

## Measuring Your Company's Carbon Footprint

Footprints are unique impressions that people leave behind that provide information, such as your weight, size, speed, where you have been, and where you are going. Similarly, every individual and company has a carbon footprint that measures the amount of greenhouse gases emitted into the atmosphere and leaves an impression on the world. Assessing your carbon footprint can indicate opportunities for energy reductions, cost savings, and improvements in your environmental impact.

Calculating your company's carbon footprint may seem somewhat complex, but maintaining a focus on the end goal of reducing greenhouse gas emissions (GHG) and choosing an assessment strategy to follow can simplify the process. [Greenhouse gases](#) include (in order of relative abundance) water vapor, carbon dioxide, methane, nitrous oxide, and some fluorocarbons. The major sources of carbon dioxide include the combustion of coal for electric power generation, vehicle exhaust, natural gas production, distillate fuel oil production, and a variety of industrial, commercial, and residential practices.



### Company Direct and Indirect Emissions

Companies will need to decide how they will account for direct and indirect greenhouse gas (GHG) emissions. Direct emissions are those from sources that are company owned or controlled, such as equipment stacks, vents, on-site generation, and company owned vehicles. Indirect emissions are those from sources that are not owned or controlled by the company, such as employee commuting, business travel, and suppliers. Measuring your carbon footprint has four important steps:

- Determine what direct and indirect emissions will be included in your carbon footprint.
- Determine the baseline year and begin to compile the data.
- From the data, calculate and analyze your GHG emissions. The contributing entities can be broken down into groups, allowing you to start with the basics first, such as the company's office building(s), then continuing with process operations.
- Report the results and determine appropriate action plans.

Online calculators are available to help companies calculate their direct and indirect GHG emissions. The World Resources Institute and the World Business Council for Sustainable Development began a [GHG protocol initiative](#) that provides general, as well as sector specific [worksheets](#). The [Carbon Consultant conversion factor sheet](#) can be used to convert units of fuel into kilograms of CO2 emissions per unit. [Carbon Counter](#) offers tracking tools for businesses and individuals, and Climate Care provides a [Business CO2 calculator](#) that can measure the direct carbon footprint from travel information and utility-provided energy consumption.

### Lifecycle Assessment

Another approach is the "lifecycle assessment" (LCA) that determines the amount of carbon emitted at each stage of a product's life. The assessment includes the carbon emitted to develop the raw materials, the production process, distribution, consumer usage, and disposal of the product. This approach is part of the [ISO 14000 Environmental Standards](#) and can be used to optimize the environmental impact of a particular product, and compare that product to similar products and increase brand reputations as an environmental steward. ISO 14000 maps [the life cycle assessment in four stages](#) (goal and scope definition, inventory of extractions and emissions, Impact Assessment and interpretation).

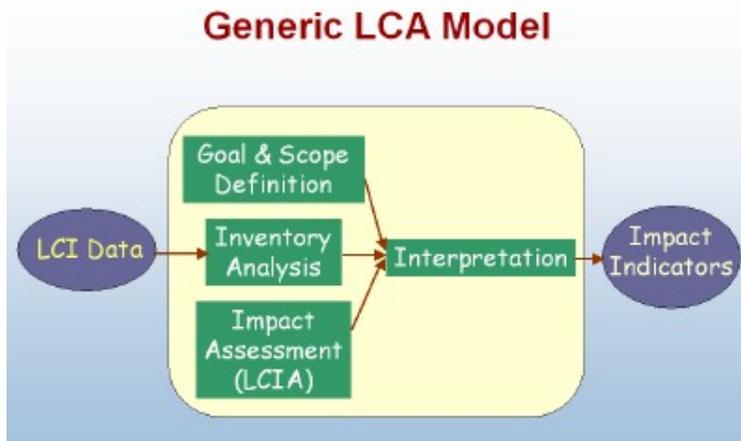


Photo from [NREL](#)

The National Renewable Energy Laboratory (NREL) provides tools to assist the process of "inventory of extractions and emissions." The NREL [Life Cycle Inventory Database](#) shows the energy usage of particular materials in common unit processes. This data is available to help companies with similar processes complete an LCA assessment and ensure consistency in the evaluation. In addition, [LCA software and calculators](#) may be downloaded from the NREL website.

### **Climate Leaders**

The U.S. Environmental Protection Agency has developed an industry government partnership, called Climate Leaders, with companies committed to reducing their greenhouse gas emissions. According to the EPA,

"Partners set a corporate-wide greenhouse gas (GHG) reduction goal and inventory their emissions to measure progress. By reporting inventory data to EPA, Partners create a lasting record of their accomplishments. Partners also identify themselves as corporate environmental leaders and strategically position themselves as climate change policy continues to unfold."

As a Climate Leader Partner, companies have access to eighty hours of free technical assistance provided by EPA experts to help them complete the GHG inventory, accounting methods, tracking, and reporting.

### **Consulting Professionals**

Although compiling the amount of greenhouse gases emitted from your direct operations (gas and electricity use) can be a quick calculation from your utility statements, defining your carbon footprint from indirect operations may be more difficult. Professional consultants provide services that will help you analyze your operations, compile the necessary data and assess your GHG emissions. The [Thomas Publishing Company](#) supplies a list of Environmental Consultants that can be sorted by state to find a company near your location.

### **Case Studies**

According to a report released by [The Conference Board](#), approximately 75% of companies are actively measuring their carbon footprint. Understanding the strategies other companies have used to manage GHG emissions can help others to become successful as well.

In 1996 Stonyfield Farm, a yogurt producer in Portland, Oregon, became committed to offsetting 100% of the carbon emissions from its production facility. The company achieved this goal one year later, and created a carbon fund to enable companies to invest in carbon-offset projects. Stonyfield has published [an "Environmental Cookbook"](#) describing the successful project.

In 2003, Starbucks hired CH2M Hill to calculate the carbon footprint of approximately 3,700 stores across the country. Since then, Starbucks has been implementing energy efficiency measures in their stores. In 2005, Starbucks joined the World Research Institute's Green Power Market Development Group that helps members purchase renewable energy. By 2006, the company increased its wind power to 20% of the total energy consumed by its North American stores. In order to further reduce energy consumption, stores are installing individual meters on specific equipment to monitor and track energy usage.

In April 2007, Yahoo! announced its commitment to going "carbon neutral," meaning the company will invest in greenhouse gas projects to neutralize its impact on the environment. Although much controversy surrounds the idea of carbon neutrality, Yahoo! contends that they will remain committed to reducing energy consumption by powering facilities with renewable energy, encouraging employees to reduce vehicle emissions, and promoting energy conservation to its customers.

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