Arch Capital Group Ltd.

Task Force on Climate-Related Financial Disclosures

For the year ended Dec. 31, 2023

Important Legal Information

Arch Capital Group Ltd. (together with its subsidiaries, "Arch" or "the Company"), is a publicly listed Bermuda exempted company with approximately $21.1 billion in capital at Dec. 31, 2023 and is part of the S&P 500 index. Arch provides insurance, reinsurance and mortgage insurance on a worldwide basis through its wholly owned subsidiaries. While we are positioned to provide a full range of property, casualty and mortgage insurance and reinsurance lines, we focus on writing specialty lines of insurance and reinsurance. In addition to providing comprehensive disclosure on our website regarding our approach to value creation, which integrates environmental, social and governance ("ESG") topics, we provide the following disclosures, which are aligned with the Task Force for Climate-related Financial Disclosures ("TCFD") framework.

The inclusion of information contained in this report should not be construed as a characterization regarding the materiality or financial impact of that information. For a discussion of information that is material to Arch, please see our 2023 Annual Report on Form 10-K for the fiscal year ended Dec. 31, 2023, filed with the SEC on Feb. 23, 2024 ("2023 Annual Report"). Moreover, this report may use certain terms, including those that TCFD or others may refer to as “material,” to reflect the issues or priorities of the Company, its subsidiaries and its stakeholders. Used in this context, however, these terms are distinct from, and should not be confused with, the terms “material” and “materiality” as defined by or construed in accordance with securities, or other laws or as used in the context of financial statements and reporting.

This report may include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 ("PSLRA"), which reflect our current views with respect to future events, risks and uncertainties. All statements other than statements of historical fact included in or incorporated by reference in this report are forward-looking statements. Forward-looking statements, for purposes of the PSLRA or otherwise, can generally be identified by the use of forward-looking terminology such as “may,” “will,” “expect,” “intend,” “estimate,” “anticipate,” “believe” or “continue” and similar statements of a future or forward-looking nature or their negative or variations or similar terminology. Actual events and results may differ materially from those expressed or implied in these statements. Important factors that could cause actual events or results to differ materially from those indicated in such statements include, among other things, those factors discussed in Item 1A, pages 40-59 of our 2023 Annual Report, and our quarterly reports on Form 10-Q filed with the SEC. These forward-looking statements speak only as of the date of this report. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

This report may contain links to or information from other internet sites. Such links and information are not endorsements of any products or services in such sites, and no information in such sites has been endorsed or approved by the Company.

ARCH CAPITAL GROUP LTD.: TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

As a leading (re)insurer, Arch Capital Group Ltd. (together with its consolidated subsidiaries, "ACGL," "Arch" or "the Company"), offers specialty risk solutions, property and casualty (re)insurance, and housing-sector products in communities worldwide.

Our approach to property-casualty underwriting integrates a comprehensive assessment of risks to provide solutions to protect our clients' employees, assets, property and business. Our risk management process monitors and manages climate risk and catastrophic events worldwide and is applied across our underwriting units.

Climate change presents potentially far-reaching implications for our business, customers and the broader global economy. We are committed to improving our understanding of the short-, medium- and long-term implications of climate change and providing products and services that appropriately address evolving climate-related risks and opportunities.

We are committed to improving our energy efficiency and carbon footprint and in 2022, we set a target for reducing our absolute Scope 1 and Scope 2 emissions by 42% by 2030 (from a 2020 base year) and achieving net zero operations by the same year.

This report, in conjunction with the climate-related disclosures in our 2023 Sustainable Accounting Standards Board Report and our 2023 Sustainability Report (together, "Sustainability Reports"), discusses our approach to managing the risk and opportunities associated with changing climate conditions. View our Sustainability Reports here.

This report is designed to align with the reporting framework set forth by the Financial Stability Board's Task Force on Climate-related Financial Disclosures ("TCFD") and includes the following disclosure categories:

I. Governance
II. Strategy
III. Risk Management
IV. Metrics and Targets

I. Governance

The TCFD recommends that insurance companies disclose the organization's governance around climate-related risks and opportunities, including the roles of the Board of Directors and management.

Our Approach. Our holistic risk management approach involves analyzing risk from top-down and bottom-up perspectives. The Company's risk management framework includes our:

1. Risk philosophy and policies designed to address the material risks confronting the Company.
2. Compliance, approaches and procedures aimed at controlling and/or mitigating these identified risks.

The framework's core comprises the actions and policies implemented to meet Arch's business management and regulatory obligations. Climate change risk is embedded in our existing risk management framework.

Three Lines of Defense. Risk management responsibilities are delegated across our organization through a "Three Lines of Defense" approach to risk governance. This risk management framework, reinforced by key controls, is embedded within our operations and enables us to limit risk and evaluate opportunities. We view environmental, social and governance ("ESG") risks not as standalone risks but as enterprise-wide risks.

BOARD OF DIRECTORS
Accountable for Organizational Oversight

MANAGEMENT Takes actions (including managing risk) to achieve our strategic goals.		INDEPENDENT ASSURANCE
1 **FIRST LINE:** These are our people on the front lines — such as our underwriters, pricing actuaries and investment professionals. They're managing risk, complying with regulations and standards, and carrying out our risk control processes daily.	**2** **SECOND LINE:** These roles are responsible for oversight and challenge of the front line. They develop and implement risk management processes policies and procedures.	**3** **THIRD LINE:** Their role is to independently assess and report on the work of the management lines of defense.
KEY CONTROLS		
■ Underwriting guidelines. ■ Business segment reviews. ■ Peer reviews and quality control. ■ Pricing models. ■ Reinsurance purchases. ■ Natural catastrophe modeling and assessment. ■ Predictive analytics. ■ Investment guidelines. ■ Customer vetting. ■ IT Access Controls and cybersecurity.	■ Risk Management Board Reporting. ■ Aggregate exposure measurement and monitoring. ■ Risk Assessments and Control Mapping. ■ Own Risk and Solvency Assessment. ■ Capital modeling and forecasting. ■ Operational Risk Committee. ■ Regulatory issues reporting. ■ Third-party service provider approval and monitoring.	■ Internal Audit Enterprise Reviews.

ESG Oversight. Our Board of Directors ("Board") oversees and monitors enterprise risk to support our long-term financial strategies and objectives. As outlined in its charter, our Board's Nominating and Governance Committee ("N&G Committee") oversees ESG matters, including the establishment and management of our ESG initiatives. Our Chief ESG Officer meets with the N&G Committee at least twice a year and provides substantive quarterly updates.

The ESG Steering Committee, established in 2019, comprises executive leadership that oversees ESG topics and practices organization-wide and contributes to executing the ESG strategy. Led by the Chief ESG Officer, the ESG Steering Committee maintains regular communication with leaders across our operations to ensure ESG topics are integrated into business processes. Our dedicated ESG team actively enhances our management of ESG factors and coordinates sustainability efforts across our businesses, including assessing climate change risk within our corporate strategy.

Our oversight structure extends to business and operating-level committees to manage specific ESG integration initiatives. Since 2022, our primary insurance operations in the U.K. formed an ESG Steering Committee (U.K. ESG Committee) to incorporate an ESG framework and strategy into their existing management and committee structures and to promote Arch's long-term sustainability success in alignment with the Company's overall ESG strategy. The U.K. ESG Committee, chaired by the U.K. CEO, meets quarterly and comprises senior leaders throughout our U.K. operations and the Chief ESG Officer. Beyond embedding ESG considerations into the U.K. business, the group built on our Thermal Coal Policy framework and developed principles-based policies for sensitive underwriting factors applicable to accounts covering oil sands and Arctic energy exploration and production.

In 2020, we formed a committee comprising senior underwriting officers, risk professionals and the ESG team, to integrate environmentally sensitive considerations into underwriting insurance risks associated with the thermal coal industry. The global insurance groups have committees that continue to meet and monitor submissions. See page 13 of our 2023 Sustainability Report for more information about our approach to underwriting thermal coal. See also our Thermal Coal Policy.

For our investments, in 2021, we established the Investment Group ESG Steering Committee ("ESG Investments Steering Committee") to oversee the assessment of ESG risk in our investment strategy. See "ESG Investment Governance" below for additional details.

Risk Identification and Assessment. Our Board's Audit, Underwriting Oversight, and Finance, Investment and Risk ("FI&R") committees oversee the top-down and bottom-up review of risks. These committees provide a forum for discussion among management and the Board as they consider insurance, investments, operational, liquidity, credit, group and strategic risks. Our Chief Risk Officer ("CRO") assists these committees in identifying and assessing key risks, including physical risks arising from climate change. The evaluation extends to understanding how these risks may be influenced by changing weather patterns and potentially impact our business and operations.

Risk Monitoring, Control and Reporting. Our CRO is responsible for maintaining the Company's Risk Register and regularly reviewing and challenging risk assessments, including the impact of climate change. The Risk Register incorporates ESG factors and the risks associated with severe weather events. Please also see this report's "Risk Management" section for additional information on the Risk Register process. Quarterly, the CRO compiles key findings from the risk review process into a report presented to the Board and relevant committees. Annually, the ACGL Risk Register undergoes a review by the Board and relevant committees, followed by Board approval.

ESG Investment Governance. Our investment team is responsible for investing and managing assets totaling over $34.6 billion for our policyholders and shareholders as of Dec. 31, 2023. As careful stewards of the capital entrusted to us, we manage the investment portfolio to ensure the ongoing ability to pay claims when due and achieve asset growth over investment cycles. Through our fundamental analysis, we incorporate investee companies' ESG risk ratings, including corporate governance, climate risk exposure, carbon reduction and workforce policies. We aim to deliver total return for Arch while potentially realizing the societal benefits of ESG investing.

As outlined in its charter, the FI&R Committee oversees the Board's responsibilities related to the Company's investment policy. This includes reviewing investment allocation, manager selection, benchmarks and investment performance. Our Chief Investment Officer ("CIO") reports to the FI&R Committee quarterly and assists the committee in assessing our approach to long-term sustainable value creation and incorporating ESG factors in the investment process.

Our investment team has a designated ESG Officer who is responsible for ESG oversight and oversees the ESG Investments Steering Committee. This committee sets forth the investment team's ESG strategy and focuses on managing ESG-related risks in our investment portfolio with sustainability-themed investments. Comprised of our CIO, CRO, Chief ESG Officer and key investment team members, the ESG Investments Steering Committee meets quarterly.

In early 2022, we adopted a Responsible Investing Policy that provides a framework for governance and strategy and outlines our approach to engagement, reporting, training and communications regarding our responsible investing practices. See page 32 of our 2023 Sustainability Report for more detail regarding our Responsible Investing Policy.

II. Strategy

The TCFD recommends that insurance companies disclose the actual and potential impacts of climate-related risks and opportunities on their businesses, strategy and financial planning where such information is material.

Arch has undertaken steps to integrate climate factors and considerations across our business. Starting at the corporate level, we conducted an annual high-level assessment to identify the climate factors most relevant to our worldwide business over the short-, medium- and long-term. This assessment incorporated feedback from our global risk management leadership, underwriters and actuaries with our CRO's ultimate oversight. Feedback included evaluations of natural catastrophe loss trends over the short-, medium- and long-terms that, in some instances, led us to adjust the premium we require for assuming risk.

We focused on identifying climate-related risks and opportunities across our key business units and developing strategic responses for our underwriting and investment management activities.

Provided below, "Our Identified Climate-Related Business Risks" table outlines relevant climate-related considerations and potential business risks.

Our Identified Climate-Related Business Risks.

Time Horizon	Climate Change Risks (Transition[1]/Physical[2]/Liability[3])	Business Risk
Short Term (<1 year)	Increased stakeholder expectations and regulatory requirements/mandates related to climate-related issues.	Underwriting and exposure selection risk.
		Exposure monitoring and reporting risk.
		Reputational risk related to reporting requirements.
		Impact on investment strategy.
		Regulatory risk related to non-compliance.
	Increased uncertainty and unpredictability of frequency and severity of natural catastrophes such as extreme weather events, including the aggregation of such events.	Pricing and reserving risk.
		Product profitability and demand risk.
		Accumulation management and CAT losses risk.
	Increased regulatory requirements/mandates on existing products/services and climate-related reporting/issues.	Regulatory risk related to disclosure/reporting non-compliance.
		Reputational risk related to reporting requirements.
		Potential loss of revenue.
		Impact on investment and underwriting strategy.
Medium Term (1–10 years)	Shifts in strategy and market dynamics tied to climate change risk (e.g., risk profiles, technological innovation, regulatory scrutiny, rating agency requirements, government policies and evolving consumer and stakeholder preferences).	Risk profile uncertainty for carbon-intensive assets, firms or sectors, including revenue and/or income loss.
		Reputational risk associated with failing to transition to and/or meeting new market environment, customer expectations and regulatory requirements.
		External influences impact Arch's strategic plan.
	Change in risk profiles of insurance product exposures.	Underwriting exposure and selection risk including property, general liability, financial lines, professional liability, business interruption, agriculture, and mortgage insurance.
		Accumulation management risk.
		Model risk from increased claims frequency and severity not included in historical data.
	Regional economic hardship due to climate change events and regulation.	Underwriting exposure and selection risk.
		Product design and demand risk.
		Pricing, reserving and regulatory risk.
	Increased capital requirements, counterparty risk, and/or reduced returns on equity.	Potential loss of investment income.
		Increased capital charges for climate change from ratings agencies or regulators.
		Adverse impact on counterparty credit strength.
Long Term (10+ years)	Stringent regulatory mandates such as government policies and sustainable reforms on climate change restricting insuring/investing in carbon-intensive sectors.	Revenue and/or business risk due to government policies and/or influence from external pressure groups.
	Increased frequency and/or severity of natural catastrophe and extreme weather events.	Underwriting exposure and selection risk.
		Accumulation management and CAT losses risk.
		Product design and demand risk.
		Potential loss of investment income and risk to capital.
	Substantial change in economic activities and risk profiles due to climate change.	Product design and demand risk.
		Reduction in reinsurer/counterparty financial strength and risk transfer appetite or capacity.
	Physical impact of climate change on business operations.	Increased business interruption and operational costs.

[1] *Transition Risk:* resulting from the global transition to a carbon-neutral or low-carbon economy.
[2] *Physical Risk:* resulting from the direct damages caused by climate events.
[3] *Liability Risk:* relating to climate-related insurance claims under liability insurance policies and direct legal claims against insurers for failing to manage climate risks.

Climate Opportunities for Our Underwriting and Services. The physical impacts of climate change may result in increased frequency and/or intensity of weather patterns, severe weather and natural catastrophic events. These impacts broaden the scope of our business solutions. Below are examples of climate-related opportunities across our identified time horizons. These examples should not be construed as a characterization regarding the materiality or financial impact of these opportunities.

Time Horizon	Climate-Related Opportunities
Short Term (<1 year)	Regulations are likely to drive increased demand for specific products and services as governments and companies worldwide pledge to achieve net-zero greenhouse gas emissions and to transition to clean energy.
	Through our lenders products, demand in service contracts for individuals generating renewable energy (i.e., solar energy).
	Increase risk control offerings as awareness increases around climate-change and mitigation risk.
Medium Term (1-10 years)	Further innovation is expected to drive development of product/services for clean energy and clean technology business.
	Changes in weather patterns may lead to an increase in customer demand for insurance coverage.
	Work with insureds to improve their environmental preservation, safety and loss prevention practices.
	Our insureds' business models may change due to the energy transition which may lead to an increase in demand for certain of our insurance products and services.
	Construction projects requiring a focus on clean energy and LEED®-certified construction design may require specialized insurance products.
	Increased economic activity and research and development related to clean energy and clean technology is expected to generate additional revenue to Arch as a result of increased demand for certain of our insurance products.
	Regulation encouraging commercial and personal vehicle owners to drive hybrid or electric vehicles could increase demand for specialized product offerings.
Long Term (10+ years)	Changing patterns of weather-related events is likely to further increase demand for certain of our insurance products and services.
	Greater demand for insurance products/services that support both the development of new technology and infrastructure, and the adaptation or decommissioning of heritage assets.

Climate change presents new opportunities for our underwriting business. Decarbonization efforts driven by market demand for clean energy, renewable energy and clean technology may give Arch an opportunity to generate more revenue. An increase or expansion in legislation and regulation related to energy use, including solar energy, could increase demand for insurance products relating to such regulations. Our specialized insurance products are well-positioned to address the unique aspects of renewable energy projects. For example, there could be more demand for coverage on LEED®-certified ("Leadership in Energy and Environmental Design") construction, excess and surplus casualty products that cover all stages of renewable energy construction, directors' and officers' liability coverage in the renewable energy sector, professional indemnity coverage for energy consultants, property managers, architects and engineers with LEED® certifications.

Through our risk and loss-control service platform, "Arch Risk Control," we work with insureds to improve their environmental preservation, safety and loss prevention practices. We help our U.S. insurance customers better understand and manage their environmental exposures. Our comprehensive services include dedicated training, technical information and consulting solutions for reducing the risk of fire and related carbon emissions, emergency response planning, flood emergency response plan development, hurricane preparedness and avoidance of risks commonly associated with solar panel installations and operations. Our annually renewed non-mortgage (re)insurance contracts can offer natural catastrophe coverage to help our customers cope with climate risks. In addition, we undertake special efforts to help expand (re)insurance protection, through our sovereign lending products in underdeveloped markets and other innovative risk transfer instruments.

In the renewable energy (re)insurance business, Arch collaborates with brokers and companies specializing in the clean energy sector. We anticipate new opportunities that may necessitate (re)insurance protection across many of our business units, including property, liability, construction and workers' compensation. For our onshore energy group, we are dedicated to growing our portfolio in energy-efficient and low-carbon technology markets, offering products catering to clean energy production such as solar, wind, hydro, nuclear power, biofuel and geothermal power, as well as biofuel production and energy transition technologies, such as battery storage, hydrogen and carbon capture projects.

Further, as the transition to clean energy production progresses in the long term, we may see greater demand for specialized insurance products catering to the complexities of decommissioning legacy power generation facilities.

We also identify underwriting opportunities in construction projects as public and private entities address changing climate patterns, such as flood control, infrastructure adaptability, water-proofing, fire safety, and susceptibility.

For our mortgage insurance business, because climate trends can develop over long periods, this time horizon allows our risk control team to assist customers with resources to conduct business impact analyses, prioritize and implement risk management action plans, and make physical improvements, gradually improving resiliency. Similarly, we can provide educational resources to help insureds adapt to the increased risks from climate change, including flooding and other natural disasters.

Climate Opportunities for Our Investing

Seeking opportunities to invest in companies committed to positive and measurable environmental outcomes. As a long-term asset manager and owner, we integrate ESG factors into investment analysis and decision-making. Through our fundamental analysis, we incorporate investee companies' ESG risk ratings, including corporate governance, climate risk exposure, carbon reduction and workforce policies. We engage with our external asset managers to understand their ESG integration into investment decisions and portfolio construction. We continue to include responsible investments in our alternative and liquid market investments. Through these investments, we aim to deliver total return for Arch while potentially realizing the societal benefits of ESG investing.

As of Dec. 31, 2023, we had invested $227 million in green bonds issued to fund green projects or activities that promote climate change mitigation or adaptation, or other environmental sustainability purposes. Our green bond investments increased 63% year-on-year.

Monitoring Exposure to Climate Impact and Carbon Intensive Industries. Responsible investing necessitates that we measure carbon metrics and other ESG factors in carbon-intensive industries. Investing in companies making positive progress towards an energy transition allows us to capture the value created by these efforts while reducing our overall risk. Our exposure to thermal coal[1] as of Dec. 31, 2023, represents 1.8% ($610 million) of the total portfolio. This is an increase over our 1.3% ($359 million) exposure in 2022.

[1] In future reporting we will use the MSCI field "Thermal Coal - Involvement - 10%" which is defined as "Companies that derive ten percent or more of total annual revenues from thermal coal" to reflect the thermal coal exposure in the investment portfolio. We believe this field is more representative of exposure to climate impact than the field "Thermal Coal-Any Tie" we have used previously. As of Dec. 31, 2023, our exposure to companies that derive ten percent or more of total annual revenues from thermal coal was modest at $13.5 million (0.04% of the total portfolio), in line with the exposure as of Dec. 31, 2022, of $13.7 million (0.05% of the total portfolio).

Our exposure to fossil fuels[2] was $1.7 billion as of Dec. 31, 2023, representing 5.1% of the total portfolio. This is an increase over the 3.8% ($1.1 billion) exposure in 2022. The increases in 2023 are attributable to increasing our exposure to utilities, targeting issuers with decarbonization initiatives in place.

Assets with United Nations Principles of Responsible Investing Signatories ("UN PRI"). We recognize the material commitment that becoming a UN PRI signatory requires and highlight our asset owners or asset managers that have achieved this distinction. Our assets managed by UN PRI signatories improved year over year (i.e., 2022 and 2023) representing 30% of the total assets under management ("AUM") and 84% of the total externally managed assets, approximately $12.2 billion as of Dec. 31, 2023.

The transition to a low-carbon economy also creates opportunities for specific asset classes, described below in "Making Responsible Investments."

III. Risk Management

The TCFD recommends that insurance companies disclose how the organization identifies, assesses and manages climate-related risks.

The Risk Register and the Own Risk and Solvency Assessment ("ORSA") process are key elements of our risk management framework. Our Risk Register includes an analysis of all risks facing Arch and details the corresponding controls and/or mitigation concerning these risks. The ORSA process contemplates all risks facing the control group as articulated in the Risk Register and is designed to assist our Board in understanding and managing the Company's key risks. Material changes in the underlying risks, such as changes in business mix, reinsurance strategy and investment strategy, are evaluated for potential impact on the Company's capital requirements. This process ensures material risks are included within the Risk Register and in our ORSA report, feeds into the analysis of capital requirements and, in some cases, triggers further investigation through stress testing.

Although risks tied to climate change have historically been embedded within other risks in our Risk Register and ORSA process, our current process focuses on identifying climate-change risk components in our risk universe and articulating these more specifically in our Risk Register and ORSA process. This initiative was a collaborative effort among our ESG, Risk Management, Investments and business teams to embed evaluations of climate-change risk into our already mature enterprise risk management processes. The current climate-change risk assessment summary is contained in this report in the "Our Identified Climate-Related Business Risks" table.

IV. Metrics & Targets

The TCFD guidance recommends insurance companies examine how resilient their strategies are to climate-related risks and describe risk exposure to weather-related catastrophes in their property insurance by jurisdiction.

Underwriting Resilience under Different Scenarios. For Arch's natural catastrophe-exposed business, we seek to limit the amount of exposure we assume from any single insured or reinsured, and the amount of exposure to catastrophe losses from a single event in any geographic zone. We monitor our exposure to catastrophic events, including earthquakes and windstorms, and periodically reevaluate the estimated probable maximum pre-tax loss for such exposures. We seek to limit the net probable maximum pre-tax loss from a severe catastrophic event in any geographic zone at the 1-in-250-year return period to approximately 25% of tangible shareholder's equity available to Arch (total shareholders' equity available to Arch less goodwill and intangible assets). We reserve the right to change this threshold at any time.

Based on in-force exposure estimated as of Jan. 1, 2024, our modeled peak zone catastrophe exposure is a windstorm affecting the Florida Tri-County area, with a net probable maximum pre-tax loss of $1.6 billion, followed by windstorms affecting the Northeast U.S. and the Gulf of Mexico with net probable maximum pre-tax losses of $1.4 billion and $1.3 billion, respectively. As of Jan. 1, 2024, our modeled peak zone earthquake exposure (San Francisco, California, area earthquake) represented approximately 54% of our peak zone catastrophe exposure, and our modeled peak zone international exposure (German windstorm) was substantially less than either our peak zone windstorm or earthquake exposures.

Net probable maximum loss estimates are net of expected reinsurance recoveries, before income tax and excess reinsurance reinstatement premiums. Catastrophe loss estimates reflect the zone indicated and not the entire portfolio. Since hurricanes and windstorms can affect more than one zone and make multiple landfalls, our catastrophe loss estimates include clash estimates from other zones. Our catastrophe loss estimates and realistic disaster scenario loss estimates do not represent our maximum exposures, and it is highly likely that our actual incurred losses would

[2] In future reporting we will use the MSCI field "Fossil Fuel Reserves" to reflect the fossil fuel exposure in the investment portfolio. This field identifies companies with evidence of owning fossil fuel reserves regardless of their industries, including companies that own less than 50% of a reserves field. Evidence of owning reserves includes companies providing the exact volume of reserves, and companies making a statement about their ownership of reserves. We believe this field is more representative of exposure to climate impact than the field "Fossil Fuels-Any Tie" we have used previously. As of Dec. 31, 2023, our exposure to companies with evidence of owning fossil fuel reserves was $723 million (2.2% of the total portfolio). This is an increase over the $454 million (1.7% of the total portfolio) exposure we had as of Dec. 31, 2022.

vary materially from the modeled estimates.

By evaluating our modeled natural catastrophes across multiple global zones and differing return periods (i.e., likelihoods of occurrence), we can observe the range of possible impacts on our portfolio. We evaluate the impact of single occurrences and study the impact of the aggregation of multiple losses over select periods as part of our corporate risk management.

Climate change may make modeled outcomes less certain or produce new, non-modeled risks. Consequently, we evaluate natural catastrophe models, tools, loss trends and data on a peril-by-peril and region-by-region basis. Evaluations of our clients' risk selection, the quality of the exposure data they provide to us and the tools and processes supporting their risk management are key fundamental components of our underwriting process. In 2023, detailed evaluations included U.S. severe thunderstorm, model-based storm surge, Hurricane Ian post-loss assessments, and wildfire along with completion of a European Union ("EU") windstorm review. In addition, an assessment was completed on the climate-change impact on EU secondary perils (flood/wildfire/windstorm/severe thunderstorm).

Our appetite for natural catastrophe risk is determined by estimated climate patterns and other important factors such as our overall mix of business, market conditions, our market share, regulatory constraints, corporate structure and costs of capital. The complex combination of these, among other factors, determines our appetite for assuming natural catastrophe-related risk.

A key tenet of our business approach is the diversification of risks across risk sources. To the extent that climate change leads to a greater proportion of our overall risk exposure from weather-related events, we could adjust our appetite or required economic returns for the risks we would be willing to (re)insure. In addition, climate change may lead to shifts in population densities and the location of physical assets, which could drive our exposure opportunities.

Based on our ongoing evaluation of climate-related risks, our current exposure remains within our risk appetite. We continually measure and monitor our evaluations and assumptions to adjust our views on risk for new information. Since most property/casualty (re)insurance contracts are one year long, we can adequately adjust the price and manage risk efficiently and effectively.

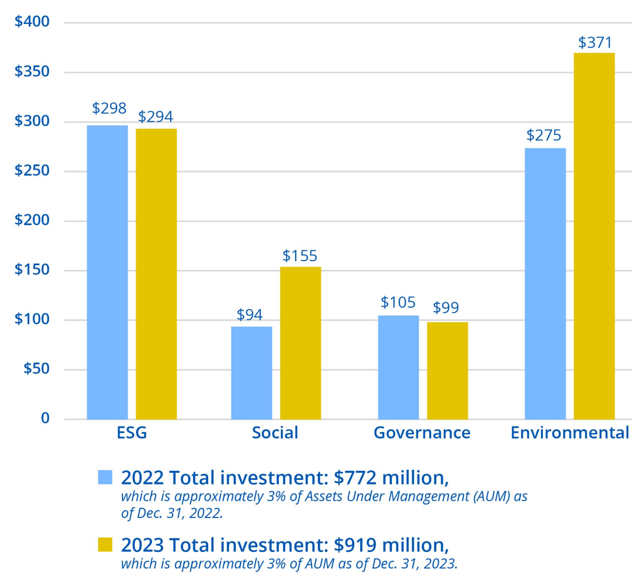
Investments. On an ongoing basis, we assess the potential financial impacts of climate change on our investment portfolio. This analysis includes a full understanding of various climate-change factors, metrics and scenarios.

Our Investment team engages with data providers and uses third-party tools to help benchmark and understand our portfolio's climate impact profile. Analysis of the relevant climate risks and exposures, including scenario analysis across our portfolio, is a part of this process.

We also recognize the need to examine the portfolio's exposure to the transition and physical elements of climate risk. Future greenhouse gas ("GHG") emissions and controversial business practices can expose the portfolio to stranded asset risks over time. Our Portfolio Carbon Risk Rating can indicate how issuers are prepared for a transition over time and provide a forward-looking analysis. Physical risk metrics include analysis of the issuer's physical risk management plans and exposures to major hazards that might increase due to climate change.

Making Responsible Investments. A continued focus on ESG factors remains core to our decision-making and inclusion of responsible investments in the portfolio. We have made certain investments over time that reflect our consideration of ESG factors in internal and externally managed investments. Responsible investments currently total approximately 3% of our total AUM as of Dec. 31, 2023.

Responsible Investing ($M)



Environmentally Efficient Operations. At Arch, we are working to reduce and responsibly manage the impacts our operations have on our world's natural environment. By applying our energy-efficient strategies to lower our emissions, we can improve our operational efficiency. In this report, we share the results of an assessment of our 2020, 2021, 2022 and 2023 GHG emissions and provide an overview of our approach to not only measure our carbon footprint, but also align on a go-forward strategy to address and reduce our carbon emissions.

Greenhouse Gas Emissions and Methodology.

We continue to measure our global emissions across Scopes 1, 2 and 3 (select categories as reflected in the table). These figures were calculated using a verified methodology in line with the Greenhouse Gas Protocol's[3] reporting standards. The data marks four years of GHG computations.

2023 Highlights of Our Emissions Data:

- Our total Scope 1, 2 and 3 emissions increased by 18% year-over-year, primarily driven by our increased vendor spending in conjunction with our company's growth. Our total operational footprint (Scope 1 and 2 emissions), however, decreased by 6% and 15% from our base year of 2020. This decrease is observed before accounting for the purchase of renewable energy certificates, which further reduce our Scope 2 emissions and are a key facet of our efforts to source renewable energy for our operations.
- A driver of our emissions reduction centers around our efforts to right-size our operations. Our global square footage decreased by 7% while the emissions from our facilities dropped 9%, reflecting a 2% decrease in our facilities' emissions intensity by square foot.
- To progress toward our 2030 Scope 1 and 2 emissions reduction target in alignment with the Science-Based Targets initiative (SBTi), in 2022 we purchased 6,394 Renewable Energy Certificates (RECs) from eligible renewable energy projects in the U.S. and Philippines to complement our facilities' existing efforts to source renewable energy, effectively reducing our 2022 Scope 2 market-based emissions by 2,261 metric tons. This reduction allows Arch to make progress against its 2030 Scope 1 and 2 targets. Arch expects sourcing renewable energy will remain a key component of its decarbonization strategy in the coming years.
- Despite an 11% increase in our global headcount, the intensity by full time employee ("FTE") of our business travel emissions decreased by 1%.
- In addition to our efforts to decarbonize our operations, we also strive to neutralize our remaining Scope 1 and 2 emissions by purchasing carbon offsets from verified high-quality projects that generate positive impacts in local communities, including:
    - A Gold Standard-certified project in Uganda, centered on rehabilitating non-functioning boreholes to increase access to safe and clean water. This program carries a charitable function where generated income is donated toward rhino protection.
    - A Verra-certified project in Malawi, targeted on distributing improved fuel-efficient cook-stoves across households. By burning wood more efficiently, these cookstoves save fuel, decelerate deforestation in Malawi and reduce health hazards associated with indoor smoke pollution.

Improving Efficiency and Setting Targets for GHG Reduction. Over half of Arch's operational carbon emissions come from electricity powering our worldwide offices. Monitoring and reducing our office electricity and natural gas consumption levels are priorities for our global facilities team and our environmental sustainability committee, "Blue Goes Green." While we are an office-based company that primarily leases our building space, we still see strong value in analyzing our Scope 1 and Scope 2 emissions to identify the areas where we can work to improve efficiencies each year.

Aligning with the SBTi, we recently defined the activities, boundaries, timeline and scope of ambition for our GHG reduction targets. In 2022, we set the following targets:

1. **Commit to reducing absolute Scope 1 and Scope 2 GHG emissions 42% by 2030, from a 2020 base year, and;**
2. **Commit to achieving net zero operations by 2030 by purchasing carbon removal offsets for our remaining Scope 1 and Scope 2 emissions.**

Our decarbonization strategy continues to focus on promoting energy efficiency measures within our global facilities, sourcing renewable energy through utility providers, purchasing RECs, and right-sizing our office and data center portfolio to fit the needs of our operations. We will adjust this strategy over time to meet our targets.

[3] World Resources Institute and the World Business Council for Sustainable Development. 2015. "The Greenhouse Gas Protocol - A Corporate Accounting and Reporting Standard, Revised Edition." WRI and WBCSD. Available at: https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

Arch Capital Group Ltd. 2020 - 2023 GHG Inventory Results* Scopes 1-3 Emissions		2020 Emissions (metric tonnes CO2e)	2021 Emissions (metric tonnes CO2e)	2022 Emissions (metric tonnes CO2e)	2023 Emissions (metric tonnes CO2e)	2023 vs 2022 %
Scope 1	Natural Gas	249	265	252	256	2 %
	Diesel	18	24	46	22	(52)%
	Gasoline	—	—	2	—	(100)%
	Jet Fuel	213	389	544	717	32 %
	Refrigerant Leakages	445	440	504	448	(11)%
Total Scope 1 Emissions		925	1,118	1,348	1,443	7 %
Scope 2	Electricity	6,394	5,802	5,244	4,841	(8)%
	Natural Gas	552	431	383	316	(17)%
	Diesel	3	3	13	1	(92)%
	Steam	108	120	177	144	(19)%
	Chilled Water	104	111	114	112	(2)%
Total Scope 2 Emissions (Market-based)		7,161	6,467	5,931	5,414	(9)%
Total Scopes 1+ 2 Emissions (Market-based)		**8,086**	**7,585**	**7,279**	**6,857**	**(6)%**
Scope 3	**Cat 1:** Purchased Goods and Services**	31,129	32,702	36,935	44,083	19 %
	Cat 2: Capital Goods**	6,027	5,887	6,802	11,733	72 %
	Cat 3: Fueled- and Energy- Related Activities***	2,086	2,638	2,694	2,121	(21)%
	Cat 4: Upstream Transportation (Courier Services)	398	507	466	429	(8)%
	Cat 5: Waste*****	173	176	63	0	(100)%
	Cat 6: Business Travel	4,566	2,200	10,552	11,491	9 %
	Cat 7: Employee Commuting	4,004	3,565	5,636	7,490	33 %
	Cat 8: Upstream Leased Assets	2.6565	3.9757	5.8159	14.1070	143 %
	Cat 13: Downstream Leased Assets	727	1,525	1,438	591	(59)%
Total Scope 3 Emissions		49,113	49,204	64,592	77,952	21 %

Total Scopes 1, 2 and 3 Emissions (Market-based)		**57,199**	**56,789**	**71,871**	**84,809**	**18 %**
Total, adjusted for RECs purchase	**Purchase of RECs (in MWh)**	**n/a**	**6,624**	**6,394**	********	********
	Total Scope 1 and 2 (Market-based, adjusted for RECs)	**8,086**	**5,029**	**5,018**	********	********
Facilities Emissions/sqft		**0.0068**	**0.0063**	**0.0057**	**0.0056**	**(2)%**
Facilities Emissions/FTE		**1.70**	**1.48**	**1.28**	**1.06**	**(17)%**

*Emissions calculations are based on a combination of actual, estimated and extrapolated data, and are calculated in accordance with the GHG Protocol guidelines. We are committed to continually improving our data collection, management and calculation processes. Our 2020, 2021 and 2022 GHG emissions were retroactively calculated to reflect improved facility and vendor spend data. Our emissions reduction targets are now based on the recalculated 2020 baseline year emissions. As our calculation methodology is refined in future years, our emissions numbers are subject to change. Scope 3 emissions do not include the direct emissions of invested assets.

**Scope 3 Category 1 emissions are calculated on the basis of our 2023 operating expenses, while Scope 3 Category 2 emissions are calculated on the basis of our 2023 capital expenditures.

***As part of our efforts to apply the most up-to-date calculation methodologies, Scope 3 Category 3 emissions have been recalculated to integrate leading upstream emissions factors developed by the International Energy Agency (IEA).

****We are in the process of drafting our plans for REC procurement for the 2023 reporting period.

*****To align our greenhouse gas accounting with our financial accounting, we shifted to calculating spend-based emissions using data collected on an accrual basis (i.e., from our Trial Balance). This change was retroactively applied to historical years to ensure greater comparability. As a result, waste activity is now assumed to be captured within our wider purchasing activity (Category 1). Notwithstanding this shift in data collection, the emissions associated with waste are immaterial.

Arch Capital Group Ltd. 2023 Energy Use by Region

		Asia	Australia	Europe	Latin America	Middle East	North America	TOTAL/ Average
Electricity Consumption (in kwh)	Renewable	0	0	371,134	0	0	3,364	374,498
	Non-Renewable	635,603	118,908	1,183,341	742,852	5,829	13,294,431	15,980,964
	Total	635,603	118,908	1,554,475	742,852	5,829	13,297,795	16,355,462
	(%) from Renewable Sources	0%	0%	24%	0%	0%	0.03%	2%
	(kwh/sqft) Normalized Electrical Power	9.91	9.41	8.84	23.49	15.30	16.33	13.88
Energy from Electricity (in GJ)	Energy from Electricity	2,288	428	5,596	2,674	21	47,872	58,879
	Percentage of consumed energy from the grid	95%	92%	11%	19%	100%	74%	n/a
Energy Consumption (in GJ)*	Renewable	—	—	1,336	—	—	12	1,348
	Non-Renewable	2,411	465	51,951	13,783	21	64,764	133,395
	Total	2,411	465	53,287	13,783	21	64,776	134,743
	(%) from Renewable Sources	0 %	0 %	3 %	0 %	0 %	0.02 %	1 %
	(%) from Non-Renewable Sources	100 %	100 %	97 %	100 %	100 %	99.98 %	99 %
Calculated Emissions, incl. fleet (in mtCO2e)	Scope 1 Emissions	32	6	264	699	0	442	1,443
	Scope 2 Emissions (Location-based)	439	78	337	278	3	4,557	5,692
	Scope 2 Emissions (Market-based)	439	78	413	278	3	4,203	5,414
	Scope 1+2 Emissions (Location-based)	471	84	601	977	3	4,999	7,135
	Scope 1+2 Emissions (Market-based)	471	84	677	977	3	4,645	6,857

*Includes all reported energy consumption across all facilities, including fleet vehicles
Assumed corporate jet under Bermuda (Latin America) region
Assumed jet fuel conversion to Gigajoules to be equivalent to diesel
Assumed a conversion rate of 10 liters of fuel per kilometer for fleet vehicles reported in distance data
Assumed a conversion rate of 1 kWh of electricity per mile for fleet vehicles reported in distance data