



2020 Task Force on
Climate-Related Financial
Disclosures Report

Introduction

At Liberty Mutual we are committed to transitioning to a low-carbon economy. The insurance sector sees the impact of climate change firsthand as extreme weather events affect policyholders in many parts of the world.

As a leading Property and Casualty (P&C) insurer that touches nearly every sector of the global economy, we recognize the role our products and services play in the financial ecosystem. We recognize that we have an important role to play in supporting climate resiliency through our risk management, underwriting and investing activities. We are committed to undertaking this journey toward a low-carbon economy in a responsible and strategic manner.

We are focused on creating and implementing an enterprise-wide climate change approach that thoughtfully addresses both the risks and opportunities presented by climate change, while supporting our customers, investors and employees in their respective efforts to advance and adapt to a low-carbon future.

Anchored in that philosophy, Liberty Mutual is undertaking a responsible energy transition. We are de-emphasizing our exposure to fossil fuels, while increasing our exposure to and investment in more sustainable alternatives. The economy and energy sector are poised for a massive transition to a future that is powered by alternative energy sources, which includes renewables. However, rapidly walking away from all fossil fuel projects and investments could cause supply disruptions and economic harm to workers, communities and businesses that are reliant on these industries. Therefore, we are pursuing a careful transition strategy – one that is informed by technological and regulatory changes, market forces and reliable climate data.

Over the coming year, as part of our environmental, social and governance (ESG) integration work, we are also looking to identify and incorporate material climate-related performance indicators into our underwriting and investment processes. To support this, we have onboarded multiple ESG data providers and have given portfolio managers access to expanded climate data.

Liberty Mutual has embraced the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) that focus on four core elements of an organization's climate approach: Governance, Strategy, Risk Management and Metrics & Targets. The following report provides an overview of Liberty Mutual's progress in each of these four areas. We believe this report helps demonstrate how we are thoughtfully transitioning our business while protecting and supporting the interests of our policyholders and capital providers. We plan to issue a TCFD report annually and will enhance our disclosures as we make additional strides in our enterprise-wide climate approach.

Thank you for reading this report. We recognize that transitioning to a low-carbon economy is a journey. In 2021 and beyond, conversation and insights from our stakeholders are critical to finding effective ways to address climate risks and opportunities across our global businesses and operations.

We have created a governance structure that allows for effective oversight, decision-making and execution of our approach to climate change risks and opportunities. The role of each of the bodies involved in the climate oversight governance structure is discussed below.

Governance Bodies

Board of Directors

The Liberty Mutual Board of Directors has oversight of Liberty Mutual's overall ESG approach, including climate-related risks and opportunities. The Board Risk Committee has responsibility for monitoring and overseeing all risks, including climate-related risks. The full Board considers material climate-related information when reviewing and guiding strategy.

Executive Leadership Team

Addressing climate change is part of the environmental pillar of our ESG program, which is among the corporate priorities. The Executive Leadership Team, led by the CEO, has management-level responsibility for overseeing our strategic response to climate change.

ESG Operating Committee

The Liberty Mutual ESG Operating Committee is a management-level body charged with identifying material ESG topics that impact the company, developing the company's ESG strategy and operationalizing it in partnership with the business units and functions. Chaired by the Chief Sustainability Officer (CSO), the Committee includes subject matter experts from across the business and liaises with all business units and corporate functions. The ESG Operating Committee prioritizes issues, develops recommendations and actionable contingency plans and sets targets for review by the Board and the Executive Leadership Team.

Climate Council

In 2020, we further formalized our management of climate-related risks and opportunities through the establishment of an enterprise-level Climate Council. The Council is chaired by the Senior Vice President of Sustainability Solutions and is comprised of a cross-functional team inclusive of representatives from each of our businesses, as well as representatives from the investments, enterprise risk management, public affairs and finance functions. The Council meets bimonthly and reports directly to the ESG Operating Committee. The Council's mission is to embed consideration of climate-related risks and opportunities throughout the enterprise and to ensure that climate-related risks and opportunities inform strategy, financial planning, underwriting and investment decisions and product development.

To support this mission, the Climate Council:

- Supports the development of climate-related policies and frameworks
- Monitors, identifies and shares knowledge of emerging climate issues, risks, opportunities and trends
- Works with areas of the business to advance climate-related actions
- Coordinates implementation of climate efforts across the enterprise
- Measures progress and recommends adjustments, as necessary

The Climate Council also works in very close partnership with Enterprise Risk Management (ERM) to catalog and understand ESG-related risks, inclusive of climate-related risks, and coordinates appropriate measurement, monitoring and mitigation activities.

Governance Process

The ESG Operating Committee is responsible for monitoring climate-related issues and informing the Board and the Executive Leadership team on these issues. The CSO gives regular updates to both of these bodies. Any critical or urgent issues are also raised in between regular updates.

The ESG Operating Committee reviews the following climate-related ESG initiatives and targets:

- Enterprise ESG framework
- ESG integration in investments
- ESG integration in underwriting
- Sustainability in products and services
- Environmental footprint of operations
- ESG integration in vendor management
- Internal and external communication on ESG
- Regulatory/rating agency changes on ESG issues

Climate issues are also addressed by departments, groups and individuals across the enterprise. The CSO's office, through the ESG Operating Committee and the Climate Council, coordinates between groups to facilitate an enterprise-wide transition to a low-carbon economy.

ESG Governance at the Business Level

We are strengthening our ESG governance structures at the business level, as illustrated below.

Global Retail Markets has a cross-functional working team tasked with identifying key areas of focus for ESG throughout the organization spanning policyholder actions, internal operations and external partnerships.

Global Risk Solutions' London-headquartered business segment, Liberty Specialty Markets, has created "The Climate Change Forum" that identifies and assesses climate risk within the business unit, creating an organization-wide feedback loop between departments' risk managers, relevant sub-committees and boards and the Liberty Specialty Markets President & Managing Director.

Liberty Mutual Investments in 2021 established an ESG Steering Committee, which enables senior leaders to guide strategic decisions pertaining to ESG, as well as an ESG Operating Committee, which is responsible for ongoing management of ESG integration efforts.

Enterprise-Level Strategy

Our enterprise-level climate strategy is comprised of four elements:

1. Understanding the impacts that climate change is having on our customers, employees and society.
2. Developing innovative solutions to help our customers meet the challenges posed by climate change and supporting customers on their own transition journey.
3. Adapting our business and operations to meet the challenges posed by climate change.
4. Seizing investment opportunities in the low-carbon economy.

This past year, we formalized a set of Climate Aspirations that shape Liberty Mutual's enterprise-level climate transition strategy. These Aspirations also give the businesses a directional roadmap to adapt and implement climate strategies and initiatives within their operations. Embedded within the Climate Aspirations is a values-driven philosophy regarding climate issues. To us, being values-driven means proactively adopting climate strategies that emanate from Liberty Mutual's purpose — to help people embrace today and confidently pursue tomorrow — and proactively supporting the responsible transition to a low-carbon economy.

We are also working at the enterprise level to advance our implementation of TCFD recommendations and enhance our future TCFD disclosures.

Business-Level Strategies

The enterprise-level strategy provides guidance for businesses to define and implement their own climate efforts. The businesses, in turn, identify lessons and best practices from their climate journeys, which are used to inform and hone the enterprise-level strategy.

The below provides an overview of the businesses' climate journeys and the measures they are taking to address climate risks and opportunities.

Liberty Mutual's Climate Aspirations

Aspiration 1:

We are committed to transitioning to a low-carbon economy and are undertaking activities that will help inform our climate strategies.

Aspiration 2:

We are building capabilities to help us monitor and measure the progress of our transition journey.

Aspiration 3:

We support the development of responsible investment and underwriting guidelines that will enable our climate journey while supporting businesses in traditionally high-impact sectors that are committed to transitioning to a low-carbon economy.

Aspiration 4:

We aim to support innovation that can significantly impact the pace and design of the transition to a low-carbon economy.

Aspiration 5:

We favor a '3-Rs' strategy for our operations low-carbon transition roadmaps with preference being given to i) reducing our emissions through improved efficiency, followed by ii) investing in renewable/alternative technologies and businesses and finally, iii) buying RECs (renewable energy credits) and offsets.

Addressing Climate Change in Underwriting

Liberty Mutual's underwriting strategy focuses on **Creating Strong Partnerships, Building Solutions** and **Considering ESG in Processes**. This strategy is underpinned by risk management, discussed further in the [Risk Management](#) section of this report.

Creating Strong Partnerships

Working with policyholders to help facilitate their low-carbon transition journeys through advisory services and education

Partnering with policyholders is a significant opportunity for Liberty Mutual to make an impact in the climate challenge while building stronger, long-term customer relationships. Through a variety of products and programs, we work to encourage policyholders to reduce their susceptibility to losses from severe weather-related natural catastrophes and to incentivize them to adopt more low-carbon and climate change mitigating behaviors.

Building Solutions

Identifying new risks that need to be covered, new innovative product offerings that will be built out over time and new types of projects that will need to be insured

The opportunity to build a sustainable underwriting portfolio is a significant one, and we are evaluating new emerging industries, products and types of projects that will need to be insured. One of our most important areas of focus is alternative energy sources. We are steadily and thoughtfully expanding our portfolio and expertise in this growing sector and now have an expansive book of business globally serving solar, wind, geothermal, biomass and hydroelectric energy segments. We see potential for growth here and are working closely with key broker partners and clients to create an industry-leading alternative energy strategy.

Liberty Mutual Carbon Reduction/Climate Change Mitigation Incentive and Education Programs for Policyholders¹



ByMile incentivizes lower miles and reduced emissions by offering significant savings for driving less. In 2020, we expanded ByMile and now offer this option in 18 U.S. states, India, Brazil and Chile. We aim to expand this further in 2021.



Discounts for loss mitigation features (e.g., storm shutters in hurricane-exposed geographic areas) that act to directly reduce both the likelihood and magnitude of property damage from severe weather events.



Risk management guides covering all major natural catastrophe perils (e.g., hurricanes, floods, hail) that outline numerous steps policyholders can take to protect their properties and reduce the potential for damage related to severe weather events.



Loss Prevention units staffed by engineers and other technical experts who consult directly with commercial property owners and develop customized action plans to reduce the susceptibility of losses due to severe weather events.

¹This list is not comprehensive and includes only examples of the programs and products Liberty Mutual offers institutional and individual policyholders to adopt climate change mitigation behaviors.

Developing a Suite of Parametric Insurance Products

We are augmenting and scaling our parametric insurance products, which are designed to help close the protection gap against environmental triggers and enhance resilience to better manage crisis events via quick liquidity. If during a contract period the agreed upon climate-related thresholds are breached, a claim is triggered and paid quickly depending on the jurisdiction's regulatory framework, from an automatic to a quick confirmation of the loss. Examples of contract triggers include temperature, precipitation, wind speed, hours of sunshine or biomass (measured by satellite imagery). Parametric insurance products support climate resilience and give policyholders greater security in the face of uncertain climate change-related weather events and conditions.

Examples of Liberty Mutual's climate-related parametric insurance products include:

- **Tropical Cyclone:** Protection based on the latest scientific advances in cyclone modelling that enables Liberty Mutual to create a wind index at any point surrounding a cyclone
- **Frost:** Protection for farmers' harvests against frost, through a loss index based on the nearest weather station
- **Solar Farm:** Protection for solar panel owners and solar farms, combining damage cover against hail and revenue protection based on a bespoke radiation power curve
- **Wind Farm:** Protection against excessive periods of low winds for wind farms
- **Wildfire:** Protection through the use of modern satellite technologies and local forest data supporting reforestation after an event

Parametric Insurance in Practice

In the Caribbean we developed a proprietary wind model to help banana producers. Previously insurance was not available, because of the high probability of hurricane losses and the lack of local loss adjusting capability. The product provides first-of-its-kind protection for producers, for tens of millions of dollars of aggregate exposure.

In Europe, we offer parametric cover for crop producers against a range of environmental challenges – precipitation, humidity, hours of sunshine etc. The modelling service that accompanies it can also assess what yield farmers can expect based on the parameters in the model, providing an opportunity for producers to intervene if production is not on track. Based on our experience in this market, the product is being adapted for Latin America.

Considering ESG in Processes

Embedding climate considerations into our underwriting decisions and measuring these risks

Across our businesses, we are developing a simple, easy-to-understand approach that aims to:

1. Enhance our ability to incorporate ESG transition into our underwriting processes, helping clients understand how they might be impacted by climate change.
2. Support clients' on their own responsible energy transition.

We are in the early stages of pilot programs with ESG data providers to get a better understanding of how we can incorporate existing data and ratings into our underwriting process most effectively.

Addressing Climate Change in Investing

Liberty Mutual is committed to de-emphasizing fossil fuels over time, while increasing our exposure to and investment in more sustainable alternatives. This commitment is built on three pillars: **Reduction**, **Transition** and **Integration**.

Reduction

Gradually reducing exposure to traditional energy and fossil fuels

We are steadily and thoughtfully making reductions in our traditional energy investments, consistent with our commitment to a responsible energy transition.

Transition

Expanding focus on alternative energy sources, new technologies and companies dedicated to advancing a responsible energy transition through Liberty Mutual Investment's (LMI) newly developed Energy Transition Investment Strategy

Our Energy Transition & Infrastructure investment team utilizes its depth of sector expertise and ability to take illiquid risk to identify undervalued, underappreciated, mismanaged and/or uniquely positioned global power and alternative energy assets that exhibit strong risk-adjusted return potential, current cash flows and meaningful downside protection with limited commodity exposure.

We will continue to invest in companies that show proven progress in the shift to clean energy, including advancing our Energy Transition Investment Strategy.

Integration

Integrating material environmental factors, alongside social and governance factors, as part of our overall investment process, and informed by LMI's ESG Framework

To deepen our focus on the integration of sustainability considerations into our investment process, Liberty Mutual became the first U.S. P&C insurer to join the United Nations-supported Principles for Responsible Investment (PRI), the leading international network of institutional investors committed to including ESG factors in their investment decision, as a signatory.



Sunnova Energy

In 2020 we expanded on Liberty Mutual's commitment to sustainable energy by investing in Sunnova Energy. This is part of our long-term strategy of decarbonization and investment in alternative energy sources. Sunnova Energy is one of the leading and fastest-growing residential solar and energy storage service providers in the U.S. Our investment supported their continued growth and deployment of residential solar systems and battery storage units.

Enterprise Operations Strategy

While working toward a low-carbon economy through our underwriting and investments, we are also reducing our own operational impacts.

The COVID-19 pandemic changed the way we operated in 2020, leading to a significant reduction in our footprint from 2019 levels. While Liberty Mutual employees worked remotely for most of the year, we took this opportunity to accelerate eco-friendly changes across offices, to ensure a more sustainable workplace when offices reopen across the globe.

For example, we converted our Boston headquarters to full LED lighting three years ahead of a planned capital project, leading to an anticipated carbon footprint reduction of 841 metric tons annually and anticipated annual run rate savings of \$190,000 (1,189,404 KWH) due to reduced electricity consumption.

Amidst COVID-19, we pressed forward with other initiatives to improve our operational footprint. We particularly focused on establishing an enterprise-wide strategy for lowering emissions across all offices and operations, solidifying relationships and partnerships across markets to help Liberty

Mutual reduce our carbon footprint for the long-term. Other 2020 initiatives included the following.

- **Printing Conservation:** Through Liberty Mutual's Print\$mart initiative, employees conserved 23 million gallons of water, saved 27,111 trees, reduced CO2 emissions by 3,214 tons and reduced greenhouse gas emissions by 1,130 tons. Our program captures printing activity regardless of in-office or remote work.
- **Paper Recycling:** We continued to work closely with a record storage vendor to shred and recycle files eligible for destruction for offices that remained open. Liberty Mutual recycled 1,207 short tons of paper, avoiding approximately 1.8 million pounds of CO2 emissions.
- **Furniture Reuse:** We diverted over 4.77 tons of furniture from waste disposal and donated \$56,685 in furniture to local nonprofit organizations and schools.

Our employees are an active part of our low-carbon journey, sharing best practices and participating in eco-conscious programs through our internal employee sustainability group. As most employees shifted to work-from-home, the sustainability group shared tips on Liberty Mutual's internal portal on how to make homes and personal spaces more eco-friendly.

Best-in-class Buildings

We are a primarily office-based business, and our real estate footprint is a priority for emissions reductions. In the U.S., six of our offices are certified to Leadership in Energy and Environmental Design (LEED) standards. Our London office has also received Building Research Establishment Environmental Assessment Method (BREEAM) certification.

While Liberty Mutual builds new and retrofits existing buildings to LEED standards, we are also working to reduce the impact that this construction has on the environment. We require all construction contractors to follow indoor air quality guidelines and practices, including using recycled/recyclable carpet, low VOC (volatile organic compounds) adhesives, sealants and paints.

Greening the Way We Get Around

100% of Liberty Mutual's U.S. automotive fleet (field drivers) consists of either PZEV (partial zero emission vehicle), LEV (Low Emissions), ULEV (ultra-low emissions), SULEV (super ultra-low emissions) or flex-fuel vehicles. Due to the COVID-19 pandemic, there was also a significant decrease in mileage and gallons consumed.

Our impact in 2020:

- 32% reduction in miles driven.
- 34% decrease in gallons consumed.
- 0.49% increase of MPG.
- 42% reduction in CO2 emissions.
- \$1.9 million in fuel cost savings.

We will continue to improve our fleet and operations to drive further reductions over 2019 levels.

Effectively evaluating and managing risk is a core aspect of insurance. Unlike other financial industries, the insurance industry is focused on managing not just average risks – but the extremes of risk.

This is highly relevant from a climate risk perspective as climate change can increase the frequency and severity of extreme weather events which result in significant social and economic devastation.

At Liberty Mutual, we assess risk – including climate risk – both at an enterprise-level and within each business line. We are constantly evolving our risk management capabilities to meet the expected needs of our customers and regulators. We are refining what we know works, while also evaluating new tools to assess and prepare for climate risk across our businesses.

The Liberty Mutual's ERM function is responsible for identifying, assessing, monitoring and mitigating all risks, inclusive of climate-related risks. ERM has been working in partnership with the Climate Council to systematically review and assess climate risks and mitigation processes across the enterprise.

Liberty Mutual has a mature, well-developed catastrophe risk management discipline. Central to this discipline is an ERM-led catastrophe risk management governance system which derives natural catastrophe gross and net tolerances and limits at the corporate and business unit levels based on the company's risk appetite, capital and earnings. ERM maintains exposure databases and stochastically models losses for key perils, then reports on modeled losses relative to limits and tolerances on a quarterly basis. The company uses a combination of sound underwriting practices, exposure management and reinsurance to mitigate the financial impact of extreme natural catastrophe events.

Recognizing the increasing threat from climate change, ERM has a specialized Catastrophe Research and Development function to analyze catastrophe models for perils such as hurricane, earthquake, tornado/hail, wildfire and winter storms. This group customizes vendor models or builds specific models to create what we call the "Liberty View of Risk," which helps Liberty Mutual make informed underwriting, pricing and reinsurance decisions that will protect customers.

For many years, the ERM Catastrophe R&D function has included climate scientists who provide expert insights on climate risks on a day-to-day basis. These scientists play an essential role in translating the latest in climate science and climate risks to the businesses. Their role is all the more important given the current state of climate models. As noted in a recent study,¹ climate models are best suited to capturing long-term changes in average conditions. Applying climate models in isolation to understand changes in short-term extremes can lead to unintended consequences and poor risk management. That is why Liberty Mutual pairs climate models with catastrophe models, which are specifically designed to manage extreme events, allowing for a more accurate understanding of what could happen to extreme events in the near term, based on the best available climate science. As this work continues, we need to ensure that regulatory expectations do not get ahead of the data/modelling capabilities.

To understand climate risks within our investment portfolio, we are in the process of developing a systematic climate risk assessment approach. This work is rooted in our belief that climate change can impact the overall risk-return profile of our holdings, and that different holdings face different types and degrees of risk.

¹Business risk and the emergence of climate analytics - Nature Climate Change | VOL 11 | February 2021 | 87-94 | www.nature.com/natureclimatechange 87

Physical Risks in Underwriting

In general, the greatest physical risk concerns posed to underwriting by climate change are the potential for increased frequency and severity of extreme weather-related events, which impact both the magnitude and volatility of losses.

Like our peers in the industry, we rely on catastrophe models to evaluate severe weather-related risks. Catastrophe models that exist in the industry today are a key tool in the toolbox to manage emerging climate risks, but alone they are insufficient to manage forward-looking climate risk. We have an ongoing effort within ERM's Catastrophe R&D function to improve our catastrophe models to better evaluate and capture climate risks. We are pursuing several initiatives, described below.

• **Getting better data in underwriting**

We have always depended on data to shape our understanding of risk. But to be able to accurately model the fastest-changing risks — including flooding, sea level rise, storm surge and wildfires — we need high quality, reliable exposure data at the hyper-local level. This requires a level of data quality and sophistication beyond what the insurance industry has traditionally needed to model more developed risks like wind and earthquake. We are now adopting new methods to get the clean, accurate view of data required to get a sufficiently clear picture of today's and tomorrow's risk.

• **Implementing more rigorous stress tests in underwriting**

With better data, we are also working to develop more forward-looking views of risk, regularly stress-testing scenarios for the next 10-30 years, to ensure the best possible coverage and risk mitigation strategies for our policyholders and our businesses. By looking at a decades-long time horizon, we are better able to project and account for extreme scenarios, like changes in tropical cyclone frequency and intensity. This type of stress testing informs Liberty Mutual's understanding of the financial impacts (earnings, capital and liquidity) of various scenarios and combinations of scenarios, allowing for increased confidence that the current portfolio of exposures does not result in a capital or liquidity impact that exceeds established tolerances.

• **Driving climate data innovation**

- **Upgrading our technology and analysis:** In 2020, we partnered with Jupiter, a leading data and analytics provider of hyper-local, current- hour-to-50-plus-year probabilistic risk analysis for weather in a changing climate. We hope to leverage this partnership to drive innovative, forward-looking risk management strategies for some of our largest long-term risks and to assess operational risk within Liberty Mutual's own enterprise.
- **Partnering for deeper insights:** We work with external experts and partners to advance our own and our industry's capabilities in climate risk modeling. Recently, we partnered with MIT to build a hybrid machine learning and physics model that better assesses flood risk. While our initial use case is for one segment of our homeowners business, the model could provide greater capabilities across Liberty Mutual.

Transition Risks in Underwriting

Through the ERM/Climate Council processes, we are further exploring transition risks. One of the short-term transition risks that the industry faces is government mandates or increased regulation of products. Increases in property catastrophe risk associated with climate change will manifest themselves gradually over a period of many years, while insurance policies are usually of one-year duration. This allows P&C insurers to adjust rates, coverages and underwriting guidelines, as required, in response to trends that demonstrate an increase in the frequency and/or severity of natural catastrophe events. An emerging concern is that regulatory regimes do not allow sufficient flexibility to ensure that pricing is set at actuarially sound levels, and, in effect, impose rate review and approval processes that are slow to react to changes in risk levels. Should P&C insurers be unable to adjust rates to account for increases in natural catastrophe risk, they may need to explore restricting the amount of business written in certain markets.

Global Risk Solutions' London-headquartered Business Segment, Liberty Specialty Markets' Approach to Climate Risk

Over the past two years, Liberty Specialty Markets has put in place several business-specific mechanisms to monitor and assess climate financial risks. These include:

- A climate-focused dashboard that provides a snapshot of climate change risks and activities to the relevant Liberty Specialty Markets Risk Management Committees, allowing for appropriate management action.
- A climate risk assessment conducted every six months, which assesses climate risks to different business areas over a 30-year horizon, based upon three speed of policy action scenarios (i.e., early policy, late policy, no policy).

Liberty Specialty Markets is continuing to refine these tools and processes in 2021 and will share best practices that can be applied to the enterprise and/or individual Liberty Mutual businesses.

Metrics & Targets

Liberty Mutual measures and reports on climate risk in a number of different ways. Our chief metrics and targets are included below.

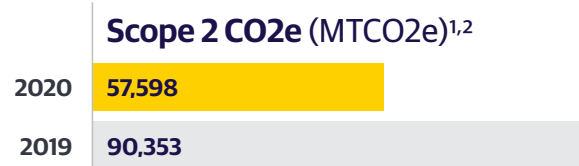
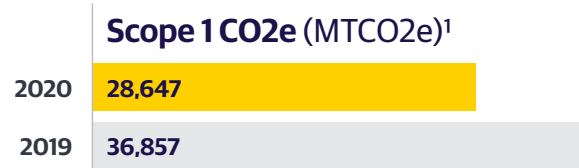
Greenhouse Gas Emissions

As a result of work-from-home and a halt to most business travel, our emissions footprint fell significantly in 2020. As Liberty Mutual prepares to reopen offices, we have identified more sustainable resources that will help decrease our emissions from 2019 levels.

We are in the process of establishing emissions reduction targets for our operations. Given that 2020 emissions were an outlier because of COVID-19 operations, we have restated 2019 inventories to include global operations and this will serve as the current baseline for future reduction targets.

Natural Catastrophe Losses

In 2020, the company reported pre-tax catastrophe losses, net of reinsurance, of \$2.5 billion, which included approximately \$150 million of losses from civil unrest. Natural catastrophe reported pre-tax losses, net of reinsurance, of \$2.4 billion were above expectations due largely to record levels of Atlantic hurricanes (30 named storms, 12 U.S. landfalls, both all-time highs) and above-average tornado/hail and wildfire activity during the year.



¹ Previous reporting for CO₂e emissions included U.S. operations only. 2020 figures now include our global operations, and we have recalculated 2019 to reflect this as well.

² Scope 2 emissions are calculated using location-based methods.

³ Scope 3 includes commercial air and ground travel, including employee mileage reimbursement.

Progress Against Coal Target

In December 2019 we announced our global policy on coal underwriting and investing, solidifying our commitment to:

- No longer accept underwriting risk for companies where more than 25% of their exposure arises from the extraction and/or production of energy from thermal coal.
- Not make new investments in debt or equity securities of companies that generate more than 25% of their revenues from thermal coal mining or utility companies that generate more than 25% of their electricity production from thermal coal.
- Phase out coverage and investments for existing risks that exceed this threshold by 2023.

To date, the coal policy has been implemented as written and we have taken the following actions in 2020:

- We phased out coverage and new investments for existing risks that exceed the 25% threshold three years ahead of the 2023 target.
- Our investment exposure to issuers that exceed the thresholds in its thermal coal policy declined by \$263 million from \$561 million to \$298 million.
- We exited our underwriting relationship with Adani Carmichael and entered into an agreement to exit thermal coal investments in Alberta, Canada, identifying a partner that is also committed to a decarbonized future.
- We also established a referral process for Liberty Mutual underwriters to use when they are unsure of the appropriate action on energy-related issues.

Investment Portfolio

As of December 2020, our total investments in traditional energy were \$3,779 million, a decrease of 16% from 2018. We will continue to assess our traditional energy exposure in 2021, ensuring that we are advancing the transition to a low-carbon economy, while supporting our customers on their own energy transition journey.

Since 2007, we have invested more than \$1.25 billion in wind, solar and hydro power projects and sustainable forestry initiatives. Our total investment in alternative energy sources as of December 2020 was \$861 million. This equates to .92% of LMI's total portfolio holdings.

Total investments in traditional energy¹ (US\$)

2020	\$3,779 million
2019	\$3,841 million
2018	\$4,522 million

Total investments in alternative energy sources (US\$)^{2,3,4}

2020	\$861 million
2019	\$420 million
2018	\$295 million

¹ Includes unfunded commitments of US\$67 million (2020), US\$119 million (2019) and US\$521 million (2018).

² In 2020, Liberty Mutual modified its definition of alternative/renewable energy to only include energy derived from solar, wind and hydro sources.

³ 2020 Includes LP, LLC and other equity method investments value of US\$288 million, fixed maturities of US\$180 million and unfunded commitments of US\$393 million. 2019 includes LP, LLC and other equity method investments value of US\$254 million, fixed maturities of US\$22 million and unfunded commitments of US\$144 million. 2018 includes LP, LLC and other equity method investments value of US\$226 million, fixed maturities of US\$6 million and unfunded commitments of US\$63 million. 2019 and 2018 figures have also been restated to reflect this new definition of alternative/renewable energy.

⁴ The increase in 2020 was primarily driven by: (1) investments in solar asset-backed securities and (2) a combination of solar and hydro investments in LP, LLC and other equity method investments.