FROST & SULLIVAN

Growth Opportunities in the Global ESG Climate Risk Platform and Reporting Industry

New Platforms to Bring Transparency and Improve Emissions Measurement

Global Energy & Environment Research Team at Frost & Sullivan

The Growth Pipeline™ Company
Powering clients towards a future shaped by growth

K9C6-15
June 2024

Contents

Contents (continued)

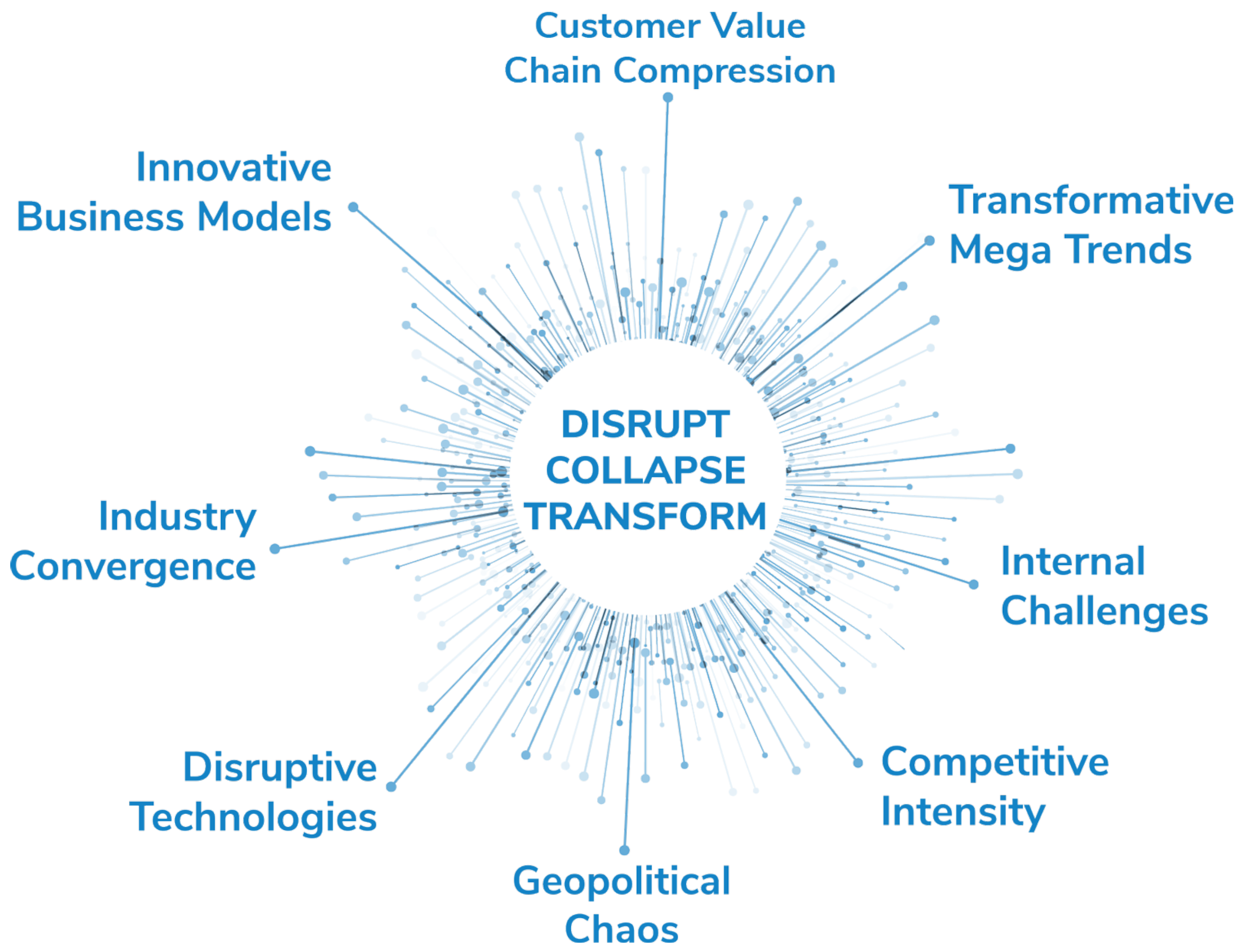
Contents (continued)

Author: Victoria Courtade

Strategic Imperatives

Why Is It Increasingly Difficult to Grow?

The Strategic Imperative 8™: Factors Creating Pressure on Growth



Source: Frost & Sullivan

The Strategic Imperative 8™

Innovative Business Models	Customer Value Chain Compression	Transformative Mega Trends	Internal Challenges
A new revenue model that defines how a company creates and capitalizes economic value, typically impacting its value proposition, product offering, operational strategies, and brand positioning	Customer value chain compression as a result of advanced technologies, internet platforms, and other direct-to-consumer models that enables reduction in friction and the number of steps in customer journeys	Global forces that define the future world with their far-reaching impact on business, societies, economies, cultures, and personal lives	The internal organizational behaviors that prevent a company from making required changes

Competitive Intensity	Geopolitical Chaos	Disruptive Technologies	Industry Convergence
A new wave of competition from start-ups and digital business models that challenge the standing conventions of the past, compelling established industries to re-think their competitive stance	Chaos and disorder arising from political discord, natural calamities, pandemics, and social unrest that impact global trade, collaboration, and business security	New, disruptive technologies that are displacing the old, and significantly altering the way consumers, industries, or businesses operate	Collaboration between previously disparate industries to deliver on whitespace cross-industry growth opportunities

Source: Frost & Sullivan

The Impact of the Top 3 Strategic Imperatives on the ESG Climate Risk Platform and Reporting Industry

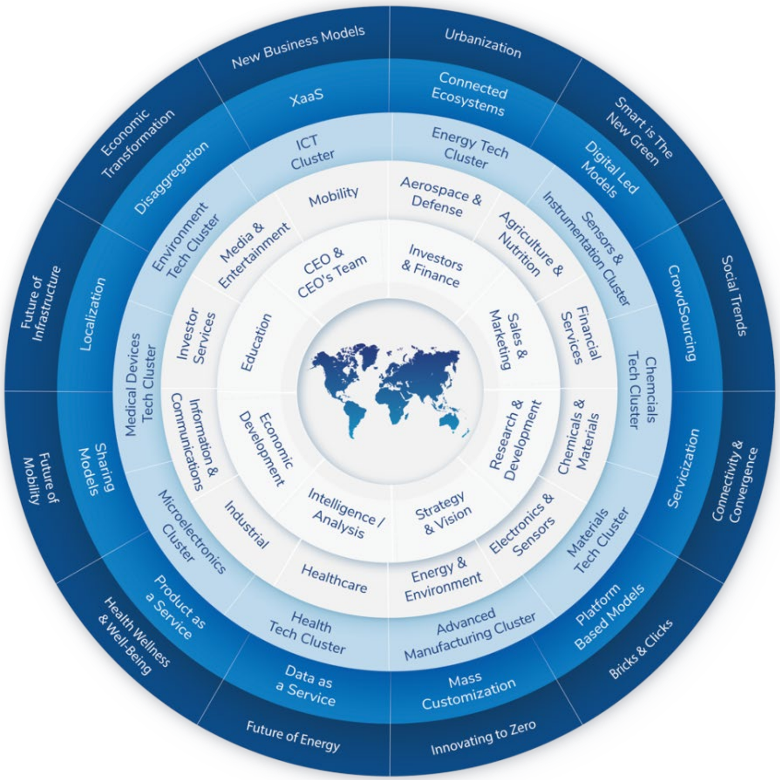
SI8	Disruptive Technologies	Transformative Mega Trends	Innovative Business Models
Why	• Because more companies are being compelled to report their ESG-related issues, new technologies that facilitate this task must be incorporated.	• Pressure from investors looking closely at ESG initiatives of companies and the development of the legislative framework are pushing industries that have historically refrained from ESG reporting to seek solutions that will allow them to comply with these requirements.	• ESG reporting requirements for companies are changing rapidly and impacting more and more industries and companies of various sizes. • The need to determine and control ESG metrics will become increasingly necessary in various scenarios.
Frost Perspective	• The use of platforms for reporting and monitoring ESG* metrics will increase in a wide variety of industries. • The development of platforms that use AI-driven solutions will be a key factor in the incorporation of these tools in different companies. Time-consuming work previously done manually will become automated.	• With the European Union developing the Corporate Sustainability Reporting Directive (CSRD) and the United States Securities and Exchange Commission (SEC) releasing a proposal requiring public firms to include comprehensive climate-related information in their SEC filings, companies that will seek to incorporate reporting solutions of its ESG topics will grow rapidly in the next 5 years.	• With companies of different sizes and sectors needing to track their ESG metrics, the development of platforms that are easily incorporated into their daily lives, allow cost savings, and provide real-time data for decision-making, will be seen more and more frequently.

*Environmental, Social, and Governance (ESG)

Source: Frost & Sullivan

Growth Opportunities Fuel the Growth Pipeline Engine™

The Innovation Generator™



Analytical Perspectives

The Growth Pipeline Engine™

Source: Frost & Sullivan

Growth Opportunity Analysis

6P Framework to Unlock Growth Opportunities Through Sustainable Finance

6P Framework for Future of the ESG, Sustainability & Circular Economy – A Pathway to Net Zero

The future of sustainability will rely on delivering ***"more with less"*** and shaped by the pathway of policies through to platforms.

PLATFORMS

Platforms for measuring, monitoring, reporting, and verifying ESG performance for compliance with international reporting guidelines.

PARTNERSHIPS

Partners in the structuring, implementation and achievement of sustainability and circular economy objectives through transfer and subsidies for technologies

PEOPLE

People and personas both internal (supply side) and external (demand side) including customers

POLICIES

UN sustainability development goals (SDGs); regional, national and local ESG-focused policies—SEC[1], CSRD[2], green taxonomy, Paris climate agreement (net zero goals/targets), reporting initiatives (TCFD[3] and GRI[4] standards)

PRODUCTS

Product design and development that align with ESG targets and are influenced by ESG-related policies

PROCESSES

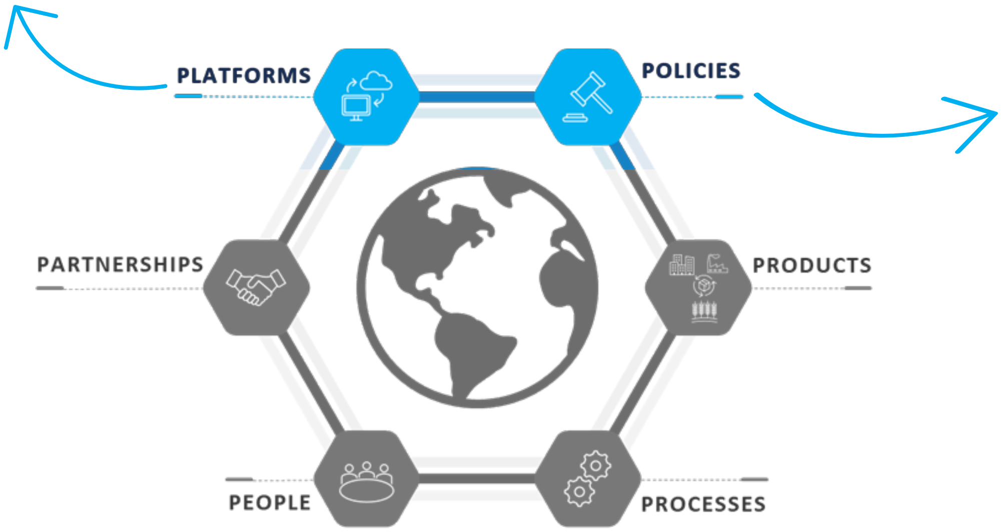
Mapping of key activities and workflows impacting/influencing the environment and emissions, with key focus on tracking scope 1, 2, and 3 emissions

[1]US Securities and Exchange Commission (SEC); [2]Corporate Sustainability Reporting Directive (CSRD); [3]Task Force on Climate-Related Financial Disclosures (TCFD); [4]Global Reporting Initiative (GRI)

Source: Frost & Sullivan

6P Framework: Policies and Platforms

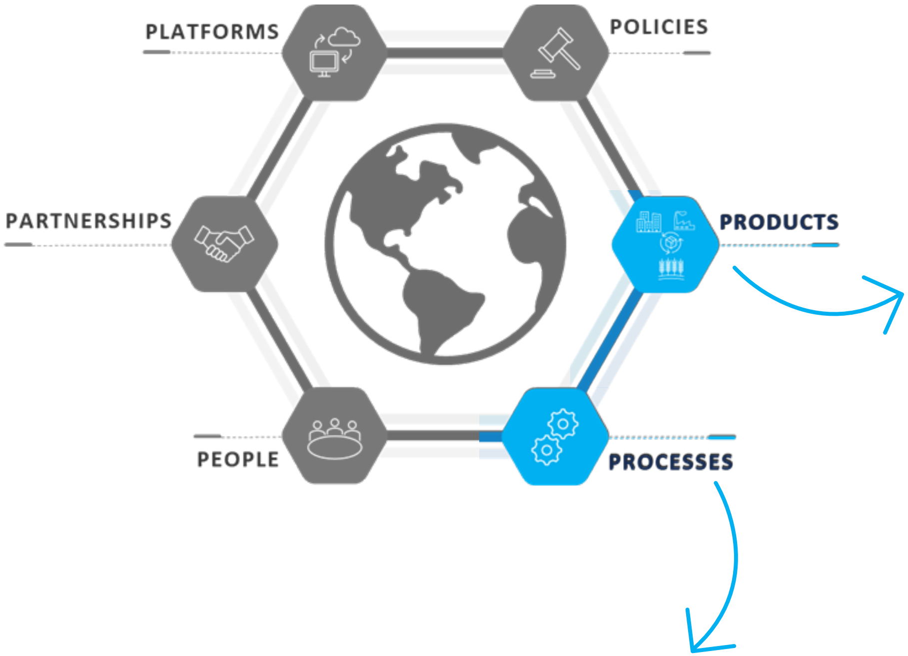
- ESG platforms and software play a pivotal role in empowering companies to enhance their capabilities and support ESG measurement and tracking. These platforms serve as integral tools for organizations, providing a unified and organized space for information on their environmental, social, and governance impacts.
- The incorporation of ESG platforms is instrumental in offering companies greater transparency in their processes, facilitating a comprehensive understanding of their ESG performance. By centralizing impact-related data, these platforms contribute to a more streamlined and efficient approach to ESG auditing and verification.
- The use of advanced technologies and data analytics within ESG software aids in identifying key performance indicators, mitigating risks, and uncovering areas for improvement.
- Overall, the adoption of ESG platforms represents a strategic investment for companies seeking to navigate the complexities of ESG reporting, compliance, and sustainable business practices in an increasingly conscious and regulated business environment.



- The ESG climate risk platform and reporting industry is being impacted by various policies and regulations worldwide, which is forcing companies to adapt to this changing market.
- For instance, in the European Union, ESG regulations such as the green taxonomy and the Sustainable Finance Disclosure Regulation (SFDR) are changing the way companies do business because they will need to disclose their ESG impacts by 2026.
- In the United States, the Securities and Exchange Commission (SEC) has proposed climate-related disclosure rules that would impose new ESG reporting requirements on US-based companies. The impact of these regulations on the ESG platform and reporting industry is significant, and companies are adapting to these changes to stay compliant and competitive.
- In China, the three major stock markets--Shanghai Stock Exchange (SSE), Shenzhen Stock Exchange (SZSE), and Beijing Stock Exchange (BSE)--announced mandatory sustainability reporting requirements.

Source: Frost & Sullivan

6P Framework: Products and Processes



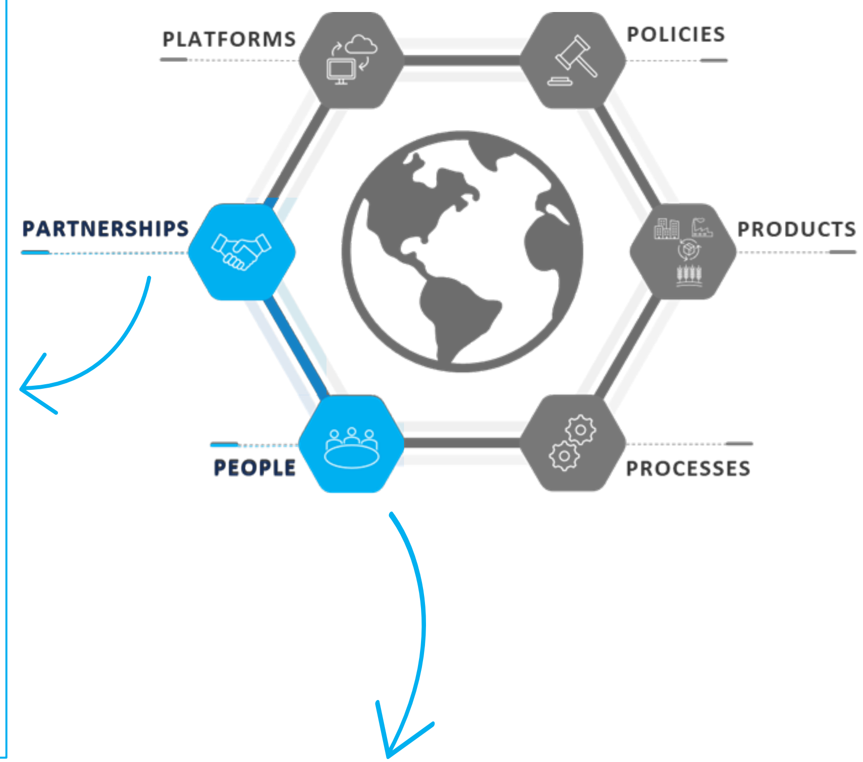
- ESG-related policies exert a profound influence on product development, driving a shift toward sustainability. Client preferences increasingly favor products with positive impacts, prompting producers to emphasize life cycle assessments (LCA) for designing eco-friendly products. This emphasis extends beyond compliance, positioning sustainability as a strategic imperative for long-term success.
- Product innovation now stems not only from market demands but also from a dedication to environmental and social responsibility. This trend aligns with the broader industry movement toward circular economy principles, emphasizing product design for recycling, reusing, or repurposing.
- As the demand for eco-friendly products rises, companies integrating ESG considerations into their development strategies not only meet market expectations but also contribute significantly to global sustainability goals.

- The ESG Climate Risk Platform and Reporting Industry is changing rapidly because of increasing regulations worldwide and mounting social pressure. Companies are compelled to disclose their impact related to ESG topics, driving the incorporation of platforms designed to monitor and manage these issues. These platforms enable companies to map key activities and workflows influencing the environment and emissions, placing a particular emphasis on tracking scope 1, 2, and 3 emissions. The implementation of these platforms equips companies with the capability to monitor their processes with precision, providing clear and reliable information in adherence to international legislation and guidelines. This not only ensures greater control, traceability, and transparency throughout the entire process but also facilitates seamless data collection, reporting, and verification.
- By addressing the challenge of tracing workflows across the entire value chain, these platforms empower companies to align with evolving ESG standards. This comprehensive approach supports companies in navigating the complexities of emissions tracking, fostering a more sustainable and responsible business ecosystem that aligns with global environmental goals and societal expectations.

Source: Frost & Sullivan

6P Framework: People and Partnerships

- Partnerships are a vital influence on the sustainable development of the ESG climate risk platform and reporting industry, fostering collaborations in the structuring, implementation, and achievement of sustainability and circular economy goals. These partnerships serve as a catalyst for progress through investments in new technologies.
- Alliances between various actors, spanning upstream and downstream participants, are foundational for the industry's advancement. Collaborative efforts and partnerships among stakeholders, including data providers, platform developers, consulting entities, and auditing firms, are instrumental in accelerating the industry's journey toward greater sustainability. By pooling expertise and resources, these partnerships contribute to the evolution of ESG platforms, elevating them to new levels of effectiveness and impact.
- Collaborative initiatives not only enhance the efficiency of data collection, analysis, and reporting but also ensure that platforms align with the latest sustainability goals and circular economy principles. In essence, partnerships are the driving force that propel the ESG climate risk platform and reporting industry toward a more resilient, sustainable, and collectively beneficial future.



- The people involved in the ESG climate risk platform and reporting industry are essential for its development and implementation. With multiple individuals dedicated to each ESG-related topic, these platforms are instrumental allies for organizing and tracking information. In smaller companies, these platforms help facility/asset managers serving as a chief sustainability officer (CSO). In larger companies, these solutions enable C-level executives to have a clear overview of their performance and support the development of a robust sustainability strategy based on transparent information.
- From the supply side, these new platforms are crucial tools for internal development, process streamlining, and efficiency enhancement. Externally, they play a pivotal role in understanding the diverse personas seeking their products. Customers, both internal (supply side) and external (demand side), experience improved transparency, efficient decision-making, and the facilitation of sustainable strategies through these platforms. The industry's stakeholders, from individuals within enterprises to customers seeking ESG solutions, benefit from the transformative influence of ESG platforms in fostering a more sustainable and responsible business environment.

Source: Frost & Sullivan

ESG Climate Risk Platform and Reporting Scope

Tracking and reporting platforms play a key role in the path for companies to achieve their ESG targets. The route includes companies with experience in consulting, advisory, and auditing services, in addition to new platforms designed for recording and monitoring of ESG goals aligned with various international standards and regulations.

Data Ingestion & Data Providers: Data ingestion is the process of collecting, aggregating, and incorporating environmental, social, and governance (ESG) data from various sources into a centralized system. Data providers are entities that supply relevant information for analysis, aiding organizations in assessing their ESG performance and risks.

Scope	
Geographic Coverage	Global
Study Period	2023–2030
Base Year	2023
Forecast Period	2023–2030
Monetary Unit	US Dollars

Analytics and Reporting: This covers the process of using specialized software and platforms to analyze collected data. These tools facilitate the interpretation and visualization of ESG metrics, allowing organizations to generate comprehensive reports on their sustainability performance and climate risks.

Consulting: This covers tasks aimed at supporting companies in the development of an ESG strategy, generation of objectives, KPIs, monitoring, and aligning goals to international standards and frameworks. Consultants offer insights into the ESG frameworks, assist in data interpretation, and support companies in developing and enhancing sustainability practices and reporting protocols.

Source: Frost & Sullivan

ESG Overview

Companies across industries are focusing on communicating clear information and precise goals to stakeholders because of the growing awareness of environmental and social issues.

Initiatives for corporate ESG reporting and control are expanding at an ever-increasing rate. Because of its perceived ability to provide financial returns, align with societal values, and support sustainability and climate-related goals, ESG investing—which broadly refers to the process of incorporating environmental, social, and governance factors into asset allocation and risk decisions—has emerged as a prominent form of sustainable finance. Metrics aligned with environmental impact, mitigating climate risk, and strategies for increased use of renewable energy, innovations, and products in business operations are being increasingly integrated by ESG rating providers and investment funds as market participants demonstrate greater awareness and concern regarding physical and climate transition risks that could impact financial stability and market efficiency.

Resources might be redirected to commercial endeavors that have less negative social and environmental externalities through the use of ESG marketplaces. Market participants' responses to information on the degree to which a particular asset is connected to such activities are necessary for this mechanism to function. Investors dedicated to promoting sustainability objectives may favor assets that they believe contribute to the achievement of these objectives.

Source: Frost & Sullivan

ESG Criteria

Environmental

Environmental issues include climate change, pollution, greenhouse gases and carbon emissions, environmental policies, energy and water use, and waste management.

Governance

Governance issues cover executive pay, accounting and ethics, board compositions, bribery and corruption, political contribution, and compensations.

Social

Social issues cover workplace practices and human capital, which include diversity, equity and inclusion, wage gaps, health and safety, human rights, labor protection, data privacy, and community relations.

Source: Frost & Sullivan

ESG Landscape

Global Goals and Principles

- UN Sustainable Development Goals
- Principles for Responsible Investment
- UN Global Compact
- Greenhouse Gas Protocol

Regulatory Framework

- Corporate Sustainability Reporting Directive (CSRD)
- SEC Mandatory Climate Disclosure
- EU Green Taxonomy

Reporting Frameworks and Standards

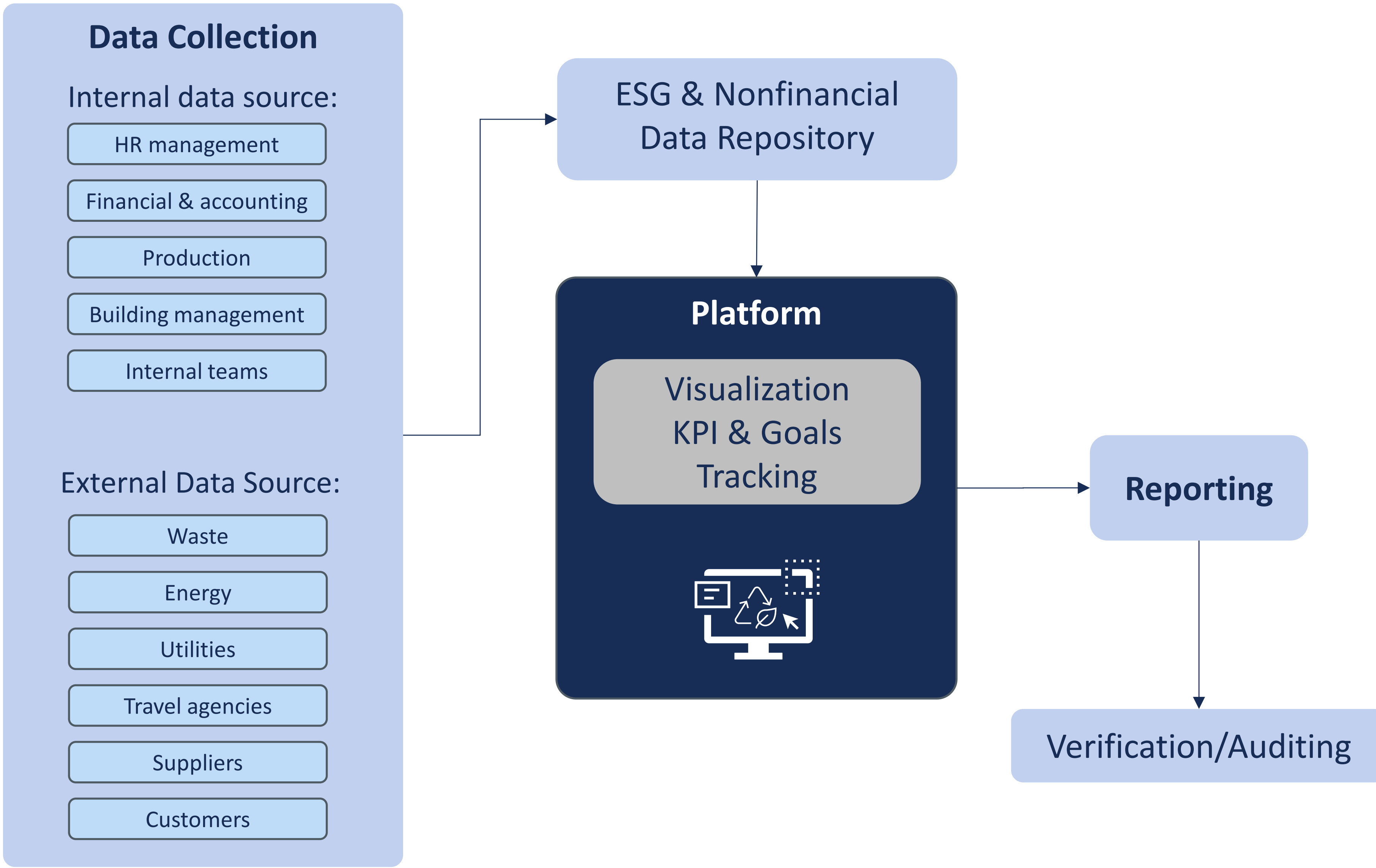
- Carbon Disclosure Project (CDP)
- Global Reporting Initiative (GRI)
- Science-based Targets
- Task Force on Climate-Related Financial Disclosures (TCFD)
- SASB Standards
- Integrated Reporting Framework (IIRF)
- Climate Disclosure Standards Board

ESG Investor Ratings and Index

- Sustainalytics
- MSCI
- S&P Global Sustainable1

Source: Frost & Sullivan

ESG Reporting Process



Source: Frost & Sullivan

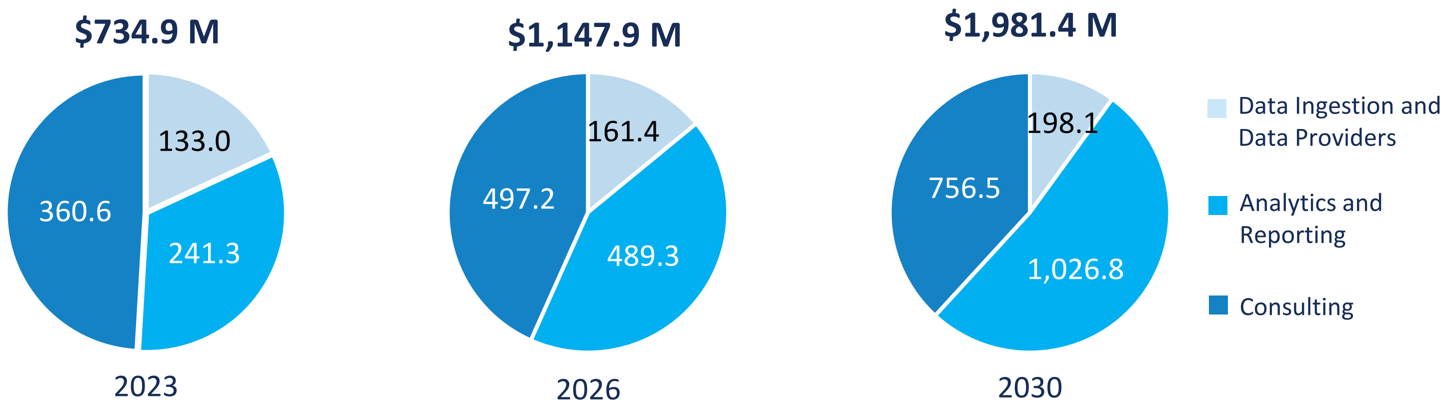
ESG Climate Risk Platform and Reporting Snapshot

Data Providers
20–30

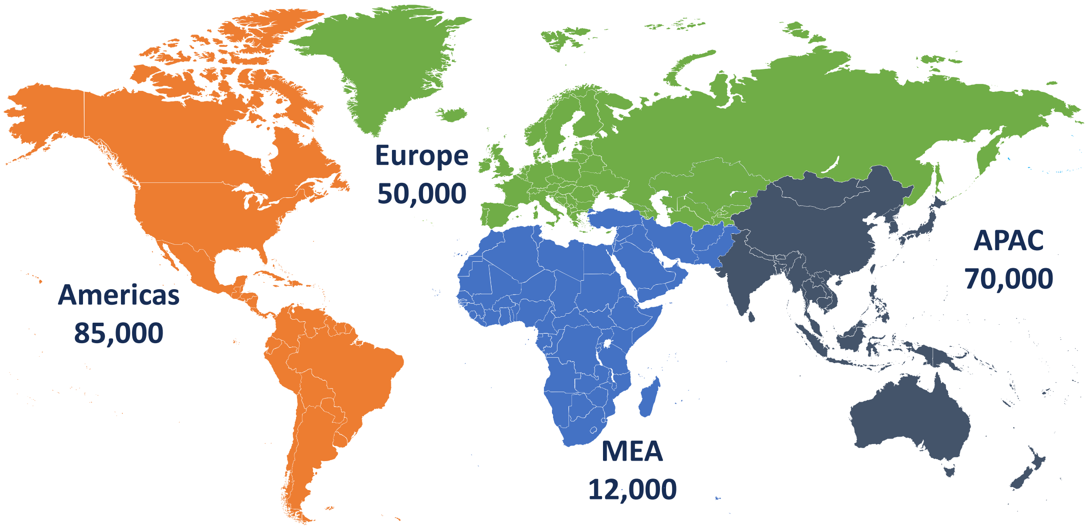
Platforms and Software Developers
50–100

Consulting Firms
20–50

Climate Risk Platform and Reporting: Revenue by Segment, Global, 2023, 2026, and 2030



Number of Companies Impacted by ESG Reporting Policies



Source: Frost & Sullivan

ESG Reporting Regulations by Region

ESG Reporting Regulations, Europe

- Based on the Nonfinancial Reporting Directive (NFRD) scope, the **Corporate Sustainability Reporting Directive (CSRD)** approved in 2022 is set to establish new nonfinancial reporting standards and obligations.
- This new directive will expand the scope of companies that need to disclose nonfinancial information from 12,000 to 50,000. It introduces the concept of double materiality, and companies will need to disclose information on the impact their activities have on climate and population and how sustainability concepts influence the company.
- Companies that will need to comply with this new directive are:
  - All listed companies (including SMEs and large companies)
  - All large companies, regardless of capital market orientation that meet at least two of the following three requirements:
    - 250 or more employees
    - €40 million in net turnover
    - €20 million in assets
- In February 2024, the European Parliament and Council announced the decision to delay the adoption of sector-specific rules by two years. With this modification, the regulations for corporate sustainability reporting for O&G, road transport, food, cars, agriculture, textiles, energy, and mining industries would be ready for 2026. The goal is to allow companies to have more time to concentrate on implementing the first, more comprehensive ESG disclosures that they will be required to include in their annual reports starting in 2024.
- In early 2024, EU lawmakers reached an agreement to regulate ESG rating providers. This would mean that ESG rating providers would be under the European Securities and Markets Authority, to ensure transparency and reliability.

Source: Frost & Sullivan

ESG Reporting Regulations, Europe: NFRD vs. CSRD

NFRD	CSRD
Adopted	
2014	2022
Application	
From 2017 until CSRD	2025 on 2024 data
Companies affected	
Large public companies (>500 employees) Listed companies, banks, insurance companies	All listed companies (including SMEs and large companies) All large companies, that meet at least two requirements: • 250 or more employees • €40 million in net turnover • €20 million in assets
12,000 companies approximately	More than 50,000 companies
Audit	
Not mandatory	Limited assurance with plans to expand to reasonable assurance
Reporting format	
Encourages digital reporting without specific requirements Nonmandatory guidelines	Disclosure in XHTML format to comply with European Single Electronic Format (ESEF) regulations and EU Sustainability Taxonomy Reporting following the EU Sustainability Reporting Standards (ESRS)

Source: Frost & Sullivan

ESG Reporting Regulations, Americas

United States

- The United States Securities and Exchange Commission (SEC) released a proposal on March 21, 2022, requiring public firms to include comprehensive climate-related information in their SEC filings.
- The proposed rules require disclosure of greenhouse gas emissions associated with a public company, which often includes an attestation report from a greenhouse gas emission (GHG) emissions attestation provider; and climate-related financial metrics to be included in an audited financial statement of a company. SEC´s regulation include Scope 1 and 2 emissions reporting.
- Disclosure of these risks is expected to have a material impact on the business, results of operations, or financial condition of the company.

Canada

- Canada's regulatory framework includes a range of ESG-related subjects, which cover topics related to the environment, occupational health, and safety, for instance, establish obligations such as reporting requirements and minimal conduct standards. Currently, ESG reporting is mandatory only for federally regulated financial institutions (banks and insurance companies).
- Both the federal and local governments in Canada have established ESG legislation in recent years that specify more detailed standards tailored to the country's ESG-related aims. Canada's Climate Investment Taxonomy sets qualifications for investments contributing to a net-zero economy by 2050. The Sustainable Finance Disclosure Regulation increases transparency on sustainability risks, while the Greenhouse Gas Pollution Pricing Act establishes a federal carbon pricing system.

Source: SEC; Government of Canada; Frost & Sullivan

ESG Reporting Regulations, Americas: US SEC Registrant Types

The SEC's proposed rules would include a phase-in period for all registrants, with the compliance date based on the registrant's filer status. Originally it was planned with a phase-in period for the disclosure of Scope 3 emissions; a phase-in period for the assurance requirement and the level of assurance required for accelerated filers and large accelerated filers; a safe harbor for liability with regard to the disclosure of Scope 3 emissions; an exemption from the disclosure requirement for smaller reporting companies; and, to the extent that proposed disclosures would contain forward-looking statements, safe harbors under the Private Securities Litigation Reform Act would apply. On March 2024, SEC defined that only large and mid-size public companies will report Scope 1 and 2 emissions.

With these modifications, Scope 3 emission disclosure will be voluntary. However, any voluntary assurance over GHG emissions that are not required to be assured, such as Scope 3 emissions, must follow the requirements and standards as Scope 1 and 2 disclosure.

Filer Type	Scopes 1 and 2 GHG Emissions Disclosure Compliance Date	Limited Assurance Compliance Date	Reasonable Assurance Compliance Date
Large accelerated filer	Fiscal year 2026	Fiscal year 2029	Fiscal year 2033
Accelerated filer (other than SRCs[1] and EGCs[2])	Fiscal year 2028	Fiscal year 2031	N/A

[1]Smaller reporting companies (SRCs); [2]Emerging growth companies (EGC)

Source: US SEC; Frost & Sullivan

ESG Reporting Regulations, Americas

Latin America

- Banks, sovereign wealth funds, and international organizations are focusing more on ESG compliance and standards in the region. The possibility of projects being shelved because of ESG-related divestments or being turned down by funding sources because of ESG concerns rises because of this scrutiny. The amount of ESG assets under management has grown significantly in recent years. Investment funds and financial institutions are looking to create more inclusive criteria to weed out particular goods, industries, or projects from their loan or investment asset portfolios to comply with ESG-related norms worldwide.
- Brazil, Chile, Colombia, and Mexico are some of the countries that are developing legislation that involves ESG-related topics.
- Colombia presented Green Taxonomy to promote sustainable financing in the national territory. In addition, it aims to promote the development of a more sustainable, responsible, and inclusive financial industry, in which ESG and climate issues are addressed.
- In 2023, after three years of collaboration among public and private sectors, financial institutions, academics, and civil society groups, Mexico presented Sustainable Taxonomy, which defines key activities with positive impact on the environment and a society based on technical criteria and international standards. The taxonomy focuses on six economic sectors: agriculture, livestock, and forestry; energy and water supply; construction; manufacture; transport; waste management and remediation services; and emphasizes climate change mitigation and adaptation goals.

Source: Gobierno de Mexico; Green Taxonomy of Colombia; Frost & Sullivan

ESG Reporting Regulations, Asia-Pacific

- Asia-Pacific (APAC) is progressing with the introduction of ESG-related legislation. The production, acquisition, and consumption of goods and services have all changed because of laws making sustainability/ESG performance disclosures necessary, the existence of high-level sustainability commitment projects and regional agreements, and the mainstreaming of sustainability. The need for more cutting-edge sustainability solutions and improved business practices for both technology suppliers and users has risen because of these sustainability factors. Over the last ten years, APAC has undergone significant regulatory changes, and the majority of country markets now have some kind of governance-related rule that must be complied with or explained.
- Since 2016, there has been a discernible increase in Hong Kong's disclosure of environmental data. This is due to a regulatory reform that raised the ESG Reporting Guide's demands from voluntary to "Comply or Explain." Because the issuance of sustainable bonds has surged in Chinese markets in recent years, Hong Kong and China implemented reporting standards for green financing and green bonds in 2018.
- Hong Kong, Japan, New Zealand, and Singapore have made TCFD reporting mandatory for certain entities. Especially in China, ESG investment was resilient despite the post-pandemic socioeconomic volatility. Investors and governments worldwide will seek increasingly complex and transparent ESG criteria and measures as the demand for green investments rises, both in APAC and globally.

Source: China Securities Regulatory Commission; South Korea’s Financial Supervisory Service; Frost & Sullivan

ESG Reporting Regulations, Asia-Pacific (continued)

- China's securities regulator (CSRC) began requiring listed businesses to report ESG data explicitly in 2021. The first stock exchange-issued guideline that provides listed firms with further instructions on how to comply with the standards of the CSRC is the revised disclosure guideline. Investors are also encouraged to consider additional ESG factors when making investment decisions under the revised disclosure guidance. In early 2024, the publication of new sustainability reporting guidelines for listed companies was announced by the three major stock exchanges in China: the Shanghai Stock Exchange (SSE), Shenzhen Stock Exchange (SZSE), and Beijing Stock Exchange (BSE). Among the guidelines is a new requirement that requires hundreds of larger cap and dual-listed issuers to start mandatory disclosure on a broad range of ESG topics in 2026.

- The Financial Supervisory Service (FSS) of South Korea has released new guidelines for the assessment of ESG bond certification by South Korean credit rating agencies. The new rules are intended to increase uniformity and openness in terms of criteria and methods of evaluation used by credit rating organizations. Specifically, the criteria are in conformity with the suggestions made by the International Organization of Securities Commission. The Korea Financial Investment Association will adopt the rules as best practices, which came into effect on 1 February 2023.

Source: Singapore Exchange Regulation; China Securities Regulatory Commission; South Korea's Financial Supervisory Service; Sustainability Standards Board of Japan; Frost & Sullivan

ESG Reporting Regulations, Asia-Pacific (continued)

- Singapore is set to introduce mandatory climate reporting for both listed and large nonlisted companies, beginning in 2025. The new rules will require companies to disclose climate-related information in line with the International Financial Reporting Standard's (IFRS) International Sustainability Standards Board. The reporting obligations will be phased in, starting with listed companies in 2025 and followed by large nonlisted companies in 2027, defined as those with at least $1 billion in revenue and $500 million in assets in 2027, with specific requirements for emissions reporting and external assurance.
- In accordance with the requirements of the International Sustainability Standards Board (ISSB), the Sustainability Standards Board of Japan (SSBJ) has released exposure drafts for proposed sustainability reporting standards. These proposals could result in Japanese listed firms being required to provide sustainability information. Regulations have tightened the standards for sustainability reporting; the Tokyo Stock Exchange, for example, now requires climate disclosures based on TCFD recommendations. The recommendations from SSBJ are similar to those of the ISSB but offer possibilities unique to each jurisdiction.

Source: Singapore Exchange Regulation; China Securities Regulatory Commission; South Korea's Financial Supervisory Service; Sustainability Standards Board of Japan; Frost & Sullivan

ESG Reporting Regulations, Middle East and Africa

In the Middle East and Africa, ESG regulations are developing and evolving with governments, regulators, and businesses becoming more aware of the importance and benefits of ESG. Some of the recent developments in the region include:

- The UAE Securities and Commodities Authority (SCA) issued a board decision in 2020 that requires public joint stock companies listed on the Dubai Financial Market (DFM) or on the Abu Dhabi Securities Exchange (ADX) to publish a sustainability report on an annual basis.
- The Dubai Financial Services Authority (DFSA) launched a task force on sustainable finance in 2022, which issued a publication on climate and environmental risk management.
- On 28 October 2021, the Saudi Exchange released disclosure requirements pertaining to ESG issues, to support sustainable growth in Saudi Arabia. These recommendations aim to assist Saudi Exchange-listed firms in raising awareness and knowledge of environmental, social, and governance (ESG) issues and their significance.

Source: Saudi Exchange; UAE Securities and Commodities Authority; Dubai Financial Services Authority; Frost & Sullivan

AI Impacting the ESG Climate Risk Platform and Reporting Industry

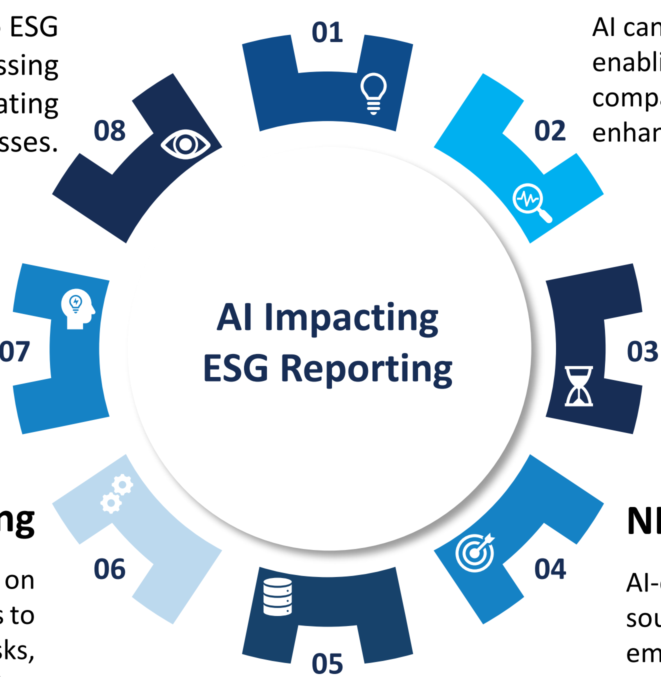
AI Impacting the ESG Climate Risk Platform and Reporting Industry

- Artificial Intelligence (AI) is rapidly impacting the ESG reporting industry, offering unprecedented efficiency and depth to organizations embracing sustainable practices. The integration of machine learning, natural language processing (NLP), and predictive analytics enables a comprehensive transformation in how companies collect, process, and communicate their ESG data.
- One significant role of AI in ESG reporting is streamlining data collection and analysis. By automating these processes, companies can reduce resource consumption and enhance the accuracy of their reports. Machine learning algorithms analyze vast datasets, identifying trends and patterns, while NLP extracts pertinent information from company reports. This not only facilitates a clearer understanding of ESG performance but also expedites the identification of areas for improvement.
- The synergy of applied and generative AI in question-and-answer sessions further elevates ESG reporting. Applied AI efficiently processes and analyzes extensive datasets, addressing intricate queries regarding a company's ESG performance. Generative AI complements this by crafting articulate responses, translating complex metrics into easily understandable narratives for stakeholders. This dynamic enhances transparency, fosters better rapport with investors, and aids in strategic decision-making.
- To navigate the integration of AI into ESG reporting, companies are advised to prioritize data integrity, address AI ethics and bias, invest in relevant skills, adopt a phased implementation approach, stay compliant with evolving regulations, and leverage external expertise. Ultimately, the combination of AI and ESG reporting is not merely a technological upgrade but a strategic imperative for companies aiming to stay competitive, compliant, and aligned with the values of modern consumers and investors.

Source: Frost & Sullivan

AI Impacting the ESG Climate Risk Platform and Reporting Industry (continued)

The incorporation of AI into ESG reporting will have a fundamental impact on companies because it will help them understand their material topics, while driving transparency and facilitating goal tracking.



Facilitation of Regulatory Compliance

AI can assist companies in adhering to ESG regulations by monitoring changes, assessing compliance requirements, and automating reporting processes.

Data Analysis and Integration

AI can streamline ESG data collection and management, enabling a more comprehensive understanding of a company's ESG performance, reducing manual errors, and enhancing efficiency.

Reliable and Quality Data

AI can enhance the quality and reliability of ESG data by identifying anomalies, inconsistencies, or gaps while ensuring accurate and trustworthy information.

Predictive Scenario Analysis

AI's predictive analytics enable companies to simulate scenarios and predict future outcomes, enhancing efficiency and strategic planning, especially in addressing long-term environmental and social challenges.

Real-time Monitoring

AI provides real-time insights and alerts on ESG-related parameters, enabling companies to promptly respond to emerging issues, mitigate risks, and capitalize on opportunities.

NLP for Advanced Reporting

AI-driven NLP analyzes textual data from various sources to provide insights into public topics, emerging trends, and reputational risks related to ESG factors, automating reporting processes.

Benchmarking

AI systems enable companies to compare their ESG performance with industry standards, providing a clearer understanding of relative performance and identifying strengths and areas for improvement.

Automated Solutions

Automated solutions enable companies to stay updated on sustainability measurement and management, enabling them to adjust their strategies incrementally.

Source: Frost & Sullivan

The importance of incorporating AI to ESG Climate Risk Platform and Reporting Industry

AI not only helps businesses meet investor expectations but also guarantees compliance, reduces risk, and establishes companies as pioneers in environmentally and socially friendly operations.

Market Leadership

The incorporation of AI-driven tools for ESG reporting is becoming imperative for market leaders. Companies seeking to attract new investors and to be seen as innovators need to have strong ESG credentials. The incorporation of AI tools for ESG reporting provides transparency and allows companies to make data-driven decisions in real-time. This is a key differentiator to track and achieve ESG goals.

Cost Savings and Operational Efficiency

AI-driven ESG reporting reduces dependence on human labor and related expenses, automates data gathering and analysis, and streamlines processes to provide considerable savings. Predictive analytics may also spot possible inefficiencies and danger areas, which can result in preventative actions that ultimately save time and money.

Company Differentiator

AI-enhanced ESG reporting helps establish a company as a transparent and responsible brand in a consumer market where ethics and values are becoming increasingly important. Using ESG performance data to extract AI-driven insights will advance marketing and distinguish brands while showing customers and investors transparent and reliable information related to ESG topics.

Source: Frost & Sullivan

Growth Drivers and Restraints

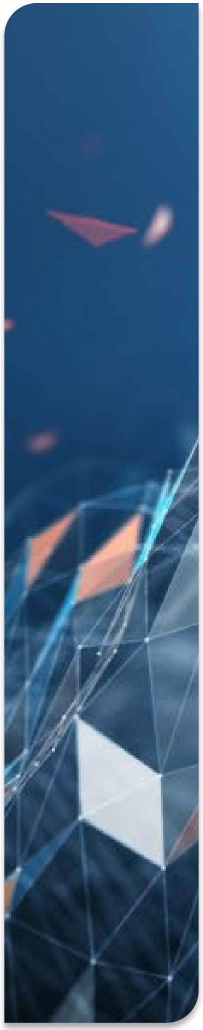
Growth Drivers

ESG Climate Risk Platform and Reporting Industry: Growth Drivers, Global, 2024–2030

Driver	1–2 Years	3–4 Years	5–7 Years
Increasing Demand for ESG Reporting: As more companies recognize the importance of ESG reporting, the demand for ESG climate risk platforms and reporting is expected to increase. The demand will be driven by regulatory requirements, investor pressure, and consumer preference for sustainable products and services.	**Medium**	**High**	**High**
Increasing Regulations: Stringent regulations such as the EU green taxonomy and SEC mandates are catalyzing the surge in the ESG reporting sector. Companies worldwide are compelled to adopt sustainable practices, fueling the demand for ESG reporting services and technologies to ensure compliance and demonstrate commitment to ESG standards.	**Medium**	**High**	**High**
Growing Focus on Climate Risk Management: Climate change is one of the most significant risks that businesses face today. As a result, companies are increasingly focusing on climate risk management. This includes identifying, assessing, and managing climate risks, and reporting on their efforts to mitigate these risks.	**Medium**	**Medium**	**High**
Advancements in Technology: The ESG climate risk platform and reporting industry is benefiting from technological advancements, such as the use of artificial intelligence (AI) and machine learning (ML) to analyze data, identify trends, and develop new platforms for easy reporting.	**Low**	**Medium**	**High**

Source: Frost & Sullivan

Growth Restraints



ESG Climate Risk Platform and Reporting Industry: Growth Restraints, Global, 2024–2030

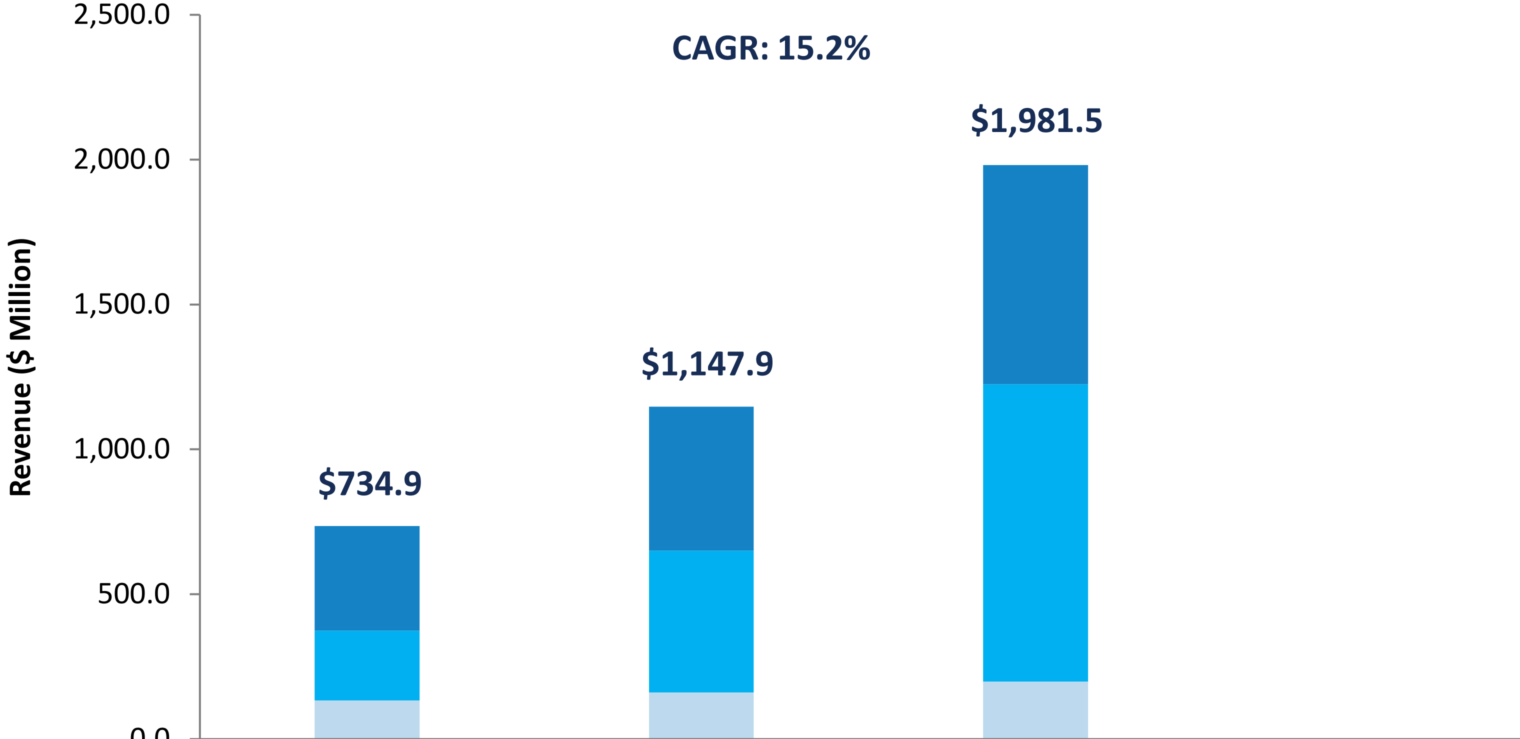
Restraint	1–2 Years	3–4 Years	5–7 Years
Lack of Standardization: The absence of standardized ESG reporting frameworks poses a challenge because investors struggle to compare the ESG performance of different companies. This hinders transparency and makes it difficult to assess the true impact of sustainability initiatives, potentially impeding effective decision-making.	**Medium**	**High**	**High**
High Implementation Costs: Initial investments and ongoing expenses associated with ESG reporting systems act as a barrier, especially for smaller companies. The need for comprehensive data collection, analysis, and reporting tools may deter younger/smaller organizations from committing to sustainable practices, slowing the overall adoption of ESG reporting.	**Medium**	**High**	**High**
Early Stage Development: The ESG climate risk platform and reporting industry is nascent, and rapid evolution may leave some companies struggling to keep pace with technological advancements and stringent regulations. The risk of falling behind arises from the industry's dynamic nature, potentially leading to gaps in compliance, data accuracy, and overall alignment with emerging standards.	**Medium**	**Medium**	**High**
Policies and Regulatory Gaps: While ESG reporting regulations are increasing globally, the lack of a fully developed regulatory landscape poses challenges. Outside Europe and North America, only a few countries actively work on green taxonomy frameworks. Inconsistencies and gaps in policies hinder a unified approach, making it harder for companies to adhere to a standardized set of ESG reporting guidelines.	**Low**	**Medium**	**High**

Source: Frost & Sullivan

Revenue Forecast

Revenue Forecast by Segment

ESG Climate Risk Platform and Reporting Industry: Revenue Forecast by Segment, Global, 2023, 2026, and 2030



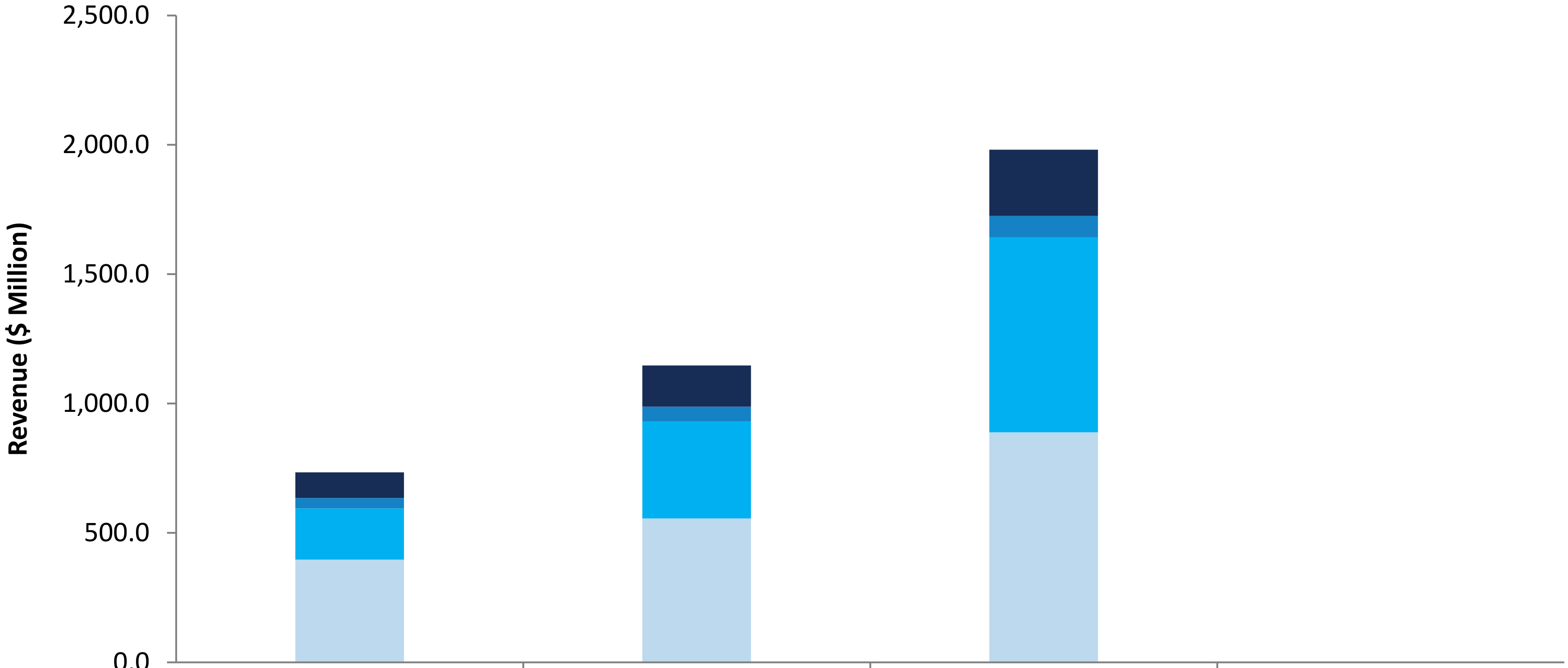
	2023	2026	2030	CAGR (2023-2030)
Consulting	360.6	497.2	756.5	11.2%
Analytics and Reporting	241.3	489.3	1026.8	23.0%
Data Ingestion & Data Providers	133.0	161.4	198.1	5.9%

Year

Source: Frost & Sullivan

Revenue Forecast by Region

ESG Climate Risk Platform and Reporting Industry: Revenue Forecast by Region, Global, 2023, 2026, and 2030



	2023	2026	2030	CAGR (2023-2030)
APAC	100.0	160.0	256.0	14.4%
MEA	40.0	56.0	84.0	11.2%
Europe	198.0	376.2	752.4	21.0%
Americas	396.9	555.7	889.1	12.2%

Year

Source: Frost & Sullivan

Mapping of the Value Chain and C2A

Value Chain Mapping

Company	Value Chain Coverage		
	Data Ingestion/Data Providers	Analytics & Reporting	Consulting
Clarity AI	o	o	
Cority	o	o	o
Diligent	o	o	
Emitwise		o	o
ESG Book	o	o	
ESG Flo	o	o	
Fenergo	o	o	
FigBytes	o	o	o
Greenfeet	o	o	
Greenly	o	o	
Greenplaces	o	o	o
IBM Envizi	o	o	
Integrity Next	o	o	o

Source: Frost & Sullivan

Value Chain Mapping (continued)

Company	Value Chain Coverage		
	Data Ingestion/Data Providers	Analytics & Reporting	Consulting
Persefoni AI	o	o	
Measurabl	o	o	o
Microsoft	o	o	
Intelex	o	o	o
Nasdaq (Metrio)	o	o	
Novisto	o	o	
planA	o	o	
Pulsora	o	o	
PWC	o	o	o
Quentic	o	o	o
RepRisk	o	o	
Rimm	o	o	
Salesforce	o	o	

Source: Frost & Sullivan

Value Chain Mapping (continued)

Company	Value Chain Coverage		
	Data Ingestion/Data Providers	Analytics & Reporting	Consulting
SAP	o	o	
Sphera	o	o	o
Sweep	o	o	
UL	o	o	o
Velocity EHS	o	o	o
Watershed	o	o	
Workiva	o	o	o
Deloitte			o
Accenture			o
KPMG			o
EY			o
MSCI	o	o	
S&P	o		

Source: Frost & Sullivan

ESG Platform Coverage by Customer Type

Company	Customer Segment										
	Banking and Financial Services	IT	Government and Public Sector	Manufacturing	Retail	Healthcare	Energy and Utilities	Education	Legal Services	Real Estate	Other Industries
Clarity AI	o	o	o	o	o	o					o
Cority	o			o							
Diligent	o	o	o	o	o						o
Emitwise		o									
ESG Book											o
ESG Flo		o									o
Fenergo	o										
Figbytes		o					o				
Greenfeet		o					o				
Greenly		o									
Greenplaces			o					o	o		
IBM	o	o	o	o	o	o	o				o

Source: Frost & Sullivan

ESG Platform Coverage by Customer Type (continued)

Company	Customer Segment										
	Banking and Financial Services	IT	Government and Public Sector	Manufacturing	Retail	Healthcare	Energy and Utilities	Education	Legal Services	Real Estate	Other Industries
Integrity Next		o	o	o		o					
Intelex		o		o							
Measurabl		o		o						o	
Microsoft	o	o	o	o	o	o	o	o			o
Nasdaq	o										
Novisto	o		o	o			o				
Persefoni AI		o		o							
planA		o		o							
Pulsora	o	o	o	o	o	o	o				o
PWC	o	o	o	o	o	o	o	o			o
Quentic	o	o	o	o	o	o	o	o			o

Source: Frost & Sullivan

ESG Platform Coverage by Customer Type (continued)

Company	Customer Segment										
	Banking and Financial Services	IT	Government and Public Sector	Manufacturing	Retail	Healthcare	Energy and Utilities	Education	Legal Services	Real Estate	Other Industries
RepRisk	o	o	o	o	o	o					o
Rimm	o	o		o							
Salesforce	o	o	o	o	o	o	o				o
Sphera				o			o				
Sweep		o		o							
UL		o		o		o	o				
Velocity EHS		o		o							
Watershed		o		o							
Workiva		o		o							

Source: Frost & Sullivan

C2A

Greenplaces

- Greenplaces focuses on supporting vendors and suppliers that do not have sustainability departments and decided to build an inclusive, all-in-one, easy, turnkey solution that would helps its clients to cover all bases in terms of ESG reporting. Greenplaces's solutions allow its clients to measure their carbon footprint, provide solutions to help optimize their operations, and help them share their progress.
- The company launched the platform in January 2022 and immediately had as a first client a publicly traded SaaS company with 2,500 employees. The company not only provides software and platform services but also accompanies clients every step of the way to understand their needs and customize its solutions and services. At the moment, clients can handle Scope 1, 2, and 3 emissions.
- Though clients are from a wide range of industries, the company focuses on professional services, software, and education. Nearly 10% of the top 100 American law firms now partner with Greenplaces. The company's turnkey solutions help legal advisors, staffing companies, and other service providers comply with sustainability reporting requirements.
- The company also stands out in the software sector, partnering with growing companies such as Zuora, Pendo, Salesoft, and Yext. Greenplaces serves as a Chief Sustainability Officer in a Box for these clients. It also helps Microsoft, Google, Vista Equity, and AT&T meet their ESG reporting requirements.

ESG Book

- Established in 2018, ESG Book is one of the leading independent sustainability and data technology companies to offer a unique highly competitive ESG and climate dataset with a disclosure platform. The company works with more than a hundred of the world's largest financial institutions. ESG Book's platform is integrated into every leading financial data platform, including Bloomberg. The platform has over 450 ESG metrics and more than 10,000 users and processes 15 million data points every day.
- ESG Book focuses on 3 key areas: ESG and climate data (where it serves financial institutions through ESG analytics management tools), ESG data disclosure platforms, and corporate solutions. One of the key values ESG Book offers is transparency.
- ESG Book closed $35 million in Series B funding in June 2022. This fresh financial investment will speed up the company's expansion and help it meet the growing demand for technology-enabled ESG data solutions. It will enhance ESG Book's next-generation technological capabilities, enabling clients to satisfy ever-more-complex sustainability criteria.
- Leading global investment firm Energy Impact Partners (EIP), global sustainability pioneer Meridiam, and Allianz X, the digital investment division of renowned global insurer and asset manager Allianz, led the round. Shareholders and Series A investors Commerz Real and BMH sold their minority interests in ESG Book, during the Series B round at a higher valuation than when they first invested in the company in 2019.

Source: Greenplaces; ESG Book; Frost & Sullivan

C2A (continued)

ESGFlo

- Launched by Bain & Company as part of its tech incubator division called Founder’s Studio, ESG Flo's core services include data transformation and ESG compliance. Its solutions automate the collection and transformation of data into audit-ready metrics using cutting-edge AI technology. The platform ensures organizations meet ESG compliance requirements by providing accurate and complete data management. By leveraging AI, the platform transforms raw data into high-accuracy metrics, simplifies compliance reporting and third-party verification, and helps clients with responsible decision-making.

- The company recently closed its first round of funding, signaling strong investor interest and confidence in its mission. In just one year, ESG Flo secured more than $5 million in seed capital from investors, such as Rho Ignition, Tola Capital, Bain & Company, and Contour Venture Partners. Catering to customers in the industrial, manufacturing, and infrastructure sectors, ESG Flo offers solid ESG data infrastructure for effective reporting and decision-making.

Measurabl

- Measurabl offers ESG data management solutions for the real estate sector. The platform helps companies measure, manage, and report ESG data on more than 15 billion square feet of real estate across more than 90 countries.

- The platform automatically collects and verifies meter-level electricity, water, fuel, district, and waste data from thousands of utilities and can visualize and track trends in energy and water consumption, waste outputs, and carbon emissions; in addition, it can then compare performance against weather and building occupancy factors.

- The platform has integrated global physical climate risk data to its ESG platform to help users assess their exposure to heat stress, flooding, and other factors at the asset level and allows clients to benchmark their buildings and portfolio-level ESG performance against tens of thousands of buildings in the Measurabl's database.

- The $93 million Measurabl raised through a Series D venture capital round will be used to forge global alliances, develop its unique meter-to-market ESG platform. Energy Impact Partners and Sway Ventures led the oversubscribed round, which also included participation from a worldwide coalition of leading venture and strategic investors.

Source: ESG Flo; Measurabl; Frost & Sullivan

C2A (continued)

Diligent

- Diligent is a leading vendor of innovative governance, risk, and compliance (GRC) software solutions that empower organizations to meet their ESG objectives. Since 2001, the company has consistently demonstrated its commitment to fostering responsible corporate behavior, enhancing board effectiveness, and ensuring ethical business practices. The company describes itself as a modern governance company whose solution, the Diligent One Platform, delivers a unified and connected GRC experience. The platform helps consolidate all information regarding ESG, ethics and compliance, governance, controls management, and risk and security.
- Diligent has positioned itself as an ESG pioneer by developing a suite of cutting-edge software tools tailored to help organizations navigate complex ESG responsibilities. Its holistic platform aggregates data from various sources, including internal reports, public records, and third-party providers. It employs advanced data analytics to offer companies a comprehensive view of their ESG performance, enabling them to identify trends, gaps, and opportunities for improvement. Diligent's solution streamlines the reporting process, allowing companies to generate comprehensive ESG reports quickly and accurately. The platform supports adherence to global ESG standards and regulations, enhancing transparency and credibility.
- Because effective ESG management starts at the board level, Diligent's platform facilitates board oversight and engagement in ESG matters, providing directors with the necessary tools to make informed decisions and align their strategies with ESG goals.
- By integrating ESG data into risk assessments, Diligent's solution helps organizations identify and mitigate potential risks associated with noncompliance or poor ESG performance, safeguarding a client's reputation and bottom line.
- Over three years, Diligent invested in acquisitions across different sectors, such as SaaS, GRC software, and enterprise technology. Diligent expanded its global partner program with the incorporation of partnerships across Asia-Pacific, Latin America, and North America. The company has a network of 120 global partners or more across the sustainability, technology, legal, and consultancy sectors.
- The Diligent Partner Program is the first of its kind because it serves partners by being a one-stop shop for all ESG and GRC requirements. By adopting, modifying, integrating, referring to, and reselling Diligent's entire range of solutions, partners can enhance their GRC and ESG practices through the program. The company develops four types of partnerships:
  - Solutions providers such as ecoact and Turnkey;
  - Big4 and other consulting firms that specialize in ESG practices, such as PWC, KPMG, Deloitte, Accenture, and DFIN;
  - Technology providers, primarily data development providers that add value and capabilities to Diligent solutions, such as Glass Lewis, Bitsight, Clarity AI, S&P Global, and MSCI; and
  - Go-to-market (GTM) alliances that bring opportunities in adjacent sectors that are a fit for Digilent solutions, such as Vertosoft, AWS, CDW, and NYSE.

Source: Diligent; Frost & Sullivan

C2A (continued)

Persefoni

- Through its SaaS solution, Persefoni offers its clients a climate management and accounting platform (CMAP) for real-time management. Clients can manage their carbon transactions and inventory while adhering to regulatory climate disclosure requirements. The end-to-end solution analyzes climate data and generates reports taking into account interjurisdictional emission standards and varying. Clients can forecast and plan their decarbonization journey and strategy with the help of the platform's features. To this end, Persefoni has regularly invested in AI-related technologies to add capabilities, such as automated data mistake correction, natural language data matching, and anomaly detection.

- In June 2023, Persefoni announced the Scope 3 Data Exchange for supplier engagement, which gives clients a more complete picture of their carbon footprint and unlocks new growth opportunities. Better emissions reporting and more precise tracking of climate targets are made possible by using actual data from suppliers; this eliminates the challenges of direct interaction on a large scale. The company developed its solution as an accounting product and an accounting platform tool and knew that as the market evolved, it would need partnerships to support the business model. As a result of that strategy, it developed partnerships with Deloitte, PWC, Bain, DRM, IBM, Hitachi, and SMBC.

- In August 2023, the company launched PersefoniGPT, the company's AI co-pilot solution for carbon accounting and management, along with the announcement of a $50 million Series C-1 investment round. TPG Rise led this investment round that saw the participation of ENEOS Innovation Partners, NGP Energy Technology Partners, Rice Investment Group, Prelude Ventures, Parkway Ventures, Bain and Co., EDF, and Alumni Ventures. Persefoni has received investments totaling more than $150 million.

- Aside from the introduction of PersefoniGPT, the company introduced several features to its main platform for carbon accounting and management. Aside from the introduction of PersefoniGPT, the company introduced a number of AI features into its main platform for carbon accounting and management. Besides other functionalities, its models offer anomaly detection, natural language data matching, and automated data error resolution; these advances help simplify organizational data management.

Source: Persefoni; Frost & Sullivan

C2A (continued)

Sweep

- Sweep is a pioneering software company that has carved a niche for itself in the realm of carbon and ESG management. The company has developed a state-of-the-art platform that empowers businesses to understand, manage, and improve their sustainability performance. The platform offers a comprehensive ESG data management solution with robust collaboration features and a user-centric design. It simplifies ESG metric tracking, implements actions to improve performance, and ensures compliance with reporting standards.
- What sets Sweep apart from competitors is its ability to handle granular data and large volumes, providing real-time data access to everyone in the company and supply chain. This fosters transparency and enables informed decision-making. Sweep has also incorporated strong AI capabilities to enhance data quality, enable predictive analytics, and provide valuable insights. This helps customers improve ESG reporting and carbon reduction planning, setting new industry standards.
- Through comprehensive analysis, Sweep helps businesses understand effective strategies and areas for improvement. It also strengthens stakeholder relationships through proactive engagement and audit-ready reporting. Sweep offers an enterprise platform that not only helps businesses understand and manage their ESG metrics but also encourages them to reduce carbon emissions and improve social and environmental performance.
- Sweep views carbon and ESG not as a limitation, but as a creative force for innovation and positive growth. This perspective is reflected in the company’s efforts to help businesses become 'Forever Companies’, a term that signifies sustainability and longevity.
- The company has seen an incredible 500% year-over-year growth and raised a staggering $100 million in funding. This includes a $22 million Series A funding round and a $73 million Series B funding round, demonstrating the confidence investors have in Sweep's mission and potential.
- Sweep has also formed strategic partnerships with consulting firms that specialize in advising companies on ESG strategy and implementing technology to digitize their processes. These factors underscore Sweep's unwavering commitment to its mission and its promising future in the ESG solutions market.
- Partnerships are integral to Sweep’s strategy because they enhance the company’s offerings and expand its reach in the market. For instance, Swisscom, a leading provider in business communications, is one of Sweep’s partners. Swisscom supports companies in planning, implementing, and operating their ICT infrastructure, data management, and integration and operation of complex IT systems. These partnerships enable Sweep to provide a more comprehensive and effective solution to its clients, further solidifying its position as a leader in the ESG solutions industry.

Source: Sweep; Frost & Sullivan

The Importance of External Assurance

- Consulting and auditing firms play a critical role in the rapidly expanding ESG climate risk platform and reporting industry. Third-party assurance providers are fundamental to validating the quality and reliability of ESG reports. These actors allow assurance that the information provided by clients is accurate, meets the standards it informs, and avoids greenwashing.
- With the regulatory framework of this industry rapidly expanding, the role of this type of external assurance firm will be increasingly necessary.

- Traceability and collection of information for audits is historically a complex issue for both clients and the companies that provide these services. The incorporation of platforms and software for the collection and processing of the information necessary for ESG reporting allows this information to be grouped in a single place, facilitating the work of external assurance.
- The use of AI tools to monitor ESG metrics is transforming data handling. Facilitating access to data sources, data collection, and analysis, it helps streamline the reporting of ESG data, making work more efficient for clients and auditors.

Source: Frost & Sullivan

Growth Opportunity Universe

Growth Opportunity 1: Report Validation and Verification Auditing on ESG Platforms

Opp. Size in 5 Years	**USD 100 M – USD 500 M**
Timeline for Action	**1 to 3 Years**
GO Base Year	**2024**

Relevant End-User Industries for this Growth Opportunity

Manufacturing	Mobility	Metal & Mining
Energy & Environment	Chemicals & Materials	Information & Communications Technologies
Electronics & Semiconductors	Agriculture, Food & Nutrition	Govt and Public Sector
Construction	Education	Healthcare & Lifesciences
Consumer	Aerospace	Hospitality
Retail	Defense	Banking & Financial Services

Applicable Regions

- Central & East Europe
- South Asia
- Western Europe
- CIS
- North America
- Latin America
- Africa
- Middle East
- Asia-Pacific

Frost & Sullivan has identified 10 Growth Processes that serve as levers for determining and evaluating new Growth Opportunities.

Growth Processes

Customer & Branding	**Distribution Channel**	**Geographic Expansion**	**Vertical Market Expansion**	**Competitive Strategy**
Strategic Partnering	**Product Development**	**Mergers & Acquisitions**	**Product Launch**	**Technology & IP**

Source: Frost & Sullivan

Growth Opportunity 1: Report Validation and Verification Auditing on ESG Platforms (continued)

Context and Definition

- Platforms for monitoring ESG metrics will be implemented with increasing frequency in companies of different industries and sizes.
- The collection and transformation of data that until now has been carried out manually, will see a transformation towards digitization and automation. This will reduce human error in this step while simplifying the work and allowing information to be tracked; this will increase transparency.
- Currently, the data verification and validation audit process is carried out manually, which increases the risk of errors and the total time spent on these tasks.

Call to Action

- The implementation of platforms for monitoring ESG issues allows information collection to be automated while grouping and organizing it in a single space. This process will simplify the audit process for validating and verifying metrics in ESG reports. Higher levels of control over information will also bring greater transparency to the ESG report audit process.
- Platform developers must establish processes that allow external auditors to access their clients' information for a complete and transparent process.

Source: Frost & Sullivan

Growth Opportunity 2: Scope 3 Emissions Measurement

Opp. Size in 5 Years	**USD 100 M – USD 500 M**
Timeline for Action	**1 to 3 Years**
GO Base Year	**2024**

Relevant End-User Industries for this Growth Opportunity

Manufacturing	Mobility	Metal & Mining
Energy & Environment	Chemicals & Materials	Information & Communications Technologies
Electronics & Semiconductors	Agriculture, Food & Nutrition	Govt and Public Sector
Construction	Education	Healthcare & Lifesciences
Consumer	Aerospace	Hospitality
Retail	Defense	Banking & Financial Services

Applicable Regions

- Central & East Europe
- South Asia
- Western Europe
- CIS
- North America
- Latin America
- Africa
- Middle East
- Asia-Pacific

Frost & Sullivan has identified 10 Growth Processes that serve as levers for determining and evaluating new Growth Opportunities.

Growth Processes

- Customer & Branding
- Distribution Channel
- Geographic Expansion
- Vertical Market Expansion
- Competitive Strategy
- Strategic Partnering
- Product Development
- Mergers & Acquisitions
- Product Launch
- Technology & IP

Source: Frost & Sullivan

Growth Opportunity 2: Scope 3 Emissions Measurement (continued)

Context and Definition

- Until now, companies interested in measuring their carbon emissions have mostly focused on Scope 1 and 2 measurements, because they are less complex direct emissions.
- With legislative requirements for ESG reporting and standards such as GRI and SBTi focusing on these emissions, the need to include Scope 3 emissions in measurements will become increasingly urgent.
- Platforms and software developers are actively working to incorporate the necessary tools to gather Scope 3 data from their supply chain, such Persefoni, which is working on tools to reach its clients' suppliers. Greenplaces is another company that currently provides Scope 3 emission measurement services.

Call to Action

- ESG platform solutions providers must expand their reporting capabilities to incorporate categories and data necessary to facilitate Scope 3 emissions reporting.
- Taking into account the complexity of collecting and processing information for measuring this type of emissions, because it includes indirect emissions from both upstream and downstream companies, it will be necessary to adopt technologies to guarantee the transparency and traceability of the information, such as the use of blockchain, which allows access to those involved while protecting information from third parties.

Source: Frost & Sullivan

Growth Opportunity 3: Data Monetization for Added Value

Opp. Size in 5 Years	USD 100 M – USD 500 M
Timeline for Action	1 to 3 Years
GO Base Year	2024

Relevant End-User Industries for this Growth Opportunity

Manufacturing	Mobility	Metal & Mining
Energy & Environment	Chemicals & Materials	Information & Communications Technologies
Electronics & Semiconductors	Agriculture, Food & Nutrition	Govt and Public Sector
Construction	Education	Healthcare & Lifesciences
Consumer	Aerospace	Hospitality
Retail	Defense	Banking & Financial Services

Applicable Regions

- Central & East Europe
- South Asia
- Western Europe
- CIS
- North America
- Latin America
- Africa
- Middle East
- Asia-Pacific

Frost & Sullivan has identified 10 Growth Processes that serve as levers for determining and evaluating new Growth Opportunities.

Growth Processes

Customer & Branding	Distribution Channel	Geographic Expansion	Vertical Market Expansion	Competitive Strategy
Strategic Partnering	Product Development	Mergers & Acquisitions	Product Launch	Technology & IP

Source: Frost & Sullivan

Growth Opportunity 3: Data Monetization for Added Value (continued)

Context and Definition

- In the rapidly evolving ESG landscape, data monetization is emerging as a crucial element, adding substantial value to these platforms. Data monetization refers to the process of leveraging data as an asset to generate economic value. Within the ESG context, this involves extracting meaningful insights from environmental, social, and governance data to inform decision-making and drive sustainable practices.
- In this highly fragmented market, where diverse datasets are generated and managed, data monetization becomes a key for users seeking comprehensive solutions. It allows for benchmarking within the ESG platform, enabling organizations to compare their performance against industry standards and best practices, thereby fostering a culture of continuous improvement.

Call to Action

- As stakeholders recognize the pivotal role of data monetization in enhancing the effectiveness of ESG platforms, they should collaborate to standardize data formats, ensure data accuracy, and develop robust analytical tools for meaningful interpretation.
- Solutions such as Microsoft Cloud for Sustainability are at the forefront of this movement, utilizing data to support customers in their sustainability endeavors.
- By facilitating peer-to-peer comparisons and offering actionable insights, such platforms empower stakeholders to make informed decisions, catalyzing positive environmental and social impacts. A collective commitment to harnessing the power of data will not only drive innovation within the ESG sector but also contribute significantly to addressing global sustainability challenges.

Source: Frost & Sullivan

List of Exhibits

Legal Disclaimer

Frost & Sullivan is not responsible for any incorrect information supplied by companies or users. Quantitative market information is based primarily on interviews and therefore is subject to fluctuation. Frost & Sullivan research services are limited publications containing valuable market information provided to a select group of customers. Customers acknowledge, when ordering or downloading, that Frost & Sullivan research services are for internal use and not for general publication or disclosure to third parties. No part of this research service may be given, lent, resold, or disclosed to noncustomers without written permission. Furthermore, no part may be reproduced, stored in a retrieval system, or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the permission of the publisher.

For information regarding permission, write to: permission@frost.com