of GHG accounting standards, giving rise to a whole new dimension of interactions within the supply chain — the exchange of carbon footprint information.

Here are seven key points to keep in mind as supply management efforts continue to sync up with environmental concerns:

1) **Debate will continue.** Without a binding global policy agreement on climate change, the issue will continue to be debated for years to come. However, governmental actions point to cap-and-trade strategies as the preferred policy tool in many parts of the world. If any of your suppliers is a "big emitter," they will likely fall under cap-and-trade regulation first (especially if their facilities are located in developed economies).
2) **Carbon tax legislation in the U.S. is very unlikely for the next three to five years.** There may be some changes in fuel taxes, but refer back to 2008, when oil prices peaked, to get a good sense on how your supply chain may be impacted.
3) **Measure your corporate carbon footprint.** Consider participating in voluntary registries. Even with a robust GHG protocol leading the way, the measurement process will highlight any data gaps, which will help prepare your organization for any future carbon reporting.
4) **Develop a baseline carbon footprint to help analyze potential reduction scenarios.** What will it take to match the leaders in your particular industry? Having numbers on hand will help support strategic discussions on the subject.
5) **Encourage key suppliers and partners to engage in corporate GHG Protocol reporting.** The 2011 version of the GHG protocol will be more aggressive in Scope 3 reporting, and key supplier information will be invaluable.
6) **Keep customer concerns in mind.** If your products are end customer-facing (or are key components of end customer-facing products), remember that major retailers are engaged in creating detailed product carbon footprints. They will be knocking on your door soon, so you'll need to knock on your suppliers' doors shortly afterward. Select a few products and go through the exercise of measuring all the supply chain emissions. Consider engaging academia, consultants and other businesses you might benchmark with if you need help.
7) **Work on embedding knowledge.** GHG management is not something that should only be done once a year to get data for a corporate sustainability report. Include GHG related metrics with your normal supply chain scorecards and develop your own language.

When it comes to carbon footprint information, it pays to be ahead of the curve — the Keeling Curve. After all, GHG and other environmental drivers will be key competitive areas in the future. There are new markets to be created, and very strong, growing pressures for governments to take action once the economic downturn cycle stabilizes. Our supply chains are in a pivotal position to make a strategic difference. ISM

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