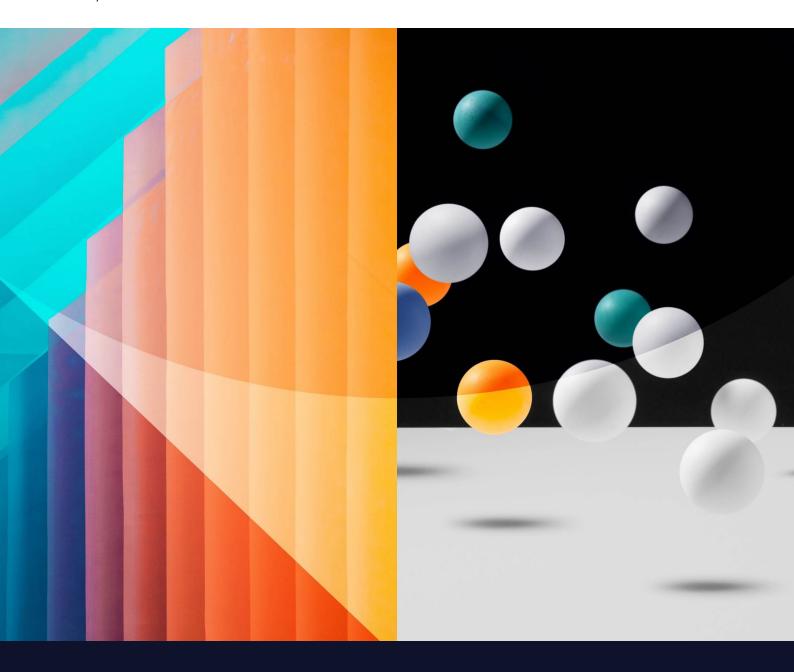
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Net Zero & Climate Risk

Green Quadrant: Climate Change Consulting 2023

By Connor Taylor and Alastair Foyn With Ryan Skinner

June 2023





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This report provides a detailed, fact-based benchmark of 15 of the most prominent climate change consulting providers in the market. Based on the proprietary Verdantix Green Quadrant methodology, our analysis included two-hour live briefings, customer interviews and vendor responses to a detailed 94-point questionnaire, covering 15 capability and three momentum categories. The market for climate change consulting has grown significantly in recent years, driven by corporate investment in climate change initiatives to prepare for climate change transition; providers are concurrently investing to improve their capabilities across strategy, technical and implementation services. Amongst the providers featured in the Leaders' Quadrant, six firms – Deloitte, ERM, EY, KPMG, PwC and WSP – demonstrated the most comprehensive climate change consulting capabilities.

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3Degrees has deep carbon- and energy-offset capabilities	
AECOM provides asset-level implementation expertise with strong climate adaptation capabilities	
Anthesis brings dedicated climate change expertise to the table	
Arcadis applies engineering and design expertise to deliver end-to-end climate change solutions	
Deloitte blends deep strategic and technical expertise for climate change consulting services	
ENGIE Impact uses its global footprint to bridge the gap between boardrooms and assets	
ERM has strong technical expertise across decarbonization and climate risk	
EY has market-leading capabilities in climate change consulting	
KPMG stands out for its climate risk strategy and emissions data assurance capabilities	
PwC's global network provides net zero strategy and emissions data assurance expertise	
Ramboll's engineering legacy underpins a comprehensive climate change consulting offering	
Schneider Electric has extensive capabilities for implementing climate change strategy at the asset level	
SLR has strong capabilities across climate risk management and scenario analysis	
WayCarbon provides digitally enabled services across climate risk and decarbonization	

WSP excels at asset-level decarbonization and climate risk management and mitigation

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Organizations mentioned

3Degrees, Accenture, AECOM, Aesop, AFARA, Airport Authority Hong Kong, Amazon Web Services (AWS), Amgen, Anthesis, Apollo Global Management, Arcadis, Attalea, Avon, Bain, Barclays, BCG, Body Shop, Brazil's National Council for Scientific and Technological Development (CNPq), Brazil's Securities and Exchange Commission (CVM), Bristol Myers Squibb, BTG, Bureau Veritas, Carbon Care Asia, (CDP) Carbon Disclosure Project, Carbon Intelligence, CBA (Companhia Brasileira de Alumínio), Cervest, ClearBlue Markets, Climate Action 100+, Climate Neutral Group, CLIMsystems, Coho, Committee of Sponsoring Organizations of the Treadway Commission (COSO), CoolPlanet, Corporate Knights, Deloitte, Disney World, Electric Power Research Institute (EPRI), Enablon, ENGIE Impact, ERM, Esri, Euronext, EV Connect, ExxonMobil, EY, Faurecia, Federal University of Paraiba (UFPB), ForFuturing, Fortune, Fujitsu, G20 Financial Stability Board, GHG Protocol, Giftge Consult, Glasgow Financial Alliance for Net Zero (GFANZ), Global Logistics Emissions Council (GLEC), Global Reporting Initiative (GRI), Golder, Google, Green Domus, GUESS, Hawaii Department of Transportation, IBI Group, IBM, IFRS Foundation, Initiative Climat International (iCI), Intelex, Intergovernmental Panel on Climate Change (IPCC), International Carbon Reduction and Offset Alliance (ICROA), International Energy Agency (IEA), JBS Global, Johnson Controls International (JCI), John Wood Group, JPMorgan Chase & Co., KKR, KPMG, LevelTen Energy, LGIM, MarineSpace, Mastercard, McDonald's, McKinsey & Company, Microsoft, Minerva Foods, Mondelez International, Moody's Analytics, Natura & Co, Natural Climate Solutions Alliance, Network for Greening the Financial System (NGFS), NINT, OCT Emissions Solutions, Origin Climate, Ørsted, PACER, Padd Energy, Partnership for Carbon Accounting Financials (PCAF), Patch, Persefoni, Planet Labs, Point Advisory, pulsESG, PwC, Quantis, Ramboll, Refinitiv, Resultante, Salesforce, Santander, SAP, Scandiaconsult, Schneider Electric, Science Based Targets initiative (SBTi), Science Based Targets Network (SBTN), ServiceNow, Siemens, SLR, South Pole, Sphera, State of Texas, Station A, Sweep, Task Force on Climate-related Financial Disclosures (TCFD), Task Force on Nature-related Financial Disclosures (TNFD), TechnipFMC, Transition Plan Taskforce (TPT), Trinity AgTech, UK Department for Environment, Food & Rural Affairs (Defra), UK Green Building Council (UKGBC), UK National Highways, UNESCO, UN Global Compact, UN Net-Zero Banking Alliance (NZBA), UN Principles For Responsible Investment (UN PRI), US Environmental Protection Agency (EPA), US National Basketball Association (NBA), US Securities and Exchange Commission (SEC), Vale, Verisk, Walmart, Watershed, WayCarbon, Workday, Workiva, World Business Council for Sustainable Development (WBCSD), World Resources Institute (WRI), WSP, WTW, Zeigo.



The state of the climate change consulting market

The landscape for climate change consulting has expanded significantly in recent years. A shifting global climate regulatory landscape, growing stakeholder interest, and increasing awareness of the threat climate change poses to business are forcing firms to develop climate change transition strategies. Managing the climate change transition requires firms to invest in internal management, governance and implementation structures, and consider how to demonstrate performance to external markets. These requirements have led global services firms from diverse backgrounds to develop climate change consulting offerings, combining previously distinct net zero and climate-risk-related services. The climate change consulting market is therefore in a rapid evolutionary phase.

To aid climate change decision-makers in selecting best-fit service provider partners, this report provides an in-depth assessment of 15 prominent climate change consulting providers. The report seeks to answer the following questions for buyers of these services:

- What is the current state of the climate change consulting market?
- Which providers lead the market?
- Which service providers can best meet the requirements of my firm?
- How will the market develop in the near future?

To answer these questions, Verdantix assessed 15 climate change consulting providers through a 94-point questionnaire, a two-hour briefing with participants, and interviews with more than 30 customers across a range of industries. The analysis is based on the Verdantix proprietary Green Quadrant methodology, which provides an evidence-based, objective assessment of providers offering comparable products or services.

The climate change consulting market is growing

Organizations are under increasing pressure to demonstrate their impact on and resilience to climate change. This is expressed through voluntary commitments, such as setting public net zero and decarbonization targets, and – increasingly – through regulatory expectations, which ultimately impact operational strategies. Concurrently, businesses are growing more aware of climate change risks, stemming both from the physical events around them that potentially impact their operations, and from the associated impacts of climate change on the economy, policy and capital markets. In response to this demand, the climate change consulting market has seen high levels of investment and activity, both from specialist and more diverse global services firms.

Policy and stakeholder requirements drive growth in the climate change consulting market

Growing pressure on organizations to demonstrate resilience towards climate change has resulted in a surge of demand for relevant consulting across strategy, technical and implementation projects. In 2022 the net zero consulting market alone reached \$3.5 billion (see **Figure 1**) and is forecast to hit \$15.8 billion by 2028. Related markets, including digital solutions for carbon management and climate risk, are forecast to grow by CAGRs of 28% and 30%, respectively, in 2022-28. This market growth is caused by:

Increasing financial risk stemming from poor climate transition planning.

Firms across sectors are more exposed than ever to material financial risks relating to climate change practices, and stakeholders increasingly demand that organizations create viable climate change transition plans. In April 2023 LGIM and a US investor announced that they were challenging ExxonMobil's climate change plans, noting concerns based on the cost of decommissioning current downstream assets and a lack of alignment with the Paris Agreement; just two years previously, Exxon's board had been restructured, following activist investor pressure. Firms across sectors are therefore developing strategies to demonstrate that they are transitioning activities to align with a low-carbon economy.



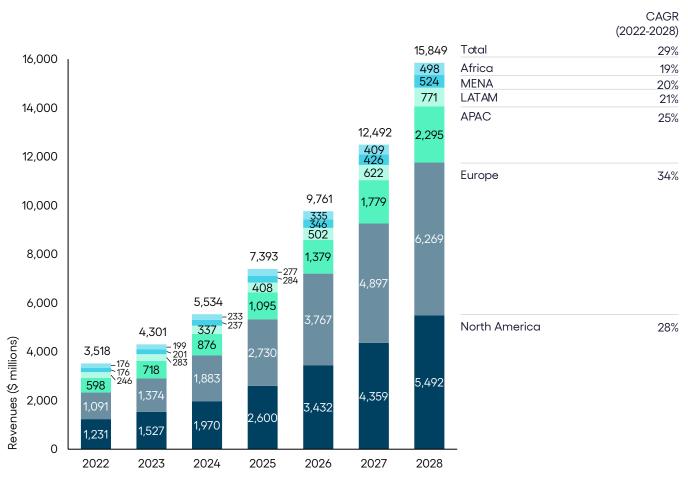
• Growing regulatory pressure based on the 'double materiality' concept.

The national decarbonization targets of the 2015 Paris Agreement, along with the desire of regulators to reduce climate risk exposure for financial investors, are driving new climate legislation. The critical concept underpinning new laws is 'double materiality', which recognizes that a firm's impacts – beyond finance – can be material both to the firm itself and to the world at large. The principle is implicit in the Task Force on Climate-related Financial Disclosures (TCFD), which is the basis of both existing and upcoming climate change disclosure regulation in the UK, US, Canada, Brazil and New Zealand. The EU's Corporate Sustainability Reporting Directive (CSRD) is one of the most comprehensive double-materiality-aligned regulations passed to date (see <u>Verdantix Strategic Focus: The Most Challenging Climate Reporting Requirements Of The EU's CSRD</u>).

• Development of climate change funding incentives.

In August 2022 the Federal Inflation Reduction Act was passed in the US. It represents the most significant global funding policy for climate change to date (see <u>Verdantix Strategic Focus: The Impact Of The Inflation Reduction Act In The US</u>). Of the \$394 billion aimed at energy transition, some \$270 billion comprises incentives for private investment in the form of tax credits, alongside grants and loan guarantees. These incentives will drive significant private investment in areas such as renewable energy, electrified transport and manufacturing. Firms require services to help them navigate the incentive landscape and design strategy and implementation plans to develop these new assets.

Figure 1
The net zero consulting market is set to hit \$15.8bn by 2028



Note. Data labels are rounded to zero decimal places. Source: Verdantix analysis



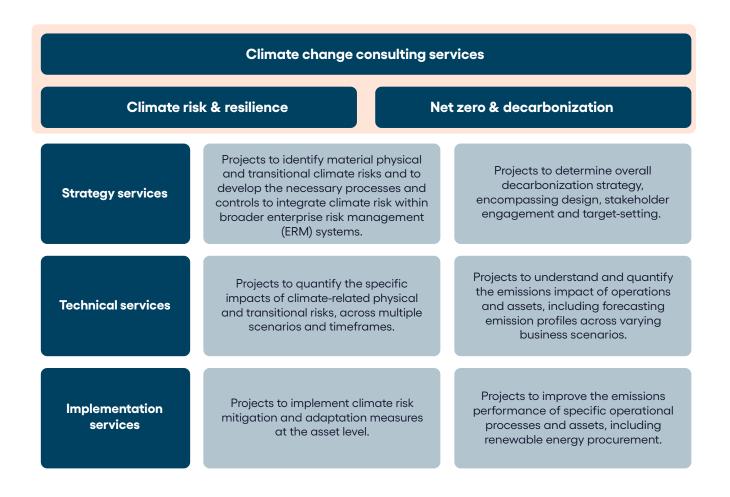
The climate change consulting market is taking shape

The dramatic upsurge of investment and demand for climate change consulting is driving rapid change across the market. Consequently, providers are revamping offerings to address demand and remain competitive – a strategy that involves using both pre-existing consulting specialities and building out new dedicated service areas for climate change consulting.

Climate change consulting clients need strategy, technical and implementation help

Creating and implementing climate transition plans requires corporate action to define overall ambition and direction, collect and understand critical climate-related data, and improve operational processes to support progress towards predefined projects. Consequently, three dominant forms of climate change consulting project have emerged: strategy services, technical services and implementation services projects (see **Figure 2**). These three categories of consulting project help firms:

Figure 2
The three categories of climate change consulting





• Refine and develop climate change strategies.

Climate change strategies reflect a business's climate transition plan. To achieve their goals, firms seek help from consultants for overarching strategy support. One executive director of corporate sustainability strategy at a Fortune 100 pharmaceuticals firm described her experience of strategy-oriented climate change consulting as "an ongoing partnership, focused on high-level target-setting, strategic objectives planning, and board engagement. We typically engage in these projects alongside more operationally oriented decarbonization initiatives."

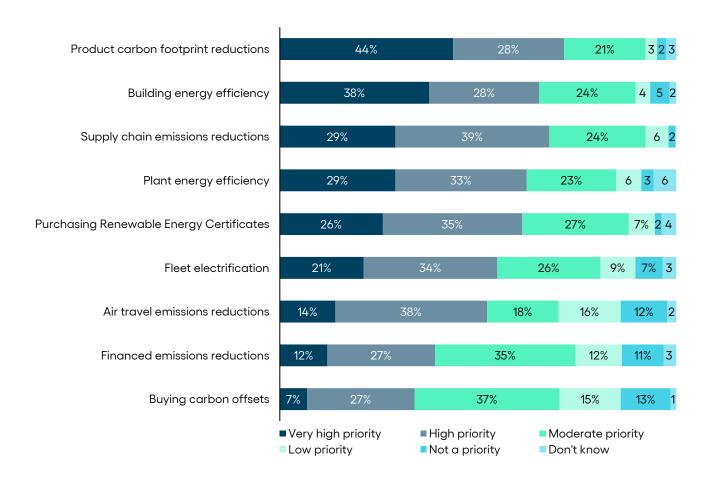
• Address the technical aspects of impact quantification and climate exposure.

Disclosures form an integral part of overall climate change strategy: they are the vehicle through which strategic ambitions, such as decarbonization targets or climate risk mitigation initiatives, are communicated. Technical climate change service projects help firms quantify information relating to climate change, boosting the accuracy and applicability of disclosures, and ultimately improving performance. The sustainability director of a global cosmetics group stated: "We selected a consulting partner to help us implement data management structures to support TCFD implementation; we felt we lacked the technical skill to do this in-house...the core elements of this project were focused on emissions management and climate risk quantification."

Figure 3

Firms will prioritize operational decarbonization over the next three years

In the next three years, to what extent will your firm prioritize the following decarbonization initiatives?



Note: Data labels are rounded to zero decimal places; percentages less than 7% are written as numbers. Source: Verdantix Net Zero And Climate Risk Global Corporate Survey 2023

N=350



• Implement operational decarbonization and climate risk mitigation at the asset level.

To improve climate change performance, firms must implement strategies at the operational level; operational decarbonization is therefore a very high priority for a significant proportion of firms (see **Figure 3**). Implementation services cover projects designed to improve the carbon performance or climate risk resilience of particular assets or groups of assets, encompassing energy efficiency, direct climate risk mitigation infrastructure, and on-site carbon capture. The Head of Net Zero at a Fortune 100 technology business said: "We are past the strategy-setting phase. Our consulting partner helps us both define and implement a range of initiatives, such as hydrogen, biofuels... they tell us what specific sources to use, in great technical detail."

Climate change consulting offerings are nascent and heterogenous

Climate change consulting providers have mature offerings across certain services relating to climate transition, such as emissions reporting. Nonetheless, providers are grappling with how best to integrate these offerings within an overarching service delivery strategy to gain traction within the market as a whole. As part of this goal, climate change consulting providers have:

• Entered the market with very different types of expertise.

The climate change consulting market consists of dedicated climate change specialists – who frequently have strong legacies in broader sustainability and environmental consulting – and global consulting providers from engineering, design expertise, tax and management consulting backgrounds, who are redefining offerings to compete in the climate change consulting market. EY, for example, has developed a cross-functional team of disclosure specialists combining sustainability professionals from the EY Climate Change and Sustainability Services practice with financial reporting specialists from the EY Financial Accounting Advisory Services practice.

Identified climate change services as pivotal to their own commercial strategies.

Although providers have been offering climate-change-related services for decades, they now consider such offerings as core to the future of their business. Engineering and professional services firm WSP announced its business-wide 'Future Ready' strategy in 2022, highlighting climate change as central to its overall business innovation planning. PwC has defined energy transition as one of its few 'future bets' – a candidate to become one of its core market priorities. Consulting providers are also developing their own climate change strategies; Deloitte, as part of its 'WorldClimate' strategy, has committed to achieve net zero by 2030.

Ramped up investment in climate-change-related capabilities.

To develop market-leading offerings, providers have stepped up levels of internal investment in climate change consulting capabilities, manifested in dedicated climate-change-related centres of expertise, such as KPMG's Global Decarbonization Hub and PwC's Centre for Nature Positive Business. Providers are also investing in new dedicated practice areas, such as WTW's launch of Climate Risk Solutions for Corporate Risk and Broking in May 2023, and Deloitte's GreenSpace Tech, designed to help clients deploy technology to decarbonize.

Partnered with complementary service providers to fill gaps in their offerings.

In recognition that no one provider is currently able to deliver the full range of services across industries to help firms manage climate change, providers are seeking out partners from varying service backgrounds. Typically, this has occurred between providers with backgrounds in strategy development and delivery, and those with asset-level and technical implementation experience. Dedicated sustainability services provider Anthesis partnered with Fujitsu in April 2023; earlier that year, Schneider Electric announced a partnership with Bain.



• Invested in internal training to lift their climate change capacity.

Global professional service providers are training employees, to prevent the availability of unique climate-change-related specializations becoming a bottleneck to project delivery in key areas such as climate risk. Since 2022, Bain, BCG and Deloitte have announced employee training initiatives for climate-change-related skills. These developments indicate that service firms are not only increasing their capabilities for delivering dedicated climate change consulting projects, but are seeking to embed sustainability expertise across business units.

Market movements demonstrate provider ambition to deliver end-to-end services

The climate change consulting market has experienced a surge in activity in the last 12 months, as global providers aim to develop capabilities through acquisitions of dedicated specialists, and partnerships with providers of complementary offerings. This underpins the growing ambition of providers to offer broad capabilities across the life cycle of climate-change-related services. Key trends that have shaped the market are the:

Race to acquire dedicated specialists.

In a bid to rapidly increase capability across climate change consulting, global providers have prioritized tactical acquisitions of specialist firms (see **Figure 4**). These acquisitions have the dual benefit of building capabilities in specific areas of climate change consulting delivery – such as ERM's acquisition of renewable energy advisory firm Coho in February 2023 – and increasing geographic penetration: witness EY's acquisition of Spanish ESG consulting firm Attalea in February 2023. Such acquisitions signal a desire from service providers to not only increase the depth of their service delivery, but also the breadth – becoming a kind of 'one-stop shop'. Illustrating this, in December 2022 Deloitte acquired infrastructure-focused consultant PACER.

Figure 4
Climate change consulting market transactions 2022-23

Date	Transaction	Desciption
May -23	Acquisition	Accenture acquires dedicated sustainability consultancy Green Domus
Mar-23	Acquisition	ERM acquires sustainable finance advisory firm NINT
Feb-23	Acquisition	ERM acquires climate and renewable energy advisory firm Coho
Feb-23	Acquisition	EY acquires ESG consulting provider Attalea
Dec-22	Acquisition	Deloitte acquires infrastructure consultant PACER
Dec-22	Acquisition	BCG acquires sustainability consultancy Quantis
Sep-22	Acquisition	EY acquires ESG consulting provider AFARA
Sep-22	Acquisition	Accenture acquires climate change consultancy Carbon Intelligence
Jul-22	Acquisition	ERM acquires marine environment consultancy MarineSpace



• Expansion of digital capabilities to support climate change project delivery.

Managing diverse decarbonization, climate risk and transition planning initiatives requires digital investment to support data aggregation and reporting efforts. Climate change consulting providers are seeking to differentiate by developing robust digital tools – whether through partnerships with existing technology vendors or by proprietary technology development (see **Figure 5**). Many providers have partnerships with global technology firms such as Amazon Web Services (AWS), Google, Microsoft and SAP, or specialized software for carbon or climate risk management. ERM, EY and KPMG have created their own platforms for climate risk quantification and scenario analysis; for emissions management, consulting providers such as BCG and ENGIE Impact – with its digital solution, ENGIE Ellipse – offer proprietary digital tools.

Figure 5
Climate change consulting digital partnerships and product launches 2022-23

Date	Transaction	Desciption
May -23	Partnership	KPMG partners with decarbonization solution provider CoolPlanet
May -23	Partnership	KPMG partners with carbon management platform Watershed
May -23	Partnership	ERM partners with satellite data provider Planet Labs
May -23	Product launch	EY launches blockchain-based emissions tracking solution, EY OpsChain ESG
May -23	Partnership	Accenture partners with climate risk platform Cervest
Apr-23	Product launch	Deloitte launches Scope 3 emissions calculator on the Workiva platform
Apr-23	Partnership	ERM partners with carbon management solution provider Persefoni
Apr-23	Product launch	Schneider Electric launches decarbonization platform Zeigo
Mar-23	Product launch	Deloitte launches decarbonization platform GreenLight Tech
Mar-23	Partnership	EY partners with IBM to offer sustainability strategy solutions
Feb-23	Partnership	ERM partners with Salesforce to offer decarbonization solutions
Feb-23	Partnership	KPMG partners with Workiva to provide ESG solutions and services
Dec-22	Partnership	PwC partners with SAP to provide ESG strategy and reporting solutions
Nov-22	Partnership	Deloitte partners with Persefoni to provide carbon management solutions for banks and insurers
Oct-22	Partnership	EY partners with Microsoft to develop decarbonization solution
Sep-22	Partnership	McKinsey partners with Microsoft to develop decarbonization solutions
Aug-22	Product launch	Deloitte launches sustainability solutions suite with SAP
Jul-22	Investment	Accenture invests in ESG measurement platform pulsESG
May-22	Partnership	PwC partners with ESG and sustainability platform Sphera



Green Quadrant for climate change consulting

Clients of climate change consulting providers seek firms that demonstrate strong subject-matter expertise, experience within relevant industries, and the ability to engage with senior executives and management. Depending on which service is required – and the maturity of the client – relative strengths across strategy, technical and implementation capabilities are strong determining factors for selection.

Clients engage with climate change consulting to help them reduce their contributions towards climate change, and to create a robust transition plan to ensure the ongoing resiliency of the business against the impacts of climate change. Verdantix defines climate change consulting as:

"Services – comprising skilled professionals, methodologies and data resources – that support organizations on their journeys towards decarbonization and climate resilience, encompassing strategy, operations, opportunities and risk."

This Green Quadrant study benchmarks climate change consulting offerings against four meta categories: climate resilience strategy and implementation; net zero carbon strategy and implementation; climate data management and disclosures; and asset-level decarbonization.

Green Quadrant methodology

The Verdantix Green Quadrant methodology provides buyers of specific products or services with a structured assessment of comparable offerings across vendors at a specific point in time. The methodology supports purchase decisions by identifying potential suppliers, structuring relevant purchase criteria through discussions with buyers and providing an evidence-based assessment of the products or services in the market. To ensure the objectivity of the study results, the research process is defined by:

• Transparent inclusion criteria.

We work to analyse all providers that would qualify for inclusion in the research. For those providers that decline our invitation or fail to respond, we work to include them based on publicly available information that would provide an impression of those firms' market positioning if such information was deemed complete and sufficiently accurate to form a basis for benchmarking.

• Analysis from a buyer's perspective.

For this Green Quadrant, we spoke with 30 climate change consulting buyers to understand the relevant buying requirements and weight the evaluation criteria in the model that drives the Green Quadrant analysis graphic. Additionally, we utilized data from Verdantix corporate surveys of net zero and climate change decision-makers.

• Scores based on available evidence.

As it would be unfeasible to check all data and claims that providers make, we emphasize the need for professional integrity. Correspondingly, competitors and existing customers can check each provider's assertions, as they are placed in the public domain through this report.

Reliance on professional integrity.

To assess the expertise, resources, business results and strategies of individual providers, we collected evidence from public sources and conducted interviews with multiple representatives of each services provider, as well as industry experts. When providers claimed to be 'best in class', we challenged them to present related evidence.



• Comparison based on relative capabilities.

We constructed measurement scales ranging from 'worst in class' to 'best in class' performance at a certain point in time for each assessment category. A provider's position in the market can change over time depending on how its offering and success evolve compared with its competitors. This means that even if a provider adds new capabilities, makes a strategic acquisition or receives new investment, its Quadrant positioning may not improve relative to other consultants, if its competitors also enhance their offerings. Verdantix repeats a Green Quadrant analysis for a product or service market annually or every two years, to capture these transitions over time.

Evaluated firms and selection criteria

Verdantix defines vendor inclusion criteria to ensure that the Green Quadrant analysis only compares firms with the potential to support implementations of comparable scale and complexity. The 15 climate change consulting providers included in this study were selected because they had:

Coverage of over half the Green Quadrant capability categories.

To ensure that participants can deliver a wide range of climate change consulting projects – and thereby ensure a competitive analytical playing field – vendors were only included in this Green Quadrant if they demonstrated capabilities across at least 50% of the following capability categories: climate resilience strategy and implementation; net zero carbon strategy and implementation; climate data management and disclosures; and asset-level decarbonization.

• At least 200 dedicated climate change consultants.

Firms only qualified for participation within this Green Quadrant if they employed 200 dedicated climate change consultants. Although firms with a smaller consulting and advisory capacity may be able to provide similar capabilities to those of their larger counterparts, our research finds that they cannot deliver a suitable breadth of project delivery across categories to meet the needs of all buyers.

• A global presence, with at least two offices in separate countries.

To qualify for this benchmark study, participants had to operate out of at least two distinct offices in separate countries.

Based on the inclusion criteria above, this report evaluated 15 climate change consulting providers: 3Degrees, AECOM, Anthesis, Arcadis, Deloitte, ENGIE Impact, ERM, EY, KPMG, PwC, Ramboll, Schneider Electric, SLR, WayCarbon and WSP. All implementation service firms in this study actively participated through interviews and provided responses to a 94-point questionnaire. Verdantix also invited Accenture, Bain, BCG, McKinsey & Company, Siemens and South Pole to participate, but these firms chose not to do so.

Evaluation criteria for climate change consulting providers

Verdantix defined the evaluation criteria for the Green Quadrant climate change consulting study through a combination of interviews with senior executives, desk research, discussions with multiple customers and staff expertise. In full, this year's Green Quadrant analysis compares offerings from 15 consulting firms, using a 94-point questionnaire covering 15 categories of capabilities and three categories of market momentum. Individual metrics were classified as follows:

• Capabilities metrics.

The capabilities dimension, plotted on the vertical axis of the Green Quadrant graphic, was used to measure each consulting firm's climate change consulting based on the breadth and depth of that firm's service approach, its differentiators against other providers, and its proven experience in each area. In specific categories, where applicable, additional questions covering technical expertise, digital offerings and volumes of renewable energy and offset procurement were used to measure performance. In total, we assessed the providers across 72 capability criteria, representing 15 distinct capability categories.



Momentum metrics.

The momentum dimension of the analysis, captured on the horizontal axis of the Green Quadrant graphic, was used to measure each consulting firm based on its vision and strategy, climate change consulting revenue size, and partnerships. Additional information was collected concerning customer bases, but was not scored in a distinct category. In total, we assessed the providers across 22 momentum criteria, representing three distinct momentum categories.

The combination of high-level criteria scores in the Capabilities and Momentum sections generate the Green Quadrant graphic and rankings. **Figure 6** and **Figure 7** provide details of the study criteria; **Figure 8** and **Figure 9** show the scoring for all participants against the criteria. **Figure 6** also presents the weighting of each primary criterion, shown inside the parentheses. **Figure 10** provides the Green Quadrant graphic summarizing the positioning of all consulting firms in this benchmark study.

Figure 6
Capabilities criteria for climate change consulting services

Meta service line	Capabilities	Questions
	Climate risk, strategy and governance (8%)	What are your capabilities for delivering climate risk strategy and governance engagements for clients? How does your firm differentiate its approach to climate risk strategy and governance engagements? How many projects have you completed in the last 12 months?
Climate resilience strategy and implementation	Climate mitigation, adaptation and implementation (7%)	What are your capabilities for delivering climate mitigation and adaptation engagements for clients? How does your firm differentiate its approach to climate mitigation, adaption strategy and implementation engagements? How many projects have you completed in the last 12 months?
	Climate risk quantification and scenario analysis (9%)	What are your capabilities for delivering climate risk quantification and scenario analysis engagements for clients? How does your firm differentiate its approach to climate risk quantification and scenario analysis engagements? How does your firm support digital requirements relating to climate risk quantification and scenario analysis? How many projects have you completed in the last 12 months?
	Net zero strategy, governance and target-setting (5%)	What are your capabilities for delivering net zero strategy, governance and target-setting engagements for clients? How does your firm differentiate its approach to net zero strategy, governance and target-setting engagements? How does your firm support digital requirements relating to net zero strategy, governance and target-setting? How many projects have you completed in the last 12 months?
Net zero carbon strategy and	Carbon credit support and sourcing (4%)	What are your capabilities for delivering carbon credit support and sourcing engagements for clients? How does your firm differentiate its approach to carbon credit support and sourcing engagements? What volume of credits has your firm sourced or developed for clients? How many projects have you completed in the last 12 months?
implementation	Net zero programme management (8%)	What are your capabilities for delivering net zero progamme management engagements for clients? How does your firm differentiate its approach to net zero progamme management engagements? How many projects have you completed in the last 12 months?
	Financed emissions management (5%)	What are your capabilities for delivering financed emissions management engagements for clients? How does your firm differentiate its approach to financed emissions management engagements? How does your firm support digital requirements relating to financed emissions management? How many projects have you completed in the last 12 months?

Figure 6 (continued) \downarrow



Figure 6 (continued)

and adaptation disclosures (8%)	What are your capabilities for delivering climate risk, opportunity and adaptation disclosure engagements for clients? How does your firm differentiate its approach to climate risk, opportunity and adaptation disclosure engagements? How many projects have you completed in the last 12 months?
Net zero disclosures (8%)	What are your capabilities for supporting net zero disclosure engagements for clients? How does your firm differentiate its approach to net zero disclosure engagements? How many projects have you completed in the last 12 months?
Carbon data management and accounting (4%)	What are your capabilities for delivering carbon data management and accounting engagements for clients? How does your firm differentiate its approach to carbon data management and accounting engagements? How does your firm support digital requirements relating to carbon data management and accounting? How many projects have you completed in the last 12 months?
Emissions data assurance (7%)	What are your capabilities for delivering emissions data assurance for clients? How does your firm differentiate its approach to emissions data assurance engagements? How many projects have you completed in the last 12 months?
Built environment decarbonization (8%)	What are your capabilities for delivering built environment decarbonization engagements for clients? How does your firm differentiate its approach to built environment decarbonization engagements? What specific technical capabilities (e.g. engineering expertise) does your firm offer for built environment decarbonization projects? How does your firm support digital requirements relating to built environment decarbonization? How many projects have you completed in the last 12 months?
Industrial plant decarbonization (7%)	What are your capabilities for supporting industrial plant decarbonization engagements for clients? How does your firm differentiate its approach to industrial plant decarbonization engagements? What specific technical capabilities (e.g. engineering expertise) does your firm offer for industrial plant decarbonization projects? How does your firm support digital requirements relating to industrial plant decarbonization? How many projects have you completed in the last 12 months?
Fleet decarbonization (7%)	What are your capabilities for delivering fleet decarbonization engagements for clients? How does your firm differentiate its approach to fleet decarbonization engagements? What specific technical capabilities (e.g. engineering expertise) does your firm offer for fleet decarbonization projects? How does your firm support digital requirements relating to fleet decarbonization? How many projects have you completed in the last 12 months?
Renewable energy supply and energy decarbonization (7%)	What are your capabilities for delivering renewable energy supply and energy decarbonization engagements for clients? How does your firm differentiate its approach to renewable energy supply and energy decarbonization engagements? What is the volume of renewable energy sourced for clients over the last 12 months, including both PPAs and unbundled RECs? How many projects have you completed in the last 12 months?
	Net zero disclosures (8%) Carbon data management and accounting (4%) Emissions data assurance (7%) Built environment decarbonization (8%) Industrial plant decarbonization (7%) Fleet decarbonization (7%)



Figure 7

Momentum criteria for climate change consulting services

Momentum	Questions							
Vision & strategy	How do you see market demand for climate change consulting services engagements evolving over the next two to three years? What is your firm's strategy for competitive positioning, differentiation and growth in the climate change consulting services market? What is your innovation and R&D strategy to remain at the forefront of climate change consulting services expertise? Which acquisitions relating to climate change consulting services have you made in the past 12 months?							
Climate change consulting services revenue size (2022/23)	Which acquisitions relating to climate change consulting services have you made in the past 12 months? How many climate change consulting services clients have you delivered engagements for since March 2022? How much revenue have you generated from climate change consulting services engagements since March 2022? What is the average cost per climate change consulting services engagement signed or delivered since March 2022?							
Partnerships	With which technical and engineering services firms do you have a formal alliance? With which software firms do you have a formal alliance? With which industry associations (e.g. power utility, food and beverage) have you partnered? Which climate and carbon organizations (e.g. CDP, IFRS) are you a member of?							
Figures in brackets represent the weig	yhting given to each criterion in the flexible multi-criteria model that generates the Green Quadrant graphical analysis							



Figure 8
Vendor criteria scores (Capabilities)

		3Degrees	AECOM	Anthesis	Arcadis	Deloitte	ENGIE Impact	ERM	EY	KPMG	PwC	Ramboll	Schneider Electric	SLR	WayCarbon	WSP
Climate resilience	Climate risk, strategy and governance	1.2	1.7	1.6	1.7	2.4	1.4	2.0	2.5	2.5	2.2	1.5	1.2	2.0	1.5	2.0
strategy and	Climate mitigation, adaptation and implementation	0.6	2.3	1.8	2.1	1.5	1.1	1.8	1.8	1.8	1.6	2.3	0.9	1.6	1.1	2.4
implementation	Climate risk quantification and scenario analysis	0.6	1.9	1.8	1.7	2.0	1.3	2.3	2.4	2.0	2.0	1.5	0.7	2.2	1.4	1.8
	Net zero strategy, governance and target-setting	1.3	1.7	1.8	1.3	2.2	1.7	2.3	2.3	1.8	2.3	2.1	1.9	1.7	1.7	2.2
Net zero carbon	Carbon credit support and sourcing	2.0	1.4	2.8	1.2	1.8	1.7	1.7	2.2	1.7	1.7	1.8	1.8	0.9	1.9	2.0
strategy and implementation	Net zero programme management	0.7	2.4	1.2	1.7	1.5	1.4	1.5	1.8	1.4	2.0	2.2	1.7	1.7	1.0	2.8
·	Financed emissions management	0.8	0.8	1.9	1.0	1.9	0.8	2.4	2.6	2.0	2.8	1.0	1.5	1.2	1.2	1.6
	Climate risk, opportunity and adaptation disclosures	0.7	1.2	2.0	1.2	2.4	1.4	2.3	2.4	2.5	2.2	1.2	1.8	1.7	1.3	1.7
Climate data	Net zero disclosures	1.0	1.8	2.2	2.0	2.2	1.4	2.0	2.3	2.0	2.0	1.2	2.0	1.8	1.3	1.5
management and disclosures	Carbon data management and accounting	1.3	1.9	2.3	1.9	2.5	2.4	2.4	2.4	2.3	1.8	2.1	2.4	1.8	1.8	2.2
	Emissions data assurance	0.0	1.1	0.7	0.0	2.4	0.7	2.0	2.4	2.7	2.4	2.0	0.4	1.5	0.8	1.7
	Built environment decarbonization	1.1	2.9	2.3	2.6	2.0	2.3	2.1	2.4	1.7	1.7	2.6	2.7	1.3	0.0	2.9
Asset-level	Industrial plant decarbonization	0.7	1.9	1.7	1.4	1.6	1.9	1.8	1.4	1.6	1.7	2.4	1.6	1.3	1.4	2.6
decarbonization	Fleet decarbonization	1.0	2.4	1.1	2.1	1.6	1.7	1.8	1.6	1.6	1.4	2.3	2.4	1.7	0.3	2.6
	Renewable energy supply and energy decarbonization	2.3	0.9	1.6	2.0	2.0	2.1	2.1	2.1	2.2	1.9	1.4	3.0	2.5	1.0	2.3

Vendor provides evidence of market-leading capability, supported by a broad set of references to customer examples	3
Vendor provides evidence of strong capability, supported by a broad set of references to customer examples	2
Vendor provides evidence of moderate capability, with limited references to customer examples	1
No response provided or publicly available, or supplier has a weak offering	0



Figure 9 Vendor criteria scores (Momentum)

	3Degrees	AECOM	Anthesis	Arcadis	Deloitte	ENGIE Impact	ERM	EY	КРМО	PwC	Ramboll	Schneider Electric	SLR	WayCarbon	WSP
Vision & strategy	0.7	1.1	1.7	1.2	2.3	1.4	2.0	2.3	1.7	1.7	1.2	1.7	2.0	1.4	2.3
Climate change consulting services revenue size (2022/23)	1.4	2.4	1.4	1.6	2.4	1.6	1.8	2.6	2.0	2.6	1.8	1.2	1.2	1.4	2.0
Partnerships	1.5	1.8	1.8	2.5	2.5	1.5	2.5	2.5	2.5	2.3	1.0	1.5	2.3	1.5	2.5

Vendor provides evidence of market-leading capability, supported by a broad set of references to customer examples	3
Vendor provides evidence of strong capability, supported by a broad set of references to customer examples	2
Vendor provides evidence of moderate capability, with limited references to customer examples	1
No response provided or publicly available, or supplier has a weak offering	0



Figure 10
Green Quadrant for climate change consulting services 2023



Capabilities

This dimension measures each climate change consulting provider on the breadth and depth of its offerings across 15 capability areas, as outlined in **Figure 6**.

Momentum

This dimension measures each climate change consulting provider on three strategic success factors, as outlined in **Figure 7**.



3Degrees has deep carbon- and energy-offset capabilities

Founded in 2007, and with over 300 employees globally, 3Degrees is a climate solutions provider headquartered in San Francisco, USA. In 2017, 3Degrees merged with Origin Climate to expand its carbon project development and renewable energy strategy and procurement services. 3Degrees has invested considerably in building out its climate change consulting service offerings and in 2022 announced the launch of a climate technology advisory service. The firm has established partnerships with LevelTen Energy, Persefoni and Sweep. Additionally, 3Degrees collaborates with Johnson Controls International (JCI), allowing customers to benefit from energy supply services through the JCI Net Zero Buildings offering, or as a standalone solution.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that 3Degrees has strengths in:

• Renewable energy supply and energy decarbonization.

3Degrees ranked highly on renewable energy supply and energy decarbonization, with a score of 2.3/3.0. 3Degrees assists clients in developing custom renewable energy portfolios, covering a variety of power purchase agreements (PPAs), green tariffs, retail supply options and on-site solar generation, across regions including North America, Europe and Asia-Pacific (APAC). Additionally, 3Degrees assists customers in selecting compliance Renewable Energy Certificates (RECs) in the US, as well as project-specific RECs, allowing them to benefit from associated co-benefits, such as the 'Peace REC' transactions executed for Microsoft. 3Degrees is also able to execute value-aligned contracts and manage contracts post-execution. In 2022, 3Degrees assisted Mondelez International in sourcing and advising on a 12-year virtual power purchase agreement (VPPA) in Poland for approximately 1,25GWh of solar electricity.

Carbon credit support and sourcing.

With a score of 2.0/3.0, 3Degrees is one of the top performers for the carbon credit support and sourcing capability. 3Degrees provides both strategic advisory services – helping clients develop viable procurement strategies – and procurement services. As part of its strategic advisory services, 3Degrees offers benchmarking, strategy roadmap development and business case analysis; additionally, the firm provides marketing claim risk analysis, to minimize reputational risk from offset use. On the procurement side, 3Degrees helps clients identify suitable carbon projects and developers, run procurement processes, conduct due diligence and execute purchases.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that 3Degrees could improve its capabilities by:

- Improving digital capabilities for climate risk quantification and scenario analysis.
 - With a score of 0.6/3.0, 3Degrees' climate risk quantification and scenario analysis score is below average. The firm's new climate risk advisory services are aimed at organizations who are at the start of their climate risk management journeys. However, 3Degrees does not provide bespoke digital tools for climate risk quantification and scenario analysis an increasingly standardized offering amongst frontrunners in this assessment. 3Degrees could additionally develop functionality to provide financial risk quantification.
- Providing tooling for maturity and gap assessments for climate change disclosures.
 - 3Degrees scored 0.7/3.0 for the climate risk, opportunity and adaptation capability category, which is below average in this Green Quadrant. 3Degrees focuses on preparing relevant content and data for disclosures, and additionally provides readiness assessments to determine a client's maturity against regulatory and voluntary frameworks. However, leading firms in this category offer dedicated tooling to undertake materiality, gap assessments and peer reviews against industry competitors. Clients then benefit by ensuring disclosures are targeted to meet industry and stakeholder expectations on coverage and depth.



Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that 3Degrees should be shortlisted by:

• Organizations at the start of the climate change disclosure process.

3Degrees tailors its disclosure-related services to firms that are taking their first steps towards understanding and building a strategy to manage climate disclosures. The firm provides stakeholder education projects in the form of a climate risk academy, which covers the foundational concepts and frameworks associated with climate risk assessment and scenario analysis, including readiness assessments for the Task Force on Climate-related Financial Disclosures (TCFD). Firms looking to build knowledge and understanding of climate change disclosures – and advance capacity over time – should consider shortlisting 3Degrees.

• Multinational firms looking to procure renewable energy across territories.

By virtue of its experience procuring renewable energy globally, 3Degrees should be shortlisted by global firms looking to develop organization-wide renewable energy strategies. 3Degrees has bought, sold and consulted on clean energy in over 65 countries, delivering more than 300 million Guarantees of Origins (GOs), RECs and Energy Attribute Certificates (EACs) for clients over the past 12 months. Customers with global renewable energy procurement portfolios include Mastercard and Verisk.



AECOM provides asset-level implementation expertise with strong climate adaptation capabilities

Founded in 1910 and headquartered in Dallas, Texas, AECOM is a global infrastructure consulting firm. It has approximately 50,000 employees, including more than 420 specialist climate change consultants, working in more than 450 offices in nearly 50 countries. AECOM has an extensive catalogue of delivered climate change service projects, including projects to boost the climate resiliency of coastal reefs for UNESCO World Heritage, nature-based engineering solutions for the State of Texas, and climate risk management for the Airport Authority Hong Kong.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that AECOM has strengths in:

• Climate mitigation, adaptation and implementation.

AECOM achieved a score of 2.3/30 for the climate mitigation, adaptation and implementation capability category – one of the highest scores across the Green Quadrant. AECOM delivers extensive services across both strategic and implementation-focused use cases, with a strong heritage in public-sector services. The firm delivers technical assistance and training on climate risk assessment and sustainable infrastructure investments, and prepares strategies to enhance the coastal protection of facilities and other infrastructure. AECOM also develops climate-sensitive integrated flood risk management strategies. In 2022 the firm helped ensure the ongoing resiliency of New York's waterfront, by developing a novel waterfront development code, and a dedicated waterfront marine administrative unit to enforce it.

• Net zero programme management.

With a score of 2.4/3.0, AECOM achieved the second-highest ranking in the net zero programme management capability category. AECOM delivers multidisciplinary strategy and implementation work, reconciling carbon and energy strategy development – including pathway development – with the ability to provide design services at the asset level. These services encompass full project management capabilities, including cost management, and ongoing progress management against overarching decarbonization targets.

• Built environment decarbonization.

By achieving a score of 2.9/3.0 for the built environment decarbonization capability, AECOM emerges as one of the frontrunners in this category across the Green Quadrant. The firm delivers services to decarbonize both existing and new buildings, covering energy auditing, modelling, strategic energy planning, and lifecycle assessment (LCA) carbon modelling. From a design perspective, AECOM provides technical expertise across architectural, structural, mechanical and electrical design services.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that AECOM could improve its capabilities by:

• Enhancing financed emissions management capabilities with PCAF-specific digital offerings.

AECOM scored 0.8/3.0 for its financed emissions management capabilities – below average in this capability category. Despite acting as a specialist advisor for investor portfolio firms, and delivering carbon performance due diligence as part of investment reviews, AECOM lacks an overarching digital offering for financed emissions management. By providing dedicated carbon management solutions aligned with the Partnership for Carbon Accounting Financials (PCAF) – integrated within AECOM's existing toolset – the firm could expand its offerings to a broader range of portfolio management use cases, with a specific focus on helping institutions manage their real estate portfolios.



• Developing a standalone climate risk quantification and scenario analysis platform.

AECOM achieved a score of 1.9/3.0 for the climate risk quantification and scenario analysis capability. This score is above average across the Green Quadrant; to further improve, AECOM should consider using its in-house climate data analysis tool to create an overarching climate risk management platform, with a focus on providing both transitional and physical risk management capabilities.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that AECOM should be shortlisted by:

Organizations with significant exposure to acute climate risks.

AECOM possesses expertise in delivering climate-resilience-related projects, with significant experience in infrastructure. The firm provides on-demand services for those organizations facing significant near-term business disruption, such as vulnerability assessments, business continuity planning, and resilient infrastructure design and building services.

• Firms looking to embed decarbonization and sustainable design into new-build projects.

By virtue of its engineering legacy, AECOM should be shortlisted by firms looking to develop new infrastructural assets in line with corporate decarbonization targets. AECOM provides extensive design services, encompassing concept and tender documentation production, contract administration, and commissioning. AECOM helped the Sacramento Kings (a member of the US's National Basketball Association (NBA)) design a new sports venue – the Golden 1 Center – which subsequently earned the highest score for a sports venue in the LEED (Leadership in Energy and Environmental Design) building certification system.



Anthesis brings dedicated climate change expertise to the table

Founded in 2013, Anthesis is a dedicated sustainability solutions provider headquartered in London, UK. With over 1,400 employees based in 42 countries, Anthesis is a certified B-Corp organization. The firm has made 16 acquisitions since 2012, with notable examples including the Climate Neutral Group – a dedicated carbon offset project developer and service provider – in January 2022, and Padd Energy – a specialist energy consultancy – in July of that year. Anthesis is partnered with the Science Based Targets initiative (SBTi) and is an advisory member of both the Science Based Targets Network (SBTN) and the Task Force on Nature-related Financial Disclosures (TNFD). The majority of Anthesis's clients are based in the US and EU, although the firm is also active across the Asia-Pacific (APAC) region, South America and the Middle East and Africa.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that Anthesis has strengths in:

• Carbon credit support and sourcing.

With a score of 2.8/3.0, Anthesis is the top scorer in the carbon credit support and sourcing category. Anthesis offers both strategy and procurement services relating to carbon offsets, encompassing mitigation strategy definition, carbon markets training, and direct procurement. The Climate Neutral Group – acquired by Anthesis in 2022 – has operated in the market for more than 20 years and has supported over 100 clients in offsetting 15 million tonnes of CO². Additionally, Anthesis is a founding member of the International Carbon Reduction and Offset Alliance (ICROA). Anthesis's in-house project development team specializes in nature-based projects, such as regenerative agriculture, and soil and blue carbon projects.

Carbon data management and accounting.

Anthesis scored 2.3/3.0 in the carbon data management and accounting category, placing it amongst the higher scorers in this space. The RouteZero platform developed by Anthesis provides carbon accounting, reduction and mitigation recommendations for clients by identifying emissions hotspots based on scope, geography and supplier. Furthermore, Anthesis provides a range of advisory services relating to emissions data management, covering inventory management, benchmarking, lifecycle analysis and pre-assurance.

Net zero disclosures.

Anthesis scored 2.2/3.0 for net zero disclosures – above average in this category. The firm provides emissions-disclosure-related services primarily geared towards voluntary frameworks, such as the CDP (Carbon Disclosure Project), Global Reporting Initiative (GRI) and SBTi. Anthesis also has considerable expertise in net zero disclosures for cities, such as benchmarking and action planning across regions in the UK, Sweden and Spain. The firm has developed SCATTER (Setting City Area Targets and Trajectories for Emissions Reduction) – a tool for cities to report and model carbon impacts – with considerable penetration across UK local authorities.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that Anthesis could improve its capabilities by:

Developing a proprietary digital tool for climate risk quantification and scenario analysis.

Anthesis scored 1.8/3.0 for the climate risk quantification and scenario analysis capability. Despite offering competitive strategy and governance offerings relating to climate risk, including the integration of climate risk into organization-wide risk management frameworks, Anthesis could improve its offering by developing a dedicated platform for managing climate scenario analysis, allowing users greater insight into climate risk data to develop adaptation and mitigation strategies.



Enhancing its fleet decarbonization digital offerings.

Anthesis achieved a score of 1.1/3.0 for its fleet decarbonization capabilities, which is below average for this capability. Although Anthesis conducts fleet decarbonization activities as part of broader carbon strategy work, the firm lacks a convincing standalone offering. Anthesis could improve its capabilities in this area by integrating with or developing a bespoke fleet telematics solution, using these data as an input within its RouteZero platform. This would help clients improve the overall quality of data within fleet-specific carbon accounting contexts.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that Anthesis should be shortlisted by:

• Firms looking to develop a comprehensive carbon offset strategy.

With strong capabilities relating to net zero strategy, governance and target-setting – as well as carbon credit support and procurement – Anthesis should be shortlisted by firms looking to develop, or otherwise upgrade, carbon credit utilization and offset strategies. By combining procurement and strategy services relating to offsets, Anthesis can help those organizations seeking to directly procure credits or build carbon credit procurement strategies. Additionally, clients can use the RouteZero platform to demonstrate how carbon credits are used as part of an overall decarbonization strategy, and to ensure offset strategies are compliant with the recommendations set out by the SBTi.

• Organizations seeking to train employees on climate-change-related issues.

Anthesis offers dedicated climate-change-related education products, notably the Anthesis Activator Academy. The Academy provides eLearning courses for clients, featuring interactive content and scenario-based activities. As part of a broader solution for human capital management, firms looking to educate employees on climate change and drive carbon literacy should consider shortlisting Anthesis.



Arcadis applies engineering and design expertise to deliver end-to-end climate change solutions

Founded as a land reclamation specialist in 1888 in the Netherlands, Arcadis is now a global design, engineering and management consulting firm based in Amsterdam. It has more than 36,000 employees in over 70 countries, and segments its service offerings across four categories: resilience, places, mobility and intelligence. In 2022 Arcadis made a series of acquisitions that boosted its climate change services, including that of Giftge Consult, to strengthen its energy transition offerings, and IBI Group, a sustainable design and engineering consultancy. Arcadis is a member of several climate-change-related partnerships, including the UK Green Building Council (UKGBC) and the World Business Council for Sustainable Development (WBCSD), as well as industry-specific associations, such as the Electric Power Research Institute (EPRI) in the US. Arcadis has pledged to reach net zero across its operations by 2035, and has had its near-term GHG targets approved by the Science-Based Targets initiative (SBTi).

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that Arcadis has strengths in:

• Built environment decarbonization.

With a score of 2.6/3.0, Arcadis is amongst the top performers in the built environment decarbonization capability category. The firm provides a range of services relating to built environment decarbonization, spanning strategy, technical and implementation capabilities, and encompassing investment strategy, technical return on investment (ROI) analysis, and technical due diligence relating to environmental performance. Additionally, Arcadis provides services relating to embodied building carbon, such as a building information model connected to the carbon footprint and financial data of materials. Arcadis is currently working with the Royal Botanic Garden Edinburgh as part of the 'Edinburgh Biomes' project; this involves the construction of a sustainable energy centre featuring source heat pumps and low-heat-loss pipework, and has resulted in a 12% reduction of emissions on site.

• Fleet decarbonization.

Arcadis places amongst the top five firms for fleet decarbonization services, with a score of 2.1/3.0. The firm has the capability to provide fleet decarbonization projects across strategy, planning and final implementation. Its capabilities encompass setting a baseline for current vehicle use; forecasting infrastructure and power needs; strategic advisory, including policy recommendations and implementation plans; and procurement or turnkey delivery of electric vehicles (EVs). Arcadis also works with proprietary tools for fleet decarbonization, such as the Fleet2Zero application, and SparkFleet, which use telematics data to support vehicle analysis.

Climate mitigation, adaptation and implementation.

At 2.1/3.0, Arcadis is amongst the top scorers in the climate mitigation, adaptation and implementation category. The firm has a long history of technical climate resilience implementation work, with over 130 years of experience in water resiliency and risk adaptation. Arcadis can provide strategy and technical projects covering benchmarking and gap analysis, portfolio screening and vulnerability assessments – alongside implementation services at the site level. Additionally, the Arcadis Climate Resilience Analytics tool can simulate the effectiveness of mitigation projects against varying weather scenarios, helping clients create an optimized delivery plan for implementation.



Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that Arcadis could improve its capabilities by:

- Strengthening its climate risk, strategy and governance capabilities for better stakeholder alignment.
 Arcadis scored below average on climate risk, strategy and governance. Despite strong technical expertise relating to portfolio screening, transition planning, and benchmarking and gap analysis, the firm could develop its capabilities in this area by improving its stakeholder alignment. This would involve integrating climate risk within broader enterprise risk management processes, and delivering stakeholder management projects with wider value chain participants.
- Improving its digital capabilities for net zero strategy, governance and target-setting.

 Arcadis scored below average for net zero strategy, governance and target-setting, with 1.3/3.0. Although Arcadis offers services for net zero target-setting, including SBTi submission and abatement modelling, higher performers in this category offer more comprehensive digital services, either through extensive partnerships or in-house-developed software-as-a-service (SaaS) solutions. Arcadis should consider using its proprietary internal tool the Net Zero Decarbonization Model as the basis of a standalone platform for clients.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that Arcadis should be shortlisted by:

- Organizations with significant physical climate risk exposure to assets.
 - Arcadis has deep experience in climate mitigation and adaptation, across both the public and private sectors, including in strategy expertise, governance and site-level assessments. Organizations with substantial physical climate risk exposure or who are facing stakeholder or regulatory demand to mitigate this risk should consider Arcadis, especially as they shift from pure risk quantification to risk mitigation across assets and operations.
- Firms under regulatory pressure to decarbonize built environment assets.
 - Firms facing pressure from buildings-focused climate change regulation such as New York's Local Law 97 should contemplate shortlisting Arcadis. With significant technical and strategic expertise in built environment decarbonization, alongside renewable energy procurement capabilities, the firm is well-positioned to deliver decarbonization services in this sector. Additionally, Arcadis possesses a dedicated digital solutions business area Intelligence to develop software solutions in this space.



Deloitte blends deep strategic and technical expertise for climate change consulting services

Founded in 1845, Deloitte is an international professional services network headquartered in London, UK. The firm has more than 415,000 employees based in over 150 countries; in 2022 it launched a programme to train all of its employees on climate change and sustainability-related topics. Deloitte has developed a collaborative approach to managing climate change, in tandem with NGOs, other firms and entrepreneurs, through initiatives and incubators such as the Sustainability Next programme, the GreenSpace Tech initiative, and the Deloitte Center for Sustainable Progress. Furthermore, Deloitte has pursued a rapid acquisition strategy for climate change consulting, acquiring Carbon Care Asia, OCT Emissions Solutions and PACER since May 2022. This expands the firm's capabilities in the fields of carbon strategy, decarbonization technology and infrastructure engineering, respectively.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that Deloitte has strengths in:

• Carbon data management and accounting.

Deloitte achieved a score of 2.5/3.0 for the carbon data management and accounting capability – the top score in this category across the Green Quadrant. Deloitte provides digitally enabled emissions data management through the GreenLight Tech solution. Consisting of multiple integrated software assets, the solution helps clients determine a path to net zero, engage with value chain participants, and ultimately disclose emissions-related data. Deloitte additionally partners with a range of carbon management solution providers, such as Persefoni, Salesforce, SAP and ServiceNow.

• Climate risk, strategy and governance.

With a score of 2.4/3.0, Deloitte emerged as one of the highest scoring firms across the climate risk, strategy and governance capability category. The firm provides services encompassing corporate strategy and governance – including board and executive-level education – climate strategy transformation, internal controls and tax incentivization. Furthermore, Deloitte has extensive regulatory compliance capacity, as well as specialized capabilities across the government and public, and financial services, sectors. The firm's digital solutions include ESG Insights, allowing businesses to benchmark their performance against industry peers, and RegHub, a tool that provides information on regulatory changes to help clients navigate the mutable climate policy landscape.

Climate risk, opportunity and adaptation disclosures.

Deloitte scored 2.4/3.0 for the climate risk, opportunity and adaptation disclosures capability – one of the top scores in this category. Deloitte provides a broad range of services relating to climate readiness, disclosure preparation, stakeholder relations, and limited and reasonable assurance of climate-risk-related data. For Task Force on Climate-related Financial Disclosures (TCFD) readiness, Deloitte advises on financial statement implications and the choice of measurement and disclosure of climate metrics and targets.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that Deloitte could improve its capabilities by:

• Building out asset-level climate mitigation and adaptation offerings.

Deloitte scored 1.5/3.0 for the climate mitigation, adaptation and implementation capability. Despite strong strategy and technical offerings in this area – covering regulatory risk assessment, green finance advisory, and climate stress testing – improved capabilities for physical asset-level climate adaptation would round out the firm's offerings. This could be achieved through broader partnership networks with dedicated infrastructure engineering specialists.



• Expanding its implementation capability for industrial plants.

With a score of 1.6/3.0, Deloitte ranks below average in the industrial plant decarbonization category. The firm delivers a broad array of projects relating to net zero transformation implementation, encompassing abatement project development, pilot and full-scale project advisory, and financing and tax advisory. By expanding its capabilities for asset-level technology implementation, Deloitte could provide fully end-to-end services for industrial plant decarbonization.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that Deloitte should be shortlisted by:

• Financial institutions looking to improve the quality of their PCAF-aligned disclosures.

Deloitte provides strong capabilities for both disclosure management and financed emissions management. From a strategy design perspective, the firm is able to support business model innovation, apply PACTA (Paris Agreement Capital Transition Assessment) methodologies for sectoral targets in investment portfolios, and directly support financial institutions with implementation of the Partnership for Carbon Accounting Financials (PCAF) methodology for financed emissions carbon accounting. This tranche of capabilities – alongside a global footprint – makes Deloitte a suitable choice for shortlisting by financial institutions looking for both strategy and implementation support.

• Organizations seeking to develop and commercialize carbon abatement.

Deloitte's proprietary platform – ClearCarbon – helps firms commercialize carbon assets, from project origination to transaction and commercialization. The solution can be used either to generate new revenue streams or to provide auditable data trails for supply chain insetting initiatives, including at a product level. Additionally, Deloitte is partnered with ClearBlue Markets, a dedicated carbon markets consultant headquartered in Toronto, Ontario. Firms looking to understand the landscape for offset-related incentives would also benefit from Deloitte's tax advisory expertise.



ENGIE Impact uses its global footprint to bridge the gap between boardrooms and assets

ENGIE Impact was founded in 2019 as a dedicated climate change and sustainability services hub, within the large French utilities provider ENGIE. ENGIE Impact has over 2,000 employees across 18 offices worldwide, servicing over 1,500 clients at more than one million specific sites. The ENGIE group itself has more than 96,000 employees, and reported revenues in 2022 of €93.9 billion. In 2021 ENGIE Impact announced the launch of ENGIE Ellipse, a carbon management platform with a focus on emissions footprinting, decarbonization target-tracking, and scenario-modelling. ENGIE Impact's clients are predominantly located in North America, with significant penetration in the manufacturing and built environment industry sectors.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that ENGIE Impact has strengths in:

Built environment decarbonization.

ENGIE Impact achieved a score of 2.3/3.0 for built environment decarbonization, and is thus one of the top scorers in this capability category. The firm provides deep expertise around energy efficiency initiatives, green electricity, thermal energy, and carbon removal; the broader ENGIE network supplements these capabilities with solar, wind and storage solutions for energy supply. ENGIE has developed a dedicated digital tool – the ENGIE Impact Data Management Platform – to help firms understand portfolio energy consumption and identify areas for improvement. At the site level, ENGIE Impact can assist with implementing efficiency measures, such as lighting system and HVAC upgrades. ENGIE Impact also supports implementation of the US Environmental Protection Agency (EPA) ENERGY STAR programme in the US, enabling organizations to make reduction benchmarks through portfolio analysis.

Carbon data management and accounting.

With a score of 2.4/3.0, ENGIE Impact ranks higher than average in the carbon data management and accounting capability category. Through its dedicated carbon management services offering, the firm provides Scope 1, 2 and 3 accounting services, including Scope 3 materiality assessments, and quantification of hard-to-identify emissions. On its proprietary platform ENGIE Ellipse, clients can digitize emissions data management processes and engage in value chain footprinting exercises.

Renewable energy supply and decarbonization.

ENGIE Impact scored 2.1/3.0 for the renewable energy supply and energy decarbonization capability, which is above average in this Green Quadrant. ENGIE Impact can provide stakeholder management projects, develop current state assessments (covering costs, price trends and regulatory analysis), and build risk management strategies relating to energy procurement. Furthermore, the firm can deliver direct procurement services for Renewable Energy Certificates (RECs), physical and virtual power purchase agreements (PPAs and VPPAs), and community solar projects. On May 12, 2022, ENGIE Impact announced a contract with automotive firm Faurecia to provide, install, operate and maintain solar panels for an eventual cumulative peak capacity of 60MW by the end of 2023.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that ENGIE Impact could improve its capabilities by:

Expanding its climate mitigation and adaptation capabilities to develop a holistic offering.

With a score of 1.1/3.0, ENGIE Impact ranked below average for the climate mitigation, adaptation and implementation capability category. Although the firm provides services to build an organization's resilience to risks such as extreme weather events – including sector-specific roadmaps – and has transition risk management capabilities focused on energy, water and waste, it could expand its capacity through focused offerings across a broader range of climate-related risks, such as a larger array of physical risks, and transitional risks such as reputational risk management.



• Building a dedicated platform for climate risk quantification and scenario analysis.

ENGIE Impact achieved a score of 1.3/3.0 for the climate risk quantification and scenario analysis capability. The firm provides proprietary digital tools and undertakes analysis under multiple scenarios and against relevant timescales for prioritized risks and opportunities. It could improve its offering by reconciling its digital tools in a single software-as-a-service (SaaS) platform, integrating this with the ENGIE Ellipse platform – thus allowing customers to manage both physical climate and transitional carbon risk in one digital environment, for efficient disclosure and performance management.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that ENGIE Impact should be shortlisted by:

• Global firms looking to holistically improve the carbon performance of assets.

With strong capabilities across building decarbonization and renewable energy supply and procurement – alongside a global footprint, with teams in the Americas, Europe and Asia-Pacific (APAC) – ENGIE Impact should be shortlisted by firms looking to implement global renewable energy strategies. ENGIE Impact can help firms procure renewable energy, while boosting the energy efficiency of their assets through new built environment technologies. To manage residual emissions, ENGIE Impact additionally offers carbon offset strategy and procurement services.

• Organizations with complex asset portfolios seeking to benchmark asset performance.

ENGIE Impact possesses multiple capabilities to help firms with complex, geographically diverse asset portfolios: proprietary digital tools, experience in energy-intensive sectors at industrial sites, and the ability to conduct technological and economic assessments of site performance to identify best-fit decarbonization pathways.



ERM has strong technical expertise across decarbonization and climate risk

ERM is a global, pure-play sustainability consultancy, headquartered in London, UK. Founded in 1987 after the merger of UK-based ERL and US-based ERM in 1977, ERM now has more than 5,500 employees in 40 countries. In 2021 American global investment firm KKR bought a majority stake in the firm. ERM has made a series of strategic acquisitions in recent years, including of MarineSpace, a marine environment consultancy, and Australia-based climate change and sustainability consultancy Point Advisory. ERM is a member of a number of leading climate institutions, such as the Natural Climate Solutions Alliance, the Science Based Targets initiative (SBTi) and the UN Global Compact.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that ERM has strengths in:

• Carbon data management and accounting.

With a score of 2.4/3.0, ERM emerged as one of the top scoring firms for the carbon data management and accounting capability in the Green Quadrant. ERM delivers emissions inventory and corporate net zero data management projects globally, powered by strong digital offerings through partnerships with carbon management platform providers such as Enablon, Intelex, SAP and Sphera. Additionally, ERM develops and provides a range of proprietary platforms, including emissions.AI, which uses digital twin technology to identify decarbonization levers for emissions-intensive sites. In May 2023 ERM announced a partnership with Planet Labs, allowing clients to use satellite data to identify emissions hotspots globally.

• Financed emissions management.

ERM achieved a score of 2.4/3.0 for the financed emissions management capability category – one of the top three scores across the Green Quadrant. ERM works with three of the top ten largest global banks and delivers projects for financial institutions to develop emissions models, set emissions pathways, identify decarbonization levers and establish tracking metrics. ERM's in-house Net Zero Compass platform is aligned with the Partnership for Carbon Accounting Financials (PCAF) methodology, allowing asset managers to define and track their net zero roadmaps. In 2021 ERM worked with JPMorgan Chase & Co. to develop the Carbon Compass methodology, which describes how the bank will align financing activities with the climate goals of the Paris Agreement.

• Climate risk quantification and scenario analysis.

ERM scored 2.3/3.0 for climate risk quantification and scenario analysis, and is thus a top scorer in this capability category. ERM authored the technical guidance on scenario analysis for climate-related financial risk assessment on behalf of the G20 Financial Stability Board. ERM's Climate Impact Platform (CIP) – which has been deployed commercially for over a year – provides a digital framework to conduct physical and transition risk assessments aligned with the Task Force on Climate-related Financial Disclosures (TCFD). The platform has 50 climate indicators and three climate change scenarios that provide forecasts across nine time horizons; recently, ERM developed new functionality to allow the parallel assessment of both transition and physical risks for an organization.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that ERM could improve its capabilities by:

• Furthering its technical capabilities for fleet decarbonization.

ERM ranks above average in the fleet decarbonization capability category, with a score of 1.8/3.0. However, this services capability has strong potential for improvement. ERM has a dedicated digital tool for managing and processing telematics data through its Connected Road Safety offering, and strong strategy capabilities for fleet optimization, such as total cost of ownership and marginal abatement cost modelling. For ERM to emerge as a frontrunner in this space, it should buy, build or partner for additional capabilities at the implementation level, such as on-site-specific charging solutions and fleet procurement offerings.



• Providing direct carbon credit procurement services.

With a score of 1.7/3.0, ERM ranks below average for the carbon credit support and sourcing capability. Despite carbon credit support offerings in strategy development, trading desk assistance, due diligence and feasibility advisory, ERM does not directly provide procurement services, unlike the leading firms in this category. ERM should consider partnering or developing direct procurement capabilities to enhance its value proposition in this area.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix that believes ERM should be shortlisted by:

- Organizations looking to differentiate disclosures based on the quality of the underlying carbon data.
 ERM should be shortlisted by firms looking to gain a competitive edge by improving the quality of their carbon accounting. With a strong digital approach, through its robust partnership ecosystem and in-house digital tools, ERM is a suitable partner for firms seeking to use digitization to improve carbon data quality. Furthermore, through partnerships with satellite data providers such as Planet Labs, ERM's clients benefit from an 'outside in' view of emissions hotspots, with particular relevance for methane and fugitive emissions sources.
- Firms aiming to produce market-leading TCFD disclosures.

ERM played a direct role in drafting the original TCFD framework in 2017 and has provided support for recent iterations of the GHG Protocol, including the upcoming Land Sector and Removals guidance. Additionally, ERM plays an active role in ongoing climate disclosure thought-leadership, through its SustainAbility Institute. Firms looking to produce high-quality TCFD disclosures will also benefit from ERM's digital solutions for climate risk management, which combine both physical and transition risk analysis – a key element of TCFD-derived disclosure requirements.



EY has market-leading capabilities in climate change consulting

EY is a global professional services firm headquartered in London, UK, with over 394,000 employees across 700 office locations in more than 150 countries. Established in 1989, after the merger of Ernst & Whitney and Arthur Young & Co., EY provides assurance, tax, consulting and advisory services; the majority of EY's clients are situated in Europe, the Middle East, India and Africa, with significant client bases in the Americas and Asia-Pacific (APAC). Since 2022 EY has made a series of acquisitions in the climate change consulting space, including of AFARA, a Canadian sustainability consulting firm, and Attalea, a Spanish ESG consultancy. EY is a member and advisor to a variety of climate and carbon organizations, such as Climate Action 100+, the IFRS Foundation, the Task Force on Climate-related Financial Disclosures (TCFD) and the World Business Council for Sustainable Development (WBCSD). EY also has a large number of digital partners, and works with solutions providers such as Enablon, IBM, Microsoft, SAP and ServiceNow.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that EY has strengths in:

• Climate risk quantification and scenario analysis.

EY earned a top score of 2.4/3.0 for the climate risk quantification and scenario analysis capability. EY provides intertwined TCFD scenario analysis and quantitative risk modelling, powered by the EY Climate Analytics Platform (EY CAP). EY CAP enables the assessment of more than 30 physical climate risk hazards – both acute and chronic – providing assessments in intervals to 2100. The firm has developed additional tools, such as the EY Carbon Modelling Tool, to quantify transition risks, using integrated economic modelling against a range of economic scenarios, with Power BI integration.

• Climate risk, strategy and governance.

EY scored 2.5/3.0 for climate risk, strategy and governance – the joint top score in this category. The firm has capabilities across risk identification, screening and maturity assessment, alongside stakeholder engagement, enterprise risk management and the development of specific governance management structures. In addition, EY annually publishes the 'EY Global Climate Risk Barometer', an analysis of global climate risk strategy and governance disclosures across 1,500 firms in 37 countries, enabling firms to benchmark their maturity and identify areas for strategic improvement. In partnership with Enablon, EY has developed a dedicated ESG solution to track and manage climate-related risks and control measures, alongside stakeholder engagement initiatives.

• Financed emissions management.

EY achieved a score of 2.6/3.0 for financed emissions management – the second-highest score in this category. EY provides a range of solutions specifically targeted at financial institutions, such as financed emissions assessments, portfolio net zero roadmaps, and the integration of climate change performance within due diligence projects. EY was among the first of the professional services firms to sign on as a stakeholder endorser of the UN Principles For Responsible Investment (UN PRI). The firm has also developed a dedicated solution, in conjunction with IBM Envizi, to help financial institutions calculate and manage their financed emissions.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that EY could improve its capabilities by:

• Expanding its fleet decarbonization offerings digitally and through implementation capabilities.

EY scored 1.6/3 for fleet decarbonization, which is below average for this category. Despite considerable capabilities for managing and understanding electric vehicle (EV) incentives – including a dedicated digital EV Incentive Tool, which assists clients with diesel emissions reduction incentive programmes in the US – frontrunners in this area demonstrate a greater depth of implementation capability. By growing its implementation capacity, EY could provide end-to-end fleet decarbonization services.



• Building out site-level capabilities for net zero programme management.

Despite scoring above average for net zero programme management, with 1.8/3.0, EY could improve by further investing in dedicated implementation specialists, such as engineering professionals. EY currently offers governance and organizational structural development services, including transformation office and change management services, but lacks asset-level, boots-on-the-ground support for net zero programme management.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that EY should be shortlisted by:

• Firms looking to develop a digital-first approach to decarbonization.

EY possesses strong digital capabilities, through established partnerships and in-house-developed tools, to help firms achieve their decarbonization ambitions and boost their data quality for performance management and disclosure purposes. EY has an alliance programme, consisting of over 130 partnerships with a range of digital solutions providers. This programme delivers both broad carbon management expertise – such as through partnerships with Enablon, Microsoft and SAP – and capability for more specific use cases, such as via the EY Decarbonization Navigation tool, which supports firms in identifying key decarbonization levers.

• Organizations that must assure emissions data due to upcoming regulations.

EY offers independent, third-party, non-financial reporting assurance services covering Scope 1, 2 and 3 data, according to the EY Sustainability Assurance methodology – an approach designed to balance risk with audit efficiency. Combined with EY's digital capabilities for carbon management, which help organizations improve their data quality and surrounding controls, the firm offers strong assurance capabilities, particularly for customers obliged to include climate-related data in financial disclosures.



KPMG stands out for its climate risk strategy and emissions data assurance capabilities

Headquartered in London, UK, and with a history dating to 1891, KPMG is a multinational professional services network offering services across audit and assurance, tax and legal, and advisory. KPMG has over 265,000 employees, in 143 countries and territories globally. The firm's climate change consulting function services clients around the globe, with the largest portion of revenue (approximately 50%) coming from the Europe, Middle East and Africa (EMEA) region. In October 2021 KPMG announced a \$1.5 billion investment in its global ESG solutions, to be spent on training and expanding the firm's global workforce, and setting up KPMG Regional ESG Hubs in Europe, Asia-Pacific (APAC) and the Americas, along with KPMG Emerging Markets Accelerators for developing nations. As part of this commitment, KPMG acquired Brazilian sustainable finance consultancy Resultante in November 2022. KPMG has established a comprehensive set of strategic alliances, both with technology firms such as Google, IBM, Microsoft, ServiceNow and Workday, and technical partners such as Bureau Veritas, Johnson Controls International (JCI) and TechnipFMC.

Strengths And Differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that KPMG has strengths in:

• Climate risk, strategy and governance.

KPMG scored 2.5/3.0 for climate risk, strategy and governance – the joint top score in this category. KPMG offers a strategy-led approach to climate risk, with expertise in readiness reviews and board engagement capabilities for climate action. Through the use of its proprietary ClimatelQ multi-industry risk management tool to help firms assess both physical and transitional climate risks, KPMG helps firms understand and project the impact of climate change on their business. KMPG assisted global asset management firm Apollo – which manages more than \$500 billion of assets – to develop a climate change strategy, covering maturity assessments, climate ambition quantification and strategy development.

• Climate risk, opportunity and adaptation disclosures.

With a score of 2.5/3.0, KPMG leads in this Green Quadrant for climate risk, opportunity and adaptation disclosures. KPMG consultants have strong regulatory expertise at the entity, portfolio and product level, with experience across both voluntary and mandatory frameworks, as demonstrated by the firm's lead role on the Initiative Climat International (iCl) working group for Task Force on Climate-related Financial Disclosures (TCFD) implementation recommendations under the UN Principles For Responsible Investment (UN PRI). To help clients assess their readiness under a variety of climate scenarios, KPMG has developed a proprietary risk visualization tool, called the Climate Risk & Resilience Navigator. In addition, KPMG helps clients respond to the demands of the Transition Plan Taskforce (TPT) and supported the development of the TPT's Implementation and Sector Guidance.

• Emissions data assurance.

KPMG emerged as the top provider of emissions data assurance services in this Green Quadrant, with a score of 2.7/3.0. The firm provides both limited and reasonable assurance of emissions data, alongside readiness assessments for GHG inventories in line with both international and US standards. KPMG also reviews emissions inventories against international standards, such as the GHG Protocol, covering governance standards, methodologies, assumptions and estimations. Furthermore, KPMG is able to assess the credibility of applied emissions factors from a variety of sources, such as the Global Logistics Emissions Council (GLEC), the International Energy Agency (IEA) and the UK's Department for Environment, Food & Rural Affairs (Defra), and perform on-site visits to improve site-level data collection processes and verify the completeness of reported emission sources. KPMG emissions data assurance clients include Barclays and GUESS.



Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that KPMG could improve its capabilities by:

• Expanding its asset-level capabilities for climate mitigation and adaptation.

With a score of 1.8/3.0, KPMG ranks above average for climate mitigation, adaptation and implementation. However, despite strong capabilities relating to strategic climate transition planning, Verdantix finds that there are gaps in asset-level climate resiliency implementation, such as at the design and planning level. KPMG could boost its offerings in this area by partnering with established players in the engineering and industrial design space, allowing customers to benefit from end-to-end climate resiliency, from the boardroom to the asset level.

Enhancing net zero programme management through strategic partners and alliances.

KPMG scored below average for net zero programme management, with 1.4/3.0. Although able to leverage its strong strategic, governance and financing expertise – such as for emissions monitoring and assurance, digital capabilities and carbon pricing – KPMG does not possess extensive in-person, site-level programme management capabilities. The firm should expand its strategic partnerships with players in this area to enhance its offering.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that KPMG should be shortlisted by:

• Firms seeking complex tax, legal and financial incentive advice for business model transformation.

KPMG possesses strong capabilities across climate change policy, including for tax, regulations and incentives. Not only can KPMG assist firms in staying ahead of the regulatory agenda, it can leverage green financing expertise to help clients raise capital for business model transformation. KPMG also possesses expertise in environmental taxes, incentives, subsidies and grants, including around EU Green Deal advisory on tax and access to funding.

• Organizations preparing for the onset of regulated climate disclosures.

With the emergence of global climate change disclosure regulations – notably the EU's Corporate Sustainability Reporting Directive (CSRD) and the anticipated – but delayed – climate change disclosure rule from the US Securities and Exchange Commission (SEC) – firms are under increased pressure to ensure that emissions disclosures are both accurate and assured. KPMG's capabilities in disclosure and assurance-related services make it a strong shortlisting candidate for businesses that are at the readiness stage for complying with regulations. Furthermore, KPMG's global footprint will be a benefit to firms with cross-jurisdictional operations and complex disclosure requirements.



PwC's global network provides net zero strategy and emissions data assurance expertise

PwC was founded in 1998, when Coopers & Lybrand merged with Price Waterhouse; both constituent firms have histories dating to the 18th century. PwC is an international professional services brand of firms, which operate as partnerships under the PwC brand. In total, PwC has 328,000 employees, across 742 locations in 157 countries. More than 10,000 PwC employees work in the sustainability space. The majority of the firm's climate change clients are based in Europe, the Middle East and Africa (EMEA), with significant client bases in Asia-Pacific (APAC) and the Americas as well. PwC has been a member of the World Business Council for Sustainable Development (WBCSD) since 2001 and was also a member of the Real Economy and Managed Phase Out of Stranded Asset workstreams for the Glasgow Financial Alliance for Net Zero (GFANZ).

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that PwC has strengths in:

• Emissions data assurance.

With 2.4/3.0, PwC is a top scorer in emissions data assurance. The firm provides both public assurance opinions and private assurance to audit committees, as well as limited and reasonable assurance. Additionally, PwC can provide assurance across Scopes 1, 2 and 3 emissions, as well as on specific disclosures, such as avoided emissions. PwC also offers accompanying assurance services, such as advising on upcoming assurance requirements for specific regulations and disclosure frameworks, data quality assessments, and boundary identification for financial reporting. In addition, the firm conducts tests on assurance procedures to verify the existence of appropriate audit trails.

Net zero strategy, governance and target-setting.

PwC achieved a score of 2.3/3.0 for the net zero strategy, governance and target-setting capability criteria – one of the highest scores across the Green Quadrant. PwC's offerings encompass maturity assessment and baselining, decarbonization lever identification and pathway analysis, and transformation implementation of operating models, operations, supply chains and assets. Furthermore, PwC offers a digital tool – the Green Taxes and Incentive Tracker – which covers more than 800 taxes and 600 incentives globally, to help clients factor these policy instruments into strategic decision-making. Additional digital offerings are its TCFD Readiness Assessment Diagnostic tool, and ESG Pulse, a web-based solution that helps firms determine the maturity of their ESG strategy.

• Financed emissions management.

PwC scored 2.8/3.0 for the financed emissions management capability category – the top score for this capability in the Green Quadrant. The firm helps financial institutions measure, monitor and mitigate financed emissions, through services such as decarbonization strategy and transition planning against established frameworks, such as that developed by the Transition Plan Taskforce (TPT). Notably, PwC has the capability to support clients as part of an end-to-end managed service offering, encompassing data collection, carbon accounting and reporting. PwC has developed a suite of dedicated tools for financial institutions, such as Carbon Explorer, to assist with data estimations, and Portfolio Emissions Manager, a financed emissions calculation and scenario analysis engine.



Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that PwC could improve its capabilities by:

- Developing climate mitigation and adaptation services by partnering with engineering specialists.
 - PwC scored 1.6/3.0 for the climate mitigation, adaptation and implementation capability category. Despite strong capabilities relating to executive engagement, capital sourcing and insurance alongside policy advisory the firm does not possess comprehensive mitigation and adaptation capabilities at the asset level. To improve its offering in this area, PwC should consider partnering with infrastructure and engineering firms to enable customers to bridge the strategy and asset-level hazard mitigation gap.
- Bringing together climate risk digital solutions on one platform.

With a score of 2.0/3.0, PwC ranks above average in the climate risk quantification and scenario analysis capability category. Nevertheless, the firm could further improve by bringing together its technology-enabled solutions – such as its Climate Excellence tool (covering transition risk), its Climate Risk Modelling solution and its Geospatial Climate Intelligence offering – into one dedicated digital solution for climate risk management.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that PwC should be shortlisted by:

- Firms looking to prepare for upcoming regulated climate disclosures.
 - PwC provides end-to-end services for climate change disclosures, with particular strengths in the financial industry. From a digital perspective, solutions such as PwC's Climate Excellence tool for scenario analysis support investors in assessing portfolios for climate change risks and opportunities, across scenarios, regions and sectors. When combined with its capabilities in data assurance, executive engagement and disclosure strategy, PwC is an attractive proposition for firms coming under regulatory scrutiny globally.
- Organizations seeking a digital upgrade of their emissions management strategies.
 - PwC has developed a cohesive set of digital offerings, both through internally built platforms and through partnerships in its PwC Alliance ecosystem. Partners include technology firms Amazon Web Services (AWS), Google, Microsoft, Refinitiv, Salesforce, SAP and Workiva. In December 2022 PwC and SAP announced a co-innovation strategy to create ESG solutions incorporating carbon measuring and reporting. Furthermore, PwC has a dedicated offering that helps firms use Al to determine mitigation and adaptation opportunities, with simulation models to forecast the impact of economic market trends on climate transition risk.



Ramboll's engineering legacy underpins a comprehensive climate change consulting offering

Ramboll is a Copenhagen-headquartered consulting engineering group; in 2003, following a merger with Swedish Scandiaconsult, the firm became the largest consulting engineering group in the Nordics. With over 17,000 employees, Ramboll operates across 35 countries; the majority of its clients are based in Europe, with operations also in North America, Asia-Pacific (APAC), South America and South Africa. Ramboll's overarching sustainability strategy – entitled The Partner for Sustainable Change – has led to investments in green energy, in decarbonizing energy-intensive sectors, and in sustainable urbanization services, amongst others. Ramboll has also developed a dedicated innovation and digital transformation team that aims to develop both external and internal digital tools.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that Ramboll has strengths in:

• Industrial plant decarbonization.

Ramboll scored 2.4/3.0 for industrial plant decarbonization – the second-highest score across the Green Quadrant. Ramboll delivers a wide array of projects in this field, covering design, production and execution, with a particular focus on advanced manufacturing, encompassing waste heat recovery, renewable energy and hydrogen systems. Furthermore, Ramboll provides technology feasibility, concept design development, and engineering procurement, installation and commissions support. The firm has developed a dedicated tool – Shair – that assists clients in measuring and managing air quality, through real-time visualized air and source contributions, to aid with planning and developing industrial zones.

• Built environment decarbonization.

With a score of 2.6/3.0, Ramboll ranks amongst the top firms in this Green Quadrant in the built environment decarbonization category. With more than 3,000 building specialists, Ramboll designs over 10 million square metres of energy-efficient buildings a year. The firm also offers multiple digital design tools for built environment projects, both through implementing external tools, and through its proprietary software – which includes Conceptualise, to measure and track building emissions; GreenScenario, to aid with climate adaptation planning; and Rehub, to connect supply and demand of reusable building materials.

• Fleet decarbonization.

Ramboll is one of the top five scorers in the fleet decarbonization capability category, with a score of 2.3/3.0. The firm takes a multi-disciplinary approach to fleet decarbonization, with expertise across smart mobility, energy and buildings, and end-to-end capabilities that encompass defining a fleet conversion strategy and implementing site-specific charging solutions. In 2023 Ramboll worked with four municipalities in Denmark to deliver action plans for public electric vehicle (EV) charging and to explore alternative scenarios for converting municipal vehicles to electricity.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that Ramboll could improve its capabilities by:

Expanding its financed emissions management capabilities.

Ramboll scored 1.0/3.0 for the financed emissions management capability category, which is below average across the Green Quadrant. Although Ramboll has the capacity to assist financial institutions – particularly private equity firms – with transactions and portfolio firm management, including emissions management and target-setting, it does not provide a standalone digital offering for emissions management aligned with the Partnership for Carbon Accounting Financials (PCAF), instead using in-house tools and systems.



• Developing additional strategic offerings relating to climate risk disclosure management.

With a score of 1.2/3.0, Ramboll ranks below average in the climate risk, opportunity and adaptation disclosures capability category. The firm provides a range of services relating to disclosure management, backed by strong technical expertise, encompassing governance analysis, financial impact assessments and disclosure content advisory. By developing select capabilities – notably, stakeholder relations management and investor relations and communications advisory – Ramboll could provide additional value to clients in this area.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that Ramboll should be shortlisted by:

• Firms with many facilities or assets that require end-to-end decarbonization services.

Ramboll's climate change consulting offerings combine strong technical and implementation expertise with a particular focus on the built environment. Ramboll should therefore be shortlisted by firms looking to develop a comprehensive net zero programme management system combining goal-setting, decarbonization action planning, and both technical and financial analysis and feasibility. With a dedicated engineering team, Ramboll can also act as a design and energy performance partner for firms with extensive built environment assets.

• Organizations implementing climate mitigation strategies at the asset level.

Firms looking to take asset-level action to prevent losses relating to both chronic and acute physical climate risks should shortlist Ramboll. The firm's digital tool – HazAtlas – has been applied to assets across six continents, in industries such as utilities, marine terminals, technology infrastructure and commercial real estate. Combined with the firm's technical climate adaptation expertise, it allows Ramboll to offer a compelling end-to-end climate mitigation service for firms with direct asset-level exposure to climate risk.



Schneider Electric has extensive capabilities for implementing climate change strategy at the asset level

Schneider Electric is a Paris-headquartered international firm specializing in energy management and digital automation. Founded in 1836, Schneider Electric is a Fortune 500 firm, publicly traded on the EuroNext exchange. The firm has over 128,000 employees based in more than 100 countries, with in excess of 2,700 clients globally. In January 2021 Schneider Electric was named the 'world's most sustainable corporation' by Corporate Knights. Over the past year, Schneider Electric has created multiple partnerships with consulting firms such as Bain and software providers such as Patch; invested in start-ups such as Station A; and acquired Zeigo, a digital platform for renewable power procurement.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that Schneider Electric has strengths in:

• Renewable energy supply and energy decarbonization.

With a score of 3.0/3.0, Schneider Electric is the top performer across the Green Quadrant for renewable energy supply and energy decarbonization. The firm delivers projects for initial education and market intelligence, global renewable energy strategies and roadmaps, supplier engagement and education, formalized solicitation and procurement, and ongoing asset management and reporting. Furthermore, it has a utility-scale off-site power purchase agreement (PPA) procurement advisory practice, with over 20 years of experience. Schneider Electric recently developed a supply chain renewables offering to help firms tackle value chain emissions through renewable energy procurement; in October 2022, in partnership with Ørsted, it convened the first cohort of suppliers to Walmart's Gigaton PPA renewable energy accelerator.

• Built environment decarbonization.

Schneider Electric scored 2.7/3.0 for the built environment decarbonization capability category, making it one of the top scorers in this area across the Green Quadrant. Schneider Electric has developed a three-step framework for firms looking to decarbonize built assets, covering strategy, digital automation and the implementation of decarbonization initiatives such as upgrading building electrical infrastructure and installing on-site renewables. As a full engineering, procurement and construction (EPC) turnkey provider, the firm has experience in supplying and implementing technologies such as lighting, HVAC and solar power.

• Fleet decarbonization.

Schneider Electric achieved a score of 2.4/3.0 for fleet decarbonization – again, one of the top scores in the Green Quadrant. The firm has considerable technical expertise relating to electrical vehicle (EV) implementation, around design and engineering, procurement and installation of EV chargers and software, electrical distribution infrastructure, solar generation and grid integration. Schneider Electric delivers projects across both the public and private sectors, and has a dedicated software product, EV Connect, to manage the full life cycle of electric vehicles and help firms benefit from EV incentives across the US.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that Schneider Electric could improve its capabilities by:

Integrating climate risk quantification and scenario analysis within pre-existing digital tools.

Schneider Electric scored 0.7/3.0 for the climate risk quantification and scenario analysis capability category, which is below average in this Green Quadrant. The firm supports physical and transitional risk and opportunity assessments, including the modelling of financial risk and outcomes, but does not possess

a dedicated digital tool to manage this functionality. To improve its capabilities in this area, it should consider providing this, either by building a dedicated tool or by partnering with independent providers on the market, integrating this capability within its dedicated energy and carbon management platform, Resource Advisor.



Enhancing governance capabilities for climate risk, strategy and governance.

With a score of 1.2/3.0 for the climate risk, strategy and governance capability category, Schneider Electric ranks below average in this Green Quadrant. The firm provides risk and opportunity screening, assessments and stakeholder engagement services, but could improve its capabilities by enhancing its organizational governance and risk process and control structure delivery.

Selection advice for buyers

consider shortlisting Schneider Electric.

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that Schneider Electric should be shortlisted by:

- Firms seeking to decarbonize value chains through renewable energy procurement.
 - Schneider Electric has pioneered the use of renewable energy procurement to decarbonize value chains. Through its consulting services, and technology platforms such as NEO Network and Zeigo, the firm can assist suppliers in advancing both individual and aggregated renewable energy purchases. In August 2022 Amgen and Bristol Myers Squibb joined Energize a programme designed and delivered by Schneider Electric to increase access to renewable energy for pharmaceuticals suppliers.
- Organizations looking to build a digitally supported energy and carbon management strategy.
 Schneider Electric has extensive capabilities for building energy management automation, such as metering, which can be integrated within its energy and carbon management digital solution, Resource Advisor. This enables firms with significant built environment assets to increase the automation of data collection and boost the accuracy of their carbon accounting efforts. Organizations looking to build end-to-end data management strategies, with a focus on data collection from built environment assets, should therefore



SLR has strong capabilities across climate risk management and scenario analysis

SLR is an international environmental and sustainability consultancy, founded in 1994 and headquartered in the UK. It has more than 2,500 employees globally and a dedicated climate and energy transition team of over 300 professionals. It delivers more than 1,300 projects a year to over 400 clients. The majority of these are based in Europe, with additional client bases in the Americas, Africa and Asia-Pacific (APAC). SLR is a silver partner to the Science Based Targets initiative (SBTi) and a member and signatory of the Task Force on Nature-related Financial Disclosures (TNFD); it also has partnerships with a variety of digital solution providers, such as Esri, IBM and Moody's Analytics.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that SLR has strengths in:

• Renewable energy supply and energy decarbonization.

With a score of 2.5/3.0, SLR emerged as the top performer in the renewable energy supply and energy decarbonization capability category. SLR delivers renewable and other energy projects that encompass planning, environmental and technical services, from options appraisal and feasibility studies to full technical contract support, project management and operational performance management.

Climate risk quantification and scenario analysis.

SLR achieved a score of 2.2/3.0 for climate risk quantification and scenario analysis, and thus is a top scorer in this area across the Green Quadrant. The firm's dedicated climate risk management division – CLIMsystems – has been delivering climate risk management projects for 20 years, and has a dedicated digital tool, Climate Insights. This platform shows future changes in climatic variables across multiple physical hazards, based on global climate models up to 2100, with analysis provided for additional five-year intervals. The climate data can be applied to an asset location to estimate potential damage and corresponding losses, thus providing a climate-adjusted physical value at risk for each specific asset.

• Climate risk, strategy and governance.

SLR scored 2.0/3.0 for the climate risk, strategy and governance capability category, which is above average in this Green Quadrant. SLR delivers projects ranging from climate risk and opportunity assessment, to readiness reviews and overarching risk management support. Additionally, the firm can support governance through framework development, double materiality identification and support, and board engagement capabilities. SLR has developed a dedicated, multi-sector database of climate-related risks and opportunities across differing time horizons, to inform climate risk and opportunity identification and assessment.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that SLR could improve its capabilities by:

• Enhancing its digital capabilities for financed emissions management.

SLR scored 1.2/3.0 for the financed emissions management capability, which is below average across the Green Quadrant. Although SLR delivers financed emissions quantification projects, and has expertise relating to sustainable finance – including green bond framework assessment – it does not provide dedicated digital Partnership for Carbon Accounting Financials (PCAF)-enabled platforms. SLR should consider entering into partnerships with carbon management software providers to shore up its capabilities in this area.



• Rounding out carbon credit support offerings in the voluntary space.

With a score of 0.9/3.0, SLR ranks below average in the carbon credit support and sourcing capability category. SLR delivers extensive projects for firms operating in regulated carbon markets, including managing compliance reporting requirements and the carbon credit purchase and surrender process. Additionally, as part of its net zero strategy work, it offers guidance on carbon credit purchasing strategies. However, this is not a standalone offering; to improve its capabilities in this area, SLR should consider adding sentiment analysis, market approach guidance and developer-side support.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that SLR should be shortlisted by:

• Firms looking to upgrade climate risk analysis and risk quantification.

SLR – via CLIMsystems – can leverage a variety of digital tools to improve climate risk management capabilities for clients. These include a dedicated climate risk analytics platform and a variety of spatial analytics tools. These geographic information system (GIS)-empowered tools have been deployed at the regional and state level, as well as in individual catchment-level zones and for specific assets. SLR also provides dedicated flood risk modelling tools to predict future flooding patterns.

• Organizations seeking in-depth supplier engagement support.

With its combination of technical expertise and supply chain management capacity, SLR should be shortlisted by firms seeking to engage their supply chains to improve emissions performance and data management collection. Projects in this area typically involve a multi-stage process, encompassing goal and KPI definition, supply chain mapping and specific supplier identification, data collection and performance management. SLR is also able to aid firms in updating procurement processes to ensure new suppliers are aligned with organizational climate change goals.



WayCarbon provides digitally enabled services across climate risk and decarbonization

Founded in 2006, WayCarbon is a Brazil-based climate change and sustainability consultancy, with 270 employees and clients based in 18 countries. In March 2022 WayCarbon was acquired by Santander. The majority of WayCarbon's clients are within the public sector, mining, and food and beverages verticals; the firm has delivered more than 1,000 projects for over 500 of Brazil's largest businesses, including Minerva Foods, Natura & Co and Vale. WayCarbon is currently working on several government-funded R&D projects, including for the Federal University of Paraiba (UFPB) and Brazil's National Council for Scientific and Technological Development (CNPq), exploring how to use software to support emissions transition in carbon-intensive sectors.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that WayCarbon has strengths in:

Carbon credit support and sourcing.

With a score of 1.9/3.0, WayCarbon ranks above average in the Green Quadrant for carbon credit support and sourcing. The firm has been delivering services related to carbon project development since its inception. WayCarbon has developed over 60 carbon projects – some of them for biofuels – including the first community-based avoided deforestation project in Guinea-Bissau. In 2021, alongside BTG and ForFuturing, WayCarbon launched the first carbon fund in Brazil regulated by the CVM (the Brazilian Securities and Exchange Commission). Additionally, WayCarbon has been expanding its nature-based solutions delivery capability, developing a proprietary geographic information system (GIS) database to support the identification and assessment of potential carbon project opportunities in Brazil.

• Climate risk, strategy and governance.

WayCarbon scored 1.5/3.0 for the climate risk, strategy and governance capability category. The firm started its dedicated climate risk unit in 2013, providing intelligence and advice on structuring risk governance, KPI definitions and risk integration, using the ERM Guidelines of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). WayCarbon delivers projects aligned with the four pillars of the Task Force on Climate-related Financial Disclosures (TCFD). In 2022 it helped Natura & Co converge the climate risk management structures and KPIs of its acquired businesses – Aesop, Avon, the Body Shop and Natura – and integrate a climate risk management process into its holding company structure.

• Net zero strategy, governance and target-setting.

WayCarbon scored 1.7/3.0 in the net zero strategy, governance and target-setting capability category. The firm's decarbonization unit has 68 dedicated professionals, delivering projects spanning emissions quantification, scenario design, abatement technology mapping, marginal abatement cost curves (MACCs) and target-setting. WayCarbon has specific sector expertise across emissions-intensive sectors such as steel, chemicals and mining; in 2022 it approved the first retail Science Based Targets initiative (SBTi) target in Brazil, as well as the SBTi target of the CBA (Companhia Brasileira de Alumínio).

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that WayCarbon could improve its capabilities by:

• Developing PCAF-aligned functionality within its Climas platform.

WayCarbon scored 1.2/3.0 for financed emissions management, which is below average across the Green Quadrant. The firm provides technical consulting on portfolio carbon footprints, decarbonization pathways and strategies aligned with the Partnership for Carbon Accounting Financials (PCAF), the SBTi and the UN Net-Zero Banking Alliance (NZBA), as well as the design of transition loan products. WayCarbon maintains delivery through its proprietary carbon management platform, Climas, which supports the continuous monitoring of emissions and decarbonization targets. The firm could improve its capabilities in this area by developing dedicated PCAF-aligned functionality within the Climas platform.



Launching a SaaS platform for climate risk, allowing clients to independently quantify risk exposure.
WayCarbon scored 1.4/3.0 for the climate risk quantification and scenario analysis capability category, which is below average across the Green Quadrant. The firm's climate risk team currently uses a proprietary tool – MOVE – to identify risk exposure and impact relating to specific assets, using scenarios developed by the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA) and the Network for Greening the Financial System (NGFS). Evolving MOVE into a scalable software-as-a-service (SaaS) platform would allow clients to independently carry out risk analysis, and thus improve the firm's capabilities in this area.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that WayCarbon should be shortlisted by:

- Global agricultural firms looking for end-to-end climate change management capabilities.
 - WayCarbon has significant expertise in the agricultural sector, with both decarbonization and climate risk management capabilities; in addition, through its solution provider ecosystem, it is partnered with technical decarbonization solution providers for agriculture, such as Trinity AgTech. WayCarbon also provides forest, land and agriculture (FLAG) emissions management and sectoral decarbonization approach guidance, supply chain risk management, and supply chain carbon offsetting capabilities. Specific clients in this area include JBS Global, with WayCarbon leading its 2030 beef decarbonization strategy.
- Organizations seeking to develop nature-based carbon credit projects across South America.
 With strong expertise in carbon credit project development across both clean development mechanisms and voluntary carbon credit projects WayCarbon should be shortlisted by organizations looking to develop new carbon credit projects. WayCarbon can deliver development services such as market assessments, technical viability studies and business plan management. Additionally, the firm provides funding for early-stage projects, project monitoring, plan implementation, verification and issuance support.



WSP excels at asset-level decarbonization and climate risk management and mitigation

WSP is a global engineering and professional services firm headquartered in Montreal, Canada, with 66,000 employees in more than 500 offices in 50 countries. WSP has made a series of strategic acquisitions in recent years to expand its climate change and overall ESG service offerings, including of Golder in 2021, and the environment and infrastructure business of the John Wood Group in 2022. Over the last 12 months, WSP's acquisitions have expanded its presence in both Australia and Switzerland; in the same time period, the firm has completed approximately 3,600 climate change consulting projects for some 720 clients. Under WSP's global innovation programme – named Future Ready – the firm has invested in developing networks for expertise globally, covering topics such as sustainable development, carbon capture, and resilience and climate change.

Strengths and differentiators

Based on the Verdantix Green Quadrant analysis, Verdantix finds that WSP has strengths in:

• Climate mitigation, adaptation and implementation.

WSP was the top scorer in the climate mitigation, adaptation and implementation capability category, with a score of 2.4/3.0. WSP provides end-to-end climate services in this area, with a scope covering strategy, technical and implementation work. The firm's adaptive capacity framework helps clients consider four main components of climate adaptation at the facility level: infrastructure, physical operations, employees, and host community. WSP supplements this by leveraging engineering and technical experts to design physical resiliency measures and integrate analysis to create both facility- and organization-wide resiliency plans. WSP worked with the Hawaii Department of Transportation to develop a climate adaptation plan, covering 971 miles of highway and associated assets.

Net zero programme management.

WSP achieved a score of 2.8/3.0 in the net zero programme management capability category, making it the top scorer in this category across the Green Quadrant. The firm provides standalone, specialist net zero programme management services that can involve embedding teams within a client's operations, either across an overall net zero programme, or a specific part of the decarbonization life cycle – for example, a group of specific assets. WSP was lead advisor in the development and implementation of UK National Highway's net zero plan, which covers three distinct decarbonization goals leading to full net zero by 2050.

• Built environment decarbonization.

With a score of 2.9/3.0, WSP is the joint top scorer in the built environment decarbonization capability category. The firm provides services across the full life cycle of the built environment, encompassing initial project feasibility, design, construction and de-commissioning. Additionally, WSP can deliver projects across a variety of implementation initiatives, such as fuel switching, renewable energy generation and energy efficiency upgrades. In 2021, WSP USA provided mechanical, electrical and plumbing engineering and energy analysis to aid McDonald's in opening a net zero restaurant at Disney World, Florida.

Improvement opportunities

Based on the Green Quadrant analysis, Verdantix finds that WSP could improve its capabilities by:

• Building a proprietary platform to enhance financed emissions management.

WSP scored 1.6/3.0 for the financed emissions capability category, which is around the average in this Green Quadrant. The firm has a range of financed emissions management capabilities related to identifying and sourcing capital for decarbonization projects, including climate investment appraisal and structuring. WSP additionally performs financial due diligence on behalf of investors and creates climate investment strategies; it is a member of the technical working group for the World Resources Institute (WRI) Portfolio Carbon initiative. However, the firm does not possess a proprietary digital platform to aid financial institutions in performing carbon accounting aligned with the Partnership for Carbon Accounting Financials (PCAF), instead using a partner network of providers to fill this gap.



• Further investing in platforms for climate risk and scenario analysis.

WSP scored 1.8/3.0 for the climate risk quantification and scenario analysis capability, which is above average in this Green Quadrant. However, despite designing proprietary tools for both physical and transition risk modelling – including for bespoke, asset-specific damage functions – WSP has not yet developed a standalone platform offering in this regard, unlike other frontrunners in this area. Developing such a tool would enable WSP to differentiate itself in the market, thanks to its pre-existing expertise in asset-specific risk management.

Selection advice for buyers

Considering all of the vendors assessed in the Green Quadrant analysis, Verdantix believes that WSP should be shortlisted by:

Multinational firms looking to embed climate strategy across assets.

With strong capabilities across many asset classes, including built environment, infrastructure and industrial assets, WSP should be shortlisted by firms looking to ensure that assets operate congruently with organizational climate change initiatives. Firms seeking to upgrade diverse assets to improve carbon performance – for example, by electrifying fleets and creating the necessary infrastructure to do so – would benefit from WSP's expertise in strategy, technical and implementation projects.

• Organizations aiming to outsource net zero delivery.

WSP has the technical and managerial capacity to deliver net zero programme management at both the asset and organizational level. Firms who have yet to develop the necessary in-house climate change expertise should shortlist WSP to meet this need.



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