ENERGYCAP®

Carbon Accounting 101

Practical strategies to manage and report carbon emissions

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Executive Summary

The need for sustainable business practices has never been more crucial in today's rapidly changing world, where environmental concerns and climate change are at the forefront of global conversations. As organizations strive to reduce their carbon footprint and demonstrate their commitment to a greener future, carbon accounting has emerged as an indispensable tool for measuring, managing, and mitigating greenhouse gas emissions.

This Carbon Accounting 101 eBook is designed to equip individuals and businesses with the basic knowledge needed to navigate the world of carbon accounting and begin the journey to decarbonization.

Whether you're an environmental enthusiast seeking to enhance your understanding, an aspiring sustainability professional aiming to develop expertise, or a business leader looking to integrate sustainable practices into your operations, this guide serves as an invaluable resource to demystify carbon accounting.

What is Carbon Accounting?

Carbon accounting is a crucial practice involving measuring, tracking, and reporting the amount of Green House Gas (GHG) emissions emitted. It assesses an organization's carbon footprint, including all the direct and indirect emissions associated with its activities, products, and services. Accurate and consistent carbon accounting enables organizations to identify areas to reduce carbon emissions, improve Enviornmental, Social & Governance (ESG) performance, and achieve sustainability goals.

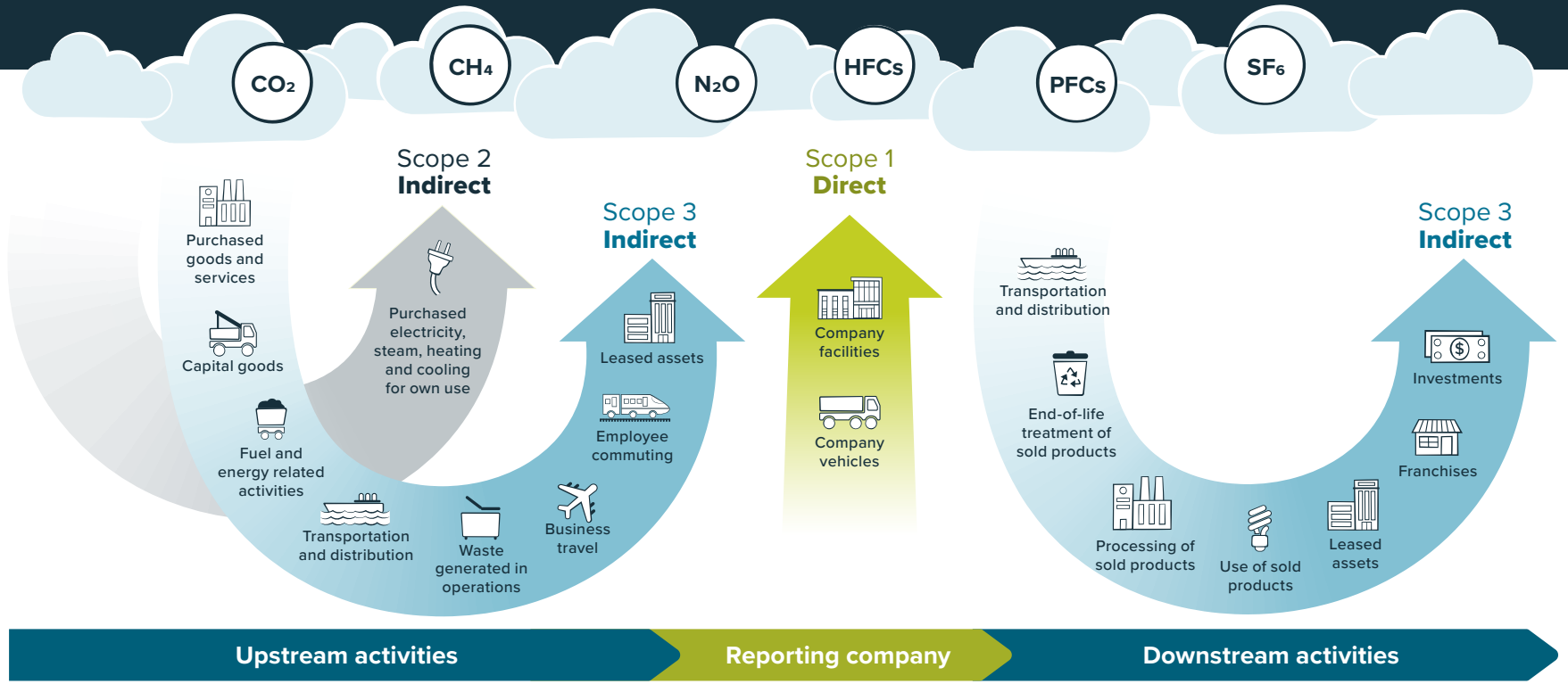
Carbon accounting uses established methods to calculate and report GHG emissions.

The most used method is the Greenhouse Gas Protocol, which categorizes emissions into three scopes.

Scope 1 emissions are direct emissions from upstream sources owned or controlled by the organization, such as the combustion of fossil fuels.

Scope 2 emissions are indirect emissions from purchased electricity, heat, or steam consumption.

Scope 3 emissions are indirect emissions from downstream sources outside the organization's boundary, such as transportation and waste disposal.



Scope of Emissions

Understanding the scope of emissions is crucial for organizations seeking to manage their carbon footprint and identify opportunities to reduce emissions. Through measuring and reporting emissions in all three scopes, organizations can develop a comprehensive strategy to reduce GHG emissions, align with sustainability goals, and contribute to global efforts in this direction. Adopting such a comprehensive approach can enable organizations to make significant strides toward reducing environmental impact while enhancing reputation and competitiveness.

As defined by the GHG Protocol Corporate Standard, emissions are classified into three scopes:

Direct GHG Emissions

Direct GHG emissions occur from sources owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc., emissions from chemical production in owned or controlled process equipment.

Electricity Indirect GHG Emissions

Scope 2 accounts for GHG emissions from the generation of purchased electricity (electricity, steam, and heating/cooling) consumed by an organization.

Other Indirect GHG Emissions

Scope 3 is an optional reporting category that allows for treating all other indirect emissions. Scope 3 emissions are a consequence of an organization's activities but occur from sources not owned or controlled by an organization. Some examples of Scope 3 activities are extraction and production of purchased materials, transportation of purchased fuels, and use of sold products and services.

Source: **https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf**

There are 15 categories of Scope 3 emissions identified by the GHG Protocol, which include:

- Purchased goods and services
- Capital goods
- Fuel and energy-related activities not included in Scope 1 or Scope 2
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets
- Downstream transportation and distribution
- Processing of sold products
- Use of sold products
- End-of-life treatment of sold products
- Downstream leased assets
- Franchises
- Investments

Source: **https://ghgprotocol.org/scope-3-calculation-guidance-2**

Understanding and reporting Scope 3 emissions can be complex, often involving emissions outside an organization's direct control. However, Scope 3 emissions are essential when developing strategies to reduce an organization's carbon footprint, as they represent a significant portion of the emissions associated with its operations.

75%

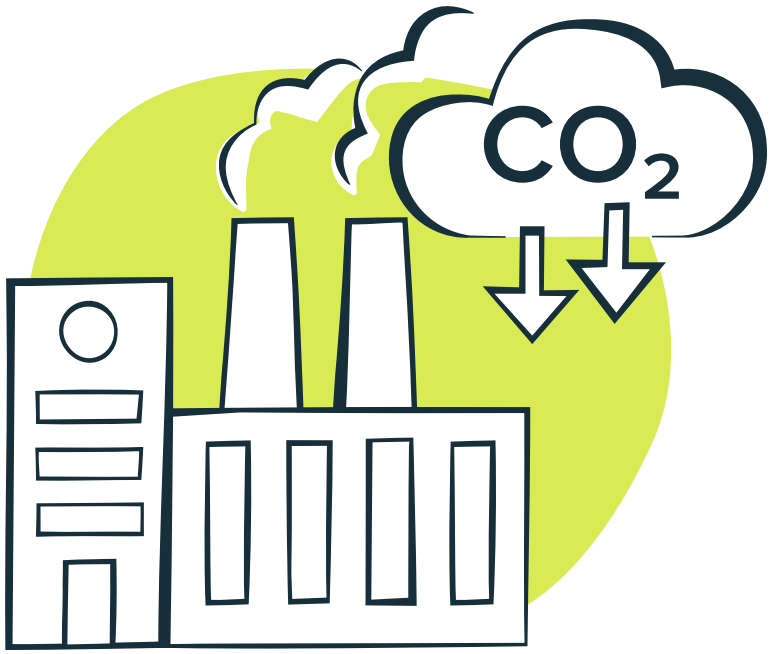
of companies' greenhouse gas emissions are accounted for by Scope 3 emissions (on average).

Source: **https://www.wri.org/update/trends-show-companies-are-ready-scope-3-reporting-us-climate-disclosure-rule**

Carbon Accounting Important?

Carbon accounting is essential for organizations because it allows them to understand their impact on the environment and take steps to reduce their GHG emissions. Carbon accounting assesses an organization's carbon footprint, including direct emissions from their operations and indirect emissions from their supply chain and customer use. By measuring and reporting their GHG emissions, organizations can identify areas for improvement, set reduction targets, and track progress toward those targets. In addition, carbon accounting can help organizations comply with regulatory requirements and demonstrate their commitment to sustainability, enhancing overall reputation.

By implementing carbon accounting, organizations can identify opportunities to reduce costs, improve efficiency, and enhance their environmental performance while contributing to the global effort to mitigate climate change.



Factors Contributing to Carbon Accounting Importance

Fast-Evolving Regulatory Requirements

The issuance of mandates and policies requiring organizations to report GHG emissions has become increasingly common. SEC's proposed climate-related disclosure rule would require publicly traded companies in the United States to disclose Scope 1, 2 and in some cases Scope 3 information about their climate-related risks and opportunities in their financial reports.

Disclosure Risks From Stakeholders

Climate-related risks are becoming more critical to investors, who may require information about an organization's carbon footprint and emissions reduction targets when making investment decisions. Failure to disclose this information may result in a loss of investor confidence and negatively impact the organization's reputation.

Improving Reputation

There is a growing interest among consumers, investors, and stakeholders in the environmental impact of businesses and organizations. Carbon accounting provides a means for organizations to convey their efforts toward reducing carbon emissions, which can enhance their reputation and appeal to new customers and investors who value sustainability.

The "E" in ESG reporting

It's important to clarify that carbon accounting only addresses the "E" in environmental, social, and governance (ESG) reporting. Environmental criteria considers how a company safeguards the environment, including addressing climate change. The "E" is undoubtedly the most difficult to measure.

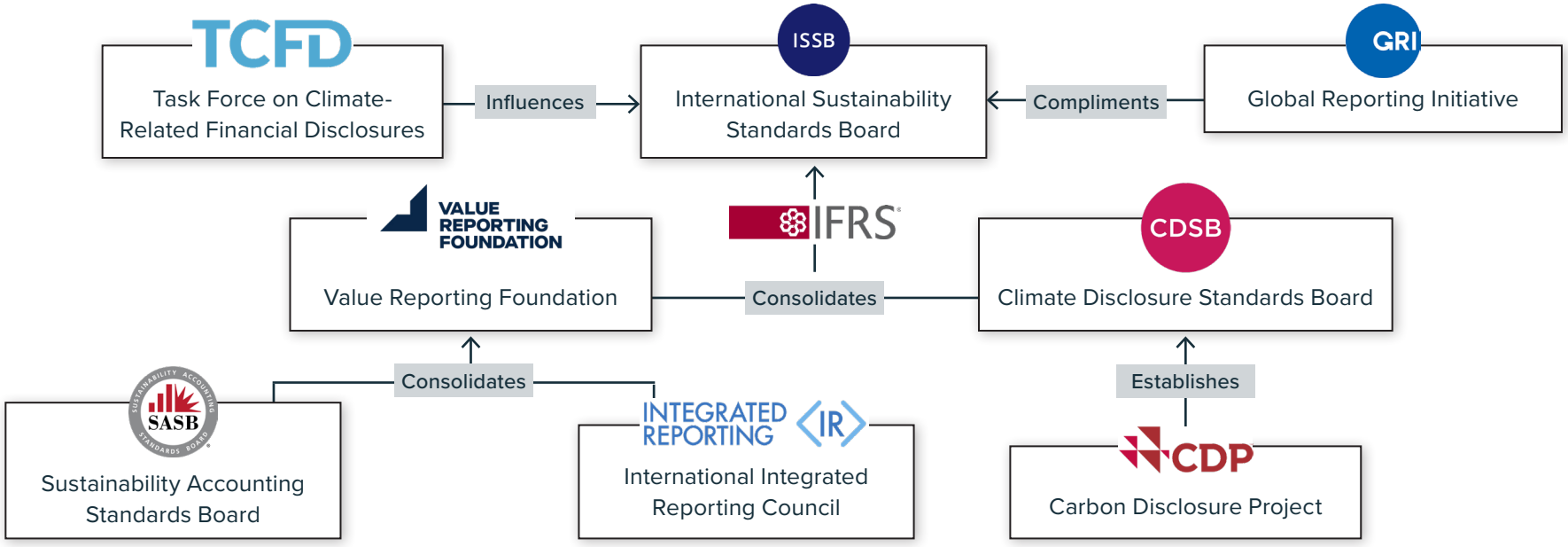
Many companies are now voluntarily reporting their sustainability practices and their GHG emissions to a variety of ESG frameworks, making it difficult to compare the sustainability and GHG emissions of different companies.

To address this issue, there is a growing effort to consolidate carbon accounting standards and ESG frameworks. One example is the Task Force on Climate-related Financial Disclosures (TCFD), established by the Financial Stability Board in 2015.

The TCFD provides a framework for companies to disclose climate-related risks and opportunities in their financial reporting.

In addition to the TCFD, other initiatives aim to consolidate carbon accounting and ESG frameworks. For example, the Sustainability Accounting Standards Board (SASB) provides a set of industry-specific sustainability accounting standards that companies can use to report on their sustainability practices.

Consolidating carbon accounting and ESG frameworks is crucial to making sustainability reporting more consistent and comparable across companies. This will make it easier for investors, regulators, and other stakeholders to evaluate companies' sustainability practices and make more informed decisions.



Steps to Carbon Accounting and Reporting

Organizations can track their carbon footprint using spreadsheets or utilize an energy and sustainability ERP to organize and analyze emissions for streamlined accounting and reporting. There are several steps involved in corporate carbon accounting and reporting:

1. **Measuring Emissions.** This involves calculating an organization's GHG emissions from various sources, such as energy use, transportation, and waste. Several methods and tools are available to measure emissions.
2. **Setting Reduction Targets.** After measuring emissions, organizations can establish targets for reducing their carbon footprint.
3. **Implementing Reduction Measures.** Organizations can implement measures to decrease their emissions, including improvements in energy efficiency, the adoption of renewable energy sources, and waste reduction.
4. **Reporting Emissions.** There are several ways in which organizations can report their emissions, including annual carbon/ESG reporting, monthly carbon reporting/analysis or real-time decarbonization efforts.

Evolution from Spreadsheets to ERP Software:

Similar to how the accounting industry transitioned from paper ledgers and spreadsheets to Enterprise Resource Planning (ERP) software, the energy and sustainability industry is experiencing a similar shift. Today advanced energy and sustainability organizations are adopting software to streamline processes, automate manual tasks, improve collaboration across departments, and manage data in a centralized system.

The status quo relies on spreadsheets and manual data entry for meter reads and data collection. This approach gets the job done but can be cumbersome to access and manipulate data, and there is a high risk of errors when dealing with multiple data sources.

The most effective leaders leverage software to automate manual processes and create scalable, reportable, and reliable financial-grade energy and sustainability data.

The Status Quo

Manual utility bills, meter reads, data collation in spreadsheets

Occurs annually

Difficult to access data

Manual labor

Hard to maintain and update

High chance of error

Data silos

Reactive reporting

Using Software

Energy and sustainability ERP

Automatically captures data

Auditable, financial-grade

Real-time updates

Reduces/eliminates manual labor

Reduces error

Better collaboration

Scalable, reportable and reliable

Proactive: monitor and respond in real time

Journey to Decarbonization

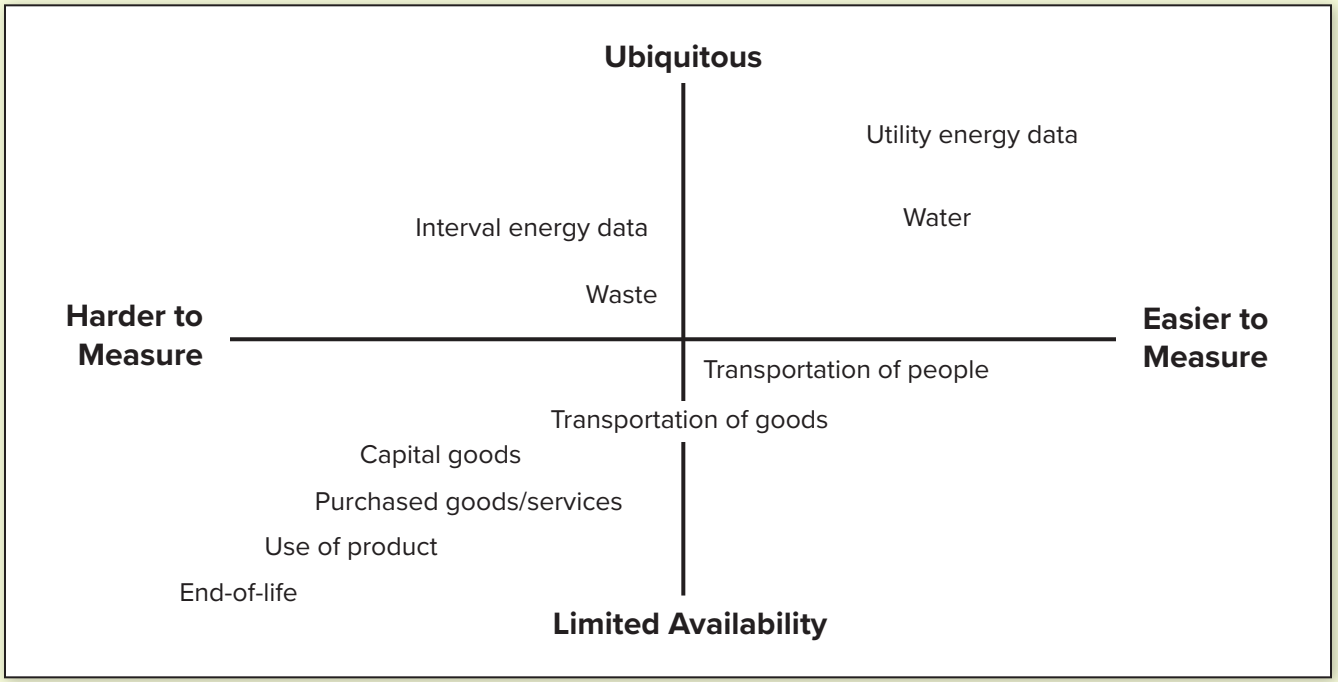
Whether you're using a software tool or not, if you need to report carbon data and have climate-related goals to hit, there are some foundational steps you can take to kick off decarbonization. Hint...the best place to start is utility bill data.

Not all emissions are created equal. Some are much easier to track and more available than others. When you look at the availability of data for some greenhouse gas contributors, you find a continuum where utility data and water are available and easy to measure.

As we move further down into scope three, some data points are harder to measure.

Therefore, it is important to consider the data points that are crucial for your organization to measure and easier to measure to get started.

If you're new to carbon accounting, utility bill data will provide you with almost all of your Scope 1 & 2 emissions data. You can manually collect the utility bill data in spreadsheets and apply emissions factor calculations to the data. Suppose you have a lot of bills to sort through. In that case, you should consider using a tool like EnergyCAP's CarbonHub™ platform to help you collect, audit, and streamline emissions calculations from your utility bills on an ongoing basis.

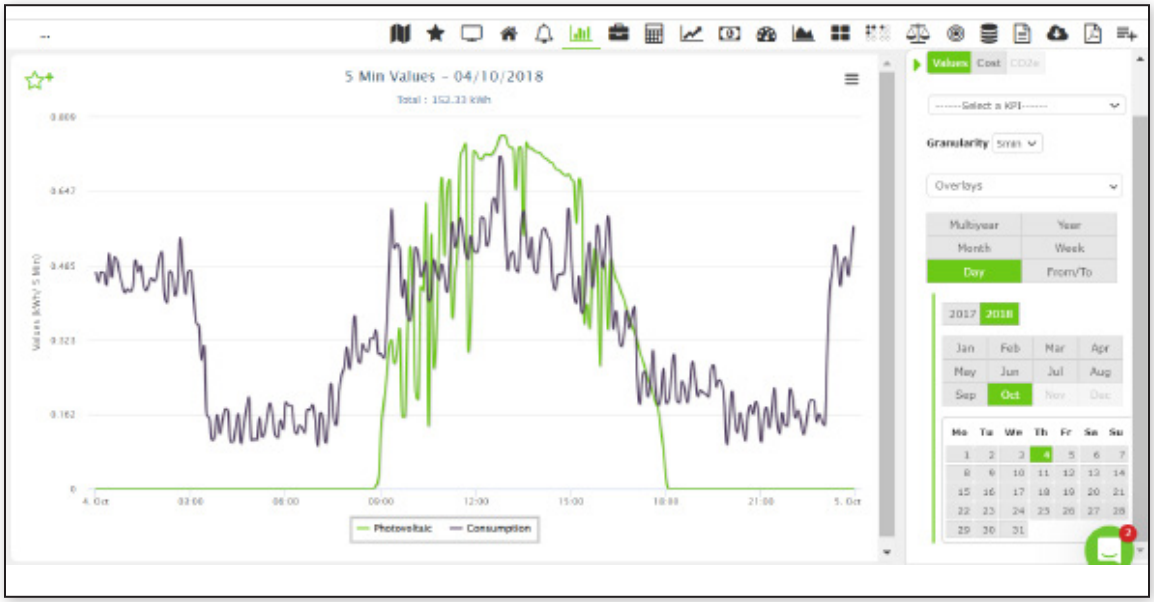


What Categories to Track:

While Scope 1 & 2 seem pretty straightforward, Scope 3 is an entirely different story. There are 15 Scope 3 categories, and trying to capture all of them can seem overwhelming.

Don't fret! MSCI pulled together data of total value-chain emissions per scope and category by industry to help leaders estimate which Scope 3 emissions they should prioritize.

The following provides a breakdown of total value-chain emissions intensity levels per scope and category for various industries.



You can use this as a guide but understand that every organization is different. At the end of the day, you need to decide which emissions are most material for your organization and focus on reporting and reducing those for maximum impact.

40%

of of annual global CO_2 emissions is generated by the built environment (Source: IEA, 2022)

How Often to Track:

To bring all the data together on a cadence that makes sense for your business, you need a plan to have a single source of truth, whether a spreadsheet or a software system. There are several places to start, including annual data collection that can be retroactive, going back years, and pulling data from previous years. Many people spend a reasonable amount of time each year pulling disparate data sources together to bring it into a spreadsheet for their ESG reporting or their annual sustainability reports for the corporate.

However, the more advanced approach is pulling in data regularly, usually from monthly utility bills. This enables you to start activating more projects in less time, and the ideal state is to pull in data in real-time to make real-time data-driven decisions about the decarbonization efforts at your organization.

Carbon Accounting Vs. Decarbonizing

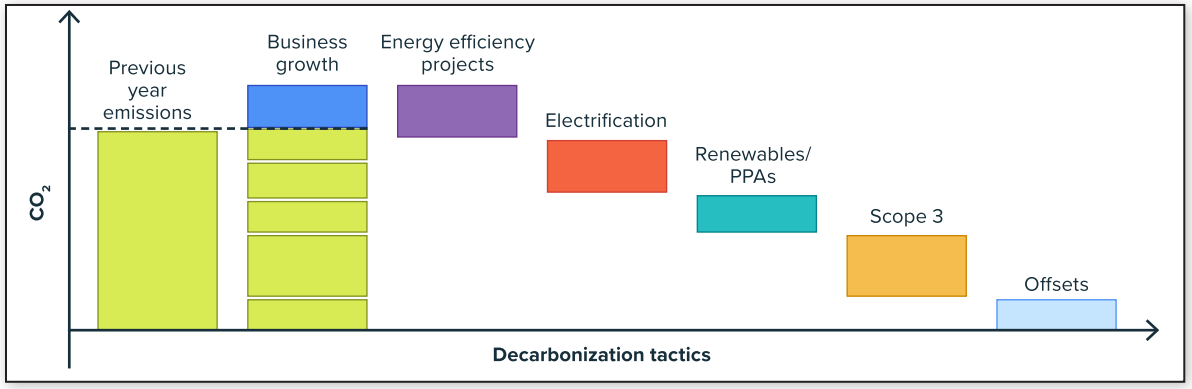
Carbon accounting alone does nothing to mitigate climate change. It's what you do with the information that makes the impact. Once you have a baseline for your previous year's carbon emissions, you should assume that with business growth will come additional increases in emissions. This is represented in the first two columns in the chart below.

Now that you have assessed your carbon footprint and accounted for business growth, there are a variety of levers you can pull to decrease emissions across your organization. Note that the order here does matter. We always recommend making your operations as efficient as possible before adding additional (often more exciting and shinier) conservation measures.

The greenest and cleanest KWH is the KWH not used. Here is our recommended journey to decarbonize your operations:

1. Optimize your buildings and operations to be as efficient as possible.
2. Explore electrification or greener energy sources.
3. Explore renewables and power purchase agreements (PPAs)
4. Explore ways to decrease Scope 3 emissions in your organization's offset, whatever you can't reduce by supporting carbon projects through validated sources. Carbon offsets are a great way to achieve net zero after you've done everything you can to reduce emissions. It is essential only to use this to compensate for what you cannot reduce in operations and ensure a trusted, validated offset source. Use caution, as carbon offsetting is frequently utilized as a form of greenwashing, whereby organizations use it unethically by investing in non-verified carbon credits or overlooking building emission reductions.

There are many tactics to decarbonize your operations, and order matters. We outlined a few in the chart below.



Carbon Accounting Tools and Software

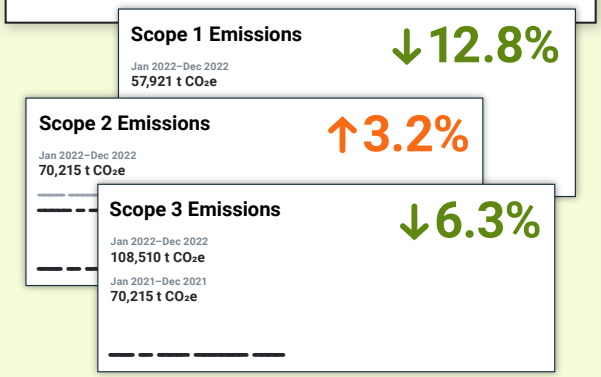
Carbon accounting tools and software are designed to help organizations measure, track, and report their GHG emissions. These tools are important because they allow organizations to understand their environmental impact and identify areas to reduce emissions.

Calculate your Carbon Emissions with the EnergyCAP Platform

EnergyCAP CarbonHub™ serves as the central repository of all carbon emissions-related data, sustainability reporting, and tracking performance toward decarbonization goals. It utilizes financial-grade utility data from the EnergyCAP UtilityManagement™ platform and automatically applies standard or custom factors for auditable Scope 1, 2, and 3 reporting. EnergyCAP CarbonHub can also calculate emissions from other inputs such as onsite generation, central plants, corporate travel, supplier, and distributor emissions, and more.

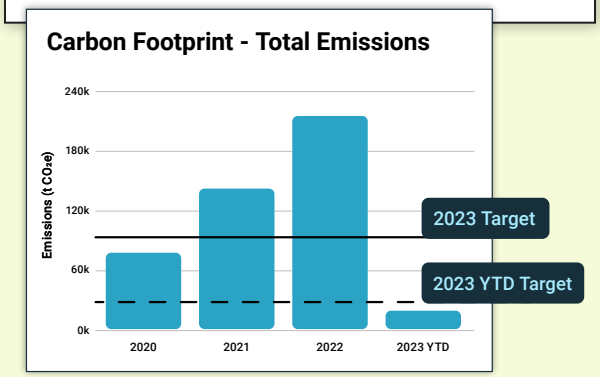
Calculate

Calculate Scope 1, 2, & 3 data across your business



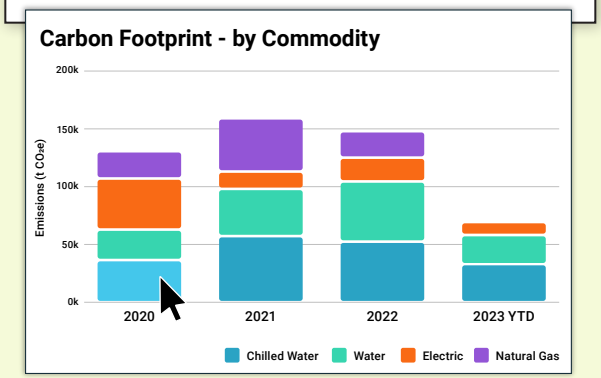
Target

Set targets and track de-carbonization goal performance



Report

Access robust analysis and GHG reporting functionality



Calculate your Carbon Emissions with the EnergyCAP Energy and Sustainability ERP

EnergyCAP is the leading Energy and Sustainability ERP, empowering customers with full control and understanding of their energy and sustainability data to reduce their carbon footprint and drive savings. For over forty years, thousands of public and private institutions have been using EnergyCAP to streamline accounting processes, reduce resource consumption, and identify opportunities for sustainable operations. EnergyCAP helps customers who are drowning in paper bills, manual processes, and cumbersome spreadsheets and enables them to execute, analyze, and report on the energy and decarbonization projects needed to create a more sustainable world.

Solutions to empower your energy and sustainability data journey

Seamlessly bundle or choose à la carte from EnergyCAP's array of energy and sustainability solutions. Whether you're starting small or expanding big, we've got you covered. Empower your data-driven transformation, anywhere you are.

Visit **www.EnergyCAP.com** to learn more.

ENERGYCAP UtilityManagement™

Financial-grade greenhouse gas accounting

Target and track emissions.

An advanced, holistic view of financial-grade emissions data across your business with automatically applied factors to meet your ESG reporting needs.

Customer Data Type
GHG activities

Persona
Sustainability

ENERGYCAP CarbonHub™

Portfolio-level energy and sustainability reporting

Manage and see it all

Get accurate and reliable energy and utility data across your entire portfolio and streamline energy and accounting workflows.

Customer Data Type
Utilities/bill/resources

Persona
Finance/energy

ENERGYCAP SmartAnalytics™

Real-time energy and sustainability analytics

Dive deep. Respond quickly.

Dive deep into real-time performance of assets, devices, and sensors. Make quick, data-driven decisions for high-performance, net-zero buildings.

Customer Data Type
Time-series/Interval energy

Persona
Energy/facilites

CAPture Services: CAPture Services: Bill CAPture, Bill Processing/Managed Services

Conclusion: The Catalyst for Decarbonization

As organizations strive to reduce their environmental impact, carbon accounting has become necessary to track and report carbon emissions. However, an energy and sustainability ERP can play a much more significant role in sustainability beyond carbon accounting.

By leveraging financial grade energy and sustainability data, organizations can identify opportunities for innovation and optimization, leading to cost savings, increased efficiency, and a competitive advantage in the market. An energy and sustainability ERP can enable organizations to manage their broader environmental impact more effectively and embrace sustainability as a strategic business opportunity.

In conclusion, while carbon accounting is crucial to sustainability reporting, an energy and sustainability ERP can help organizations go beyond compliance and unlock additional value. By automating and streamlining sustainability reporting processes, organizations can comply with regulations, identify opportunities for innovation and cost savings, and positively impact the environment.

About EnergyCAP

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