

5 Steps to Effective Carbon Data Management



Executive Summary

ESG is gaining momentum across the industrial sector. Investors, regulators, and consumers demand greater focus on driving down greenhouse gas (GHG) emissions in line with achieving global net zero ambitions. The one thing that all ESG programs must have as their foundation is good, reliable data.

Data is the currency through which measurable progress against environmental and sustainability targets can be measured. Yet, for many companies, quantifying progress can be a challenge. Data is difficult to access, unreliable, and hard to analyze in a timely manner. How can you know where you stand and how you are doing

against your targets, if you cannot access the data quickly and effectively?

Further, the burden of creating the submission-ready reports required by the regulators can be high as can the financial risk and reputational damage that results from emission miscalculations.

This report looks at 5 essential steps to achieve effective carbon data management to drive your sustainability efforts to the next level of performance.

Introduction:

Emissions monitoring systems have been used for years in so-called “dangerous and dirty” industries, such as oil and gas and manufacturing. These systems measure a variety of emissions – such as carbon, waste, methane, etc. – to enable companies to accurately monitor and provide timely reports to environmental agencies, such as the U.S. Environmental Protection Agency (EPA).

Beyond compliance, there are good business reasons for companies to provide honest and transparent data about their carbon emissions. Companies with a strong environmental track record access capital at cheaper rates, attract and retain talent, and may benefit from increasing market share as eco-conscious consumers factor environmental credentials into their purchasing decisions. Similarly, inaccurately reported data can incur financial penalties and fines from environmental and financial regulators.

However, while many companies make voluntary disclosures of their environmental impacts, carbon emissions reporting and ESG disclosure is still a bit of a Wild West.

Some companies voluntarily disclose carbon emissions reporting following private frameworks such as GRI, CDP, and TCFD. There are also environmental ratings agencies such as ISS, Sustainalytics, Bloomberg, and MSCI.

“We have a literal ‘alphabet soup’ of NGOs writing standards,” explains Shivaram Rajgopal, Kester and Byrnes Professor of Accounting and Auditing at Columbia Business School.

The sheer number of these different reporting frameworks and standards pose a challenge for organizations trying to decide which framework to use. Additionally, it is difficult for investors to compare the environmental track record of different companies. How much of what is reported is accurate? How much is greenwashing?

“As it is, companies can decide what – if any – social and environmental data to report. And what they do report is often self-serving,” write Michael O’Leary and Warren Valdmán in an HBR article [“An ESG reckoning is coming.”](#)

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SEC Chair Gary Gensler

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"A century ago, financial reporting underwent a process to become transparent, standard, mandatory, and audited. This created a sense of accountability that social and environmental commitments desperately require today," the authors add.

In both Europe and America, there are signs that regulators are starting to respond to the need for greater transparency on climate disclosure. In Europe, regulators adopted in April 2021 a proposal to strengthen climate disclosure in EU countries. The proposal – the Corporate Sustainability Reporting Directive (CSRD) – is currently in public consultation. The European Financial Reporting Advisory Group (EFRAG) has been mandated by the EU to develop the draft reporting standards.

In the United States, meanwhile, the SEC has recently proposed new disclosure rules that would require companies to report on their carbon emissions and climate related risks if material to their business.

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investment decisions," said SEC Chair Gary Gensler in a [written statement](#) about the proposals.

While the SEC requirements are expected to apply mostly to larger companies, smaller suppliers with less well-established processes and data on carbon emission may suddenly find themselves caught up in the new regulation because of the provision around scope 3 emissions.

"In reality, billion-dollar companies are going to turn around to the smaller providers and tell them: 'I need to see your emissions number because I made a goal that included scope three,'" explains Michael Tuohy, VP of Environment and Sustainability at Intellex.

Whether or not the SEC proposals get passed, the writing is on the wall for large and medium-sized companies: investors and consumers want greater transparency on a company's environmental track record. Those companies able to provide this data will get ahead of the curve, capture market share, and be prepared for future regulatory changes to carbon emission reporting.





Step 1: Understand your obligations

A solid foundation for effective carbon data management needs to be established the same as any other business change program: methodically and expediently.

Start with climate-related disclosures that your company has already made. What targets have been publicly set? What data and baselines are you using to set your targets? What reporting requirements are required for the regions in which you operate? How might you be affected by the requirement for scope 3 emissions disclosures?

All publicly announced targets must be based on solid data and sound science.

"We absolutely should be setting targets. The question is, did you make them on real numbers?" asks Michael Tuohy. "Did you actually have the availability of that information to make those goals?"

The International Sustainability Standards Board (ISSB) is expected to have new guidelines on sustainability disclosure standards ready by the end of the year. The SEC has used the ISSB disclosure standards as the foundation for its own disclosure reporting requirements.

In Europe, EFRAG is taking the lead on developing the EU's Corporate Sustainability Reporting Directive (CSRD). According to EFRAG, agreements have been signed with reporting standard initiatives GRI, Shift, and WICI to help "contribute to international convergence" of standards. Working papers of those guidelines are being developed and will be available on EFRAG's [website](#) as they develop.

The exact regulatory landscape ahead is complex and uncertain. However, it is a certainty that both markets and regulators will demand greater ESG transparency in the coming years. Companies can look to these standard frameworks to understand what data will likely be needed before the requirements become law.

Step 2: Capture your data

Once you really understand your obligations – some of which may be mandatory and some of which may be voluntary or anticipatory (in advance of expected legislation) – you need to put in a place a robust process to capture and report key ESG and carbon emission data.

“The SEC is looking for your laundry basket, not your closet. They want to see everything,” observes Intelix’s Michael Tuohy. “You do not report financial data without receipts and bills. You are going to see the same thing with carbon.”

Getting that data can be a bit of a minefield for many companies as legacy systems, siloed applications, and department-level restrictions can make gathering standardized data on emissions across the company difficult – at best – to obtain.

“The challenges of integration are there across the board. It is not just GHG, it is all our systems that we need to integrate,” says Christy Elliot, Chief Sustainability Officer, Senior Vice President, General Counsel and Corporate Secretary, Parkland Corporation.

The company supplies over 21 billion litres of petroleum products annually to communities in Canada, the United States, and the Caribbean. It has a refinery in Burnaby, BC and operates nearly 2,000 convenience stores across Canada alone under well-known brands like Pioneer, Ultramar, Fas Gas Plus, Chevron, and On the Run / Marché Express.

With a global business in multiple countries, it can be difficult to get accurate data from all locales.

“It has been a real journey for us. We got external help from consultants who came in to help us gather the data and calculate it,” she explains. “Once we had that baseline, it has become a little easier to update it each year.”

Companies should look at their existing data collection processes, policies, and procedures, and what internal

controls are in place. What data do you have? What don’t you have? What is not good enough? Where does it need to be? How do we get there?

A gap analysis can help in the process to determine where the deficiencies are so that you can take measures to address them.

Companies may also wish to hire external climate consultants who can help advise on getting the right data frameworks in place to establish and maintain accurate ESG data.

“Don’t try to do it yourself. By using someone else you can use their expertise. It’s complex. It’s resource heavy,” advises Tanya Ashton, Head of Sustainability – Global Sourcing Europe at Walgreens Boots Alliance talking about evaluating scope 3 emissions in the supply chain.

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Walgreens Boots Alliance is a global retail pharmacy with approximately 13,000 locations across the U.S., Europe, and Latin America. The company has been using a software system since 2021 to evaluate the ESG performance of its suppliers.

External resources can help to establish an effective baseline and repeatable data gathering processes and procedures.



Step 3: Automate your data collection and reporting

Once you have identified your data sources and have begun tracking them, the ideal is to automate your collection process to increase both the accuracy and speed at which data is gathered.

According to a [Markets and Markets research report](#), emissions monitoring systems are expected to grow from approximately \$3 billion today to \$4.5 billion by 2027, as companies gear up to meet more stringent regulatory and reporting requirements and investors and consumers demand greater environmental transparency. Continuous emissions monitoring systems (CEMS), which monitor greenhouse gases, are expected to comprise the largest share of the growth.

These systems can help to automate the initial collection process, but it can be tempting to begin recording this data in an ever-growing network of spreadsheets. Organizations should look beyond Excel to ease the burden of ESG reporting. Technology platforms can improve and automate data collection processes, offer better insight into operations and emission sources to help improve environmental performance, and ideally create submission-ready reports for regulatory authorities.

You need a centralized resource for ESG data according to Angela Reamer, Vice President of Manufacturing at French food manufacturer Monin, as spreadsheets do not provide the speed and effectiveness of more robust systems.

"Most manufacturers are going to end up going to a platform where everything is put all together," she says, speaking at our recent [Data Driven ESG event](#). "Having these digital platforms is what will help companies handle this information, now and in the future."

The oil and gas industries are relatively advanced in carbon data management as the EPA requires large emitters such as fuel and gas production facilities to require their emissions annually as part of its Green House Gas Reporting Program (GHGRP). At bpx energy, the onshore division of global energy company BP, for instance, the process of carbon data collection is automated to reduce the risk of operator error and speed up data collection.

It is important to take "the onus off the operator or the individual to write down what they're doing," explains Dr. Faye Gerard, Vice President, Low Carbon and Sustainability at bpx energy, speaking at a recent Oil and Gas IQ conference. "We have systems in place that can automatically tell us what we are doing. We automate our emissions footprint and profile."

While some companies may look to create their own proprietary ESG system, there are off the shelf solution providers that can help companies automatically track and report GHG emissions in line with common reporting frameworks such as GRI or the ISSB.

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Angela Reamer, Vice President of Manufacturing, Monin



Step 4: Use your emission data to drive business value

Gathering carbon data is essential to meeting regulatory reporting requirements. However, the goal is to use that data to drive business value.

"Improvement is going to come from the granular detail of 15 second data and the production of hourly, daily, and monthly data to truly understand what's happening," observes Intelix's Michael Tuohy.

Which plants are the most energy efficient? Where should you allocate your resources to drive carbon emission reductions? When should you renew pieces of equipment? How does your carbon data inform your building and operational management?

"We look at a lot of data quarterly. That is allowing us to figure out what the next steps are," says bpx's Dr.

Faye Gerard speaking about methane emissions. "The regulatory requirements are 'find and fix'. [...] I would like to be more into the 'predict and fix'."

Companies have always looked at optimization and improvement of quality, efficiency, productivity, and customer satisfaction. But carbon emissions may play a bigger role in moving the needle in the years ahead. Emissions are simply another axis that will work into organizational decision making and continuous improvement.

Solid data foundations need to be in place so that the data is available, accessible, and accurate to enable more effective decision making.

Step 5: Engage your workers

While much of the work around carbon data reporting needs to focus on gathering the data, it is essential not to overlook the role of engaging your people.

Although this is listed as Step 5, it effectively underpins all the steps listed in this guide. Employee engagement is just as important to ensuring that the data that is collected is accurate and timely as it is to identifying opportunities within the data to drive business value.

Over the past decade as companies focused on creating a safety culture and that same work needs to go into creating an emissions culture so that workers understand why the data is important and their role in driving it.

"It is all about talking the talk and then walking the walk to making sure that ESG is part of every decision you make. What does this mean for carbon? How can we think about emissions? How can we think about GHG's when we are doing this?" says Trevor Bronson, Strategic Development Manager at Intellex. "Sooner or later, you have not only the people who are responsible for sending these numbers to the SEC thinking about reducing emissions, but you get the third-shift supervisor noticing something on the line that can make things more efficient."



Consistent, repetitive, and understandable messaging is key.

Boots Walgreen's Tanya Ashton suggests that you can engage workers informally through education opportunities, lunch-and-learn sessions, and other sharing opportunities. Formally, you can link carbon emissions to individual objectives.

Monin's Angela Reamer says that they weave discussions about resource use into daily scheduling meetings. This builds a focus on resource use directly into daily

operations and processes. While the focus of the discussions at Monin is on effective water usage, the approach could easily apply carbon emissions.

"If it's a priority to make these aspects better, the only way you can improve is to know what needs to be improved," says Reamer. "Really bring the data to the forefront and have it visual and get everyone involved. Everyone has an important role within sustainability. That goes with safety and quality as well."

"It is all about talking the talk and then walking the walk to making sure that ESG is part of every decision you make. What does this mean for carbon? How can we think about emissions? How can we think about GHG's when we are doing this? Sooner or later, you have not only the people who are responsible for sending these numbers to the SEC thinking about reducing emissions, but you get the third-shift supervisor noticing something on the line that can make things more efficient."

Trevor Bronson, Strategic Development Manager, Intellex

Conclusions

The requirements for environmental and carbon data reporting look set to tighten in the coming years as investors, regulators, and consumers demand transparent and consistent reporting standards.

Even private companies that may believe themselves too small to be required to submit such robust reporting may find themselves caught up as their customers demand greater scrutiny of their supply chains and even their suppliers' suppliers.

Companies must start to prepare for this new reality to get ahead of the regulatory curve and start to harness the business value of carbon data. Understand the potential regulatory requirements and common reporting frameworks. Get processes and procedures in place to gather relevant data. Bring in outside help and off the shelf technology to reduce the reporting burden. Automate as much as possible and use the data to drive business value.

Customers, investors, regulators, and your future employees will expect no less.



About Industrial Transformation Network



The Industrial Transformation Network (IX Network) is an online news source for global manufacturing and industrial operations, EHS and technology leaders who leverage technology and best practices to improve safety, operational and environmental performance. The site's editorial team delivers the latest industry news, thought leadership, and analysis through written articles, webinars, white papers, case studies and in-depth market reports. We recognized the revolution in industrial transformation as it was happening, and realized that a forum was needed through which industry practitioners could connect with each other on a regional and global basis. With members from around the globe, the Industrial Transformation Network (IX Network) is the largest and most established global community of industrial operations, EHS and technology leaders in the world.

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At InteleX, we empower organizations to meet the challenges of an increasingly complex marketplace while minimizing their negative social, environmental and human impacts.

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Today, InteleX is a global leader in the development of EHS and quality software, the oldest independent vendor of EHS and quality software in North America and one of Canada's largest software companies. Having invested over two decades establishing this market, we're motivated by the knowledge that it is just in the early stages of its potential.

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Diana Davis

Editor

Industrial Transformation Network

Diana Davis is editor of Industrial Transformation Network. She has had over 10 years of experience in the editorial space, including creating content for online communities, television news journalism and software marketing. She loves exploring and diving deep into niche business topics and engaging with industry leaders, influencers and experts to learn even more about the industry and the challenges being faced.

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