

GUIDE

How to measure & reduce your company's carbon footprint in 2025?

July 2025





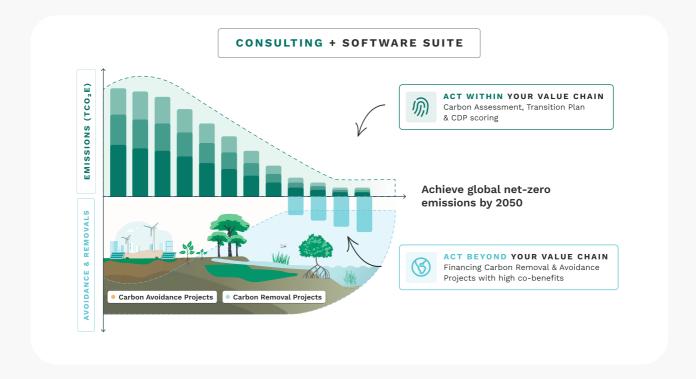
About ClimateSeed

Founded in 2018 as an intrapreneurial project within **BNP Paribas** and supported by **AXA Investment Managers** since 2021, ClimateSeed is an impact driven company that offers consulting services backed by digital tools to assist organizations in developing and implementing their climate strategy.

Our mission is to accelerate the fight against climate change and support global carbon neutrality (Net Zero*).

To achieve this, we help companies:

- Act within their value chain, by conducting greenhouse gas (GHG) assessments, developing transition plans, and assisting with CDP reporting.
- Act beyond their value chain, by creating high-integrity portfolios of carbon sequestration and avoidance projects.



Member of Certified















Table of Contents

- P.1 Introduction
- Why is it important to measure company's GHG emissions?
- How to measure & reduce your company's carbon footprint?
- P.20 ClimateSeed's support in measuring and reducing your emissions
- P.31 Conclusion



Introduction

In an era where climate change is reshaping global economies, businesses play a crucial role in the transition to a low-carbon future. Reducing carbon emissions is no longer just a regulatory obligation—it is a strategic necessity for companies aiming to remain competitive, resilient, and aligned with stakeholder expectations.

This guide provides a clear and actionable roadmap for measuring and reducing your company's carbon footprint. From understanding the basics of carbon accounting to implementing effective reduction strategies, you will find practical insights to help your business contribute to global climate goals while driving operational efficiency and long-term value creation.

What is carbon footprint?

According to UNDP [1], a carbon footprint is a measure of the greenhouse gas emissions released into the atmosphere by a particular person, organization, product, or activity. A bigger carbon footprint means more emissions of carbon dioxide, and therefore a bigger contribution to the climate crisis.

Measuring a person's or an organization's carbon footprint involves assessing both direct emissions from the burning of fossil fuels for energy production, heating, and land and air travel, as well as indirect emissions from the production and disposal of all the food, manufactured goods, and services they consume.

This comprehensive evaluation helps to identify key areas where reductions can be made, ultimately contributing to a more sustainable future. By understanding these impacts, individuals and organizations can make informed decisions to minimize their environmental footprint.



□ Did you know?

According to a report from the World Meteorological Organization [2] (WMO), greenhouse gas concentrations reached a new record in 2023, exposing the planet to rising temperatures for many years to come. With an increase of more than 10% in just 20 years, carbon dioxide (CO₂) is accumulating in the atmosphere faster than ever in human history.



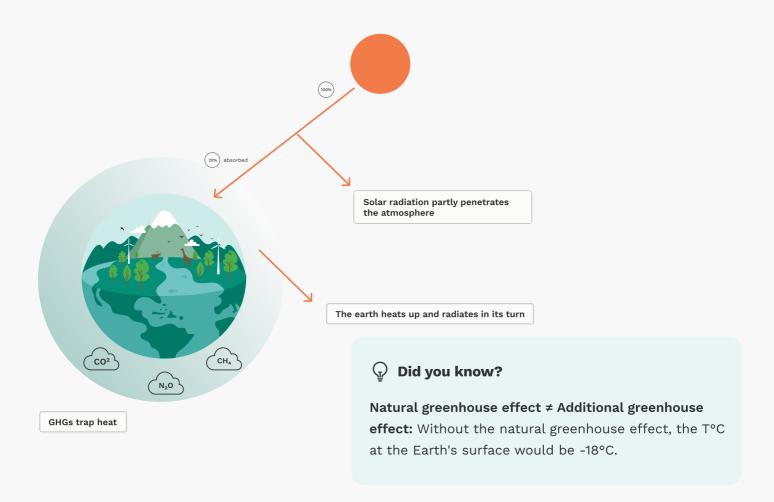
Why is it important to measure company's GHG emissions?

Measuring your company's carbon footprint is the first step toward meaningful climate action. Without accurate data, it's impossible to set realistic reduction targets, comply with evolving climate regulations, or demonstrate transparency to stakeholders.

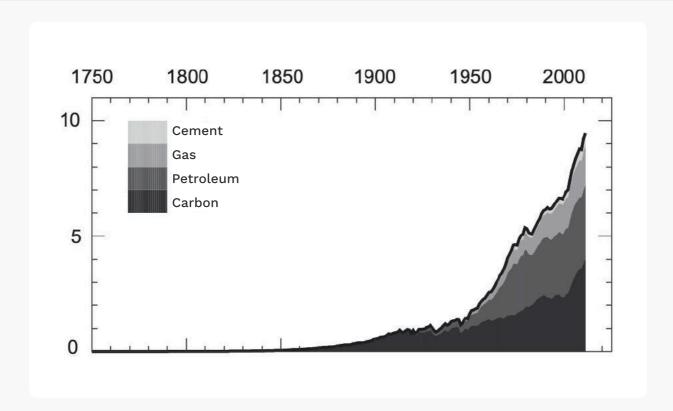
In this part, we will explain the main reasons why companies should measure their carbon footprint.

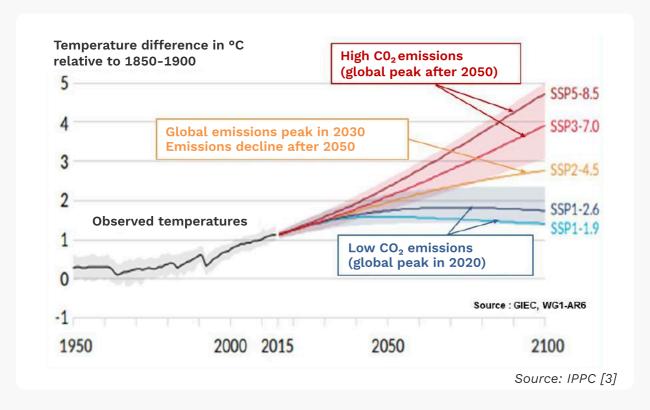
Climate, the role of the carbon footprint

Greenhouse gases are natural and make life on Earth possible. Thanks to the GHGs naturally present in the atmosphere, the Earth absorbs part of the energy it receives from the Sun, while the rest is reflected back into space. This natural phenomenon, known as the greenhouse effect, makes life on Earth possible.









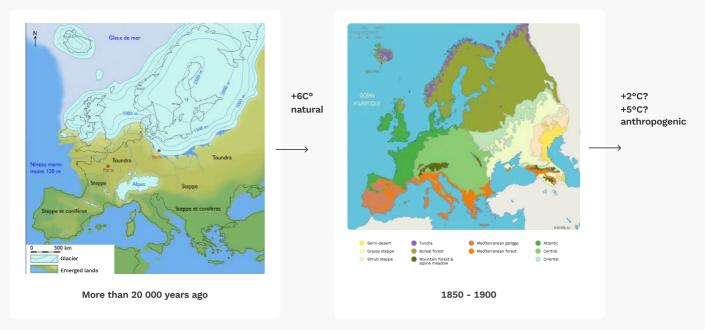
Did you know?

In 2024, the global average temperature exceeded the pre-industrial average of 1850-1900 by around 1.45°C, making it the hottest year on record. [4]



Why limit the temperature increase to below 2°C?

The goal of the Paris Agreement is to keep the temperature increase below 2°C and, if possible, below 1.5°C compared to pre-industrial levels.



Source: sciencedirect.com [5]

Scientific point of view

From a scientific perspective, human activity is largely responsible for climate change [6]. To limit the global temperature increase to 1.5 degrees above pre-industrial levels, as stipulated by the Paris Agreement, companies must take the necessary steps to reduce their emissions and contribute to global carbon neutrality.

To support the goal of global carbon neutrality, the IPCC emphasizes the importance for organizations to:

- Reduce emissions across their value chain
- Contribute to projects that avoid or sequester emissions

Did you know?

20,000 years ago, France had the same climate as today's Russia, and the difference in average terrestrial temperature was only -6°C. A difference of +5°C in 2100 could radically change the surface of the globe.



Business

The carbon footprint is analyzed to determine reduction priorities, i.e. how to focus efforts to reduce carbon and other greenhouse gas emissions. Using the carbon footprint to identify levers for action is essential to drawing up an effective reduction plan.

Internal drivers for organizations

Strategic decision-making

Measuring emissions is a critical driver for strategic decision-making, providing the foundation for an effective decarbonization roadmap. By identifying emission hotspots across operations and the value chain, businesses can prioritize reductions in areas with the greatest environmental and operational impact.

(!) Risk management

Measuring emissions is a vital tool for managing climate-related risks that can impact a company's financial performance and strategic resilience. A clear understanding of your emissions profile allows you to assess exposure to regulatory, reputational, and market risks tied to carbon-intensive operations. By integrating emissions data into broader risk management processes, businesses can safeguard their operations and capitalize on emerging opportunities in the low-carbon transition.

>> Operational efficiency & cost savings

Measuring emissions reveals inefficiencies in energy use and resource management, enabling companies to implement cost-saving improvements. Upgrading energy systems, optimizing resource consumption, and improving waste management are common strategies that not only cut Scope 1 and 2 emissions but also deliver financial benefits, making sustainability and financial performance mutually reinforcing goals.



Climate change risks for businesses

Climate change poses both direct physical threats and pressures related to economic transition for businesses.

Physical risks

Risks associated with exposure to the physical consequences of global warming:

- Rising average temperatures and increased fluctuations
- Intensification of extreme weather events (rainfall, heatwaves/droughts, etc.)
- Scarcity of resources (particularly energy), as well as food and water insecurity
- Collapse of biodiversity

Transition risks

Risks (and opportunities) arising from the shift to a low-carbon economy:

- Regulatory and policy changes for mitigation
- Markets and sectors transitioning toward low-carbon value creation: opportunities to seize and associated market risks
- Increasing stakeholder demands for environmental commitments
- Cultural shifts among employees and consumers regarding the company's environmental reputation

Reputational & regulations

Comply with evolving regulations

Measuring your carbon footprint ensures compliance with evolving regulations like **the EU's Corporate Sustainability Reporting Directive** [7] (CSRD), which mandates GHG assessments for thousands of companies, including SMEs and publicly listed firms. By staying ahead of these requirements, organizations mitigate legal risks, avoid significant fines, and demonstrate accountability to regulators, stakeholders, and the public. This proactive approach also positions companies to adapt to future regulatory changes as climate policies tighten globally.

Corporate reputation & stakeholder trust

Consumers, investors, and regulators expect companies to back climate claims with verifiable data. A documented footprint showcases accountability, mitigates greenwashing risks, and builds credibility through public disclosures like **the Carbon Disclosure Project** [8] (CDP).



How to measure & reduce your company's carbon footprint?

5 steps to measure & reduce your carbon footprint

To conduct a carbon assessment, it is important to define the scope of measurement, choose the right methodology, understand the data to collect, and know how to convert it into greenhouse gas emissions. Here are the 5 steps to follow:



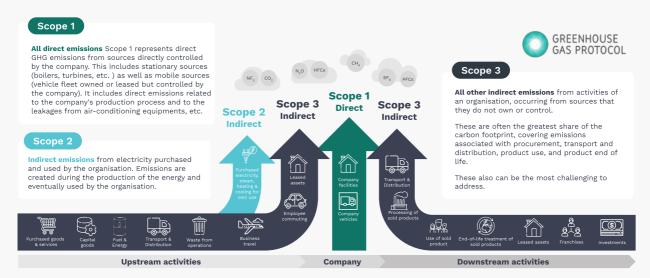
Definition of perimeter to consider

- ▼ Temporal perimeter: It corresponds to the period over which the company wishes to measure its carbon footprint, typically the previous 12 months to have all the necessary data.
- Organizational perimeter: It corresponds to the different sites, facilities and buildings to be taken into account. For example, does the company want to measure the carbon footprint of its sites in several countries?

Examples of Organizational Boundary Definitions This could include: Corporate headquarters Regional offices Production facilities Warehouses Any entities or locations excluded from the boundary, along with a justification (e.g., limited data access, minimal contribution to emissions).



Operationnal perimeter: It corresponds to the emission types linked to these sites, installations, and buildings. Different methodologies usually classify emissions into Scopes or categories. According to methodologies, all the company's direct and indirect emissions must take into account.



*Source: Technical Guidance for Calculating Scope 3 Emissions V 1.0



M Key considerations for scope definition

- Primary Objective: Determine the primary objective of the carbon footprint assessment (e.g., regulatory compliance, stakeholder engagement, internal decision-making).
- Legal and Regulatory Requirements: Identify any mandatory reporting requirements or industry-specific standards that may influence the scope definition.
- Identify the most significant sources of emissions: based on their contribution to the overall carbon footprint.

The goal is to establish a boundary where data collection is both practical and meaningful to avoid spreading efforts too thin and compromising the project's overall effectiveness.



Choosing the right methodology

The choice of methodology will depend on several factors, including:

- Regulatory Requirements: Compliance with specific regulations (e.g., BEGES in France, CSRD in Europe).
- Industry Standards: Alignment with industry-specific standards and best practices.
- Stakeholder Expectations: Meeting the expectations of customers, investors, and other stakeholders regarding transparency and reporting.
- Strategic Goals: Supporting broader sustainability objectives and long-term decarbonization strategies.

The main methodologies

- ✔ ISO 14064: A globally recognized international standard for GHG accounting, providing a flexible framework for organizations of all sizes.
- **⊘ GHG Protocol:** A widely used international standard with a comprehensive framework for Scope 1, 2, and 3 emissions.
- ❷ BEGES (Bilan d'Émissions de Gaz à Effet de Serre): A French regulatory framework for GHG accounting, specifically designed for companies operating in France.



Organizations can adopt multiple methodologies to meet diverse needs and stakeholder requirements. Tools like ClimateSeed's tool called 'GEMS' streamline the process, ensuring consistency and efficiency across different approaches.



2 Data collection

How to collect emissions data?

To start collecting data efficiently, you should:

- Know the emissions categories to be taken into account (energy, transport, waste management, etc.).
- ✓ Identify the sources of these data and designate a person responsible for data collection for each category.

The presence of a project manager is crucial to verify the completeness and consistency of the data collected with the budget objectives.

① Zoom

How to identify the right people responsible for data collection & involve them effectively?

- 1. Identify the required data in each organizational unit and identify the data owner.
- 2. Share the importance of using physical data.
- 3. Verify the consistency of data from different sources and avoid double counting.

What types of data can I collect?

The data generally used to calculate the carbon footprint can be:

- Physical or monetary data: these are complementary, i.e. they can be used can be used simultaneously to cover different sources of emissions within a single same budget (being careful, however, to avoid double-counting).
- The data may be primary, i.e. referring directly to the organizational unit being analyzed, or secondary, i.e. resulting from statistics or extrapolated from comparable data.

For best accuracy, always give priority to physical and primary data.



Which data should you focus on?

For best accuracy, always give priority to physical and primary data. [9]

Type of Data	Description	Examples	Reliability / Accuracy
Primary Data	Observed data collected from information systems and physical records belonging to or operated by the organization or company (or a company within its supply chain).	Actual fossil fuel consumption, ton- km transported, tons of material purchased, number of products sold	++++
Secondary Data	Generic or average data from published sources, representing the activities of the company, its products, or the community and its territory.	National average fuel consumption of a gasoline car in urban driving. Average distance traveled by household transport type in France (National Transport and Mobility Survey, 2008).	++
Extrapolated Data	Primary or secondary data related to a similar activity, adapted or customized to fit a new situation.	Energy consumption of a rural bank branch in the Vosges, adjusted for climate, applied to a similar branch located in the Landes.	+
Approximated Data	Primary or secondary data related to a similar activity that can be used instead of representative data. These existing data are directly used without adaptation.	Energy consumption of a rural bank branch in the Vosges, without climate adjustment, applied to a similar branch located in the Landes.	-

How to harmonize data?

To accurately calculate a carbon footprint, it's essential to ensure that your data is properly harmonized. Here are three key steps to achieve this:

- Bring together data from different sources in a single database.
- Pay attention to units of measurement.
- Supplement missing data with extrapolations and coherent hypotheses, and ensure traceability.



3 Calculation & interpretation

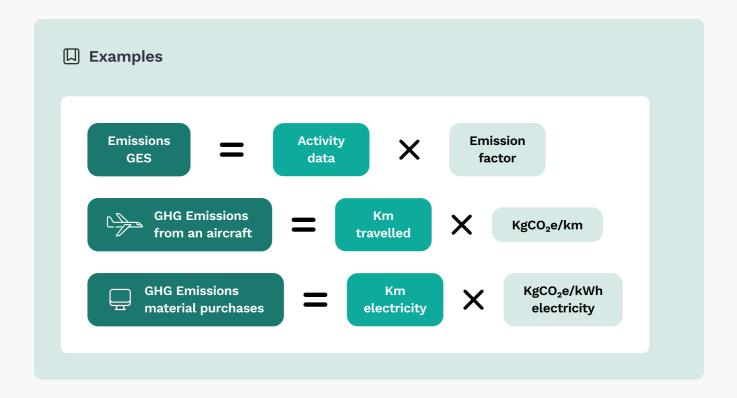
In this step, we will look at how the collected data is used to calculate the carbon footprint of a given activity.

How is the carbon footprint calculated?

Once the data has been obtained, how is the carbon footprint calculated?

The collected data must be converted into kg of CO₂e using an emission factor. This is a representative value used to convert the activity data into greenhouse gas (GHG) emissions.

Greenhouse gas emissions are therefore calculated as follows:



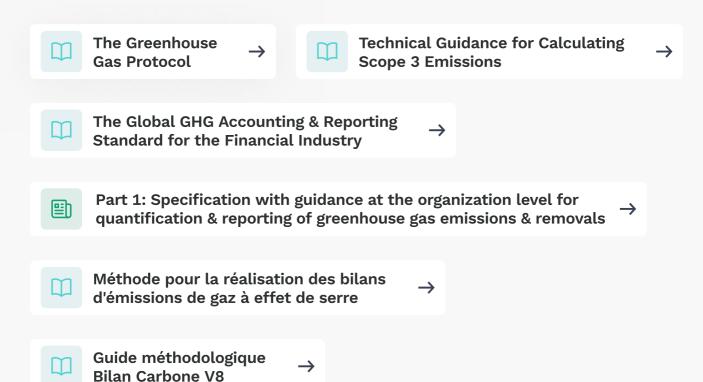


Where to find the emission factors?

These emission factors can be found in public or private databases, often specific to a country or sector of activity. Among the most widely used databases are:



What are the key documents on carbon accounting methodologies to assist you?





Two types of uncertainty considered in carbon footprint results

The average margin of accuracy for carbon measurement is approximately 25 to 30%. This is less precise than financial accounting, as emission factors are used.

1 Data uncertainty

This refers to the variability or inaccuracy of the data collected on the activities of the company that generate emissions.

Example: Data obtained from a survey with a 30% response rate required extrapolation. An uncertainty is then applied to the extrapolated data.

2 Emission factor (EF) uncertainty

Each emission factor (EF) has an inherent level of uncertainty, as it is always based on a statistical average.



Example

Data obtained from a survey with a 30% response rate required extrapolation. An uncertainty is then applied to the extrapolated data.



Monetary approach vs. physical approach

Example

Monetary factors: being an average for an entire sector of the economy, intrinsically present a high degree of uncertainty (≈80%).

The physical approach: provides greater granularity by using specific units of measurement for activity data, such as kilometers, kWh, or kilograms.

In contrast, the monetary approach converts currency (€ or other) into GHG emissions (tCO₂eq) using monetary ratios (e.g., kg CO₂/€). This method is less precise and can overestimate emissions, potentially tripling your carbon footprint.



Approaches	Result (kgCO2e)	Emission Factor (EF) uncertainty
Monetary	618 Kg	80 %
Physical	202 Kg	50 %

□ Did you know?

Carbon footprints should not be compared between companies, as different calculation methods can lead to significant variations.

However, they can be effectively compared year over year within the same company, as long as the same calculation methodology is applied consistently, allowing for a more accurate assessment of progress and trends over time.



Example of carbon footprints



Name of company

GHG Measurement 2025

Reference years

Number of sites

2024

32



23 tCO₂e

Emission per employee

€ 26 tCO₂e Emission per M€ Confidence score +/- 24 tCO2e (24%)



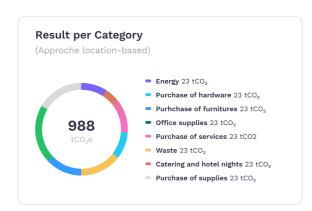


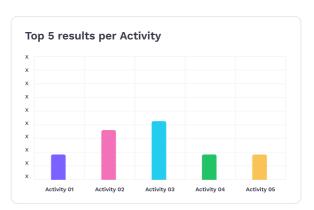






Breakdown of results

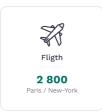




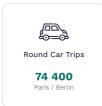
Equivalence tCO₂

934 kgCO₂ represent...













Communication & reporting

Communicating your carbon footprint and emissions reductions is crucial for demonstrating your commitment to sustainability and building trust with stakeholders. Here are some key avenues:

1 Sustainability Report or Extra-Financial Report

A dedicated sustainability report (sometimes called an extra-financial report) provides a comprehensive overview of your environmental performance, including detailed information on your carbon footprint, emissions reduction strategies, and progress towards targets. This report allows for in-depth analysis and transparency to your stakeholders.

2 Customer and stakeholder communications

Sharing your carbon footprint data and reduction efforts through various channels is vital for engaging with your customers and other stakeholders. This can be done via your website, press releases, dedicated communication campaigns (e.g., social media, newsletters), and even through product labeling or packaging where relevant. Tailor your message to the specific audience and focus on clear, concise, and impactful information.

3 Disclosure for CDP, SBTi, ISO 14064 & CSRD

Participating in recognized reporting frameworks like CDP (Carbon Disclosure Project) and aligning with initiatives like SBTi (Science Based Targets initiative) demonstrates your commitment to standardized and credible reporting.

Similarly, adhering to standards like ISO 14064 for greenhouse gas accounting and preparing for the CSRD (Corporate Sustainability Reporting Directive) ensures your data is robust and comparable, allowing stakeholders to benchmark your performance against others. These disclosures often require specific data points and methodologies, driving internal improvements in data collection and analysis.



5 Reducing emissions

Once the greenhouse gas emissions have been measured, it is crucial to set clear reduction targets to minimize environmental impact. Measurement helps identify the main sources of emissions, but real action lies in the ability to reduce them significantly.

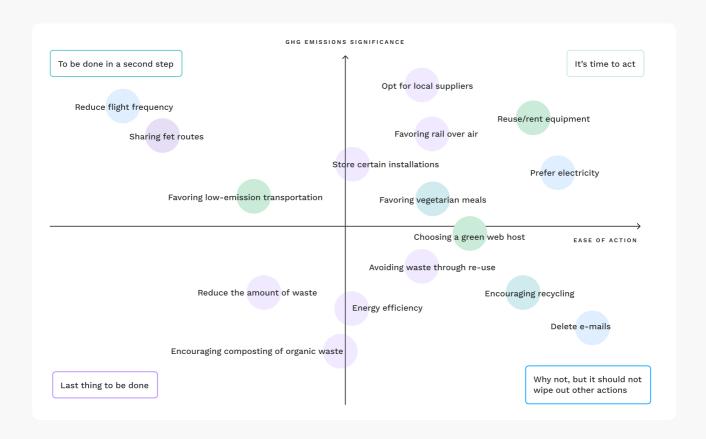
To plan this reduction, it is essential to develop strategies tailored to the specific needs of your organization. These measures should be concrete, measurable, and follow a clear action plan to ensure effective long-term reduction.

How do you plan your reduction?

✔ Identify the emissions categories on which you intend to take action For this, it is important to take into account the scale of emissions in the category, the level of influence on the emission source, the cost of reduction, the acceptability of possible reduction actions.

Define objectives, budget and timeline It is advisable to define precise objectives, a corresponding budget, those responsible, implementation deadlines and intermediate short and medium-term sub-objectives.

✓ Involve the various stakeholders Involve those responsible for reducing emissions or defining the necessary organizational and financial resources.





How to achieve the reduction?

Define precise reduction actions

For each emissions category, define reduction actions, specifying the reduction potential (in tCO₂e), the implementation deadline, the type of action (structuring/ongoing), the investment required, potential savings or additional costs.

Check how much that actions contribute to reduction objectives

For each emissions category, check that the expected reductions are consistent in quantitative terms with the objectives set.

Make reduction actions scalable

Particularly in the case of complex and international structures, share best practices within the company and eliminate obstacles to their scalability.

How to control the reduction?

Create intermediate targets

Identify the causes of potential delays and the risks of not meeting targets, in order to adjust the reduction plan.

Adjust the budget

If implementing a measure is more costly than expected, analyze the reasons and adjust the budget.

Check for new rebound emissions (boomerang effect)

Reducing certain emissions may lead to an increase in other emissions. It is important to check that these do not cancel out the efforts made.





ClimateSeed's support in measuring and reducing your emissions

ClimateSeed offers consulting services supported by an intuitive digital platform to measure and reduce your greenhouse gas emissions.

For each GHG measurement project, we offer:

- A dedicated consultant who supports you from start to finish and understands your specific challenges.
- Full access to GEMS, our intuitive platform, to track your data, analyze your results, and manage your actions with ease.

Fully flexible support from our senior decarbonization consultants

GHG emissions measurement (GHG assessment)

- Free assessment of your carbon maturity
- · Introductory training on carbon accounting
- · Scoping, flow mapping & data collection strategy
- · Workshop to learn how to use our GEMS platform
- Support in your data collection
- · Verification of data collection
- · Reporting of results

Transition plan (emissions reduction)

- Analysis of your current situation (GHG assessment, identification of major emission sources, etc.)
- dentification of key issues and challenges in the transition to a low-carbon economy
- Workshop with your stakeholders to co-develop a transition plan
- Definition of reduction targets in line with science (Science Based Target).



Define your organizational structure and give access to the right people

Set up your GHG measurement

- **Define your measurement perimeter:** temporal, organizational, and operational.
- Configure the platform with your legal entities, business lines, and sites in France and internationally.
- Customize the platform to your needs (relevant data points) and define carbon intensity KPIs (revenue, FTEs, number of products sold, etc.).
- Identify, for each data point, the contributors across the entire perimeter.
- Add your own specific emission factors if needed.
- Set up access levels to reinforce security and facilitate inter-team cooperation.

□ Did you know?

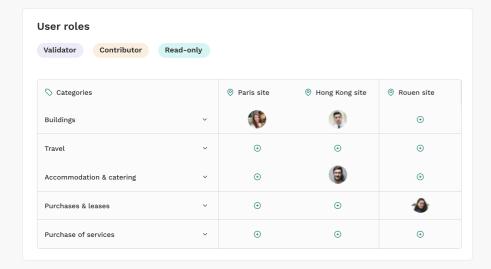
With GEMS, you can manage several measurements simultaneously within the platform.

Our platform is available in:

- French
- · English
- Italian

Onboard your team

ClimateSeed provides a training and configuration phase to align all participants with the methods and objectives.





Get support from ClimateSeed's consultants

Support in defining perimeter and strategy of your measurement.



GEMS Platform: Data collection and analysis of the results

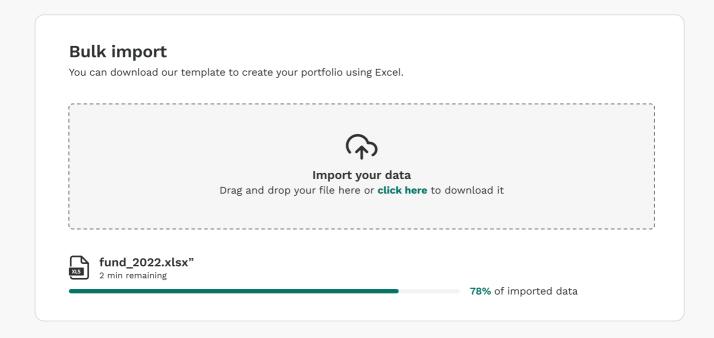
The data collection phase is a cornerstone of any carbon footprint assessment project, where rigor and accuracy are essential.

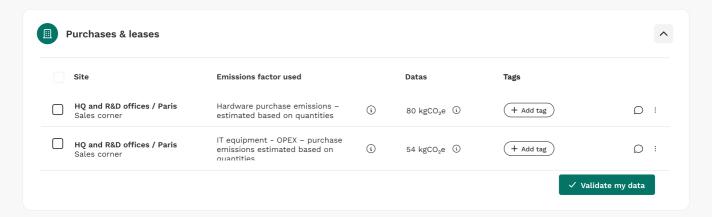
During the GEMS platform leverages its advanced features to enable efficient and structured data collection through adaptive collection forms, bulk data import templates, and the support of a dedicated consultant who ensures the relevance and consistency of the information gathered and the results produced.

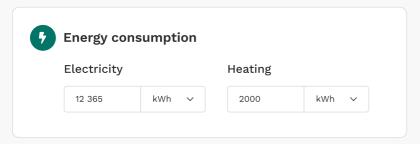
The different ways of collecting data

- Pre-calibrated questionnaires: Engage your stakeholders by sending automated questionnaires to employees.
- Adaptive input forms: Simplify data entry with forms that adapt to the information you have available.
- ✓ Mass import options: Utilize Excel templates to import large datasets for purchases, business travel, and other emission sources.
- ✔ Data extrapolation: Extrapolate data based on reporting periods or across different sites and entities if needed.
- ▼ Tag system: Categorize data with tags to generate segmented results tailored to your organization's specific needs.









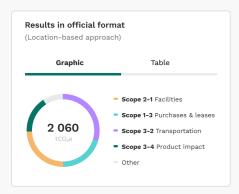


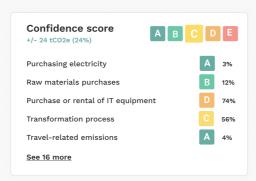
Reliable results & reporting

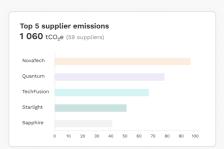
- Confidence score: Assess the certainty of your data and identify areas for improvement to enhance the reliability of your results
- Compliance with standards: Extract results according to regulatory BEGES, ISO 14064/14069, or GHG Protocol methodologies.
- Extensive emission factor database: Access a comprehensive database of emission factors from various sources, including Base Empreinte® (Ademe), IEA, Ecolnvent, DEFRA, Agribalyse, Boavizta, Exiobase, and internal E Fs.
- Data extrapolation: Extrapolate data based on reporting periods or across different sites and entities.
- Tag system: Categorize data with tags to generate segmented results tailored to your organization's specific needs.
- Real-time monitoring: Track the progress of data collection in real-time to ensure timely completion.

Get support from ClimateSeed's consultants

Our consulting services provide support in strategy development, monitoring data collection, offering guidance on methodologies, and reprocessing files to ensure data quality and consistency.





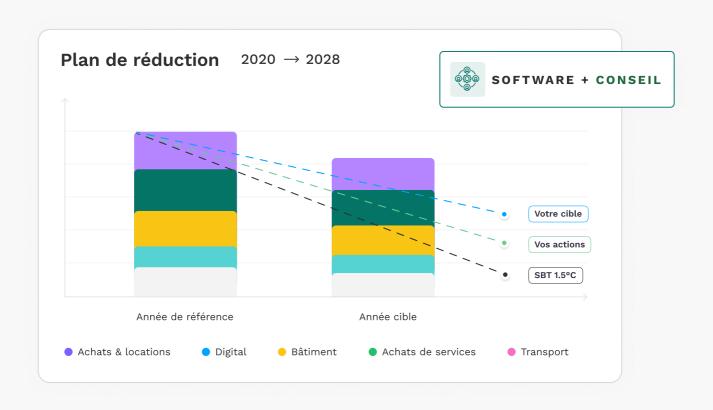




Transform the results of your GHG assessment into clear objectives and a concrete action plan.

Our expert consultants can provide comprehensive support to guide your organization through the process of emissions reduction. The process begins with collaborative workshops to define clear targets and develop a tailored strategy.

Assistance is provided in formalizing a robust action plan with clearly identified responsibilities, timelines, and quantified reduction potentials for each initiative. Support is then offered for the implementation of early actions, with guidance and best practices to ensure successful execution. Progress is monitored, key metrics tracked, and ongoing support offered to keep the reduction plan on track and aligned with goals. This includes follow-up meetings at 3 and 9 months to review progress, key performance indicators, and address any questions.





Conclusion

Taking meaningful climate action starts with understanding your company's carbon footprint. By measuring emissions, setting clear reduction goals, and implementing targeted strategies, businesses can make a real impact—not just on the environment, but also on their long-term success.

Sustainability is no longer just a responsibility; it's an opportunity to build resilience, drive innovation, and strengthen relationships with customers, investors, and employees. With cutting-edge tools, like GEMS, and a commitment to continuous improvement, companies can take charge of their environmental impact and contribute to a more sustainable future. The journey to net-zero is a step-by-step process, but every action counts. The time to start is now.





Talk to a decarbonization expert

The climate transition starts with knowing your emissions.

At ClimateSeed, we support your company at every step: measuring your emissions, analyzing your data, and implementing concrete actions to reduce them.

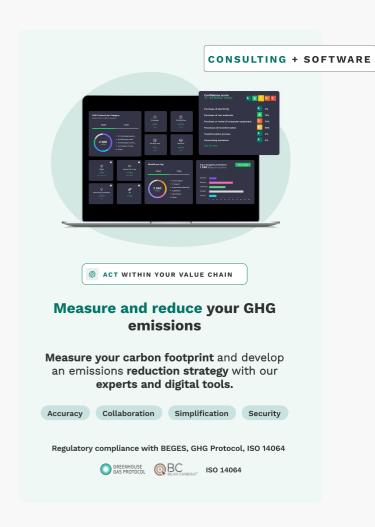
Curious to see how we can help?

<u>Book a free consultation</u> to discover our tailored approach and how we can support your climate strategy.



Key steps for measuring your carbon footprint:

- Consultant dedicated to your project
- A comprehensive greenhouse gas (GHG) assessment tool covering scopes 1, 2, and 3, fully compliant with French and international standards.
- ✓ An all-in-one, easy-to-use, and customizable platform designed to meet the needs of organizational structures of various sizes. (multisite, multi-activity, etc.)
- Consultant supports for each step
- The ability to implement effective climate action plans with topdown or bottom-up approaches.







ClimateSeed remains dedicated to providing innovative and transparent solutions that empower organizations to achieve their climate goals, all while upholding the highest standards of ethical conduct and data security. **The EcoVadis Gold Medal** and **ISO27001 certification** serve as a testament to ClimateSeed's ongoing efforts to lead by example, demonstrating not only a commitment to a more sustainable future, but also the robust data protection practices essential for building trust and ensuring responsible operations.

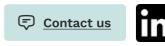


References

- [1] United Nations Development Programme, UNDP. (n.d.). Link
- [2] Organisation Météorologique Mondiale. (2024, October 25). Link
- [3] The Intergovernmental Panel on Climate Change. IPCC. (n.d.-a). Link
- [4] Le Monde. Link
- [5] Deglaciation of fennoscandia. Quaternary Science Reviews. Link
- [6] C. général au développement. (n.d.). Causes of climate change. Climate change observations 2024. <u>Link</u>
- [7] Corporate sustainability reporting. Finance. (n.d.-a). Link
- [8] Carbon Disclosure Project. CDP. (n.d.). Link
- [9] BEGES Methodology Link
- [10] Les outils Conformes. Association pour la transition Bas Carbone. Link



For more information, get in touch with our team of experts.



climateseed.com

