Carbon Accounting Management Platform Benchmark

2024-2025

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Introduction

Sia Partners, a leading management consulting firm aims to deliver exceptional impact by creating innovative ESG solutions for clients. Our Climate Analysis Center, dedicated to climate transition projects, recently conducted a study to benchmark the effectiveness and capabilities of several top carbon accounting software solutions in Europe and the United States. This fact-based comparison evaluates fourteen of the most prominent generalist carbon accounting software options available. The Climate Experts at Sia Partners have pinpointed the key features that companies should consider when selecting the carbon accounting software that would best meets their needs.

Carbon accounting software is essential for companies to track, measure, and reduce their carbon emissions. By utilizing such software, companies can uphold their environmental commitments, develop strategies to lower emissions, monitor their progress, and receive expert guidance on sustainable business practices. This benchmark study aids companies in achieving their carbon neutrality goals and supports the broader effort to combat climate change.

Through this benchmark, Sia Partners offers valuable insights into the capabilities of various software programs, helping businesses choose the most effective tools for their carbon reduction initiatives. This study examines leading carbon accounting software programs active in Europe and the US. Both markets are at the forefront of current and anticipated environmental regulations (such as SEC and CSRD), which accounts for the advanced technological maturity of carbon accounting software in these regions.

Our experts considered several key features during the solution selection process, including carbon footprint calculations, carbon management and target setting, benchmarking, and risk management, reporting practices, and communication features. Sia Partners' experts conducted an in-depth analysis of these criteria using information from a questionnaire that has been filled out and answered by each player in May 2024. The evaluation process involved various stages, such as solution demonstrations and documentation analysis. During the demos, experts assessed each software's real-world performance, focusing on data input, scenario modeling, report generation, and integration capabilities. In 2024, the assessment was expanded to include more carbon solutions and a deeper examination of tool features, performance, and user-friendliness. It is important to mention that this benchmark is not exhaustive, only the companies that responded to our questionnaire take part in the assessment. This benchmark provides a snapshot of the solutions of at a given moment, acknowledging that these innovative companies and their software are continuously evolving.

DOMAINS	QUESTIONS	Aktio	Carbometrix	CO2 ai	Coolset	Dcarbonize	Doconomy	Envizi by IBM
CARBON FOOTPRINT	Core Data Libraries for GHG Inventory	●	◕	◑	◑	◕	◑	●
	User Guidance on Data Sources and Emissions Factors	●	●	●	●	●	●	●
	Financial Conversion Methods for Base Year GHG Calculation	●	●	●	●	●	○	●
	Inventory Conversion Methods for Base Year GHG Calculation	●	●	●	●	●	●	●
	Inventory Conversion Methods for Base Year GHG Calculation	●	●	●	●	●	●	●
	Uncertainty Range for GHG Emissions	●	◔	◑	◔	◑	◔	●
	Scope 3 Upstream Emissions	●	●	●	●	●	●	●
	Scope 3 Downstream Emissions	●	●	●	●	●	◕	●
	Measurement of Third Parties' GHG Emissions	●	●	●	●	◕	●	●
	Methodology for Lifecycle Analysis	◔	◑	◔	○	●	◑	○
	Approach to Carry Out Lifecycle Analysis	◔	●	◔	○	●	◔	○
	Lifecycle analysis	●	◑	◔	○	●	◕	◑
	Impact Assessment of the LCA	○	○	●	○	○	○	●
	Multilevel calculation	●	●	●	○	●	◔	◑
	Configurable Emissions Factors Mapping Model	◔	◑	◔	◑	◔	◔	●
CARBON MANAGEMENT	Emissions Reduction Scenarios Creation	●	●	◕	●	◕	○	◕
	Emission Targets at Different Time Horizons	◑	◑	◑	◕	◑	◔	◑
	Future Decarbonization Consideration in Scenarios	◔	○	◔	○	◔	○	◔
	Measurement of Gaps with Target GHG Emissions	●	○	●	○	●	●	●
	Recalculation of Intermediate Targets and Emissions Mix	◔	○	◔	○	◑	◔	◕
	Wider GHG Reductions Emissions Objectives	◑	◕	◑	◑	◑	○	◑
	Current Emissions Dashboard Views	◔	◑	●	●	●	◑	●
	Provision of Reduction Levers	●	●	●	●	●	○	●
	Addition of Reduction Levers	◕	◕	◕	◑	◕	○	◕
	Comparison of Different Carbon Reduction Levers	◑	◔	◑	◑	◔	○	◕
	Management of Carbon Reduction Action Plan	●	●	●	◑	●	○	●
	Overall Carbon Performance Target Design	◔	◑	◔	◔	◔	○	●
	Carbon Pricing Capabilities	◔	◔	○	○	◑	◑	○
	Portfolio of Offsets and Removals Initiatives	◑	◔	◔	◑	◔	○	●
	Marketplace for Carbon Offset Initiatives	●	○	○	◑	○	○	○
BENCHMARK & RISKS	Comparison of Current and Previous Year GHG Emissions	◔	◕	◕	◕	●	○	◕
	Benchmarking	○	●	◕	●	●	◑	◑
	Addressing GHG Risk Exposures and Providing Actionable Insights	●	●	○	◕	○	○	◑
REPORTING	Customizable Analytics and Data Visualization Tools	◑	●	◕	●	●	◕	●
	Automatic Generation of Reports Aligned with External Frameworks	○	◔	●	○	●	○	●
	Generation of Shareable Internal Reports	◕	●	●	◕	○	◑	●
COMMUNICATION	External Communication Templates and Material	●	◑	○	●	◕	◑	◑
	Dedicated Employee Platform for Sustainability Goals	◕	◑	◑	◑	◑	○	◑
	Supporting Training Material and Resources on Climate Change	◔	◑	◔	●	●	○	○
TECHNICAL NEEDS & MISC	Integration Capabilities with Customer's Technical Ecosystem	●	●	●	●	●	◕	○
	Automatic Data Collection Through Various Connector Types	◔	◑	◑	◑	◑	◕	◑
	User Permission Levels for Data Privacy and Control	●	◑	●	●	●	○	●
	Scalability of Implementation Process	●	●	◕	●	●	●	●
	Access from Various Mobile Devices	○	◑	○	●	●	●	○
	User Guides and Trainings	●	◑	●	●	●	○	◑

Legend for rating symbols: ● = full, ◕ = three-quarter, ◑ = half, ◔ = quarter, ○ = empty

DOMAINS	Questions	Global Climate Initiatives	Greenly	Hellocarbo	Normative IO	Sami Eco	Sinai	Toovalu
CARBON FOOTPRINT	Core Data Libraries for GHG Inventory	●	◕	◕	●	●	●	○
	User Guidance on Data Sources and Emissions Factors	◑	●	●	●	◕	◕	●
	Financial Conversion Methods for Base Year GHG Calculation	●	●	●	●	●	●	●
	Inventory Conversion Methods for Base Year GHG Calculation	●	●	●	●	●	●	●
	Inventory Conversion Methods for Base Year GHG Calculation	◑	◕	●	●	●	●	◕
	Uncertainty Range for GHG Emissions	●	◕	◕	◔	○	●	●
	Scope 3 Upstream Emissions	●	●	●	●	●	●	●
	Scope 3 Downstream Emissions	●	●	●	●	●	●	●
	Measurement of Third Parties' GHG Emissions	●	●	●	●	●	○	●
	Methodology for Lifecycle Analysis	◕	◑	◕	○	●	○	◔
	Approach to Carry Out Lifecycle Analysis	●	●	●	○	●	○	○
	Lifecycle analysis	●	●	◕	◔	◕	◔	◑
	Impact Assessment of the LCA	○	○	○	◔	◔	◔	◔
	Multilevel calculation	●	●	◑	●	●	●	●
	Configurable Emissions Factors Mapping Model	◑	◑	◑	◑	◑	◑	●
CARBON MANAGEMENT	Emissions Reduction Scenarios Creation	●	●	●	◕	●	◕	●
	Emission Targets at Different Time Horizons	◕	◕	◕	◕	◕	◕	◕
	Future Decarbonization Consideration in Scenarios	◑	◑	◑	◕	◑	◑	○
	Measurement of Gaps with Target GHG Emissions	○	◕	○	●	◑	●	◑
	Recalculation of Intermediate Targets and Emissions Mix	◑	◑	◑	◕	◑	◑	◑
	Wider GHG Reductions Emissions Objectives	◑	◑	◑	◑	◑	◑	◑
	Current Emissions Dashboard Views	◑	◑	◑	◑	◑	◑	●
	Provision of Reduction Levers	○	◕	●	●	●	○	●
	Addition of Reduction Levers	◕	◕	◕	○	◑	◕	◕
	Comparison of Different Carbon Reduction Levers	◑	◑	◑	◑	◑	◕	○
	Management of Carbon Reduction Action Plan	●	●	◑	◑	◑	◑	●
	Overall Carbon Performance Target Design	◕	●	◑	●	◑	◕	◕
	Carbon Pricing Capabilities	◑	●	○	○	○	◑	○
	Portfolio of Offsets and Removals Initiatives	◑	◑	◑	◑	●	◑	◑
	Marketplace for Carbon Offset Initiatives	●	●	●	●	◑	◑	○
BENCHMARK & RISKS	Comparison of Current and Previous Year GHG Emissions	●	●	◕	●	●	◕	●
	Benchmarking	○	◕	◕	◕	◑	◑	○
	Addressing GHG Risk Exposures and Providing Actionable Insights	○	●	○	○	●	○	○
REPORTING	Customizable Analytics and Data Visualization Tools	○	●	○	◑	◑	◑	●
	Automatic Generation of Reports Aligned with External Frameworks	●	●	○	◕	○	◕	◕
	Generation of Shareable Internal Reports	◕	◕	◕	◕	◑	○	●
COMMUNICATION	External Communication Templates and Material	◕	●	●	◕	●	○	○
	Dedicated Employee Platform for Sustainability Goals	◑	●	●	◑	●	○	○
	Supporting Training Material and Resources on Climate Change	◑	●	◕	◕	●	◑	◕
TECHNICAL NEEDS & MISC	Integration Capabilities with Customer's Technical Ecosystem	●	●	◑	●	◑	●	○
	Automatic Data Collection Through Various Connector Types	◑	◑	◑	◑	●	◕	◑
	User Permission Levels for Data Privacy and Control	◕	◑	◕	●	●	●	●
	Scalability of Implementation Process	●	●	◕	◑	●	◕	◕
	Access from Various Mobile Devices	◑	○	●	◑	○	○	○
	User Guides and Trainings	◑	◑	◑	●	●	◕	●

Measuring the Carbon Footprint

Measuring a carbon footprint involves several crucial aspects, including the scope of emissions, data collection and calculation methods, and the methodologies applied. The benchmark evaluates the maturity of the calculation engines within various tools, analysing their diverse capabilities and features.

The assessment includes the use of internal or external databases by each tool, specifically examining the robustness and accuracy of these databases in providing emission factors. High-quality databases are essential for precise calculations, ensuring that the emission factors used are accurate and current.

User guidance features of each tool are evaluated, focusing on how effectively each tool assists users in accessing the correct sources and applying the appropriate emission factors. Strong user guidance is crucial for ensuring accurate and efficient data input, reducing errors, and enhancing overall reliability.

The methods used for base year GHG calculations are examined, considering whether financial or inventory conversion methods are leveraged and if manual data input is permitted. Flexibility in these areas allows users to customize the tool to their specific needs, making it adaptable to different organizational contexts.

Verification processes and uncertainty mechanisms are another critical focus area. These features are vital for ensuring data accuracy and reliability

through cross-checks and validations, providing trustworthy and credible results.

The tools' capability to consolidate data from multiple entities is evaluated, emphasizing the importance of standardizing measurement methodologies, and integrating various data sources. This capability is particularly significant for large organizations with complex structures, ensuring consistent and accurate data across all entities.

The ability of the tools to measure third-party GHG emissions across the entire value chain, including upstream and downstream Scope 3 emissions, is assessed. This capability is essential for providing a complete picture of an organization's carbon footprint, enabling comprehensive environmental impact assessments.

Lifecycle analysis is another feature analysed, considering whether industry standards were consulted in developing the methodology and the approach used (cradle-to-gate vs. cradle-to-cradle). This helps determine the comprehensiveness of the tools in assessing the entire lifecycle of products. Technical calculations are verified, noting whether external software or built-in LCA calculation tools are utilized.

Finally, the details of the calculations are assessed. This includes examining if the tools support multi-level calculations, distinguish between global, regional, and local emissions, and in-

clude configurable emissions factors mapping models such as ITSM, ERP, or others. These capabilities ensure that the tools provide detailed and accurate emissions data tailored to specific organizational needs.

Overall, the benchmark offers a thorough evaluation of the leading carbon accounting software, highlighting their strengths and areas for improvement. This comprehensive analysis is invaluable for businesses seeking to select the most effective tools to drive their carbon reduction efforts and achieve their sustainability goals.

The carbon footprint measurement features aim to identify the maturity and capabilities of the calculation engine, the methodology used, the impact measurements of the life cycle assessment, and the granularity and level of detail the calculations entail. Among the evaluated tools, CO2 AI achieved the highest score, closely followed by Greenly, Aktio, Dcarbonize, and Sami Eco, all of which offer comprehensive features and demonstrate advanced maturity levels across various aspects.

While Doconomy provides robust capabilities, it could enhance its calculation engine by incorporating financial conversion methods for base year GHG calculations. Coolset, Envizi by IBM, and SINAI, though strong in other areas, currently do not include lifecycle assessment calculations, which could be an area for future development.

Carbon Management

The second pillar analysed is carbon management functions. A key aspect assessed is the platform's ability to create customized target emissions reduction scenarios. This includes different time horizons and consideration of future sector decarbonization scenarios, such as changes in the electricity mix. This feature is essential for enabling organizations to plan long-term strategies effectively.

Target emissions tracking is another critical feature examined. To manage a carbon footprint, it is necessary to track progress and identify gaps. The assessment considered whether the tool provides monitoring dashboards for tracking these gaps and if it allows the re-calculation or re-evaluation of intermediate targets or milestones if current targets are not met. This flexibility is crucial for adapting strategies and maintaining progress toward goals.

Many companies embark on their GHG reduction journey to meet international objectives or comply with standards. Therefore, the evaluation included whether the tool allows benchmarking against international targets, such as those set by the Science Based Targets initiative (SBTi) or the National Low-Carbon Strategy (SNBC). This capability ensures alignment with global best practices.

Setting an emission reduction plan is a primary outcome of a carbon footprint assessment, making the software's ability to identify reduction levers vital. Specifically, it was analyzed whether the tool can provide carbon emission reduction levers, if additional levers can be added by users, and if a comparison scale is offered. Additionally, the tool's capability to allow users to set specific carbon performance targets was evaluated, enhancing the ability to strategize and measure progress.

Furthermore, carbon management includes carbon pricing, removal, and offsetting features. The platform's carbon pricing capabilities were checked, such as pulling internal carbon prices or market-based data into calculations. For offsetting and removal, it was essential to verify if the solution allows users to choose from a portfolio of offsets and removal initiatives, offering options for different project types, locations, and certifications. Some platforms even provide a marketplace of reputable carbon offset initiatives and providers, ensuring a wide range of choices for effective carbon management.

In summary, these carbon management functions play a crucial role in helping organizations effectively manage and reduce their carbon footprint. By offering features such as customized

emissions reduction scenarios, target emissions tracking, international benchmarking, identification of reduction levers, and comprehensive carbon pricing, removal, and offsetting options, these tools provide a robust framework for sustainable carbon management.

The Carbon Management pillar evaluates the maturity, functionality, and capabilities of tools in helping users manage their carbon footprint. This includes setting emission reduction plans, tracking emissions and scenario targets, and offering options to compensate for non-removable emissions through offsetting or carbon pricing models. Greenly, Aktio, and Envizi by IBM achieve the highest overall scores for carbon management features, particularly excelling in setting target emission scenarios and tracking progress. When it comes to setting emission reduction plans, these three tools perform comparably to CO2AI, Dcarbonize, and Toovalu.

While the concept of advanced carbon pricing, removal, or offsetting models is still emerging, it is noted that not all tools currently offer these features at a highly advanced level. Nonetheless, the tools assessed provide a robust foundation for managing carbon footprints effectively.

Benchmark & Risk

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The third pillar focuses on benchmarking GHG emissions and assessing GHG risk exposure features. The evaluation examines whether the platform allows for comparison of current GHG emissions with those of previous years and with other companies. Benchmarking GHG emissions is essential as it enables users to measure their performance against industry standards and competitors, offering valuable insights into areas for improvement.

A critical aspect of this assessment is the platform's capability to identify GHG risk exposure and provide mitigation recommendations. This involves evaluating how effectively the platform can analyze potential impacts on revenues, costs, and other aspects of business operations. Effective GHG risk management enables organizations to

proactively address the environmental and financial risks associated with greenhouse gas emissions, ensuring a more sustainable and resilient business strategy.

The tools assessed in this pillar are evaluated for their ability to deliver comprehensive benchmarking data and risk analysis, which are key to informing strategic decisions and improving overall performance. By enabling detailed comparisons and thorough risk assessments, these tools provide organizations with the insights needed to enhance their sustainability efforts and mitigate potential risks effectively.

The benchmark and risk pillar evaluates the platforms' features for benchmarking GHG emissions and assessing GHG risk exposure. This invol-

ves determining if the platform allows comparison of current year GHG emissions with previous years and enables benchmarking emissions with other companies. Greenly, Normative IO, Dcarbonize, Coolset, and Carbometrix are the most advanced in these areas. Aktio and Doconomy also offer these features, though they are still developing in comparison.

In terms of risk exposure features, Sami Eco, Carbometrix, Aktio, and Greenly are pioneers, demonstrating advanced capabilities in this area. While some platforms are still expanding their risk exposure features, the overall trend shows significant progress and innovation in providing comprehensive GHG risk management solutions.

Reporting

The fourth pillar focuses on reporting features, a crucial step in carbon accounting that encapsulates all calculations, target settings, and benchmarking efforts. Companies expect comprehensive reports that consolidate these elements, so the assessment includes the tools' capabilities to provide customizable analytics and data visualization.

With the growing popularity of ESG (Environmental, Social, and Governance) reporting frameworks, more companies are aligning their reports with these standards. An automated solution that generates reports compliant with frameworks like GRI (Global Reporting Initiative), CDP (Carbon Disclosure Project), SASB (Sustainability Accounting Standards Board), or EcoVadis offers significant advan-

tages. These frameworks ensure that reports are consistent, comparable, and transparent, meeting the expectations of investors, regulators, and other stakeholders.

The evaluation also considers whether platforms generate reports that can be easily shared within companies, catering to employees or stakeholders. Internal sharing is vital for transparency and fostering a culture of sustainability within the organization.

Additionally, the assessment examines whether the solutions ensure compliance with carbon footprint certifications, such as the GHG Protocol or other recognized standards. Compliance with these certifications enhances the credibility of the reports and ensures adherence to global best

practices in carbon accounting.

Overall, the reporting features pillar assesses the extent to which tools support comprehensive, standards-aligned, and shareable reporting, reinforcing transparency and compliance in carbon accounting practices.

The Reporting pillar evaluates features such as the ability to create customizable analytics and automated report generation aligned with international frameworks or for internal company communications. Envizi by IBM scored the highest in these features, closely followed by CO2 AI and Carbometrix. Coolset, Dcarbonize, Toovalu, The Global Climate Initiative, Normative IO, and Greenly also demonstrate strong capabilities and similar maturity levels in their reporting features.

Communication

The fifth pillar focuses on communication. The study examines whether platforms provide a communication kit, which includes customizable templates, guidelines, and best practices for extracting external communication materials. These tools are essential for effectively disseminating information about carbon reduction strategies to external stakeholders, ensuring clear and consistent messaging.

The analysis also considers the inclusion of a dedicated employee platform. Such a platform enables employees to actively participate in the company's sustainability goals, track their individual carbon footprints, and contribute to collective efforts to reduce emissions. This feature fosters a sense of ownership and engagement among employees, making sustainability a shared responsibility throughout the organization.

Additionally, some solutions offer educational content, including training materials and resources about climate change. Providing these resources is crucial for raising awareness and educating employees on the importance of sustainability. By equipping employees with knowledge and skills, a culture of sustainability can be cultivated, driving collective action towards reducing emissions.

Overall, the communication pillar assesses the extent to which tools support effective external and internal communication, employee engagement, and education, all of which are vital for fostering a comprehensive and collaborative approach to sustainability.

Various communication features have been benchmarked for the communication pillar. The evaluation considers the maturity and capability of providing external communication templates or materials to help customers disseminate information. Additionally, the presence of an employee platform and the provision of educational content have been assessed. The results highlight Sami Eco, Hellocarbo, Coolset, Aktio and Greenly as frontrunners in these areas. Other players are continuing to develop and enhance these features.

Technical needs & MSC

The final pillar evaluates the technical needs and MSC (maintenance, support, and customization), focusing on the solution's platform integrations. This includes examining the ease of integrating the platform within the customer's ecosystem, such as the availability of connector types or an API. These technical capabilities enhance the solution's adoption for customers.

The assessment also compares user permission levels and implementation scalability, considering how easily the solutions can be deployed across various entities and organizations. Additionally, the accessibility of the platform on different mobile devices is evaluated, along with the availability of guides, training materials, and other resources for customer onboarding.

The frontrunners in platform integration features include Dcarbonize, Normative IO, Aktio, Greenly, SINAI, and Coolset. The solutions with the most developed accessibility on various mobile devices are Hellocarbo, Doconomy, Coolset, and Dcarbonize. Additionally, Normative, Dcarbonize, and Coolset offer the most mature solutions in terms of providing supporting guides and training materials for platform usage.

Conclusion

The benchmark study conducted by Sia Partners' Climate Analysis Center highlights the pivotal role of carbon accounting software solutions in fostering sustainable business practices. This comprehensive evaluation examines the effectiveness and capabilities of leading carbon accounting software across the globe helping companies select tools that align with their environmental goals.

Carbon accounting software is crucial for effectively tracking, measuring, and mitigating carbon emissions. These solutions provide invaluable tools for maintaining accountability, devising emission reduction strategies, monitoring progress, and obtaining expert guidance for sustainable operations.

The benchmark illuminates the strengths and areas for improvement of each software. In carbon footprint measurement, CO2 AI, Aktio, and Sami Eco excel, offering comprehensive features and demonstrating advanced maturity levels. Greenly, Aktio, and Envizi by IBM prove themselves to be the most advanced in terms of carbon management features, particularly in setting target emission scenarios and tracking progress. CO2 AI, Dcarbonize, and Toovalu are top-rated for setting emission reduction plans. The tools are also evaluated for their ability to deliver comprehensive benchmarking data and risk analysis. Greenly, Normative IO, Dcarbonize, Coolset, and Carbometrix lead in this area. For risk exposure features, Sami Eco, Carbometrix, Aktio, and Greenly stand out with advanced capabilities. In reporting, Envizi by IBM excels with robust, transparent, and customizable reports that align with internal and external frameworks, closely followed by CO2 AI, Carbometrix, Coolset, and Dcarbonize. Communication features are highlighted by Sami Eco, Hellocarbo, Coolset, and Aktio, which emphasize efficient engagement tools and comprehensive support infrastructure. Dcarbonize, Normative IO, Aktio, and Greenly are frontrunners in platform integration features. The solutions with the most developed mobile accessibility are Hellocarbo, Doconomy, Coolset, and Dcarbonize.

The benchmark's in-depth analysis identifies areas for improvement and highlights opportunities for each software to evolve, providing valuable insights for companies seeking to enhance their carbon management strategies.

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SIAPARTNERS

About
Sia Partners

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