WELLINGTON
MANAGEMENT®

2022 Climate Report

PREPARED IN ALIGNMENT WITH THE RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Contents

Message from leadership

Wellington's continued focus on climate change stems from the conviction that the costs associated with decarbonizing the economy and building resilience to physical risks will affect asset prices, with potentially profound consequences for the portfolios we manage on behalf of our clients. At the same time, the investment opportunity set associated with the energy transition and climate adaptation is expanding across asset classes in public and private markets.

In this year's Climate Report, in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we provide an update on our climate research and engagement efforts, governance and risk oversight, climate-focused investment offerings (which we have extended to alternatives, including private markets), and industry-leadership activity. We also share progress on our efforts to lower our operational carbon footprint.

During 2022, we deepened our work with Woodwell Climate Research Center (Woodwell Climate), adding biodiversity to our research agenda, and started a research collaboration with the Joint Program on the Science and Policy of Global Change at the Massachusetts Institute of Technology (MIT Joint Program) to further study climate-transition risks. As policymakers and market participants begin to appreciate the human and economic toll of biodiversity loss, the market may embrace information material to security analysis, just as it has with research on the physical and transition risks of climate change.

To further develop our research-led approach to understanding the potential investment risks associated with biodiversity loss, we joined several biodiversity-focused organizations, including Ceres' Land Use & Climate working group, the Taskforce on Nature-related Financial Disclosures (TNFD) forum, Farm Animal Investment Risk and Return (FAIRR), and the Partnership for Biodiversity Accounting Financials (PBAF).

Other activities included collaborating with members of the Global Resilience Partnership to author a white paper aimed at providing a framework to help companies build resilience to climate change. We also partnered with Coalition Greenwich to conduct a survey of asset owners that sought to better understand their level of knowledge and attitudes toward climate investing.

We formalized the Wellington Climate Leadership Coalition (WCLC), which brought together a group of large global asset owners to share views and ideas on climate change and financial markets. Head of Sustainable Investment Wendy Cromwell joined the Climate-related Financial Risk Advisory Committee, serving on the Financial Stability Oversight Council (FSOC) of the US Department of the Treasury, which is chaired by Secretary of the Treasury Janet Yellen.

We also became members of the Global Real Estate Engagement Network (GREEN), an organization that encourages the real estate sector to reduce its exposure to financial and nonfinancial climate risk by reducing carbon emissions and managing progress against science-based 1.5° C targets. We believe these activities lead to long-term value creation.

Our new Transition Alignment Rating (TAR), developed in 2022, helps us assess issuers' strategies to address the energy transition. Finally, we continued our participation in the Net Zero Asset Managers (NZAM) initiative, which has US$59 trillion committed from 301 signatories worldwide, as of 31 December 2022. The energy transition is a major economic theme that we believe will impact capital markets and the securities we invest in on behalf of clients. We are committed to helping our clients navigate this theme with a focus on financial performance and risk management. We appreciate your continued support along our climate journey, aiming, as always, to achieve the best possible financial and investment outcomes for our clients.

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Jean Hynes, CFA
Chief Executive Officer

Wendy M Cromwell

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Vice Chair and Head of Sustainable Investment

Chris Goolgasian, CFA, CPA, CAIA
Director of Climate Research

Introduction

The physical and transition risks of climate change are expected to intensify over the next 10 to 30 years, with potentially material implications for economies and capital markets. Across the world, we are seeing growing interest around the topics of the low-carbon transition and climate adaptation and resilience. These changes are encouraging companies to adjust their business models and become more energy efficient to take advantage of new opportunities and become more resilient.

When analyzing climate dynamics, we focus on their potential impact on company fundamentals. We look for signs of higher costs in the form of capital expenditure, insurance, and carbon taxes, among others. We consider challenges arising from supply chain disruption, regulatory scrutiny, litigation, and shifting consumer preferences. It is our assumption, based on a mosaic of information and informed by our scientific collaborations, that markets are not yet fully pricing in climate risks. Nor are they factoring in the potential opportunities that may accrue to companies that successfully adapt to or mitigate these risks.

As fiduciaries of our clients' assets, we take a pragmatic approach, viewing climate change through a financial market lens. We strive to better understand economic risks, advocate for standard disclosures, and enable capital to find its way to climate leaders, which we define as companies best addressing the risks and opportunities presented by climate change. This work supports our objective of generating competitive, nonconcessionary investment returns and positive client outcomes.

Our approach to climate across our investment, client, and infrastructure platforms continues to evolve. In 2022, we expanded our Sustainable Investment (SI) Team and SI product suite beyond public-market equities and fixed income and into alternatives, including private markets. We redoubled our climate research throughout the year, deepening our climate-science collaboration and extending our research into biodiversity with Woodwell Climate. We published insights on how we integrate climate inputs — including physical and transition risks — into capital market assumptions. To our knowledge, this is the first work of its kind in the industry to incorporate both types of risks into equity and bond returns across 18 developed and emerging economies. We also shared with policymakers and standard setters our views on climate disclosure best practices.

We aim to integrate the assessment of sustainability-related risks — including climate considerations — into investment decision making, as relevant to each investment approach and with a focus on long-term financial materiality. In addition, we have taken steps to further develop our corporate sustainability practices, in line with client and regulatory expectations. In 2022, we reframed our firmwide sustainability platform, WellSustain, which formalizes the incorporation of sustainability into our operations and infrastructure. WellSustain has long been centered on environment, community, and culture, with the reduction of our firm's carbon footprint being our main environmental objective. We are in the process of evolving this platform, maintaining our focus on social and environmental stewardship.

Our sustainability journey continues, as does our intention to work with clients to meet their individual objectives. Aligned with the TCFD's recommendations, our third climate report describes our data-driven processes for monitoring, evaluating, and managing material climate-related risks and opportunities. We also outline the processes, metrics, and output of our climate disclosures, which will evolve over time as more and better data becomes available.

To learn more about our overall approach to sustainable investing, please see our Sustainability Report, available on our website.

WELLINGTON'S CLIMATE CAPABILITIES

Wellington is one of the world's largest independent investment management firms. Serving as a trusted adviser to over 2,400 institutional and private clients located in more than 62 countries, Wellington actively manages over US$1.1 trillion of assets, as of 31 December 2022. With capabilities covering most segments of the global capital markets, our focus is on investment management on behalf of our clients. As of year-end 2022, our suite of climate products represented US$18 billion in AUM across climate-solution strategies and low-carbon/Paris-aligned approaches.

Our investment teams can draw on extensive proprietary research and a collaborative culture that encourages independent thought and rigorous debate. An ongoing, science-led climate-research agenda enables investment teams to evaluate investment opportunities in the context of climate change and assess the effect of physical and transition risks on securities. The Climate Research Team helps translate scientific data and projections into investment data, tools, and insights, which are available to investment teams throughout the firm. We want to ensure that climate data can help inform investment decisions across asset classes and geographies.

Each investment team can apply climate research in the context of its investment objective and time horizon, and as relevant to its investment philosophy. Teams often share these differentiated insights in constructive, two-way dialogues with companies and issuers, raising awareness of climate risks across market sectors and geographic regions, with the aim of creating value.

ONGOING COMMITMENT TO CLIMATE LEADERSHIP

While we launched our first climate-focused equity approach in 2007, we have been researching the market impacts of water, pollution, and environmental conservation since the 1980s, via our Future Themes initiative. This is a firmwide special-research project conducted every five to seven years, focused on secular themes that may impact markets long term.

2017

Signed statement of support for the TCFD and published our first TCFD report

Launched systematic investment strategy with low-carbon focus

2018

Began collaboration with Woodwell Climate Research Center

Supported Transition Pathway Initiative (TPI)

2019

Formalized Climate Research Team

Director of Climate Research named to CFTC[1] Climate-Related Market Risk Subcommittee and contributed to Managing Climate Risk in the U.S. Financial System report

Published "Physical Risks of Climate Change (P-ROCC)" disclosure framework

Joined CDP (formerly Carbon Disclosure Project)

Joined Ceres Investor Network on Climate Risk and Sustainability

2020

Launched climate-resilience strategy

Became a founding member of NZAM

Joined Climate Action 100+

Joined the Institutional Investors Group on Climate Change (IIGCC)

2021

Head of Sustainable Investment joined NZAM Advisory Group

Launched climate-focused private equity and alternatives strategies

Published "P-ROCC 2.0: Call for location data," an addendum to our original disclosure framework

Joined working groups within Glasgow Financial Alliance for Net Zero (GFANZ) and Paris Aligned Investment Initiative (PAII); co-led the PAII's Top-down Target Setting subgroup

Developed a climate-adjusted strategic asset allocation framework

Launched proprietary net-zero dashboard, enabling investment teams to analyze climate-transition risks

Entered into a virtual power purchase agreement (VPPA) with Enel Green Power to match 100% of US office and employees' home electricity consumption

2022

Announced a climate-change research collaboration with MIT Joint Program

Joined the Asia Investors Group on Climate Change (AIGCC)

Joined Global Real Estate Engagement Network (GREEN)

Head of Sustainable Investment invited to join a new Climate-related Financial Risk Advisory Committee, formed by the Financial Stability Oversight Council (FSOC)

Joined biodiversity initiatives: TNFD Forum, PBAF, Ceres Working Group on Land Use and Climate, and the FAIRR Initiative

Contributed to PAII and asset-class-specific working groups developing practical methodologies for inclusion in the PAII's Net Zero Investment Framework (NZIF), submitting feedback to consultations or papers on private equity, derivatives, and hedge funds

Contributed to the Bondholder Stewardship Working Group launched by IIGCC

Submitted responses to the consultation for Science Based Targets initiative's (SBTi's) sector guidance for Forest, Land, and Agriculture and Cement

Conducted 550 company physical climate-risk assessments, taking the total completed to date up to more than 1000

[1] US Commodity Futures Trading Commission.

INDUSTRY LEADERSHIP

SUPPORTED STANDARDIZED CLIMATE DISCLOSURES IN THE US

In June 2022, we submitted a second public comment letter to the US Securities and Exchange Commission (SEC) in support of its proposal to enhance and standardize climate-related corporate disclosures. Consistent, comparable disclosure across issuers will enhance investors' ability to analyze risks and opportunities using information provided by companies, rather than relying on third-party information. We shared feedback on various aspects of the proposal, including:

- Scopes 1, 2, and 3 greenhouse gas (GHG) emissions, with phasing and appropriate safe-harbor protection[2]
- Physical locations material to an issuer's business
- Climate-risk education of boards and management

We believe accurate, comparable information about climate risks, including GHG emissions, enhances our ability to make more informed investment decisions on behalf of our clients. Scopes 1 and 2 emissions alone do not enable us to assess an issuer's transition risks. Disclosure inclusive of Scope 3 (which encompasses all end-use emissions from a company's upstream and downstream activities) is necessary for investors to develop a full picture of transition-risk exposure for a company and its supply chain. The value of a company with high Scope 3 emissions could suffer if, for example, an implicit or explicit carbon price materializes or if consumer preferences shift. Conversely, a company that innovates to reduce emissions from its operations and supply chains could see its long-term value increase. As for location data, we believe providing physical-asset location data is a crucial component of disclosing material climate-related risks. It is also a simple first step toward promoting climate-risk transparency.

In our ongoing communication with SEC commissioners and staff, we have expressed why we believe transparency on these issues would enable us to more accurately value securities and make better investment decisions. As our clients' fiduciaries, we aim to manage overall financial risk in their portfolios; we believe emissions disclosures would help us do that.

AWARDS AND OTHER INVOLVEMENT

In addition to these efforts, we continue to contribute to other initiatives to ensure that our clients' interests are represented in the dialogue. Our case study about the relevance of Scope 3 disclosure for investment decision making is included in GFANZ's recent report, "Expectations for Real-economy Transition Plans."

In 2022, we received recognition for our efforts in the form of third-party awards, specifically:

ESG innovation of the year, research, at Environmental Finance's Sustainable Investment Awards for our climate research efforts.

The adviser did not pay a fee to be considered. Winners were selected by submitting a written application, and Wellington Management was the only winner in the ESG innovation of the year, research, category. The award may not be representative of any one client's experience. The award is not indicative of Wellington Management's future performance. Past performance is no guarantee of future results. Award date and time period: July 2022; July 2021 – July 2022.

Best Fund Manager 2022 within the Equity — Ecology category for Alan Hsu, manager of Climate Strategy, at the 2022 Citywire Spain Awards

The 2022 Citywire Spain Awards were judged based on an assessment of several accounts managed by Wellington Management; therefore, they are not representative of any individual account or fund. Wellington Management did not pay a fee to be considered for the awards. Winners were selected by a points-based scoring system of a large panel of industry experts and institutional investors active in the market. The awards are not indicative of Wellington Management's future performance and should not be construed as a recommendation or endorsement. Past performance does not predict future returns. An investment can lose value. Award date and time period: October 2022; October 2021 – October 2022.

[2] Scope 1 emissions are released during regular operations at sites directly controlled by the company, including the use of natural gas for heating, generators, and company vehicles. Scope 2 emissions are indirectly generated from electricity and heat used to power the company's sites, so Scope 2 emissions depend upon the generation mix of the electricity grid at different sites. Scope 3 emissions are indirectly generated throughout the value chain, from upstream activities such as purchased goods and business travel and downstream activities such as the use of sold products.

Section 1: Oversight and governance

During 2022, we strengthened the governance of our sustainability practice to ensure we can best support our objectives across our investment, client, and infrastructure platforms. **Figure 1** shows our governance structure.

Figure 1
Wellington sustainability governance at a glance

	Oversight	Management & accountability	Research & assessment
Firmwide governance			
SI Leadership Team	✘		
SI Governance Committee	✘		
SI Management Team		✘	
Firmwide stewardship			
Investment Stewardship Committee	✘	✘	
SI Product Integrity Working Group		✘	✘
Client Exclusions Working Group		✘	
Sustainability Content & Education Working Group		✘	
Portfolio integration			
Climate Research Team			✘
Investment Product & Fund Strategies	✘	✘	
Portfolio oversight			
Line management	✘		
Portfolio management teams		✘	✘
Investment review groups	✘		

1.1 FIRMWIDE GOVERNANCE

We aim to deliver investment excellence and help clients navigate changes in the economy related to sustainability considerations through our commitment to research, engagement, and continuous learning. Our governance forums are designed to optimize cross-functional decision making. We continue to review and evolve our governance model to deepen firmwide sustainability knowledge, formalize responsibilities, improve communication, ensure ongoing collaboration, identify new opportunities, mitigate risks, and enhance efficiency.

Our SI Governance Committee (SIGC) includes senior leaders from across our three platforms, as well as from the Executive Committee, Operating Committee, and Compensation Committee. These leaders support the overall vision and success of Wellington's sustainability efforts. The SI Management Team (SIMT) includes SI leaders who determine and execute the firm's overall SI vision and strategy to meet evolving investment, client, and regulatory imperatives. In addition to these two groups, SI leadership teams across platforms support the integration of our work across the firm. This governance is further backed by our Investment Stewardship Committee (ISC) and several working groups, whose remit and membership we detail below.

SI LEADERSHIP TEAM (SILT)

Purpose: Bring together experienced SI leaders from across the firm to provide input and discuss key strategic SI initiatives.

Membership: Experienced SI leaders from our investment, client, and infrastructure platforms.

Meeting frequency: Monthly

Sample activities: Provide insight on evolving investment, client, and regulatory imperatives; gain a better understanding of key initiatives to act as a conduit to each member's functional groups.

SI GOVERNANCE COMMITTEE (SIGC)

Purpose: Oversee and support the vision and success of the firm's sustainability efforts.

Membership: Jean Hynes, CEO, and senior leaders from across the firm, including from our Executive Committee, Operating Committee, and Compensation Committee.

Meeting frequency: Monthly.

Sample activities: Establish/renew key external partnerships; approve major industry initiatives; endorse resource recommendations across platforms; approve policy mandates with broad, firmwide consequences.

SI MANAGEMENT TEAM (SIMT)

Purpose: Determine and execute the firm's overall SI vision and strategy to meet evolving investment, client, and regulatory imperatives.

Membership: Senior-level and experienced SI leaders from our investment, client, and infrastructure platforms.

Meeting frequency: Weekly.

Sample activities: Recommend and prioritize resource needs; decide industry-wide working group participation; identify resources for SI initiatives; identify and solve for gaps, redundancies, or inconsistencies arising from our decentralized SI management model.

1.2 FIRMWIDE STEWARDSHIP

The goal of our stewardship activities is to support decisions that we believe will maximize investment returns for our clients. Stewardship extends to any area that may affect the long-term sustainable financial return of an investment. Stewardship can be accomplished through research and constructive dialogue with company management and boards, by monitoring company behavior through informed active ownership, and by emphasizing management accountability for important issues via our proxy votes.

INVESTMENT STEWARDSHIP COMMITTEE (ISC)

Purpose: Set the strategic direction for stewardship across the firm, with a focus on proxy voting and engagement.

Membership: Senior-level and experienced professionals from portfolio management, investment research, sustainable investment, corporate sustainability, relationship management, and legal and enterprise risk.

Meeting frequency: Every other month.

Sample activities: Ensure Wellington votes, engages, and stewards client assets in a manner consistent with our mission to deliver investment excellence over time. In pursuit of this goal, the ISC is empowered to:

- Set and approve proxy voting policies and procedures, conflicts of interest policy, and annual voting guidelines
- Oversee proxy votes, with a focus on key stewardship issues and evolving best practices
- Set and approve our engagement policies
- Monitor engagement practices and steer engagement priorities
- Serve as a sounding board on engagement and stewardship matters, including escalation and conflicts
- Confirm that we satisfy our stewardship code responsibilities
- Ensure we are accountable and authentic in our stewardship commitments
- Identify tools and information to support investment teams in their stewardship decisions

SI PRODUCT INTEGRITY WORKING GROUP (SI PIWG)

Purpose: Ensure that our sustainable investment products, funds, and client solutions have high integrity and are operationally scalable, in alignment with our overall SI strategy and global client and regulatory standards.

Membership: Experienced professionals from our investment, client, and infrastructure platforms, including colleagues focused on legal, compliance, and investment implementation.

Meeting frequency: Weekly.

Sample activities: Evaluate new SI products and recommend whether they should be offered and marketed to clients, considered for incubation, or not pursued in their current form. Evaluate custom SI client solutions and evolution of existing products and funds. Consider investment integrity, commercial potential, legal implications, and operational complexity in the context of the overall suite of sustainable investment product offerings and capabilities.

CLIENT EXCLUSIONS WORKING GROUP (CEWG)

Purpose: Develop, monitor, and evolve frameworks to support client-directed exclusions. This group reports to the ISC.

Membership: Experienced professionals from our investment, client, and infrastructure platforms.

Meeting frequency: Twice monthly.

Sample activities: Evaluate client requests for new and existing categories of exclusions as needed and define frameworks to enable clients to meet their investment portfolio construction goals.

Additional details: The CEWG brings together groups of analysts and other subject-matter experts from across the firm to develop and implement frameworks to ensure consistent application of rules, as appropriate, for exclusion, and to make recommendations for exclusion.

Our current client exclusions policy can be found at www.wellington.com/en/legal/sfdr.

SUSTAINABILITY CONTENT & EDUCATION (SCE) WORKING GROUP

Purpose: Create and maintain external content, as well as a comprehensive sustainability education program tailored across our three platforms.

Membership: Experienced professionals from our investment, client, and infrastructure platforms.

Meeting Frequency: Twice monthly.

Sample activities: Develop a firmwide education program focused on strategic, commercially important regulations (e.g., principal adverse indicators [PAIs]), firm-level commitments (e.g., net zero), baseline market expectations (e.g., TCFD), and appropriate fluency with SI topics, data, and tools.

1.3 RESEARCH, DEBATE, AND PORTFOLIO INTEGRATION

Wellington fosters an open, collaborative culture in which our investment teams share research and challenge one another to sharpen decisions, uncover blind spots, and manage risk. Our assessment of sustainability-related risks is integral to this culture. We combine multidisciplinary resources — including equity and credit analysts, ESG research analysts, climate researchers, data scientists, and macro analysts — with portfolio teams. We refer to this structure as a community of investment boutiques, each with its own investment philosophy and process (P&P) to inform investment decisions. We believe this model helps us attract talented, independently minded investment professionals and aligns their efforts with client outcomes. We also find diversity of thought strengthens internal debate and, as a result, investment decision making on behalf of our clients.

CLIMATE RESEARCH TEAM

Purpose: Research climate risks (physical and transition) and biodiversity risks in collaboration with our external scientific partners; apply and communicate climate- and biodiversity-related research insights to help investment teams understand the potential impacts of climate change and biodiversity loss on markets and economies and make more informed decisions; help identify and assess investment risks and opportunities across sectors, geographies, and asset classes.

Membership: Director of Climate Research and research analysts focused on transition risk, physical risk, and geospatial analysis.

Meeting frequency: Regular and ongoing. The team hosts twice monthly climate meetings with investment teams to present research from Woodwell Climate and the MIT Joint Program; quarterly meetings with the broader Wellington investment community summarizing research and investment insights; and informal meetings as needed with teams around the firm.

Sample activities: Host meetings to facilitate dialogue among investment teams and climate-science partners; publish notes on our firmwide collaborative research-sharing platform; present quarterly findings to the firm; build investor tools for portfolio analysis and risk management; participate in Wellington's early-career investor development program; partner with ESG research analysts to integrate climate insights into company-specific research and engagements; source scientific and climate-related company data.

INVESTMENT PRODUCT AND FUND STRATEGIES (IPFS)

Purpose: Provide independent perspective on investment portfolios, with a focus on investment integrity, to assess whether portfolio implementation is consistent with clients' investment objectives and risk tolerance.

Membership: Investment directors, specialists, and analysts, dedicated to specific strategies. IPFS is independent from each portfolio management team, with different reporting lines and the ability to escalate concerns to line management.

Meeting frequency: Regular and ongoing.

Sample activities: Meet with portfolio managers who have designated climate risks and opportunities as part of their decision-making process; review portfolio-level climate data, climate-related voting, engagement tracking, and other relevant ESG and stewardship factors; work with investment teams and clients to identify and disclose sustainability risks; join portfolio managers' investment discussions and firmwide peer review groups; request prioritization for climate portfolio reviews for further climate research consideration.

1.4 PORTFOLIO OVERSIGHT

LINE MANAGEMENT

Purpose: Oversee portfolio managers and investment groups.

Membership: Senior line managers across the investment platform.

Meeting frequency: Regular and ongoing.

Sample activities: Provide fiduciary oversight for portfolio managers and their risk taking. Line managers also collect and provide feedback to portfolio managers from the firm's independent oversight groups, including IPFS and Risk Management. Assist with talent resourcing and development needs, opine on advancement and compensation decisions, and meet regularly with portfolio managers to provide feedback and support.

PORTFOLIO MANAGEMENT TEAMS

Purpose: Investment research; asset management of client portfolios.

Membership: Portfolio managers, analysts, and associates.

Meeting frequency: Regular and ongoing,

Sample activities: Day-to-day identification, assessment, and monitoring of climate risks relevant in the context of their investment strategy, philosophy, and process, and Wellington's fiduciary duties to clients. In support of these aims, portfolio managers and investment teams are provided with a range of data and analysis regarding such risks and may integrate these insights, along with other investment criteria, into their decision making via proprietary investor tools. Examples of these tools include our proprietary Climate Exposure Risk Application (a physical-climate-risk assessment tool) and Sustainability View (a company-level dashboard integrated into Mosaic, our collaborative research-technology platform). These and other tools support portfolio managers' and investment teams' ESG and climate investment integration efforts and inform engagement prioritization by highlighting material topics for discussion with companies.

INVESTMENT REVIEW GROUPS

Purpose: Provide advice and guidance to foster portfolio manager development; offer insights into line management's fiduciary oversight; conduct formal and informal reviews of investment teams' P&P, investment performance, and other pertinent topics.

Membership: Senior investment professionals with relevant market experience.

Meeting frequency: Regular and ongoing.

Sample activities: Ask portfolio managers how they believe ESG considerations, including climate, may be material to their P&P; provide detailed feedback to line management and other review groups.

INCENTIVE ALIGNMENT

A key structural support of our collaborative environment is our performance review and compensation process. We structure our compensation program to incentivize longer-term performance measurement, which helps align client time horizons with those of our investment teams. Our clients often have decades-long obligations to their beneficiaries. Because climate-related risks and opportunities are present in the market today and will be relevant for decades to come, our fiduciary duty to clients obligates us to incorporate near- and longer-term perspectives, and to foster a culture of accountability with respect to risk taking, including appropriate consideration of sustainability risks.

As part of the investment mosaic, and as relevant to each investment team's investment philosophy, climate insights help us pursue our goal of delivering competitive risk-adjusted returns in the portfolios we manage on behalf of our clients. Performance evaluations of our research analysts include an assessment of whether analysts demonstrate depth of knowledge of the key ESG issues in their sector and company views, as well as proactively contributing to scaling our ESG efforts, effectively engaging with companies seeking to create value, and driving positive outcomes for clients. In addition to compensation based on the quality and depth of their research, analysts are eligible to receive discretionary bonuses according to how successfully investment teams implement their recommendations in client portfolios across the firm.

We believe ESG considerations can be material to the performance of securities over the investment horizon of many teams. When hiring climate research professionals, we seek people who are passionate about markets and have experience integrating sustainability considerations into their investment processes. We design our compensation plans to be fair and motivational over time to attract and retain the best professionals in the investment industry. Wellington believes that its remuneration policies, practices, and procedures are consistent with the appropriate consideration of relevant sustainability risks in our investment decision-making processes. For more information on our incentives program, please review our Sustainability Report.

Section 2: Climate research, tools, and risk management[3]

We believe climate change poses material risks for companies, economies, and society — and therefore, for our clients' investment portfolios. Research on material industry- and security-related climate risks can inform our short-, medium-, and long-term investment decisions, guide leadership on best practices, and enable us to engage more effectively on our clients' behalf. We base our approach to climate research on extensive bottom-up analysis and close collaboration among our investment teams and ESG Research and Climate Research teams. Each investment team is responsible for climate-risk management within its portfolios, using its individual P&P to guide the extent to which climate research impacts its investment decisions.

The resources and proprietary tools we make available to investment teams to help them integrate climate insights into their investment processes are underpinned by a common research philosophy, centered on the following beliefs:

- **Rigor:** All research used in investment decision making should be precise and held to scientific, peer-reviewable standards
- **Application:** Capital market insights from climate research can help inform active investment decisions
- **Evolution:** As climate and ESG data improves and our research progresses, so too will our insights and conclusions

2.1 MATERIALITY OF PHYSICAL AND TRANSITION RISKS

In our security analysis, we may consider a range of physical and transition risks based on their financial materiality. The Climate Research Team assesses physical risks primarily as a function of a company's or issuer's location and business model exposure, and transition risks primarily as a function of industry and/or business or financial model exposure.[4] **Figure 2** is a generalized view of the Climate Research Team's assessment of various climate-risk drivers, their potential severity, and the time horizon over which they may be material to investment outcomes.[5]

Figure 2

Heat map of physical and transition climate risks

For illustrative purposes only. Source: Wellington Management.

PHYSICAL RISKS

A primary insight from our work with Woodwell Climate is that the frequency and severity of extreme climate events are already disrupting some business models, financial fundamentals, and supply chain operations, with the potential to lower top-line revenue and/or increase capital expenditure. According to Woodwell Climate's climate models, acute and chronic climate risks will continue to rise over the next several decades. In the Climate Research Team's view, market appreciation of the economic impacts of physical climate risks will lead to widespread asset repricing.

TRANSITION RISKS

Climate-related policies continue to emerge and evolve, indicating that the low-carbon transition is underway and likely inevitable. Competing global priorities and inadequate international coordination may result in a disorderly and nonlinear transition, however. While some countries are currently strengthening policy to accelerate the pace of transition, over the long term, low-cost technology and other market-based solutions may render government intervention unnecessary. In the near term, companies (and in some cases, entire industries) face reputational risk for a lack of transparency and standard disclosures. As more uniform,

[3] All investment professionals at the firm can access the research and tools discussed in this chapter. Investor usage typically depends on the types of approaches the investor manages, or their specific areas of coverage. Investment professionals managing portfolios in accordance with ESG- and SI-specific strategies, those incorporating ESG into their fundamental process, and those managing in accordance with client guidelines and regulations are typically the most frequent users of these tools.

[4] Because Wellington does not have a house view, the views of individual investment teams may differ from those of the Climate Research Team.

[5] The assessment is based on potential risk exposure to portfolios and does not incorporate forward-looking views about the risk-management plans of individual companies.

peer-comparable data becomes available, investors and consumers will be better able to assess whether companies are sufficiently prepared for climate-related risks to their business.

While the scope of our climate research is broad, our ability to measure climate risks quantitatively depends on data availability. In 2022, we continued to invest in data-availability enhancements, monitored improvements and commitments from third-party vendors, and developed investor tools to facilitate measurement of potential climate risks. Our physical climate research can help our investment teams assess the risk exposure of securities across most global regions and asset classes, provided that physical locations related to an investment are known.

In addition, we made significant investments in our transition-risk research and issuer evaluations, with the introduction of our new Transition Alignment Rating (TAR) and related climate-transition-risk considerations in our proprietary, integrated climate portfolio review (CPR). Looking forward, we are expanding our transition-risk research beyond corporates, where data is readily available, to sovereigns and other asset classes, where emissions data is becoming more prevalent.

2.2 IDENTIFYING CLIMATE-RELATED INVESTMENT OPPORTUNITIES

Our climate-research collaborations with Woodwell Climate and the MIT Joint Program confirm that first, society is generally unprepared for climate change, and second, climate risks remain deeply misunderstood, particularly through the lens of traditional capital market metrics. As awareness and action grow in response to pressure from regulators, customers, and other stakeholders, we expect to see a significant increase in demand and capital supply for innovations aimed at climate-risk mitigation and resiliency.

Investing in climate solutions enables investors to gain access to a market segment that we believe is inefficient and replete with attractive investment opportunities. Companies that can help solve for climate change by applying existing technology in new ways or developing novel products and services may gain market share and build competitive advantages. Those that fail to prepare for the low-carbon transition and build resiliency to physical climate risks may lag their peers and face headwinds from rising costs of capital.

Our climate investing opportunity set (**Figure 3**) includes low-carbon electricity and transport, utility and grid resilience, sustainable infrastructure and agriculture, water and resource management, cooling systems, flood control, backup power, and many others. Recognizing the diverse solutions needed to address climate change holistically, our Climate Research Team, along with third-party climate-research partners and climate-focused investment teams, collaborate to identify underappreciated issuers that may stand to benefit from responding to climate change. We continue to identify evolving near- and longer-term risks and opportunities across sectors, geographies, and asset classes.

Figure 3

Broad investable universe of climate solutions

	ENERGY	BUILDINGS/ INFRASTRUCTURE	TRANSPORTATION	INDUSTRIAL	FOOD/ AGRICULTURE
MITIGATION	• Renewables-facilitation technology • Grid optimization • Storage software • Financing models	• HVAC innovation • Building optimization • Design/simulation software • Water efficiency	• EV and fleet software • Shared/micromobility • Connected transportation • Logistics optimization	• Intelligent manufacturing • Process optimization • Supply chain optimization • Recycling technology	• Protein alternatives • Agricultural biotechnology • Farm-to-consumer • Waste reduction • Smart-nutrition and personalization devices
ADAPTATION	• Utility resilience • Backup power & microgrids	• Climate-risk analytics and insurance • Emergency-response technology • Weatherization • Water security	• Logistics resilience • Infrastructure planning and monitoring	• Industrial cybersecurity • Supply chain resilience • Field service management	• Controlled-environment agriculture • Farm management software • Food safety & traceability tech

There is no assurance that any climate investing strategy and techniques employed will be successful and investments can lose value.

Please refer to the important disclosures at the end of this report. Source: Wellington Management.

2.3 2022 RESEARCH REVIEW

RESEARCH COLLABORATION WITH THE MIT JOINT PROGRAM

To bolster our transition-risk research, in January 2022, Wellington and the MIT Joint Program announced a climate-change research collaboration. The MIT Joint Program's integrated team of natural and social scientists updates Wellington's investment teams on their research on comprehensive climate-change projections under various environmental, economic, and policy scenarios. The objective of these updates is to outline potential decarbonization pathways for corporate operations, supply chains, and products, while also assessing their potential economic impacts. Throughout the past year, several investment teams integrated these transition-risk findings into ongoing fundamental research, in conjunction with physical-risk findings from Woodwell Climate, as appropriate to their P&P.

MONTHLY MEETINGS WITH WOODWELL CLIMATE AND MIT JOINT PROGRAM

In 2022, we continued our monthly climate-research readouts with Woodwell Climate, focusing on material climate risks impacting client portfolios. In addition to covering global issues like agriculture, the scientists also shared region- and country-specific research, covering locations of greatest interest to investors and clients. Mirroring this collaboration, we initiated monthly research readouts with the MIT Joint Program, centered on transition technologies such as carbon-capture systems and clean hydrogen, which are increasingly of interest to our investment professionals. As early-stage companies continue to innovate in these areas, we expect interest to continue to grow.

KEY RESEARCH THEME: BIODIVERSITY

Consistent with our data-driven approach to ESG and climate research, our approach to biodiversity research emphasizes financial materiality across asset classes, regions, and securities over the long term. In 2022, we sought to deepen our collective understanding of biodiversity risks and advance our stewardship on biodiversity. The goal of this work is to inform engagements and empower select investment teams to consider these risks in their investment process, as appropriate to their P&P. To oversee these efforts, we established a biodiversity working group, which aims to expand subject-matter expertise and steer the firm's strategy on the topic. Our collaboration with Woodwell Climate supports these internal efforts; we have found that research into biodiversity loss is complementary to our climate research, given its many interrelated direct and indirect impacts.

As with any rapidly evolving area, we continually strive to interpret changing client, market, and regulatory priorities around biodiversity — particularly for disclosure and risk management — and apply them to our efforts as appropriate. Last, but not least, we have joined several industry groups to learn from and contribute to practitioners' perspectives on developing policies and practices. These include the TNFD Forum, PBAF, Ceres Working Group on Land Use and Climate, and the FAIRR Initiative. As tools, frameworks, and company disclosures develop, our research teams will continue to provide Wellington investment teams with information about biodiversity that they may need to help inform investment decisions.

Please visit our website for more information on our biodiversity efforts.

2.4 INTEGRATED CLIMATE-RISK TOOLS

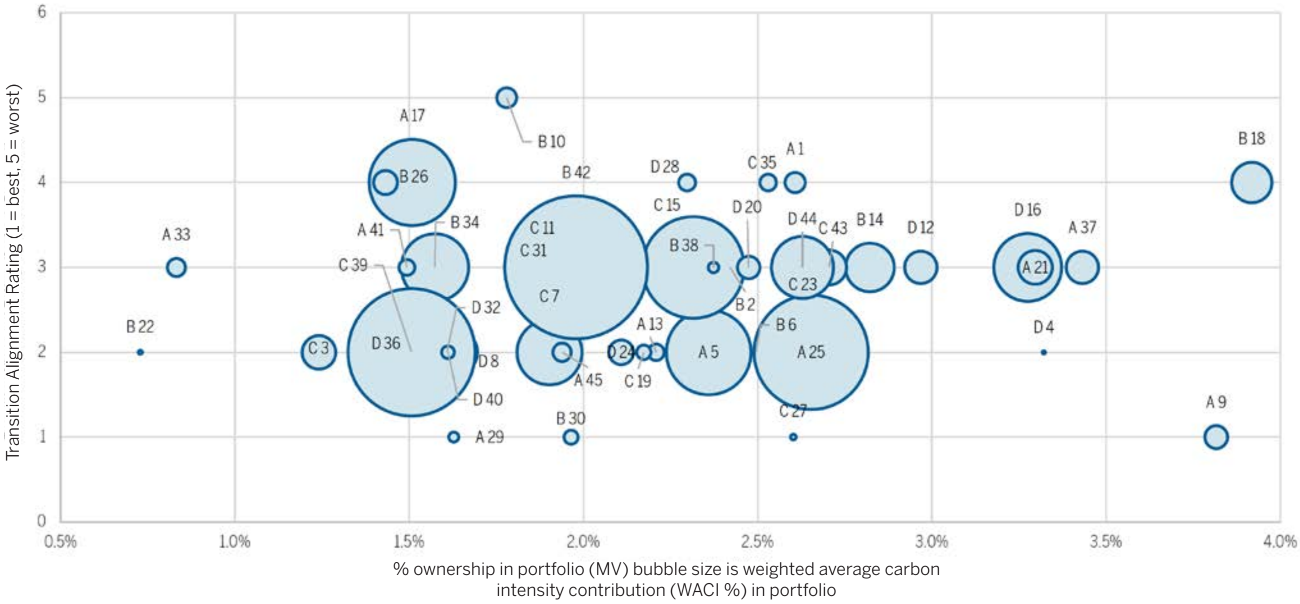
INTEGRATED CLIMATE PORTFOLIO REVIEWS

In 2022, the Climate Research Team revamped our Climate Portfolio Reviews (CPRs) by leveraging our newly developed TAR scores to provide transition-risk insights, in addition to existing physical-risk information. As with the legacy CPRs that focused on physical climate risks, the new integrated CPRs provide individual security assessments and offer investment teams valuable information on overall portfolio-level climate-risk exposure. **Figure 4** is an example of data output from a CPR.

Portfolio teams can leverage the Climate Research Team's bespoke analysis to help develop more informed dialogues with company management teams. They can also expand their opportunity set by introducing comparable investment ideas with potentially better risk/reward profiles. Further information on our TAR scores can be found later in this section.

Figure 4

CPRs provide insights on both physical and transition risks



The example shown is presented for illustrative purposes only and is not to be viewed as representative of actual holdings. It should not be assumed that any client is invested in this (or a similar) example, nor should it be assumed that an investment in the example has been or will be profitable. Actual holdings will vary for each client and there is no guarantee that a particular client's account will hold the example presented. The Climate Portfolio Review process represents an optional offering by the Climate Research Team that each individual investment team may opt into to facilitate consideration of material climate risks and opportunities. This process is offered as one of several potential components of a customized integration plan to support the authentic development of ESG considerations into P&P. Prior to 2023, climate-focused portfolio reviews were conducted based on physical-risk ratings only. This type of review was requested by and completed for more than 50 investment strategies between 2020 and 2022.

SUSTAINABLE INVESTMENT RESEARCH VIEW (SI RESEARCH VIEW)

SI Research View (**Figure 5**) is a straightforward tool that centralizes public-market issuer-based research, ratings, and metrics. It also serves to direct teams to other SI tools and dashboards, described below. Designed to support our multifaceted research process, SI Research View offers a single point of access to a series of data points that have historically lived in multiple places internally, or on various vendor portals, including:

- Internal ESG ratings and commentaries from our ESG analysts focused on financial materiality
- External ESG ratings, report summaries, and direct links to the full vendor commentaries
- Transition-risk metrics — Scopes 1, 2, and 3 emissions and intensity; and science-based target (SBT) status
- Internal physical climate ratings and commentaries from our Climate Research Team
- Streamlined access to engagement notes, outcomes, and proxy voting history
- Detailed information on key EU regulatory metrics — EU Taxonomy and Principal Adverse Impact Indicators (PAIs)
- Revenue alignment with the United Nations Sustainable Development Goals (UN SDGs)

Figure 5

SI Research View

For illustrative purposes only. | Source: Wellington Management.

2.5 PHYSICAL CLIMATE-RISK RESEARCH AND INVESTOR TOOLS

In the course of our five-year collaboration with Woodwell Climate, we have researched heat, drought, wildfires, floods, hurricanes, water scarcity, and sea-level rise. Our objective is to bridge the gap between climate science and finance to better understand the potential impact of these variables on capital markets, identify potential asset mispricings, and produce financially relevant insights.

Effective, climate-aware investment decision making depends on access to reliable data and resources to integrate that data into risk analysis. Climate science is complex, however, and climate models do not easily translate into financial models and projections. We believe this mismatch can result in asset-pricing dislocations.

Our collaboration with Woodwell Climate scientists has provided the data and resources necessary to enhance our physical-climate-risk analysis and integrate this research into our investment process. The Climate Research Team regularly engages with investment teams across the firm to answer questions and solicit feedback. Based on this collective foundation of climate science and investment knowledge, we have also developed several proprietary tools available to all Wellington investment teams. Details about these processes and tools follow.

REGULAR RESEARCH AND INVESTMENT MEETINGS

Members of our ESG Research Team, Climate Research Team, and climate-dedicated investment teams join sector-focused analysts and diversified portfolio managers to debate the impacts of physical and transition risks on the securities in their opportunity set. These teams participate in Wellington's twice-daily Morning Meeting (accommodating multiple global time zones), in which multidisciplinary investment teams share perspectives.

The Climate Research Team and climate scientists from Woodwell Climate also regularly host informal collaboration meetings to review the scientists' climate-research findings. The Climate Research Team steers research topics along market-relevant lines. On a quarterly basis, the team summarizes its research and investment insights and presents these to the broader Wellington investment community.

CLIMATE EXPOSURE RISK APPLICATION (CERA)

Working with Woodwell Climate, we have developed an innovative physical-climate-risk assessment tool. Using integrated spatial finance, CERA displays geospatial maps, which, when overlaid with climate data, help users visualize and quantify physical climate risks for a wide range of securities and real assets (**Figure 6**). CERA allows investment professionals to isolate or combine views of seven key climate factors: heat, drought, floods, hurricanes, wildfires, water scarcity, and sea-level rise. The tool overlays capital market insights onto regional maps, enabling users to identify "hot spots" for each asset class or region of interest that may warrant further fundamental research. The Climate Research Team applies information and insights from CERA, along with company disclosures, to issuer analysis. To date, the team has evaluated over 1,800 companies for their physical risks, based on materiality of exposure and strength of risk-management practices.

Figure 6

CERA: Visualizing physical climate risks

For illustrative purposes only. | Source: Wellington Management.

PHYSICAL CLIMATE-RISK RATINGS

The Climate Research Team conducts physical-risk assessments of individual issuers, prioritized according to the needs of specific investment teams (**Figure 7**). The team can aggregate these assessments into the integrated CPR to highlight portfolio exposures with material physical-climate-risk exposure. The Climate Research Team uses natural language processing (NLP) and manual reviews to analyze annual reports, disclosures, CDP (formerly the Carbon Disclosure Project) disclosures, earnings transcripts, and investor presentations. This information helps our investment professionals assess the materiality of a company's climate risk and its current management of climate exposure, which we pair with our geospatial analysis, using CERA. The result is a climate-risk materiality assessment, captured via a physical-risk rating, and specific ideas for engagement topics. Investment teams across Wellington can then use this research to engage with company management teams directly on the topic of physical-risk management as appropriate to their P&P.

In recent years, the Climate Research Team has applied this process to evaluate physical climate risks for the holdings within 50 portfolios across equity and fixed income securities. In all, we have reviewed over 1,800 companies globally, covering 80% of the market value of the S&P 500 Index, 62% of the market value of the MSCI ACWI, and 41% of the market value of the Bloomberg Barclays Global Aggregate Corporate Index (**Figure 7**). The team will continue to expand its research coverage further as it reviews additional portfolios.

ESG MODEL BUILDER

Our ESG analysts, in collaboration with global industry analysts, fixed income credit analysts, and macro analysts, have developed ESG materiality frameworks that define what they believe are key issues for each sector and identify metrics for assessing public-market issuer performance. These frameworks are the cornerstone of the ESG research process. In 2022, we meaningfully advanced the implementation of these frameworks by launching our ESG Model Builder (**Figure 8**). This tool has enabled us to transform our frameworks into working models. It also allows us to capture the growing body of indicator-level issuer data, with a focus on specific data points we deem most material to value creation. With the tool, we can also integrate bottom-up analysis of material issues and forward-looking views from our experts to scale issuer ratings and research.

The ESG Model Builder connects with our overall SI- and financial-data ecosystem. We obtain indicator-level issuer data from a variety of sources, including company-disclosed data, datasets from government websites, and proprietary physical climate data from Woodwell Climate. Importantly, the platform combines this data with our forward-looking insights gathered from company engagements and fundamental research. These ratings are then available firmwide, through our SI-specific investor tools and portfolio management and research tools.

Figure 7

Distribution of internal physical-risk ratings

Reviewed market value (MV) by physical-risk rating	S&P 500	MSCI All Country World	Bloomberg Barclays Global Agg Corporate
Total % of MV in index rated by Climate Research Team	80.4	62.4	41.2
Low/no risk identified	14.2	9.5	3.3
Potential risk identified	23.3	20.0	20.1
Material risk identified	43.0	33.0	17.8

Risk assessments as of 31 December 2022. Analysis is based on company disclosures as well as proprietary research from Wellington Management's Climate Research Team. Coverage to date has been focused on corporate entities only and research on the broad global equity and corporate investment universe is incomplete. Ratings reflect a fundamental assessment of potential physical climate risk, based on our understanding of climate-change projections (as supplied to Wellington by Woodwell Climate) and our research to identify key addresses associated with the company's operations. For companies researched thus far, there can be no assurance all addresses currently associated with company operations were captured, as most addresses are not publicly disclosed by companies today.

Drawing on Woodwell Climate's climate projections and our proprietary geospatial mapping tool, we evaluate the potential impact of key climate variables, including heat, drought, water scarcity, wildfire, floods, hurricanes, and sea-level rise, for each known company address. These climate projections are subject to many assumptions as specified by the climate scientists at Woodwell Climate. Projections vary over different time periods and are subject to change.

Materiality assessments are communicated via Low/no risk, Potential risk, and Material risk (defined below) and reflect potential physical risk identified by Wellington's Climate Research Team as of a specific time. If the company's disclosure of location data is more general than provincial or state level and we are unable to find additional information from supplementary sources, it would be insufficient to produce a rating based on our criteria. In this case, we would look at qualitative factors to assign a rating and flag the rationale with the statement "Qualitative assessment applied due to insufficient location data." Importantly, these ratings do not reflect our assessment of how company management teams plan to manage these risks over time. Ratings are not intended to signal buy or sell investment decisions. Ratings should only be interpreted as a potential input into an investment team's research mosaic. Other investment teams at Wellington Management may disagree with the Climate Research Team's materiality assessment.

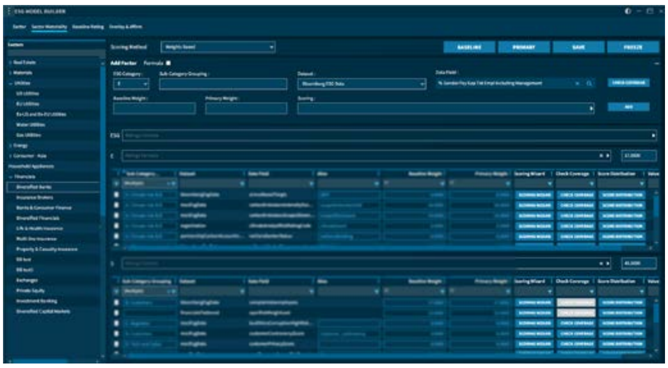
Material risk identified: Typically defined as a company with greater than 10% of its key locations at risk, or greater than 5% of revenue at risk from climate-related events.

Potential risk identified: Typically defined as a company with some level of climate risk to its key inputs or critical facilities (1% – 10%, or below 5% of revenue at risk), or a company with more than a 30% net property, plants, and equipment (PP&E) to total assets ratio.

Low/no risk identified: Typically defined as a company with little to no level of climate risk due to either its locations, diversification, the nature of its business, or the industry/sector in which it operates. | Source: Wellington Management.

Figure 8

ESG Model Builder



For illustrative purposes only. Source: Wellington Management.

2.6 CLIMATE-TRANSITION-RISK RESEARCH AND INVESTOR TOOLS

Climate-transition risks affect the ecosystem in which companies operate and can materially impact their attractiveness from an investment perspective. Businesses effectively mitigating transition risks may accrue competitive advantages and see their cost of capital decline. Transition factors vary by region and sector, and our ESG Research Team analyzes them through various lenses, aiming to identify companies bolstering their readiness and engaging with those that are not. Our risk analysis entails disclosure reviews of a company's transition-related initiatives, which we post on our internal CDP dashboard. These assessments inform our ESG Research Team's ratings, also available to investment teams.

To improve our ability to analyze transition risks and opportunities, we developed a new system to assess climate-transition alignment. Completed in late 2022, our new Transition Alignment Rating (TAR) system allows us to score companies along a spectrum, based on their progress toward climate-transition-risk-mitigation plans, relative to their peers. These quantitatively derived, forward-looking ratings are inspired by the parameters for alignment outlined in the IIGCC's Net Zero Investment Framework. In general, companies that have set science-based targets (SBTs) tend to receive higher scores, while companies that have not yet set targets and/or are just beginning to disclose their emissions receive lower scores. The system accounts for differences in market capitalization (with higher expectations for larger companies) and regions (with more defined decarbonization plans expected for companies in developed markets). We also adapt company peer groups to better capture the distribution of climate leaders and laggards.

Ultimately, we expect TARs to help investment teams track public companies' transition risks, generate opportunities to focus constructive dialogues with companies on topics of greatest impact, and measure incremental progress toward robust risk-mitigation plans in pursuit of better financial outcomes for clients. Qualitative assessments, led by our industry experts, supplement the quantitative scoring and help us assess the credibility and feasibility of each company's transition-risk strategy. We look forward to rolling these ratings out across our investor tools and climate-focused portfolio reviews in 2023.

COMPANY CARBON DASHBOARD

In 2022, we improved our carbon emissions tool to compare companies with peers and industry-intensity averages. This dashboard includes the historical trend of intensity figures for Scopes 1 and 2 only and for Scopes 1, 2, and 3, leveraging estimated Scope 3 datasets (**Figure 9**). We display multiple data sources to demonstrate the difference in estimation methodologies and underscore the importance of encouraging company-specific disclosures. Analysts can look across their coverage universe to identify how business-strategy differences relate to carbon output. They can also identify companies that may require more robust transition strategies and related capital expenditures to catch up to peers.

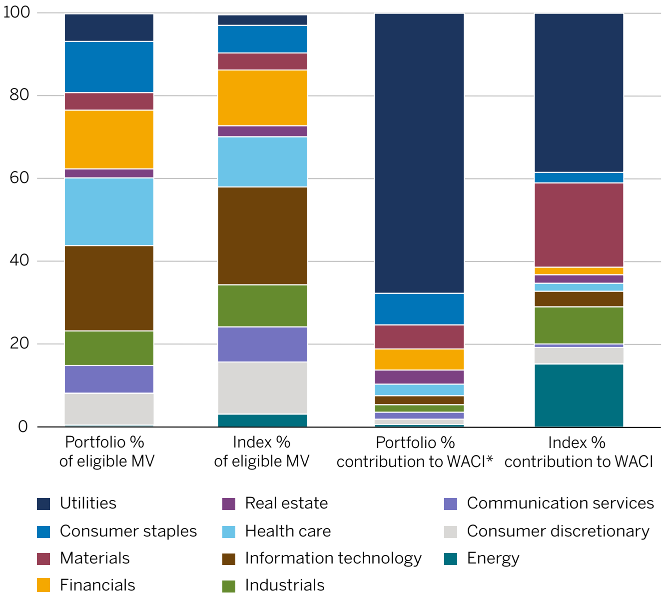
Figure 9

Company carbon dashboard

SUMMARY

	Carbon emissions TCO2e	Carbon emissions/ US$M TCO2e/ US$M invested	WACI TCO2e/ US$M sales
Portfolio	46,155.6	20.2	96.4
Index	97,338.2	42.5	129.8

SECTOR CARBON INTENSITY



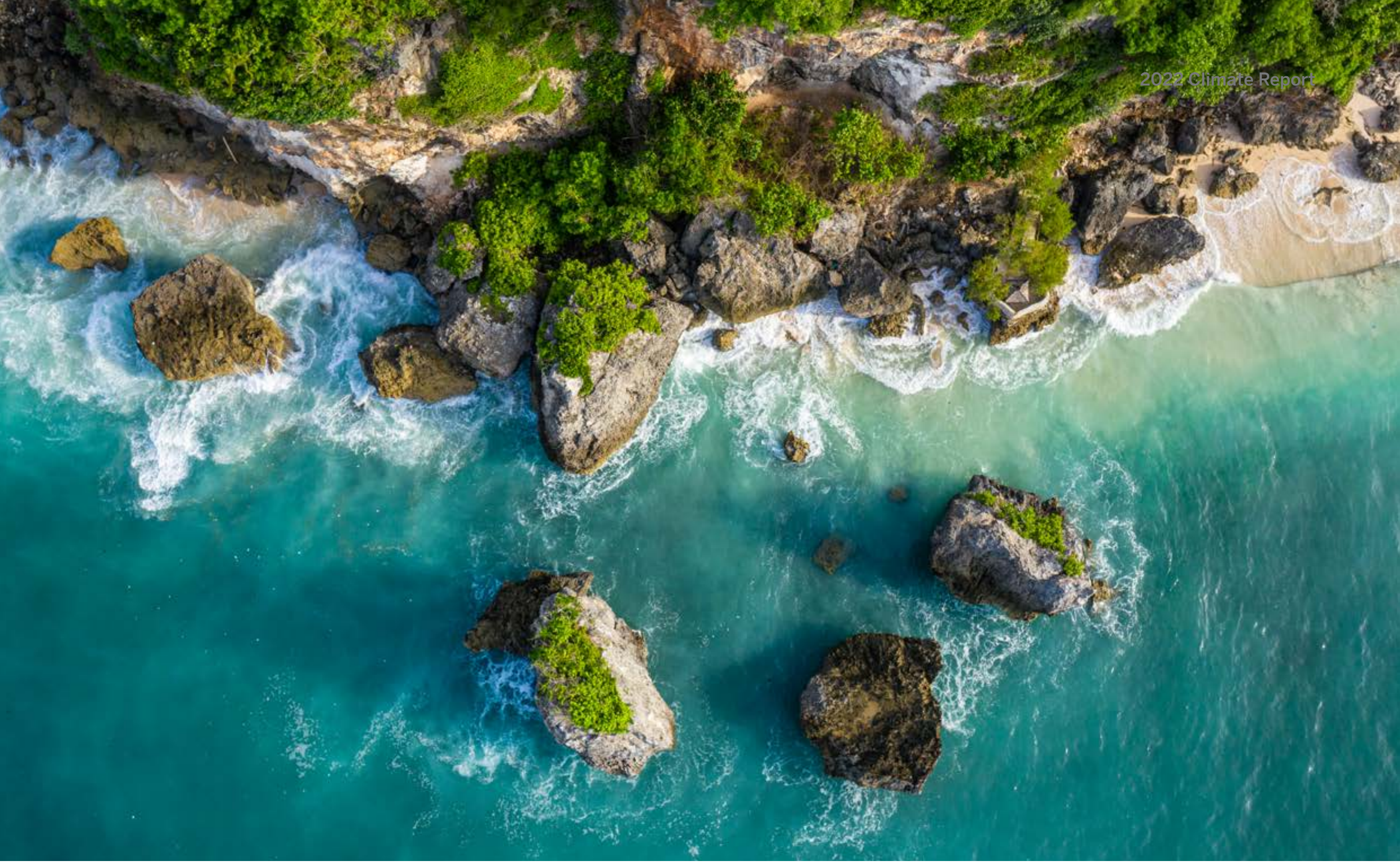
* Weighted average carbon intensity. For illustrative purposes only. Sources: MSCI, Wellington Management

CARBON EMISSIONS DATA COVERAGE

% market value (MV) eligible for carbon data	% of eligible MV with carbon data: Adjusted	Estimated	Reported	Total	Without carbon data: Total
99.5	6.2	15.3	78.5	100.0	0.0
100.0	3.8	12.9	83.1	99.8	0.2

	% of eligible MV		Contribution to WACI	
	Portfolio	Index	Portfolio	Index
Utilities	6.7	2.6	67.6	38.4
Consumer staples	12.3	6.7	7.7	2.5
Materials	4.3	4.1	5.8	20.4
Financials	14.2	13.4	5.0	1.8
Real estate	2.1	2.7	3.5	2.1
Health care	16.4	12.1	2.7	1.9
Information technology	20.6	23.6	2.2	3.8
Industrials	8.4	10.2	1.8	8.9
Communication services	6.7	8.5	1.7	0.9
Consumer discretionary	7.7	12.6	1.3	4.0
Energy	0.4	3.2	0.7	15.3
Not covered	0.0	0.2	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
Not eligible	0.5	0.0		

For illustrative purposes only. Sources: MSCI, Wellington Management

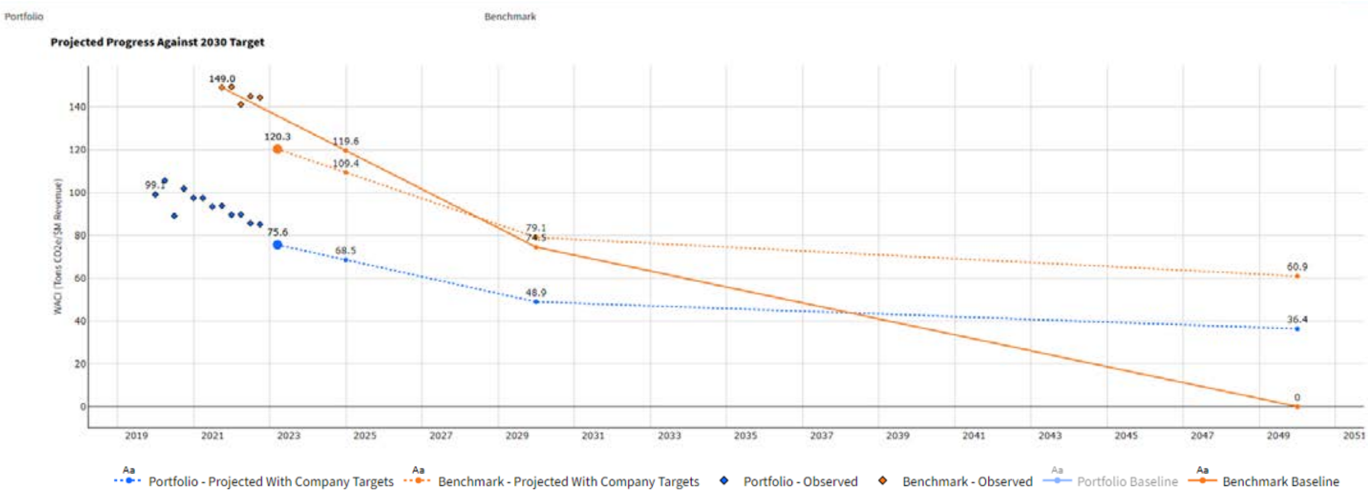


NET-ZERO DASHBOARD

In 2022, we continued to enhance our proprietary net-zero dashboard. This tool allows portfolio management teams to monitor historical and projected portfolio-level weighted average carbon intensity (WACI). Further information on WACI is provided in Section 4. The dashboard also measures portfolio exposure to companies that have committed to or have set SBTs, which we consider a proxy for a credible transition plan. The tool provides an illustrative glidepath for portfolio managers who, at the request of a client, have agreed to incorporate a transition-related glidepath into guidelines to monitor and ensure compliance. Importantly, this tool illustrates security-level exposures, including top contributors to each portfolio's carbon footprint. It suggests priority candidates for constructive dialogue on transition risk, based on their contributions to portfolio WACI and lack of demonstrated transition-risk management (**Figure 10**). To accompany the dashboard, we have made a related report available to our clients upon request.

Figure 10

Net-zero dashboard



Sample client-defined glidepath using exposure to science-based targets.

For illustrative purposes only. Data as of 31 December 2022. | Sources: MSCI, SBTi, Wellington Management.

Section 3: Engagement philosophy, approach, and examples

We rely on constructive dialogue with company management teams and boards to assess companies' and issuers' credibility on climate-risk management. Because most emissions data in analytical tools is backward-looking, incomplete, or estimate-based, engagement helps us evaluate forward-looking investment risks and opportunities. While engagement applies to investments across equity and credit in both private and public markets, we engage on the topic of climate when we believe doing so is financially material to an investment team's holdings. Proxy voting applies mostly to public equities.

3.1 ACHIEVING OUTCOMES THROUGH CONSTRUCTIVE DIALOGUE

Constructive dialogue with company management teams and issuers helps us assess their climate preparedness. We typically start by assessing a board or management team's understanding of climate-related physical and transition risks. Many companies do not yet disclose climate-relevant information, which is necessary to understand material financial risks, so we may begin by encouraging them to measure and disclose their Scopes 1, 2, and 3 emissions as well as the physical locations of property, plant, and equipment.

Regular dialogue also allows us to monitor corporate behavior over time for ways we believe can unlock value — for example, by helping companies adopt best practices for climate-risk-management transparency and setting science-based emissions-reduction targets. As more companies improve in these areas, we intend to intensify our focus on the credibility of climate-risk management, including incentives alignment and capital-allocation decisions. We increasingly track and measure engagements to monitor outcomes, assess effectiveness, and identify candidates for escalation. Our portfolio teams are familiar with the escalation tools at their disposal to pursue enhanced value for clients, including proxy voting and letter writing.

2022 ENGAGEMENT PRIORITIES

Financial disclosures: We have been engaging with select portfolio companies to encourage the adoption of the TCFD recommendations for several years, as we believe that TCFD-aligned disclosure is evidence of a climate-risk-management process. TCFD-aligned disclosures help us assess the rigor of the company's climate strategy and focus on areas of improvement.

Transition-risk mitigation: We believe mitigation requires setting and meeting challenging, time-bound SBTs to reduce emissions. Demonstration of progress signals a company's willingness and ability to mitigate its transition risks over time. We monitor whether and how companies link targets to capital-allocation decisions and executive compensation. This is an area of increasing focus for investment teams with net-zero-aligned client accounts.

Physical-risk adaptation: We find most companies focus less on identifying and addressing physical climate risks than on mitigating transition risks. We would like more companies to disclose their expected financial impacts of physical risks under multiple climate scenarios, and for management teams to proactively adapt to these risks. Over the years, we have established frameworks for companies to disclose physical risks, including a specific call for physical location information. In 2022, our efforts expanded to calling for information related to biodiversity impacts. While investor-relevant frameworks remain nascent, we have begun to ask companies about their intentions to disclose more about their oversight and assessment frameworks for biodiversity, including deforestation and land-use risks.

Learning from leading companies: We continue to engage with companies that we believe are leading their peers on climate-risk management or opportunity alignment. Climate leaders can often provide real-world examples of new or evolving best practices in a particular industry or region. Insights we learn in these productive dialogues help us improve our feedback to other companies.

3.2 ENGAGEMENT EXAMPLES

In 2022, the physical and/or transition risks of climate change were a substantive agenda item in meetings and proxy votes; we engaged with issuers on the topic at over 1,100 climate-related meetings. We also voted on more than 200 climate-related proposals, including environmental shareholder proposals, Say on Climate votes, and votes against directors for failure to disclose emissions in cases where we believed this information to be important to achieve the best financial outcomes for our clients.

We chose the following examples to represent stewardship related to climate-transition and/or physical climate risks, broad investor involvement across asset classes and regional lines, and a range of engagement outcomes. We also selected examples that we believe demonstrate our engagement and voting policies in action. Not all engagements resulted in meaningful or measurable outcomes; however, they all contributed to our relationship with and/or understanding of the company, helping enable better-informed investment decision making. We continue to develop our engagement tracking tools to enhance research and ESG integration, as well as client reporting.

See **Appendix 6** for a complete list of 2022 public-market issuer engagements on climate-related topics.

AEGEA

Primary topic: Physical climate risks

Objective: Encourage climate-risk mitigation

Method: Engagement with management

Detail: Aegea, the largest private sanitation company in Brazil, provides clean water and sewage services throughout the country, with the goal of promoting universal access to these essential services. The company's debt instruments are held by several of our fixed income investment teams, including our Global Impact Bond Team.

Our fixed income credit analysts engaged with Aegea in the third quarter of 2022 to assess the company's capacity to manage the physical climate risks to which it is exposed. Per analysis from our dedicated Climate Research Team, in conjunction with Woodwell Climate, we determined that the rising probability of droughts and seasonal rainfall variability will increase water scarcity in some of Aegea's operating regions and thus threaten shareholder value. Our analysis, which we shared with the company, focused on Aegea's concentration of operations in the part of the country most exposed to these physical climate risks.

Outcome: During this engagement, management acknowledged these hydrological risks and informed us that it had hired a weather-forecasting consultant to improve climate modeling. The company's analysis thus far focused on the northeast region of Brazil and found that drought in the region should not impact Aegea's operations or water supply, given the heavy reliance on the Parnaíba River as the main water source. Aegea's analysis found that the volume of the river destined to supply water corresponds to approximately 1% of the river's minimum water flow over the last 10 years. Going forward, Aegea expects the river to continue to support its operations in the region. We also sought to understand how Aegea plans to mitigate potential water scarcity in the southern part of the country, around Rio de Janeiro, given Woodwell Climate's forecast that future water demand there is likely to be among the highest in the world. We learned of Aegea's steps to reduce water loss, including repair and replacement of water networks and installation of water-pressure meters across its network.

Status and reflection: We believe Aegea continues to demonstrate a strong understanding of the physical risks posed by climate change; however, we will continue to engage with the company on this topic. The company believes that its geographic diversification, including 43 operations across 154 municipalities, partially mitigates its hydrological risks.

AMERICOLD REALTY TRUST

Primary topic: Climate-transition risks

Objective: Encourage the adoption of SBTs

Method: Engagement with management, board, investor relations, and ESG manager

Detail: In late 2021, we had the opportunity to meet with the board chair and investor relations teams of Americold, a US-based temperature-controlled warehousing and transportation company, to discuss its ESG priorities for the following year. We appreciated the board's willingness to engage in dialogue but found its responses to sustainability-related questions lacking the specificity that we typically see from the company's peers. We were concerned that if the company failed to accept this feedback, its lagging practices relative to peers would ultimately decrease shareholder value.

Shortly afterward, Americold asked for a second meeting to discuss feedback on its current and planned ESG initiatives. We provided our views on best-practice disclosures and encouraged the company to commit to science-based emissions-reduction targets. We communicated that lack of commitment to meaningful reduction in emissions could ultimately be detrimental to existing customer relationships and make it more difficult to attract new customers. It could also be viewed negatively by investors. Furthermore, the addition of energy-efficient and operationally efficient machinery would reduce Americold's operating expenses, a direct benefit to the company's bottom line. We were encouraged that our feedback was well received by company representatives. We followed up to seek an update on progress on more robust disclosures via CDP, GRESB, and the Global Reporting Initiative.

While we continued to engage throughout 2022, we were sometimes frustrated by the company's lack of clarity around target setting. Nonetheless, we continued to encourage the adoption of SBTs and question how other company priorities, such as rooftop solar installations, might contribute to the process.

Outcome: After a year of advocating for SBTs, we were pleased to see the company's certified commitment to the SBTi and the responsiveness to our input.

Status and reflection: We look forward to engaging further with Americold on the specifics of its targets.

BP

Primary topic: Climate-transition risks

Objective: Assess whether BP's current climate-transition plan supports long-term success

Method: Engagement with board

Detail: The global industry analyst, fixed income analyst, and ESG analyst collectively met with BP's board chair to discuss the company's transition plan. We believe involving multiple disciplines in an engagement allows us to make a more holistic assessment. Following the engagement, we remained positive on the oil and gas company's net-zero strategy. We agree with the board chair's view that integrated companies have an edge in the energy transition. BP's refining capacity for renewable diesel and sustainable aviation fuel, its development of electric vehicle (EV) charging infrastructure, and its disciplined approach to renewables demonstrate this edge. The company also uses a wide range of demand trajectories in its scenario planning to reduce the risk of stranded assets. It incentivizes management to remain focused on the energy transition by including growth measures for renewables, bioenergy, and EV charging points in its compensation plan.

Outcome: Following our engagement, we remained confident that BP will continue to pursue a strategy that supports its success throughout the energy transition. We therefore chose not to support a shareholder proposal on the 2022 agenda seeking short-, medium-, and long-term targets for the company's Scopes 1, 2, and 3 emissions reductions. The company had already adopted ambitious emissions targets and had a credible transition strategy with robust associated disclosure. Because of our satisfaction with the company's current goals and communication, we did not see the value in supporting the shareholder request at that time. The proposal received little support, with 85% of shareholders voting against it.

Status and reflection: We will continue to monitor BP's progress on its already well-articulated transition plan.

DANFOSS

Primary topic: Sustainability disclosure

Objective: Encourage improved disclosure and strategy regarding sustainability

Method: Engagement with management

Detail: In late 2022, we engaged with Danfoss, a private Danish developer and manufacturer of heating, ventilation, and air conditioning (HVAC) products. The company is also an innovator of solutions to tackle climate change, urbanization, and food challenges, with more than 50% of its products aimed at increasing energy efficiency and lowering GHG emissions. The company advocates for increased energy efficiency as a critical tool for accelerating the green transition. Given its strong environmental impact thesis and financial fundamentals, we have held Danfoss's debt in some of our fixed income impact portfolios since 2021. We have been monitoring the issuer since our initial purchase, however, as we expected improved disclosure and strategy regarding sustainability in 2022. Through the engagement, we learned that the company's CEO had expressed a strong commitment for more defined sustainability planning. Danfoss defined its first Sustainability Roadmap in 2022, which detailed ambitious Scopes 1, 2, and 3 emissions-reduction goals and a target of net-zero emissions in its global operations by 2030. We believe this strategy sets Danfoss up for creating long-term shareholder value.

We were impressed to learn that Danfoss is increasingly utilizing renewable energy and energy-efficient buildings to decarbonize its operations. It has acknowledged that Scope 3 is the largest contributor to the company's carbon footprint and confirmed that it is engaging with suppliers to ensure that decarbonization efforts are taking place within its supply chain. We encouraged Danfoss to implement SBT requirements for its suppliers to support these engagements. The company is currently not doing so, due to reservations about the methodology. We communicated our view that SBTs are an important standard for measuring general decarbonization commitments. Moving forward, Danfoss would like to focus on disclosing more Scope 4 data (emissions avoided). This data would be particularly relevant, given that the majority of its products help consumers save energy.

Outcome: Our comments were positively received. Overall, our engagements with Danfoss have given us a better understanding of the company's commitment to sustainability, and we believe that this commitment may contribute to long-term value. The manufacturer made significant progress in 2022 in providing sustainability data points, which will allow for better tracking of its impact progress. This level of disclosure is highly significant, given that Danfoss is a private company. We will continue to emphasize the value of adopting SBTs across the company's supply chain.

Status and reflection: We will engage further with the company in 2023 on Scope 3 emissions from its supply chain and Scope 4 emissions-avoidance metrics. We will also monitor Danfoss's contribution to the circular economy.

DUKE ENERGY

Primary topic: Physical and transition risks of climate change

Objective: Assess climate-related risks and opportunities facing Duke Energy

Method: Engagement with management

Detail: Our ESG, equity, and credit analysts evaluated the climate-related risks and opportunities facing Duke Energy, through sector-based materiality research and company engagement. In terms of transition risks, the US-based electric utility company generates power from a mix of coal, natural gas, nuclear, and renewables. The company has a published ambition to achieve net zero by 2050 and has dramatically reduced its forecast generation from coal while expanding its renewables. This pivot is supported by the increasingly favorable all-in cost to operate wind and solar power plants relative to coal power plants, particularly where coal plants are older and require more maintenance and upkeep. We will continue to monitor the balance of new natural gas generation versus renewables and whether the new post-Inflation Reduction Act economics of wind and solar will allow the company to accelerate its exit from coal and potentially unlock value.

Outcome: As Duke Energy continues to provide more details on its decarbonization roadmap — while maintaining affordability for customers and a strong safety record in its nuclear operations — portfolio managers have gained conviction that the company is taking advantage of the tailwinds of the energy transition. In terms of physical risks, our analysis of Woodwell Climate's research suggests that the company has above-average exposure to extreme climate-related weather events. However, the company has issued storm recovery bonds to cover extraordinary damage from extreme events and continues to invest in grid hardening to improve the resilience of vulnerable substations and ultimately reduce the frequency of outages for customers.

Status and reflection: We will continue to engage with the company to support its ongoing management of climate-related risks and opportunities.

FMC CORP

Primary topic: Physical climate risks

Objective: Encourage consistent climate messaging from leadership

Method: Engagement with board

Detail: FMC Corp is a crop chemical company with products aimed at improving crop yields, increasing water efficiency, and combatting disease. We hold the company in one of our climate-focused funds with the idea that rising global temperatures could lead to more pests, in new areas, leading to an increased demand for FMC's insecticide and fungicide products.

We engaged with the company to explain the benefit of having a clear, consistent, articulate message around how the firm is impacted by climate change. The benefit of clear messaging is twofold. First, it improves visibility of the relevance of climate change to the company's business for asset managers who are increasingly using NLP to screen quarterly call transcripts for relevant climate terminology. Second, it may also attract climate-focused investors, which helps diversify the shareholder base and skew it toward long-term holders. With this in mind, our Climate Research Team shared with FMC an excerpt from a quarterly public call from a climate leader in the HVAC industry. The example detailed the company's positive positioning in response to calls from the United Nations for the adoption of more zero-emission heating and cooling technologies.

Outcome: Our engagement with the company reinforced the necessity and value of the TCFD analysis already underway. We specifically underscored the value it could provide to the investment community, especially around climate change scenario analysis. FMC also committed to using messaging shared as part our Climate Research Team's transition plan, to be published late 2023.

Status and reflection: We look forward to being a resource for FMC as a part of its transition planning and hope more consistent climate messaging will attract capital in the future.

HCA HEALTHCARE

Primary topic: Physical climate risks and emissions disclosures

Objective: Encourage enhanced physical-risk preparedness and disclosure

Method: Engagement with management

Detail: The Climate Research Team conducted a risk-based portfolio review as of October 2021, focused on physical climate risks. HCA Healthcare was highlighted as having potential risk exposure given the materiality of its physical assets and their geographic distribution. With support from the investment team, our ESG and climate analysts engaged with the management team to discuss the company's preparedness for physical climate risks and progress on emissions disclosure, as these financially material risks have the potential to affect shareholder value.

Almost half of HCA's revenue comes from its hospitals in Florida and Texas, which face increasing hurricane and flooding risks. When we engaged on this topic previously, we encouraged the company to provide clearer disclosure of resiliency measures being taken to address potential business disruption from these physical risks. In its 2021 TCFD report, the company disclosed its initial climate-related risk assessment process. Following the publication of the report in 2022, we engaged with the company. HCA's hospitals in Houston were hit by Hurricane Harvey in 2017, and the company noted it has learned from such events and has increased property-level resilience measures, such as bringing in backup energy capacity and building up water barriers. During this engagement, the company discussed enterprise-level tactics, policies, and procedures to strengthen future responses to extreme weather events and mentioned increasing integration of resilience considerations when building out new infrastructure.

Outcome: We saw this enhanced preparation in action soon after; during Hurricane Ian in September 2022, HCA announced proactive patient transfers, closures, and service deferrals. We view these as positive, proactive steps for patient safety, which ultimately decrease business disruption.

Since results from climate models are not easily digestible, we have found that many companies continue to rely on historical data to inform their climate outlook. This makes it more challenging to plan for potential increases in capital expenditures related to increasing frequency and severity of climate events. Subsequent to this dialogue, our climate analyst followed up with Woodwell Climate regarding future hurricane and flood risk to assist HCA with climate modeling across different time horizons and scenarios. We also provided our Physical Risk of Climate Change (P-ROCC) framework, which seeks to provide guidance to companies to disclose their physical vulnerabilities and resilience measures, thereby helping investors better evaluate the ability of the companies they invest in to adapt. Regarding HCA Healthcare's carbon-emissions profile, the company recently disclosed Scopes 1 and 2 emissions in its sustainability report and is on track to complete an initial baseline on material Scope 3 emissions by the fourth quarter of 2023.

Status and reflection: Our ESG analyst gained conviction in the company's environmental risk mitigation practices and trajectory toward better disclosure around emissions and transition risk. We plan to continue to monitor its progress around disclosure of physical-risk resilience and Scope 3 emission disclosure, and ultimate reduction plans.

HELIOS TOWERS

Primary topic: Climate-transition risks

Objective: Encourage investments in renewable energy sources

Method: Site visits and engagement with management

Detail: Helios Towers provides critical telecommunication infrastructure through its network of over 13,500 cell towers in high-growth markets across Africa and the Middle East, where it accommodates major mobile network operators. In 2022, we held some of the company's senior unsecured bonds.

In 2022, one of our fixed income credit analysts visited Helios in Kinshasa, Democratic Republic of Congo (DRC). In-country meetings with Helios' local teams have given us a better sense of the complexity of running telecom and cell-tower operations in Africa. They have also afforded us an opportunity to discuss ESG topics material to Helios and the industry at large. Specifically, we engaged with Helios on its use of renewables to improve power reliability to its cell towers. We also engaged on its site-security challenges. Conversations with local staff and customers allowed us to witness firsthand the transformative impact of mobile and broadband coverage expansion in the region.

Outcome: Investing in renewable energy sources to further reduce downtime during power outages is a key component of the company's growth strategy. Today, 19% of its sites use solar power, and Helios aims to expand that. Through our engagement, we learned more about structural challenges in the DRC that are hindering the company's ability to deliver power via renewable sources. In particular, reliance on hydropower has resulted in a lack of reliable energy supply from the national grid. Still, just 45% of the country's cell towers are connected to the grid, implying a heavy reliance on diesel-powered generators. Helios continues to invest in solar to improve its reliability and emissions profile.

Status and reflection: We will continue to engage, especially on long-term grid connectivity and increased development of solar-powered cell towers.

IMPERIAL OIL

Primary topic: Climate-transition risks

Objective: Ensure that Imperial Oil's transition plan supports long-term success

Method: Engagement with management and proxy voting

Detail: Imperial Oil's 2022 annual general meeting included a shareholder proposal seeking improvement in the company's long-term emissions-reduction strategy. The proposal called for the cessation of capital expenditures to develop new oil and gas fields. The company recommended a vote against the proposal, highlighting the need for new investments in oil and gas given the rate of natural decline from existing fields. However, in 2022, the company announced a net-zero ambition and remains on track to reduce GHG emissions intensity by 30% by 2030, relative to 2016 levels. In doing so, it continues to demonstrate a thoughtful approach to its climate strategy.

Imperial also leverages its engineering capabilities, both from its lab in Calgary and through a collaboration with Exxon, to develop lower-carbon oil-extraction solutions. During a July 2022 site visit, we learned more about Imperial Oil's VAPEX technology for enhanced bitumen recovery. This process uses significantly less steam than conventional approaches and is expected to reduce Imperial's GHG emissions by 60% and water usage by 90%.

Outcome: We voted against the shareholder proposal, as did over 90% of Imperial Oil's shareholders. We found the proposal overly prescriptive. We are also encouraged by the company's participation in the Pathways to Zero Alliance and its recent commitment to build Canada's largest renewable diesel facility at its Strathcona Refinery. The world will depend on oil and gas during the low-carbon transition. We believe fossil-fuel companies that are proactively reducing Scope 1 emissions and allocating incremental capital to low-carbon projects could retain and enhance competitive advantages.

Status and reflection: We will continue to engage with the company and monitor its transition preparedness.

3.3 CLIMATE TRANSITION PLANNING

Companies' transition alignment spans a continuum of transparency, ambition, and credibility. While we observe that companies with larger market capitalizations based in developed markets tend to be further along in their mitigation strategies, across emerging markets, transition ambition has expanded considerably.

TRANSPARENCY

We expect companies to have credible transition plans and have communicated that we recommend they use the TCFD recommendations. We view disclosure of Scopes 1 and 2 emissions as a minimum expectation where measurement practices are well defined and attainable. We encourage all companies to disclose Scope 3 emissions as well. While we recognize the challenges associated with collecting Scope 3 emissions data, this disclosure is necessary for us to fully understand the transition risks applicable to an issuer. Disclosure that breaks out upstream and downstream Scope 3 emissions data, including context and granularity about the most significant Scope 3 sources, enhances our ability to evaluate investment risks and opportunities.

AMBITION

As part of enterprise risk management and strategic planning to reduce the potential financial impacts of climate change, we encourage companies to set a credible, science-based decarbonization glidepath. When evaluating interim and long-term targets, we consider three primary elements:

Comprehensiveness: Does the target comprise all categories of material emissions?

Rigor: Is the target consistent with the ambition to achieve net-zero emissions by 2050 or sooner?

Competitiveness: How does the target compare to that of the company's peers?

Where industry-specific guidance is applicable and practical, we consider it to be best practice for companies to pursue validation from the SBTi.

CREDIBILITY

Once a target is set, we aim to monitor companies' implementation with qualitative assessment as deemed material in the normal course of research on transition-risk management. We seek additional data to reinforce strategic alignment of a decarbonization strategy with corporate strategy. These data points vary by industry but may include capital allocation, current and future "green revenue" growth, management incentives, and lobbying practices. When a company uses offsets to neutralize residual emissions, the offsets should be high quality and remove or reduce GHG emissions in real, additional, and permanent ways. We also evaluate just-transition considerations, or how a company balances the target with associated adverse social consequences, such as job losses in incumbent industries or affordability of low-carbon products.

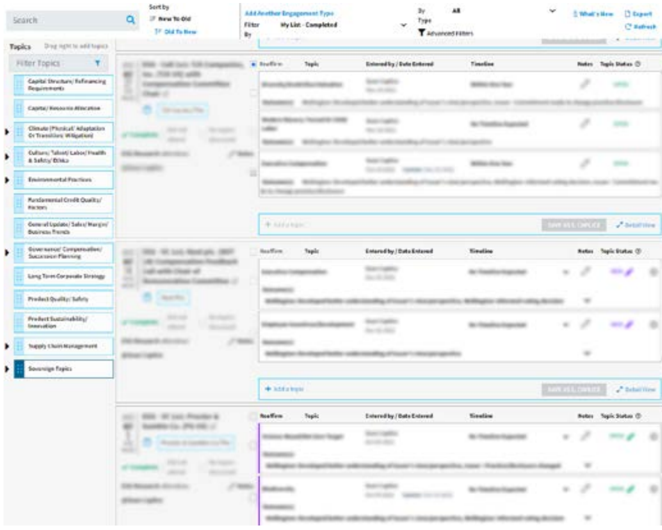
3.4 TRACKING ENGAGEMENT OUTCOMES

To facilitate the engagement work of our investment teams, we have built a proprietary system for tracking our public-market engagement activity.[6] Our goal is to create a rich dataset that can deepen our conversations with issuers as we seek to create value. Our engagement tracker (**Figure 11**) is a shared tool that investment teams focused on public-market corporate and sovereign issuers across our firm can use to record and collaborate on engagement topics. It is a key component of our escalation process, enabling teams to identify engagements that require escalation. Investment teams track key engagements to ensure they can continue conversations over multiple years and see progression and consistency in our messaging. In addition, the tool provides a feedback loop, informing future engagements and prioritization. We have also built an engagement-reporting dashboard, which provides tracked engagement data across teams, strategies, and firmwide.

Once a team books an issuer meeting, they may invite other investment teams through a central calendar. Bringing asset-class specialists together gives company managements a window on our various investor perspectives and concerns, including balance-sheet leverage, capital allocation, and material ESG issues. We believe this approach helps us understand issuers more holistically.

Figure 11

Wellington's engagement tracker



For illustrative purposes only. | Source: Wellington Management.

ESCALATION AND PROXY VOTING

As a complement to engagement, we can also use proxy voting as part of our escalation framework for managing climate-related risks. Voting is another signal that provides context for discussions with management and creates opportunities to inform corporate policy. We evaluate shareholder proposals related to environmental and social issues on a case-by-case basis and expect portfolio companies to comply with applicable laws and regulations regarding environmental and social standards.

When voting on shareholder proposals, we consider whether the actions being required or recommended in the proposal would promote investor returns. In addition, because proxy voting provides only limited means to express our views on a particular issue (i.e., voting "for" or "against"), we may support

[6] The firm's research and engagement-tracking tools are designed to ensure that information relating to private companies is strictly maintained behind an information barrier and accessible only to our private investing and private ESG research teams. This is to ensure there are critical information barriers between our private- and public-market business activities.

shareholder proposals in cases where we do not support every recommended action or where the proposal is accompanied by a supporting statement that we do not support, as long as we are directionally aligned with the issue motivating the proposal. In these cases, we aim to engage directly with the company to clarify the nuanced view our vote represents.

In 2022, we updated our proxy voting guidelines to vote generally against the reelection of the board chair in situations where carbon-emissions intensity presents potentially material financial risks for a company that also does not currently disclose Scopes 1 and 2 emissions and does not have a commitment to do so in the next year. This expectation applies primarily to companies in developed markets, where regulators, investors, and customers increasingly demand emissions disclosure. It also applies to other select global companies for which transition risks are likely to be financially material and with whom we have ongoing dialogue. Aligned with creating value for our clients, we also reserve the right to vote against the reelection of the chair at certain high-emitting companies that have not defined quantitative emissions-reduction targets as an indicator of robust transition-risk management.

We generally support shareholder proposals requesting improved disclosure on climate-risk management and those seeking alignment of business strategies with the Paris Agreement or similar language. We also support proposals requesting board oversight of political contributions and lobbying activities and those seeking improved disclosures where material inconsistencies in reporting and strategy may exist, especially as it relates to climate strategy. If our views differ from specific suggestions in the proposals, we provide clarification via direct engagement.

3.5 COLLABORATIVE ENGAGEMENT AND EXTERNAL PARTNERSHIPS

COLLABORATIVE ENGAGEMENT

Where operationally feasible and in line with "acting in concert" rules,[7] we generally participate in collaborative engagements that we view as complementary to our ongoing one-on-one dialogues with investee companies. To date, our participation has been through industry organizations, including:

Climate Action 100+: This group is focused on encouraging board climate accountability and oversight, TCFD-aligned disclosure, and decarbonization targets.

Investor Forum: This is a UK-based network. Through its engagement framework, the forum consults with members to hear their concerns, identify key issues, and develop constructive solutions.

EXTERNAL INITIATIVES

In pursuit of better investment outcomes, we cultivate thought partnerships with sustainability-focused organizations within and outside our industry (**Figure 12**).

Figure 12
Overview of external initiatives

Initiative	Role	Inception date
Responsible investment		
UN PRI	Signatory	2012
PRI Statement for Credit Ratings	Signatory	2016
Focusing Capital on the Long Term	Member	2017
Council of Institutional Investors	Member	2018
Investor Forum (UK)	Member	2019
International Investor Advisory Group of International Sustainability Standards Board	Member	2021
PRI's Venture Capital Network	Member	2021
Emerging Markets Investors Alliance	Member	2022
VentureESG	Supporter	2022
Stewardship codes		
UK Stewardship Code	Signatory	2010
Japan Stewardship Code	Signatory	2014
Hong Kong Principles of Responsible Ownership	Signatory	2016
Investor Stewardship Group's Governance and Stewardship Principles	Founding member	2017
FSC Standard 23 (Australia)	Signatory	2018

[7] As part of these engagements, we do not form groups; act in concert; or make any collective investment, voting, or other decisions or agreements with other investor participants. Nor do we ask, encourage, or allow other participants to represent our views or speak on our behalf.

Corporate governance		
Asia Corporate Governance Association (ACGA)	Member	2007
International Corporate Governance Network (ICGN)	Member	2012
Impact and ESG data		
UN SDGs	Supporter	2015
Global Real Estate Sustainability Benchmark (GRESB)	Member	2015
Global Impact Investing Network (GIIN)	Member	2016
Impact Management Project	Practitioner	2019
ESG Data Convergence Initiative (EDCI)	Signatory	2021
Institutional Limited Partners Association (ILPA) – Diversity in Action	Member	2022
Climate change		
Statement of Support for TCFD	Supporter	2017
Transition Pathway Initiative (TPI)	Supporter	2018
CDP (formerly Carbon Disclosure Project)	Member	2019
Ceres Investor Network on Climate Risk and Sustainability	Member	2019
Ceres Midstream Working Group	Member	2020
Climate Action 100+	Member	2020
Institutional Investor Group on Climate Change (IIGCC)	Member	2020
Net Zero Asset Managers (NZAM) initiative	Founding member	2020
Asia Investor Group on Climate Change (AIGCC)	Member	2022
Global Real Estate Engagement Network (GREEN)	Member	2022
Biodiversity		
Ceres Land Use and Climate Working Group	Member	2022
Farm Animals Investment Risk and Return (FAIRR)	Member	2022
Partnership for Biodiversity Accounting Financials (PBAF)	Supporter	2022
Taskforce for Nature-based Financial Disclosures (TNFD) Forum	Member	2022

INDUSTRY PARTICIPATION

We periodically share our perspectives with regulators and other trade organizations where relevant to our objectives of achieving better investment outcomes for our clients. As mentioned earlier, we have advocated to the US SEC, as well to the US Department of Labor, Nasdaq, and the US Environmental Protection Agency. We have also responded to various requests for input, including for the US CFTC's Climate-Related Mark Risk Subcommittee's 2020 report, "Managing Climate Risk in the U.S. Financial System." During 2022, we continued to share our perspectives on sustainability with regulators and trade organizations. This included ongoing dialogue with the UN PRI and with the UK's Financial Reporting Council (FRC) regarding its UK Stewardship Code expectations, and feedback on last year's submission. Additional examples of our advocacy and industry participation are included here.

CLIMATE-TRANSITION ADVISORY GROUPS

We embrace the opportunity to partner with clients, engage with companies, and participate in industry initiatives. Where aligned with investment objectives, we believe helping clients prepare portfolios for the low-carbon transition helps build portfolio resiliency and better positions portfolios to generate alpha over the long term. Through numerous net-zero industry initiatives, including NZAM, GFANZ, and PAII, we collaborate with other signatories to define benchmarking criteria, develop best practices for decarbonization methodologies, and shape industry standards.

GFANZ

- Our director of ESG research sits on the Real Economy Transition Plans task force for GFANZ. This task force provides guidance to companies on best practices for navigating transition risk, including publishing transition plans and demonstrating accountability.
- One of our research associates sits on the Sectoral Decarbonization task force for GFANZ. In support of companies seeking to mitigate transition risk, this task force supports the adoption and elaboration of actionable, sectoral net-zero pathways and the development of mechanisms for responsible retirement of carbon-intensive assets.

NZAM

- Our head of SI sits on the NZAM Advisory Group and helps to shape the initiative, working with other asset managers to ensure focus on achieving better investment outcomes for clients. We continue to meet with potential and recent NZAM signatory asset managers to share our research-led approach, offer advice, and answer questions.

PAII

- Our climate-transition-risk analyst contributes to and periodically chairs meetings of the PAII and asset-class-specific working groups. This group continues to develop further practical methodologies for inclusion in the PAII's Net Zero Investment Framework (NZIF) and other supplementary guidance documents to help companies mitigate transition risk. During 2022, we submitted feedback to the consultations regarding the draft guidance for private equity and the discussion paper on incorporating derivatives and hedge funds into the NZIF.

OTHERS

- Our head of SI was invited to join a new Climate-related Financial Risk Advisory Committee, formed by the Financial Stability Oversight Council (FSOC). This Committee has been established to identify, assess, and respond to the risks climate change poses to the US financial system.
- Other involvement in climate industry initiatives during the year included submissions to the consultation for SBTi's sector guidance for Forest, Land, and Agriculture and Cement.
- Members of our Climate Research Team are also contributing to the Bondholder Stewardship Working Group launched by IIGCC.

Section 4: Metrics and targets

In encouraging investee companies to improve climate disclosures, we recognize the importance of leading by example. Working on our own disclosures deepens our understanding of the effort required. It also gives us the opportunity to share with peers and investee companies the ways in which we seek to address our own measurement challenges. (Many companies cite measurement as their greatest challenge in adhering to the TCFD framework.)

Wellington operates as a community of investment boutiques, with each investment team acting as a fiduciary for its clients and developing its own P&P to guide investment decisions. Individual portfolio management teams are responsible for managing climate-risk exposure, according to their strategy's mandate. At the firm level, we assess aggregate equity and corporate credit climate-risk exposure using metrics provided to all teams. We recognize that there is no single, comprehensive metric through which to assess the exposure of our clients' portfolios to climate risks. As such, portfolio teams can leverage a mosaic of metrics to conduct climate-risk analysis and assess net-zero alignment at the portfolio level. These metrics include current and projected weighted average carbon intensity (WACI), financed emissions, exposure to carbon-related assets, implied temperature rise (ITR), and climate value-at-risk (CVaR).[8]

We can calculate GHG footprints for our strategies invested in public equity, corporate credit, and sovereign securities, as relevant data for these asset classes is widely available. Our investment teams can use this information to assess a portfolio's overall emissions footprint — including the distribution of carbon intensity across sectors and regions — and to identify top emissions contributors. This information is available to clients as a standard component of our ESG reporting.

4.1 MEASURING CURRENT EXPOSURE

This section focuses on our aggregate exposure. **Appendix 5** shows the same metrics for a sample of our equity and corporate fixed income strategies, as we disclose them to clients. The following analysis is provided for illustrative and transparency purposes and is distinct from our commitment to NZAM.

WEIGHTED AVERAGE CARBON INTENSITY (WACI)

Because we believe that, in general, energy-efficient companies manage transition risks better than their less efficient peers, WACI is our preferred portfolio-emissions metric. WACI measures a portfolio's exposure to carbon-intensive companies, using corporate revenue as a proxy for size. WACI also enables us to compare companies across industries. When conducting peer analysis, our industry research analysts may use a more specific intensity-based metric, such as kilowatt hours, for utilities.

For the purposes of this report and standard aggregate portfolio reporting, we use revenue as an approximation for output, in line with the TCFD's Supplemental Guidance for Asset Managers. (Other recommended portfolio metrics, such as carbon footprint and total carbon emissions, use an ownership approach.)

Because WACI changes only with annual reported emissions or revenue, the metric is not sensitive to share-price movements or other changes in capital structure and output. WACI is accessible and easy to communicate to clients. Like returns-based attribution analysis, WACI enables us to decompose a portfolio to clearly illustrate how both sector allocation and security selection influence a portfolio's intensity.

Figure 13 shows the WACI of our equity and corporate-credit exposures, relative to a representative global universe[9] as of year-end 2022. Figures 14 and 15 show sector-level breakdowns. Based on an attribution analysis, Wellington's equity WACI (Scopes 1 and 2) compares favorably to a global universe; we attribute this to stock selection within the two sectors representing the largest contribution to the carbon footprint: utilities and materials.

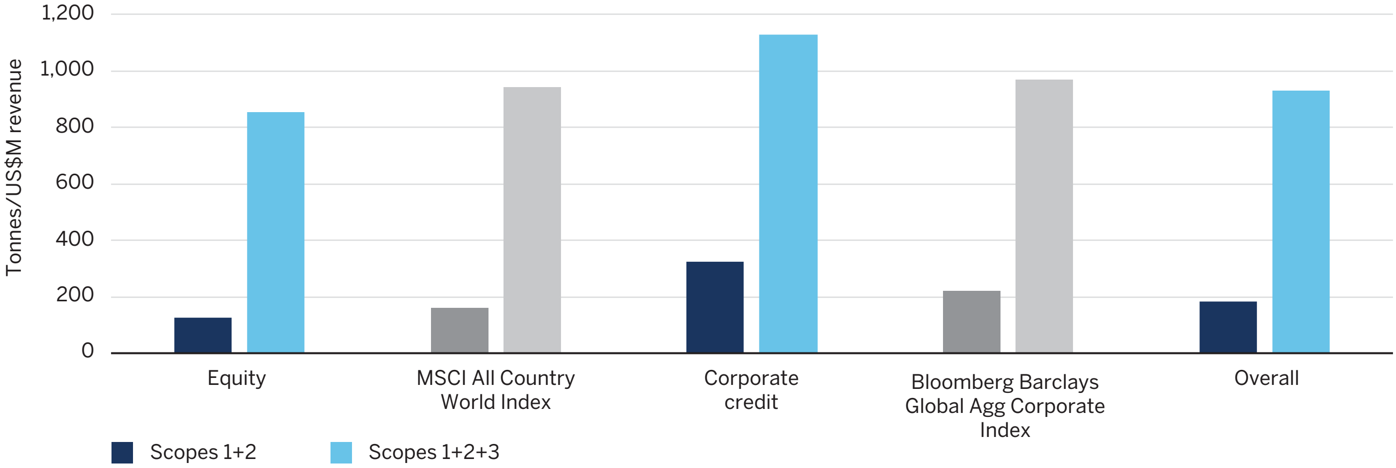
Our corporate credit assets have a higher WACI than the index because of an overweight to utilities and our specific security selection in utilities, the sector that represents the largest contribution to the footprint. In addition, the representative index is comprised of investment-grade issuance, while our corporate credit exposure includes investment-grade and high-yield issuance. For reference, the WACI for a global high-yield universe is 70% higher than that of a global investment-grade universe.[10] While we undertake the same attribution analysis for the WACI for Scopes 1, 2, and 3, we proceed with caution, as we expect the estimated dataset to be merely directionally accurate at this time.

[8] The analysis is based upon aggregate gross long equity and corporate credit exposure of nearly US$629 billion and US$254 billion, respectively, for total corporate exposure of more than US$882 billion (representing approximately 80% of total assets under management). Analysis is based on holdings and carbon data available as of 31 December 2022, unless otherwise noted. Scopes 1 and 2 emissions are based on a combination of company-disclosed and estimated data to supplement data gaps, while Scope 3 emissions are based on a fully estimated dataset; both are sourced from MSCI. These figures have not been independently assured or audited.
[9] The MSCI All Country World Index has been used to represent the global equity universe, and the Bloomberg Global Aggregate Corporate Index has been used to represent global investment-grade, fixed-rate corporate debt. Comparisons are for informational purposes only; not all assets aggregated as Wellington's equity and corporate credit exposure are managed against these indices.
[10] Wellington analysis as of 31 December 2022, based on a comparison of the Bloomberg Global Aggregate Corporate Index and the Intercontinental Exchange BofA Merrill Lynch Global High Yield Index.

The analysis indicates underweights to energy and materials, as well as an overweight to health care, which together contribute to a favorable sector-allocation profile. We will seek to analyze the stock-selection effect as Scope 3 disclosure improves to provide more differentiation within industries. We expect to be able to connect stock-selection information to our fundamental analysts' recommendations about the drivers of long-term value. For example, within the automotive industry, we should see lower Scope 3 downstream emissions (Category 11) from manufacturers that capture more market share from the sale of electric vehicles, relative to peers. In the banking industry, we should see lower Scope 3 downstream emissions (Category 15) from banks managing transition-risk exposure in their long-dated lending portfolios.

Figure 13

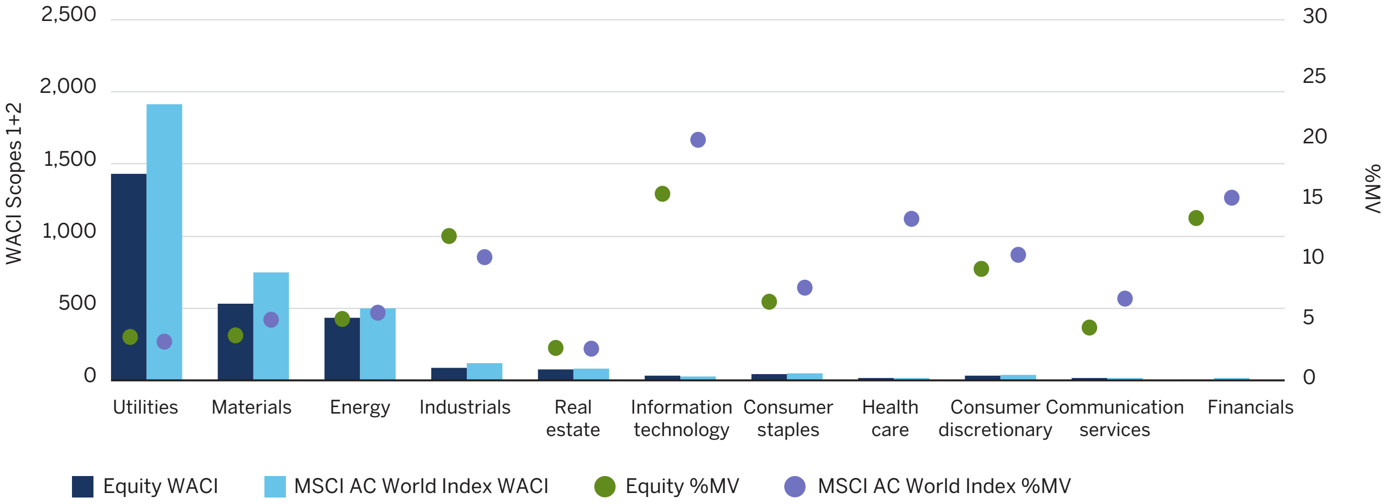
WACI of Wellington's equity and credit exposures vs relevant investment universes



Data as of 31 December 2022. Sources: MSCI, Bloomberg, and Wellington Management.

Figure 14

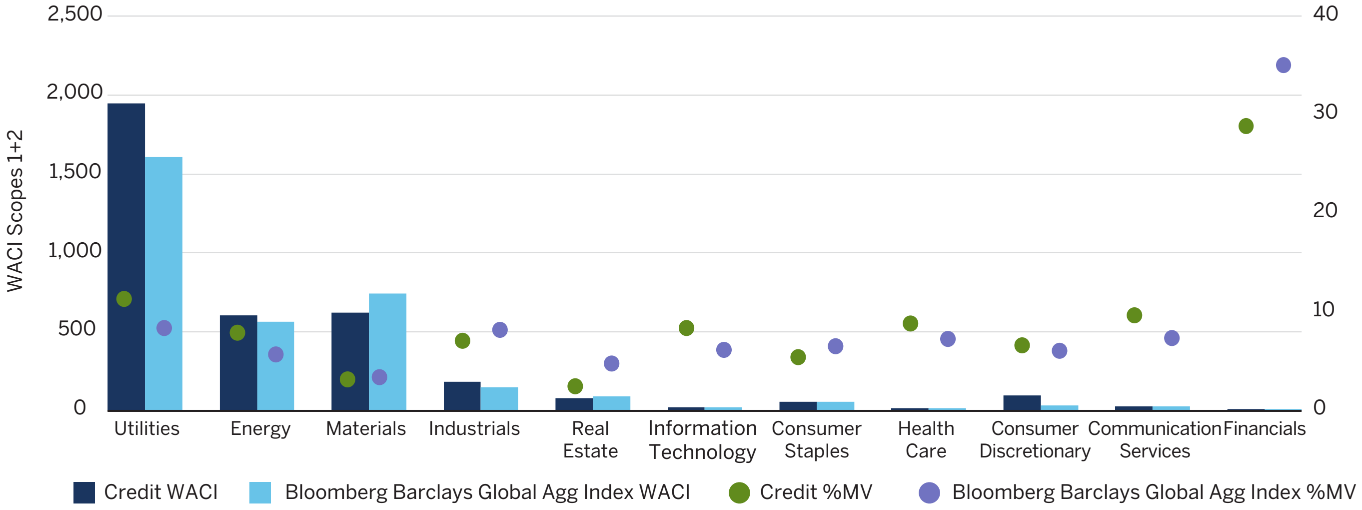
Sector-level breakdown of Wellington's WACI for equity exposure



Data as of 31 December 2022. Sources: MSCI and Wellington Management.

Figure 15

Sector-level breakdown of Wellington's WACI for corporate-credit exposure



Data as of 31 December 2022. | Sources: MSCI and Wellington Management.

A sector-level analysis comparing our equity and corporate credit portfolios' exposure with representative universes can provide further insight. **Figure 14** demonstrates that Wellington's equity investments tend to have a lower sector-level WACI than the index — particularly in carbon-intensive sectors like utilities, materials, energy, and industrials. On the other hand, the overweight to less-carbon-intensive sectors like health care also contributes to a lower WACI.

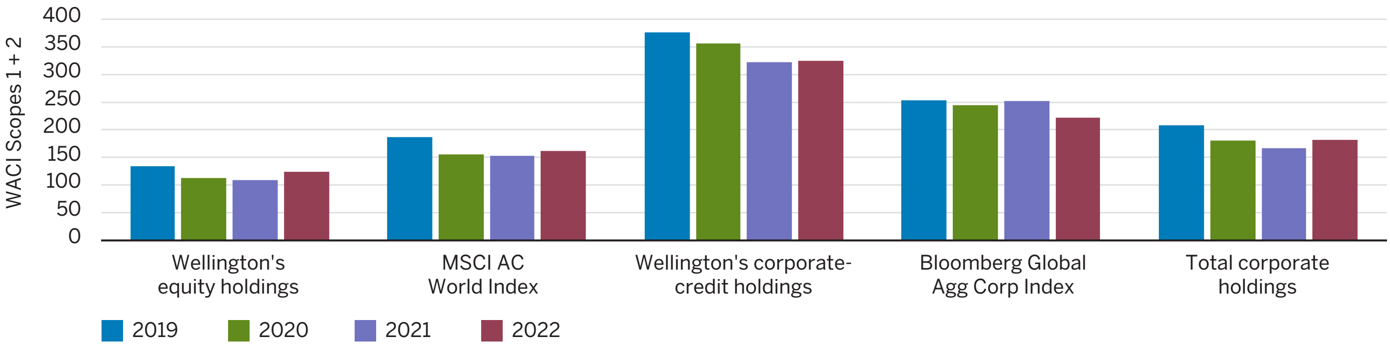
Figure 15 confirms that the difference in WACI for Wellington's corporate credit investments compared to the index can be explained by the overweight to utilities and higher sector-level WACI in utilities. Note that WACI does not account for the evolving generation mix of utilities over time.

Relative to 2019, the WACI of our equity and corporate credit portfolios has decreased by 7% and 13%, respectively (**Figure 16**). The increase in equity WACI from 2021 to 2022 has eroded some of the earlier progress, due to increased exposure to the four most intensive sectors (utilities, materials, energy, and industrials), which exceeded the increase in those sectors within the global equity universe. In fact, energy exposure roughly doubled from 2021 to 2022, consistent with fundamental tailwinds, including Russia's invasion of Ukraine and the post-pandemic rebound in demand.

The drop in our corporate credit WACI is consistent with the 14% decline in WACI for the global credit index, suggesting that some of the improvement is due to natural decarbonization of the broader universe. Security selection in carbon-intensive sectors continued to improve, however, narrowing the gap with the index. For example, the WACI for utilities, which accounts for more than two-thirds of the corporate credit WACI, has decreased by 28% since 2019. On average, the utility companies in which we invest are taking advantage of the tailwinds of the energy transition, thanks in part to the favorable economics of operating wind and solar power plants, relative to more carbon-intensive coal power plants. Currently, green bonds are attributed to an issuer as if they are general-issuance bonds. This limitation likely results in a consistently overestimated intensity measure for both a portfolio and its benchmark index.

Figure 16

Change in WACI of Wellington's portfolios over time



Data as of 31 December 2022. Sources: MSCI, Bloomberg, and Wellington Management.

CARBON FOOTPRINT: EMISSIONS ASSOCIATED WITH ASSETS UNDER MANAGEMENT[11]

As a complement to WACI (which highlights the emissions efficiency of a portfolio), some asset owner clients also want to understand how their portfolios contribute to climate change. Carbon footprinting is how financial institutions allocate emissions to "Scope 3, Category 15, Investments," per the Partnership for Carbon Accounting Financials (PCAF) Standard. To measure this, we use the ownership approach, which allocates each company's emissions to its shareholders and creditors, based on their investment share (amount invested) of the enterprise value including cash (EVIC). If a shareholder owns 1% of a company's EVIC, then that shareholder's strategy is responsible for 1% of the company's emissions.[12] The financed emissions metric per US$ million invested is a normalized version of the same figure, where total financed emissions are divided by asset class AUM. This metric can facilitate comparison among various-sized managers.

Figure 17 shows that the equity and credit assets Wellington manages on behalf of our clients contribute fewer emissions than global indices. This is true across Scopes 1 and 2 and Scopes 1, 2, and 3 emissions. On average, every US$1 million AUM in a Wellington equity strategy contributes 41.2 tonnes[13] of carbon emissions; the same US$1 million passively invested in the MSCI All Country World Index contributes 59.1 tonnes. In our credit portfolios, every US$1 million invested contributes 59.6 tonnes, while the same amount invested in the Bloomberg Global Aggregate Corporate Index contributes 62 tonnes.

Figure 17

Financed emissions from assests under management

	Scopes 1 and 2		Scopes 1, 2, and 3	
Equity	**WMC* equity**	**MSCI ACWI**	**WMC equity**	**MSCI ACWI**
Financed emissions (million tCO2e)	26.0	37.2	225.3	263.0
Financed emissions per US$ million invested (tCO2e)	41.2	59.1	358.5	418.4
Credit	**WMC credit**	**BBG Gib Agg Corp**	**WMC credit**	**BBG Gib Agg Corp**
Financed emissions (million tCO2e)	15.1	15.8	96.6	102.3
Financed emissions per US$ million invested (tCO2e)	59.6	62.0	381.2	403.6

*WMC used for Wellington Management Company. Data as of 31 December 2022. | Sources: MSCI, Bloomberg, and Wellington Management.

Since financial institutions must rely on estimates of carbon emissions to calculate portfolio emissions, the PCAF Standard suggests disclosure of a data-quality score on a scale from 1 (highest-quality, verified disclosure) to 5 (lowest quality, estimation based on asset turnover ratios). Using the MSCI dataset leveraged for this analysis, we conclude the data-quality score for both equity and corporate credit asset classes is between 2 and 3. Most market value within the global universe is directly reported but unverified, while the remainder is estimated by MSCI using a combination of physical activity and revenue factors. We expect the data-quality score to improve as regulators increasingly require climate disclosure and as investors pressure companies to voluntarily provide this information.

In adopting the PCAF Standard for financed emissions, we have encountered a few challenges requiring further consideration. While we continue to report this calculation per clients' requests, we prefer not to use it as the basis for portfolio construction or guideline development. For the allocation factor, EVIC, we leverage a data field that includes market capitalization at fiscal year-end date, preferred stock, minority interest, total debt (short and long term), and cash/cash equivalents. This places equal weight on all issuance regardless of duration and presumes that shorter-term debt continually rolls over. PCAF acknowledges that "specific elements of EVIC might not be readily available because data providers are still working to align their data with this definition," so this metric should become more mainstream over time.

Since we must make availability of EVIC a condition of our calculation, this can sometimes lead to small reductions in coverage (and rescaling of covered securities) unrelated to carbon-emissions availability. We are also cognizant of counterintuitive relationships when analyzing changes in financed-emissions metrics over time. For example, financed emissions attributable to one investment can change, absent a change in absolute emissions or intensity. Instead, the capital structure as represented by EVIC may cause the shift. We are following developments in accounting for market volatility to establish a level of standardization for this EVIC normalization and may restate these figures once adjustments to the standard calculation are incorporated.

[11] This analysis is consistent with the Public Carbon Accounting Financials (PCAF) Global GHG Accounting & Reporting Standard for the Financial Industry (PCAF Standard), based on holdings as of 31 December 2022 and carbon emissions and ownership data available from MSCI as of 31 December 2022. Given the lag in carbon-emissions disclosure and estimation, the data available at this date is a combination of 2018, 2019, and 2020 fiscal years.

[12] Limited data at the issuer level remains the main challenge in calculating financed emissions; however, issuer coverage has been improved by use of estimated data, for Scope 3 emissions in particular.

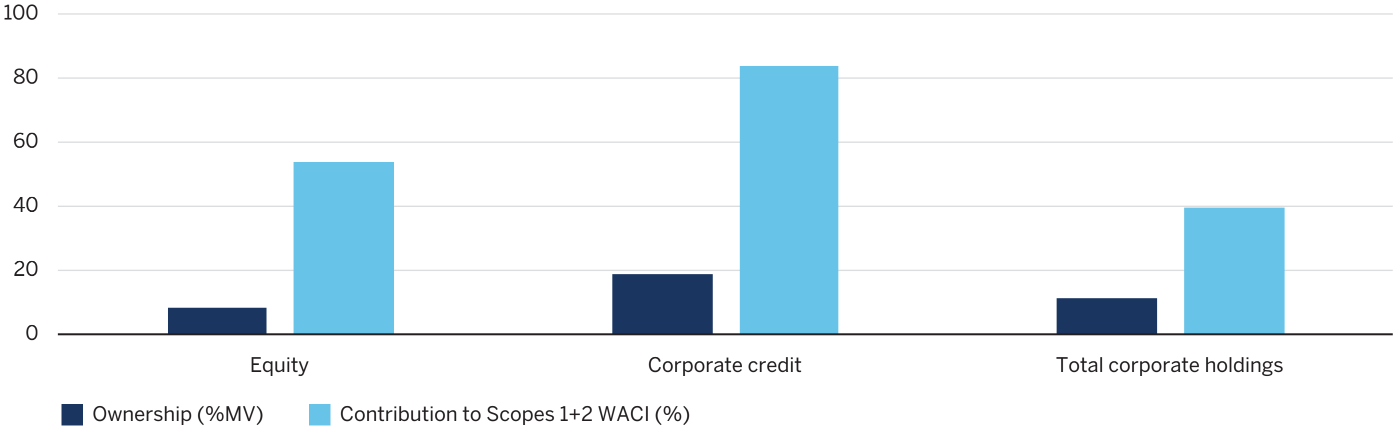
[13] Unless otherwise indicated, we use tonnes for metric tons.

EXPOSURE TO CARBON-INTENSIVE SECTORS

The TCFD defines carbon-related assets as "those assets tied to the energy and utilities sectors under the Global Industry Classification Standard, excluding water utilities and independent power and renewable electricity producer industries." Consistent with this definition, **Figure 18** shows that carbon-intensive sectors represent 11.4% of invested corporate assets (US dollars invested as a proportion of AUM in corporate asset classes) and contribute disproportionately to the overall Scopes 1 and 2 WACI (39.6% contribution). The electric utilities industry is the largest contributor to the WACI of both equity and corporate credit.

Figure 18

Wellington's exposure to carbon-intensive sectors (%)



Data as of 31 December 2022. | Sources: MSCI, Wellington Management.

Because many companies embrace their role in the energy transition, we find this to be a blunt instrument with which to measure exposure. Nonetheless, some companies also have high Scope 1 emissions, making them likely targets of carbon-pricing schemes in their respective regions, underscoring the materiality of transition risk and the importance of assessing transition plans in these industries. Within these carbon- intensive industries, we seek to pair Scopes 1 and 2 intensities with a more forward-looking approach integrating companies' emissions-reduction targets. Within carbon-intensive industries, we leverage supplemental disclosures about capital expenditure plans to gain conviction in companies' ability to achieve stated targets.

INTEGRATING FORWARD-LOOKING METRICS

Science-based emissions-reduction targets

In addition to the top-down measurement from carbon-footprint metrics, our investment teams also use bottom-up measurement to understand the proportion of underlying holdings with robust decarbonization targets. We use the public dataset provided by SBTi as a proxy for the universe of robust targets, acknowledging the limitation that some companies with strong transition-risk management may not have pursued target validation from SBTi. Focusing on companies where the low-carbon transition is a material risk to future profitability, we ask companies about their plans to establish emissions-reduction targets consistent with guidance from SBTi, which helps them benchmark their targets against peers and increase investor confidence in their long-term strategic planning. We expect to continue to use productive dialogues to encourage adoption of this best-practice standard.

When measuring portfolios, we assess exposure to companies with SBTs in terms of a holding's market value and its contribution to WACI. We want to understand whether carbon-intensive companies — with material transition risk — are adopting targets. The greater proportion of a portfolio's carbon footprint covered by targets, the faster the pace of organic portfolio decarbonization we can expect.

SBTi has two qualification statuses: "Targets set" and "Committed." Targets set indicates that a company's target has been validated as comprehensive, robust, and aligned with approved methodologies. Committed indicates that a company is in the process of setting targets and seeking review from SBTi. Because the target-setting and approval process takes time, we expect companies to move from Committed to Targets set within two years of their commitment date or the publication of relevant sector-specific guidance.

In **Figure 19**, we mimic this bottom-up approach to portfolio-level analysis for Wellington's overall equity and corporate credit assets. Across Wellington's equity holdings, exposure to companies with a target validated by SBTi or a commitment to SBTi is approximately 46%, slightly behind global equity market coverage for both market value (MV) and carbon footprint. Our corporate credit exposure to companies with SBTs is about 33%, also behind global corporate credit markets coverage for market value, but lower for carbon footprint.[14]

[14] Equities proxied by the MSCI All Country World Index, credit proxied by the Bloomberg Global Aggregate Corporate Index.

While SBTi continues to publish more sector-specific guidance to support companies, one noteworthy development during 2022 is that SBTi adopted a policy to remove all commitments from oil and gas companies until target-setting methods are developed. This, coupled with the increases in energy sector exposure noted earlier, helps to explain the relatively lower exposure across both asset classes. Nonetheless, we are encouraged by the pace of company adoption of SBTs over the last three years. In equity markets, the 52.1% covered by a target or commitment at year-end 2022 was a fourfold increase from 12.9% of MSCI ACWI by market value at year-end 2019. Credit markets have shown similar growth: 41.0% covered by a target or commitment at year-end 2022 is more than a threefold increase from 12.9% in 2019.

Figure 19

Portfolio companies with SBTs and contribution to WACI vs index

EQUITY

	Exposure to SBTs (%MV of Wellington equity)	Contribution to Wellington equity WACI (%)	Exposure to SBTs (%MV of MSCI ACWI)	Contribution to MSCI ACWI WACI (%)
Targets set	30.5%	18.8%	34.9%	21.1%
Committed	15.6%	6.1%	17.2%	7.7%
Total	**46.1%**	**24.9%**	**52.1%**	**28.8%**

CREDIT

	Exposure to SBTs (%MV of Wellington corporate-credit)	Contribution to Wellington corporate-credit WACI (%)	Exposure to SBTs (%MV of BBG Glb Agg Corp)	Contribution to BBG Glb Agg Corp WACI (%)
Targets set	19.9%	6.2%	25.7%	16.9%
Committed	12.7%	4.7%	15.3%	6.7%
Total	**32.6%**	**10.9%**	**41.0%**	**23.6%**

Data as of 31 December 2022. Sources: MSCI, Bloomberg, SBTi, Wellington Management.

PROJECTED WACI

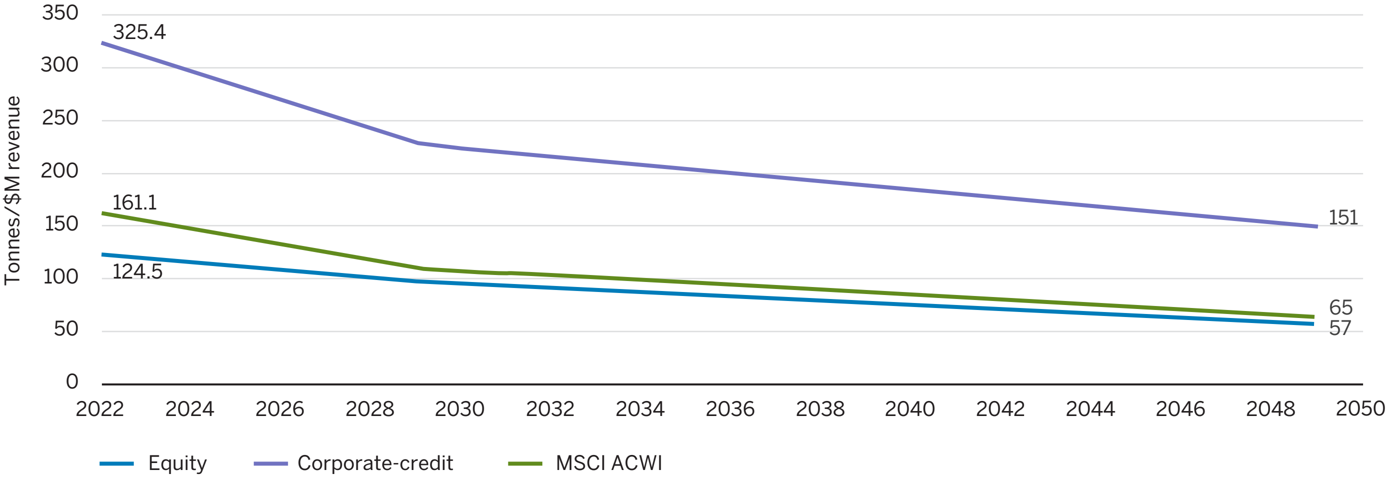
Because WACI is typically backward looking and because companies must report this data with a time lag, WACI does not reflect progress toward targets. To better incorporate the impact of target setting, we use projected emissions data to connect companies' decarbonization plans with anticipated changes in portfolio WACI. As **Figure 20** shows, we project WACI in 2030 to demonstrate the amount of natural or bottom-up decarbonization we expect to occur as the companies in our clients' portfolios work toward their stated targets. Projections are based on current emissions and reduction targets, if available. (This information incorporates targets of any rigor, not only those targets validated by SBTi.)

We assume companies with targets will achieve them. We assume companies without a current target will not set one, thus flatlining their carbon intensity through 2030 (with emissions and revenue growing at the same rate). The latter assumption is a conservative estimate for our aggregate WACI, as we have seen fairly steady growth in the number of companies with robust transition plans and resulting emissions-reduction targets, as shown by SBTi data.

Based on year-end 2022 holdings and assuming full implementation of their targets, equity exposure would reduce WACI by 20% by 2030 and corporate credit exposure would reduce WACI by 30% by 2030. Relative to their 2019 baselines, this represents a 26% reduction in equity WACI and a 39% reduction in corporate credit WACI. As more carbon-intensive companies set targets, the slope of this projected WACI line should continue to steepen.

Figure 20

Projected WACI (Scopes 1+2) of equity and corporate-credit assets under management



Data as of 31 December 2022. Data subject to numerous assumptions and may change based on factors that include, but are not limited to, trades, additional company targets, and company execution against targets. | Source: Wellington Management.

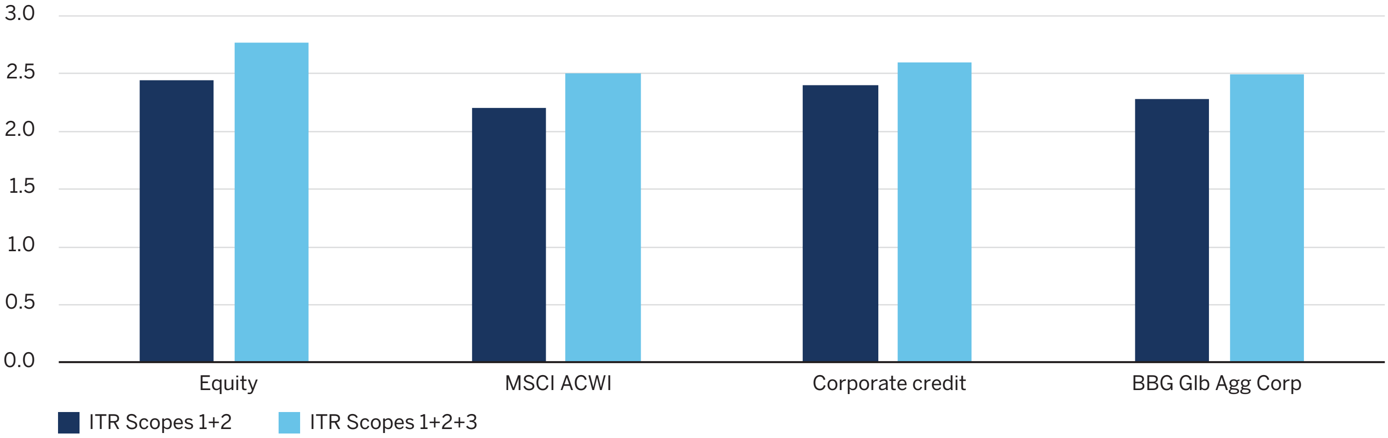
IMPLIED TEMPERATURE RISE

Another increasingly popular means of measuring portfolio alignment is implied temperature rise (ITR). Expressed in Celsius, ITR aims to quantify the degree to which a company's activities against sectoral decarbonization pathways are commensurate with the global temperature goals of the Paris Agreement. A corporate-level ITR calculation is a counterfactual that projects hypothetical aggregate global warming if the company's emissions trajectory were representative of the global investment universe. ITR projects each company's cumulative emissions (Scopes 1, 2, and 3) by 2070, based on current emissions and emissions-reduction targets.[15] Each company's cumulative projected emissions are then compared to a GHG budget, specific to its industry and regional exposure.

Companies with favorable ITR assessments include those with comprehensive near- and long-term net-zero targets and those with inherently low-carbon footprints. **Figure 21** shows that our equity ITR (Scopes 1 and 2; Scopes 1, 2, and 3) and corporate credit ITR (Scopes 1 and 2; Scopes 1, 2, and 3) are slightly higher than those of their respective indices. Many of the top contributors to ITR are oil, gas, and consumable-fuel companies, given their high Scope 3 emissions from the combustion of fossil-fuel products. Depending on a company's position in the oil and gas value chain, its degree of control over downstream emissions in this industry differs. This has been a challenge in SBTi target-setting methodology development and has translated to relatively few energy companies (mostly European integrated companies) incorporating Scope 3 emissions into a target so far.

Figure 21

ITR of Wellington portfolios (degrees Celsius)



Data as of 31 December 2022. Please see the paragraph below for the assumptions and limitations associated with ITR. Sources: MSCI, Wellington Management.

[15] MSCI projects annual emissions through 2070 to align with the 2° C reference pathway. The Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5° C concludes GHG emissions need to be net zero by 2070 to limit warming to 1.5° C, consistent with net-zero CO2 emissions by 2050.

Investors must consider the limitations and assumptions in MSCI's calculation of ITR. First, for companies that have not yet published decarbonization targets, cumulative emissions are assumed to grow 1% annually. We believe this is likely to be conservative, as pressure for companies to meaningfully reduce their emissions in absolute terms will continue to increase between now and 2070. Second, the inclusion of Scope 3 emissions is based on an estimated dataset from MSCI that ignores even robust corporate disclosure of Scope 3. While we expect the Scope 3 estimation model to be directionally appropriate at the industry level, it is unlikely to capture nuances among peer companies. Finally, ITR lacks transparency on company-specific GHG budget pathways for comparison against projected emissions. For this reason, it is not possible to ensure that the ITRs of two companies from the same industry but in different regions are calculated accurately by comparing their emissions trajectories to the same GHG budget.

PORTFOLIO-LEVEL CLIMATE-SCENARIO ANALYSIS

We can use third-party scenario tools for total portfolio analysis; however, our investment teams are not currently managing portfolios to a particular scenario-analysis metric. We believe data is lacking for these models to be accurate (such as reliable Scope 3 emissions data for most issuers). In addition, third-party providers lack sufficient transparency in their models on both climate and cost impacts for us to fully assess their accuracy. Nonetheless, we see value in analyzing the results we gain from these tools to cross-reference flagged issuers with those flagged by the mosaic of internally available climate metrics. We also seek to understand areas of differentiation relative to market sentiment, given that scenario-analysis metrics are beginning to be used by other market participants for index development and fund construction.

Using scenario-analysis metrics

Climate value-at-risk, often abbreviated as Climate VaR or CVaR, is based on the principles of a standard value-at-risk calculation, which seeks to quantify the extent of possible financial losses over a specific period in present-value terms. Applied to climate change, CVaR attempts to make a direct connection between climate risks and the valuation of securities.

During 2022, we undertook a cross-functional research project including members of the Climate Research, Investment Strategy (iStrat), and Investment Science (iSci) teams to study and reverse-engineer our own CVaR model to adjust valuations, using the physical climate research data from Woodwell Climate. Our model included two hazards — hurricanes and flooding — as a proof of concept, because they are predictable and not caused by human intervention (compared to wildfires, for example, which require an ignition source and cannot be modeled).

While the climate component of the model — frequency and severity of events — is straightforward to project, the value of any given site (in terms of both market value of the property and production value) must be estimated at a high level. We see a risk of false precision when such broad underlying assumptions are aggregated to a point estimate. Even in relative terms, the results of these models do not necessarily fit with our view of financial materiality. For example, the results for real estate make it seem that the sector experiences minor financial impacts from physical risks, despite the importance of property values to the valuation of a real estate investment trust.

In addition, given that scenario analysis represents the risk of failing to execute against stated mitigation and resilience targets, CVaR measures a company's transition-risk exposure without regard to any management of that risk. For example, whether a company has insurance coverage for damage to its sites caused by physical events (and therefore would not bear the cost of such damage) is not considered.

Finally, CVaR ignores the impact of physical risks to the wider system in which companies operate. Supply chains are not modeled, for example, and our research indicates that physical risks pose more risk to supply chains than to direct assets. Moreover, if a company has multiple suppliers to offset a temporary business disruption, it may never experience that negative financial impact.

These examples illustrate the bottom-up research and nuance required to accurately understand physical-risk exposure and management. While this research project focused on physical risks, we have analogous concerns about the transition-risk component of these models. For these reasons, we primarily consider this metric to sense-check the other climate metrics we prefer. Specifically, this metric is applied as a component of escalated analysis in our environmental risk oversight processes.[16] When a portfolio is flagged by our internal environmental risk dashboard for further review, CVaR is then run to provide one estimate of the size of the potential downside if environmental risk is not managed. Given the lack of climate-related financial disclosure in some regions, the most common risk-management tactic is engagement. The full mosaic of climate metrics, including CVaR, can inform an investment team's engagement prioritization.

Using the MSCI CVaR portfolio-analysis tool, we select a range of transition-pathway scenarios and the average-physical-risk scenario. For both the transition-risk and physical-risk components, we select the suite of scenarios from the integrated assessment model Regional Model of Investment and Development (REMIND). The Potsdam Institute for Climate Impact Research for the Network for Greening the Financial System developed REMIND to provide a common starting point for financial institutions to analyze climate risks.

[16] For more information, please see the Climate Report for Wellington Management International Limited, an annex of this firmwide report published on Wellington's UK website. Please visit wellington.com and select United Kingdom.

Applying scenario analysis to portfolio oversight: Case study

The following case study of one of our emerging markets equity strategies shows how we may use scenario-analysis metrics as a tool for portfolio monitoring and oversight.[17] We chose this strategy because it is the largest strategy in scope of our environmental risk oversight and has been subject to the aforementioned escalation process.

For diversified portfolios, we generally expect the Net Zero by 2050 (1.5° C Orderly) scenario (as established by the Network for Greening the Financial System [NGFS]) to project the lowest overall CVaR. This is because climate policies are introduced gradually, which results in low physical risks. The emerging markets opportunity set has more carbon-intensive companies than developed markets, which may require more product innovation and business-mix evolution, so transition risk may be higher than for a developed market strategy. The Delayed Transition (2° C Disorderly) scenario posits that policies are enacted after 2030, and those policies must be strong and call for significant changes. This poses higher value-at-risk from transition risks, but because the calculation of CVaR is based on net present value, the 2030 starting point for this value-at-risk lessens the overall impact. The Current Polices (3° C Hot House World) scenario assumes that only currently implemented policies remain in place, leading to high physical risks despite lower transition risk.

The aggregate CVaR result is comprised of five primary components, including four transition-risk metrics and one physical-risk metric:

- Policy risk from direct emissions – Scope 1
- Policy risk from electricity use – Scope 2
- Policy risk from value chain – Scope 3
- Technology opportunities
- Physical risk from acute and chronic hazards

The first three components comprising Policy-risk CVaR apply a carbon price to the emissions reduction required for each company to meet the selected transition-risk scenario. These cost projections do not consider a company's announced reduction targets or capital allocation.

As **Figure 22** shows, the high transition-risk CVaR results for the sample portfolio under the Delayed Transition scenario are related to the policy CVaR (-3.4% for Scope 1 and -0.1% for Scope 2). This is predominantly because of the portfolio's utilities and materials holdings (e.g., construction materials and metals and mining), which have high Scope 1 emissions. Digging deeper into the top contributor within utilities, the largest and most experienced renewables developer and operator in its home country, our internal climate research and ESG research finds this company's decarbonization target and implementation strategy credible and aligned with its country's "nationally determined contribution" (NDC).[18] We therefore conclude that this policy CVaR is unlikely to materialize. We expect to continue our ongoing engagement with this utility company to ensure it executes against its targets and encourage management to seek external validation of its targets from SBTi.

The technology opportunities component projects future revenue, based on current and expected green revenues and patent value, is most positive in a steep decarbonization scenario. While the portfolio-level result for Technology opportunities is insignificant, certain underlying holdings show highly positive values, particularly metals and mining and semiconductor companies. These results are fairly intuitive, given the importance of intellectual property to the innovation of these industries and MSCI's patent-valuation methodology. For example, this factor highlights a steel producer that has made investments in green steel production powered by green hydrogen to offer a certified low-CO2 steel to customers, who are likely willing to pay a premium given its low availability. Because companies' stated targets are not incorporated into this assessment (and the lower importance of patents in some sectors), we believe the future green revenue of many holdings is underestimated by this component of CVaR.

The physical-risk component estimates the costs of business disruption and asset damage from acute and chronic events, based on location- and sector-specific vulnerability assessments. The results increase roughly proportionally with the degree of warming implied in each scenario. The securities with the highest CVaR associated with extreme weather events are those with significant physical assets, such as the metals and mining, real estate development, telecommunication services, transportation, and utilities industries. These results may be biased by the availability of a robust dataset of locations of operations for these companies, relative to other industries.

[17] For more information on CVaR, please see the Wellington Management Singapore Environmental Risk Report, an annex to this firmwide report. published on Wellington's Singapore website. Please visit wellington.com and select Singapore.

[18] Nationally determined contributions (NDCs) are the stated efforts by each country to reduce national emissions in accordance with the Paris Agreement. Article 4, paragraph 2, requires each ratifying party to prepare, communicate, and maintain the successive NDCs that it intends to achieve.

Figure 22

Sample portfolio-level CVaR results

CVaR component	1.5°C Orderly	2°C Disorderly	3°C NDC
Policy - Scope 1	-10%	-8%	-2%
Policy - Scope 2	-1%	0%	0%
Policy - Scope 3	-10%	-5%	-1%
Technology Opportunities	2%	1%	0%
Total Transition Risk	-19%	-12%	-2%
Total Physical Risk	-10%	-13%	-15%
Total CVaR	**-28%**	**-25%**	**-18%**

Data as of 31 December 2022. Sources: MSCI, Wellington Management.

We continue to encourage investment teams to focus on bottom-up evaluation of physical and transition risks using our internal research, including that provided by our climate research collaborations with Woodwell Climate and the MIT Joint Program.

APPLYING SCENARIO ANALYSIS TO CAPITAL MARKET ASSUMPTIONS

Starting in 2021, our iStrat Team partnered with our Climate Research Team to develop 10-year capital market assumptions (CMAs). We evaluated and incorporated a range of climate-transition assumptions and potential physical-risk impacts to determine which asset classes are most likely to be affected by climate change over the next decade. We elected to use the scenarios designed by the NGFS, which are updated annually, to model the impact from transition risk and chronic physical risk. For acute physical risk, we leaned heavily on our collaboration with Woodwell Climate to devise country-level assumptions for future extreme climate events (e.g., a 1-in-100-year precipitation event), the cost of associated damages and recoveries, and potential impact on real GDP.

The implications of this climate-aware CMA process are more pronounced for equities than for fixed income. For equities, the adjustment to components of earnings-per-share growth forecasts included assumptions of higher revenue growth because of the inflationary nature of transition policies and because of lower margins, as companies cannot pass the entire cost of the transition through to their customers. For fixed income, we observe opposing forces affecting yields. On one hand, lower real-GDP estimates translate to lower real terminal yields. On the other hand, higher inflation estimates lead to higher nominal terminal yields. For fixed income assets with a high duration, the boost in income is often insufficient to offset the additional capital losses from higher ending nominal yields. The overall impact of higher default probability, driven by the more challenging macro environment on our credit-loss matrix, is modest. We believe these assumptions will be important inputs into asset allocation decisions.

4.2 OUR NET-ZERO COMMITMENT

In December 2020, we became a founding signatory of the Net Zero Asset Managers (NZAM) initiative, committing to the following:

- Work in partnership with asset-owner clients on decarbonization goals, consistent with an ambition to reach net-zero emissions by 2050 or sooner across all AUM
- Set an interim target for the proportion of assets to be managed in line with the attainment of net-zero emissions by 2050 or sooner
- Review our interim target at least every five years, with a view to ratcheting up the proportion of AUM covered until 100% of assets are included

We also acknowledge that the scope for asset managers to invest for net zero and to meet the commitments set forth above depends on the mandates agreed with clients and clients' and managers' regulatory environments. These commitments are made in the expectation that governments will follow through on their own commitments to ensure the objectives of the Paris Agreement are met, including increasing the ambition of their NDCs, and in the context of our legal duties to clients and unless otherwise prohibited by applicable law.

NZAM PROGRESS UPDATE

Asset commitment

Implementation of our net-zero commitment is inextricably linked to our clients' investment objectives. We assess clients' investment portfolios and investment strategies one by one to determine alignment of the client's investment objectives with achieving net-zero emissions by 2050 or sooner. The result of our strategy-by-strategy approach is our commitment of US$436 billion in client assets aligned with achieving net-zero emissions by 2050 or sooner, as of 31 March 2022. Our initial commitment represents assets held in accounts in which:

- A client-approved decarbonization objective consistent with achieving net zero by 2050 or sooner has been established
- Individual investment teams have, as part of their existing P&P, committed to communicate with their strategy's highest-carbon-emissions contributors with the aim of improving investment outcomes and creating value

In line with our accountability-driven approach, we initially restrict our asset-level commitment to strategies invested predominantly in equities, investment-grade bonds, and high-yield bonds, as emissions data and accepted decarbonization methodologies are currently only available for these asset classes. We continue to support efforts for mandatory climate disclosure for corporates to improve investor trust in climate-related information, as data coverage and the proportion of estimation remain challenges in several investment universes, including small cap, high yield, and emerging markets.

INVESTING IN INFRASTRUCTURE

In addition to the investment in tools as listed in Section 3, we are finalizing an internal commitment-tracking tool to monitor progress on clients' net-zero commitments and to help us support investment teams as they seek to have constructive dialogue with the top contributors to portfolio WACI.

SUPPORTING CLIENTS AND INDUSTRY PARTNERS

Since our initial commitment, we have consulted with dozens of clients who approached us for guidance and partnership in their own net-zero journey. We have learned about the unique opportunities and challenges clients face, based on their beneficiaries' expectations and investment objectives. In some instances, we have been able to offer custom analysis to help clients understand trade-offs (**Figure 23**). Ultimately, we can use this information as inputs when developing innovative solutions to better meet client needs.

We ground our leadership in NZAM on our primary objective to achieve clients' investment goals and our secondary objective to demonstrate leadership on climate integration. For details on our implementation approach, please see the white paper "Our commitment to net zero," available on our website.

Figure 23

Sample customized net-zero analysis

Consult with clients to clarify priorities

	Implementation tools: complementary or contradictory?			
Motivation		**Engagement outcomes**	**Exclusions (e.g., fossil fuels)**	**Earlier target deadline, higher level of ambition**
Emphasize real-economy emissions reductions and lower future physical risk	Engagement outcomes			
Deliver immediate footprint improvement and lower headline risk	Exclusions (e.g., fossil fuels)			
Demonstrate leadership on portfolio progress, relative to global goals	Earlier target deadline, higher level of ambition			

Analyze impact of implementation options on opportunity set

	Original ambition	**Option A**	**Option B**	**Option C**
Level of ambition	Net zero (1.5C)	Net zero (1.5C)	Net zero (1.5C)	Paris aligned (2C)
Target deadline	Portfolio is NZ by 2040	Portfolio is NZ by 2050 or sooner	Investee companies are NZ aligned by 2040	Investee companies are NZ aligned by 2040
Universe size based on current targets	Smallest	Small	Medium	Largest

Iterate and formalize implementation into client agreements

Monitor progress via transparent reports and/or guidelines

For illustrative purposes only. Not representative of an actual investment.

Section 5: Addressing our operational footprint

WellSustain, our corporate sustainability approach, formalizes how we incorporate sustainable behaviors into our business practices. WellSustain exists to support the firm's overarching sustainability mission and includes a focus on addressing the environmental impacts of our corporate operations. We also undertake several initiatives to engage our people in environmental sustainability efforts.

During 2022, we increased our use of renewable energy, continued to adapt our approach to business travel, responsibly expanded our global offices, and increased use of sustainable technology.

5.1 MANAGING OUR ENERGY USAGE

In 2021, Enel Green Power North America and Wellington agreed on a 10-year virtual power purchase agreement (VPPA) for an 11 MW portion of the energy delivered to the grid by Enel Green Power's Rockhaven wind project. A VPPA provides a mechanism through which a buyer can finance additional supply of renewable energy onto a local power grid. The arrangement covers approximately 48 GWh of wind energy annually, and during 2022, this amounted to associated renewable energy certificates (RECs) equivalent to avoiding the release of more than 21.4K tonnes of CO2 into the atmosphere. Under the agreed terms, the clean energy contracted for Wellington is expected to equal or exceed the electricity needs for all Wellington US corporate offices as well as the personal electricity usage of our estimated 2,200 US employees, in line with our hybrid work approach.

To learn more, see Enhancing corporate sustainability: About our innovative virtual power purchase agreement.

Outside the US, we generated 100% of the electricity for our London, Zurich, and Luxembourg offices from renewable sources. Our Hong Kong office has installed solar panels and sea-water cooling technology to generate renewable energy. Throughout our offices, we continue to implement energy-saving enhancements such as lighting controls, occupancy sensors, and motion-activated building systems.

5.2 REDUCING OUR WASTE

We employ recycling solutions and programs to encourage the sustainable disposal of paper and other solid waste:

- A customized recycling stream in our Hong Kong office has received both the Wastewi$e HK award and Source Separation certification
- A single-stream waste policy in our London office helps ensure that general waste is diverted from landfills
- Most of the cutlery and meal packaging in our Boston offices is compostable
- An on-demand print management system, reducing paper and toner waste, is used by many of our offices
- Empowering individual offices to devise innovative strategies to reduce waste; our San Francisco office removed its production printer to reduce paper and energy consumption, while our Zurich office plans to switch all meeting materials from paper to electronic tablets.

5.3 MINDFUL BUSINESS TRAVEL

We have adapted our approach to business travel to incorporate a focus on sustainability and lessons from the COVID-19 pandemic. We encourage employees to use a decision tool called "Should I stay or should I go?" Available on our internal Global Travel Services website, this tool helps people make informed travel decisions. Because travel is an essential element of our business, we rely on the professional judgment of each employee to assess the necessity and mode of transportation. For air travel — the largest contributor to our carbon footprint — we encourage employees to consider:

- Trip purpose and necessity: Is it essential? Is there an opportunity to combine multiple trips? Can local colleagues represent your interests?
- Virtual alternatives: Are there viable remote options? Are you achieving a balance between in-person and virtual collaboration?
- Transportation mode: Can you fly directly and avoid extra emissions from multiple takeoffs and landings? Is rail an option for short-haul trips? For long-haul trips, are you considering the environmental impact of choosing a premium class of service, while balancing your personal wellness?

As travel from Boston to New York City is our primary domestic business travel route, we are encouraging employees to travel by Amtrak Acela, a high-speed rail service. Rail travel is more sustainable, efficient, and convenient than air travel, reducing carbon emissions as well as costs. Amtrak Acela rail is 100% electric and generates approximately one third of its energy from carbon-free sources.

We are also participating in a program, sponsored by British Airways, which enables corporate customers to calculate and address their travel emissions. The CO2llaborate platform allows customers to purchase carbon offsets and small quantities of sustainable aviation fuel (SAF). The use of this platform will provide Wellington with insights on the SAF market, which can help inform our overall travel practices. Business travel, approached mindfully, is vital to developing our client and company relationships. We will continue to evolve our approach to business travel, aiming to balance efficiency and emissions reductions with our client responsibilities.

5.4 EXPANDING RESPONSIBLY

We currently lease approximately one million square feet of office space around the world. As we grow, assessing buildings for new office space, we pay close attention to environmental ratings. We seek spaces with Leadership in Energy and Environmental Design (LEED) certifications or similar regional governmental designations. We also look to lease from owners who use renewable energy and who support and employ positive environmental practices. When fitting out or refurbishing our interior spaces, we pursue energy-efficient designs, such as open-plan seating, which uses less space and energy per occupant. We also use nontoxic paint and adhesives; energy-efficient heating, ventilation, and lighting systems; and water-saving plumbing fixtures and gray-water collection systems.

ENVIRONMENTAL CERTIFICATIONS FOR WELLINGTON OFFICES

Boston:	US/LEED =Platinum
Chicago:	US/LEED = Gold
Frankfurt:	Germany/DGNB = Gold
Hong Kong:	H.K./BEAM7 = Platinum
London:	UK/BREEAM8 = Very Good
Madrid:	Spain/BREEAM = Very Good
Milan:	LEED = Gold
New York:	LEED = Gold
San Francisco:	US/LEED = Gold
Shanghai:	China/LEED = Gold
Singapore:	BCA Green Mark = Platinum
Sydney:	Australia/Green Building Council = 6 star
Toronto:	Canada/LEED = Gold

In 2022 and early 2023, we opened or refurbished several properties with sustainability features. In the US, we are working to open new offices in New York and are in the process of moving to a new office in Chicago, both of which will meet LEED Gold accreditation for energy-efficient, green construction.

We also made significant progress on our new office space in Needham, Massachusetts, set to open in August 2023. This 106,000 square-foot lease will include a deep energy retrofit, full electrification of gas-fired systems, HVAC modernization, including advanced heat recovery, and on-site renewable energy generation from a solar photovoltaic system that is designed to exceed our annual consumption. Wellington and Boston Properties intend to certify the project under the US Green Building Council LEED Zero Carbon rating system, which recognizes net-zero carbon emissions from energy consumption. This rating should make it the first office of its scale to achieve this status in Massachusetts. Finally, we ended the lease on our office at 100 Federal Street, Boston (currently LEED/US Gold-rated) and expanded the space we lease in the LEED/US Platinum-rated 280 Congress Street location.

We relocated our Sydney, Australia, office to the new 180 George Street building complex. The complex has been recognized as a leader in sustainable design and has been registered as a project under the Green Building Council Australia's "6-Star Design & As Built V.1.1 rating," the highest possible score. The building is designed to be climate resilient, features carbon-neutral construction and electric-vehicle charging stations, and is predicted to receive an excellent 5.5-star NABERS energy rating.

In our London office, we built out a new floor incorporating many sustainability features. This new space will be BREEAM certified (with an anticipated rating of "excellent") and qualified for a B-rated Energy Performance Certificate, as 90% of the waste materials generated will be diverted from landfills.

Mitigating the impacts of extreme weather events

We acknowledge the potential for business disruption caused by extreme weather events. Our offices in Boston, Hong Kong, Sydney, London, San Francisco, Singapore, and Tokyo are particularly susceptible to various climate- and environment-related risks, including power-supply disruptions and flooding. To mitigate the risk of disruptions in recent years, we have instigated various initiatives, including an AquaFence® in Boston, which is an interlocking panel "fence" that creates a portable 4-foot (1.2-meter) buffer around the building's perimeter. In Tokyo, a city susceptible to earthquakes, we relocated our office to the lower levels of a new property that features earthquake-resistant structural design.

DISCLOSING OUR PHYSICAL LOCATION DATA

In line with our expectation that companies disclose their physical location data, we disclose data on our leased physical assets in this report, which is accessible to the public and available on our website. (**Figure 24**).

Figure 24

Wellington's physical location data

AMERICAS

Street address	Country	Facility	Ownership	Coordinates	Materiality
280 Congress Street, Boston, Massachusetts, 02110	United States	Office building	Leased	42.353516767286365 lat -71.05253903273685 long	61% of global employees
100 Campus Drive, Marlborough, Massachusetts, 01752	United States	Office building	Leased	42.325285123258574 lat -71.5850687171218 long	5% of global employees
222 West Adams Street, Suite 2100, Chicago, Illinois, 60606	United States	Office building	Leased	41.87967291850019 lat -87.63469154411777 long	1% of global employees
4 Radnor Corporate Center, Suite 500, Radnor, Pennsylvania, 19087	United States	Office building	Leased	40.049001411126355 lat -75.35770764415707 long	1% of global employees
4 Embarcadero Center, Suite 2610, San Francisco, California, 94111	United States	Office building	Leased	37.79550469696568 lat -122.39625178838118 long	1% of global employees
Exchange Tower, 130 King Street West, 18th Floor, Toronto, ON M5X 1E3	Canada	Office building	Leased	43.64875311300009 lat -79.3833466305852 long	1% of global employees

APAC

Street address	Country	Facility	Ownership	Coordinates	Materiality
17F, Two International Finance Center, 8 Finance Street	Hong Kong	Office building	Leased	22.28524817233272 lat 114.15920991323107 long	5% of global employees
Palace Building 7F, 1-1-1 Marunouchi, Chiyoda-ku, Tokyo 100-0005	Japan	Office building	Leased	35.68532510967304 lat 139.7615711827426 long	3% of global employees
8 Marina Boulevard, #03-01, Tower 1, Marina Bay Financial Center, 018981	Singapore	Office building	Leased	1.2801268484023878 lat 103.85395702479049 long	3% of global employees
Level 30, 180 George St, Sydney NSW 2000	Australia	Office building	Leased	-33.86194798204927 lat 151.20819045595204 long	1% of global employees
Unit 822, Level 8, International Finance Center Tower, 2 8 Century Avenue, Pudong District, Shanghai, 200120	China	Office building	Leased	31.23771299772283 lat 121.50214974602783 long	<1% of global employees

EMEA

Street address	Country	Facility	Ownership	Coordinates	Materiality
80 Victoria Street, London, SW1E 5JL	United Kingdom	Office building	Leased	51.49719414805737 lat -0.13958625922653942 long	16% of global employees
Bockenheimer Landstraße 43-47 60325 Frankfurt am Main, Germany	Frankfurt	Office building	Leased	50.11705154300227 lat 8.6650566514701 long	1% of global employees
33 avenue de la Liberté, L-1931	Luxembourg	Office building	Leased	49.60439819142996 lat 6.130880971409155 long	1% of global employees
Calle de José Abascal 41, 28003 Madrid	Spain	Office building	Leased	40.43853248894886 lat -3.6960621933120326 long	<1% of global employees
Limmatquai 92, 8001 Zurich	Switzerland	Office building	Leased	47.374203851981754 lat 8.543196913681628 long	<1% of global employees
Via Dante 7, 20123, Milan	Italy	Office building	Leased	45.466626811449046 lat 9.184266596443248 long	<1% of global employees

OFFICES OPENING IN 2023

Street address	Country	Facility	Ownership	Coordinates	Materiality
140 Kendrick St, Needham, MA 02494	United States	Office building	Leased	42.294567286865274 lat -71.21512790482691 long	TBD
345 N Morgan St, Chicago, IL 60607, USA	United States	Office building	Leased	41.8883956958897 lat -87.65188597116435 long	TBD
799 Broadway, New York, NY 10003	United States	Office building	Leased	40.73321314904117 lat -73.99144698498912 long	TBD

5.5 SUSTAINABLE TECHNOLOGY

Given our firm's heavy reliance on technology, we have taken steps to mitigate our environmental impact and reinforce our commitment to the circular economy.

Last year, we continued to donate gently used office technology and recycle unusable devices. We also maintained our commitment to prioritizing environmentally friendly alternatives when purchasing new business technology. We outsource several software applications, infrastructure, and services from our data centers and colocation data centers to Amazon Web Services (AWS), reducing overall energy requirements and increasing performance. We also offer employees use of the Ecosia search engine to boost our contribution to global reforestation efforts and the reduction of CO2 emissions. Ecosia uses the revenue from searches to finance tree planting. In 2022, our usage of Ecosia resulted in the financing of over 600 trees.

To increase our employees' environmental engagement, we established our Global Green Network in 2022. The network, which involves more than 200 employees globally, provides access to sustainability-related educational content, including details about local environmental awareness days, invitations to participate in activities, volunteering, and firmwide collaboration opportunities. In 2022, members of the Global Green Network participated in several environmental campaigns, including Earth Hour and World Environment Day.

5.6 CARBON NEUTRALITY

In 2019, we set out a comprehensive approach, using 2014 as a baseline, to measure the carbon footprint of our global operations. Since then, we have used this data (encompassing operational Scopes 1, 2, and partial Scope 3 emissions) to develop strategies to further reduce our footprint, including investing in credible carbon offsets to compensate for remaining emissions, with the aim of hitting our target of operational carbon neutrality by the end of 2022 (**Figure 25**).

We take a multifaceted approach that helps us ensure we purchase high-quality offsets that align with our broader sustainability goals. As available tools and technologies improve and benefit from economies of scale, we expect to evolve our approach. In 2022, we purchased quality offsets to compensate for operational annual emissions within our control, making us operationally carbon neutral in relation to 2021. As travel continued to be reduced in 2021 due to the pandemic, we chose to purchase additional offsets to reflect the estimated level of travel we would have undertaken had it not been restricted (using 2019 travel emissions figures).

We actively support the development of the voluntary carbon market, incorporating the Oxford Principles for Net Zero Aligned Carbon Offsetting, including selecting high-quality offsets, modeling best practices, supporting transparency, and aligning with our clients and industry peers.

Learn more in our white paper, Toward carbon neutrality: Our approach to carbon offsets.

Figure 25

Wellington's carbon offset projects

Project name	Project type	Country	Methodology or protocol	Third-party standard
Maisa REDD+ Project	Forestry	Brazil	VM0015	Verified Carbon Standard (VCS) and Climate, Community and Biodiversity (CCB) Alliance – Gold
Toyola	Cookstoves	Nigeria	GS TPDDTEC v 1	Gold standard
CarbonCure's sustainable concrete solution	CO2 utilization in difficult-to-abate sectors	US/CANADA	VM0043	VCS

5.7 OUR OPERATIONAL CARBON FOOTPRINT

Our 2022 company emissions (**Figure 26**) have been calculated in line with the World Resources Institute and World Business Council for Sustainable Development's revised Greenhouse Gas Protocol Corporate Accounting and Reporting Standard. The emissions reported are for Wellington's financial year and relate to global operations. The boundaries of the GHG inventory are defined using the operational control approach and cover the emissions for which the company is responsible. Emissions for previous years are retrospectively adjusted as more accurate data becomes available.

Between 2021 and 2022, we reduced our global Scope 1 emissions by 22% — achieving a 31% reduction relative to our 2014 benchmark. Our location-based Scope 2 emissions increased by 18% year –over year as a result of increased electricity use as our employees returned to the office. However, as some of our colocation sites transitioned to renewable energy usage and as our virtual power-purchase agreement (VPPA) began, our market-based Scope 2 emissions were down 37% year –over year.

Meanwhile, our operational Scope 3 emissions increased significantly between 2021 and 2022 because of an increase in business travel, although they remained approximately 50% lower per person than pre-pandemic levels reported in 2019. Overall, relative to our 2014 benchmark, our operational Scopes 1, 2, and 3 emissions have fallen by 48%.

Figure 26

Wellington's carbon emissions

Metric tonnes CO2e	2018	2019	2020	2021	2022	% change 2022 vs 2014 (baseline)	% change 2022 vs 2021 (yoy)
Scope 1a	1,276	1,304	1,161	1,134	887	-31%	-22%
Scope 2b market-based	3,823	3,307	2,292	1,782	1,128	-72%	-37%
Scope 2b location-based	6,887	6,603	5,163	3,991	4,698	-36%	18%
Total market-based own source (Scope 1 and 2)	5,099	4,611	3,453	2,916	2,015	-63%	-31%
Scope 3c	10,728	11,445	1,393	1,057	6,256	-41%	492%
Total market-based emissions (Scopes 1, 2, & 3)	15,827	16,055	4,848	3,973	8,271	-48%	108%
Headcount*	3,059	3,142	3,108	3,188	3,444	22%	8%
MTCO2e/person Own Source	1.7	1.5	1.1	0.9	0.6	-69%	-36%
MTCO2e/person Scope 3	3.5	3.6	0.4	0.3	1.8	-52%	536%
MTCO2e/person**	5.2	5.1	1.6	1.2	2.4	-58%	93%
Company footprint (square meters)	90,088	91,101	86,317	83,954	84,033	-7%	0%
MTCO2e/sq m own source	0.057	0.051	0.04	0.035	0.024	-60%	-31%
MTCO2e/sq m Scope 3	0.119	0.126	0.016	0.013	0.074	-37%	491%
MTCO2e/sq m**	0.176	0.176	0.056	0.047	0.098	-45%	108%

a. Scope 1 emissions sources include the on-site combustion of natural gas for space heating, the combustion of diesel for backup generators, and fugitive refrigerants from HVAC systems. This is down year over year primarily due to updated CBECS data used for natural gas usage estimates.

b. Scope 2 emissions sources include the purchase of electricity at all locations and the purchase of steam at one site for space heating. This table calculates emissions using a market-based approach and a location-based approach. Purchased electricity emission factors were adjusted in 2022 to account for current carbon intensity of the power grids in various locations where Wellington operates. European emission factors in 2022 were updated to the Association of Issuing Bodies data source and calculated under national-level average grid mix factors (location-based) and national-level residual grid mix factors (market-based).

c. Scope 3 emissions sources primarily include business travel (air and rail) for all reported years. Starting in 2019, when Wellington completed its cloud transition, the company elected to include emissions related to cloud services and colocation data centers. The increase in Scope 3 emissions relative to 2021 is a result of a post-pandemic increase in business travel.

* Headcount figures include all full-time and contingent workers with a seat location in one of our leased facilities. We track headcount monthly and take an average across 12 months to reflect office occupancy more accurately.

** Emissions totals are calculated under market-based accounting methods.

NEXT STEPS AND CLOSING STATEMENT

We believe it is our fiduciary duty to understand how climate risks and opportunities may impact client portfolios. In pursuit of investment excellence for our clients, we strive to lead our industry via our research-based approach to climate issues. Looking ahead, we will focus our efforts in the following ways:

DEEPENING OUR RESEARCH

Toward the end of 2022, we polled a set of clients involved in the Wellington Climate Leadership Coalition and our climate-focused investment teams to determine their 2023 climate-related priorities. With that information in mind, we have set our 2023 climate research agenda. With Woodwell Climate, we will continue our country and regional deep dives and enhance our research on biodiversity and the cost of water. Through the MIT Joint Program, we will focus on translating how landmark climate initiatives such as the Inflation Reduction Act and REPower EU may reduce the cost of certain low-carbon transition technologies and solutions, resulting in new supply/demand dynamics. We also intend to deepen our understanding of global and region-specific concepts of a "just transition," strengthened by decarbonization pathways that embed "fair share" considerations. These considerations allow for more reasonable benchmarks with which to measure progress for companies operating in emerging markets, which typically face significant capital and structural challenges to climate-risk mitigation.

We also increasingly see opportunities for climate research collaboration across the firm. For example, the Climate Research Team is working closely with global industry analysts who specialize in metals and mining to learn more about biofuels and minerals that will be critical to the energy transition.

INTEGRATING CLIMATE RISKS AND OPPORTUNITIES INTO PORTFOLIOS

The Climate Research Team will continue to provide ongoing support across the investment platform, providing education sessions that highlight potential capital market implications of scientific and policy research. The team will also continue to partner with investment teams and industry analysts to conduct company- and portfolio-level evaluations on transition risk, net-zero alignment, and physical climate risk. We expect that these collaborative assessments will uncover additional compelling investment opportunities within companies providing products and services to address mitigation and adaptation needs. Finally, the team will lead ongoing enhancements of our climate tools and datasets, including tools and data that support the evaluation of climate risks within sovereign portfolios.

DEVELOPING MORE NUANCED DECARBONIZATION PATHWAYS

A common question from carbon-intensive companies in emerging markets — and our portfolio management teams in those companies — is whether they should be expected to meet a decarbonization pathway based on a global average. The concern is that emerging markets often have a combination of a higher starting-emissions profile, reduced financial means to invest in mitigation, and less organic decarbonization from local infrastructure improvements such as more renewable energy powering the electricity grid. Yet current external frameworks outlining best practices for credible decarbonization plans do not incorporate these nuances into their benchmarking. Through our participation in net-zero industry initiatives and our research agenda with the MIT Joint Program, we will continue to collaborate to define benchmarking criteria. We believe the direction of SBTi guidance is worth monitoring, given our focus on bottom-up measurement of targets.

We will also continue to contribute to best practices for measurement and decarbonization methodologies for additional asset classes. We will do this by deepening our relationships with existing third-party data providers, providing feedback and suggesting enhancements for datasets and Paris-aligned index development, and identifying new data providers.

PARTNERING WITH CLIENTS ON THEIR DECARBONIZATION GOALS

We will continue to work with our clients to assess the potential impact of secondary climate-related objectives on their ability to meet long-term investment objectives. We aim to help our clients consider any potential trade-offs of net-zero objectives that may arise based on the investment universe and philosophy, prior to formalizing portfolio decarbonization expectations where appropriate. In all cases, we will pursue net zero in nonconcessionary ways, aligned with client objectives and investment teams' philosophies and processes. We are always seeking to improve portfolio reporting to clients as a means of driving greater transparency and accountability. As for portfolio companies, we will continue to encourage improvement on disclosure and setting science-based emissions-reduction targets as a demonstration of robust transition-risk management.

Given significant interest from asset-owner clients who have net-zero commitments and invest in sovereign-dominated portfolios, we will seek to establish a methodology for net-zero alignment for sovereign issuers.

EXPANDING OUR FIRMWIDE FAMILIARITY WITH CLIMATE TOPICS

In 2022, we focused on enhancing our employees' climate skill sets through training and development. Climate research is evolving quickly, so we want to ensure that our teams are prepared to make informed investment decisions and meet our clients' objectives. Looking forward, we will continue to focus on identifying opportunities to expand our collective knowledge base.

CLOSING STATEMENT

Wellington's founding partners instilled the notion of long-term stewardship of clients' assets, which continues to be a guiding principle for our firm. Our approach to climate integration is highly consistent with these views — we aim to uncover mispriced risks and opportunities tied to climate change and incorporate these organically into our philosophies and processes through data, research, engagement, and active management. We appreciate the opportunity to share our commitment and evolution in this report.

For additional information, please visit us online:

wellington.com

wellingtonfunds.com

linkedin

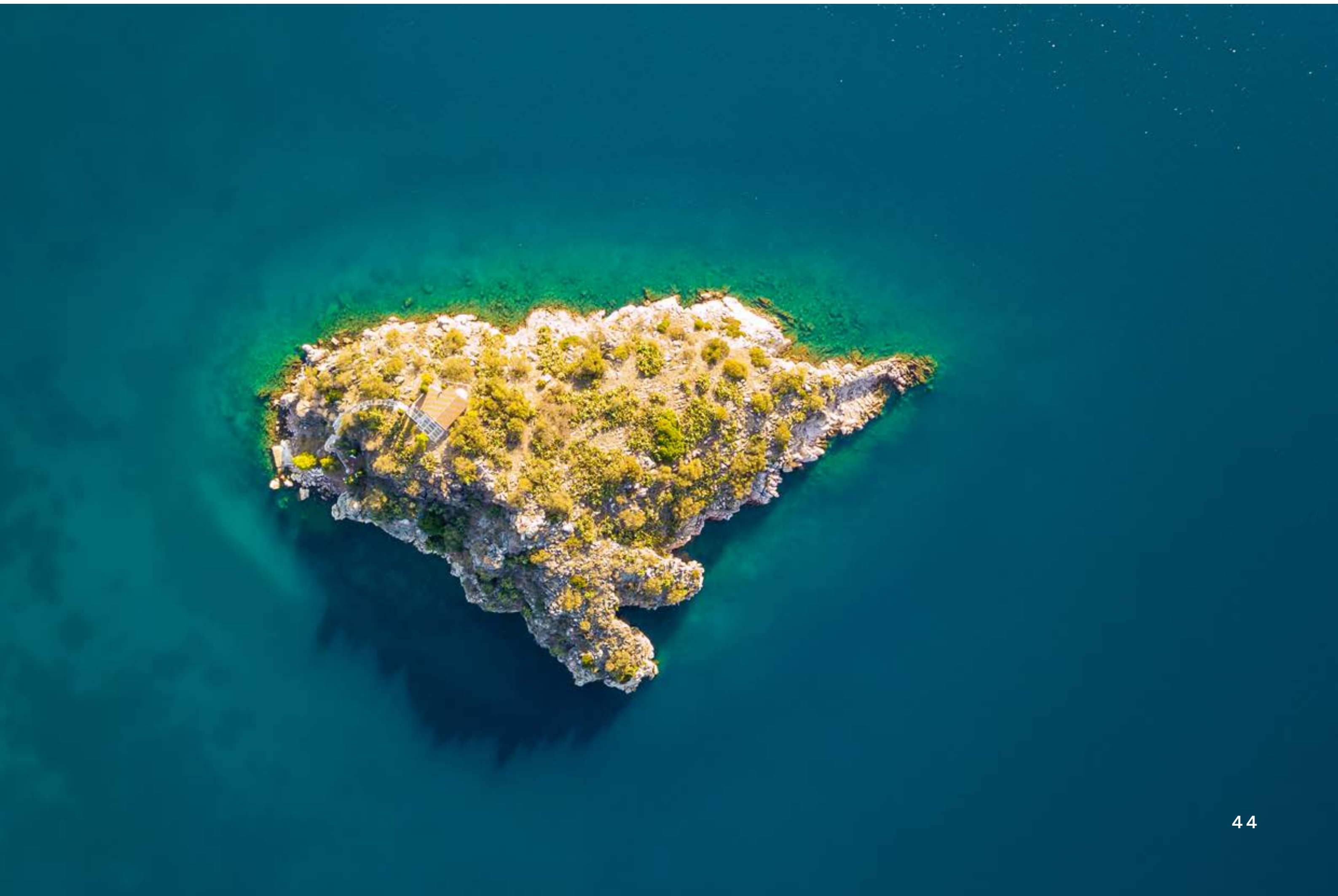
Climate investing is qualitative and subjective by nature, and there is no guarantee that the criteria utilized, or judgment exercised, by Wellington will reflect the beliefs or values of any one particular investor. Climate investing norms may differ by region. There is no assurance that any climate investing strategy and techniques employed will be successful.

Please refer to the Important disclosures at the end of this report.

Appendix 1: TCFD disclosure index

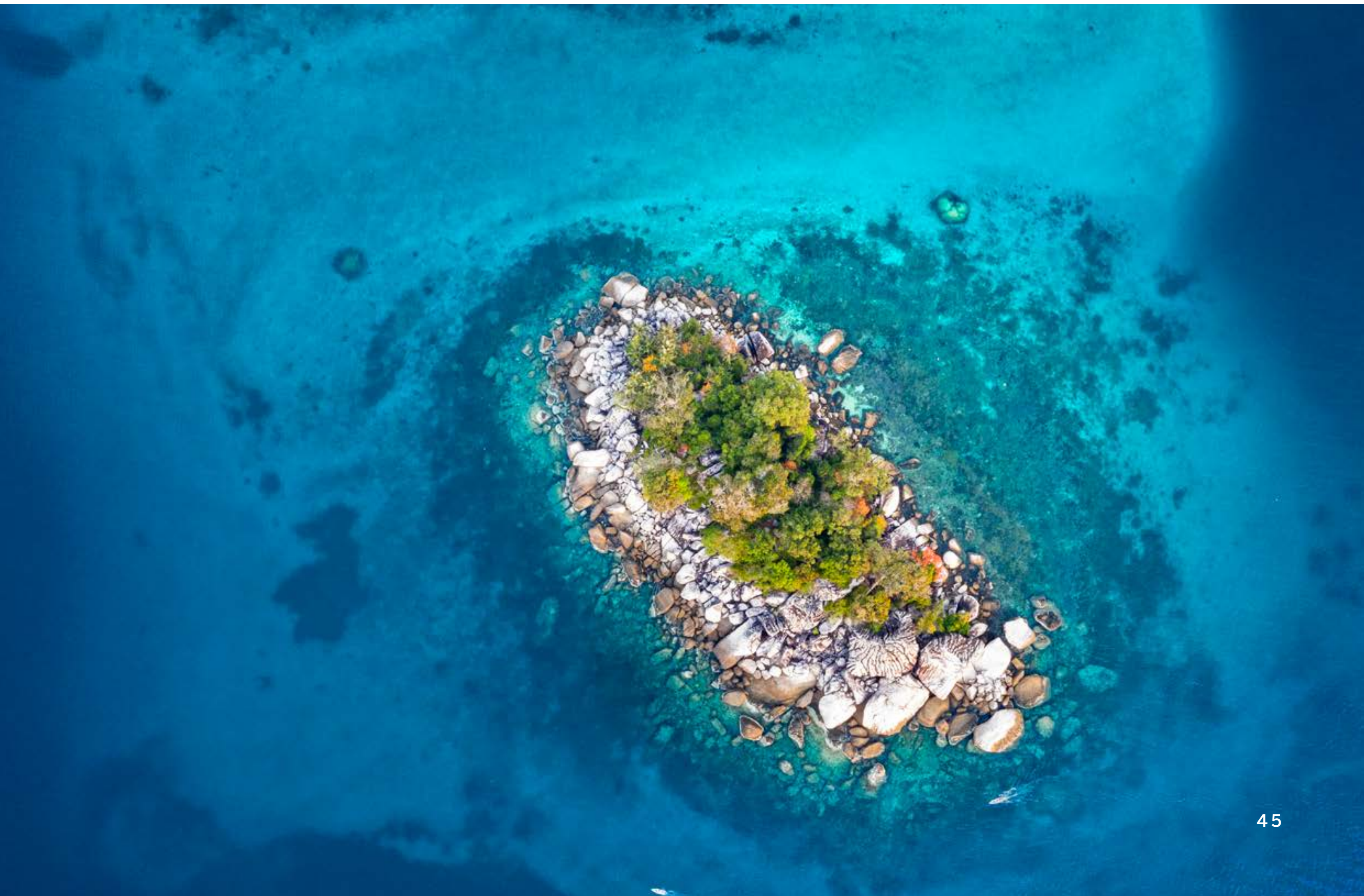
Below are cross-references to the recommended disclosures throughout this report. Please note that while the referenced section represents the primary location for each disclosure, relevant information may be included elsewhere in the report as well.

Disclosure	Sections
Governance	
Describe the board's oversight of climate-related risks and opportunities	Section 1
Describe the management's role in assessing and managing climate-related risks and opportunities	Section 1
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and longer terms	Sections 2, 3, 4, 5
Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	Sections 2, 3, 4, 5
Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios including a 2C or lower scenario	Section 4
Risk management	
Describe the organization's processes for identifying and assessing climate-related risks	Sections 2, 3, 4, 5
Describe the organization's processes for managing climate-related risks	Sections 2, 3, 4,5
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	Sections 2, 3, 4, 5
Metrics and targets	
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk-management process	Sections 2, 4, 5; Appendix 5
Disclose Scopes 1, Scope 2, and if appropriate, Scope 3 GHG emissions and related risks	Sections 4, 5; Appendix 5
Describe the targets used by the organization to manage climate related risks and opportunities and performance against targets	Sections 2, 4, 5; Appendix 5



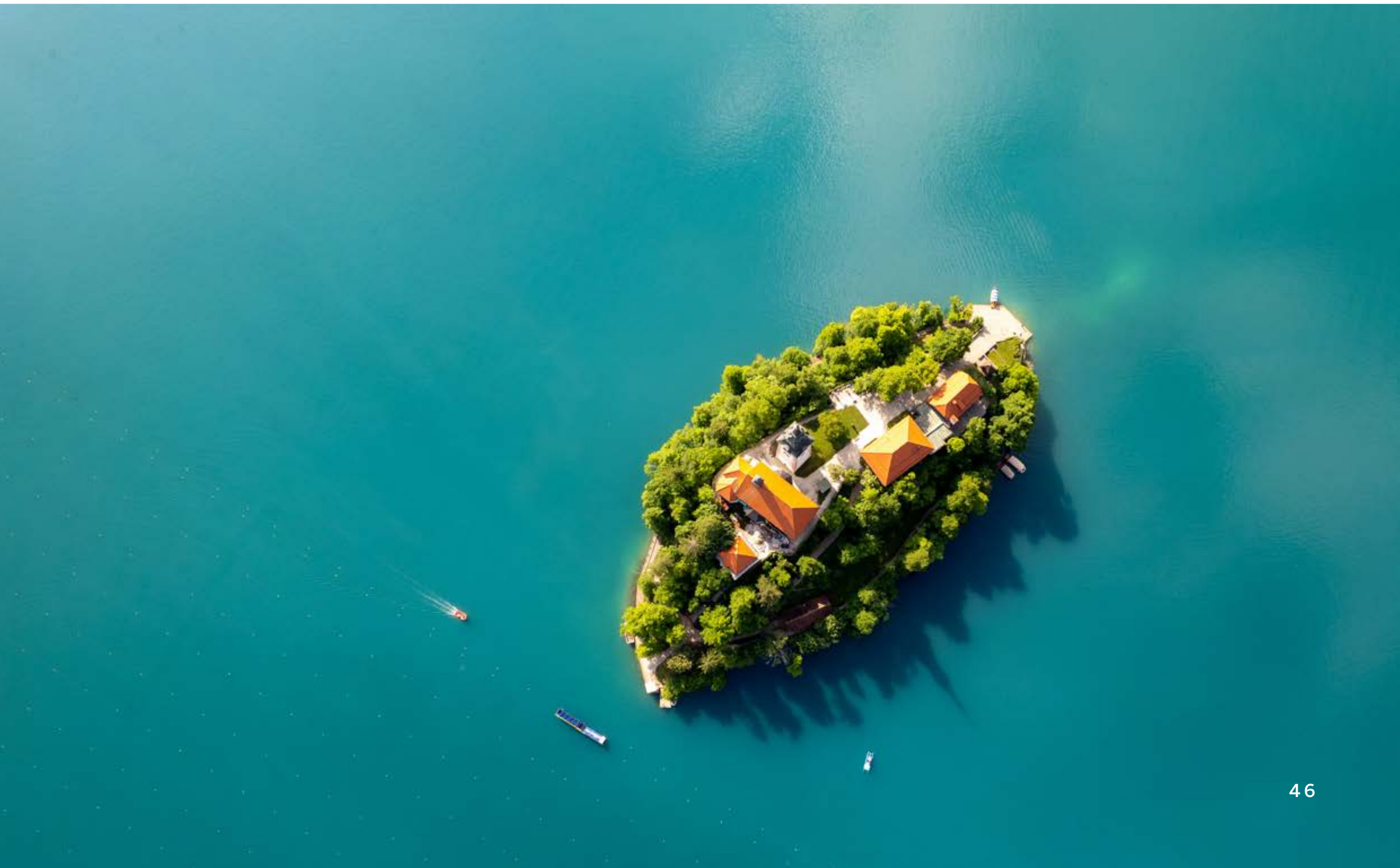
Appendix 2: Net Zero Asset Managers initiative commitment

Topic	Section
For assets committed to be managed in line with the attainment of net zero emissions by 2050 or sooner (under Commitment B)	
Set interim targets for 2030, consistent with a fair share of the 50% global reduction in CO2 identified as a requirement in the IPCC special report on global warming of 1.5°C	
Take account of portfolio Scopes 1 and 2 emissions and, to the extent possible, material portfolio Scope 3 emissions	Section 4
Prioritize the achievement of real economy emissions reductions within the sectors and companies in which we invest	Section 3
If using offsets, invest in long-term carbon removal, where there are no technologically and/or financially viable alternatives to eliminate emissions	
As required, create investment products aligned with net-zero emissions by 2050 and facilitate increased investment in climate solutions	Section 2
Across all assets under management	
Provide asset owner clients with information and analytics on net-zero investing and climate risk and opportunity	Section 4
Implement a stewardship and engagement strategy, with a clear escalation and voting policy, that is consistent with our ambition for all assets under management to achieve net zero emissions by 2050 or sooner	Section 3
Engage with actors key to the investment system including credit rating agencies, auditors, stock exchanges, proxy advisers, investment consultants, and data and service providers to ensure that products and services available to investors are consistent with the aim of achieving global net zero emissions by 2050 or sooner	Section 2
Ensure any relevant direct and indirect policy advocacy we undertake is supportive of achieving global net zero emissions by 2050 or sooner	Section 3
Accountability	
Publish TCFD disclosures, including a climate action plan, annually, and submit them to the Investor Agenda via its partner organizations for review to ensure the approach applied is based on a robust methodology, consistent with the UN Race to Zero criteria, and action is being taken in line with the commitments made here	Appendix 3



Appendix 3: Investor Climate Action Plan index

Topic	Section
Investment	
Strategy	Sections 1, 2, 3, 4
Risk management	Sections 1, 2, 4
Asset allocation	Sections 2, 4
Additional target setting	Sections 2, 4, 5
Corporate engagement	
Collective/collaborative engagement Bilateral engagement Corporate escalation and shareholder engagement	Section 3
Policy advocacy	
Investor statements Lobbying Advocacy	Section 3
Investor disclosure	
Commitments, objectives, and targets	Section 4
Carbon emissions	Section 4
Portfolio assessment	Section 4; Appendix 5
TCFD alignment Assessment of disclosures	Appendix 1
Governance	
Policy Accountability Planning and evaluation Board reporting Skills assessment	Section 1



Appendix 4: Glasgow Financial Alliance for Net Zero index

Component	Section
Foundations	
Objectives and priorities	Sections 2, 4, 5
Implementation strategy	
Products and services	Sections 2 and 4
Activities and decision-making	
Policies and conditions	
Engagement strategy	
Clients and portfolio companies	Section 3
Industry	
Government and public sector	
Metrics and targets	
Metrics and targets	Section 4
Governance	
Roles, responsibilities, and remuneration	Section 1
Skills and culture	Section 4; Next steps

Appendix 5: Sample strategies' carbon footprints

The strategies below are a subset of our strategies offered by Wellington Management and represent the largest long-only strategies (by AUM), with carbon data coverage greater than 50%, classified based on their investable universe.

Portfolio-level emissions analytics are available to all portfolio managers but may or may not be used in security selection and portfolio construction.

	Eligibility[1] %	Carbon data coverage[2] %	WACI scopes 1+2[3] T CO2e/$M sales	WACI scopes 1+2+3[3] T CO2e/$M sales	Carbon footprint scopes 1+2[4] T CO2e/$M invested	Carbon footprint scope 1+2+3[4] T CO2e/$M invested	ITR scopes 1+2+3[5] °C	SBTs target set[6] %	SBTs target set + committed[6] %
Equity									
Global									
Global Quality Growth	98.7	100.0	31.7	689.3	14.2	316.8	2.1	26.1	53.2
Global Impact	96.6	99.4	46.9	462.3	14.6	130.5	2.0	25.1	38.0
Index: MSCI All-Country World	100.0	99.8	161.1	942.7	59.1	418.4	2.8	26.1	52.1
Global Research Equity	98.1	98.5	60.1	548.9	17.8	214.8	2.0	40.7	56.6
Index: MSCI World	100.0	99.8	140.8	897.6	49.7	387.5	2.7	38.4	56.0
US									
US Research Equity	98.0	98.6	70.5	444.9	22.2	156.6	2.0	33.2	49.4
US Quality Growth	99.1	100.0	28.8	524.7	7.2	158.3	1.9	30.1	53.9
US Brand Power	99.1	100.0	19.5	390.5	3.3	75.1	1.9	45.1	63.1
Index: S&P 500	100.0	99.9	147.1	776.2	39.3	279.6	2.6	38.5	57.3
Emerging Markets									
Emerging Markets Research Equity	96.4	99.1	223.4	1274.4	124.3	634.2	3.4	7.0	21.9
Emerging Markets Local Equity	98.1	94.2	68.6	856.5	17.4	366.2	2.9	6.6	18.3
Index: MSCI Emerging Markets	100.0	100.0	321.2	1300.2	133.8	663.7	3.4	8.0	21.6
Asian Opportunities	97.6	97.6	81.2	702.7	26.1	422.5	3.3	2.0	19.0
Index: MSCI All Country Asia ex Japan	100.0	100.0	289.6	1027.7	117.5	502.3	3.0	8.2	23.0
Europe									
Strategic European Equity	98.8	99.7	53.3	426.3	30.2	206.5	1.9	29.2	62.1
Focused European Equity	98.4	100.0	137.4	684.2	79.3	340.8	2.0	53.0	81.0
Index: MSCI Europe	100.0	100.0	114.9	919.8	75.1	544.9	2.2	54.1	72.4
Pan European Small Cap Equity	97.9	96.0	55.6	567.0	21.9	207.1	2.3	28.6	47.0
Index: MSCI Europe Small Cap	100.0	99.1	114.3	724.3	76.7	456.5	2.4	20.8	41.8
Sector									
Global Health Care Equity	99.0	97.8	19.1	301.0	3.2	53.7	1.6	26.9	39.8
Index: MSCI World Health Care	100.0	100.0	16.7	310.4	3.4	74.4	1.6	41.1	62.7
Enduring Assets	98.4	100.0	896.3	1936.2	284.9	623.1	2.6	36.0	37.5
Durable Companies	98.2	95.0	66.1	342.7	18.6	164.1	1.9	10.8	24.9
Index: MSCI All Country World	100.0	99.8	161.1	942.7	59.1	418.4	2.8	26.1	52.1

Strategy	Eligibility[1] %	Carbon data coverage[2] %	WACI scopes 1+2[3] T CO2e/$M sales	WACI scopes 1+2+3[3] T CO2e/$M sales	Carbon footprint scopes 1+2[4] T CO2e/$M invested	Carbon footprint scope 1+2+3[4] T CO2e/$M invested	ITR scopes 1+2+3[5] °C	SBTs target set[6] %	SBTs target set + committed[6] %
Fixed Income									
Credit									
Global Credit ESG	85.4	98.9	146.4	783.5	53.7	302.6	2.2	27.4	48.0
Index: BBG Gagg Cr-fin US/ EU/UK 1%	99.3	97.5	188.3	923.8	59.5	400.8	2.5	27.9	44.7
Global Strategic Credit	75.1	94.5	200.7	1297.6	47.9	498.2	3.0	19.4	32.7
Global Credit Buy and Maintain	85.4	93.3	166.0	768.3	38.0	263.3	2.1	26.0	38.9
High yield									
Global High Yield Bond	98.3	73.3	182.2	1444.7	65.3	737.6	3.4	9.8	23.4
Higher Quality Global High Yield Bond	98.2	76.4	203.6	1497.0	80.2	793.0	3.6	13.1	24.2
Index: ICE BofA Global HY BB-B Constrained	99.4	83.9	353.5	1770.8	166.3	937.7	3.5	16.2	27.0
Euro High Yield Bond	97.1	61.0	109.6	831.7	33.6	524.0	2.9	15.7	34.7
Index: ICE BofA Euro High Yield Constrained	99.3	78.5	226.7	1106.4	127.8	646.5	2.7	26.7	42.8
Absolute return									
Global Multi-Asset Target Return II	55.1	98.4	87.8	747.3	28.5	297.5	2.5	29.3	43.2
Index: ICE BofA 3 Month T-Bill	0.0	0.0	--	--	--	--	--	--	--
Multi-Asset Total Return Income	80.7	99.0	220.1	1009.1	67.2	425.7	2.7	25.1	41.8
Index: BBG Gagg Cr-fin US/ EU/UK 1%	99.3	97.5	188.3	923.8	59.5	400.8	2.5	27.9	44.7
Sector rotation									
Multi-Sector Credit	53.4	63.2	307.3	1836.8	133.4	774.3	3.6	7.0	14.8
Responsible Values Multi-Sector Credit	52.5	55.0	132.5	653.1	49.9	311.4	2.5	5.3	14.7

All calculations are scaled such that covered securities are reweighted to 100% market value; this means that covered holdings have an outsized impact on the portfolio. Portfolios with lower coverage can be especially influenced by outliers. Data may not be representative of the actual portfolio in cases where coverage of carbon data availability or eligible securities is between 50% and 75%.

All data is as of 31 December 2022. SBTs are validated by SBTi. All other data is sourced from MSCI.

[1] Eligibility is based on the state of carbon data availability and includes only corporate holdings.

[2] Carbon data coverage is represented as a % of carbon eligible securities, which may be less than the total market value of the portfolio.

[3] WACI: Carbon footprint reporting accounts for Scopes 1 and 2 GHG emissions, as well as Scopes 1, 2, and 3 emissions, and is expressed in carbon dioxide equivalents. The WACI figure for each strategy is calculated by rescaling exposures based on available emissions data and therefore may not be fully representative of the strategy's emissions.

[4] Carbon footprint: Emissions financed per US$1 million invested in the mandate. This metric is calculated by summing the result of % enterprise value incl cash financed x Emissions for each holding, and then dividing by the portfolio's total market value.

[5] ITR is a forward-looking metric, expressed in degrees Celsius, and is designed to show the alignment of companies with global temperature goals, between 1.5°C and 2°C. It aims to quantify the alignment of a company's activities against pathways commensurate with future temperature goals and measures the global warming if the rest of the investment universe acts the same way as a single company. Each company's cumulative emissions by 2070 (Scopes 1, 2, and 3) is projected based on their current emissions and emissions reduction targets, where the current Scope 3 emissions reflect MSCI's fully estimated Scope 3 data. Each company's cumulative projected emissions are then compared to a GHG budget specific to its industry and regional exposure when calculating its ITR. ITR data availability is determined by the % of eligible carbon MV with ITR and EVIC data.

[6] SBTs are 10-year targets aligned with limiting global warming to 1.5°C, include Scopes 1, 2, and material Scope 3 emissions, and must be achieved through direct action in operations/value chain. Three consecutive SBTs would meet net zero by 2050. Eligibility is currently based on exposure to long-only, direct corporate holdings and excludes look-through to pools. SBTs' data availability is determined by the exposure of the % of eligible MV. Targets Set indicates the company's target has been validated to be comprehensive, robust, and aligned with approved methodologies, while Committed indicates the company is in the process of setting its target and seeking review from SBTi.

NOTES ON METHODOLOGY AND CURRENT LIMITATIONS OF CARBON FOOTPRINTING

Since emissions are self-disclosed and audited inconsistently, there is a lack of uniformity from one company to another. Estimation methodologies by third parties are imperfect because they are based on assumptions about business operations, peers, and industry averages. There is also a time lag associated with disclosures as companies disclose emissions at the end of each fiscal year, so the holdings date does not exactly match the emissions year.

Where a strategy incorporates transition-risk management into its P&P, we currently focus portfolio construction and target-setting on Scope 1 and 2 emissions, where we have the most confidence in the data due to corporate disclosure. However, consideration of Scope 3 is important because it often provides the strongest tie to business strategy. For example, Scope 3 downstream (use of sold products) provides the strongest tie to top-line opportunities, which allows us to differentiate companies' current exposure to demand for low-carbon products, such as the electric vehicle (EV) offering of automobile manufacturers.

Because carbon emissions are a moment-in-time snapshot, they fail to capture companies' future transition strategy. Companies with forward-looking reduction targets may nonetheless seem carbon-intensive today. We encourage portfolio managers to consider multiple metrics, including forward-looking transition alignment ratings, ESG ratings and capital spending plans, when analyzing companies.

At cyclical companies, carbon intensity can fluctuate dramatically without a change in business processes, as revenue is the denominator in the formula. Currency translation for companies reporting in currencies other than the US dollar can also impact revenue-based intensity figures. When the ESG Research Team looks at individual sectors, they tend to use units of production rather than revenue, especially for cyclical industries.

Additional challenges arise when footprinting corporate credit strategies. Propagation from a parent issuer to a subsidiary issuer is done to improve coverage of the portfolio. However, if a parent issuer is the disclosing entity, this parent may or may not be representative of the subsidiary issuer owned, particularly if the issuance is a green or other labelled bond. This may be resolved over time as investors come to expect enhanced emissions disclosures directly from the issuing entity.

Please refer to the discussion and footnotes within **Section 4** for further consideration of our full range of climate-related metrics.

Appendix 6: 2022 list of company engagements

During 2022, we held 18,500 meetings, thousands of which were hosted by our equity, credit, and ESG analysts, as well as portfolio managers. As the vast majority of our company meetings each year discuss long-term strategic business issues with the aim of creating value, we recently introduced a complementary engagement-tracking tool for all our investment professionals. This tool provides an interface to allow users to add topics, feedback, and outcomes of recently attended company meetings whereby investment professionals can enter information associated with each meeting they attend. In particular, they are tracking the feedback they provided to the company and the outcome of the two-way dialogue, in terms of how it may have influenced an investment decision and/or how the company may be taking action based on the feedback.

In 2022, we discussed climate topics with over 650 companies. With the aim of continuous communication, we often meet with companies multiple times throughout the year.

COMMUNICATION SERVICES

Alphabet
America Movil
AT&T
BCE
Bilibili
Bumble
Cellnex Telecom
Charter Communications
Comcast
Helios Towers
IHS Holding
Meta Platforms
NAVER
New York Times
Proto
Sea
Telefonica
Tencent Holdings
T-Mobile US
United Internet
Veon
Walt Disney
ZoomInfo Technologies

CONSUMER DISCRETIONARY

Adient
Alibaba Group
Astra International
Berkeley Group
Century Communities
China Tourism Group Duty Free
Compass Group
Coupang
Descente
Feng TAY Enterprise
Ford Motor
General Motors
Gentherm
GoTo Gojek Tokopedia
Guangzhou Automobile
Haier Smart Home
Hermes International
Home Depot
Home Product Center
Hyundai Motor
Industria de Diseno Textil
Kia
Lennar
Li Ning
Lowe's
Mercedes-Benz Group
Midea Group
Murphy USA
NVR
Playa Hotels & Resorts
Pool
Sekisui House
Shanghai Jinjiang International Hotels
Starbucks
Thule Group
Toyota Motor
Udemy
Vail Resorts

CONSUMER STAPLES

Amorepacific
Anjoy Foods
Archer-Daniels-Midland
British American Tobacco
Budweiser Brewing
Cencosud SA
China Feihe
China Mengniu Dairy
China Resources Beer
Cisarua Mountain Dairy
Coca-Cola
Coca-Cola Europacific Partners
Colgate-Palmolive
Constellation Brands
CP ALL
Cranswick
Darling Ingredients
Estee Lauder
Farm Fresh
Freshpet
General Mills
Grupo Bimbo
Hindustan Unilever
Hostess Brands
Indofood CBP Sukses Makmur
JBS SA
Jiangsu Hengshun Vinegar Industry
Jiangsu Yanghe Brewery Joint-Stock
Jonjee Hi-Tech Industrial and Commercial
Keurig Dr Pepper
Kimberly-Clark
Kose
Lamb Weston
L'Oreal SA
MEIJI Holdings
Mondelez International
Monster Beverage
Morinaga Milk Industry
Muyuan Foods
Nestle SA
Nomad Foods
Nongfu Spring
Osotspa PCL
Procter & Gamble
Proya Cosmetics
Seven & i
Shanghai Jahwa United
Shiseido
Sundrug
Sysco
Terumo
Tingyi Cayman Islands
Universal Robina
Varun Beverages
Walmart

ENERGY

AKR Corporindo
ARC Resources
Baker Hughes
BP
Brigham Minerals
Cactus
Cameco
Canadian Natural Resources
Cenovus Energy
Cheniere Energy
Chesapeake Energy
Chevron
ConocoPhillips
Coterra Energy
Crestwood Equity Partners
Devon Energy
Diamondback Energy
Ecopetrol SA
Enbridge
Energean
Energy Transfer
Enterprise Products Partners
EOG Resources
EQT
Equinor ASA
Exxon Mobil
Halliburton
Hess
Imperial Oil
Indika Energy
John Wood
Kinder Morgan
Marathon Oil
Marathon Petroleum
MEG Energy
MPLX LP
Murphy Oil
Nabors Industries
Neste Oyj
NexTier Oilfield Solutions
Occidental Petroleum
Oil & Natural Gas
ONEOK
Parex Resources
Pembina Pipeline
Petroleo Brasileiro
Phillips 66
Pioneer Natural Resources
Plains All American Pipeline
PTT Exploration & Production
PTT PCL
Schlumberger
Shell
SK Innovation
Subsea 7
Suncor Energy
Targa Resources
TC Energy
Technip Energies
Tenaris SA
TotalEnergies SE
Williams
Worley
Yantai Jereh Oilfield Services
YPF SA

FINANCIALS

Aareal Bank
Allstate
Arch Capital
Australia & New Zealand Banking
Aviva
AXA SA
Axis Bank
Banc of California
Banco Santander SA

Bank of America
Bank of Ireland
Bank of Nova Scotia
Bank Rakyat Indonesia Persero
Barclays
BDO Unibank
Beazley
BlackRock
BNP Paribas
Caixa Seguridade Participacoes
China Merchants Bank
China Pacific Insurance
Chubb
Commerzbank AG
CSC Financial
DBS Group
Deutsche Pfandbriefbank
Erste Group Bank
Euronext NV
Everarc Holdings
FinecoBank Banca Fineco
First Abu Dhabi Bank
Goldman Sachs
Greenhill
Hannon Armstrong Sustainable Infrastructure Capital
Hartford Financial Services
Helia Group
HSBC Holdings
ING Groep
Inversiones La Construccion
Investec
Just Group
KB Financial
KBC Group
Lloyds Banking
London Stock Exchange
M&G
Mitsubishi UFJ Financial
Morgan Stanley
Nationwide Building Society
NatWest Group
Permanent TSB
Phoenix Group
Ping An Bank
PNC Financial Services
Popular
Progressive
Raiffeisen Bank International
RHB Bank
Santander UK
Seacost Banking of Florida
Shawbrook Group
Shriram Finance
Standard Chartered
Tokio Marine
Travelers
UBS Group
Virgin Money UK
W R Berkley
Woori Financial
Zions Bancorp
Zurich Insurance

HEALTH CARE

Alcon
Amicus Therapeutics
Amoy Diagnostics
APT Medical
Argenx SE
AstraZeneca
Becton Dickinson
Beijing Wandong Medical Technology
Biogen
BML
Centene
Community Health Systems
CSPC Pharmaceutical
Danaher
Dr Reddy's Laboratories
Elanco Animal Health
Eli Lilly & Company
GSK
Hansoh Pharmaceutical
HCA Healthcare
Incyte
Ipca Laboratories
Johnson & Johnson
Lonza Group
Max Healthcare Institute
Moderna
Novartis AG
Prestige Consumer Healthcare
Regeneron Pharmaceuticals
Seagen
Shenzhen Mindray Bio-Medical Electronics
Shenzhen New Industries Biomedical Engineering
Teva Pharmaceutical Industries
Thermo Fisher Scientific
Vertex Pharmaceuticals
Viatris
Wuxi Biologics Cayman
Zoetis
Industrials
Aalberts NV
Air Lease
Airbus SE
Airtac International
Alfa Laval
AP Moller–Maersk
Apogee Enterprises
Atlas Copco
Babcock International
BAE Systems
Bloom Energy
Brenntag SE
BrightView Holdings
Burckhardt Compression
Bureau Veritas
Caterpillar
Centre Testing International
China State Construction Engineering
Cie de Saint-Gobain
CIMC Enric
Cintas
Core & Main
Deere
Deutsche Lufthansa
Deutsche Post
Diploma
DiscoverIE Group
Dongfang Electric
Doosan Enerbility
Ducommun
Eaton
Ecopro BM
Elis SA
Emerson Electric
Estun Automation
Evoqua Water Technologies
Expeditors International of Washington
FANUC
Fluidra SA
Fortune Brands Innovations
Generac Holdings
General Dynamics
Genuit Group
Gibraltar Industries
Giken
GMM Pfaudler
Great Lakes Dredge & Dock
Greenbrier
Han's Laser Technology Industry
Hensoldt AG
Hitachi
Honeywell International
Hoymiles Power Electronics
Hubbell
ICF International
IDEX
InPost SA
Insteel Industries
JetBlue Airways
JG Summit
JGC Holdings
Jiangsu Hengli Hydraulic
Jiangsu Zhongtian Technology
Johnson Controls International
Kamigumi
Kennametal
Kingspan Group
Kirby
Kokuyo
Koninklijke Boskalis
Korea Shipbuilding & Offshore Engineering
Kuehne + Nagel International
Kurita Water Industries
Leader Harmonious Drive Systems
Lennox International
LG Energy Solution
Lockheed Martin
Max
Metso Outotec
Middleby
Milkyway Chemical Supply Chain Service
Montrose Environmental
NARI Technology
National Express
Nibe Industrier
Ningbo Deye Technology
Ningbo Orient Wires & Cables
Ningbo Ronbay New Energy Technology
Nippon Carbon
Nissin Electric
Northrop Grumman
NuScale Power
Obara Group
Open Up
PACCAR
Pacific Basin Shipping
Pan Ocean
PGT Innovations
Plug Power
Raytheon Technologies
Recruit Holdings
Rentokil Initial
Rockwool A/S
RS Group
Ryanair Holdings
Samsung Engineering
Sany Heavy Industry
Schneider Electric
Shanghai QiFan Cable
Shenzhen Inovance Technology
Shoals Technologies
Siemens Energy
Signify NV
Sinoseal Holding
SITC International
Spirax-Sarco Engineering
Steico SE
Stem
Sungrow Power Supply
SunPower
Suzhou Maxwell Technologies
Techtronic Industries
Trane Technologies
Troax Group
Uber Technologies
Union Pacific
Vestas Wind Systems
Vinci SA
Westinghouse Air Brake Technologies
Wolters Kluwer
Xinyi Glass
Xuji Electric
Xylem
YTO Express
Zhejiang HangKe Technology
Zhejiang Sanhua Intelligent Controls
Zhejiang Windey
Zurn Elkay Water Solutions

INFORMATION TECHNOLOGY

3peak
Advantech
All Winner Technology
Analog Devices
ANSYS
Apple
Argo Graphics
ASML Holding
Autodesk
Automatic Data Processing
Beijing Kingsoft Office Software
BOE Technology
Capgemini SE

China Resources Microelectronics
Corning
Delta Electronics
Edenred
Elecom
ESPEC
Fidelity National Information Services
First Solar
Fiserv
Fujian Foxit Software Development JSC
GDS Holdings
Guangzhou Sie Consulting
Hangzhou First Applied Material
HP
Iflytek
Intel
International Business Machines
KLA
Kyocera
Lam Research
Lumentum Holdings
Marvell Technology
Maxeon Solar Technologies
Mimasu Semiconductor Industry
MKS Instruments
Montage Technology
Motorola Solutions
NetApp
Nokia Oyj
NS Solutions
OPT Machine Vision Tech
Qi An Xin Technology
Risen Energy
Samsung Electro-Mechanics
Samsung Electronics
SCREEN Holdings
ServiceNow
Shennan Circuits
Shenzhen Sunlord Electronics
Shenzhen Transsion
Sino Wealth Electronic
SK Hynix
SolarEdge Technologies
StarPower Semiconductor
StoneCo
Suzhou Good-Ark Electronics
TE Connectivity
Teledyne Technologies
Texas Instruments
Thinkon Semiconductor Jinzhou
Tokyo Electron
TOTVS SA
Viavi Solutions
VMware
WEX
Wolfspeed
Xiamen Faratronic
Yealink Network Technology
Yonyou Network Technology
Zhen Ding Technology

MATERIALS

Aarti Industries
Air Liquide
Air Products and Chemicals
Albemarle
Ambuja Cements
Anglo American
Anhui Estone Materials Technology
ArcelorMittal SA
Arkema SA
Asahi Holdings
Ball
BASF SE
Beijing Oriental Yuhong Waterproof Technology
BHP Group
Bioceres Crop Solutions
Borregaard ASA
Cabot
Celanese
China National Building Material
Chunbo
Cia Brasileira de Aluminio
Covestro
CRH
Eastman Chemical
Ecolab
Element Solutions
Elementis
Elkem ASA
Endeavour Mining
Era
First Quantum Minerals
FMC
GEM
Givaudan SA
Glencore
Graphic Packaging
HeidelbergCement
Henan Mingtai Al Industrial
Holcim
Huntsman
International Paper
Jiangsu Boqian New Materials
Kansai Nerolac Paints
Koninklijke DSM
Korea Zinc
LG Chem
Linde
Livent
LyondellBasell Industries
Marshall
Mativ Holdings
Merdeka Copper Gold
Methanex
Mitsubishi Gas Chemical
Ningxia Baofeng Energy
Nutrien
Perimeter Solutions
Petronas Chemicals
POSCO Chemical
POSCO Holdings
PPG Industries
PTT Global Chemical
Rio Tinto
Shandong Head
Shandong Sinocera Functional Material
Shanghai Hiuv New Materials
Shanghai Putailai New Energy Technology
Shenzhen Senior Technology Material
Shin-Etsu Polymer
Sigma Lithium
Sika AG
Silgan Holdings
Sims Ltd
South32 Ltd
Steel Dynamics
Suzano SA
Taiwan Cement
UltraTech Cement
Vale SA
Victrex
West Fraser Timber
Westlake
Wienerberger AG
Yamato Kogyo
Zhejiang Jiemei Electronic & Technology
Zhejiang Weixing New Building Materials

REAL ESTATE

Acadia Healthcare
Alexandria Real Estate Equities
American Tower
Americold Realty Trust
Boston Properties
British Land
Camden Property Trust
CBRE Group
Centerspace
China Vanke
Crown Castle
Derwent London
Digital Realty Trust
Equinix
First Industrial Realty Trust
LondonMetric Property
Longfor Group
Mitsui Fudosan
NewRiver REIT
Nexity SA
Prologis
Public Storage
Rexford Industrial Realty
Segro
Shaftesbury
Sun Hung Kai Properties
UDR
Urban Edge Properties
VICI Properties
Welltower OP
Weyerhaeuser
Xenia Hotels & Resorts
Utilities
Acciona
ACEN
AES Andes
AES
Ameren
American Electric Power
Atmos Energy
Avangrid
China Resources Power
CMS Energy
Consolidated Edison
Constellation Energy
Corp ACCIONA Energias Renovables
Dominion Energy
DTE Energy
Duke Energy
E.ON SE
Edison International
EDP–Energias de Portugal
Electricite de France
EnBW Energie Baden-Wuerttemberg
Enel SpA
Engie Energia Chile
Engie SA
Entergy
Eversource Energy
Exelon
FirstEnergy
Huadian Power International
Iberdrola SA
National Grid
NextEra Energy
Nippon Gas
Orpea SA
PG&E
Portland General Electric
PPL
Rubis SCA
RWE AG
Sembcorp Industries
Sempra Energy
Southern
SSE
Sunnova Energy International
Tata Power
UGI
Veolia Environnement
WEC Energy
Xcel Energy
Zorlu Enerji Elektrik Uretim

The companies shown comprise a complete list of all 2022 meetings in which Wellington Management participated, where climate change — related to physical risks, transition risks, or both — was among the discussion topics. These companies are not representative of all of the securities purchased, sold, or recommended for clients. It should not be assumed an investment in the companies listed has or will be profitable. Actual holdings will vary for each client and there is no guarantee a particular client's account will hold any or all of the companies shown. This material is not intended to constitute investment advice or an offer to sell, or the solicitation of an offer to purchase shares or other securities.

Important disclosures

This report is prepared in alignment with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). TCFD has established recommendations for disclosing comparable, reliable, and decision-useful information about the risks and opportunities presented by climate change. TCFD structured its recommendations around four core elements:

Governance — The organization's governance around climate-related risks and opportunities

Strategy — The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material

Risk management — The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and targets — The metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

Certain data provided is that of a third party. While data is believed to be reliable, no assurance is being provided as to its accuracy or completeness. Company examples are for illustrative purposes only, are not representative of all investments made on behalf of our clients and should not be interpreted as a recommendation or advice.

Individual portfolio management teams may hold different views and may make different investment decisions for different clients. Views may change over time. Each client account is individually managed; the extent to which climate-based research is considered in the investment process will vary depending on the investment policy established for each strategy or fund. Investors should always obtain and read an up-to-date investment services description or prospectus before deciding whether to appoint an investment manager or to invest in a fund.

Risks

All investments involve risks. Given the lengthy timeframes for most impact projects and many companies' reliance on disruptive technologies, investments may be subject to volatility and are therefore more suited to longer investment horizons. The following are some general risks associated with various approaches discussed in this report. This is not an all-inclusive list. Each specific investment approach and product will have its own specific risks and risks will vary.

Capital: The value of your investment may become worth more or less than at the time of the original investment. | **Concentration risk**: Concentration of investments in a relatively small number of securities, sectors or industries, or geographical regions may significantly affect performance. | **Equity and fixed income securities market risks**: Financial markets are subject to many factors, including economic conditions, government regulations, market sentiment, local and international political events, and environmental and technological issues. In addition, the market value of fixed income securities will fluctuate in response to changes in interest rates, currency values, and the creditworthiness of the issuer. | **Foreign and emerging markets risk**: Investments in foreign markets may present risks not typically associated with domestic markets. These risks may include changes in currency exchange rates; less-liquid markets and less available information; less government supervision of exchanges, brokers, and issuers; increased social, economic, and political uncertainty; and greater price volatility. These risks may be greater in emerging markets, which may also entail different risks from developed markets. | **Smaller-capitalization-stock risks**: The share prices of small- and mid-cap companies may exhibit greater volatility than the share prices of larger-capitalization companies. In addition, shares of small- and mid- cap companies are often less liquid than those of larger-cap companies. | **Manager risk**: Investment performance depends on the portfolio management team and the team's investment strategies. If the investment strategies do not perform as expected, if opportunities to implement those strategies do not arise, or if the team does not implement its investment strategies successfully, an investment portfolio may underperform or suffer significant losses. | **Sustainability risks**: ESG factors may be considered as part of a broader analysis of individual issuers (including with regards to a sustainability-risk assessment), using inputs from the investment manager's team of ESG analysts to help identify global best practices, prepare for engagement, and collaborate on new research inputs. The factors which will be considered will vary depending on the security in question, but typically include ownership structure, board structure and membership, capital allocation track record, management incentives, labor relations history, and climate risks.

IMPORTANT INFORMATION

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