SPHERACLOUD ENVIRONMENTAL ACCOUNTING

Why environmental accounting is a game changer for high-emitting industries

Contents

Under increased scrutiny

Our world is changing rapidly due to technology, globalization and the climate crisis. This affects markets, industries, policies and—increasingly—also regulations. It puts a new spotlight on corporate environmental performance. Environmental data—covering air, water and waste—is still flooding in from various sources, but now gets even more attention. With the Securities and Exchange Commission's (SEC) final rules on climate-related disclosures, organizations in high-emitting industries face demands to disclose climate-related risks and Scope 1 and Scope 2 emissions as well as provide a reasonable assurance-level report of their reported emissions. The increased public scrutiny and SEC disclosure rules mean there is immense market, regulatory and financial pressure on companies to process operations data and calculate emissions in a transparent and easily verifiable manner.

Many companies in high-emitting industries, such as Oil & Gas, Metals & Mining, Power & Utility, Chemicals, Manufacturing, find themselves unprepared for this surge in demands. Environment, health, safety (EHS) professionals struggle to efficiently handle the influx of operations data needed to provide assurance of their climate-related risks and GHG emissions. Instead of deriving insights from it, they are overwhelmed by the need to calculate their emissions and manage spreadsheets and fragmented systems to understand their environmental impact. Consequently, EHS teams often focus primarily on compliance to avoid penalties, leaving little room to understand the true potential of this data to unlock insights for minimizing risk, improving efficiency, reducing waste and optimizing operations.

If this sounds familiar, your business might not be fully leveraging your environmental data. With the help of modern software, businesses can establish a clear, transparent and auditable record of their environmental impact. This not only reduces regulatory burdens, but also helps mitigate environmental, health and safety risks and improves performance.

In this paper, we discuss the factors driving change in today's business landscape, provide a guide to an effective response and introduce Sphera's dedicated environmental accounting management software. Businesses now require technology to shift from mere compliance to enhanced performance by implementing a unified system for data collection, analysis, insights and ensuring your organization is meeting its climate-related emission reduction targets.

Transparency in emissions reporting becomes critical

Increased regulatory, shareholder and public scrutiny is driving the need for auditability and transparency of emissions data. Whether information needs to be disclosed under SEC[1] rules, to the United Nations under OGMP 2.0[2], or to regulatory agencies such as the USEPA for the GHG MRR[3] program, companies need a reliable system to collect, calculate and report Scope 1 and 2 emissions to ensure accuracy, transparency, and independent auditability.

Nearly two years have passed since the SEC proposed climate-related disclosure rules for large, publicly traded companies. And with the release of the finalized rules on March 6, 2024, speculation around corporate reporting requirements was replaced with certainty.

Under the finalized SEC rules, disclosures of Scope 1 and Scope 2 emissions (if deemed material) are required from large accelerated filers and accelerated filers. An assurance report at the limited assurance level is required; after a transition period, large accelerated filers will need to provide reports at the reasonable assurance level.

For decades, the SEC has worked to facilitate investor access to information on the environmental risks faced by public companies, but investor needs are now more critical. Investors urgently need climate risk disclosures to assess the impact of these risks on their current and potential investments.

Overall, the SEC rule is a big step for the U.S. in terms of scale and the importance of having an auditable and transparent system for Scope 1 and Scope 2 emissions disclosures.

What this means is that collecting data, assuring its accuracy and publishing reports and disclosures is taking more and more of the EHS&S team's time and focus, and the consequences of poor performance or mistakes in reporting are becoming more severe. Increased focus on ESG and sustainability is here to stay.

Read more and stay informed about **global regulatory changes**. Find them on Sphera's website.

1. Securities and Exchange Commission
2. The Oil & Gas Methane Partnership 2.0 (OGMP 2.0)
3. EPA Mandatory Reporting of Greenhouse Gases

The emissions data challenge

EHS and environmental teams traditionally rely on high-frequency data for their emissions reporting and to meet regulations. With the rise of new tools like IoT devices and edge computing, data sources and collection frequency are rapidly expanding, and the challenges are growing.

- **Data collection.** As the volume of data in many companies increases, so do the risks of inaccuracies and bottlenecks. This is because data is still being collected manually, which is an inefficient process.
- **Calculation of emissions data.** The use of spreadsheets for complex calculations of large data sets is a costly and error-prone process that does not guarantee reliable data. The lack of standardized calculation methodologies further complicates efforts to ensure the accuracy and consistency of data.
- **Data validation.** In addition to addressing the challenges of data collection and management, it is essential to identify and address any inconsistencies or errors in a timely manner to ensure the accuracy and reliability of the data.
- **Reporting and audits.** Increasing regulations and stakeholder demands for transparency make compliance-critical to environmental data management-complicated. Teams invest significant resources in tracking and analyzing regulations, monitoring processes, and producing accurate reports-often just getting by.

However, the real challenge is to move toward a more sustainable future by reducing emissions and environmental impacts. Stakeholders are now demanding detailed environmental data for the supply chain, backed up by climate commitments and evidence-based plans. With the right technology, companies can bridge the two challenges of automating and simplifying their environmental compliance management programs and focusing on environmental and operational excellence.

What businesses can do

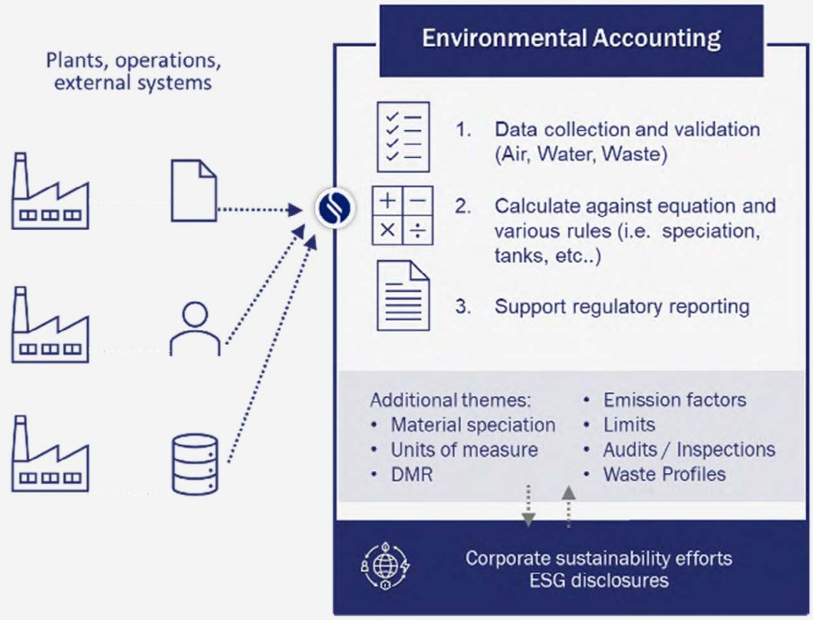
In order to respond to the increasing emissions data challenges, companies need to turn to environmental accounting software to optimize their environmental accounting programs. EHS teams can streamline data collection and analysis and identify areas for improvement to strategically contribute to broader sustainability goals. Intelligent software solutions are key to unlocking this potential. In other areas of business, such as financial accounting, software has become indispensable—not least because of the creation of auditable records. Especially with the tightening of regulations, it is imperative to have the entire environmental impact of a company in the form of air, water and waste properly documented.

The benefits of purpose-built software include:

- **Transparency.** It improves transparency with real-time data collection and emissions calculations modeling, making it easier to identify opportunities for improvement and measure progress toward meaningful goals.
- **Traceability.** The process creates a single source of truth, with data trails that can be traced from the top to the bottom of an organization. This additional environmental data provides visibility into how to better manage environmental risk, improving decision making and engagement in corporate sustainability efforts.
- **Trust.** Environmental accounting builds trust with business partners, suppliers, customers and investors by setting clear, measurable goals and regularly reporting progress toward those goals.

With the increasing environmental regulations and companies repeatedly running the reporting cycle, it is time to benefit from software solutions that are built for modern and reliable environmental data management. A modern software solution mitigates risks encountered with state-of-the-art data management and calculation functionalities, a full audit trail and robust air, water and waste management.

Beyond the immediate benefits, the insights and efficiencies created through environmental accounting software solutions often support broader company strategy. To see the bigger picture, trace the **life cycle of an environmental data point** beginning with its capture in company facilities, plants or operations.



The data is transferred from external systems into the environmental accounting software, where it is automatically validated and used in calculations against various emissions factors and/or other rules. From there, high-frequency environmental data flows into regulatory reports, where additional information on material properties, units of measure and more can be layered in. This regulatory support drives significant efficiencies in the compliance process, but the value does not stop there. This same data can also be used to support corporate sustainability efforts, providing information for ESG disclosures and other factors that contribute to company performance. For EHS and sustainability professionals, the business case for moving from fragmented systems and spreadsheets to a streamlined accounting system is clear. But realizing the full benefits of an environmental accounting software requires a commitment from across the organization.

To gain buy-in at the organizational level, it is important to consider the value proposition beyond environmental data. A software solution reduces manual data entry, supports higher-frequency data capture, improves accuracy and provides unparalleled transparency and auditability, which all drive business value. But what does that mean in terms of operations, finance, human resources, marketing and other key departments?

Consider the value of air, water and waste emissions. These byproducts, viewed as unused materials, present opportunities. By improving operational efficiency, companies can minimize costs and lower climate-related risks—a message that resonates with both operations and finance teams.

Furthermore, climate-related disclosures are becoming increasingly important. Companies need to report the materiality of climate risks with reasonable assurance. This includes reporting both Scope 1 and Scope 2 emissions. As a result, efficient and transparent emissions management becomes a fundamental business requirement.

Environmental accounting goes beyond simply quantifying waste and emissions. It helps pinpoint the sources of inefficiencies, allowing for identification and implementation of actionable improvements.

By demonstrating how environmental accounting plays a larger role in business strategy, EHS and environmental professionals can gain the support they need to see the full benefits from high-frequency environmental data collection.

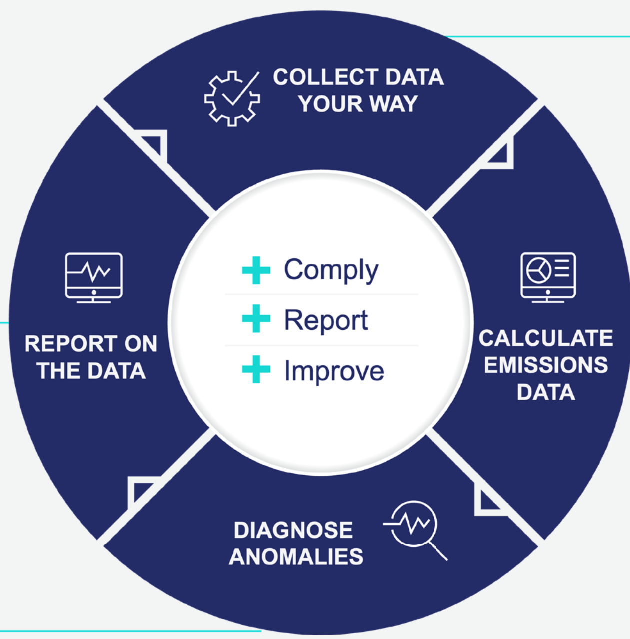
SpheraCloud Environmental Accounting approach

After having set the business case, businesses want to start navigating and optimizing their organization's environmental accounting journey. SpheraCloud Environmental Accounting Software delivers an advanced solution at scale for organizations across the globe. It offers a broad set of data management and calculation functionalities to establish an auditable record for for **air, water and waste management.**

At Sphera, we have decades of experience working with high-frequency environmental data and a deep understanding of the challenges that businesses face. The four areas depicted in the graphic below can help businesses build a robust picture of their environmental impact to better manage high-volume data, streamline compliance and meet emissions targets.

The SpheraCloud Environmental Accounting Software is a SaaS-based platform designed to help organizations improve compliance efficiency and achieve operational excellence excellence for their **air and water emissions and waste management.**

Our solution modules build a traceable system for a range of environmental data:

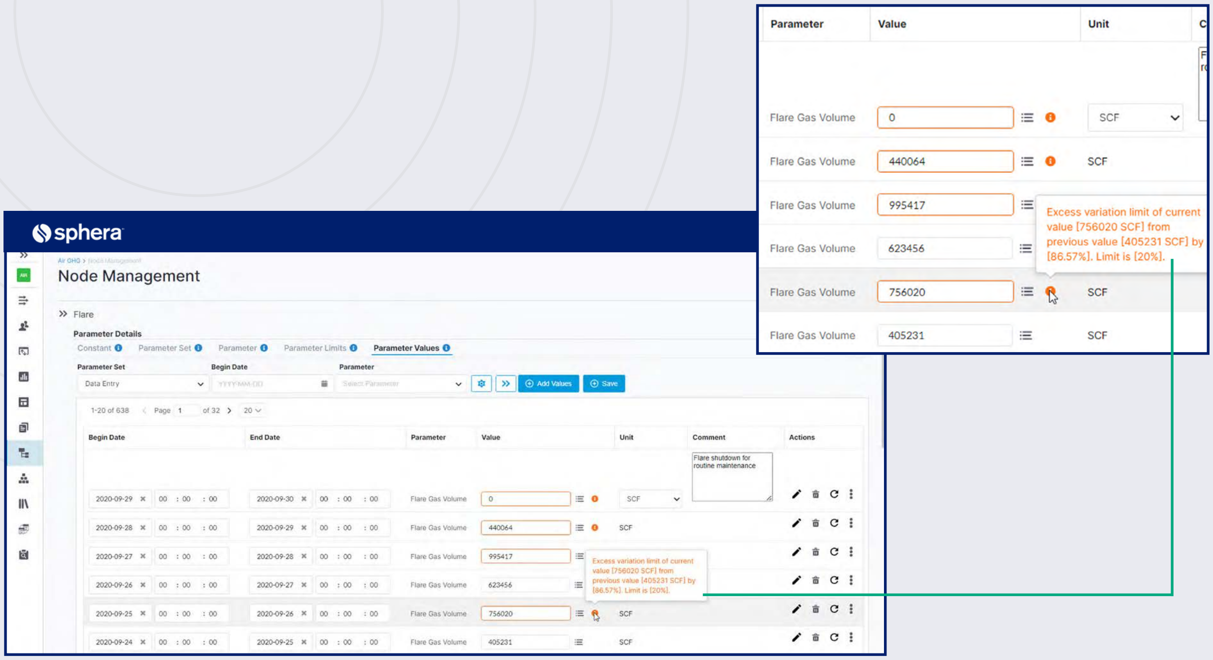


Build reports and access data directly to support annual emissions inventory reporting, greenhouse gas reporting and any other compliance or corporate reporting.

Efficiently capture accurate information by tailoring data collection to company processes using defined forms, automated batch processing and manual drag-and-drop functions.

Identify erroneous data and areas for improvement with advanced analytics that can also illustrate the impact on calculations.

Standardized emissions data flows from across the organization into a single, traceable corporate system of record for emissions, operations and compliance.



Example of Range Validation warning message

1. Collect data your way

SpheraCloud Environmental Accounting software supports both built-in data quality rules and customer-defined data quality rules.

For environmental data collection, the software provides two built-in data-quality rules. These rules apply to all methods of data collection and are most beneficial with manual and spreadsheet-based methods of data collection.

- **Range validation:** As part of configuration, companies may choose to populate absolute ranges for each parameter. Data values that fall outside of that range cannot be saved in Environmental Accounting.
- **Previous-value variance:** As part of configuration, companies may choose to specify lower and upper variance values for each parameter. As data is populated in Environmental Accounting (whether via manual data entry, integration or spreadsheet import), the new values are compared to the previously entered value. If the new value is outside of the accepted range variance percentages, then a comment is required before the new value is saved in Environmental Accounting.

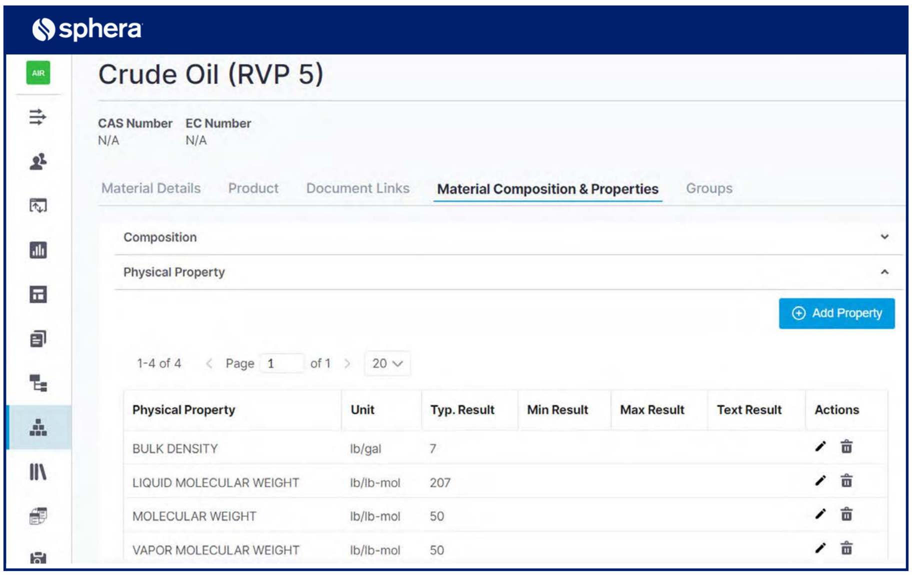
SpheraCloud Environmental Accounting software allows customers to integrate with high-frequency operations data and apply customer data-quality rules to ensure that only approved operations data is used in air/GHG emissions calculations, which support climate-related disclosures. This allows organizations to:

- Implement their own data validation and substitution rules on data before it is used in emissions calculations.
- Review, validate and approve high-frequency operations data before it is used in emissions calculations.

2. Calculating emissions data

The Oil & Gas, Manufacturing and Chemical industries have emissions calculations that are dependent on materials either produced or used. Many companies deal with hundreds of different materials each month in their emissions calculations. For them, using EHS software with a strong materials database is crucial. This software should also allow for clear and verifiable referencing of those materials within calculations.

SpheraCloud Environmental Accounting Software has a robust materials database and award-winning emissions calculator.

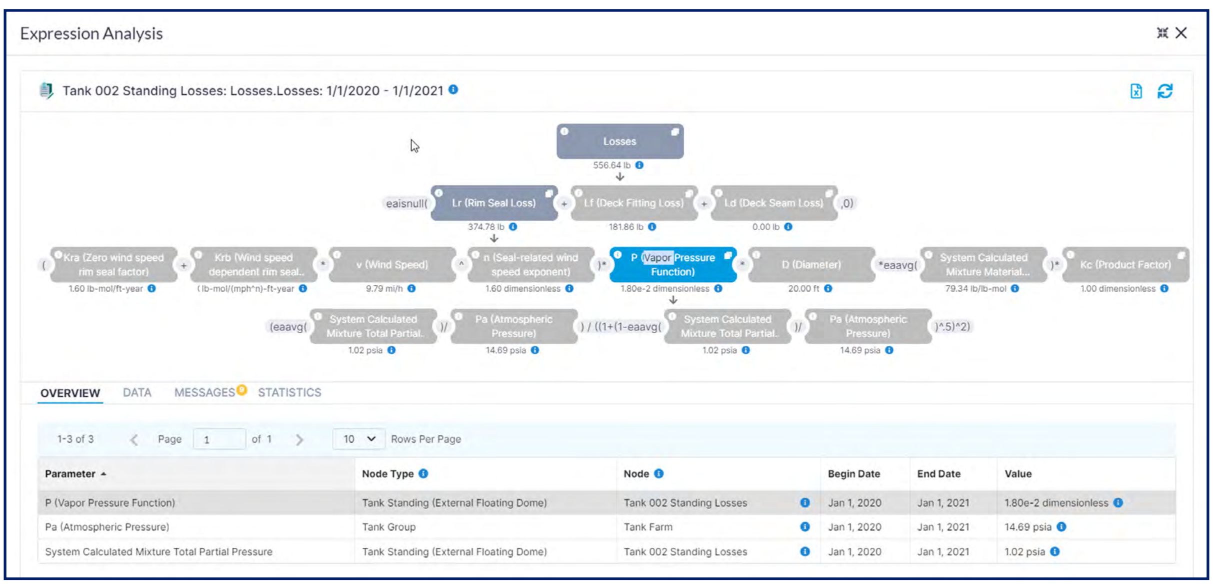


SpheraCloud Environmental Accounting tracks date stamped material property and composition information

- It can track materials usage at any periodicity needed to meet your EHS reporting requirements, whether that be monthly, daily or hourly.
- It also includes the ability to track date-stamped materials, material composition and property information—including vapor pressure methods and coefficients.
- Several different methods of vapor pressure calculations are included to support standard calculations required by customers in the Chemical, Oil & Gas and other industries.
- Five different emissions speciation methodologies are built in to support different business requirements and materials data collection requirements.
- The software includes the ability to perform complex vapor liquid equilibrium calculations. This is absolutely critical for Chemicals, Oil & Gas and other industries that store organic liquids or perform coating operations involving many materials.

3. Diagnose anomalies

SpheraCloud Environmental Accounting Software provides for unprecedented emissions calculation transparency. Whether calculations are performed for a simple diesel engine or a complex organic liquid storage tank, the calculation logic is visible in an easy-to-understand format that is downloadable to Excel workbooks with all supporting data. This makes audits of an organization's GHG emissions disclosure fast and easy for your organization.



Example of Expression Analysis standing losses from a storage tank

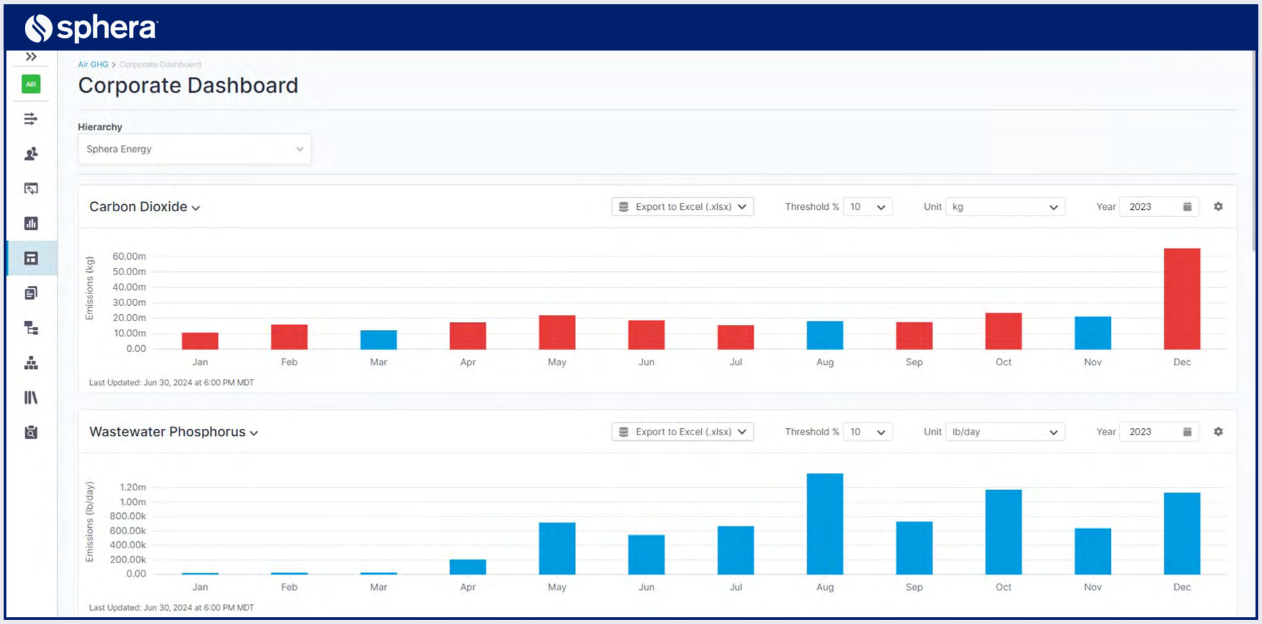
- A subject matter expert can quickly identify and validate calculation logic and all data referenced in calculations. This makes troubleshooting of anomalous calculation results a simple and efficient activity.
- Calculation logic and data referenced in calculations can be downloaded to Microsoft Excel in seconds and provided to auditors.

4. Report on the data

Calculating GHG emissions require vast amounts of ever-changing operations data, material data and equipment data. Companies need more than just live reports. They need a reliable system to track this data back to its source to ensure accurate and verifiable calculations, especially for external audits for SEC limited and reasonable assurance and other audited emissions statements.

Modern EHS software needs to provide a detailed audit trail for configuration and operations data. It also needs to provide EHS professionals with a method to review, approve and release report data sets for stakeholder and public-facing emissions reports.

SpheraCloud Environmental Accounting Software includes a robust tool for EHS professionals to create versioned report data sets used for GHG and environmental reports.



Example of a Corporate Dashboard

- A workflow engine allows for submissions of draft report data sets, with thresholds on report values requiring comments on significant changes from previously reported data sets.
- A separate EHS professional can review, approve and release versioned and approved GHG and environmental data sets for internal and external reporting.

The approved and versioned data set can also be referenced when determining whether changes to different versions of report data represent a material change, resulting in the need to re-state previously reported data to stakeholders.

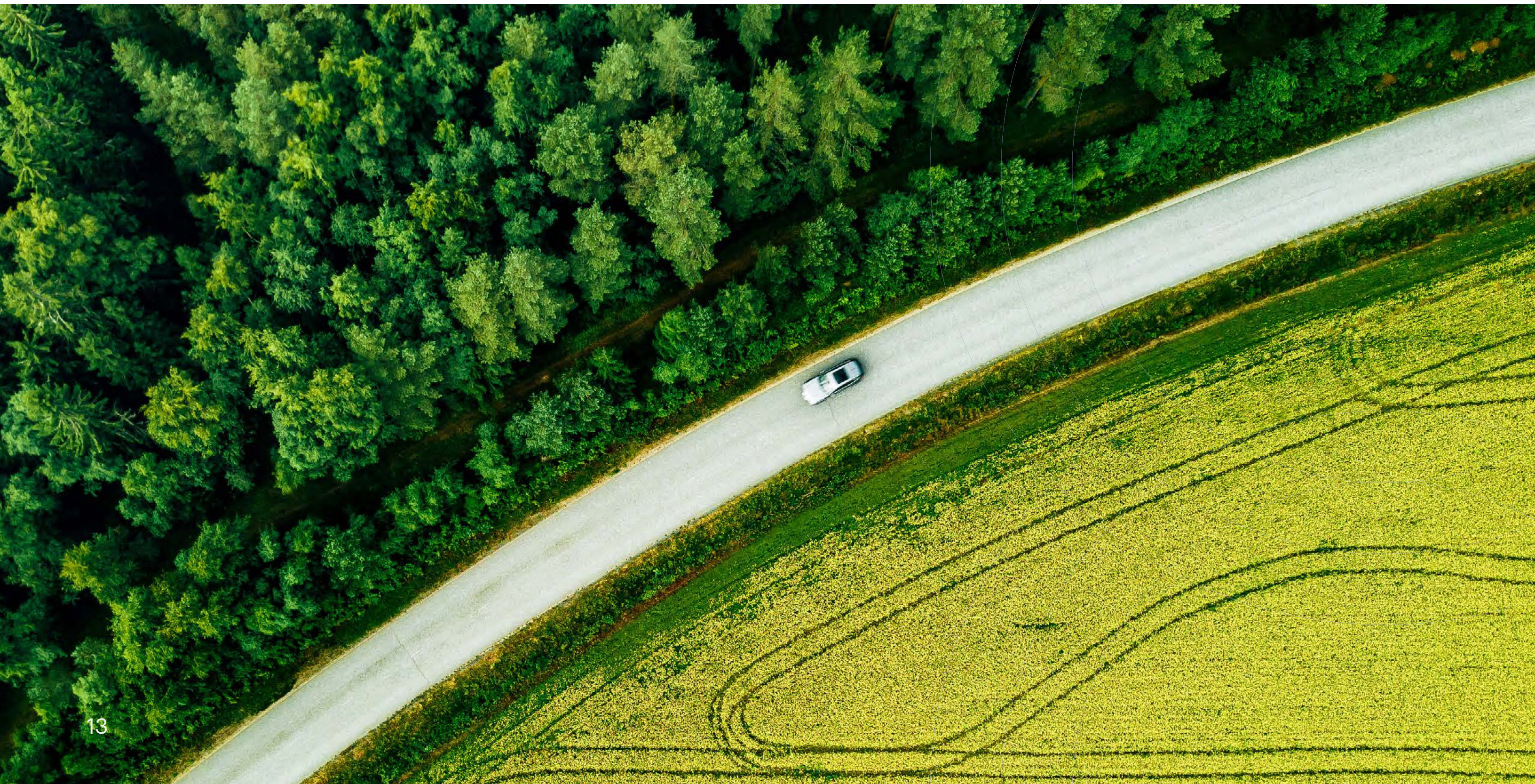
Track progress toward emissions reduction goals

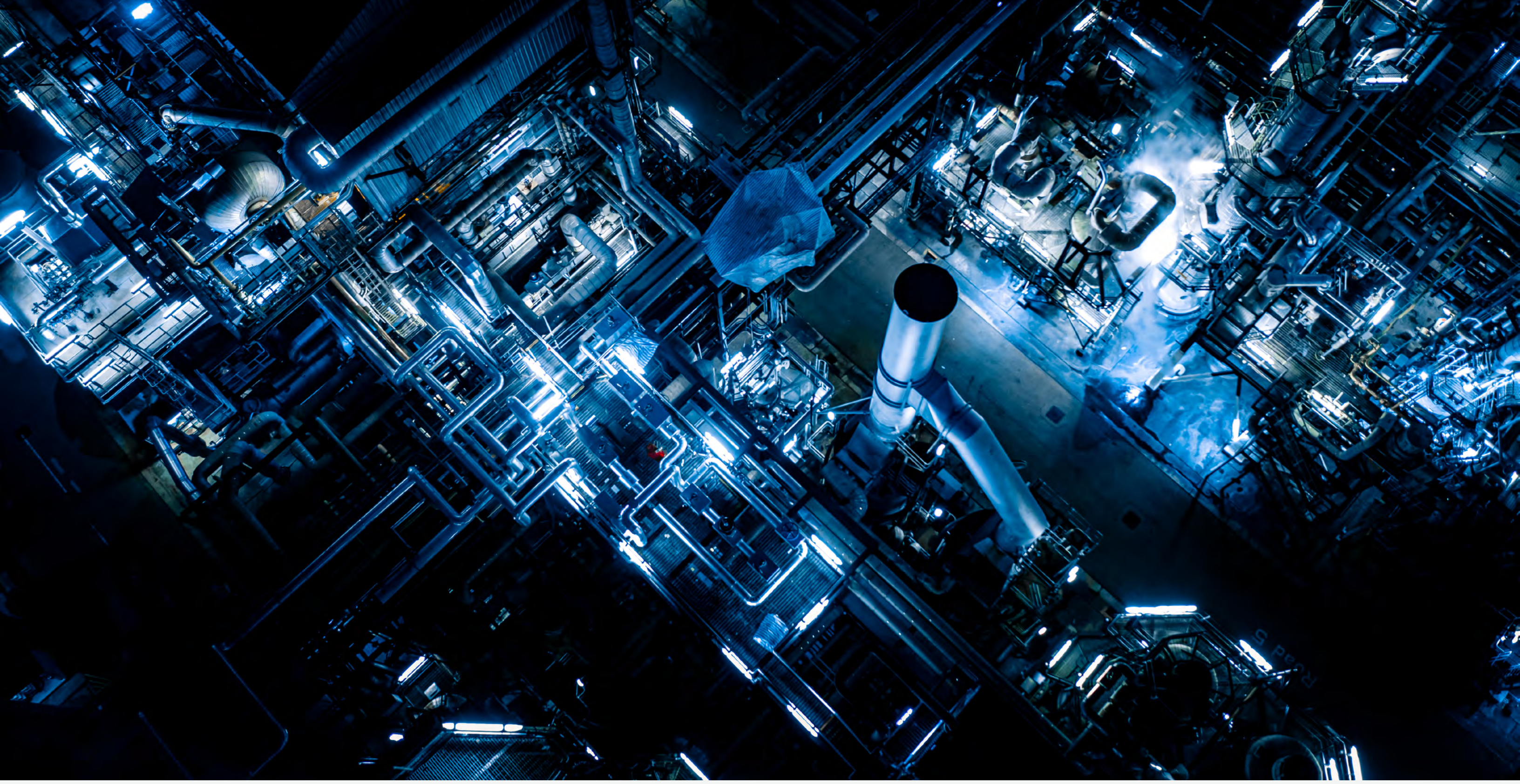
SpheraCloud Environmental Accounting Software helps organizations demonstrate progress toward their emissions reduction goals.

For each emissions reduction target, emissions limits can be configured in the software.

- It calculates equipment-specific emissions for comparison to any equipment-specific emissions limits and/or associated emissions reduction targets.
- It aggregates equipment emissions for comparison to facility-specific emissions limits and associated emissions reductions targets.
- It aggregates facility-specific emissions for comparison to business unit or corporate-specific emissions limits and associated emissions reduction targets.
- It notifies appropriate individuals when progress toward emissions limits and associated emissions reduction targets is not achieved.

The SpheraCloud Environmental Accounting Software is built on decades of experience using the powerful and trusted emissions calculation engine. It is available as a SaaS-based platform and can be integrated with numerous data management systems. All facets of the user experience—from data entry to troubleshooting to reporting—are seamless and powered by the real-time calculation engine that provides immediate, actionable insights to drive performance.





Prepare for tomorrow

Businesses today face a growing deluge of high-frequency environmental data. As regulations change, technology evolves and pressures mount to provide more transparency into environmental impact. It is time for businesses to shift their data management strategies, too. To meet today's challenges and gain a competitive advantage in tomorrow's business environment, we recommend robust Environmental Accounting software. Tomorrow will bring an even greater demand to change and innovate. Now is the time to take accountability for environmental impact. We encourage organizations to engage across a broad group of internal stakeholders to realize the full benefits of these tools.

Partners like Sphera can help businesses rapidly deploy this support with minimal disruption and provide the support necessary to adapt the solution to fit your businesses' evolving needs.

The information provided in this white paper is for general information purposes only, may not be updated in real time and does not constitute legal advice. Please consult with your legal and other advisors to discuss your particular needs and circumstances.

About Sphera

Sphera is the leading provider of environmental, social and governance (ESG) performance and risk management software, data and consulting services focusing on Environment, Health, Safety & Sustainability (EHS&S), Operational Risk Management (ORM), Product Stewardship and Supply Chain Risk Management (SCRM).

www.sphera.com

For more information contact us at:
https://sphera.com/contact-us