



Measuring and Reporting

The Big Picture

As companies are becoming increasingly aware of climate change issues, many realize that managing greenhouse gases requires tracking company emissions accurately. Stakeholders also are increasingly interested in having a way to track companies' performance in managing greenhouse gases. These internal and external needs have led to greater interest in standards for measuring emissions, and reporting mechanisms that are run or verified by third parties.

Measuring and reporting greenhouse gas emissions should be done according to common standards of rigor that are similar to financial accounting standards. This creates the same level of confidence in reported emissions as investors and others should have in other metrics reported by corporations, such as revenues and profits.

Key Players

There are several industry groups, government agencies, and nonprofit organizations that help companies measure and report their emissions.

Developers of standards and protocols. Several multi-stakeholder groups have been created to generate common standards that are generally accepted and common across companies, sectors, and geographic borders. These groups have created spreadsheets for use as measuring tools, along with documents explaining emissions measurement issues. These efforts are ongoing, and these tools and documents continue to evolve.

The Greenhouse Gas Protocol Initiative is the largest international effort to create common measuring standards applicable to large and small companies. It is a multi-stakeholder initiative convened by the World Business Council for Sustainable Development and the World Resources Institute. The GHG Protocol Initiative is comprised of a wide range of businesses,

nongovernmental organizations, and governments from around the world. The objective of the initiative is to develop internationally accepted measuring standards for GHG emissions and to promote their use in companies and other organizations.

Others have used the GHG protocols as a basis for creating geographic- or industry-specific reporting protocols, or simply as a starting point for helping companies with their climate efforts. For example, The US EPA's Climate Leaders program is a partnership between government and industry that has adapted the GHG Protocol Initiative to create its own standards as well as developing additional tools and resources to help companies. EPA also offers technical assistance to companies and assistance publicizing company programs.

Emissions registries. Companies may be interested in reporting their emissions through a registry, instead of relying solely on their own reports. Reporting through an established third-party registry adds credibility to company statements and can provide publicity and recognition to the company.

The California Climate Registry, for example, combines standards with a reporting function. Created by California statute in 2001, the registry accepts voluntary registration of GHG emissions from a broad spectrum of participants, including utilities, businesses, industry, government agencies, educational institutions, nonprofit organizations and other entities. The registry has developed a set of measuring protocols that are aligned with the GHG Protocol Initiative, but adapted to California.

The U.S. Department of Energy (DOE) also runs a public emissions reporting program called the Voluntary Reporting of Greenhouse Gases Program. It allows any company, organization or individual to establish a public record of emissions, reductions, or sequestration achievements in a national database maintained by DOE.

Non-US measuring and reporting programs. Other countries have similar GHG reporting pro

grams. One example is Canada's Voluntary Challenge and Registry (VCR Inc.), a public-private partnership working across all sectors to get companies to voluntarily report and, eventually, reduce emissions. Another example is Britain's Climate Change Projects Office, which works with companies in the U.K.

Corporate efforts. The Global Environmental Management Initiative (GEMI), a nonprofit organization of Fortune 500 companies sharing tools and information on several environmental issues, works with existing measuring and reporting standards instead of developing its own protocols. GEMI helps its member companies understand how to measure emissions and then how to take action to reduce emissions. Information on the GEMI Web site is useful to non-member companies as well.

Many companies report emissions through annual reports, Web sites, and other public records. BP is an example of a company that reports extensively on its greenhouse gas emissions on its Web site. In 1997, British Petroleum (now BP Amoco) became the first major company committed to reducing its GHG emissions to a specified level, setting a precedent for other companies to follow. BP Amoco aims to reduce its emissions to 10% below 1990 levels by the year 2010. In 1999, BP Amoco commissioned an independent audit and verification of its GHG accounting and reporting systems. The auditing team developed the first-ever industry GHG emissions audit process consistent with international financial and environmental auditing standards.

The Upside

There are numerous reasons for companies to be involved with measuring and reporting, including:

- **Identifying opportunities for cost and energy savings.** Greenhouse gas emissions are closely linked to energy use, so measuring emissions can lead to identifying ways to reduce emissions, which can in turn lead to cost savings.
- **Getting a jump on emissions trading.** Many companies are learning how to measure greenhouse gas emissions because they believe such

emissions soon will be regulated. Many also believe that GHG emissions will be traded, much as other types of emissions are now under the U.S. Clean Air Act. Accurate measurements, based on commonly agreed-upon standards, are a necessary first step towards such emissions trading and other regulatory changes.

- **Shaping protocol development.** The opportunity exists for companies to be part of GHG measuring protocol development. By becoming involved, a company can influence protocol development as well as become familiar with measuring and reporting methods, processes, and issues.
- **Mitigating the impact of future regulations.** Measuring emissions now, ahead of regulatory requirements, creates a baseline against which future reductions can be measured.

Reality Check

- **Complex questions.** Measuring greenhouse gas emissions can be difficult. Questions of scope and boundaries exist (i.e. where and how far to draw the "bubble"), and despite the development of reporting protocols, some questions are ultimately judgment calls by the company.
- **Inexact data.** Some information may have to be estimated. For example, a company that shares its building with others may not have its energy consumption metered separately, requiring that it estimate energy use based on the percentage of building space it occupies.
- **Regulatory uncertainty.** Because of present uncertainty, and because measuring protocols are still being developed, decisions made now by a company regarding its emissions may not be consistent with future standards.
- **Time, money, and other resources.** The process of deciding how and what to measure can be difficult and time-consuming. The amount of time needed to develop measuring and tracking processes depends on the size and operations of a company, among other factors. Manufacturing

companies will generally have more complicated emissions measurements than office-based organizations, but measurements can be complex for any company.

- **Ongoing responsibilities.** Once scope and boundary decisions are made, ongoing measuring and tracking can be time-consuming. The amount of time that must be dedicated will vary by company, but will at the very least require a substantial part of a full time equivalent. A company with multiple types of operations, or with operations in multiple locations, will likely need to have more than one person involved in measuring efforts.

Action Plan

At a simple level, measuring emissions entails the following elements:

- **Determining boundaries.** This requires determining what activities need to be included in the company's measurements. For example, are emissions from business travel included? Most companies would answer yes, and the GHG Protocol Initiative suggests inclusion of business travel. Are emissions from employees' commuting included? Many companies would answer no, because employee commuting is considered a personal activity. Are emissions of suppliers or product transportation included? This question demonstrates the challenges in drawing appropriate boundaries. In some cases, where the company has some control over suppliers' activities, these emissions would be included, but in other cases they would not.
- **Identifying emissions activities.** Once boundaries are established, the next step is to determine what emissions are generated within those boundaries. For example, a manufacturing process may burn fossil fuels on-site, and use electricity produced by a local utility. An office-based organization may cause emissions through building heating and electricity use, production of paper-based reports, and employee travel.
- **Calculating emissions.** The GHG Protocol Initiative provides emissions factors for many fuels, making it easy to calculate, for example, how much CO₂ is produced by burning 100 gallons of gasoline, or how much CO₂ is produced by using 1000 kilowatts of electricity in California.

Leads

- **GHG Protocol Initiative** (www.ghgprotocol.org) is the source for information on the GHG Protocol work. The GHG Protocol Initiative is a partnership of numerous companies and organizations, led by the World Resources Institute and World Business Council for Sustainable Development.
- **World Resources Institute** (www.wri.org) is a Washington DC-based nonprofit organization. A web page listing WRI's climate work, which includes green power market development, the GHG Protocol Initiative, and other science and policy climate work, is at <http://wri.igc.org/climate/>.
- **US EPA Climate Leaders** program (www.epa.gov/climateleaders/index.html) is a government-industry partnership in which companies work with EPA to measure, report, and reduce emissions. The EPA program has adopted and modified the GHG Protocol Initiative standards. EPA also provides technical assistance in conducting a greenhouse gas inventory and publicity opportunities for companies that seek it.
- **California Climate Registry** (www.climateregistry.org) is the California-based measuring and reporting effort.
- **Global Environmental Management Initiative** climate change Web site (www.businessandclimate.org) contains a good introductory section on measuring emissions. GEMI has not developed its own measuring protocol, but its introductory information can make existing protocols easier to understand and use.

Bottom Line

We manage what we measure. If a company is serious about understanding its greenhouse gas emissions, and eventually reducing them, then the starting point is learning how to measure them. For many companies just the act of measuring greenhouse gas emissions will entail a significant time and resource commitment. This commitment, however, is the first step towards managing emissions, which can lead to immediate cost savings as well as ensure against possible future regulatory costs.