

Carbon Footprint Measurement

A CONCISE GUIDE FOR
COMPANIES AND THEIR LENDERS



Private markets action on climate change

Supported by:



Endorsed by:



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INTRODUCTION

Supporting Companies

Climate change is a global challenge of increasing concern for companies, governments, regulators and financial institutions; presenting material risks and opportunities for business.

This guide is intended for company executives globally (and indirectly their fiscal sponsors, direct lenders and other debt-holders) who are looking for brief background and practical guidance for measuring and reporting greenhouse gas (GHG) emissions. This document is not intended to be comprehensive but rather summarises the increasing importance of, and interest in, this information, pathways for how to collect and measure GHG emissions, and how this information can be used beyond reporting to stakeholders.

About iCI

The Initiative Climat International (iCI) is a global, practitioner-led community of private markets investors that seek to better understand and manage the risks associated with climate change.

iCI's members share a commitment to reduce carbon emissions of private equity-backed companies and secure sustainable investment performance by recognising and incorporating the materiality of climate risk. In practice, this implies a commitment to effectively analyse and manage climate-related financial risk and GHG emissions in their portfolios, in line with the recommendations of the Financial Stability Board's Task Force for Climate-related Financial Disclosures (TCFD). Members commit to sharing knowledge, experience and best practice, working together to develop resources that will help standardise practices across the industry.

The iCI is supported by the Principles for Responsible Investment (PRI), is a Supporting Partner of The Investor Agenda, and is open to all private markets firms and investors to join.

The iCI counts over 240 members globally; representing US \$4.1 trillion as of July 2023.

Acknowledgements

The iCI Private Credit Working Group was established to create practical resources and guidance for private credit stakeholders (borrowers and lenders) in order to facilitate decision useful information and action toward addressing climate change. During this process, the iCI Private Credit Working Group engaged with and sought feedback from the following key industry organisations: PRI, European Leveraged Finance Association (ELFA), Loan Syndications and Trading Association (LSTA), CDP, Loan Market Association (LMA), Asia Pacific Loan Market Association (APLMA) and others.

iCI Private Credit Working Group Members

- | | |
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Co-Chair |
| • Claire Hedley, 17 Capital | • Malin Henriksson, EIG |
| • Jeannie Cho, KKR | • Jayd Alvarez, Oak Hill Advisors |
| • Danielle Pal, Onex | • Aurélie Madé, Partners Group |
| • StepStone Group | |

Important information: Note that the views expressed in this document do not necessarily represent the views of individual member firms of iCI (or of any of their affiliates).

This document was designed by: [baselinegroupny](#)

THE BUSINESS CASE

Providers of capital and credit rating agencies are increasingly being required by regulation or are voluntarily taking the climate impacts of companies into consideration—raising the need for greater transparency. That transparency is conveyed through annual reporting of GHG emissions, which is the process of quantifying primary climate impacts of a company's activities, its direct supply chain and uses of its products and services. Companies that provide annual disclosure on common and company-specific climate metrics, and progress on their decarbonisation plans often experience several co-benefits, such as:



Access to capital

Lenders' credit risk assessments are increasingly informed by climate factors. The European Central Bank reports that companies that are disclosing GHG emissions and have an established decarbonisation strategy with forward looking targets may have **reduced credit risk**, due to management of exposure to transition risks.¹ Lenders are increasingly exposed to regulatory attention and scrutiny of climate matters globally. At the start of the century, there were around 50 cumulative sustainable finance policy interventions – that number has skyrocketed to 900 over the past 20+ years.² Prominence of sustainable finance has grown tremendously. Additionally, over the last decade there has been a market-wide shift in the attitudes of banks, and increasingly private lenders and providers of capital, toward integrating climate as a core component of their analysis: utilising research and data to assess companies' low-carbon transition readiness, constructing portfolios based on forward-looking GHG emissions reduction metrics, and incorporating climate-related criteria into lending, often in the form of margin ratchets. As this trend continues to grow, companies who have started their climate journey may retain better access to capital.



Cost and operational efficiencies

Costs and GHG emissions can be reduced in the medium to long term by creating greater efficiencies within operations and processes, optimising material and resource use, switching to on-site energy generation, and increasing the proportion of renewable energy sourced. World Economic Forum's analysis of decarbonisation projects shows that companies across essentially all major sectors can realise significant cost savings through its operational activities, with very little, if any, inputs. In fact, this analysis showed that almost all companies can reduce at least a third of their GHG emissions at no net costs to their business.³ GHG emissions accounting helps realise these savings by identifying priority areas to act on and invest in.



Business resilience

Businesses can build resilience against a variety of present and future risks through a strategy informed by analysis of company-level GHG emissions. CDP found that 215 of the world's largest companies face almost \$1 trillion in losses due to climate-related risks.⁴ This figure reflects the potential magnitude of exposure to climate-related risks that companies may face, and the value preparedness can bring. Therefore, a company that is capable of withstanding the implications of the energy transition, changing consumer behaviour, and tightening regulation on its business is better positioned for long-term success. Additionally, advancing decarbonisation efforts is increasingly a top priority for providers of capital (see [Access to capital](#)).



Alignment with stakeholders' expectations

Companies can align with stakeholders' expectations on climate change through transparent carbon footprint measurement and reporting. As investors assess financial risks and the value of a climate strategy, consumers ask for more sustainable supply chains and products, and employees search for more fulfilment in their jobs, it has become a reasonable expectation for companies to adapt and increase transparency, which includes managing and reporting on their environmental footprint. According to the Ernst & Young CEO Imperative Study, 67% of CEOs studied reported moderate to extreme pressure from stakeholders to engage with global challenges.⁵ Similarly, 83% of Edelman Trust Barometer respondents say that they expect CEOs to take a public stance on climate change.⁶

Employee engagement and retention is critical to avoiding the high cost of replacement, which can range from one-half to two times of an employee's annual salary, and a strong and credible sustainability commitment can provide reassurance to employees

and help reduce turnover.⁷ This is especially relevant considering that by 2029, Millennials and GenZ will make up 72% of the workforce,⁸ and at least 83% say they would be more loyal to a company that helps them contribute to important issues.⁹

Regulatory focus on climate-related data across multiple jurisdictions will likely have a meaningful impact not only on companies, but also on asset owner and asset manager disclosure obligations. While these regulations typically target large and publicly listed companies, they are likely to affect a significant proportion of private companies indirectly through the commercial requirements or expectations of their customers or practices of key suppliers. For some asset managers and asset owners, these pressures may lead to engagement with companies to procure climate-related data, or may have portfolio impacts where climate-related data is not available. Climate transparency will soon no longer be a source of differentiation but rather the requirement.

WHERE TO START

For businesses to better prepare to address climate risks and seize opportunities presented by the energy transition, the first step is to measure their carbon footprint. Through this process a company identifies key sources of GHG emissions within its operations (scope 1 & 2) and value chain (scope 3). The output data can be utilised to make strategic decisions to reduce GHG emissions where it matters most in the short term and long term.

Deciding to measure GHG emissions is the first step—the second step is figuring out how.

Reliable carbon footprint measurement is the bedrock of effective management of climate impacts. [The GHG Protocol](#) is the world’s most commonly used standard to measure and manage GHG emissions. To make this more accessible for private companies, the iCI has synthesised the measurement process in the [iCI GHG Accounting and Reporting Guidance for the Private Equity Sector](#) (p.29–58), and generally it encompasses five key activities:

Carbon Footprint Measurement

1. Choose appropriate reporting boundaries
2. Identify emissions sources
3. Collect source data
4. Select appropriate emission factors
5. Calculate emissions

Whilst the GHG Protocol specifies how to undertake the inventory, this document details other important considerations for companies in determining their approach to carbon footprint measurement. This exercise can be done either in-house (manually), through a software provider, or through an external advisor or a combination of these. The level of complexity of a business should be factored into the assessment of which method to choose.

There are three key attributes to consider when determining a preferred path to GHG emissions measurement and assessing the alternatives.

 Cost	Cost: How expensive is the method to set up, deploy and keep running periodically, and how does that match up against the budget?
 Resource Intensity	Employee Inputs: How much full-time equivalent (FTE) time will the effort require? Expertise: Does it require prior carbon footprint measurement experience?
 Data Attributes	Accuracy: How accurate will the GHG emissions calculation be, and what is the error risk? What is the comfort level with using estimations? Are the assumptions underpinning the emissions calculation reasonable? Auditability: Is the emissions measurement easily auditable? Could an assurance service provider (third party) attest to the quality of the reporting? User Experience: Can the data be easily extracted, manipulated, and visualised; replicated year on year?

Each attribute may have varying importance according to a company’s business goals, needs and resource capacity. For example, when measuring GHG emissions for external publication or regulatory reporting, **Accuracy and Auditability** may be the most important attributes. Further, if the priority is to gain institutional awareness and find cost-savings and emissions reduction opportunities, then **User Experience** is likely to be the most important attribute. Lastly, there are constraining factors which can vary in importance depending on a business’ available resources, such as **Cost** and **Resource Intensity**. As such, please evaluate the relative importance of each attribute in order to assess the most suitable method.

WHERE TO START (continued)

Selecting a Method

The framework below should be used as a reference guide to assess a short-list of options in a structured and detailed manner. Generally, regardless of the method, there will always be some level of internal ownership over GHG emissions measurement (including, but not limited to: choosing reporting boundaries, identifying emissions sources, collecting source data, etc.), but the degree of involvement and level of intensity varies and may evolve over time. The framework presents a relative comparison of each method, though business context is imperative to assess appropriately.

Method	 Cost	 Resource Intensity	 Data Attributes
 In-House This approach is the do-it-yourself option and involves manual calculation. There are several paths available to calculate emissions in-house, including the use of online emissions calculators, publicly available spreadsheets, and/or the creation of in-house tools (e.g., Excel spreadsheets).	Most cost-effective option, albeit opportunity cost of current resources should be considered.	Employee Inputs: Most time constraining option Expertise: Requires knowledge on carbon footprint measurement or significant upfront time investment	Accuracy: Higher risk of error, especially across time and geographies (e.g., emission factors could be outdated or incorrectly used for the geography) Auditability: Low User Experience: Data extraction, manipulation, and visualisation capabilities will be rudimentary, and highly dependent on the employee's capabilities
 Software This approach entails the use of software for emissions calculation. There are a range of software providers in the market that tend to generally either be a pureplay or purpose-built emissions calculation platform, or have an emissions calculation function embedded within a wider sustainability platform.	More cost effective than external advisors. There is usually an annual subscription fee for the software, besides the capex for setting it up. Cost can be tied to the number of accounts.	Employee Inputs: Requires platform training and onboarding of data and access, and could be more time consuming than external advisors Expertise: Could require knowledge of carbon footprint measurement	Accuracy: Should be high given the degree of automation involved, but it depends on additional assistance and expertise provided; also depends on degree of geographic offerings Auditability: Software platforms should allow for auditability of emissions calculations, but some may not User Experience: Platform functionalities could allow for data manipulation and visualisation
 External Advisors This approach entails hiring external advisors to measure GHG emissions. There is a range of types of advisors, including audit firms, management consultants, ESG consultants, and climate specialists. Providers may also utilise third-party or proprietary software solutions.	Most likely highest cost option, albeit pricing can vary depending on the advisor and geography.	Employee Inputs: The least time-intensive option, and service quality is expected to be high Expertise: No carbon footprint measurement knowledge required	Accuracy: Accuracy should be high, albeit subject to human error and quality of advisors; should be able to adjust for geography Auditability: Typically high, but depends on quality of advisors User Experience: Data extracts and manipulation may be challenging and require further advisory services

Further Considerations

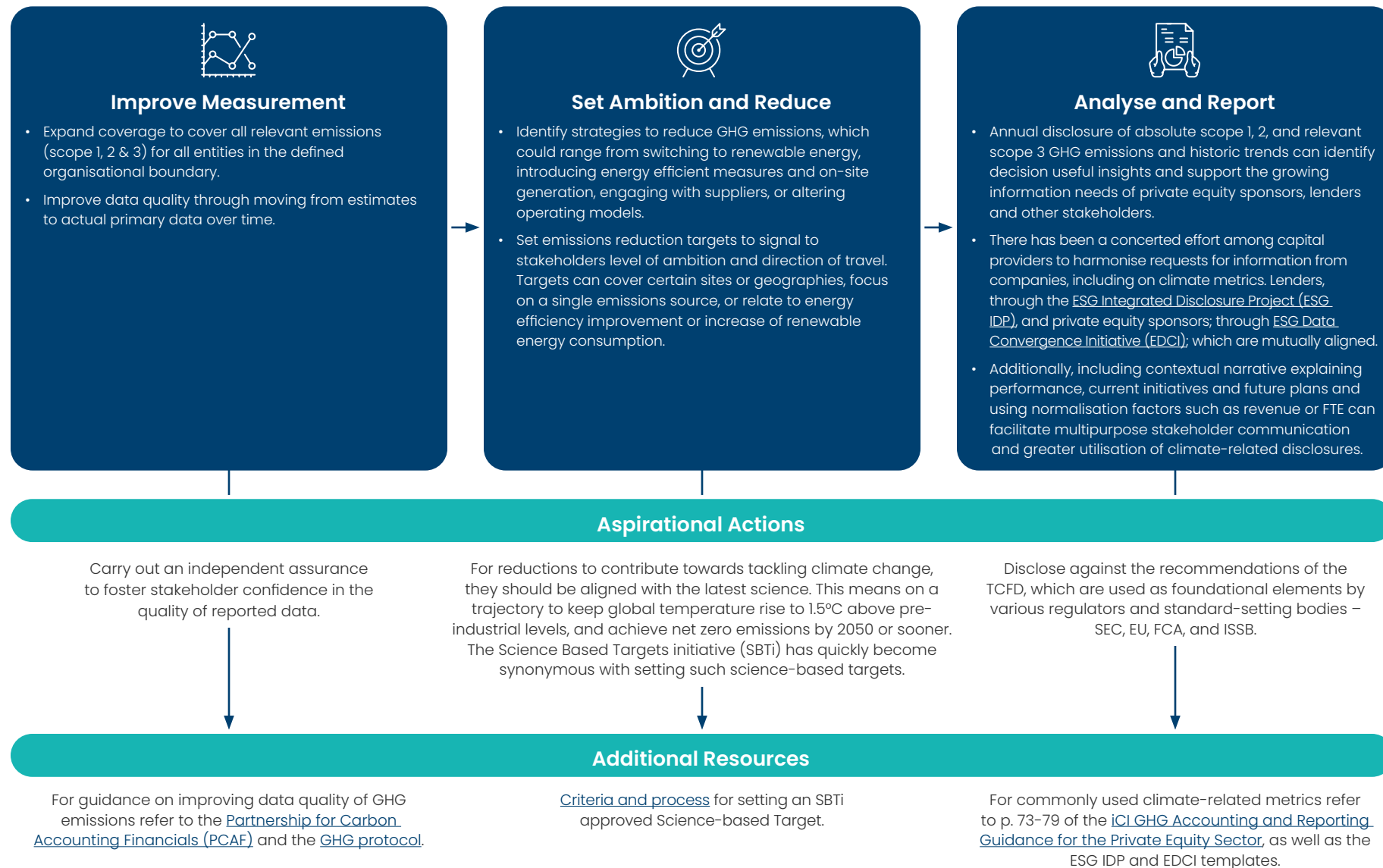
There are additional features to consider that relate to the process after the initial carbon footprint is complete. One of which is continuity, as most companies that measure GHG emissions do not do it as a one-off task, but do so every year. Thus, in choosing a method, keep in mind the replicability of the chosen method. It is not uncommon for companies to change methods during their first few years as business priorities change and they become familiar with carbon footprint measurement. Another feature is future planning, which entails developing an emissions reduction plan based on the complete carbon footprint. **The next section gets into emissions reduction planning further**, but if this is a priority for the business, the chosen method should likely focus on **Data Attributes** in order to help facilitate future planning.

Key

- Beneficial:** Less intensive, easier, more comprehensive, more affordable
- Neutral:** Somewhat intensive, requires some effort, costs can vary
- Challenging:** More intensive, more difficult, more expensive, less comprehensive

WHAT NEXT

GHG emissions measurement can be considered the initial, necessary step for a company looking to adapt to emerging risks and opportunities and understand its impact on the climate. This is the foundation from which concrete actions in the short and long term can be developed. This section introduces the possible next steps.



KEY TERMS AND RESOURCES

Key Resources for Carbon Footprint Measurement



In-House

- The [GHG Protocol](#) provides comprehensive global standardised frameworks to measure and manage GHG emissions from private and public sector operations, value chains, and mitigation actions. Alignment with the GHG Protocol is both best practice and standardised across the industry. The [ICI GHG Accounting and Reporting Guidance for the Private Equity Sector](#) sets out a consistent approach to GHG emissions disclosure across the private equity sector, including PE-backed companies (p.29 – 55).
- There are other resources and tools, such as through the [GHG Protocol](#) webpage that companies can use to calculate or estimate aspects of their carbon footprint.
- There are also online GHG emissions calculators available through government websites, such as the [US EPA](#).¹⁰



Software

- CDP has catalogued their accredited solutions providers, which includes external advisors and software platforms, [here](#).
- Persefoni¹¹ has short-listed 9 Emissions Management Software Tools to consider in 2023, [here](#).
- Verdantix's [Green Quadrant: Enterprise Carbon Management Software 2022](#) provides a detailed fact-based comparison of the 15 most prominent carbon management software vendors in the market (registration required).



External Advisors

- CDP has catalogued their accredited solutions providers, which includes external advisors and software platforms, [here](#).

Glossary of key terms

Scope 1 Direct GHG emissions

Occur from sources that are owned or controlled by the organisation. For example emissions from combustion in owned or controlled boilers, generators, vehicles, as well as process and fugitive emissions.

Scope 2 Indirect GHG emissions

Occur from the generation of purchased electricity, heating, cooling and steam.

Scope 3 Other Indirect GHG emissions

Occur from activities relating to the value chain, from sources not owned or controlled by the organisation.

Carbon footprint

The total amount of greenhouse gases that are emitted into the atmosphere based on a defined boundary and time period, e.g. person, product, building, organisation. A private equity firm can define a carbon footprint as accounting for its own operational GHG emissions. For the purpose of this guidance, the total carbon footprint of a private equity firm is accounting for both its own operational GHG emissions (across scope 1, 2 and 3 categories 1-14) and its financed emissions (those of its managed funds and underlying investments – scope 3 category 15).

Decarbonisation

Decarbonisation is the term used for the reduction or elimination of carbon dioxide (CO₂) emissions, for example by switching to low-carbon energy/power sources, achieving a lower output of greenhouse gases into the atmosphere.

Climate-related Risks

Climate-related risks are typically divided into two major categories: (1) risks related to the transition to a lower-carbon economy (transition risks) and (2) risks related to the physical impacts of climate change (physical risks).

Science Based Targets initiative (SBTi)

A partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). Established to drive ambitious climate action in the private sector by enabling companies to set science-based emissions reduction targets.

Task Force on Climate-related Financial Disclosures (TCFD)

The Financial Stability Board created the Task Force on Climate-related Financial Disclosures to improve and increase reporting of climate-related financial information.

Endnotes

1. [European Central Bank](#)
2. [PRI](#)
3. [World Economic Forum](#)
4. [CDP](#)
5. [Ernst & Young](#)
6. [Edelman Trust Barometer](#)
7. [Gallup](#)
8. [Marsh & McLennan](#)
9. [Cone Communications](#)
10. [US EPA Simplified Company GHG Calculator](#)
11. Note that the article is written by Persefoni, which is also a software emissions platform.