



What Is Carbon Accounting?

ESG & Sustainability Transformation

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ESG Transformation



What Is Carbon Accounting?

Carbon Accounting or Greenhouse Gas Accounting: Overview

Carbon accounting plays a vital role in ESG work – both in implementing initiatives and in tracking their effectiveness.

Carbon accounting, also known as greenhouse gas accounting, is a way for companies to quantify the amount of greenhouse gases (GHGs) they produce. It is similar to financial accounting, but instead of financial impact, carbon accounting measures a company's climate impact.

Carbon accounting is a popular way for governments, businesses, and individuals to assess and report their climate impact. In some countries, businesses must report their GHG emissions every year, which makes carbon accounting a necessary business process. Many companies are willingly seeking to reduce their environmental impact as well; as of February 2023, companies and governments representing 92% of global gross domestic product (GDP) have made an intended or actual commitment to reaching net zero by 2050.

What Is the Difference Between GHG Accounting and Carbon Accounting?

Although the two terms are similar and often used interchangeably, there is a subtle but key difference. Carbon accounting refers only to carbon dioxide (CO₂) emissions, while GHG accounting refers to all greenhouse gases.

The GHG inventory covers the seven direct greenhouse gases under the Kyoto Protocol:

1. Carbon dioxide (CO₂)
2. Methane (CH₄)
3. Nitrous oxide (N₂O)
4. Hydrofluorocarbons (HFCs)
5. Perfluorocarbons (PFCs)
5. Sulphur hexafluoride (SF₆)
6. Nitrogen trifluoride (NF₃)

ESG (environmental, social, and governance) reporting, which includes carbon accounting as one component, is becoming a more mainstream business concept.

ESG is a much-discussed topic for businesses and investors alike. And carbon accounting plays a vital role in ESG.

Here's what ESG is, what it means for businesses, and how carbon accounting empowers ESG work.

KEY TAKEAWAYS

- Carbon accounting is a way for businesses, governments, and even individuals to assess their climate impact.
- Carbon accounting methodologies, of which there are several, aim to quantify the emissions produced by an organisation.
- Many companies in many countries are required to report their emissions to government or other regulators, and carbon accounting has become the recognised way to do this.
- Effective, accurate carbon accounting can be a challenge to implement, but it can have many business benefits.



Understanding Carbon Accounting

Carbon accounting allows companies, governments, and individuals to understand and measure their environmental impact. Carbon accounting takes into account the total greenhouse gas (GHG) emissions produced by a company, both directly and indirectly. Carbon accounting gets its name from carbon dioxide (CO₂), the most common greenhouse gas and the biggest single contributor to global climate change. In most carbon accounting systems, emissions of all GHGs are measured by carbon dioxide equivalent, or CO₂e.

There are two approaches to carbon accounting: spend-based and activity-based methods.

- Spend-based methods of carbon accounting take the financial value of a purchased good or service and then multiply this by an “emission factor,” which estimates the volume of emissions produced per dollar. If a business buys computers, for example, it’s possible to look up the emission factor of computers, multiply this by the amount spent on them, and thereby estimate the emissions produced by the purchase.
- Activity-based methods of carbon accounting take a different approach, measuring how many units of a particular product a company has purchased. If a company buys computers, to take the same example, this method would take the number of units bought (rather than their value), and again multiply this by an emissions factor.

Both of these methods rely on estimates, and because of this, neither can be completely accurate. However, activity-based methods are generally regarded as more accurate than spend-based methods.

Scopes of Emissions

Carbon accounting attempts to account for all of the emissions produced by a particular company, not just those produced directly as a result of its operations. In most carbon accounting models, the emissions produced by a particular company are broken down into three types:

Scope 1 Emissions

These are also known as direct emissions, which include all the emissions produced as the direct result of the operation of a company. This can include emissions produced by manufacturing processes, electricity produced on-site by burning fossil fuels, and emissions produced by chemical processes.

Scope 2 Emissions

Plenty of companies don’t produce Scope 1 emissions because they are not running manufacturing processes themselves. Scope 2 emissions are those produced as a result of the generation of electricity, steam, heating, and cooling.

For example, suppose an information technology (IT) company runs server farms that use a lot of electricity. In that case, they will add the emissions produced from the generation of this electricity to their carbon accounting. This type of emission can represent a significant proportion of the total emissions of a company, depending on its sector.

Scope 3 Emissions

Often referred to as supply chain emissions, Scope 3 emissions are indirect greenhouse gas emissions that occur as a consequence of the activities of a company, but from sources not owned or controlled by it. This can include the emissions produced during the manufacturing of the goods that a company buys, for example.



Scope 3 emissions represent a significant proportion of the total emissions produced by companies in the West. For most companies in the service sector, Scope 3 emissions will far outweigh those in Scopes 1 and 2 combined. As such, reducing consumption of third-party goods, or seeking greener alternatives to them, represents a major opportunity for firms to reduce their GHG impact.

Why is carbon accounting needed for ESG?

Carbon accounting enables businesses to calculate their greenhouse gas emissions. These emissions are an important component of a business's impact on the environment – the E in ESG. Therefore, carbon accounting is essential for businesses to report their full environmental impact – especially when it comes to mandatory disclosure requirements – and determine their ESG ratings.

However, carbon accounting's usefulness goes beyond reporting. If businesses want to improve their ESG ratings, they need to minimize their negative environmental impact – and to do that, they need to understand that impact in detail. As the management adage says: "you can't manage what you can't measure."

High-quality carbon accounting will enable a business to break down its carbon footprint by its sources and identify the highest-emitting parts of its operations or value chain. These insights empower the business to implement carbon reduction initiatives.

Why Is Carbon Accounting Important or what is its Benefits?

Carbon accounting is important for at least three reasons:

1. ESG reporting. Environmental, social, and governance (ESG) investing refers to a popular set of standards for a company's behaviour. It considers how a company safeguards the environment—including corporate policies addressing climate change, for example—and is increasingly popular among socially conscious investors looking to screen potential investments. Carbon accounting provides a measure of a company's environmental impact—the "E" in "ESG"—and can therefore help it reduce risk and attract investment.
2. Proof that companies are meeting their commitments under environmental legislation. Many countries, including the United States and
3. the United Kingdom, now require companies to report their environmental impact (and take steps to reduce it). Carbon accounting is the standard method for this reporting.
4. Efficiency. More generally, carbon accounting can be important from an efficiency perspective. Goods and services that have a high carbon cost are often those that are produced inefficiently, and seeking to reduce carbon expenditure often results in a company reducing its financial expenditure as well.

Challenges of Carbon Accounting

Though carbon accounting is a widely used tool, it can present serious challenges for organisations seeking to implement it rigorously. These include:

- Significant time and expense are required. Many organisations run their annual carbon accounting and ESG ratings calculation process using manual data collection and spreadsheets. This leads to enhanced risk and productivity loss, especially for complex, global organizations that report to multiple frameworks.
- Data access may be difficult. To assess carbon emissions correctly, a company must combine many different data sources, and so must either spend time collecting this manually or spend money constructing a complex system that contains all the relevant data.



- Data quality may be compromised. Even where data are available, tracking the carbon impact of every purchase and process a company makes or runs can be very challenging. Errors in these data can often lead to inaccuracies in carbon budgets.
- Carbon accounts may be poorly understood. Even where carbon accounts are accurate, explaining their relevance and utility to decision-makers inside an organization can be challenging. Carbon budgets are often seen as a reporting requirement rather than a management tool in themselves.

Is Carbon Accounting Mandatory?

For many companies, carbon reporting is legally mandated. Since 2009, the United States has required facilities that emit 25,000 metric tons or more of carbon dioxide to report their greenhouse gas emissions to the Environmental Protection Agency (EPA) every year.

The Bottom Line

Carbon accounting is a way for businesses, governments, and even individuals to assess their climate impact. Carbon accounting methodologies are designed to quantify the emissions produced by an organisation.

Many companies in many countries are required to report their emissions to the government or other regulators, and carbon accounting has become the recognized way to do this. Though effective, accurate carbon accounting can be a challenge to implement, it can have many business benefits.

To learn more about Green Economy and sustainability-related models, don't hesitate to contact [**YTT Consulting!**](mailto:info@ytt-consulting.com)

