



ALLIANCEBERNSTEIN®

June 2025

Climate Change Statement & Task Force on Climate-related Financial Disclosures Report





Table of Contents

A Note from Our Chief Responsibility Officer. 1

Introduction. 2

AB’s Approach to Climate Change 3

The Governance Model Overseeing Our Approach to Climate 6

Incorporating Climate Change into AB’s Risk-Management Framework. 7

Integrating Material Climate Risks and Opportunities into the Investment Process 11

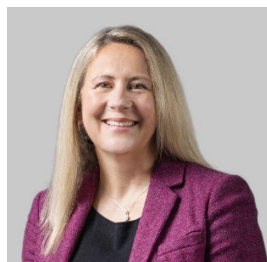
Approaching Biodiversity Risks and Opportunities Within Our Investments 31

Investing in Climate Solutions: AB’s Portfolios with Purpose 39

AB as a Business. 42

Appendix 46

A Note from Our Chief Responsibility Officer



Erin Bigley
AB Chief Responsibility Officer

AllianceBernstein (AB) believes in the importance of disclosure and transparency, so we are pleased to present this year's Climate Change Statement & Task Force on Climate-related Financial Disclosures (TCFD) Report.

In alignment with our responsible investing vision—to deliver better outcomes to our clients through rigorous responsible investing research, integration, stewardship and solutions—we focused our efforts in 2024 on these four areas: developing solutions for our clients, producing thought-leading research, enhancing and growing our stewardship capabilities, and bolstering data science and technology. We continued to develop thought-leading research on climate-related topics, as well as educate our investment teams on how material climate-related risks and opportunities might affect our clients' investment portfolios through the second iteration of our AB and Columbia Climate Change and Investment Curriculum. The curriculum covered various topics, including biodiversity, geopolitics and physical climate risk. We employed our proprietary Climate Transition Alignment Framework (CTAF) with the goal of consistently identifying and engaging companies that are acutely exposed to climate transition risks and opportunities across industries.

We continued to deliver climate-focused solutions for our clients via our climate-conscious Portfolios with Purpose. We also increased our investments in green bonds, which grew to more than US\$9.54 billion in AUM (as of December 31, 2024).

Finally, as a company, AB refreshed its corporate responsibility strategy in 2024, and we are working toward our firmwide corporate sustainability goals, including measuring greenhouse gas emissions, optimizing energy use, managing office waste and inspiring employee engagement. In September, we relocated our New York office to The Spiral in Hudson Yards—a LEED Gold—certified building. Additionally, our London and Nashville office buildings have procured renewable energy, and we continued to engage our employees on the topic of sustainability.

We are happy to share details on these initiatives and more in the enclosed statement and report.

Introduction

AB is a global asset-management firm with more than 4,000 employees across 25 countries and jurisdictions. We serve our clients through two core businesses: asset management and wealth management.

With US\$792 billion in AUM as of December 31, 2024, we deliver solutions across the capital markets, from fixed income to equity and from alternatives to multi-asset. Our broad range of investment expertise spans portfolio construction and investment management; fundamental, quantitative, economic and multi-asset research; wealth planning; and trading.

Fiduciary duty to our clients is paramount. That duty includes the incorporation of material risks and opportunities, which may include material climate risks and opportunities, into our research and investment processes. Furthermore, as an asset-management firm, our primary exposure to climate risk sits within our investment portfolios. We integrate material ESG factors, including climate risks and opportunities, into the majority of our actively managed strategies, and as of December 31, 2024, ESG-integrated strategies represent US\$555 billion of our AUM.

We work to understand the climate-related risks and opportunities facing the issuers within our

clients' investment universes and how they may be affected by the transition to a lower-carbon economy. The integration of these material climate risks and opportunities may inform our research and investment decision-making when optimizing risk and return for our clients in most of our actively managed strategies.

This Climate Change Statement represents AB's annual report on our approach to managing material climate risks and opportunities, complying with the reporting recommendations of the TCFD for asset managers.¹ This statement covers the reporting period of January 1, 2024, to December 31, 2024, and meets regulatory requirements in the UK. AllianceBernstein Limited (ABL) is an investment manager authorized and regulated by the UK-based Financial Conduct Authority (FCA). It is in scope for the TCFD disclosure requirements under the FCA's Environmental, Social and Governance sourcebook. ABL's entity-level report is featured in the appendix of this firmwide report.

¹ AB's Climate Change Statement & 2024 TCFD Report does not encompass the climate-related activities of AB CarVal, except for those that have been vetted by AB, such as the Energy Transition Funds I and II. For more information on AB CarVal's responsible investing practices, please see [here](#).

AB's Approach to Climate Change

Climate change can generate material investment risks and opportunities that the market misprices. We consider these material climate change-related risks and opportunities as part of our investment process for most of our actively managed strategies. From an environmental perspective in our operations, the principle of resource efficiency guides our sustainability efforts and supports our business objectives.

2030 Climate Action Plan

The responsible investing and corporate responsibility activities that we plan to undertake over the rest of the decade are embodied in our 2030 Climate Action Plan, which we developed in 2021 (*Display 1*). A summary of our achievements over the past year is included below, and more details are shared throughout the report. Regarding our investments, this plan aims to address the material climate-related

risks we've identified in the short (one to three years) and medium (three to five years) terms. Regarding our corporate responsibility, the plan focuses on green buildings, renewable energy and office waste in service of our commitment to net zero emissions in our operations across Scopes 1 and 2 by 2050. Progress made in this plan is reported to AB's Board of Directors on an annual basis.

DISPLAY 1: AB 2030 CLIMATE ACTION PLAN

	Action	Achievements
Strategy and Policy	<ul style="list-style-type: none">• Develop a climate strategy and climate action plan, and incorporate climate considerations into relevant statements, policies and procedures• Build and implement AB's approach to net zero	<ul style="list-style-type: none">• Incorporated climate considerations into our relevant statements, policies and procedures• Established a client-driven approach to net zero
Research and Integration	<ul style="list-style-type: none">• Continue training investors and asset owners on climate science and its materiality to investment risks and opportunities• Continue to provide investment teams across the business with access to Climate Value-at-Risk (CVaR), conduct scenario analysis, and engage with ESG data providers on improving scenario-analysis products for the investor use case• Understand net zero implications and pathways for investment holdings and portfolio construction• Expand and build AB's institutional knowledge and capacity to manage material climate risks and opportunities by developing tools, resources, training and partnerships that are accessible across the organization	<ul style="list-style-type: none">• Trained our investment teams through the AB and Columbia Climate Change and Investment Curriculum on the topics of physical risk, biodiversity finance and geopolitics• Carried out 44 engagements under the CTAF in 2024• Enhanced the Climate Transition Dashboard and the Biodiversity Risk Matrix• Continued to enhance the Natural Hazards Index (NHI) tool with Columbia's National Center for Disaster Preparedness (NCDP)

	Action	Achievements
Stewardship	<ul style="list-style-type: none"> • Develop best practices, tools and guides for investors to engage on material environmental issues • Engage for insight and action on material climate issues • Progress engagements on climate disclosure with companies materially impacted by climate-related risks and opportunities and encourage them to identify, disclose and manage these issues • Engage with capital markets and issuers to ensure that ESG-labeled debt structures help companies meet their sustainability objectives, and align issuer and investor incentives around the energy transition • Evaluate shareholder proposals (SHPs) to understand whether or how proposals promote genuine improvement in a company's management of material climate-related issues, thereby enhancing shareholder value and warranting AB's support based on our SHP framework, as described in our Proxy Voting and Governance Policy • On behalf of clients, engage with governments to advocate for policies that support investors' efforts to address material risks and opportunities stemming from climate change 	<ul style="list-style-type: none"> • Enhanced ESIGHT • Conducted 909 environmental-related engagements in 2024 • Grew our green bond allocations to more than US\$9.54 billion as of December 31, 2024 • Attended the 2024 UN Climate Change Conference (COP29) and the UN Convention on Biological Diversity (COP16)
Partnership	<ul style="list-style-type: none"> • Continue to work with and learn from climate-related industry bodies • Share views with investors to conduct research, build tools, and design frameworks and the methodology to promote industry understanding and effectiveness • Support industry-wide standards, disclosures and metrics related to climate • Grow and evolve our partnership with the Columbia Climate School, from education and training to research and development 	<ul style="list-style-type: none"> • Participated in a variety of climate-focused industry organizations, including the UN Principles for Responsible Investment (PRI), One Planet Sovereign Wealth Funds, Institutional Investors Group on Climate Change (IIGCC), Ceres and CDP • Joined a Carbon Asset Risk working group led by Ceres • Joined the IIGCC's Adaptation and Resilience working group • Supported industry-wide standards and disclosures through our publication of climate-related financial disclosures • Continued conducting research with the Columbia Climate School • Joined the Taskforce on Nature-related Financial Disclosures (TNFD) Forum
Portfolios with Purpose	<ul style="list-style-type: none"> • Establish and expand our range of offered investment strategies, enabling clients to invest in low-carbon and climate-focused solutions • Continue to grow our AUM and the market share of our Portfolios with Purpose platform 	<ul style="list-style-type: none"> • Continued to focus on our existing range of climate-conscious Portfolios with Purpose • Continued to engage with clients on our existing range of strategies and bespoke net zero solutions for them
Governance	<ul style="list-style-type: none"> • Include climate reporting in relevant board and committee monitoring processes • Continue to incorporate board and management participation in climate risk training • Update relevant boards and committees on climate action plan progress 	<ul style="list-style-type: none"> • Provided periodic updates and training to our board and various committee members on our climate-related practices and progress • Obtained approval of this statement from our Responsibility Steering Committee and Board of Directors • Approved a climate risk assessment framework, which was conducted for AB's office in Taipei, Taiwan, by the Responsibility Risk Oversight Committee (R-ROC)
Investor Disclosure	<ul style="list-style-type: none"> • Develop and help set the industry standard on innovative product reporting on climate metrics • Provide annual updates on the implementation of AB's climate strategy and action plan progress in alignment with TCFD reporting recommendations and global product disclosure regulations • Participate regularly in industry-led material climate risk and opportunity reporting initiatives 	<ul style="list-style-type: none"> • Produced product-level reporting on climate metrics per the UK FCA requirements
Corporate Responsibility	<ul style="list-style-type: none"> • Continue to expand our operational greenhouse gas (GHG) footprint measurement and improve data quality • Identify opportunities to procure renewable energy • Manage office waste, especially during decommissioning • Educate employees on sustainability and engage employees in operating our business sustainably 	<ul style="list-style-type: none"> • Received limited assurance on our 2024 GHG data inventory for Scope 1, 2 (location-based) and 3 (Category 6) • Exceeded objective to locate 85% of our employees into green buildings • Decommissioned the New York 1345 Avenue of the Americas office and relocated our employees to the Hudson Yards office with minimal waste • Educated employees on sustainability

As of December 31, 2024 | Source: AB



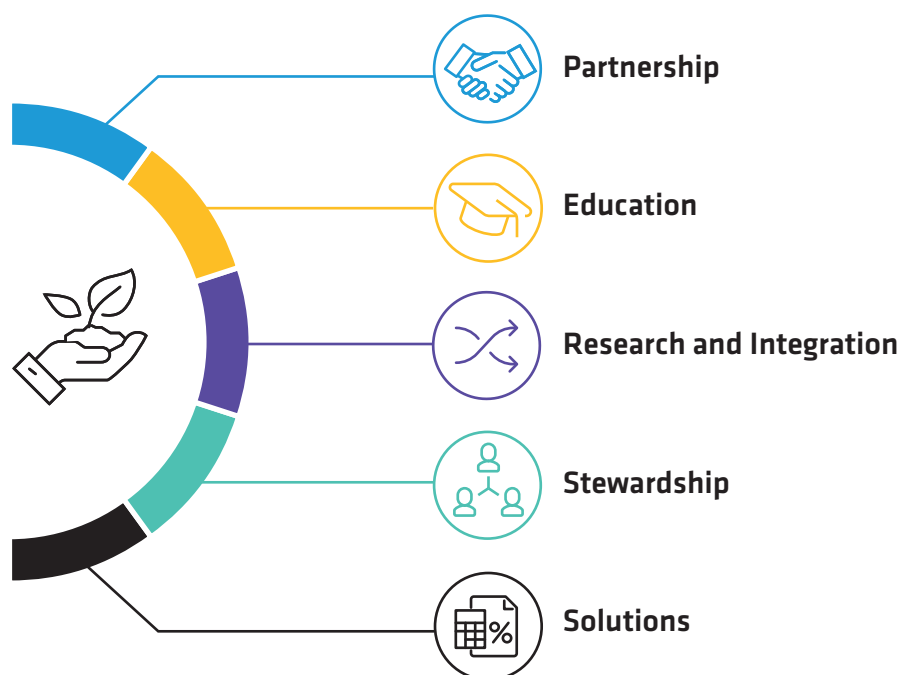
Approaching Climate Risk and Opportunity Within Our Investment Portfolios

AB's approach to identifying and integrating these material climate-related risks and opportunities is multifaceted (*Display 2*), and includes:

- **Partnership**—Drawing on expertise from academic and industry partners
- **Education**—Training our investment teams on the science behind climate change and its potential implications for our clients' investments
- **Research and Integration**—Incorporating climate insights into our research and decision-making processes, which we believe can lead to better client outcomes
- **Stewardship**—Active stewardship through engagement on material climate-related issues with issuers and regulators as well as via proxy voting
- **Solutions**—The climate transition presents issuers and investors across many sectors and regions with opportunities to strengthen their businesses and positioning through innovative products and services that can help enable them and their customers to be successful in a lower-carbon economy

DISPLAY 2: AB'S APPROACH TO CLIMATE

Managing Material Climate Risks and Opportunities Matters to Client Outcomes



As of December 31, 2024 | Source: AB

The Governance Model Overseeing Our Approach to Climate

We've created a robust governance structure to oversee our climate-related corporate responsibility and responsible investing activities. AB's oversight of material climate risk involves a multilayered governance model that extends upward from our investment and operational teams through our Risk Management team and Operating Committee and, ultimately, to AB's Board of Directors—via our Audit and Risk Committee. This model includes the following:

- **The Audit and Risk Committee of Our Board of Directors** provides formal oversight for corporate responsibility and responsible investing, including our climate-related activities, and receives annual updates on strategic direction. This ensures that members at the highest level of our organization play a role in overseeing our corporate responsibility and responsible investing strategy. AB's Board of Directors approves this statement annually.
- **AB's Risk Management team** oversees AB's operational and investment-related risks, ensuring that the firm has effective operational processes to manage client investment portfolios and the firm's corporate activities, including those related to climate strategy.
 - Our **corporate business continuity strategy**, which is aligned with the ISO 22301 standard, is designed to allow business-critical functions to continue during significant disruptions, including those caused by severe weather and other climate-related phenomena. The goal is to enable us to continue serving our clients effectively. Developing our business-resumption strategies involves analysis, planning, implementation, maintenance, testing and awareness. Testing verifies the resources and requirements needed to recover business-critical functions and operate them in accordance with recovery specifications. Plans are continually updated to minimize recovery time. Business response plans for each office include mobilization procedures, notification guidelines, call trees and other pertinent business information. They also include plans for crisis-management and executive-management personnel to coordinate command and control.
- The **R-ROC** is responsible for the review and prioritization of investment and operational risks and projects required to support the firm's responsible investing and corporate responsibility and operations processes. The R-ROC provides senior-management oversight of the effective implementation of responsible investment standards applicable to AllianceBernstein L.P., its investment products, strategic business units (SBUs) and subsidiary entities globally. Additional local requirements may also apply and be considered (where appropriate, supported by local expert committees that report to the R-ROC).
- **The Responsibility Steering Committee**, chaired by our Chief Responsibility Officer, serves as an advisory council to both the Responsible Investing team and Corporate Responsibility team. This committee, which meets quarterly, comprises senior professionals from across AB, giving different businesses within the firm an opportunity to shape AB's approach. The Responsibility Steering Committee reviews this report annually.
- Our **investment teams**—analysts, portfolio managers and traders—are at the heart of our responsible investing process. In partnership with members of the Responsible Investing team, they engage with issuers, analyze and quantify material ESG factors and climate risks, and ultimately, incorporate this information into their investment decisions. Some investment teams also have a dedicated ESG analyst or specialist. These specialists bring ESG knowledge to bear on a specific asset class or investment strategy.
- Within our investments group, the **Responsible Investing SBU** is a team of subject-matter experts who partner with our other investment teams across asset classes to develop ESG research insights and engage with issuers. The team develops proprietary frameworks and toolsets, manages our strategic ESG-related partnerships and develops training programs. Most team members maintain an industry focus to better partner with our investment teams. Our environmental research and engagement efforts are overseen by our Director of Responsible Investing Research. The Responsible Investing Research team works closely with other investment teams across asset classes to produce research on climate and other material ESG topics. It also partners with the Columbia Climate School, which focuses on developing and executing research and training for investment professionals in climate science, policy, management and other issues.
- Our **Corporate Responsibility team** oversees our firm's corporate responsibility strategy and reporting. This strategy includes environmental sustainability and modern slavery risk, and the firm's readiness for new corporate responsibility regulations, including regulated reporting on sustainability.

Incorporating Climate Change into AB's Risk-Management Framework

AB employs a “Three Lines Model” for investment and operational risk management, where first-line risk is owned by SBUs, second-line risk is overseen by control functions, and third-line risk ownership and oversight is validated by internal audit. AB's approach to second-line climate risk management is to embed climate risk monitoring into our second-line control functions, including both Risk Management and Legal & Compliance.

In 2024, the Risk Management, Legal & Compliance and Responsible Investing teams continued to enhance the firm's frameworks for identifying material risks and exposures, which included:

- Monitoring climate-related risks through the R-ROC
- Supporting the development and implementation of new products by ensuring that robust new business checks are conducted prior to launch, focusing on the infrastructure needed to support each product
- Supporting the development of AB's resilience strategy to defend the firm from weather-related disruptions, and speed resumption of business services

- Tracking and implementing global regulatory changes related to climate
- Collaborating to develop training programs related to ESG risks
- Proactively seeking out new technology and replacing manual processes with automatic ones to mitigate risk and drive commercial success

In 2025, the teams will continue to build on the work done in 2024.



AB's Climate Risks and Opportunities

As an investment manager, we are affected by climate risk in our operations and our investment activities. First, climate risk affects our business physically, through extreme weather events that our global offices may experience, and second, it affects us through transition

risk such as increased regulation, generated by the rapid evolution of financial-services climate-related products (*Display 3*). Finally, as an asset-management firm, our primary exposure to climate risk sits within our investment portfolios.

DISPLAY 3: CLIMATE-RELATED RISKS AND OPPORTUNITIES AB FACES OVER TIME HORIZONS

Risk or Opportunity	Description	Physical Risk, Transition Risk or Opportunity	Time Horizon	Level
Current Regulation	As a financial institution with operations, investments and clients across the globe, AB is subject to regulations in numerous local, national and supranational jurisdictions. We understand the importance of monitoring and complying with regulations related to climate change, as such regulations can affect our business, clients, investees and other stakeholders. Current environmental and climate-related disclosure requirements and regulations, such as the EU's Sustainable Finance Disclosure Regulation, or those related to carbon trading schemes, are examples of regulations that may affect AB's investments, operational activities or reputation, or increase compliance requirements and costs. Our Responsible Investing, Corporate Responsibility, Legal & Compliance, Risk Management and other teams work together to adhere to, and raise awareness of, regulations and judicial proceedings in the locations where we operate and invest. In addition, we engage with industry groups, legal experts and regulators to stay abreast of developing regulations and provide feedback, and seek to adapt to new requirements in a timely fashion.	Transition	Short Term	Moderate
Emerging Regulation	As a financial institution with operations, investments and clients across the globe, AB is subject to regulations in numerous local, national and supranational jurisdictions. We understand the importance of monitoring and complying with regulations related to climate change, as such regulations can affect our business, clients, investees and other stakeholders. We recognize that emerging regulations, such as the EU's Corporate Sustainability Due Diligence Directive, could affect AB's investments, operational activities or reputation, or increase compliance requirements and costs. The global regulatory environment in which we operate is complex and rapidly changing; it includes climate disclosure requirements in financial reporting across various jurisdictions. However, we endeavor to monitor the risks associated with potential climate policy changes and integrate them into our business decisions. Our Responsible Investing, Corporate Responsibility, Legal & Compliance, Risk Management and other teams work together to make fully informed investment, commercial and reputational risk-management decisions, and to meet emerging regulatory and legal requirements related to climate change. In addition, we engage with industry groups, legal experts and regulators to stay abreast of developing regulations, and provide feedback and seek to adapt to new requirements in a timely fashion.	Transition	Short Term	Severe

Risk or Opportunity	Description	Physical Risk, Transition Risk or Opportunity	Time Horizon	Level
Technology	<p>As an investment manager across regions, asset classes, sectors and industries, AB is exposed to material transition risks emerging from technological developments that could enable the mitigation of and adaptation to climate change while also disrupting certain issuers and industries. However, such technology can also yield material opportunities within our investments, in such areas as energy efficiency; hydrogen; carbon capture, utilization and storage; and water-management technologies that will enable issuers and their customers to mitigate and adapt to climate change. Artificial intelligence, which is a new and emerging technology with vast global investment needs, presents a dual-edged sword: it creates the risk of overshooting climate targets due to its significant energy demands, yet it also offers substantial opportunities for enhancing energy efficiency and discovering new solutions to combat climate change. Like the other material risks and opportunities we face, these considerations are ones we seek to integrate into the investments we make in the best interests of our clients. From an operational perspective, AB also seeks to implement and consider technologies and projects to reduce our own environmental footprint and increase our resiliency to climate change.</p>	Transition and Opportunity	Short Term	Severe
Legal	<p>AB recognizes the importance of monitoring and addressing legal developments related to climate change, both as an organization and in regard to the investments that we make on behalf of our clients. We recognize that legal and compliance risks include legal or regulatory sanctions, litigation, financial loss and negative reputational impact if we fail to comply with regulations or client investment guidelines or requirements. Climate-related litigation could result from inaccurate or incomplete disclosures, stranded assets, acute climate events or resulting market price declines. Exposure to high-emission sectors could also increase the potential for legal liability. Our investment teams consider potential material liabilities for our issuers related to pending climate change litigation matters in the investment decision-making process.</p> <p>AB is also aware of the emerging legal risks in the US associated with certain ESG-related disclosures, claims and commitments made by financial institutions. We assess and manage these risks, and others previously referenced, through our Legal & Compliance and Risk Management teams, which endeavor to maintain compliance with applicable legal and other requirements in the jurisdictions where we operate and invest.</p>	Transition	Medium Term	Moderate
Market	<p>Market-related risks from climate change include physical and transition risks that could impact asset valuations and prices in the investments we make on behalf of our clients. Such changes in asset values and pricing could cause AB's AUM and related revenue to decline. In addition, products that do not effectively adapt to changes in client preferences regarding climate change could lead to outflows that would impact AB's revenues. While AB's investment teams seek to identify and address material climate-related risks on an issuer and portfolio level, AB's Risk Management team partners with our investors and Responsible Investing team to ensure that such systemic risks are monitored and managed systematically. AB maintains a separate and independent risk-management infrastructure outside of our investment teams to assist and oversee portfolio managers in their management of risk. Risk management is not just an oversight function, but rather a core value that is embedded throughout our firm's investment and operational processes.</p>	Transition	Medium Term	Moderate

Risk or Opportunity	Description	Physical Risk, Transition Risk or Opportunity	Time Horizon	Level
Reputational	<p>AB is committed to upholding the purpose and values of the firm in fulfilling our fiduciary responsibility to our clients. Our reputation is therefore critical to maintaining strong relationships with our clients, employees, investors and other stakeholders, who are increasingly affected by climate change. AB acknowledges that different stakeholders may have divergent views on climate-related matters, and that this divergence increases the risk that any action or inaction on climate-related matters could be perceived negatively by some stakeholders, potentially damaging AB's reputation and business and leading to reduced client satisfaction and outflows. Therefore, AB is committed to proactively engaging with stakeholders, particularly clients, to ensure that the firm continues to meet their needs and expectations.</p> <p>We act on this by integrating material climate change risk considerations into the majority of our actively managed investments; elevating issuers with significant environmental or social risks for enhanced review; developing guidance from our Controversial Investments Advisory Council on identifying and mitigating reputational and other risks related to climate change; and providing education and training to stakeholders on climate change-related matters. We also regularly engage with our stakeholders through a variety of channels, including industry groups, meetings, calls and other programming to understand and respond to their needs and expectations regarding climate change and investment management.</p>	Transition and Opportunity	Short Term	Severe
Acute Physical	<p>Acute physical risks stemming from climate change, such as the increasing severity and frequency of hurricanes and wildfires, could impact our operations and investments. For our operations, we regularly review the resiliency of our office spaces, and we consider such risks at various stages of our real estate—management processes. AB maintains a robust Business Continuity Program to safeguard our facilities and operations in vulnerable areas and in the event of disruptions.</p> <p>For our investments, we take the following three-pronged approach to identifying and addressing material physical risks from climate change and the disruptions they can cause:</p> <ol style="list-style-type: none"> 1. Education—AB has designed and implemented training on physical risks for our investment teams with our partners at the Columbia Climate School. 2. Active Management—Where material, we engage with issuers to assess the potential impact and management of acute physical risks on their businesses and value chains. 3. Partnership—We have partnered with the Columbia NCDP on its NHI to better understand the risks of weather events, particularly to certain fixed-income investments. <p>AB continues to explore opportunities and solutions to improve our identification and management of acute physical risks to both our business and investments.</p>	Physical	Short Term	Low
Chronic Physical	<p>Chronic physical risks stemming from climate change, such as rising sea levels and rising temperatures, could impact our operations and investments over the long term. For our operations, we regularly review the resiliency of our office spaces, and we consider such risks at various stages of our real estate—management processes. AB maintains a robust Business Continuity Program to safeguard our facilities and operations in vulnerable areas and in the event of disruptions.</p> <p>For our investments, we take the following three-pronged approach to identifying and addressing physical risks from climate change and the business disruptions they can cause:</p> <ol style="list-style-type: none"> 1. Education—AB has designed and implemented training on physical risks for our investment teams with our partners at the Columbia Climate School. 2. Active Management—Where material, we engage with issuers to assess the potential impact and management of acute physical risks on their businesses and value chains. 3. Partnership—We have partnered with the Columbia NCDP on its NHI to better understand the risks of weather events, particularly to certain fixed-income investments. <p>AB continues to explore opportunities and solutions to improve our identification and management of chronic physical risks in both our business and investments.</p>	Physical	Medium Term	Moderate

As of December 31, 2024 | Source: AB

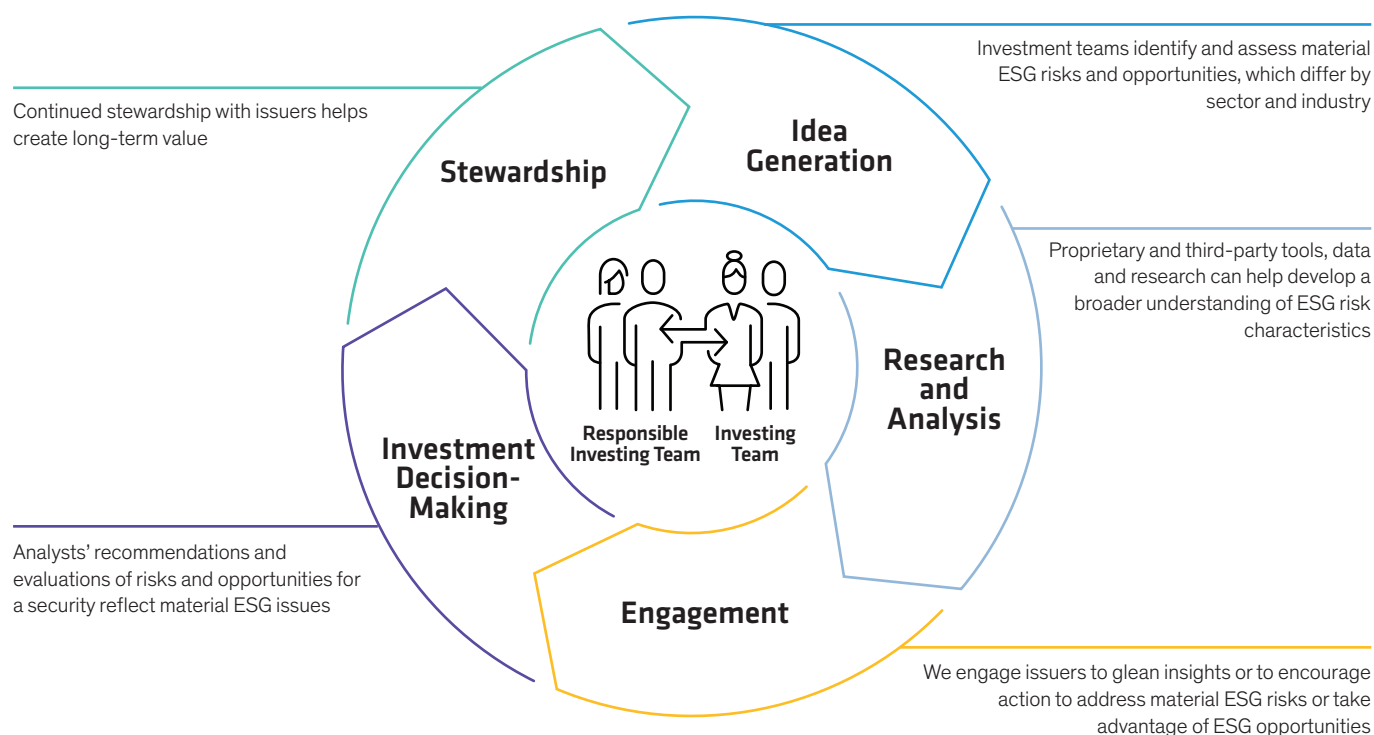
Integrating Material Climate Risks and Opportunities into the Investment Process

ESG Integration

In line with our broad approach to ESG integration, AB integrates material climate-related risks and opportunities into the applicable stages of the investment process within the majority of our

fundamental active strategies—from idea generation to research, and from engagement to investment decision-making to continued stewardship (*Display 4*).

DISPLAY 4: AB'S APPROACH TO ESG INTEGRATION



AB engages issuers when it believes the engagement is in the best financial interest of its clients.

As of December 31, 2024 | **Source:** AB

Understanding Climate Risks and Opportunities

At AB, our ESG integration process starts with equipping our investors with the education, tools and processes to enable them to understand, research and integrate material climate-related factors. Understanding climate science is one of the key facets of successfully integrating material climate change considerations into investment decisions. While scenario analysis and stress-testing can be important, we take a multifaceted approach to improving our understanding of climate risks and opportunities, and to generating valuable insights, including through partnerships and education.

Analysts take ownership of identifying, researching and engaging with issuers on material ESG issues, and incorporating them into their models and frameworks. An analyst's recommendation and evaluation of the risks and opportunities for a security reflect the consideration of material ESG issues. Materiality differs by sector and industry. For example, how a company or issuer manages its water consumption and treats wastewater could present material ESG risks for food and beverage companies. For financial firms, however, data and privacy concerns might take precedence.

AB uses a proprietary materiality map—developed by the Responsible Investing team and over 120 analysts—that covers more than 40 ESG issues and spans almost 70 subsectors. In our view, a consistent framework for incorporating material ESG factors helps us make better-informed investment decisions and can ultimately enable us to deliver better investment outcomes. In 2024, we began a review of this proprietary tool, aiming to refresh its existing material issue definitions, enhance it with new and emerging ESG factors, and incorporate innovative data sources and proprietary insights within it.

Partnership with the Columbia Climate School

Our partnership with the Columbia Climate School helps investors and academics partner to build understanding and awareness of material climate risks and opportunities and to develop solutions to support the energy transition.

AB: The Founding Member of the Columbia Climate School Corporate Affiliate Program

Our partnership with the Columbia Climate School involves the codevelopment of research, thought leadership, and curated training and events. AB became the Founding Member of the Corporate Affiliate Program at the Columbia Climate School in April 2021. This is the first purpose-built school of its kind focused on tackling climate change issues. Faculty and researchers in basic earth and environmental science, engineering, journalism, architecture, policy, public health, economics, business and law come together to build mutual understanding across disciplines and sectors for:

- Executive and management education and training
- Student engagement
- Faculty and research interaction
- Sponsored research and consulting

Climate Research with Columbia

Our collaboration has also spurred ideas for joint research projects between AB investment teams and Columbia's academics. AB and Columbia have embarked on a research agenda focused on leveraging and highlighting the intersection of climate science and academia with AB's investment processes. Research may be shared externally through thought leadership, workshops and other avenues to demonstrate how investors are considering insights gleaned from scientists to inform investment-related decisions and stewardship activities.

The research enterprise comprises interactions between AB investment teams and Columbia's scientists and experts on the material climate issues that arise in the investing process across portfolios, sectors, asset classes and regions.

AB investment teams are engaging with faculty and scientists on specific short- and long-term research projects. Past research areas include renewable energy, fisheries and synthetic biology. More recent research includes gauging the risk of natural hazards.

AB and Columbia faculty and academics have worked to better evaluate the physical risks posed by climate change, particularly in the US. Many sectors and assets are exposed to risks from natural disasters, particularly those intensified or catalyzed by climate change. Existing tools that apply geospatial data to inform hazard risk aren't as effective as they could be; they may lack the level of detail needed, exclude certain climate and weather data, or have accessibility issues.

Through this collaboration, AB and Columbia updated the NCDP's US NHI tool, which was designed in 2017 to help US households prepare for emergencies. The index has also been deployed by businesses (e.g., the banking industry and those who manage municipal bond ratings). After having upgraded and added new data on hazards from extreme weather and natural disasters and on social vulnerability in 2023, the focus in 2024 was to enhance the NHI tool by developing forward-looking scenario projections for four of the NHI's most impactful hazards. This forward-looking insight can help investors better deploy capital and make more informed risk-adjusted investment decisions. Once implemented, the tool is designed to enhance investors' ability to engage with issuers to ensure that they are taking the necessary action to address material risks from physical climate risk.

AB analysts are beginning to use this resource to evaluate material climate risks and opportunities in mortgage-backed securities, credit risk-transfer securities and municipal bonds.

AB Investors Team Up with Columbia Experts

AB and the Columbia Climate School continue to collaborate in an ongoing effort to bridge the gap between finance and climate science, with a focus on helping investors better understand the opportunities and risks inherent in the shift to a lower-carbon economy and the physical impacts of a warming world.

Together, we took our investment teams through the second iteration of the Climate Change and Investment Curriculum, including sessions focused on physical climate risk, biodiversity finance, and climate and geopolitics. This curriculum gave our investment teams the opportunity to learn about the latest climate science and research that underpins economics, businesses and societies. Meanwhile, the Columbia scientists learned more about the investment process, helping them deliver more useful information to companies, communities and governments.

AB–Columbia Student Collaboration on Climate Finance

In addition to education and research, this collaboration is intended to help shape the next generation of investment professionals striving to manage material risks stemming from climate change and develop new solutions. In 2024, we hosted a Climate Finance Research trainee in our central Responsible Investing team to focus on a range of projects, including: (1) assessing and engaging with issuers under AB's proprietary CTAF; (2) enhancing our approach to assessing

physical risk; and (3) assisting on the evolution of our Biodiversity Risk Matrix. Through this work, the trainee gained practical experience in incorporating climate change considerations into financial decisions.

In-House Climate Research

While our partnership with the Columbia Climate School has enabled our investment teams to better understand the material impacts of climate change, we also continue to develop our own research and frameworks on climate change risks and investment opportunities.

In 2024, we produced multiple blogs, articles and white papers on climate change–related topics, including a suite of thought leadership papers on biodiversity and nature, an issue highly interconnected with climate change risk. We also developed research on topics such as physical risk, the climate transition, renewable energy demand amid growing electrification, and the electric vehicle industry in China.

While transition risks and opportunities resulting from climate change are one of several lenses through which to assess climate change's impact on the investment landscape, physical risks and opportunities are another—and one that is often overlooked. Learn more in the sidebar "[As Climate Change Gets Hyperphysical, Investors Should Too](#)" (page 14).



As Climate Change Gets Hyperphysical, Investors Should Too

Integrating the physical toll of climate change can help investors spot key risks—and opportunities.

Climate-focused investing traditionally emphasizes how well industries are transitioning to low-carbon economies, such as how they are responding to climate-friendly regulations, greener technologies and shifting consumer needs. But transition risks and opportunities are just one of several lenses through which to assess climate change's impact on the investment landscape. Physical risks and opportunities are another.

Knowing Physical Threats Enhances Risk Assessment

The number of companies that acknowledge climate change's direct financial impact grew 24% in 2023, according to a [CDP Worldwide](#) survey. But transition risks continue to command more of companies' attention than physical risks. Between 2009 and 2020, for example, average mentions of transition risks in 10-K filings grew from four to 10, while average mentions of physical risks rose from two to just four, based on a [Brookings Institution analysis](#). We think such low reporting for physical risks suggests that businesses are only beginning to appreciate their effect on the bottom line.

The threats are very real, however. Physical risks can be chronic—as with rising global temperatures and sea levels—or acute, as in the case of an extreme heatwave or a hurricane. Any of these can levy substantial financial burdens on businesses and global economic growth alike.

The financial toll of physical risks manifests in several ways, but often through local property damage or total loss. There are also costs for stranded or delayed production capacity, plant closures, supply chain disruptions and legal liabilities from not adapting assets and communities to be more resilient.

Disasters can also hurt local households, in ways ranging from job losses to residential displacement, which has implications for labor supply and customer demand for products and services. As these local extremes add up, their macro implications can throttle global productivity, trade and government revenues, as well as sway inflation and interest rates.

Physical Risks Won't Disappear, Prompting More Ways to Cope

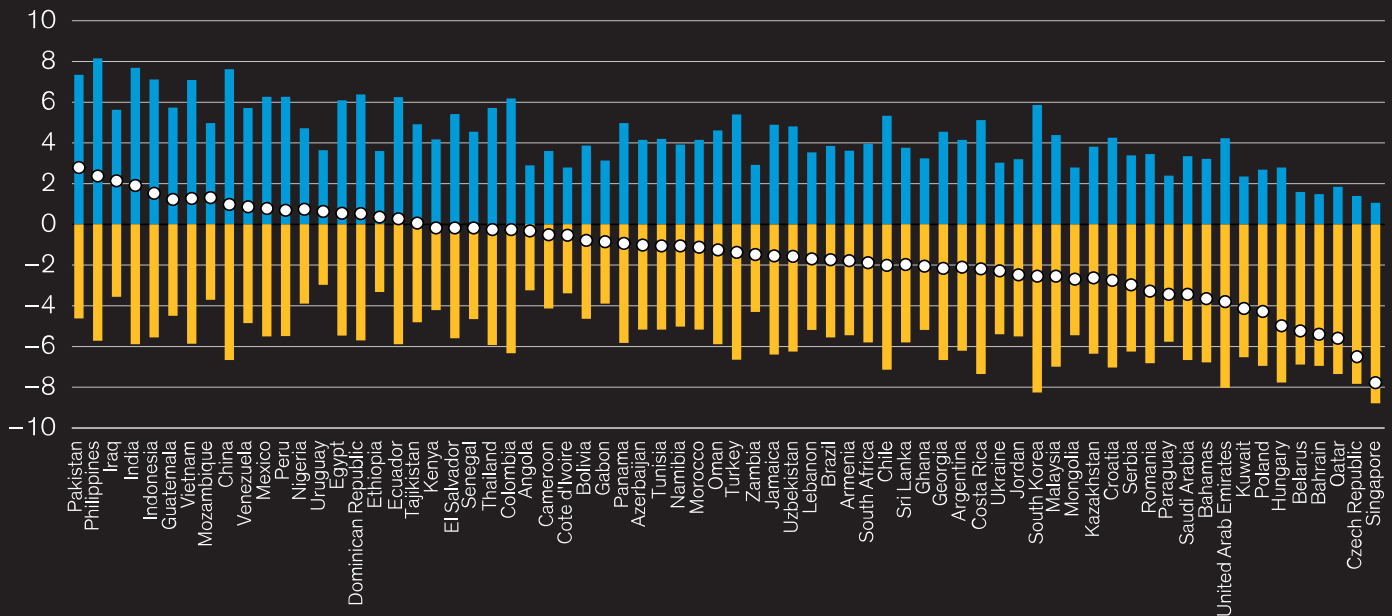
As a global disruptor, climate change remains one of a handful of [megaforces likely to permanently change](#) how the world lives, works and consumes—and that directly affect countries, assets and companies on many levels.

For example, population centers will likely shift within countries and across continents as crops fail or it becomes too hot to work outdoors. Agriculture-dependent regions could be the most vulnerable, not only to food scarcity but also to [modern slavery](#).

Emerging-market (EM) regions are especially vulnerable to physical risks—frequently as a result of flooding or drought. Thankfully, we're seeing governments and the private sector deploying more coping mechanisms across these regions. These include adaptation plans, multihazard warning systems and risk assessments, which we believe can help offset some of the high exposure to physical risk these regions face (*Display*). This suggests that even countries with high physical risk potential could take effective steps to manage it—and improve their creditworthiness.

INFORM EM PHYSICAL RISK AND COPING CAPACITY INDEX

Natural Hazards Index 2.0 Composite Risk Map



Current and historical analyses do not guarantee future results.

Coping capacity measures a country's ability to prepare, respond or recover from the effects of climate-related hazards on its infrastructure, residents and physical environment.

As of March 2024 | **Source:** Columbia Climate School NCDP

Data Show Climate Change Is Global but Impact Is Local

Florida hurricanes, Canadian wildfires, Abu Dhabi flooding—**when disasters strike**, they're not only more frequent and costly but also hyper-regional. That's why we believe that understanding physical risks at the local level helps investors better assess their potential financial damage, even for globe-spanning entities.

Obtaining local physical risk data can be challenging. In the US, some granularity can be **mapped using the Natural Hazards Index**, which AB developed in partnership with the Columbia Climate School. The index tracks 14 types of extreme weather disasters and assigns risk scores to some 75,000 underlying census tracts. Meanwhile, the global Aequeduct Water Risk Atlas, which tracks potential water-specific risks, pinpoints areas facing the highest risks to potable water quality and quantity.

Another hurdle in evaluating physical risks is tying them to companies' physical locations, since they tend not to be uniformly disclosed. However, Climate TRACE (Tracking Real-Time Atmospheric Carbon Emissions) is making headway, offering models to help investors identify which of a global firm's locations are high emitters. Combined with Aequeduct Water Risk Atlas data, the results can effectively map where a global company's local physical risks are greatest (*Display*). Many leading data sources, such as Moody's, S&P and MSCI, also now offer physical risk-scenario analysis tools—although sometimes with conflicting insights that require careful assessment.

MAPPING A GLOBAL COMPANY'S PHYSICAL RISKS ON A LOCAL LEVEL

Climate TRACE and Aqeduct Data Reveal Which of a Large Automaker's Factories and Other Facilities Are Most Exposed



For illustrative purposes only

Source: World Resources Institute and AB

Engaging directly with companies can also reveal much about their physical risk exposures and plans to address them. Engagement involves meeting with leaders, touring facilities and participating in shareholder meetings, among other activities. In many cases, more intel can be gained from dialogue than from data, especially since physical climate risk reporting is still relatively new for many companies. This was the case with a large South American bank, whose most significant financial threat comes from—of all things—farming.

Banking on Agriculture: A Study in Physical Risk

The bank is a majority state-owned enterprise based in Brazil, the world's largest agricultural exporter. About 85% of the nation's farms comprise small family-owned homesteads that subsist on loans for which the institution is a top provider.

The bank's primary physical risk exposure stems from the country's epic regional flooding and drought. Both can disrupt farm production and upend the livelihood of its largest borrower group,

which could be more likely to skip payments or default. The bank is also exposed through its insurance affiliate, which offers crop insurance, using farmers' equipment and cash flows as collateral. Add in potential physical damage to branch locations and office equipment in the danger zones, and the picture looks grim.

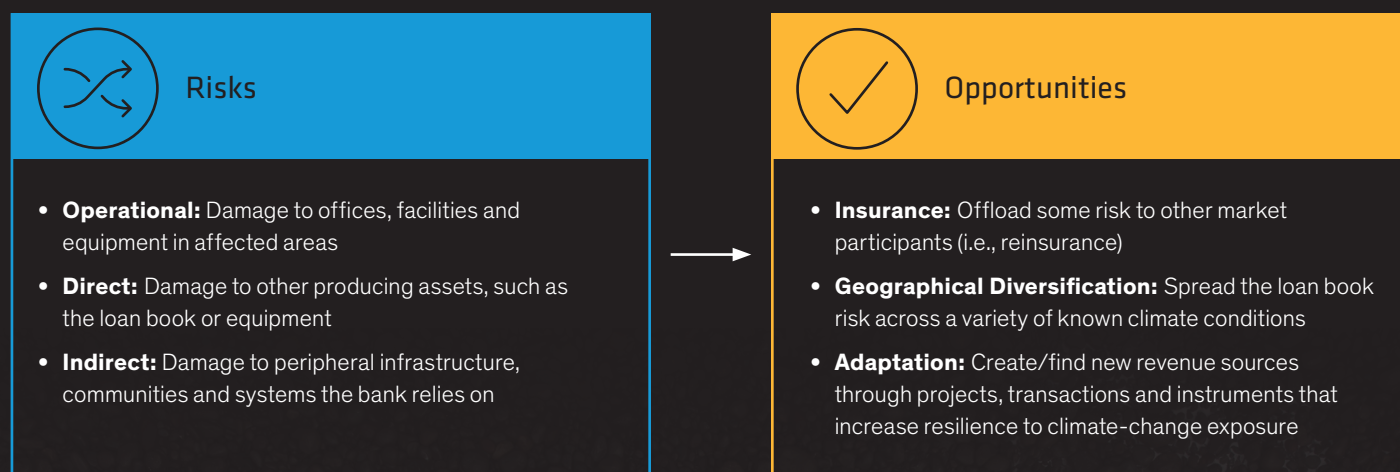
A bank this large and with inherent government backing should have the resources to manage such risks and pursue the opportunities we see for it. Through our engagement with the bank, for example, we discovered that helpful mitigation measures were underway, such as spreading the insurance liability to willing participants in-country and abroad, and more diversification across agricultural regions and crop types (*Display*).

We think inviting more government input, along with suggestions for helpful solutions, is another opportunity that should be in both the bank's and the country's interests, considering that agriculture represented about 24% of Brazil's GDP in 2023. The takeaway:

physical risks can touch any industry in unique ways, but how companies respond can create opportunities that are just as unique.

Catastrophic and costly weather events continue to turn up the dial on physical and economic damage, creating life-altering disruptions to people and property in every region. That's why we believe that investors should seek opportunities stemming from the preparation, response and recovery surrounding climate-related hazards.

A growing number of relevant data sources, combined with engagement and an active investment approach, are especially helpful in this nascent area. Together, they can offer climate-focused investors effective tools to access not only physical risks but also their potential effect on asset prices across regions, sectors, industries and companies of all stripes.



Historical analysis does not guarantee future results.

As of March 2024 | **Source:** World Resources Institute and AB

Climate-Related Engagement and Analysis

Engagement is a cornerstone of responsible investing at AB. When our investment analysts engage with issuers, they typically speak directly with management, board directors, investor relations officers or other key officers, discussing the material ESG risks and opportunities a company faces. Dialogues may cover how companies identify and disclose material ESG issues and how they're integrating these considerations into their businesses. All engagements are conducted from a fiduciary perspective in accordance with relevant market regulations and frameworks. We operate as a "passive" investor (i.e., not an activist investor) for the purposes of the US Securities and Exchange Commission's Regulation 13D-G.

Fundamental Engagement for Insight and Action

We engage with issuers for two main reasons: to generate research insights (e.g., to learn more about an issuer's corporate strategies and competitive positioning) or for action (e.g., to encourage issuers to better address material ESG risks or take advantage of ESG opportunities, in our clients' best interests). We believe that, as active managers, we can generate enhanced risk-adjusted returns through our engagement with issuers.

Engaging for insight enhances our climate research process, generating insight into issuers' climate strategies and competitive positioning. It also reveals how management teams address and manage short-, medium- and long-term risks and opportunities, including material climate considerations.

We're also better able to assess the quality of an issuer's management, strategy, operations and corporate governance structure. We incorporate this valuable information into our analysis and investment decisions—with the ultimate goal of generating enhanced risk-adjusted returns for our clients.

Engaging for action helps us support our clients' interests, enabling us to share our climate risk assessment to better address material risks or take advantage of opportunities. Discussions can focus on strategic,

financial and operational ESG-related issues, like climate, but the goal is always the same: to encourage firms to make decisions with a long-term view toward providing better financial outcomes for our clients.

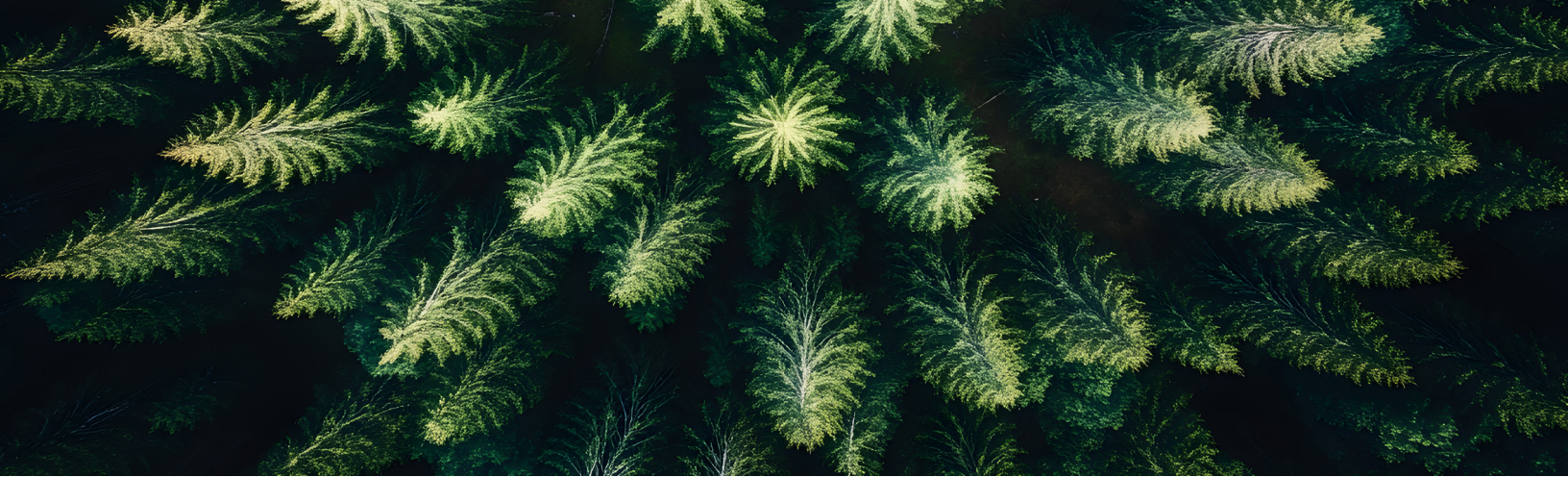
When engagements include a substantive discussion of ESG risk or opportunity considerations, our analysts document the purpose of the engagement, the ESG topics discussed and the outcome in our proprietary ESIGHT system.

ESIGHT integrates our ESG issuer assessments, proxy-voting history, engagements, and third-party research from MSCI and Sustainalytics. It's also a knowledge center with a wealth of ESG information, including thematic sell-side research reports, academic studies, nongovernment entity reports and our own proprietary ESG ratings.

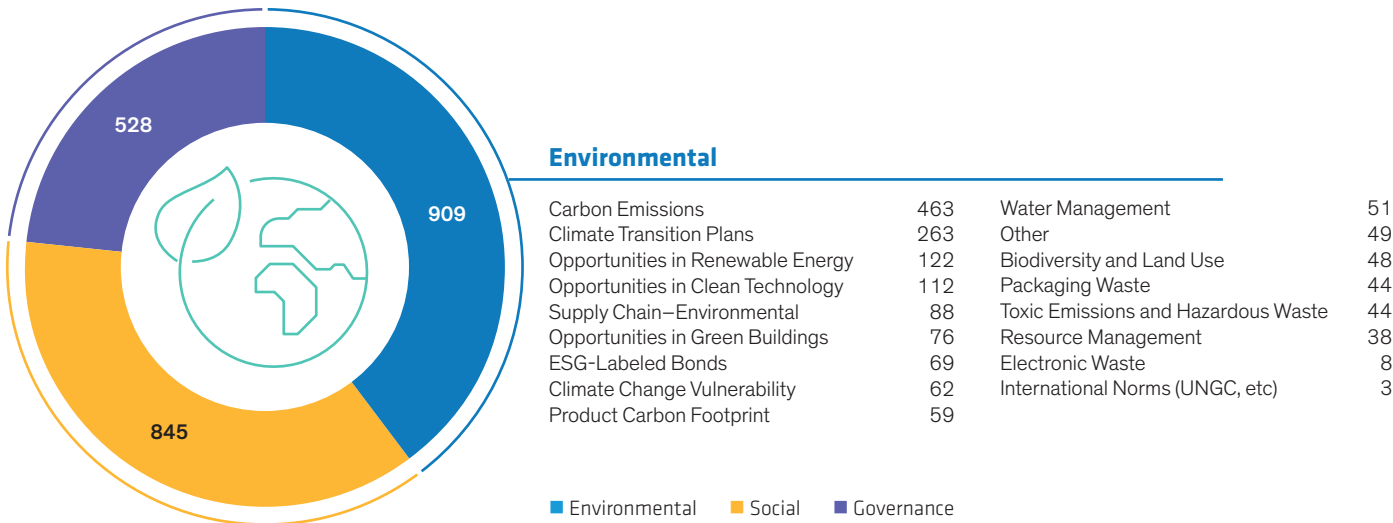
With ESIGHT, AB has a hub where bond and equity investment teams can access and share information in real time about issuers' ESG practices. When our investment teams conduct research or prepare for an engagement, they can explore previous interactions—querying by issuer, AB investment team, or ESG topic and theme. ESIGHT also enhances portfolio management and reporting—we can assess ESG topics by company/issuer, industry or portfolio—and documents engagement statistics, examples and outcomes that we can share with our clients. In 2024, we began development of the next generation of ESIGHT. Enhancements will include a library of hundreds of potentially material ESG factors, displayed in a manner that will aid investment teams in identifying leaders or laggards and trends to enhance the engagement process. These ESIGHT 2.0 factors are being sourced from a wide range of sources, including nongovernmental organizations, governments, internal AB frameworks and third-party vendors.

In 2024, AB held more than 11,460 issuer meetings, many focusing on material ESG issues, including 909 meetings on environmental-related issues (*Display 5, page 19*). Of those engagements, 463 discussed carbon emissions, 263 discussed climate transition plans, 122 discussed opportunities in renewable energy, 112 discussed opportunities in clean technology and 88 discussed supply chain—environmental, with many more topics covered.





DISPLAY 5: ENVIRONMENTAL-RELATED ENGAGEMENTS IN 2024



AB engages issuers when it believes the engagement is in the best financial interest of its clients.
Numbers will not sum to total, as engagements frequently discuss multiple ESG topics across or within pillars.
As of December 31, 2024 | Source: AB

Engagement Examples

We engage issuers on many different material environmental risks and opportunities, including setting a strategy and targets, and improving disclosure and transparency. We encourage actions that can support financial outcomes that are in the best interests of our clients.

Issuer: Ampol

Sector: Energy

Asset Class: Equities

Ampol runs a large network of service stations throughout Australia and is one of only two remaining gasoline refineries in the country. The Australian government considers its refining capacity important for national fuel security. However, with gasoline demand declining for the past decade and oil demand expected to peak before 2030, Ampol must find a pathway to transition the core of its business to the new energy economy.

We engaged with management to understand how Ampol might transition its business to meet the future demands of the economy. We learned that the issuer is actively investing in building out both electric vehicle (EV) chargers across its service station network and biodiesel production at its Lytton refinery. Both of these activities are crucial to the long-term prospects of its business. With support from the New South Wales government, Ampol installed EV chargers at several of its premium highway service centers. Management's feedback on the commerciality of the pilot was positive, and it estimates that the chargers become

cash-flow neutral at about the 10% utilization rate and profitable at the over 20% rate. The pilot EV chargers are operating at a 7% utilization rate. The team also noted that the ramp-up of utilization of the chargers is progressing slowly, because consumers take time to become familiar with where charging stations are located. Ampol also noted that when it installs EV chargers, the site selection must be chosen carefully to align with consumer behavior and travel patterns. For renewable fuels production, management noted that it is very early days, but there has been some industry advocacy in the market by Qantas Group to establish a local sustainable aviation fuel industry, which has provided a bit of momentum to the investment case. However, supportive government policy is required to build a domestic manufacturing industry.

Overall, Ampol seems to be taking thoughtful actions in response to the changing demand dynamics in the gasoline and oil markets in its efforts to transition its business. We will continue to monitor its activities.



Climate Transition Alignment Framework

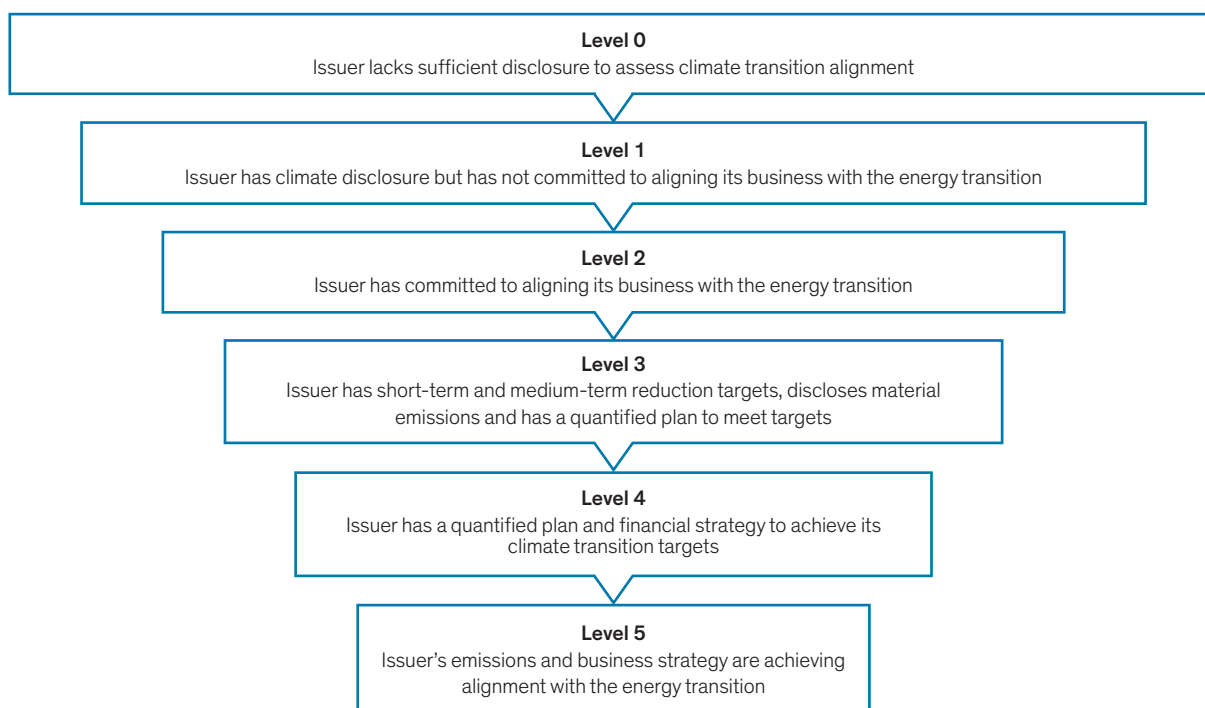
For our investments, AB's approach to net zero is client-driven and entails working with our clients to understand their specific climate-related goals and to provide a variety of methodologies, strategies and solutions to help them achieve those goals. This approach is complemented with the proprietary CTAF. To assist our fundamental equity and corporate credit analysts, the CTAF is used to identify companies that are acutely exposed to climate transition risks and opportunities and support engagement with these issuers to ensure that they are preparing their businesses to be successful in a lower-carbon economy (*Display 6*). Through the CTAF, we have identified issuers across more than 20 high-impact industries in our actively managed corporate credit and equities strategies. High-impact industries generally have particularly material risks and opportunities from the transition to a lower-carbon economy. The framework is designed to identify specific areas of material risks and opportunities for issuers within high-impact industries and to signal where our investors should focus their engagements with these issuers for progress, when materially relevant for our clients. We assess issuers

from Level 0 to Level 5 in terms of emissions disclosure, emissions-reduction targets, plans to meet those targets and execution on the issuers' plans over the long term.

Over the course of 2024, we conducted 44 CTAF engagements. We will continue to assess and engage with these high-impact issuers in the years to come.

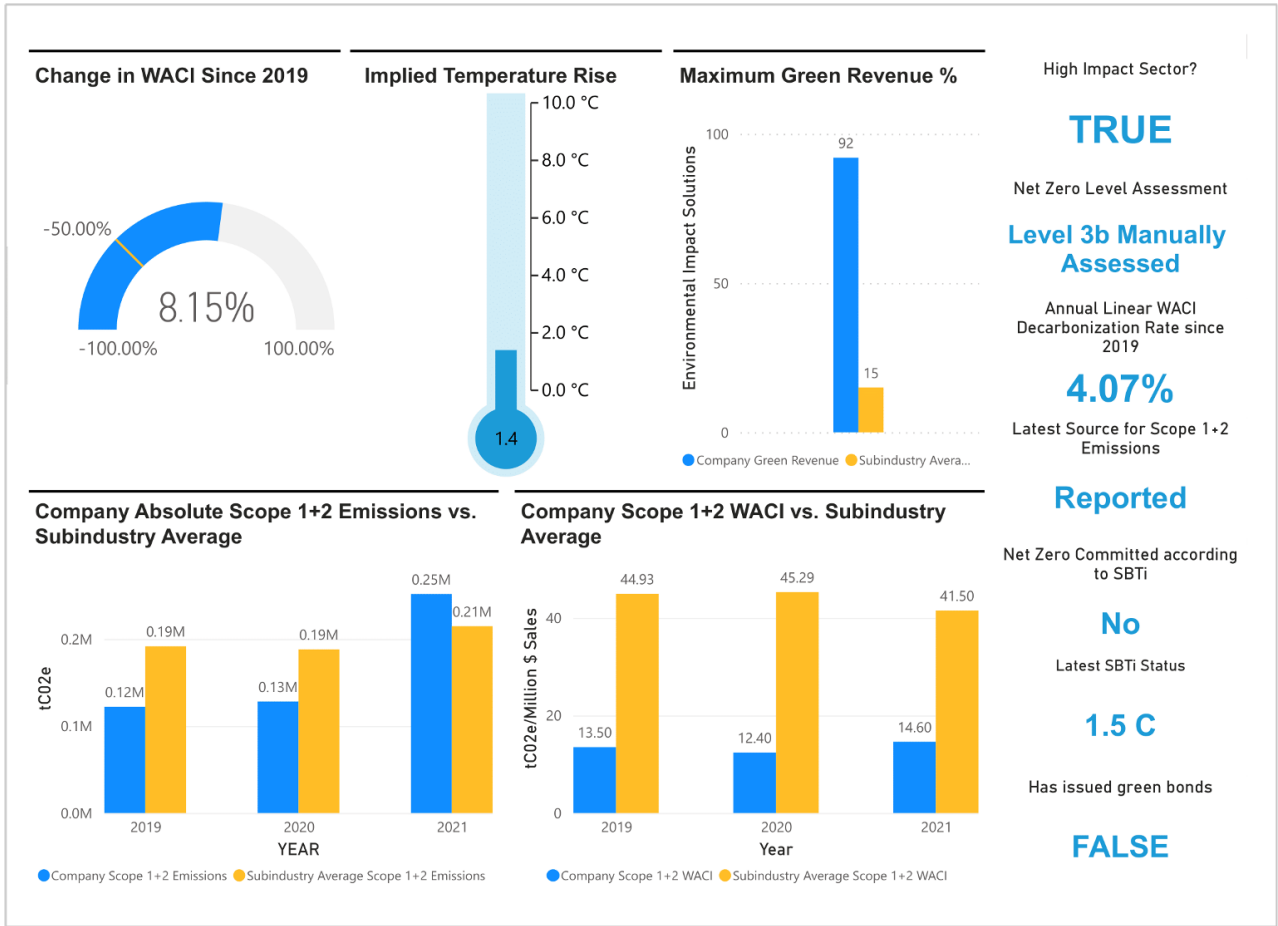
This effort is supported by the development of our proprietary Climate Transition Dashboard (*Display 7, page 22*). This dashboard allows our teams to easily view, compare and explore current climate change-related data on over 20,000 issuers across our actively managed equities and fixed-income strategies. The dashboard allows AB investment teams to access a central place for consistent climate data and presents users with dozens of data points, including historical absolute and intensity Scope 1 and 2 emissions; relative change in weighted average carbon intensity (WACI) over time; implied temperature rise; revenues and financing aligned to climate transition; and climate-related commitments and targets.

DISPLAY 6: CLIMATE TRANSITION ALIGNMENT FRAMEWORK



As of December 31, 2024 | Source: AB

DISPLAY 7: CLIMATE TRANSITION DASHBOARD—ISSUER EXAMPLE



As of December 31, 2024 | Source: Bloomberg, CDP Worldwide, FactSet, MSCI and AB





Issuer: Saab Group
Sector: Industrials
Asset Class: Equities

Saab is a Swedish company involved in defense, aviation and aerospace. After an assessment of the issuer's climate transition alignment, the Responsible Investing team and covering analyst engaged with and encouraged the issuer to understand how the issuer can address and mitigate material risks. The company was assessed at Level 1. Saab has set a 2050 net zero target for all scope emissions, approved by the Science Based Targets initiative (SBTi) for both near-term and 2050 goals. By 2030, Saab aims to reduce its Scopes 1 and 2 emissions by 42% from a 2020 baseline year, covering 100% of these emissions. In assessing the company, we learned that it had planned to achieve its goal through improving energy efficiency, purchasing renewable energy credits, implementing an electricity savings initiative and increasing the number of charging points on company grounds by 55% during 2023. For Scope 3 emissions, Saab targets a 25% reduction in emissions from the use of sold products and from travel and transportation by 2030, based on a 2020 baseline year. However, these targets cover only 39% of the company's Scope 3 emissions. Additionally, Saab aims to engage 50% of its suppliers, prioritized by dependency (based on spend), to set science-based targets by 2027.

From 2020 to 2023, Saab's Scopes 1 and 2 emissions decreased by nearly 30%, while Scope 3 emissions increased by roughly 4%, which can be attributed to the increased sales of its products. Only 3% of Saab's total capital expenditure is allocated to environmentally sustainable activities, according to the EU taxonomy. Saab has also established a "Climate Fund" to internally fund innovative projects aimed at reducing emissions, though the scale of impact and capitalization

of the fund remain unclear. Examples of Saab's sustainable solutions include Departure Assist Systems at busy airports, underwater hull cleaning to improve fuel efficiency, and involvement in sustainable underground mining projects.

During our engagement with Saab's CEO, we focused our questions on what the company intends to undertake in order to reduce its Scope 3 emissions, which constitute the majority of the company's emissions profile, given that it seems to be making significant progress on reducing Scopes 1 and 2 emissions. Saab indicated that while it's focusing on reducing Scopes 1 and 2 emissions, it's dependent on the development and scaling of sustainable aviation fuel, the availability of which continues to prove a challenge throughout the industry. In the medium term, the company is still researching designs for next-generation aircraft that could run on batteries or hydrogen.

Going forward, we will continue to engage the company on:

1. Developing a quantified plan for reducing Scopes 1, 2 and 3 emissions
2. Realizing a reduction in absolute Scope 3 emissions
3. Disclosing and increasing investment in capex that is aligned with the company's net zero commitment
4. Continuing to develop low-carbon product solutions

Issuer: Phillips 66
Sector: Energy
Asset Class: Equities

Phillips 66 is a multinational energy company that is identified as a high-impact issuer. The issuer was assessed at Level 1, using AB's CTAF. Phillips 66 has set a target to reduce Scopes 1 and 2 emissions intensity by 30% by 2030 and 50% by 2050, and Scope 3 emissions intensity by 15% by 2030. From the company's 2019 baseline, Scopes 1 and 2 absolute and intensity emissions decreased by 8.5%, while Scope 3 absolute emissions decreased by 7.3%; Scope 3 intensity decreased by 3.2% from 2019 to 2022. The issuer does not disclose information regarding potential allocated capex toward its targets, or on planned usage of carbon offsets.

During our engagement, we met with the company's general counsel, members of its investor relations (IR) team, its manager of sustainability strategy and its general manager of total rewards. We learned that Phillips 66 plans to achieve its targets through improving energy

efficiency, increasing renewable power sources, capturing CO₂, producing lower-carbon-intensity hydrogen, and supporting enterprise growth and portfolio optimization. However, the company provided little detail on its strategy for Scope 3 emissions reduction, except for noting that it plans to achieve its target for Scope 3 emissions reduction by diversifying its sold fuel and energy mix, with renewable diesel and sustainable aviation fuel as its biggest near-term levers. It also expects to incur substantial capex and opex costs due to laws and regulations. Finally, the issuer notes that it is considering the use of carbon offsets or credits to meet its targets.

We plan to monitor future disclosures for more details around the company's decarbonization plan, capex spend to achieve stated targets and use of carbon offsets.

Issuer: Xcel Energy
Sector: Energy
Asset Class: Fixed Income

Xcel Energy is an electric utility and natural gas delivery company based in Minnesota. It serves around 3.8 million electric customers and 2.2 million natural gas customers through four subsidiaries, and it operates in two segments: Regulated Electric Utility, which manages electricity services in eight states, and Regulated Natural Gas Utility, which handles gas operations in five states. Residential customers constitute 86% of its electric customer base and 91% of its gas customer base. The issuer was assessed at Level 3 using AB's CTAF. Xcel Energy aims to achieve net zero emissions by 2050 for its electric and natural gas systems.

We met with its director of energy and environmental policy and members of its IR team. We learned that the company plans to reduce its Scope 1 emissions by 80% by 2030 and achieve net zero emissions by 2050 for its electric business. Xcel Energy plans to retire all coal plants by 2030, converting some to natural gas and decommissioning the rest. In terms of its natural gas business, it aims to achieve net zero emissions across Scopes 1, 2 and 3 by 2050, with an interim target of a 25% reduction in gas business emissions by 2030, both from a 2020 baseline. By 2030, it plans to use only certified low-methane gas and incorporate low-carbon gas supplies such as hydrogen and renewable natural gas. It has already reduced its Scope 1 emissions by 59% from 2005 (as of 2023) and aims for a 70% reduction by 2030. It also purchased about 1.5 million renewable energy certificates from 2021 to 2022.

To meet a growing data center demand, Xcel Energy plans to add 6,700 megawatts by 2028, balancing growth with various state emissions-reduction goals in which the issuer operates. In 2023, around 50% of the power provided to its customers came from clean energy sources. The company is planning to invest US\$1.5 billion in renewable energy in 2024, making up about 20% of its capital expenditure for the year. From 2024 to 2028, it plans to allocate US\$5.6 billion to renewable energy and US\$22 billion to electric transmission and distribution and to resiliency. Lastly, it has issued several green bonds, maturing around 2050, to support its sustainability initiatives. Xcel Energy actively seeks federal funding through programs like the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, and it participates in a variety of clean energy projects, such as the Form Energy pilot, which focuses on a 100-hour iron-based battery that is low cost and does not rely on rare earth minerals. The issuer does acknowledge the challenges of new technologies and the need to educate regulators about these technologies' associated risks and economic feasibility. It also emphasizes that future technologies like geothermal, hydrogen and long-term storage are needed to maintain grid resiliency and meet emissions-reduction targets.

We suggested that the issuer publish a quantitative emissions-reduction plan, and we will monitor Xcel for future developments.

Climate Risk in Investment Decision-Making

Analysts' recommendations and evaluations of risks and opportunities for a security reflect material ESG issues, including climate.

Measuring Climate Risks and Opportunities

AB's Carbon Footprint, Carbon Intensity and Scenario-Analysis Methodologies

AB uses one or more formulas, as recommended by the TCFD, when calculating and reporting carbon footprints and intensities for portfolios (*Display 8*). These may vary regionally in accordance with local regulations and client preferences, and as global reporting standards evolve.

Scenario Analysis at AB

AB subscribes to MSCI's Climate Value-at-Risk (CVaR) climate scenario analysis tool, which provides both transition and physical climate risk results for many of our publicly listed equities and corporate credit holdings. However, due to the limits of climate scenario analysis models—today a nascent industry with imperfect data and highly variable approaches, compounding a complex exercise—the tool is not implemented systematically. As part of our efforts to systematically identify and address material climate transition risk and opportunities across our actively managed fixed-income and equities portfolios, AB looks to combine and verify data from various sources with our analysts' company and sector knowledge as well as our CTAF.

MSCI's CVaR model calculates the present value of aggregate future policy risk costs, technology opportunity profits, and extreme-weather-event costs and profits—expressed as a percentage of portfolio market value—across a variety of policy, technology and physical risk scenarios (*Display 9, page 26*).

The scenario analysis model employs a hybrid top-down and bottom-up methodology to identify and calculate the potential CVaR of the various transitional risks and opportunities that each portfolio holding is exposed to. These include, but are not limited to, future policies targeting emissions reductions, the potential of low-carbon technologies, and indirect climate-related risk impacts from electricity consumption and the supply chain (Scopes 2 and 3). The model also forecasts the potential impacts of extreme weather events by modeling costs from both asset damage and business interruption.

AB uses the scenarios developed by the Network for Greening the Financial System, where applicable. We use the 1.5 REMIND Orderly, 2.0 REMIND Disorderly and 3.0 REMIND Hot House World transition scenarios, with the aggressive physical scenario held constant across the three transition scenarios in certain portfolios. We will continue to evaluate new scenarios as they are developed. For more details on MSCI's CVaR models and methodologies, please refer to the MSCI website.

DISPLAY 8: PORTFOLIO CARBON METRICS

Type of Metric	Metric Formula	Units
Total Financed Emissions	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * \text{ Issuer's emissions})$	Tons of CO ₂ e
Total Financed Emissions per \$ Million Invested	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * \text{ Issuer's emissions}) / \$ \text{ mil. invested in portfolio}$	Tons of CO ₂ e / \$ mil. invested
Weighted Average Carbon Intensity—Corporates	$\sum ((\$ \text{ current value of corporate investment} / \text{ Current corporate portfolio value}) * (\text{ Issuer's emissions} / \$ \text{ mil. revenue of Issuer}))$	Tons of CO ₂ e / \$ mil. sales
Weighted Average Carbon Intensity—Sovereigns	$\sum ((\$ \text{ current value of sovereign investment} / \text{ Current sovereign portfolio value}) * (\text{ Issuer's emissions} / \text{ capita}))$	Tons of CO ₂ e / capita

Source: AB



DISPLAY 9: CLIMATE SCENARIO ANALYSIS RISK FACTORS

Climate Value-at-Risk = Transition Risks + Tech Opportunities + Physical Risks

Risk Type	Details	Short Description
Transition Risks	Emissions-Reduction Costs (Scope 1)	Company-owned facilities and vehicles
	Electricity Pass-Through Costs (Scope 2)	Purchased or leased electricity, steam, heating and cooling
	Value Chain Impacts (Scope 3)	Upstream and downstream
Tech Opportunities	Clean Tech Revenues	Corporate earnings from green revenues
	Patents	Corporate earnings from patents
Physical Risks	Extreme Cold	Productivity impact: Construction, labor availability, increased heating costs
	Extreme Heat	Reduced labor availability, decreased productivity, etc.
	Heavy Precipitation	Transportation and mobility risks can affect construction
	Heavy Snowfall	Transport and logistics interruptions
	Extreme Wind	Asset damage or limiting outside activity, transportation, wind power generation
	Coastal Flooding	Asset damage and prolonged business interruption
	Fluvial Flooding	Infrastructure and real estate damage and displacement
	Tropical Cyclones	Most devastating natural hazard
	Wildfires	Warmer and drier weather conditions impact fire ignition, spread, intensity and vulnerability
	River Low Flow	Water scarcity on the power production sector

For illustrative purposes only

As of December 31, 2024 | Source: MSCI ESG Research

ESG Analysis in PRISM

PRISM, our proprietary credit-rating and scoring system, is integrated into our fixed-income research analysts' portal, which is a fully digitalized data and security analysis platform. With PRISM, analysts can develop and share views on individual issuers in a consistent, comparable and quantifiable way across industries, ratings categories and geographies. Issuers are evaluated on multiple dimensions and assigned ESG weights, which are determined by the industry being analyzed and are based on what we view as the most important factors for the company or issuer. AB fixed-income analysts, portfolio managers and traders can access PRISM's ESG scores in real time.

When we developed PRISM 3.0 in 2023, we had the goals of improving scoring consistency and freeing up analysts' time for activities such as engagements. Analysts can now focus their time on complementing the data-rich base-level ESG view of an issuer, rather than populating the base-level view from scratch. One of the major developments of PRISM 3.0 is its ability to link the financially material E, S and G factors to specific ESG data metrics, which then can be leveraged to populate "objective" base scores across industries. In total, we leverage over 150 metrics for our E, S and G assessments in PRISM 3.0. However, not all metrics feed into every assessment, because not all factors or metrics are universally material across industries.

Analyzing NDC Commitments in Sovereign Bond Assessments

Climate change poses significant physical and transition risks for most sovereigns—vulnerabilities that are captured by hard data or qualitative adjustments in the Sustainability and Environment scores of our proprietary sovereign ESG scoring framework. Our ESG scores feed our economists' overall emerging-market (EM) fundamental country score and can influence EM country selection. Within developed markets, our economists use these baseline scores, combined with other real-time factors, to shape our view on the direction of politics and policy going forward. These in turn will impact our views about growth and volatility, and thus have the potential to impact government bond and risk asset returns.

For sovereigns, our climate change research rests on a number of key premises. First, forward-looking climate analysis necessitates a clear understanding of sovereigns' climate mitigation and adaptation pledges. In this regard, over the course of 2023, we began including nationally determined contributions (NDCs) into our proprietary ESG scoring framework. NDCs are key documents outlining governments' ambitions in terms of GHG reduction efforts, target years for net zero implementation and other adaptation strategies. Second, we also started tracking the evolution of domestic policy agendas and implementation schedules to reach these climate targets and reduce climate change vulnerabilities over time. Engagement with government entities enables us to access the latest data and policy objectives, and communicate the importance of taking climate action and how this action informs our ESG framework and overall investment process.

Addressing Climate Change in Commercial Mortgage-Backed Securities (CMBS)

Within the CMBS sector, we believe the primary ESG risk is in the underlying commercial properties' exposure to natural hazards (e.g., earthquakes in California, hurricanes in Florida), which can result in permanent property damage not covered by insurance and/or cash-flow impacts due to business interruptions. While many commercial properties carry hazard insurance and supplemental insurance, recent storms and extreme weather events have proven that weather pattern changes can severely affect even inland areas, and most regions have overlapping concerns. The problem is significant—and growing—as climate change drives more frequent and catastrophic natural disasters.

How can fixed-income investors address this problem? We believe that the answer is to quantify the risk for individual properties based on models that consider specific types of potential disasters region by region. Through this in-depth analysis, investors can better understand CMBS risk exposure, and either demand better pricing on riskier deals or avoid them altogether. To assess this risk across the approximately 20,000 properties within the conduit and single borrower markets, we use data from Risk Management Solutions, a company that specializes in evaluating catastrophe risk for insurance and reinsurance companies. We evaluate each loan and each deal's exposure to elevated natural hazard risk. From a governance perspective, we focus on potential conflicts of interest if and when the special servicer is also the controlling class representative on a deal. From a social perspective, we evaluate where (in primary, secondary or tertiary markets) loans are being made within the CMBS deals.

CMBS investors who understand the material ESG implications within their investments will be better positioned to avoid specific hazards and have a better chance to guard against climate-related losses. We also believe that they'll ultimately be fairly compensated for the risks they choose to take.

Considering Climate Risks on Municipal Bond Values

In 2021, AB introduced a proprietary ESG scoring model for our broad-based municipal bond universe. The model integrates material ESG factors in each applicable step from the bottom up, bringing together ESG data specific to each type of municipal sector (state, city, school district, hospital, etc.) to develop a proprietary ESG score. Within the environmental category, the team evaluates factors including municipals' susceptibility to climate-related natural disasters (which we source from the updated Columbia NHI data), water and air pollution, and energy mix. Analysts assign weights to ESG components and subcomponents based on their assessment of the degree to which changes in each category may lead to a credit-rating change. ESG data are converted to a standardized scale, and very high and very low ESG scores may impact the valuation AB is willing to accept for investment in the municipality's bonds, if deemed to be material.

Climate Stewardship

AB's approach to understanding and integrating material climate risks and opportunities doesn't stop once we've made an investment. As shareholders and bondholders, we continue to engage issuers on material climate risks and opportunities. We have an ongoing open dialogue with issuers on climate change when it poses a material risk—to encourage issuers to deploy strategies and take actions that we believe could drive better financial outcomes for our clients. We also view transparency, disclosure and our reporting to clients as paramount to effective stewardship and responsible investing. We strive to be transparent in what we do, from our approach and policies to our investment process and outcomes. We also actively exercise our right to vote proxies. Consistent with our broader Proxy Voting and Governance Policy, our approach to proxy voting on climate change—related resolutions is both principles- and rules-based.

Since AB became a signatory to the PRI in 2011, we've been an active participant in important climate-related industry organizations on behalf of our clients. In being an active member of these organizations, we both learn from and share with our peers best practices in identifying and addressing climate-related risks in the market. We also engage with governments, regulators and other drivers of public policy through consultations, working groups and other forums on climate-related legislation and regulation when we feel it's in our clients' best interests.

Proxy Voting

We actively exercise our right to vote proxies, and we have a robust rules- and principles-based global in-house Proxy Voting and Governance Policy and process that are applicable to our voting activities across geographies. While we're strong shareholder advocates, supporting robust corporate governance structures, shareholder rights and transparency for both AB and the companies and issuers we research and invest in, we do not seek to exert control over the issuers during engagements.

Our internally managed assets are covered by our policy; AB has authority to vote proxies relating to securities in certain client portfolios across active and passive strategies. Accordingly, our

fiduciary obligations extend to our exercise of such proxy-voting authority for each client for which we have agreed to exercise that duty. Our policy is to vote all proxies in a timely manner, for the full number of shares, for all securities held in client accounts for which we have proxy-voting authority, whenever it is administratively and logistically possible to do so. Where clients have specifically requested to override our house policy, we have the ability to arrange such measures on a best-efforts basis. If clients have retained voting authority, they can vote their shares, but if AB has authority, we generally do not allow clients to vote directly. We check our holdings as of the record date when we execute votes on all our holdings.

There are many proposals addressing climate change concerns, and their scopes vary. Climate change continues to receive investor attention as a potentially critical and material risk to the sustainability of a wide range of business-specific activities. Related proposals may include asking companies to adopt emissions standards, quantitative goals and impact assessments.

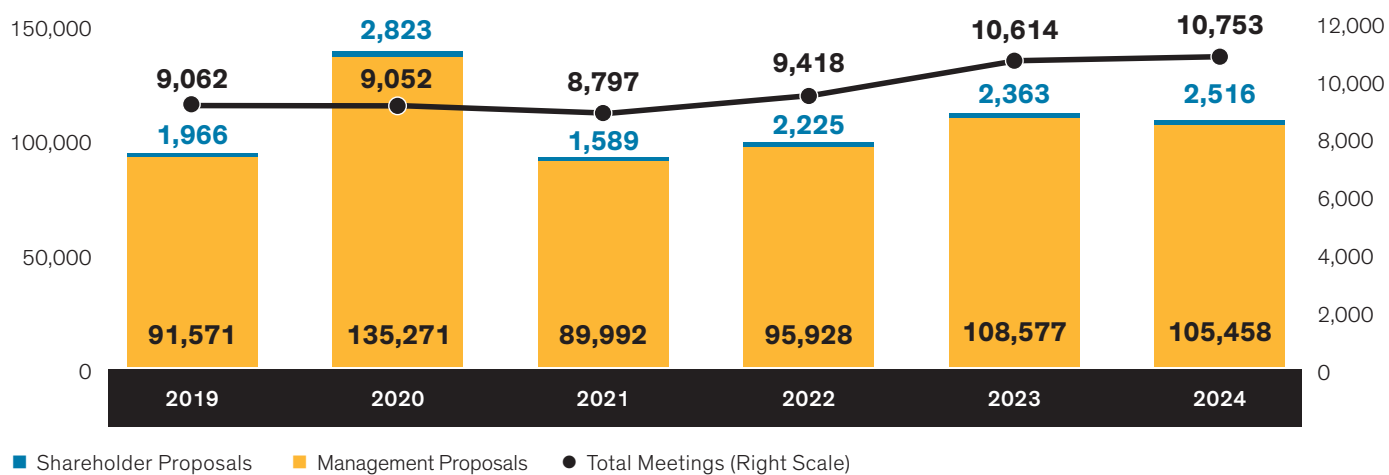
AB assesses SHPs based on our Shareholder Proposal Assessment Framework ("Framework"), as described in our Proxy Voting and Governance Policy. The Framework considers elements such as the materiality of the issue, the company's relevant practices and policies, and the context of the SHP. AB's commitment to maximize the long-term value of our clients' portfolios drives how we analyze SHPs. Rather than opting to automatically support all SHPs that mention an ESG issue, we evaluate whether each SHP promotes genuine improvement in the way a company addresses the issue, thereby enhancing shareholder value for our clients in managing a more comprehensive set of risks and opportunities for the company's business.

Summary of 2024 Voting Activity

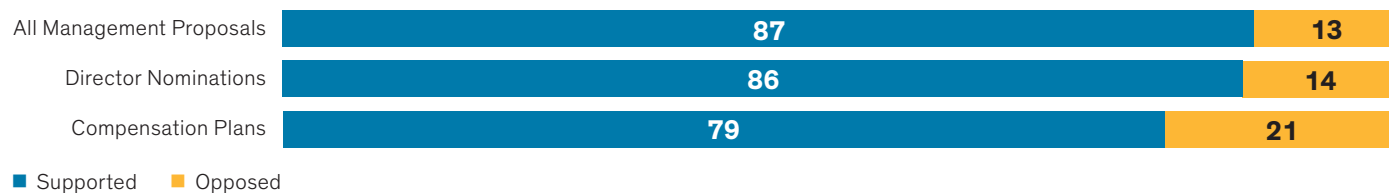
In 2024, AB voted on 107,974 total management proposals and SHPs across 10,753 companies globally (*Display 10, page 29*). We voted at 99% of the company meetings eligible. The 1% accounts for cases where we were not able to exercise our vote, generally due to unreasonable operational hurdles imposed by custodians or issuers in certain markets. We vote all our proxies internally; we do not outsource this activity.

DISPLAY 10: AB GLOBAL PROXY VOTING STATISTICS

Global Proxy Voting: Year over Year



2024 Proxy Voting Record (Percent)*



*Numbers may not sum to 100%, as frequency votes have been excluded.

As of December 31, 2024 | Source: AB

Voting Season: January 2024–December 2024

The volume of environmental SHPs decreased slightly in 2024 compared with 2023, though it continued to be high overall. The trend was coupled with a decreased market-wide support rate, which can be attributed to high volumes of prescriptive proposals, in combination with the increasingly robust corporate disclosures of environmental initiatives and risk-management efforts. Similar to results in 2023, the passage rate of SHPs also remained low. The focus of many proposals included topics related to climate change, including recycling, plastic waste and sustainable packaging, as well as the Just Transition.

Participation in Global Climate-Focused Industry Organizations

We have joined a variety of working groups, including the Carbon Asset Risk working group facilitated by Ceres and the Adaptation and Resilience working group run by IIGCC. We also continued participating in the Emerging Markets Investors Alliance's Agriculture & Extractives and Sovereign Decarbonization working groups.

AB engages with governments, regulators and other drivers of public policy when we feel it's in our clients' best interests. These engagements may take the form of comment letters, appearances at formal meetings of regulatory bodies and direct engagement with key government stakeholders. They often center on investment impacts or stewardship concerns from existing or proposed regulatory changes, such as to share classes, reporting requirements or the treatment of climate issues.

For example, AB participated in the PRI's Collaborative Sovereign Engagement on Climate Change with the Australian government. The initiative aims for investors to work collaboratively to engage with sovereign entities, officials and policymakers in the Australian system on material climate change issues. As part of this engagement, AB participated in an in-country trip to Canberra in August, where investors had the opportunity to speak directly with members of the Australian Treasury, independent members of parliament, the climate change minister, policy advisors on climate change from the opposition, and the senior advisor to the prime minister. Participation in this initiative has provided AB with leading insight on how the Australian government is approaching issues around energy transition.



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Approaching Biodiversity Risks and Opportunities Within Our Investments

Biodiversity is defined as the variability among all living organisms and the ecological complexes of which they are a part, including diversity among species and of ecosystems. Biodiversity and abiotic resources—the nonliving components of the natural world, such as land, water, air and minerals—form natural capital, which enables ecosystem services.

Ecosystem services provide the foundation for global economic activity to thrive and create the building blocks that generate value to businesses. [Biodiversity is highly interrelated with climate change and is an emerging area of research at AB](#). Nature-related risks and opportunities have become more apparent in our investments and will continue to increase as climate change and other drivers of biodiversity loss worsen. To curb the negative effects that biodiversity loss will have on the global economy, 196 countries signed the Kunming-Montreal Global Biodiversity Framework in 2022, pledging to halt and reverse biodiversity loss by 2030.

Additionally, nature-related transition risks have grown in several jurisdictions, like the EU, which is leading the way in implementing nature-related regulations. For example, the EU Deforestation Regulation is creating compliance and supply chain risks for certain sectors. Other regulations that could impact our investee companies include the UK's 10% biodiversity net gain policy, part of the Environment Act 2021; France's Article 29, requiring mandatory disclosure of both climate- and biodiversity-related risks; and the US's National Strategy on Natural Capital Accounting.

Our Strategy

We have developed a strategy to put our research and knowledge into practice. This includes:

- **Education**—Executing firmwide training and client training; identifying partners and experts to help develop and execute a curriculum
- **Implementation**—Integrating biodiversity considerations into the investment process through research and engagement with issuers; sourcing data and identifying appropriate biodiversity metrics, data, tools and targets; leveraging proprietary insights
- **Thought Leadership**—Publishing research; participating in industry groups; and partnering with clients to understand risks and opportunities presented by biodiversity loss

Over the course of 2024, AB's Responsible Investing Research team brought in external biodiversity experts and data providers to continue building upon the prior year's efforts to enhance AB's institutional knowledge and expand the firm's capacity to address

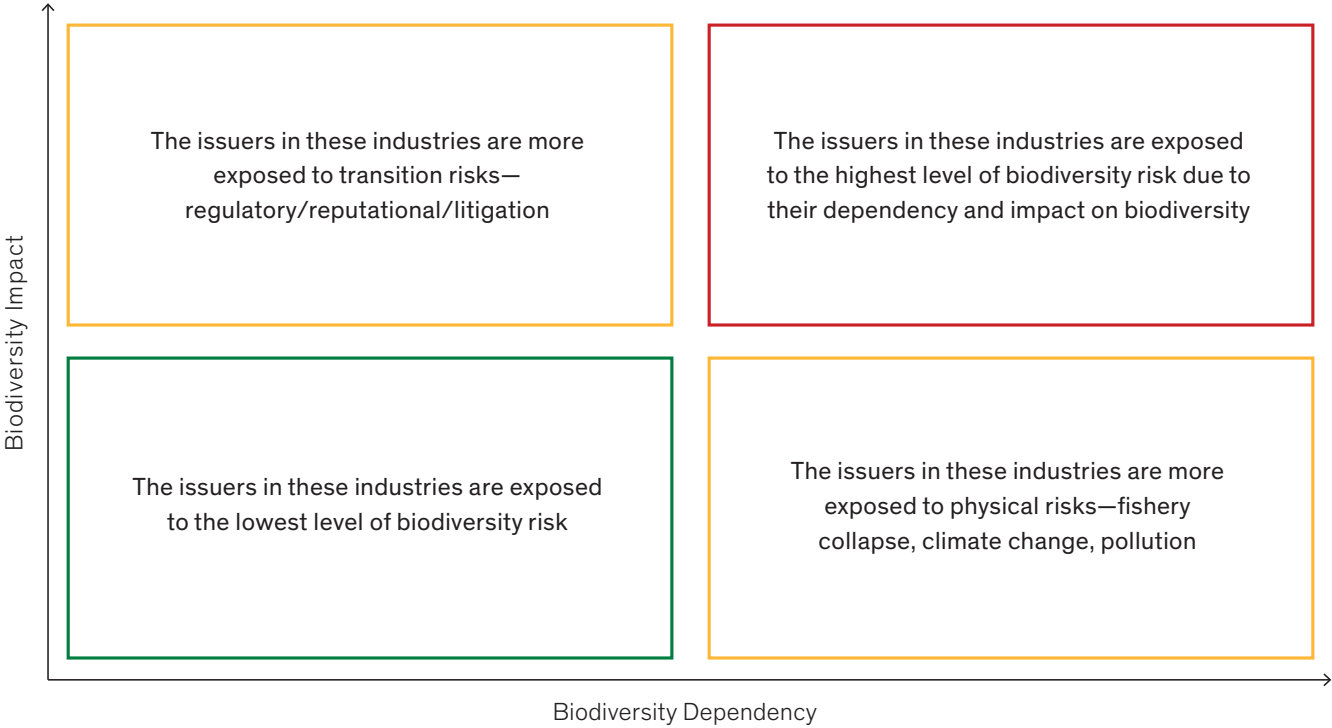
nature-related risks and opportunities. As part of the AB and Columbia Climate Change and Investment Curriculum, we hosted a training session on biodiversity for our investment teams.

The team also spent extensive time researching and producing thought leadership on the topic of nature, which has garnered recognition within the industry. We produced a white paper called [Biodiversity in the Balance: How Nature Poses Investment Risks and Opportunities](#), which provides a comprehensive survey of biodiversity for investors. It defines biodiversity, shows the scale of the global economic impact of biodiversity loss, and discusses the regulatory frameworks that are pushing biodiversity onto the global investment agenda as well as the nature-related business and investment risks that deserve closer attention. The paper takes a case-study approach to help investors conceptualize our framework. Lastly, we share our approach to integrating material biodiversity risks and opportunities into our responsible research and investment processes.

Investors can also develop nature-positive actions driven by partnerships with governments or other entities in creating innovative funding packages. One such opportunity is [debt-for-nature swap deals](#), which restructure developing countries' foreign sovereign debts, canceling or reducing outstanding bond issues on the condition that part of the debt relief is used for nature conservancy. These deals can take on different structures, such as varying amounts of debt relief or cash-flow benefits. In our view, two components are essential for a successful transaction: a significant share of debt relief redirected to nature conservancy, and a satisfactory yield for investors in the conservation-linked bonds.

From an implementation perspective, the Responsible Investing team has focused on nature-related data, which has been and will continue to be one of the major bottlenecks in addressing nature-related risks and opportunities. The team updated AB's Biodiversity Risk Matrix with quantitative data based on the Exploring Natural Capital Opportunities, Risks and Exposure materiality database (*Display 11, page 32*). An industry's position in the matrix can help investors identify potential nature-related risks and high-risk sub-industries.

DISPLAY 11: BIODIVERSITY RISK MATRIX



Source: Natural Capital Finance Alliance, [ENCORE \(Exploring Natural Capital Opportunities, Risks and Exposure\)](#) (2022)

On the matrix, we have mapped all the Global Industry Classification Standard (GICS) sub-industries to their exposure to biodiversity risk through the lens of an issuer’s dependency and impact on nature. Issuers with the highest dependency on nature are most exposed to physical nature-related risk and those with the highest level of impact

are exposed to the transition risk components. Issuers that have both dependency and impact are subject to the highest level of nature-related risk and are thus the focus industries for us to research to understand what kinds of nature-related risks are most material to their business.



Glencore is assessed at the highest level of both impact and dependency. Its impacts include disturbances, area of freshwater use, emissions of non-GHG air pollutants, and emissions of toxic pollutants to water and soil. Its dependencies include water supply, water purification services and water-flow regulation services. Glencore also discloses several biodiversity metrics, which can aid in our monitoring of its risks and opportunities. The issuer discloses its water withdrawal and discharge, the proportion of industrial sites situated in water-stressed areas, environmental incidents and spills, and land adjacent to high-biodiversity-value areas.

The Responsible Investing team created a dashboard from the above-mentioned data, which will allow analysts to view portfolio- and issuer-level dependencies and impacts. We are looking forward to rolling this out with our analysts in the coming year. As of December 31, 2024, the Responsible Investing team identified about US\$24 billion of our AUM that is classified as having the highest level of nature-related risk (*Display 12*).

DISPLAY 12: ISSUERS WITH HIGH NATURE-RELATED RISK EXPOSURE

GICS sub-industry	Number of issuers held in each GICS sub-industry
Packaged Foods & Meats	186
Construction & Engineering	156
Steel	95
Aerospace & Defense	75
Gold	64
Diversified REITs	62
Construction Materials	60
Diversified Metals & Mining	60
Hotels, Resorts & Cruise Lines	56
Homebuilding	55
Airlines	52
Automotive Retail	45
Environmental & Facilities Services	42
Air Freight & Logistics	41
Coal & Consumable Fuels	38
Retail REITs	38
Diversified Support Services	38
Marine	36
Office REITs	32
Real Estate Development	31
Fertilizers & Agricultural Chemicals	30
Industrial REITs	24
Agricultural Products	23
Multifamily Residential REITs	17
Healthcare REITs	13
Hotel & Resort REITs	10
Specialized REITs	10
Silver	8
Forest Products	7
Self-Storage REITs	6
Data Center REITs	5
Single-Family Residential REITs	5
Timber REITs	1
Housewares & Specialties	1

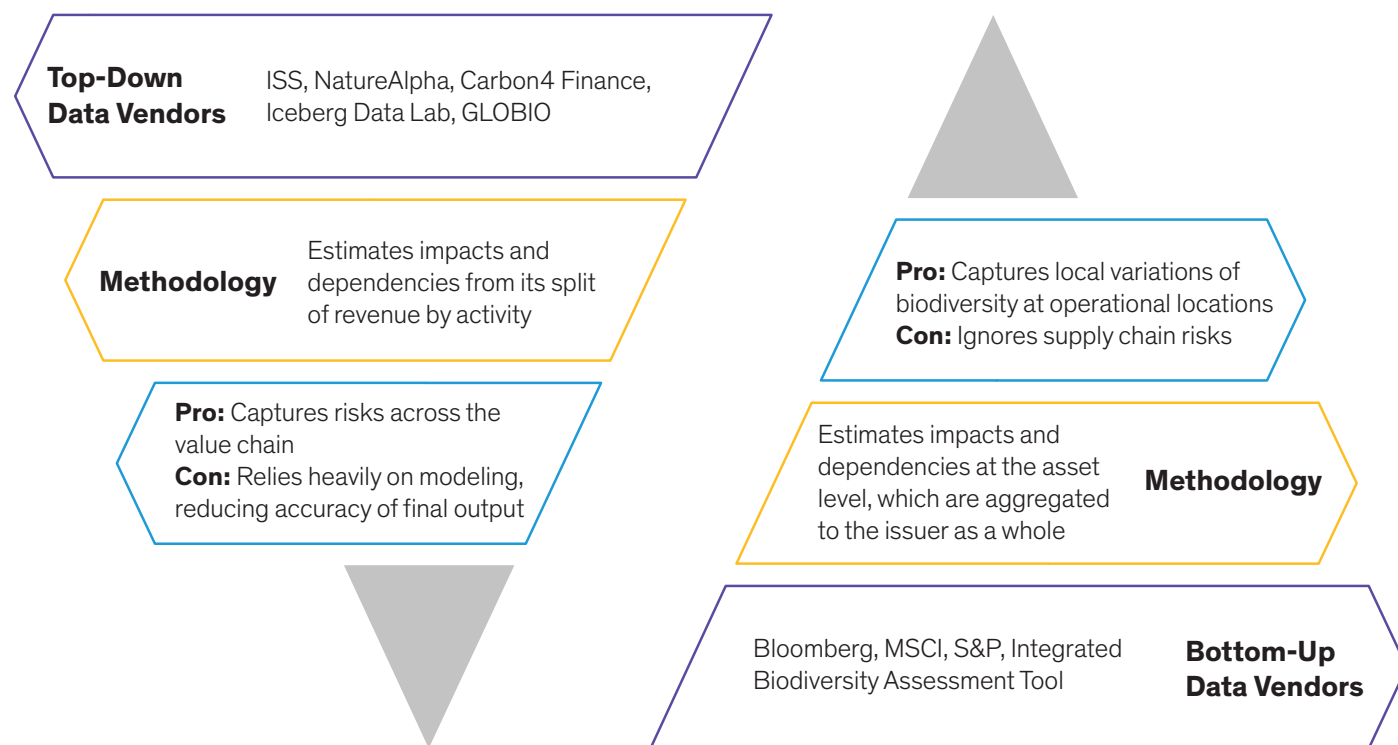


Additionally, the team entered into discussions with numerous nature data vendors to understand the landscape of metrics and tools, and their usefulness in assessing nature-related risks and opportunities. Overall, data vendor methodologies can be categorized into a top-down or bottom-up approach (*Display 13*). A top-down approach estimates dependency and impact from an issuer's split of revenue by activity. The advantage of this methodology is that it allows for a view of an issuer's risks across its value chain; however, it relies heavily on modeling, which can reduce the accuracy of the output. A bottom-up approach estimates dependency and impact at the asset level, and aggregates them to the issuer as a whole. This type of vendor takes advantage of its proprietary physical asset databases, which capture local variations of biodiversity at specific operational locations but ignore supply chain risks due to supply chain-mapping issues.

These vendors mainly utilize a "Mean Species Abundance" metric (which quantifies the abundance of original species relative to their abundance in a "pristine and undisturbed" environment in a given area) or a "Potentially Disappeared Fraction" metric (which indicates a negative impact on biodiversity over both area and time) to aggregate an organization's impact on biodiversity into a single metric, akin to using tons of CO₂ equivalence. However, we found that while aggregating impacts into a single metric can be easier to use and to create comparability among issuers, the data quality and granularity are left out. Instead, AB suggests using a dashboard of unaggregated metrics alongside an aggregated metric to ensure that data quality and comparability are available. Overall, our Biodiversity Risk Matrix and access to data help us to prioritize not only industries for research but also issuers, including those that our investment teams may wish to engage with directly to explore issuer-specific biodiversity risks and opportunities.

DISPLAY 13: STILL EARLY DAYS FOR NATURE DATA

Top-Down vs. Bottom-Up Methodologies



Source: AB

Biodiversity-Related Engagement

Integrating material biodiversity considerations into the investment process through research and engagement with issuers is a key pillar of our approach. In 2024, AB held 48 engagements across 45 companies that discussed biodiversity.

Issuer: LVMH Moët Hennessy Louis Vuitton

Sector: Consumer Discretionary

Asset Class: Equities

LVMH Moët Hennessy Louis Vuitton is a French multinational luxury goods conglomerate. During an engagement in 2023, the company shared details of its Life 360 initiative, wherein it aims to source 100% of its strategic raw materials certified to preserve ecosystems and water resources by 2026, and to have 100% of its strategic supply chains covered by a dedicated traceability system by 2030. Resources are finite and, when constrained, could impact a company's production rate or costs. We wanted to engage with the company to track the progress it is making against this target.

In 2024, we met with LVMH's director of financial communications to discuss the initiative's outcomes. LVMH defines biodiversity as its major challenge. The issuer impacts nature by utilizing a significant amount of its resources but looks to do so in a responsible way. At the same time, LVMH is dependent on a wide variety of resources and thus needs to preserve them for long-term use. The company plans to: (1) exclusively use certified raw materials by 2026; and (2) work with suppliers to implement practices that preserve biodiversity, water, forests, etc. Strategic raw materials fall

into three groups: animal-based (the biggest group, due to LVMH's leather goods), plant-based (grapes, wood and flowers) and mineral-based (gold and diamonds). For plant-based materials, for example, this could mean working with a supplier to implement regenerative agriculture with the goal of increasing soil health and retaining water. Sheep wool is a negative outlier, with only a 29% certified share, which could be expected as the category's global certification standards have only recently been deployed. LVMH is confident that it can reach 100% certification share by 2026. We learned that it tried to initiate a global traceability system, which presented challenges, so LVMH has given the responsibility of supply chain traceability to the houses themselves. Due to this setback, it is lagging behind the 2030 target. It is currently working on a project—Map and Trace—with its most important suppliers to develop traceability solutions.

LVMH is making meaningful progress toward its goals. We plan to follow up to track its progress, specifically with sheep wool, which remains a negative outlier.



Issuer: International Bank for Reconstruction and Development (World Bank)

Sector: Financials

Asset Class: Fixed Income

The World Bank issued an outcome bond tied to biodiversity in South Africa—the “Rhino Bond.” The Rhino Bond’s coupon is a function of the population growth rate of rhinos located in two parks in South Africa. We wanted to use this engagement to: (1) explore our earlier conclusions on due diligence of the population growth threshold (+4%) necessary to earn the maximum coupon payment; and (2) provide feedback to the World Bank regarding what additional outcome bonds may be attractive to investors.

During our engagement, we learned that the 2023 rhino population growth rate increased compared with the growth rate in 2022 (7.7% vs. 7.3%) and remains comfortably above the maximum payout rate of 4%. Key drivers of the increase in population growth include additional fencing, improved aerial support and community support, all of which drove down poaching and allowed for translocations (fostering population metrics to remain high without oversaturating the parks’ areas). The World Bank reported that 61% of the money earmarked to the project has been disbursed, which is expedient, and noted that this is one of the most efficient/fastest

rollouts of its global projects. Additionally, the World Bank shared some intermediate key performance indicators for the first time, showing:

- The area under improved management is 155,000 hectares (versus zero in the baseline).
- The number of rangers per square kilometer is roughly three times higher than the baseline’s.
- The poaching of rhinos is materially lower than in recent history.
- Visual confirmation of about 97% of the animals in 2023, though confidence in counting is inherently difficult.

We continue to believe that South Africa’s rhino population growth will achieve the maximum threshold (greater than 4%) and the bonds will achieve the maximum coupon step-up, which is an excellent outcome for bondholders, the World Bank’s creditability, biodiversity loss and the areas’ local communities. AB expects to continue to partner with the World Bank to develop attractive outcome-based bonds.



Issuer: Teck Resources

Sector: Materials

Asset Class: Equities

Teck Resources is a resource company that engages in the exploration, acquisition, development, production and sale of natural resources. We previously engaged the company on community engagement around water quality in Elk Valley, British Columbia, Canada, where controversies around selenium leakage elicited concerns from municipalities, scientists and Indigenous communities. While Teck Resources has since sold its operations in Elk Valley, it is expanding copper-mining operations in water-scarce Chile, where eight of its nine mines are in or near Indigenous territories. In 2023, a peer company was forced to close its copper mine in Panama due to public protests, in part over water risks in a biodiverse area. Given this context, we met with Teck to dimension how the company engages with affected communities to manage water risks more effectively.

We met with its director of IR and director of ESG engagement. Teck's governance framework spans the site, regional and enterprise levels. We learned that each site-based team has health and safety, environment and community leads. Each lead's performance criteria feature two or three metrics relevant to the materials issues under its domain. These leads all report to the general manager, who is accountable for compliance with enterprise standards. Sites monitor adherence to standards using a dashboard and ensure compliance through audits. Teck also developed a risk registry that scales any given risk from 0 to 5, based on likelihood and severity. This registry is updated with input from site leads and is used by the project board to prioritize risks and create action plans to mitigate risks. There also are regional leads for community, environment, and government and regulatory affairs who meet regularly with the senior

vice president (SVP) for their respective region. Finally, at the enterprise level, Teck Resources has had a formal commitment to engage with local communities through its SVP of sustainability and corporate affairs for 15 years. Teck also targets to use seawater or low-quality water sources for all operations in water-scarce regions by 2040.

We learned that there is consistency to Teck's types of outreach to local communities and its on-site roles across geographies. The company has dedicated a working committee to conduct deep-dive engagements with Indigenous communities. The issuer also seeks out opportunities for local employment and procurement, and invests in local communities. Teck recognizes that Indigenous communities may have cultural practices with water and it works to understand them at a site level. Teck has two methods for mitigating water risks: (1) it may try to avoid impacting local water resources; or (2) it may impact local water resources and work to have ongoing, transparent dialogue with the communities.

Over the last 10 years, Teck Resources has significantly increased the number of agreements with local communities. The communities encounter many issues, including disputes over territory boundaries and disputes over leadership. Despite the complexity, Teck is committed to obtaining free and prior consent.

In our view, Teck Resources has a robust governance framework and oversight of its affected communities and engagement with them, especially through its on-site support for community and environmental matters.





Nature Stewardship

In 2024, we joined the TNFD Forum and participated in Ceres's Climate and Land Use working group. We also attended COP16 in Cali, Colombia.

At COP16 in Colombia, we took note of some of the most pressing biodiversity-related topics atop the global political agenda. Please see below for some of our key takeaways.

- **Country Plans:** COP16 was supposed to turn COP15's ambition into action. Delegates faced an uphill battle, with [over 85% of countries having failed to submit National Biodiversity Strategic Action Plans \(NBSAPs\)](#) in the run-up to COP16, including G7 nations such as Germany and the UK and biodiversity hotspots such as Brazil and the Democratic Republic of Congo. NBSAP trackers are being provided by [World Wildlife Fund](#) and [Carbon Brief](#). At the end of COP16, 119 countries produced some form of national targets. However, countries failed to reach an agreement on a planned global review for COP17 in 2026 and failed to agree on a monitoring framework due to funding concerns. These issues will be discussed at the COP16 interim session in Bangkok in 2025, as a quorum was not reached toward the end of COP16 in Cali.
- **Indigenous Peoples and Local Communities:** One of the more tangible outcomes of COP16's first meeting was the establishment of a [permanent subsidiary body](#) for Indigenous peoples. While an informal working group has existed for over 20 years, this new body will allow Indigenous peoples to contribute to negotiations without depending on the goodwill of governments. This marks a significant step forward in recognizing Indigenous rights and ensuring that Indigenous perspectives are included in decision-making processes. [Local communities](#), defined as groups of people with a long-standing association with the land or water they live on, will also benefit from this development. This move aims to empower Indigenous peoples and local communities, acknowledging their crucial role in biodiversity conservation and sustainable management of natural resources.
- **Nature Data Utility:** The TNFD released a draft nature-related data road map that includes plans to deliver an [open-access Nature Data Public Facility](#) for market participants.
- **Nature Action 100 Benchmark Assessment:** The collaborative engagement initiative on nature has released its first benchmark assessment of corporate progress toward the initiative's [Investor Expectations for Companies](#). Though two-thirds (68) of companies disclose a commitment to protect nature and 47 disclose a nature target, only one company discloses evidence of a comprehensive materiality assessment.
- **First Movers:** As of October 2024, the number of early adopters of the TNFD sits at 502, up marginally from 416 in June. This includes [318 corporates \(US\\$6.5 trillion market cap\)](#) and [129 financial institutions \(US\\$17.7 trillion AUM\)](#).
- **Water Disclosure:** One-third of global-listed market cap now reports water data to CDP. Around 1,800 companies are assessing the impact that their value chains have on biodiversity, with a 43% increase in the number of companies disclosing biodiversity data between 2022 and 2023. Nonetheless, less than 10% of companies currently assess their dependency on biodiversity, and only 17% of banks and investors have said that they currently finance nature-based solutions.
- **Tree-Spotting:** About [38% of the world's trees are at risk of extinction](#), according to the International Union for Conservation of Nature and Natural Resources' first Global Tree Assessment.
- **Biodiversity Product Development:** [Morningstar](#) has released a [report](#) on the biodiversity and natural capital fund universe. It identifies 34 open-end funds and exchange-traded funds, all domiciled in Europe. These account for US\$3.7 billion of AUM, albeit outflows were seen in 2024 YTD for the first time. Separately, a group of [French institutional investors working with Af2i](#) have appointed a manager for a €100 million listed equity biodiversity fund to invest in both solutions and transitions.

Investing in Climate Solutions: AB's Portfolios with Purpose

Providing innovative solutions for our clients that invest in climate opportunities is another important element of our approach to climate and draws on our other climate efforts, including our learnings from climate partnerships, knowledge from climate research on risks and opportunities, and insights from engaging with corporations and others.

AB's Portfolios with Purpose offer clients a range of solutions to help them meet their financial objectives through a dedicated ESG focus, which may be climate-focused or incorporate climate along with the other ESG pillars.

AB managed approximately US\$27 billion in our Portfolios with Purpose platform as of December 31, 2024.

Our Climate Conscious Portfolios with Purpose include AB CarVal Energy Transition Funds and the AB Global Climate Transition Equity, as well as the AB Australian Managed Volatility Equity—Low Carbon and Carbon Offset Class. The latter two strategies target significantly lower carbon exposure than their respective benchmarks, and use a variety of approaches—carbon emissions, carbon pricing and fossil-fuel exclusion—in security selection and portfolio construction. We also have the AB Sustainable Climate Solutions Portfolio, which is part of our sustainable solutions suite. The AB Sustainable Climate Solutions Portfolio seeks to generate its return premium by investing in companies that provide solutions to the world's biggest climate challenges. Companies that provide solutions to key climate challenges often have attractive long-term growth optionality that the market frequently underappreciates. Companies with stronger ESG practices may also be exposed to overlooked competitive advantages and stronger business models with reduced risk profiles. The portfolio seeks to exploit these market inefficiencies.

Global Climate Transition

AB Global Climate Transition seeks to deliver better returns and significantly lower carbon exposure through buying quality,

climate-resilient companies at reasonable prices (*Display 14, page 40*). We believe that effective low-carbon equity strategies involve more than just vetting companies for carbon emissions. Many other variables should be weighed too, since so much can determine a stock's risk/reward profile beyond the long arm of climate change. That's why company fundamentals such as profitability and capital discipline are equally vital inputs in active climate-focused strategies. Strong fundamentals help quality businesses surmount macro hurdles beyond climate risks, such as inflation and higher interest rates. Attractive share valuations support return potential and help investors avoid risks in expensive parts of the market.

Investors seeking a climate-focused portfolio should also think about how it fits into a broader equity allocation. Those seeking to reduce climate risk in targeted equity strategies might not be aware of a [hidden hazard to portfolio construction](#). Climate-focused benchmarks have big positions in US heavyweight stocks, which add concentration risk and mute portfolio diversification benefits. While there are a variety of ways for equity portfolios to address climate risk—by, for example, focusing on companies helping to solve climate challenges, companies with lower carbon emissions or companies crucial to the energy transition—it's essential to manage a climate-related portfolio with the same research rigor, risk management and diversification as any active equity strategy. That means ensuring that the portfolio has adequate diversification. In fact, the MSCI World Climate Paris Aligned Index is heavily concentrated in the same stocks that dominate the MSCI World broad market index. This is largely by design, as climate indices typically seek to limit tracking error to the broader market index.

DISPLAY 14: “QCP” IDENTIFIES QUALITY, CLIMATE-RESILIENT, REASONABLY PRICED COMPANIES

Quality



Performance of **quality** companies is underappreciated, as cash flows are more sustainable than expected.

Climate



Companies that are addressing **climate** change are more likely to generate higher returns over the long term.

Price



Reasonable **price** enables us to avoid pockets of the market that may be crowded, and thus expensive and vulnerable to disappointment.

Quality: A Solid Foundation for Sustainable Growth

Companies with high-quality features have the flexibility to navigate short-term market stresses and longer-term challenges. We believe that strong profitability, measured by return on assets (ROA) and return on invested capital, is a robust predictor of future earnings power. Capital discipline can help support margins, particularly in a world of higher interest rates. Quality business models also tend to be more predictable and potentially less volatile—an especially important consideration for climate-focused investors, given how economic conditions, geopolitics and market volatility can place strains on low-carbon industries, particularly alternative energy.

Climate: A Panoramic View of Risks and Opportunities

Evaluating climate credentials requires a panoramic view of both risks and opportunities. Carbon emissions are a prominent risk, and companies that don't control the associated costs may face lower expected returns and additional volatility. In contrast, companies with clear carbon targets and strategic plans to curb CO₂ emissions should enjoy advantages versus peers whose activities are more carbon intensive. Meanwhile, green opportunities are already surfacing in a range of industries—including those that aren't typically targeted by climate-focused investors.

Price: Valuation Underpins Future Return Potential

Shares of quality, climate-advantaged businesses shouldn't be bought at any price. Valuation discipline is a principle of prudent equity investing and must be applied in climate-focused portfolios. Staying focused on valuation is particularly important when quality or climate attributes are in vogue and pockets of the market become expensive. Our research shows that quality global stocks (companies with high ROA) have been attractively valued at the 23rd percentile of their monthly history since 1990. Stocks with healthy balance sheets, based on net debt to market capitalization, also have appealing

valuations. And stocks with attractive valuations based on their price-to-free-cash-flow ratio have traded near the low end of their valuation range since 1990. We believe that select high-quality, climate-focused companies can be found within these groups at attractive valuations.

We carried out in-depth fundamental research on Stantec, a global engineering and architectural planning firm with a leading position in infrastructure, water, environmental services and buildings, in relation to the three above focus areas. We found that megatrends, global infrastructure and reindustrialization are driving large increases in capital investments. Stantec is also aligned with high-growth markets, such as climate solutions, infrastructure and future technology. The company screens well from a climate perspective, because it has a clear strategy in place that can enable the transition to a low-carbon economy. Across its own operations, the company aims to reduce absolute Scopes 1 and 2 GHG emissions by 47% by 2030 (from a 2019 base year) and absolute Scope 3 GHG business travel emissions by 47% (from a 2019 base year). The company plays a leading role in the transition to renewable energy, including participation in clean hydrogen hub projects, grid modernization and hydro refit. It utilizes a debris-flow predictor analytical tool (within a geohazard suite) that can preserve the environment. Stantec also has rapid response and recovery support to fire, flood or hurricane events. Lastly, in terms of green opportunities, the ESG consulting market is expected to grow by double digits annually, reflecting roughly US\$80 billion in spending over the next five years. From a price perspective, Stantec continues to allocate capital to both organic and inorganic growth initiatives and return cash to shareholders through share buybacks and dividends. It maintains strong cash flow that provides balance sheet flexibility.

Past performance does not guarantee future results. This example is provided for the sole purpose of illustrating how research can be used to help identify investable ideas in the portfolio-management process, and is not to be considered a recommendation by AllianceBernstein L.P. The specific securities identified and described herein do not represent all of the securities purchased, sold or recommended for the portfolio, and it should not be assumed that investments in the securities identified were or will be profitable.

As of December 31, 2024 | Source: Company reports and AB

Under AB's CTAF, we have developed a bank-focused framework for our fundamental analysts to utilize for company analysis and engagement. Over the course of 2024, we analyzed industry frameworks and available data to assess banks' facilitated and financed emissions and green lending opportunities. Throughout this exercise, we identified three gaps that we enhanced in our own framework to use for analyzing banks and financial institutions. The enhancements include focusing on the bank financing of high-impact sectors; emphasizing the need for banks to engage with clients on decarbonization, de-risking and transitions opportunities; and highlighting that banks can benefit from opportunities in the energy transition. To better understand companies' Scope 3 financed emissions, we engaged with several banks on best practices and progress toward their goals, with the background that Scope 3 emissions data is available but still has comparability issues. We also enhanced our portfolio-construction process to include additional metrics on net zero-focused memberships and data-reporting quality.

We assessed NatWest Group and found its valuation to be cheap, given the dire credit and growth environment. We have seen a slowdown in the UK's GDP, but an increase in funding costs. The company continues to have excess capital and high credit quality. NatWest Group also has high deposit betas relative to peers', so rate cuts will likely flow into funding costs relatively quickly. The company also has the lowest Scopes 1, 2 and 3 emissions footprint among its peers while maintaining a high-green-lending to carbon-intensive-lending ratio. NatWest Group engages with and supports its customers' transition to a net zero economy and monitors developments, including monitoring their efforts. The bank has an ambition to support UK mortgage customers to increase their residential energy efficiency and incentivize purchasing the most energy-efficient homes. NatWest Group is phasing out financing for coal for its UK and non-UK customers who have coal production and generation by the end of 2024, and it has a target to provide £100 billion in climate and sustainable financing by 2025.

Green opportunities are already surfacing in a range of industries. In the transition to low-carbon economies, some companies will lead the way, while others will play a supportive role or benefit from dynamic changes. We believe that climate change will have far-reaching influences as part of a select triumvirate of global macro megaforces likely to play out for years—the other two being changing demographics and deglobalization. Pathways most likely to define this linkage include rising temperatures, extreme weather events, mass migration pressures, political instability, conflict over resources, habitat loss, deforestation, biodiversity shrinkage, rising sea levels

and other physical risks. As a result, we believe an active approach to climate-focused equity selection is needed to discern between businesses that are enabling the transition to low-carbon economies, implementing change or benefiting from the shift, versus those that are at risk.

AB CarVal Energy Transition Funds

AB CarVal has an investment team that is focused on three primary strategies within energy-transition investments: developer and corporate financings, project-level financings and residential solar/efficiency loans/asset-backed securities. It manages two dedicated clean energy funds and several separately managed accounts focused on energy-transition investments. At the core of the funds' investment strategies is a rigorous investment-selection and investment-decision process that combines a top-down perspective and portfolio-construction discipline with a bottom-up fundamental analytical approach. Considerable emphasis is also placed on the monitoring and reporting of the performance of the ongoing investment portfolio. The funds are not dependent on any one particular asset class or geography, enabling the firm to move capital to the most attractive clean energy investment opportunities.

Through these and other funds, AB CarVal has invested over US\$6 billion in energy transition assets and sustainable infrastructure. The following are examples of recent AB CarVal energy-transition investments:

- Invested over US\$250 million in project tax equity partnership interests, underpinned by highly covered senior asset-level preferred cash flows, to support over US\$3 billion of renewable energy project assets across battery energy storage systems (BESS) and solar and fuel cells at both the residential distributed generation and utility-scale levels. This strategy comprises 14 tax equity deals across 11 developers, supporting US\$1.3 billion of investment tax credit across more than US\$3 billion of assets. This represents 360 megawatts of power generation and 1.3 gigawatt hours of BESS capacity
- Committed a US\$93 million construction loan and tax equity bridge facility to an established utility-scale solar developer to fund the construction of a portfolio of three projects in the US Midwest
- Funded a €75 million, five-year secured mezzanine debt facility to a leading Polish solar developer and integrated independent power producer to acquire, construct and reinvest in small-scale solar assets in Poland

AB as a Business

At AB, the principle of resource efficiency guides our sustainability efforts and supports our business objectives. To deliver on this principle, we continue to measure our GHG emissions, optimize energy use, manage office waste and engage employees around the topic of sustainability. In this section, we will outline our progress and achievements in these areas, as well as our ongoing commitment to achieve net zero Scopes 1 and 2 emissions in our operations by 2050.

Measuring Greenhouse Gas Emissions

AB measures its GHG emissions from its offices and data centers and its business travel annually. We measure Scope 1 emissions from natural gas consumption, Scope 2 emissions from electricity usage, and Scope 3 (Category 6) emissions from air and rail

business travel. The table below outlines AB's most recent 2024 data, as well as our baseline year and the prior two years (*Display 15*). The years 2020 and 2021 have been excluded due to nonreplicable business conditions (the COVID-19 lockdown). Since 2019, AB's total emissions have remained relatively consistent.

DISPLAY 15: AB'S OPERATIONAL CARBON FOOTPRINT DATA

	Units	2019	2022	2023	2024	% Change 2019–2024
Scope 1 Fuel* Consumption	Ft ³	3,592,700	3,907,296	3,019,044	5,063,473	41%
Scope 2 Electricity† Consumption	kWh	17,731,887	20,146,813	19,295,263	18,456,519	4%
Scope 3 Business Travel‡ Consumption	Miles	37,569,691	17,165,064	25,221,896	23,892,359	–36%
Scope 1 Fuel Emissions	tCO ₂ e	200	219	168	278	39%
Scope 2 Electricity Emissions	tCO ₂ e	5,524	7,392	7,438	7,605	38%
Scope 3 Business Travel Emissions	tCO ₂ e	6,580	2,877	3,757	4,195	–36%
Total Emissions	tCO ₂ e	12,304	10,488	11,363	12,078	–2%
AB Footprint	Sq. Ft.	1,152,898	1,349,036	1,394,405	1,534,472	33%
Total Emissions per Square Foot	tCO ₂ e/Total Sq. Ft.	0.010672	0.007774	0.008149	0.0079	–26%
Employees	# of Employees	3,814	4,436	4,707	4,341	14%
Total Emissions per Capita	tCO ₂ e/Person	3.226009	2.364292	2.414064	2.782249	–14%

AB considers the principles and guidance of the World Resources Institute and World Business Council for Sustainable Development's *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (Revised Edition); *GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard*; and *Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard* to guide the criteria to collect, calculate and report its sustainability metrics. The emissions reporting period is from January 1, 2024, to December 31, 2024, which is aligned to AB's fiscal year (FY). In 2025, AB received limited assurance on its 2024 GHG data inventory for Scope 1, 2 (location-based) and 3 (Category 6).

*Fuel refers to the on-site combustion of natural gas at leased offices and data centers. †Electricity refers to the purchase of electricity at leased offices and data centers. ‡Travel refers to commercial air and rail business travel undertaken by AB employees.

As of December 31, 2024 | Source: AB

Our mix of Scope 1, Scope 2 and Scope 3 (Category 6) emissions has shifted. Scope 3 (Category 6) emissions have decreased, while Scope 1 and 2 emissions have increased. Emissions per square foot and per capita have decreased, as our real estate footprint and workforce have increased.

Optimizing Energy Usage

Optimizing energy use involves using systems and processes that efficiently utilize the energy required for our daily business operations. To date, our efforts to optimize energy usage have come from relocating to green buildings and leveraging renewable energy at select locations.

In 2024, AB completed the relocation of our New York office, exceeding our goal of locating 85% of our people in green buildings. See “AB at The Spiral” (page 44) for further details on our New York office move. Additionally, we welcomed colleagues from AB CarVal into our office at 60 London Wall.

Last year, AB’s Nashville and London offices leveraged renewable energy. In Nashville, AB participated in the Tennessee Valley Authority’s Green Flex program via Green-e Energy—certified renewable energy certificates sourced from 100% wind energy. In London, our landlord procured renewable energy for the building, which is certified by the UK’s Carbon Trust.

As a global asset manager, we rely on our data centers to operate our business efficiently. Our largest three data center providers procure renewable energy for their operations and have committed to reaching climate neutrality in 2050.

Managing Office Waste

We manage office waste through waste separation, specific in-office programs and conscious decommissioning during office relocations. Our Nashville, New York and London offices have composting facilities, while our other locations offer trash separation (such as glassware, food and dry-mixed recycling). To reduce paper usage, we provide employees with a stipend to purchase an iPad, and we have connected printing to employee ID badges. Employees must activate their ID badges at the printer in person to release documents.

Moreover, decommissioning old offices presents an opportunity to relocate employees to greener spaces and minimize waste throughout the clearing process.

Engaging Employees Around Sustainability

In 2024, we continued to inspire our employees to use resources efficiently and practice sustainability at work and home. Specifically, we relaunched the AB Sustainability Councils (previously known as the Sustainable Employee Wellness Groups) and invited employees around the world to engage in discussions and activities surrounding sustainability. Activities from our Nashville, London and Pune Sustainability Councils are highlighted below.

The Nashville chapter celebrated Earth Day by cohosting an event with AB Synergy, our women’s employee resource group. Showcasing the various sustainability activities at our firm, the event featured the CEO of The FruitGuys, a woman-led B corporation and AB’s US-based produce vendor. We concluded the event by serving special drinks and hors d’oeuvres made with the vendor’s fruit.

The London chapter hosted a festive event based around sustainable brands whose mission is to make a positive impact on the world. Attendees learned about and sampled products from companies including Tony’s Chocolonely and Booni Box. Tony’s Chocolonely is committed to reducing the unfair distribution of value and power in the chocolate industry. Booni Box sells gift boxes containing products from sustainable producers and reinvests a portion of the profits into social projects. We concluded the event with a mixer that featured Sea Change Wine, which uses proceeds from its wine sales to reduce plastic pollution in oceans.

The Pune chapter celebrated World Environment Day in collaboration with Grow Billion Trees (a local NGO) and over 110 committed colleagues. During the event, AB planted approximately 170 trees, including native species, to help nurture a flourishing urban forest.

AB at The Spiral

In 2024, AB's New York office made an historic move from 1345 Avenue of the Americas in Midtown Manhattan—a location we had occupied since the 1980s—to The Spiral at 66 Hudson Boulevard in Hudson Yards. We wanted to create an innovative, artistic and green office that captures the unique energy of New York City. This new office space enabled us to exceed our objective of locating 85% of our employees in green buildings, reaching 90%.

AB's Move Out

We approached the move-out process with the intention of reducing waste-to-landfill where possible. This process included accounting for all items removed from the office and ensuring data consistency and credibility throughout the process. To work toward these objectives, we established the following "Responsible Relocation Guidelines":

- **REUSE** all items that still have value to AB.
- **RESELL** all items whose value can be captured elsewhere.
- **DONATE** items to nonprofits.
- Create **ENERGY** from waste.
- **LANDFILL** items that have no other value.

These guidelines were overseen by a minimal waste working group, who provided guidance and education to AB's removal vendors. AB employees also served as "Floor Captains," who were trained on the processes and objectives.

AB was responsible for removing technology equipment, kitchen equipment, office supplies and documents. We were not responsible for office furniture, which was returned to the building as part of our lease agreement.

Of the materials for which we were responsible, 15.54 US tons were resold, 22.13 US tons were repurposed, 226.72 US tons were recycled, and 7.22 US tons were sent to landfill (*Display 16, page 45*). There was not a material amount reused or used for energy creation. By following these guidelines, we were able to divert 97% of the materials that AB was responsible for away from landfill.

AB's Move In

In September 2024, we opened the doors to our office space at The Spiral.

The Spiral is a LEED Gold–certified building and known for its green terraces that spiral upward around the building. The building's design offers ample natural light and outdoor access. It is situated close to public transportation, world-class cultural attractions, health and wellness facilities, and childcare and pet-care facilities.

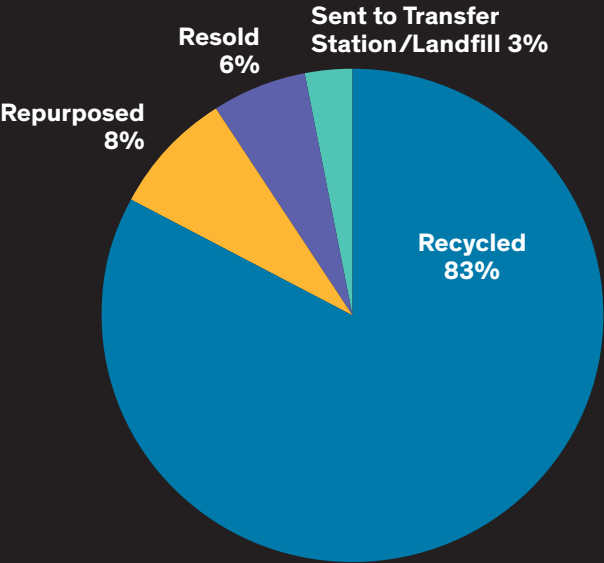
For this move, the firm outlined a clear set of objectives that we wanted to achieve in this modernized workspace. First, we aimed to replace our outdated space with a new, world-class office environment. Second, we wanted to design a workspace that would attract and retain top talent. Lastly, we sought to create a workspace that demonstrates our commitment to environmental sustainability and employee well-being.

AB's offices have received a 3-Star Fitwel rating, which means that our office facilities, amenities, emergency preparedness plans, cleaning protocols, signage and other factors are designed and implemented to support employee wellness. Where possible, we have used sustainable materials, such as biodegradable materials and forest-certified wood. Additionally, we installed motion-sensitive lighting and programmed our computer monitors to shut off after a predetermined idle time to reduce our utility consumption. Lastly, the office is fully equipped with waste-separation streams and composting.





DISPLAY 16: 1345 AVENUE OF THE AMERICAS OFFICE WASTE BREAKDOWN



As of December 31, 2024 | Source: AB

Appendix

ABL Supplement

ABL is an investment manager authorized and regulated by the FCA. The FCA's ESG Sourcebook sets out the TCFD disclosure requirements, and the following section is designed to ensure that ABL meets its disclosure requirements by disclosing how ABL takes climate-related risks and opportunities into account in relation to the assets it manages for its clients.

As ABL is part of the ABLP and its legal entities globally (the "ABLP"), it leverages the ABLP's approach to identifying and addressing climate-related risks and opportunities.

Governance

ABLP's oversight of climate risk involves a multilayered governance model that extends upward from our investment and operational teams through our Risk Management team and Operating Committee and ultimately to the ABLP Board of Directors—via our Audit and Risk Committee. For more details on the AB's governance structure, please see "The Governance Model Overseeing Our Approach to Climate," page 6.

In response to the introduction of the FCA's ESG Sourcebook and evolving requirements regarding UK director duties surrounding climate change, in early 2023, the ABL Board of Directors instituted quarterly reporting on AB's corporate responsibility and responsible investing strategy and initiatives. The board's Terms of Reference reflect that the board and its committees will be overseeing aspects of ABL's approach to managing climate-related risks and opportunities.

Commentary regarding oversight of the implementation of the firm's ESG strategy was embedded in the Statement of Responsibility (SOR) of ABL's chief operating officer. In 2024, oversight of climate-related disclosures was embedded in the SORs for the relevant ABL board members. The ABL board is continuing to evolve its climate-related governance framework, and it will:

1. Continue to receive quarterly updates from the Responsible Investing and Corporate Responsibility teams in relation to climate change
2. Be offered training to support the execution of its responsibilities on climate-related issues
3. Continue to approve the ABL TCFD report on an annual basis

Going forward, in 2025, the board will continue to carry out the activities related to the oversight of climate risk above.

ABL's investment teams engage with issuers, analyze and quantify material ESG and climate risks, and ultimately incorporate this

information into their investment decisions, when material.

Investment teams often partner with the Responsible Investing team in research and engagement. For more details on how the investment and Responsible Investing teams interact with other committees and bodies, see "The Governance Model Overseeing Our Approach to Climate," page 6.

ABL only delegates the portfolio management of client mandates within AB, which has a consistent approach to climate risk management and strategy, as set out in the firmwide report.

Remuneration

Total compensation for our investment professionals is determined by quantitative and qualitative factors. Assessments of all investment professionals are formalized in a year-end review process that includes 360-degree feedback from other professionals across the firm.

AB's compensation philosophy is governed by a widely used model for managing strategic business unit (SBU) and senior leader performance called an SBU Head Scorecard. The scorecard serves to direct SBU heads' priorities away from a solely revenue-based evaluative model, shifting to include a leadership-focused management and measurement tool. The structure of the firm's incentive compensation plans plays an additional role in this effort through the use of unit awards, not just cash, and deferral periods that instill a deeper sense of commitment to clients and the positive progress of the firm.

We assess each executive's performance relative to the sales performance, investment performance, financial results, strategic initiatives, organizational strength and culture goals established at the beginning of the year and reviewed in the context of the current-year financial performance of the firm.

The most significant quantitative component focuses on measures of absolute and relative investment performance in client portfolios for portfolio managers, as well as on the contribution to that performance for research analysts. The qualitative portion is determined by individual goals set at the beginning of the year, with measurement and feedback on how those goals are being achieved provided at regular intervals. Responsible investing can help enhance investment outcomes by identifying material risks and/or opportunities. We have a dedicated Responsible Investing team, including stewardship professionals, who have explicit responsible investing or stewardship goals. While most of our actively managed strategies are ESG integrated, we are not prescriptive in the goal-setting for portfolio managers or analysts.

Strategy and Risk Management

Our Approach

ABL leverages ABLP's approach to climate, which is built upon the idea that climate risk can generate material investment risks and opportunities that the market misprices. We consider the material climate change-related risks and opportunities of the issuers in which we invest for most of our actively managed strategies.

Our approach to identifying and integrating these material climate-related risks and opportunities is multifaceted and includes:

- **Partnership**—Drawing on expertise from academic and industry partners
- **Education**—Training our investment teams on the science behind climate change and the potential implications of our clients' investments
- **Research and Integration**—Incorporating climate insights into our research and decision-making processes, which can lead to better client outcomes
- **Stewardship**—Active stewardship through engagement with issuers and regulators on material climate-related issues as well as via proxy voting
- **Solutions**—The climate transition presents issuers and investors across many sectors and regions with opportunities to strengthen their businesses and positioning by offering innovative products and services that can enable them and their customers to be successful in a lower-carbon economy.

This approach is actualized through ABLP's 2030 Climate Action Plan. For more details on the ABLP's approach, see "AB's Approach to Climate Change," page 3.

ABLP's partnership with the Columbia Climate School and other climate-focused organizations informs and enhances our analysts' and portfolio managers' climate research and understanding of the latest climate science. Investment teams may also conduct proprietary research that enhances issuer engagement efforts. These research and engagement insights help identify material climate-related opportunities over the short, medium and long term. Investment teams may consider material climate-related risks and opportunities across different investment time horizons, which will vary by asset class and investment opportunity, but can range from a few months to a few years.

ABLP's extensive research and engagement work is bolstered by our ongoing stewardship practices, including voting and involvement in the broader investment community. ABLP and ABL also participate in policy advocacy, where appropriate.

For more details on ABLP's approach to climate-related investment risks and opportunities, see "Integrating Material Climate Risks and Opportunities into the Investment Process," page 11, and "Climate Stewardship," page 28.

For more details on how climate-related risks and opportunities are factored into investment strategies, as well as how each product or investment strategy might be affected by the transition to a low-carbon economy, please refer to the ABL product reports, which are provided upon request to ABL clients.

Risk Management

Most of the climate-related risks and opportunities that ABL faces over the short, medium and long terms concern our investment portfolios. ABL follows ABLP's approach to understanding and integrating climate-related risks and opportunities. See "Incorporating Climate Change into AB's Risk-Management Framework," page 7.

Financial Resilience and Material Risks

Each year, ABL undertakes an assessment of the material risks arising from its business model. This includes business-scenario analysis as well as stress-testing a five-year financial forecast. The following material risks are linked to climate risk: (1) business disruption risk (linked to physical climate risk); (2) legal and regulatory risk; (3) product misselling risk; and (4) business strategy and revenue risk (linked to climate transition risks). Business-scenario analysis is used to assess the impact of the first three risk categories, while stress-testing is used to model business strategy and revenue risk. Many factors beyond climate risk are incorporated into the analysis, resulting in a final determination by the ABL board of an adequate capitalization ratio for the business, pursuant to UK FCA requirements. While the focus is on overall financial resilience, not just climate resilience, the ABL board has been able to identify and assess, through its Internal Capital Adequacy and Risk Assessment, where physical climate and transitional risks have the potential to impact ABL's financial resilience, and has been able to ensure that the business remains well-capitalized and prepared to respond to material risks.

Metrics and Targets

Like ABLP more broadly, ABL assesses climate-related risks and opportunities for its ESG-integrated strategies. ABL does not set broad climate-related targets across the AUM associated with its in-scope business. ABL is directed by clients when establishing instructions and guidelines within their portfolios.

ABL measures and monitors key climate-related metrics for some of its ESG-integrated strategies (*Display 17*). For more details on how these metrics may be used by investment teams, see “Measuring Climate Risks and Opportunities,” page 25.

Climate-related metrics can be provided to ABL clients upon request.

Carbon Emissions: Financed emissions per USD million invested is a normalized measure of a portfolio's contribution to climate change, on the basis of enterprise value including cash (EVIC).² Weighted average carbon intensity indicates a portfolio's exposure to carbon-intensive issuers and is agnostic to ownership share. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of consumed energy.

Climate Value-at-Risk: The portfolio's Climate Value-at-Risk (CVaR) is a weighted aggregation of each security's CVaR. CVaR

analysis determines climate risks along a range of transitional and physical climate risk scenarios, typically shown as the present value of the aggregated future policy risk costs, technology opportunity profits, and extreme weather event costs and profits, expressed as a percentage of the portfolio's market value should the scenario in question be realized.

The standard CVaR scenarios we typically analyze include the 1.5 REMIND Orderly, 2.0 REMIND Disorderly and 3.0 REMIND Hot House World transition scenarios as described in “Scenario Analysis at AB,” page 25, with the aggressive physical scenario held constant across the three transition scenarios in certain portfolios.

Portfolio Warming Potential: The warming potential metric, or implied temperature rise (ITR), encapsulates a portfolio's contribution to rising temperatures. The metric aims to quantify the alignment of a portfolio's activities against pathways commensurate with future temperature goals. This concept draws on the Intergovernmental Panel on Climate Change warning to limit global temperature increases by the year 2100 to 2°C or lower compared with preindustrial levels. This metric allows investors to assess compliance with globally agreed-upon temperature thresholds, such as “well below 2°C,” enshrined in the Paris Agreement.

DISPLAY 17: CLIMATE-RELATED METRICS FOR ABL'S ESG-INTEGRATED STRATEGIES

Type of Metric	Metric Formula	Units
Scope 1 + Scope 2 Financed Emissions*	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * (\text{ issuer's Scope 1 emissions and issuer's Scope 2 emissions}))$	Tons of CO ₂ e
Scope 3 Financed Emissions*	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * (\text{ issuer's Scope 3 emissions}))$	Tons of CO ₂ e
Total Financed Emissions*	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * (\text{ issuer's Scope 1, 2 and 3 emissions}))$	Tons of CO ₂ e
Scope 1 and Scope 2 Financed Emissions per Million Dollars Invested	$\sum ((\$ \text{ current value of investment} / \text{ Issuer's enterprise value including cash}) * (\text{ issuer's Scope 1 and 2 emissions})) / \$\text{mil. current portfolio value}$	Tons of CO ₂ e / \$mil. invested
Scope 1 and 2 Weighted Average Carbon Intensity—Corporates	$\sum ((\$ \text{ current value of corporate issuer investment} / \text{ current corporate portfolio value}) * (\text{ issuer's Scope 1 and 2 emissions} / \$\text{mil. revenue of issuer}))$	Tons of CO ₂ e / \$mil. sales
Weighted Average Carbon Intensity—Sovereigns (per Capita)	$\sum ((\$ \text{ current value of sovereign investment} / \text{ current sovereign portfolio value}) * (\text{ issuer's emissions} / \text{ capita}))$	Tons of CO ₂ e / capita
Weighted Average Carbon Intensity—Sovereigns (GDP)	$\sum ((\$ \text{ current value of sovereign investment} / \text{ current sovereign portfolio value}) * (\text{ issuer's emissions} / \text{ GDP}))$	Tons of CO ₂ e / GDP

*The current value of investment may be adjusted to account for missing coverage.

Source: AB

² While TCFD guidance generally uses market capitalization to allocate carbon emissions, we have elected to use EVIC, based on the latest developments in market best practice, as evidenced by the latest guidance from the Partnership for Carbon Accounting Financials.

ABL measured the carbon emissions, CVaR and portfolio warming potential for its aggregate AUM at year-end 2024 (*Display 18*). The total AUM in scope is US\$61.1 billion as of December 31, 2024. Note that this analysis does not include security look-throughs for exposure to funds where AB is not the underlying manager. This analysis does not include the funds managed by AB where we can't look through because they are managed outside of our core accounting systems.

Like AB, ABL primarily uses data from MSCI. Reported Scope 1 and 2 emissions data are used when available, while figures estimated by

MSCI are used when reported data is not available. Scope 3 emissions, CVaR and portfolio warming potential data are estimated by MSCI. To provide clients with greater transparency, we disclose data coverage percentages alongside a product-level statistic. We do not disclose metrics, quantitative scenario analysis or examples where there are gaps in underlying data; these are methodological challenges that cannot be addressed by proxy data or assumptions without the resulting disclosure being misleading.

DISPLAY 18: ABL'S AGGREGATE AUM CLIMATE DATA

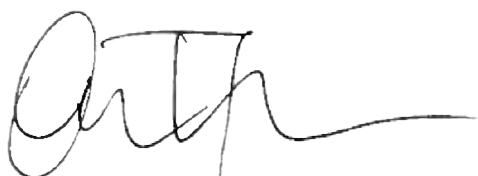
Field	Value	Coverage	Absolute Weight
Financed Carbon Emissions Scope 1	1,498,742 tCO ₂ e	91.6%	53%
Financed Carbon Emissions Scope 2	339,950 tCO ₂ e	91.6%	53%
Financed Carbon Emissions Scope 3	12,001,323 tCO ₂ e	91.6%	53%
Financed Carbon Emissions Scope 1 and 2	1,838,691 tCO ₂ e	91.6%	53%
Total Financed Carbon Emissions	13,840,014 tCO ₂ e	91.6%	53%
Financed Carbon Emissions Scope 1 and 2 per \$1 Million Invested	61.6 tCO ₂ e / \$mil. invested	91.6%	53%
Scope 1 and 2 Intensity (Sales USD)	111.5 tCO ₂ e / \$mil. sales	91.6%	53%
Scope 1, 2 and 3 Intensity (Sales USD)	824.7 tCO ₂ e / \$mil. sales	91.6%	53%
GHG Intensity (per Capita)	10.5 tCO ₂ e / capita	94.5%	22%

CVaR					
Scenario	Physical Risk	Policy Risk	Tech Opp.	Total CVaR	Coverage
Orderly	-2.7%	-10.4%	2.0%	-11.1%	74%
Disorderly	-3.4%	-4.3%	0.6%	-7.1%	74%
Hot House World	-4.5%	-2.0%	0.3%	-6.2%	74%
ITR	2.39				
ITR Coverage	86%				

As of December 31, 2024 | Source: AB

The disclosures in this ABL Supplement comply with the requirements of the FCA ESG Sourcebook and have been approved by the ABL Board of Directors on or by June 30, 2025, for the period of the 12 months ended December 31, 2024.

Signed for and on behalf of ABL:

A handwritten signature in black ink, appearing to read 'Ian Foster', with a long horizontal flourish extending to the right.

Ian Foster
Chief Operations Officer—EMEA and Chair of the ABL Board of Directors

ALIGNMENT WITH TCFD RECOMMENDATIONS

TCFD Recommendations		AB Section
Governance		
1.a.	Describe the board's oversight of climate-related risks and opportunities.	<ul style="list-style-type: none"> • The Governance Model Overseeing Our Climate Strategy
1.b.	Describe management's role in assessing and managing climate-related risks and opportunities.	<ul style="list-style-type: none"> • ABL Supplement: Governance
1.b. Supp 1	Describe how climate-related risks and opportunities are factored into relevant products or investment strategies. Asset managers should also describe how each product or investment strategy might be affected by the transition to a lower-carbon economy.	<ul style="list-style-type: none"> • AB's Approach to Climate Change • Understanding Climate Risks and Opportunities • Integrating Material Climate Risks and Opportunities into the Investment Process • Investing in Climate Solutions: AB's Portfolios with Purpose • ABL Supplement: Governance
Strategy		
2.a.	Describe the climate-related risks and opportunities the organization has identified over the short, medium and long terms.	
2.a. Supp 1	Describe engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks in order to improve data availability and asset managers' ability to assess climate-related risks.	
2.a. Supp 2	Describe how we identify and assess material climate-related risks for each product or investment strategy. This might include a description of the resources and tools used in the process.	
2.b.	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.	<ul style="list-style-type: none"> • AB's Approach to Climate Change • Understanding Climate Risks and Opportunities • Integrating Material Climate Risks and Opportunities into the Investment Process • Investing in Climate Solutions: AB's Portfolios with Purpose
2.b. Supp 1	Describe how climate-related risks and opportunities are factored into relevant products or investment strategies.	<ul style="list-style-type: none"> • ABL Supplement: Strategy and Risk Management
2.b. Supp 2	Describe how each product or investment strategy might be affected by the transition to a lower-carbon economy.	
2.c.	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2 degrees Celsius or lower scenario.	
Risk Management		
3.a.	Describe the organization's processes for identifying and assessing climate-related risks.	<ul style="list-style-type: none"> • Understanding Climate Risks and Opportunities • Integrating Material Climate Risks and Opportunities into the Investment Process • ABL Supplement: Strategy and Risk Management
3.b.	Describe the organization's processes for managing climate-related risks.	<ul style="list-style-type: none"> • Understanding Climate Risks and Opportunities • Integrating Material Climate Risks and Opportunities into the Investment Process • Investing in Climate Solutions: AB's Portfolios with Purpose • Climate Stewardship • ABL Supplement: Strategy and Risk Management
3.c.	Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	<ul style="list-style-type: none"> • AB's Approach to Climate Change • Understanding Climate Risks and Opportunities • ABL Supplement: Metrics and Targets
Metrics and Targets		
4.a.	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk-management process.	<ul style="list-style-type: none"> • AB's Approach to Climate Change • Understanding Climate Risks and Opportunities • ABL Supplement: Metrics and Targets
4.b.	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks.	<ul style="list-style-type: none"> • AB as a Business • ABL Supplement: Metrics and Targets
4.c.	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	<ul style="list-style-type: none"> • AB's Approach to Climate Change • ABL Supplement: Metrics and Targets

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