Morgan Stanley

Navigating the Transition: Managing Climate Risks and Opportunities

Morgan Stanley's Task Force on Climate-related Financial Disclosures Report, 2020

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From Our CEO

Our world faces great uncertainty as the impacts of a global pandemic, changing climate and growing inequalities unfold simultaneously. Against this backdrop, it is increasingly clear that business must engage, not stand apart from, the pressing environmental and societal issues facing us all.

With respect to climate change, the science is clear. It is a reality that demands urgent attention. The impacts of rising global temperatures are already affecting economies and communities worldwide. While no single company can address this challenge on its own, all sectors, including financial services, must work alongside international, national and local governments on sound policies and solutions for a sustainable path forward.

This inaugural report, informed by the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), charts our path so far on this journey. In 2017, Morgan Stanley was among the first supporters of the TCFD's recommendations. This report seeks to describe our progress toward implementing the recommendations, and aims to provide decision-useful information for clients and investors.

Morgan Stanley has long recognized both the risks of a changing climate and the opportunities presented by the coming low-carbon transition. In 2009, we founded our Global Sustainable Finance (GSF) Group out of our conviction that capital markets have an important role to play in protecting the environment and strengthening communities. Over the past 11 years, GSF has helped integrate climate change and sustainability initiatives into our core business activities. We are bringing the firm's thinking to bear on this complex issue as we seek to best serve our clients and communities, and put our business on a sound long-term footing.

Morgan Stanley was among the first Wall Street firms to publicly express support for the United States to remain in the Paris Agreement. In 2017, we set a target of achieving carbon neutrality across our global operations by 2022. In 2018, we committed to mobilize $250 billion in capital to support low carbon solutions by 2030—and have already facilitated more than $80 billion in clean and renewable energy transactions and investments in the first two years.

By harnessing the power of capital markets to support low-carbon transition, we are driving new opportunities for our business and our clients. This is why Morgan Stanley recently announced its commitment to reach net-zero financed emissions by 2050.

Managing risks and pursuing the next generation of opportunities in a world faced with uncertain climate impacts is imperative to the way we shape our products, services, operations and policies.

As in all our endeavors, our core values of Doing the Right Thing, Putting Clients First, Leading with Exceptional Ideas, Giving Back, and Committing to Diversity and Inclusion guide our thinking as we seek to make informed climate-related decisions on behalf of our clients, shareholders and employees.

I thank you for your interest in this report and in our progress on this journey.

James P. Gorman
Chairman and CEO, Morgan Stanley
October 2020

Introduction

Climate change is a growing global challenge that businesses and investors must understand and act on, alongside the public sector. Success will require a combination of mitigation strategies and adaptation to a wide range of environmental and economic impacts, at scale and over time.

As a global financial services firm, Morgan Stanley is a long-standing leader in leveraging capital markets to help scale sustainability solutions. We see an opportunity to address climate change, working alongside our clients, employees, investors and other stakeholders in government and civil society. Our efforts to support climate change mitigation and adaptation encompass our policies, activities, products and solutions. To support the transition to a low-carbon economy, we committed to mobilize $250 billion toward low-carbon solutions by 2030—and raised $80 billion through 2019. To reduce our own footprint, we set a goal to achieve carbon neutrality in our global operations and business travel by 2022.

In 2019, we made strides in strengthening our climate risk management approaches and our sustainable business activity continued to grow rapidly. It was this foundational work, following a decade of leadership on climate change, as described in the following section, that laid the groundwork for Morgan Stanley to announce in September 2020 our new commitment to reach net-zero financed emissions by 2050.

Looking ahead, we will work to further build our capabilities on climate risk management, data integration and climate scenario analysis, in line with TCFD recommendations. As part of that effort, the firm recently joined the Steering Committee of the Partnership for Carbon Accounting Financials (PCAF) and will seek to play a leadership role in capacity building. Once consistent, robust and comparable metrics and methodologies are available, the firm will set its initial financed emissions reduction targets while continuing to help find solutions for our clients. We will also continue to invest in innovative, market-leading climate finance and investment solutions in response to client demand and the imperative to transition to a low-carbon economy.

Our efforts aim to mitigate our climate-related risks, pursue opportunities at scale for our clients and reduce the climate impact of our own footprint. On this journey we are committed to a transparent approach to communicating our progress to investors and other stakeholders.

History of Providing Solutions to Climate Change

This report summarizes the business and operational activities Morgan Stanley is undertaking, using the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) to inform our approach.

This report describes how Morgan Stanley is working to integrate relevant climate change considerations into governance, strategy (including product development), risk management and targets in order to provide long-term benefits to the firm and our clients. This publication complements our annual Sustainability Report, which charts yearly progress across all sustainability goals and topics, and our annual CDP submission on climate-related activity, for which we received an "A" rating in 2019.

We intend to regularly publish climate reports, guided by the TCFD, alongside summaries of climate-related progress in our annual sustainability reports, on our website and in other relevant disclosures.

Morgan Stanley Climate Change Highlights

2006

Submitted first response to CDP (formerly Carbon Disclosure Project).

2009

Created the Global Sustainable Finance Group to lead our strategy to integrate sustainability considerations, including climate change, into core business activities.

2013

Launched the Morgan Stanley Institute for Sustainable Investing, which includes climate change-related thought leadership among its priorities.

2015

Issued a $500 million green bond to support energy efficiency improvement and renewable energy procurement across our operations.

2017

Signed the TCFD statement of support.

Supported two joint corporate statements urging the U.S. federal government to stay in the Paris Agreement.

Committed to achieve carbon neutrality for our global operations by 2022.

2018

Committed to mobilize $250 billion in capital to support low-carbon solutions by 2030.

Piloted climate-related stress tests in partnership with peer institutions.

2019

Formalized the Board of Directors' oversight on climate change with our Chief Risk Officer (CRO) now reporting to the Board's Risk Committee on the firm's management of climate risks.

Joined the Commodity Futures Trading Commission's (CFTC) Climate-Related Market Risk Subcommittee.

Established a firmwide Climate Change Risk Steering Committee and Working Group and a separate Climate Risk Steering Committee within Firm Risk Management (FRM) and appointed a Climate Change Risk Lead for FRM.

EMEA Chief Risk Officer was identified as the Senior Manager responsible for Financial Risks arising from climate change for Prudential Regulatory Authority (PRA) regulated entities in the U.K. Climate risk was covered as a dedicated session in the Morgan Stanley International Group Board strategy day.

Joined the Center for Climate and Energy Solutions' (C2ES) Business Environmental Leadership Council of 35 Fortune 500 companies to promote efficient and durable solutions to the climate challenge.

Hosted our inaugural Sustainable Investing Summit, with three panels dedicated to the climate challenge.

Launched the AIP Climate Solutions Fund, a first of its kind collaboration with the U.S. congregations of Dominican Sisters, to invest in climate solutions and support marginalized communities that are disproportionately impacted by global warming.

The CRO briefed the Morgan Stanley Board of Directors' Risk Committee about climate-related work to date.

2020

Morgan Stanley announced a new commitment to reach net-zero financed emissions by 2050.

Morgan Stanley became the first U.S.-based global bank to join the Partnership for Carbon Accounting Financials (PCAF) and its Steering Committee as part of the firm's commitment to measuring and disclosing its approach to climate change risk and opportunity.

Morgan Stanley Investment Management (MSIM) joined the One Planet Summit asset manager initiative, which is aimed at supporting the One Planet Sovereign Wealth Fund Framework in accelerating the integration of climate change analysis into the management of large, long-term and diversified asset pools.

About TCFD

The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board following a mandate from the G20. The recommendations aim to help companies provide decision-useful information on portfolios, client relationships and operations to investors, lenders and insurers. Staffed by prominent industry experts, the TCFD examined the physical, liability and transition risks associated with climate change, and effective financial disclosures across industries.[1] One member, former SEC Chairman Mary Schapiro, also sits on the Morgan Stanley Board of Directors and the Advisory Board of the Morgan Stanley Institute for Sustainable Investing.

The final recommendations organize corporate disclosures into four key categories: governance, strategy, risk management and metrics and targets. Our TCFD report follows this structure.

CORE ELEMENTS OF RECOMMENDED CLIMATE-RELATED FINANCIAL DISCLOSURES

1

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

2

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning

3

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

4

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

[1] https://www.fsb-tcfd.org/about/


GOVERNANCE

Governance

Morgan Stanley recognizes the significant potential for climate change to impact our clients, investments, operations, employees and local communities. To respond accordingly, we have equipped our businesses to address these unique challenges.

Board and Executive Leadership

Morgan Stanley takes an integrated approach to climate change management, with oversight from firm leadership and input from across the business. The Risk Committee of our Board of Directors assumed responsibility for oversight of climate-related risks in 2019. The Committee was briefed on climate change matters in 2020 where our Chief Risk Officer provided an overview of climate-related work to date. In 2019, climate risk was covered as a dedicated session in the Morgan Stanley International Group Board strategy day.

The Nominating and Governance Committee oversees corporate governance principles and Environmental, Social and Governance (ESG) initiatives, including sustainability reporting. The Committee receives periodic updates from the Chief Sustainability Officer and the Environmental and Social Risk Management (ESRM) Group, including relevant climate-related matters.

Risk Management Leadership

The Chief Risk Officer (CRO) oversees climate-related risks and the remits of several committees (shown on pages 10 and 11) include such risks in connection with our businesses and operations. In 2019, we appointed a Climate Change Lead in Firm Risk Management (FRM) to help coordinate climate risk integration across our business divisions. For the Prudential Regulatory Authority (PRA) regulated entities in the U.K., the Europe, Middle East and Africa (EMEA) CRO has been appointed as the senior manager responsible for Financial Risks arising from climate change by the relevant board.

The ESRM Group helps inform our climate strategy, and manages our Environmental and Social Risk Policy. Approved by the Global Franchise Committee and the Nominating and Governance Committee of the Board, this policy outlines our management approach to environmental and social risks that could impact the firm's reputation, including guidance for incorporating climate risk considerations into due diligence processes and escalating transactions to Regional or Global Franchise Committees and senior management as appropriate in accordance with the Global Franchise Risk Policy.

Sustainability Governance

Morgan Stanley's Global Sustainable Finance (GSF) Group is responsible for driving sustainability integration across policies, activities, products and services. Positioned under the firm's Chief Sustainability Officer and Morgan Stanley's Vice Chairman, the team partners with senior leadership across Institutional Securities, Wealth Management and Investment Management, as well as support services and risk functions such as ESRM and FRM. One of GSF's core focuses is integration of climate change into the firm's decision-making, client solutions and business activities.

Housed within GSF, the Morgan Stanley Institute for Sustainable Investing delivers actionable analysis to accelerate the adoption of sustainable investing and finance, including market-based, low-carbon solutions. The Institute seeks to drive innovation by leveraging the firm's perspective to deliver insight and thought leadership for investors, and develop the next generation of sustainable finance talent. The Institute's Advisory Board, chaired by our Chairman and CEO, helps ensure that our approach to climate change is comprehensive, rigorous and innovative. Members include experts from business, academia, civil society organizations and an independent Morgan Stanley director. The Advisory Board meets twice a year to provide input on the Institute and the firm's sustainability priorities.

Firmwide Executive Committees

To execute all aspects of our climate change strategy, we convene senior leaders across the firm through the following committees, councils and working groups.

The Firm Risk Committee (FRC) is our most senior risk governance body, with primary responsibility for all relevant and material risks, including from climate change. It is co-chaired by our Chairman and CEO and CRO, and includes C-suite executives from across business units and functions, including our CRO. In 2019, the FRC began to analyze how climate change risk may impact the firm, our business and our clients, including by examining the results of scenario analyses conducted by FRM and GSF.

The Executive Climate Change Risk Steering Committee and Working Group were established in 2019. The former is the highest-level governance body dedicated solely to climate change risk, comprising senior leaders from across our business units and control functions. Its purpose is to align our approach to understanding, assessing and managing potential material climate-related risks and to coordinate a comprehensive and strategic firm-wide response. Members are senior leaders from across our business units and functions, including Risk Management. The Working Group tracks significant internal and external developments, coordinates and aligns climate initiatives across the firm, and elevates significant issues to the Steering Committee and senior management.

The Firm Risk Management Climate Risk Steering Committee was created in 2019, and convenes risk managers across relevant risk functions (such as credit, market and operational) as well GSF representatives. Members coordinate information-sharing and support the technical integration of climate change into risk management assessments. The Committee is chaired by the Climate Change Firm Risk Lead.

Europe, Middle East and Africa (EMEA) Climate Risk Working Group oversees Morgan Stanley's response to the PRA's April 2019 Supervisory Statement on "Enhancing banks' and insurers' approaches to managing climate change risk" in the United Kingdom. Members from our U.K. FRM, Regulatory Relations and Government Relations teams, along with GSF representatives, identified potential relevant risks for our U.K. entity and developed appropriate climate scenarios. The Working Group also coordinates approaches with Global Risk Management leadership. For more on our work in response to the PRA's supervisory statement, see page 19.

Regional and Global Franchise Committees oversee franchise risk to the firm, including reputational risks associated with climate change. Members are senior stakeholders from FRM, Legal & Compliance Division (LCD) and other control functions as well as the business units. Our Chief Legal Officer chairs the Global Franchise Committee. Transactions that meet designated environmental and social criteria may require approval by our Regional or Global Franchise Committees as well as senior management. We take tailored approaches to certain sectors and activities, detailed in our Environmental and Social Policy Statement, which also covers climate change.

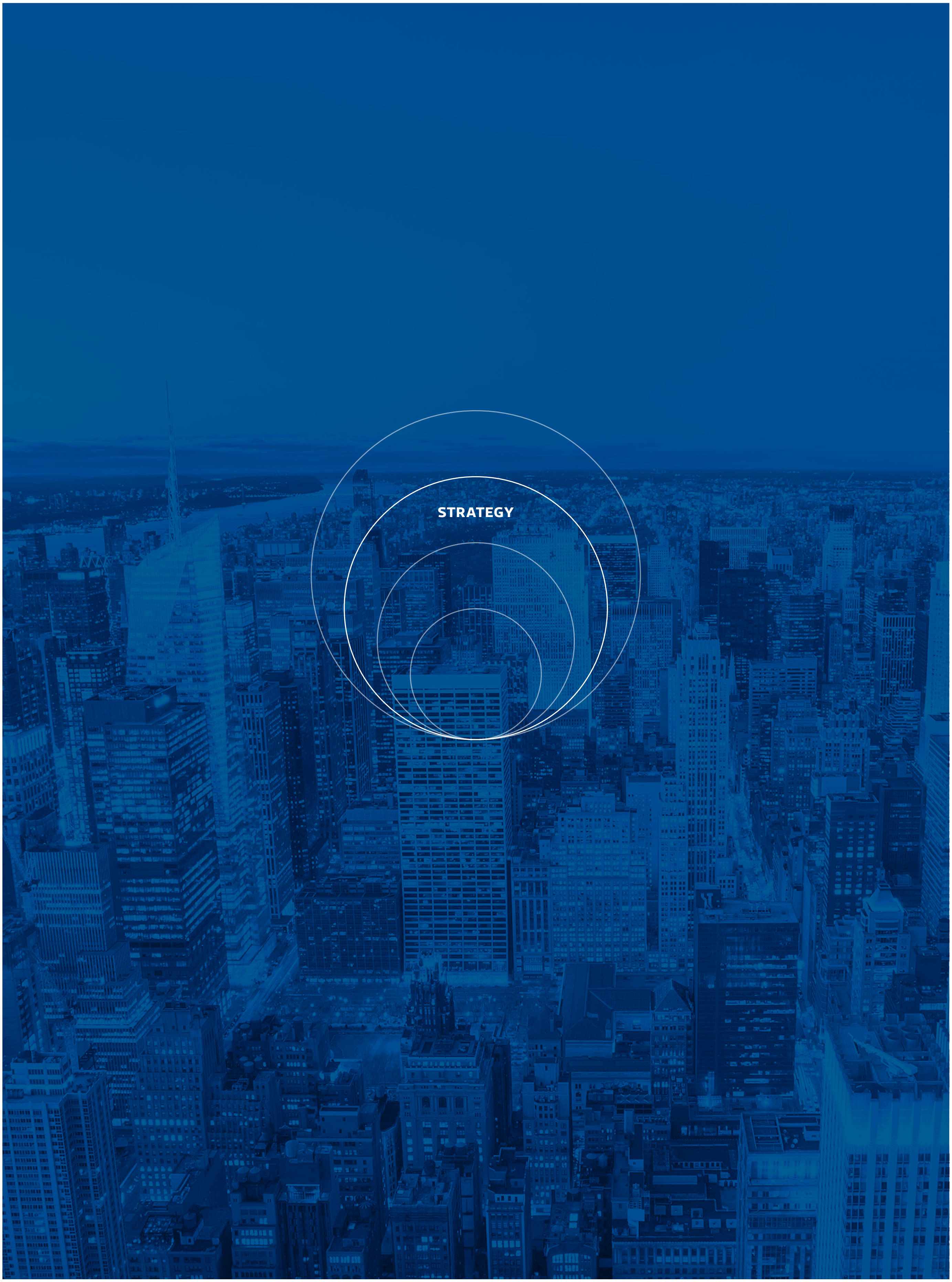
The Sustainability Disclosure Committee seeks to bring a comparable level of rigor to our sustainability reporting as to other public disclosures. It convenes firmwide leaders to provide input on, review and approve our annual CDP response, Sustainability Report, TCFD Report and other corporate sustainability disclosures. GSF chairs the committee, and members include senior stakeholders from Finance, LCD, FRM, Investor Relations, Corporate Communications and our business units, as well as other subject matter experts.

The Global Sustainability Bond Leadership Council is chaired by the firm's Vice Chairman, and includes senior stakeholders from the Global Capital Markets, Investment Banking and Investment Management divisions. Its remit is to advance green and sustainable bond origination and execution globally, by helping guide our strategy for client solutions, investor engagement and thought leadership.

The Investment Management Sustainability Council is the primary governance body that oversees key strategic and resourcing decisions in relation to the business unit's sustainable investing. The Council supports consistent and systematic implementation of sustainable investing across the Investment Management platform, including product development, measurement, education, client engagement and reporting. The Council is chaired by the Head of Sustainability for Investment Management, and comprises senior representatives from all major asset class platforms, support functions and GSF.

The Global Sustainability at Work Steering Committee and Council oversee and coordinate our operational sustainability strategy. Focal points include resource efficiency, renewable energy procurement and generation, and innovative ways to minimize environmental impacts and build the resilience of our operations globally. The Chief Operating Officer of Corporate Services chairs the Steering Committee, whose members include the Head of Corporate Services and Chief Sustainability Officer.

The Sustainable Supply Chain Working Group supports sustainable sourcing practices by identifying strategies likely to reduce ESG risks and opportunities with suppliers that further our sustainability efforts. Members are drawn from our Sourcing, Corporate Services and GSF teams.


STRATEGY

Strategy

The impacts of rising global temperatures on the natural and built environments are becoming more prevalent and intense, driving increased costs to economies and communities. Governments around the world are responding by developing policies to mitigate and adapt to climate change and meet their commitments under the Paris Agreement. The private sector is pursuing product and service innovations and new technologies for consumers that increasingly consider climate and sustainability. In the financial markets, sustainable investing has become mainstream.

As these trends continue, and likely intensify, Morgan Stanley is taking steps to position itself for success in a world shaped by climate change. In September 2020, the firm announced its commitment to reach net-zero financed emissions by 2050. Our new commitment positions Morgan Stanley to be at the forefront of the immense financing required to achieve net-zero emissions globally. We will continue to partner with clients and stakeholders to mobilize capital at scale for the low-carbon transition. By incorporating climate considerations into our business activities, we aim to manage our business for the long term while providing value for our clients and shareholders. As sustainable investing has surged across global markets, we seek to scale innovative financial solutions that mitigate climate change and promote economic resilience.

Our Approach

As we continue to develop our climate change strategy, our priorities are:

Support the transition to a low-carbon economy by mobilizing capital toward low-carbon solutions and publishing industry-leading research and thought leadership for an investor audience

- Morgan Stanley has committed to mobilizing $250 billion to support low-carbon solutions, having raised $80 billion through 2019
- The Institute for Sustainable Investing publishes frequent climate-related material, including, in July 2020, Climate Transition in a Portfolio Context: What Matters and What to Measure with MSIM

Enhance the climate resilience of our operations by minimizing our footprint and enhancing our operational resiliency

- Morgan Stanley is committed to being carbon neutral by 2022
- We are committed to purchasing 100% renewable energy for our own footprint by 2022

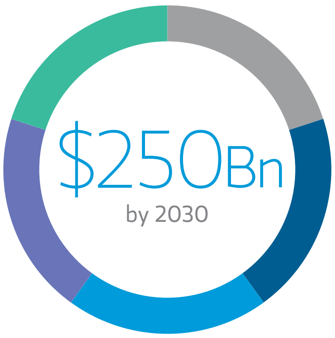
Manage climate change risk by integrating climate change considerations into our risk management processes and governance structures

- Morgan Stanley's FRC and CRO formally oversee climate-related financial risks
- FRM is working to develop appropriate scenarios and stress test models to inform changes to our strategy and risk management process
- Morgan Stanley will support and inform the development of methodologies, tools and frameworks to measure and manage climate change emissions and associated risks in the financial sector

Be transparent and provide relevant and adequate climate-related disclosures in our TCFD report and other publications

- Morgan Stanley commits to regularly publish TCFD reports, and provide interim updates in our Sustainability Report
- Morgan Stanley joined PCAF in July of 2020 and has committed to disclosing some level of scope 3 portfolio emissions within three years as PCAF's methodology is finalized

LOW-CARBON FINANCING GOAL



clean tech financing • renewable energy financing
green bonds • low-carbon investments

Mobilizing Capital to Support Low-Carbon Solutions

In April 2018, we committed to mobilize $250 billion to support low-carbon solutions by 2030. Our business activities in clean technology and renewable energy financing, sustainable bonds and other relevant transactions and investments contribute to this commitment. Through 2019, we have mobilized approximately $80 billion in capital toward this goal. Examples of low-carbon solutions in each business unit are highlighted on page 15.

In January 2020, GSF and Morgan Stanley Research convened our inaugural Cross-Divisional Forum on Climate Change. This collaboration brought together Morgan Stanley's experts on climate-related risks and opportunities across business units, including:

- **Institutional Securities Group:** divisions represented included Investment Banking, Global Capital Markets, Institutional Equities, Fixed Income, Public Finance and Commodities
- **Wealth Management:** joined by Wealth Management Investment Resources and Capital Markets
- **Investment Management:** joined by portfolio managers from Private Credit and Equity, Real Assets and Alternative Investment Partners

Our clients, including asset managers, asset owners, corporations, governments and high net worth individuals, are rethinking capital deployment to support a transition to a lower-carbon economy. This new internal forum will work to increase internal connectivity, shape actionable investment solutions and generate innovative ideas to better serve our clients of all sizes around the world.

Institutional Securities Group

Institutional Securities (ISG) has a long history of using the scale and speed of capital markets to generate positive environmental benefits for innovative companies. We achieve this with a range of levers, including mergers and acquisitions, and underwriting services. Teams across the business—including bond markets, public finance, investment banking, commodities and research—pursue these objectives.

ISG has supported over $83 billion in green, social and sustainability bond issuances across corporate, municipal and sovereign clients since 2013. In 2019, we supported several major bond transactions that support low-carbon transition, including:

- Acting as sole green structuring advisor for PepsiCo's inaugural $1 billion green bond, which seeks to address seven of the 17 Sustainable Development Goals (SDGs). The bond contributes to SDG 7 (Affordable and Clean Energy) and SDG 11 (Sustainable Cities and Communities) by investing in energy efficiency and renewable energy, and introducing sustainable farming practices into the company's agricultural supply chain; and
- Serving as joint bookrunner on the first SDG-linked bond on the market, issued by Enel. The $1.5 billion bond links its interest rate to renewable energy capacity that triggers an upward adjustment if targets are not met by the company. The bond supports SDG 7 (Affordable and Clean Energy).

Wealth Management

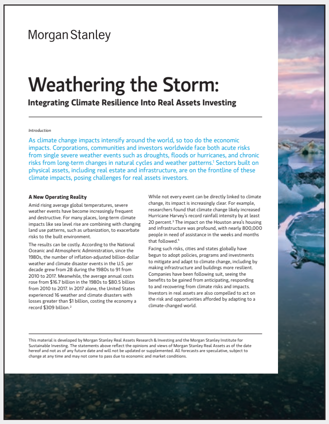
Wealth Management's long-standing Investing with Impact platform (IIP) offers retail investors more than 130 products and strategies across thematic issues, including climate change. A 2018 internal survey of third-party managers on the platform found that over half of IIP strategies aligned with at least one SDG, with climate action among the three most common themes. We also equip our Financial Advisors with Climate Change and Fossil Fuel Aware investing toolkits to help clients develop a tailored investment approach that incorporates these issues into their portfolios.

In 2019, Wealth Management launched Morgan Stanley Impact Quotient® (Morgan Stanley IQ), which provides clients with a framework to identify and prioritize more than 100 social and environmental impact preferences, including climate change. The tool leverages third-party ESG data and proprietary analytics to assess the alignment of clients' investments with their stated preferences, and guides Financial Advisors on appropriate solutions.

Investment Management

Investment Management operates in the strong belief that ESG factors—including climate change—influence risk, return and opportunity. Investment Management teams strive to incorporate ESG in their investment process, including consideration of climate-related risks and opportunities that could have significant impact on value. Portfolio managers and investment teams evaluate, as applicable, the carbon footprint and intensity of their investments as well as climate resiliency and adaptation strategies.

Our understanding of climate change risks and opportunities is deepened by active engagement with portfolio companies on their emission profiles, controls and preparedness to manage climate-related risks. We also use our position as investors to press for climate action and transparency. In 2019, we supported 90% of shareholder proposals for enhanced climate change reporting from U.S.-based companies and 64% of proposals urging companies to adopt greenhouse gas (GHG) emission-reduction targets.



Thought Leadership

The Morgan Stanley Institute for Sustainable Investing and Global Sustainability Research within ISG publish industry-leading content on sustainability topics. This expertise helps the firm, investors and other stakeholders to monitor, understand and act on existing and emerging climate-related risks and opportunities.

The Institute delivers actionable analysis to inform and empower investors and includes climate change as a primary theme. For example, in 2018, the Institute published a framework for integrating climate resilience into real assets investing to help infrastructure and real estate investors identify, understand and manage climate risk. In April 2020, the Institute published a white paper on Climate Impact: Understanding Vulnerability as the Missing Piece in the Climate Risk Puzzle. The paper presents a three-dimensional assessment framework to help companies and investors broaden their understanding and estimation of climate change risks and account for climate vulnerabilities throughout the investment process. Investment groups and risk managers across Morgan Stanley have adopted the framework when assessing their business decisions in the context of climate change.

Global Sustainability Research provides our institutional clients with insights into risks and opportunities related to ESG issues that can impact investment performance, including those related to climate change. Recent high-profile examples include a paper on decarbonization that analyzed the role of five key technologies in delivering the low-carbon transition—renewables, electric vehicles, carbon capture and storage, biofuels and hydrogen. Our sector analysts also assess climate-related factors, as appropriate for their coverage.

In addition, Morgan Stanley's business units are developing their own climate-related expertise and insights. In June 2020, the Institute for Sustainable Investing partnered with MSIM to release investor survey findings entitled Sustainable Signals: Asset Owners See Sustainability as Core to the Future of Investing. Among other key takeaways, the global survey revealed that 95% of asset owners are actively evaluating or considering climate change as an investment topic.

MSIM teams also recently published the following research:

- The Global Balanced Risk Control Strategy team released Five Sectors That Cannot Escape Climate Change and Three Climate Tipping Points Shaping Markets.
- The Alternative Investment Partners (AIP) Private Markets group released Debunking Six Myths About Climate Investing, which identifies broad investable opportunities beyond renewable energy and clean technology.

Conducting Scenario Analysis

The TCFD recommendations include conducting scenario analysis in order to understand business opportunities and vulnerabilities related to climate change. Morgan Stanley is conducting scenario analysis in the two major categories identified by TCFD: transition risk and physical risk. Our leadership will use the findings to refine our climate-related strategy and risk management processes, with a view to ultimately inform corporate strategy more holistically. In particular, we are evaluating where our business may be vulnerable to outsized, climate-driven losses.

TRANSITION RISKS

In 2018, we collaborated with peer firms and an external consultant to pilot climate-related stress testing and shed light on the related sensitivities of companies' creditworthiness. We designed custom scenarios to examine the impacts of two short-term transition risk pathways on a sample portfolio of companies in the oil and gas value chain. One of these pathways related to a technological breakthrough in electric vehicles (EV) and the other to adoption of a global carbon tax.

Participants also developed a rating migration tool to evaluate a number of assumptions, including oil demand and supply elasticity, and baseline commodity prices on the credit quality of a given borrower. The chart on page 18 shows the spectrum of financial impacts (credit downgrades) across different segments of the value chain, by scenario. In general, upstream companies more exposed to both price and volume risk were the most impacted by the carbon emissions tax with the severity of the downgrade increasing with the price of the tax. This suggests that a well-designed carbon tax would have the impact of decreasing demand for oil and gas, hence depressing prices.

The fairly rapid adoption of EVs in the market had much less near-term (less than three years) impact on the financial health of the oil and gas companies analyzed.

TRANSITION RISK SCENARIO KEY ASSUMPTIONS

RAPID EV ADOPTION

- Baseline of 3 million EVs and 1.4 billion total vehicles as of 2017
- 20% of new sales are EVs (in line with U.S. consumer preferences) versus ~1.2% today
- 15-year turnover rate, and no growth in total vehicles
- 30% of the additional electricity required by the increase in EVs is generated by gas

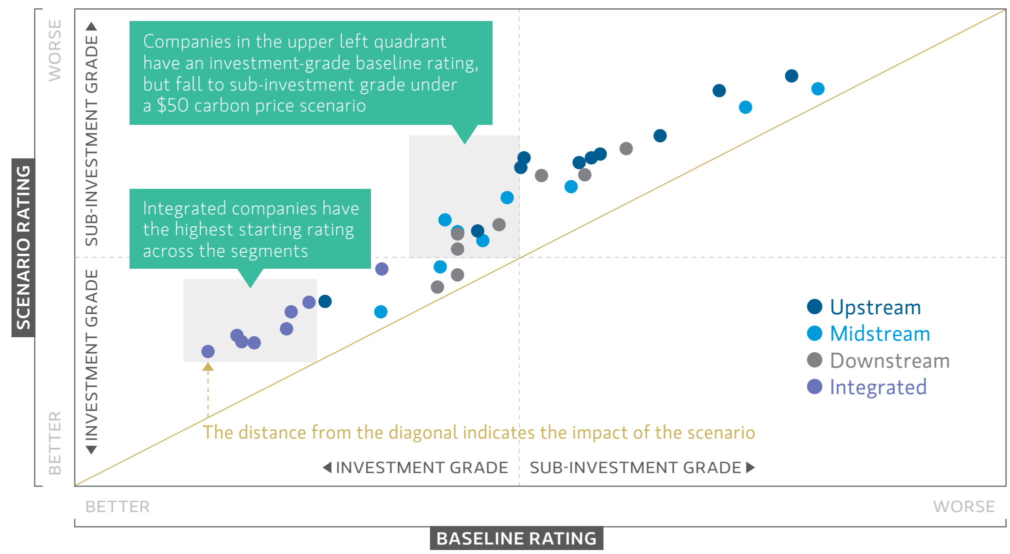
CARBON TAX ADOPTION

- The tax is nonadditive (e.g., existing carbon taxes are increased to a single global rate)
- The tax is applied to upstream producers, who pass on part of the tax to their customers
- We considered the impact of a range of carbon tax values per ton of CO_2 ($25, $50, $75 and $100)

Climate Transition Scenario Potential Impact on Ratings—Oil and Gas

SCENARIO VS. BASELINE RATING

US$50 carbon price per metric ton CO_2 (2020)



Source: Oliver Wyman

The level of impact to a particular company was influenced by a number of factors, including their current financial situation, carbon intensity of operations, position on the industry cost curve profile, and management's ability to adjust long-term strategy. The company-by-company impacts are shown above, with the distance above the diagonal gold line indicating the size of the credit downgrade.

Overall, the exercise was very useful in helping risk managers in FRM think about how climate change could impact the credit quality of our counterparties.

Building on this targeted transition risk scenario, we are now developing an enterprise-wide transition risk scenario that will examine the impacts of a comprehensive political and policy response to address climate change in the United States. The scenario includes the potential adoption of a carbon tax, expanded renewable energy subsidies and restrictions on fossil fuel developments. We have informally engaged leading economists and climate experts from Columbia University, the University of Maryland, the University of Michigan, Purdue University and the Center for Climate and Energy Solutions (C2ES) to help ensure the scenario reflects the latest developments in policy design.

PHYSICAL RISKS

To help identify areas exposed to significant physical risks, FRM and GSF mapped Morgan Stanley's exposures by geography and then cross-referenced these global geographies against potential hot spots for physical climate impacts. As a result of this exercise, we identified areas of potential climate risk vulnerabilities to our firm in certain regions.

In order to help FRM understand which risks may have substantive or strategic impact, Morgan Stanley is also conducting focused stress tests on concentrated physical and transition risk vulnerabilities as well as a broader scenario analysis. The findings will help our leadership refine our strategy and risk management processes and determine how to incorporate climate considerations into firm strategy more holistically. In particular, we are evaluating where the firm may be vulnerable to outsized, climate-driven losses.

In 2019, FRM leaders reviewed the results of a scenario designed to help the firm understand how geographic concentrations of assets could be impacted by a low probability but highly catastrophic physical climate event. The analysis found that financial risks to our firm would depend on a variety of factors, including counterparty financial health, insurance applicability and the specific physical vulnerability of each underlying physical asset. The exercise also helped us better understand gaps and limitations in our current datasets for assessing the financial impacts of physical events. We are working to address these shortcomings by utilizing additional physical risk datasets.

SCENARIO ANALYSIS AND DEVELOPING GLOBAL REGULATION

Regulatory authorities are using the TCFD recommendations to issue guidelines for relevant sectors. In 2019, the U.K. PRA issued such guidance for banks and insurance companies to identify, assess and manage climate change risks, including by conducting scenario analysis, which was further enhanced in July 2020. At Morgan Stanley, a cross-divisional-scenario-setting panel, including members from GSF, FRM, Research, and business units in London, developed both short- and long-term U.K. scenarios to help test resilience to potential material financial risks. The scenarios we developed are largely in line with the four recommended in the draft Biennial Exploratory Scenario guidance released in late-2019 for public comment. Work is underway to quantify the impact of some of these scenarios during 2020 for the U.K. entities. The PRA expects to finalize their scenario guidance later in 2020 and has delayed the exercise to mid-2021 at the earliest due to COVID-19.

The Bank of England is a member of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), a global organization of central banks that are coordinating efforts to enhance macro prudential regulatory approaches to climate change. The organization has 72 members and 13 observers, including the Bank of France, the Central Bank of Brazil and the Department of Financial Services for the State of New York. Several other countries have followed PRA's example and instituted climate stress test requirements, including Australia, Canada and Germany. The NGFS published a series of benchmark scenarios and guidance for central banks in June 2020, which we expect to take into consideration to help further develop the scenarios.

LOOKING AHEAD

Morgan Stanley is committed to advancing methodologies for assessing, measuring and reducing the emissions in our activities. We plan to disclose the greenhouse gas (GHG) footprint of relevant portfolios when we believe the appropriate methodologies accurately reflect our risk.

Our next steps will incorporate insights from our initial scenarios as well as emerging industry best practices, government policies, and new technologies and available data, with a focus on:

- Continuing to develop scenarios and stress tests in order to further refine our identification of risks and vulnerabilities related to climate change
- Developing a robust risk management framework to manage those risks
- Working to connect identified risks and vulnerabilities into our financial risk appetite
- Developing closer working relationships with the climate science, economic and policy communities to better understand the evolving science, data and technologies relevant to scenario analysis

Toward Carbon Neutrality and Climate-Resilient Operations

In 2017, Morgan Stanley committed to become carbon neutral across its global operations by 2022. We aim to achieve this by sourcing 100% of global operational electricity needs from renewable sources and offsetting any remaining GHG emissions. Our approach combines on-site power generation, power purchase agreements, renewable energy credits and carbon offsets. We are making steady progress toward meeting our 2022 goal.

Our Corporate Services Group integrates climate change management across our facilities. The team leads a wide range of initiatives to reduce environmental impact and partners with GSF to manage progress toward our operational climate change goals. Our offices worldwide have introduced composting, and many have made progress in eliminating single-use plastic in line with our Plastic Waste Resolution. These efforts also divert waste from landfills, where it would decompose into methane, a potent greenhouse gas.

We expect our suppliers to follow our environmental policies and encourage them to reduce the environmental impact of their operations. Over the past two years, we have sent key suppliers and service providers a sustainability survey, which solicits information about GHG emission-reduction goals. This input helps us understand where their approaches align with our own and if there are any gaps or opportunities to engage them on sustainability issues, including climate change. If we identify an environmental concern with a vendor, we work with them on ways to address the expectations gap. Where our suppliers are particularly strong on sustainability issues, we explore ways to expand and amplify these strengths through engagement. For more information, see our Supplier Code of Conduct.


RISK
MANAGEMENT

Risk Management

Climate change poses a significant risk to the global financial system and its ability to sustain a productive, growing economy. Climate change has the potential to impact many facets of the economy, including property, agriculture, infrastructure as well as local communities and individual health. These impacts pose a risk to the financial system, including disorderly price adjustments, disruption to market liquidity, as well as to financial institutions navigating rapidly changing consumer preferences, policies and technologies. Additionally, how these risks compound with one another is still uncertain. Market prices may not reflect the reality of climate risk.

The financial industry is moving quickly to better understand and test different methodologies on how to best identify, assess and manage climate risks. However, sufficient accurate data and relevant tools and methodologies, while in rapid development, remain inadequate in the near term. The role of disclosure, supported by common definitions and standards, will be important in improving the data necessary to appropriately quantify and manage climate risk.

Defining Climate-Related Risk

As a disclosure framework for climate change, TCFD divides climate-related risks into two major categories—transition risk and physical risk—and encourages corporations to consider and report their climate exposure this way.

Transition Risks: Transitioning to a low-carbon economy may entail extensive policy, legal, technology and market initiatives as society adapts to climate change and mitigates its causes. Depending on the nature, speed and focus of these changes, transition risks may pose varying types and levels of financial and reputational risk to businesses and other organizations.

Physical Risks: These risks include both discrete events such as flooding (acute physical risks) or longer-term shifts in climate patterns such as more frequent and prolonged drought (chronic physical risks). Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Financial performance may also be affected by changes in water availability, sourcing and quality, and food security and agricultural productivity. Extreme temperature changes may affect an organization's physical locations, operations, supply chain, transport needs and employee safety.

TYPES OF TRANSITION RISKS

POLICY AND LEGAL	TECHNOLOGY	REPUTATION
Carbon taxes	Improved energy efficiency	Shift in consumer sentiment
Renewable portfolio standards	Greater battery storage	Risks of banking certain sectors
Increased disclosure	Cheaper renewables	Greenwashing concerns

TYPES OF PHYSICAL RISKS

ACUTE	CHRONIC
Windstorms	Drought
Wildfires	Sea-level rise
River flooding	Extreme heat

Managing Our Climate Change Risk

Morgan Stanley deploys expertise and resources to explore how and where we may face potential transition and physical risks from the ongoing impacts of climate change. FRM oversees and has primary responsibility for all corporate financial risks, including credit, market, operational and climate risk. Over the past two years, GSF has partnered closely with FRM to integrate climate change considerations into the firm's lending and operational processes for identifying, assessing and managing both physical and transitional risks.

As the firm thinks about risk management in this area, we break down our activities into four main categories: Risk Identification, Exposure Calculation, Scenario Design and Risk Appetite.

RISK IDENTIFICATION

Building on the success of our initial work to develop a tool to measure credit rating migration in a targeted oil and gas portfolio, GSF and FRM are expanding our climate-related stress testing efforts to build awareness of climate risks in relevant sectors such as energy and automobiles, where the firm has credit exposures. In 2019, we partnered to develop a register of material climate-related risks by sector for risk managers engaged in FRM's credit analysis process.

We analyzed the academic and practitioner literature on climate risks to develop a sector-based risk register to be utilized by risk managers as a first step in understanding which risks were most material to the industries they cover. For example, a potential carbon tax is a high risk for carbon-intensive companies such as those in the oil and gas sector, while rapidly evolving battery technologies could be a risk to some in the auto industry. The risk register has been a helpful tool that allows FRM to prioritize material risks quickly. The risk register is a starting point and will be updated as data, science, technology and policy issues continue to evolve.

To better equip the risk managers in FRM with a working, functional knowledge of climate change in order to better identify and assess climate change risks, GSF partnered with FRM to launch "Climate Change University," or CCU, a program that aims to build a common understanding of climate change and its impact to the firm from a business perspective.

CCU provides risk managers with a multifaceted curriculum of external and internal expert speakers from academia and industry, a reference library of reading materials such as the TCFD framework and the IPCC's most recent 1.5°C report, a weekly digest and commentary on global climate change news, and real-time access to external experts to consult with as specific questions arise.

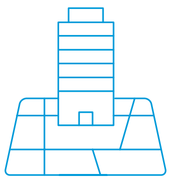
In 2020, we plan to roll out CCU for employees across the firm.

Monitoring the Evolving Risk Landscape

Risk identification requires an ongoing, dynamic approach. We are introducing internal processes to strengthen our ability to assess and enhance climate resilience by continually monitoring external developments that may impact the firm, our investments and our clients. These iterations help us to refresh and reassess our initial risk register over time.

Climate science continues to evolve as experts better understand the impacts of rising concentrations of greenhouse gases in the atmosphere on weather systems, dynamic climate feedback loops and the interrelationships between natural ecosystems. We track the latest climate science to understand physical risks to our business, as both the intensity and probability of such events continue to increase. The historical record of climatic events like droughts, storms and sea-level rise is no longer an accurate predictor of future events. We recognize the critical importance of having access to the latest science to help us understand future scenarios as both the intensity and probability of certain physical events continue to increase. In addition, we are building a network of external climate change experts to advise us on the latest scientific developments and help us with the evolution of our sector-based risk register and scenario analyses.

We also track climate-related regulations at the local, state, federal and international levels to assess potential transition risks to our business. GSF partners with Government Relations and other relevant functions to coordinate the firm's responses. As members of Ceres and C2ES, we benefit from insights on U.S. federal climate policy developments.



IN 2019, we monitored changes in local New York City laws regarding energy efficiency and buildings given some exposure to the local real estate market through our investments and operational footprint. Following the passage of Local Law 97, which requires increasing energy efficiency standards over time from both new and existing buildings, we worked to understand its operational implications, and convened a cross-sector group of real estate experts, risk managers and building energy managers from Corporate Services to help the firm better understand, navigate and implement the rule changes.

Informing Climate-Related Policies

Morgan Stanley supports appropriate policies that will accelerate the transition to a low-carbon economy, including a price on carbon. We engage with policymakers and industry groups to support development of effective regulatory policies that address climate change.

The Commodity Futures Trading Commission (CFTC) report, released in September 2020, makes recommendations across a spectrum of climate-related issues to the broad audience of U.S. legislators and regulators. We were pleased to be engaged in the CFTC Subcommittee and to help advance the work of U.S. regulators regarding climate risk. We look forward to how further study and examination contribute to evolving regulatory initiatives on this topic.

Morgan Stanley is also a member of the CEO Business Roundtable, and contributed to the working group that developed its updated climate policy position paper, released in September 2020. It calls for a robust, market-based approach to reducing U.S. emissions, including a carbon tax, other sector-based policies, and more support for research and development of low-carbon technologies.

Morgan Stanley supports policies that will help accelerate the transition to a low-carbon economy and will continue to engage with policymakers and other industry groups as opportunities arise to support the development of effective regulatory policies to address climate change.

EXPOSURE METHODOLOGIES

FRM works to prioritize and monitor high-risk areas of exposure to both credit and market climate change risks. We seek to develop methodologies that will help us create metrics to identify firm exposures to transition risks. We are also testing and onboarding a range of data to help us understand our exposures to concentrated vulnerabilities from physical risks, including operational risks to our own footprint.

Appropriate, relevant and timely climate data is necessary to properly assess and quantify climate change impacts on our business activities, our clients and our operations. In 2019, Morgan Stanley launched a firmwide initiative to secure climate-related data to inform decision-making and risk management across a range of internal use cases. Data providers' offerings cover a range of climate issues, including transition and physical impacts related to climate risk. For this reason, we actively track the data solutions on offer and evaluate options. We engaged more than 30 data solution providers in 2019 to understand which might serve our analyses best. We continue to onboard new data sets to enhance our scenario analysis and climate risk assessment efforts in 2020.

As companies work to understand how climate change may impact their businesses, new tools, datasets, consulting practices and frameworks are emerging. Morgan Stanley is exploring which resources may be helpful to our efforts, and provides feedback to vendors on their development, as appropriate.

SUPPORTING CLIMATE TOOLS AND METHODOLOGIES

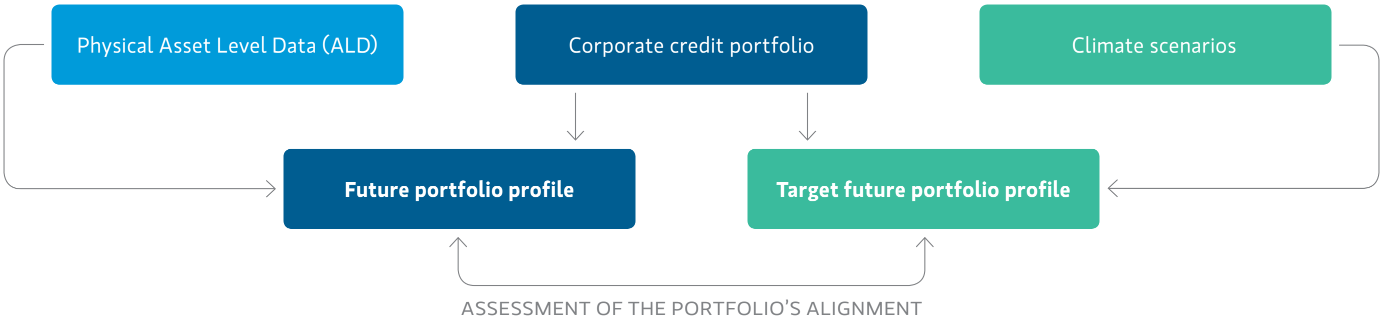
2 Degrees Investing Initiative

Morgan Stanley is one of 17 global financial firms testing the Paris Agreement Capital Transition Assessment (PACTA), developed by the 2 Degrees Investing Initiative (2DII). The analytical tool enables financial institutions to understand how their corporate loan portfolios align with the international goals agreed to in 2015.

In 2019, GSF and FRM partnered to pilot the assessment tool, which focuses on technological pathways for emissions and covers several key climate-relevant sectors like power, energy, cement and steel. The software matches 2DII's alignment data to hundreds of companies in our loan book and enables analyses that highlight areas of potential related climate risk.

We have found the tool useful to understand a number of important metrics, like exposure to high-risk sectors and companies, counterparty transition preparedness and transition risks by relevant sectors. We plan to continue using future versions to help us understand how our relevant portfolios align with International Energy Agency (IEA) scenarios over time. Given that the application only covers our corporate loan book, and only certain sectors, it will be used in conjunction with other frameworks to ensure we can gain a complete picture of our exposures to climate risks.

Building on our work to pilot the PACTA tool, we recently agreed to join a virtual working group with 2DII. The working group includes approximately 30 members made up of academic representatives, research organizations and financial institutions, with 2DII serving as the Secretariat. The output of this working group will be online software designed to help financial institutions simulate and design climate strategies and actions, a document aimed at harmonizing the tracking of climate actions, and other efforts to facilitate the scientific analysis of these actions. The goal is to create a common good for financial institutions to better understand the efficacy and impact of different climate actions and strategies.



Source: 2 Degrees Investing

Science-Based Targets

The Science-based Target Initiative (SBTI), led by CDP, the United Nations Global Compact, the World Resources Institute (WRI) and the World Wildlife Fund (WWF), has garnered commitments to climate action from close to 1,000 companies. Morgan Stanley is providing feedback on SBTI's development of a methodology for financial sector emissions reduction targets informed by the latest climate science, and the achievement of emissions reductions necessary to limit global warming to well below 2°C. We have participated in meetings, provided feedback via surveys and are exploring the methodologies to see how they may inform future work.

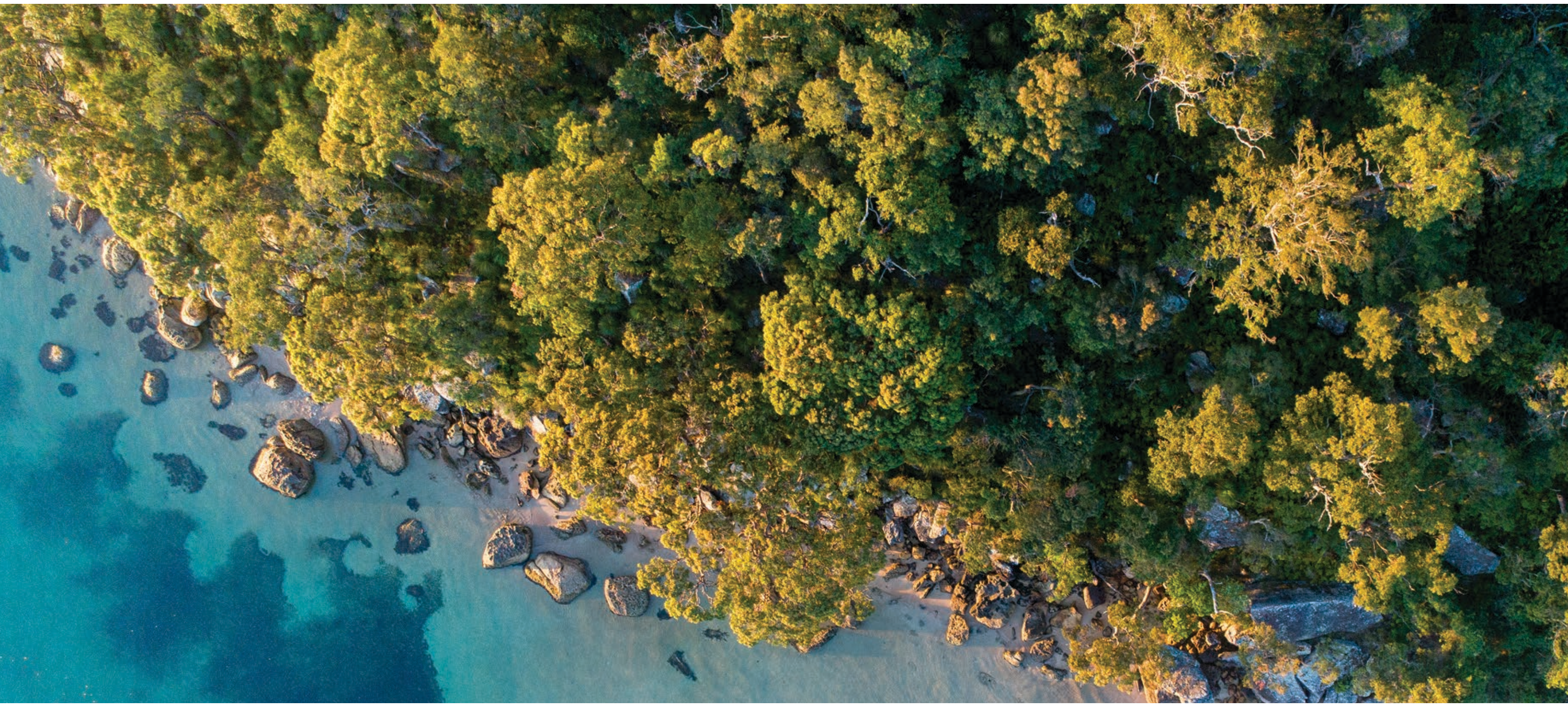
Financed Emissions Measurement

The Partnership for Carbon Accounting Financials (PCAF) is an industry-led initiative to develop an accounting methodology for banks and asset managers to measure and disclose their Scope 3, category 15 portfolio emissions, also known as "financed emissions". Creating such metrics for absolute and intensity-based financed emissions would help inform companies' understanding of their exposure to carbon risks. As of now, no widely accepted methodology exists for banks to assess this type of emissions.

To better understand the landscape, Morgan Stanley engaged PCAF and its current members in early 2020. We had an opportunity to learn more about their emissions factors database in order to better evaluate how PCAF's data for various assets could be utilized by Morgan Stanley.

In July 2020, Morgan Stanley became the first U.S.-based global bank to join PCAF and its Steering Committee as part of the firm's commitment to measuring and disclosing its approach to climate change risk and opportunity. As a member, we look forward to our continued engagement in PCAF as the organization works to finalize its draft methodology in the fall of 2020.

Internally, FRM has developed a proprietary pilot application to help evaluate financed emissions within our lending portfolio. The tool provides insights for our risk managers on our relative exposures to carbon risk and changes in the emissions intensity of our portfolios over time. Our own methodology for assessing financed emissions was developed independently from PCAF, but shares the fundamental objective of improving our understanding of the firm's carbon related lending commitments. We will continue to develop both our own tool and to inform the development of a common industry approach.



SCENARIO DESIGN

Once FRM has identified relevant risks, and prioritized higher-risk positions in both credit and market portfolios in order to calculate our exposures, FRM conducts scenario analysis on these concentrated vulnerabilities.

The scenarios are done in order to better understand potential exposures and identify a range of potential loses in any given scenario, which depend on a range of assumptions used. The scenarios also help identify potential exposures to issues like stranded assets, which may become uneconomical due to shifts in technology and policy, as well the potential value impairments.

Such calculations in turn are expected to help inform how FRM sets risk tolerances and appetites in a way that is informed by climate considerations in the future.

For further details on Morgan Stanley's use of scenario analysis, please see page 17 in the Strategy section of this report.

RISK APPETITE

FRM is leading efforts to embed assessments of climate-related risks into our risk management processes in a number of ways.

Building on our sector framework described on page 22, our risk managers are working to include climate-related considerations into risk appetite decisions. These include examining options for measuring carbon intensity, assessing transition preparedness and quantifying physical risk vulnerabilities.

FRM is also working to measure and assess carbon intensity at a portfolio level. These efforts include the development of metrics and targets, in line with TCFD recommendations, that will support our future portfolio-related decision-making on risk limits. As mentioned in the callout box on page 24, we are working to inform, as well as internally develop, a number of tools and methodologies that could potentially help us understand our exposure to concentrated vulnerabilities, which will help FRM set risk tolerance and appetite.

ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT (ESRM)

We take a firmwide approach to the management of environmental and social risks that could impact the firm's reputation.

Climate risk is part of our ESRM approach. The ESRM Group analyzes and manages environmental and social risks that may impact our firm and clients, and that may result in potential franchise risk, by advising business units, assessing relevant transactions and monitoring emerging environmental and social issues.

ESRM activities are governed by our Environmental and Social Policy Statement, which outlines our approach to sectors that may be subject to climate-related risk such as power generation, oil and gas, and forestry. In April 2020, we updated our Environmental and Social Policy Statement to clarify our approach, including, in some instances, outlining specific restrictions to thermal coal mining and coal-fired power generation, and oil and gas exploration and development in the Arctic.

Climate risk considerations are also incorporated into ESRM due diligence processes. If a transaction raises a climate-related concern, ESRM conducts enhanced due diligence in alignment with our policy. This due diligence may include a review of a client's framework for and track record in managing greenhouse gases and other emissions, and compliance with regulations and international standards. As appropriate, we would also seek to engage with companies to understand their diversification and carbon reduction strategies.

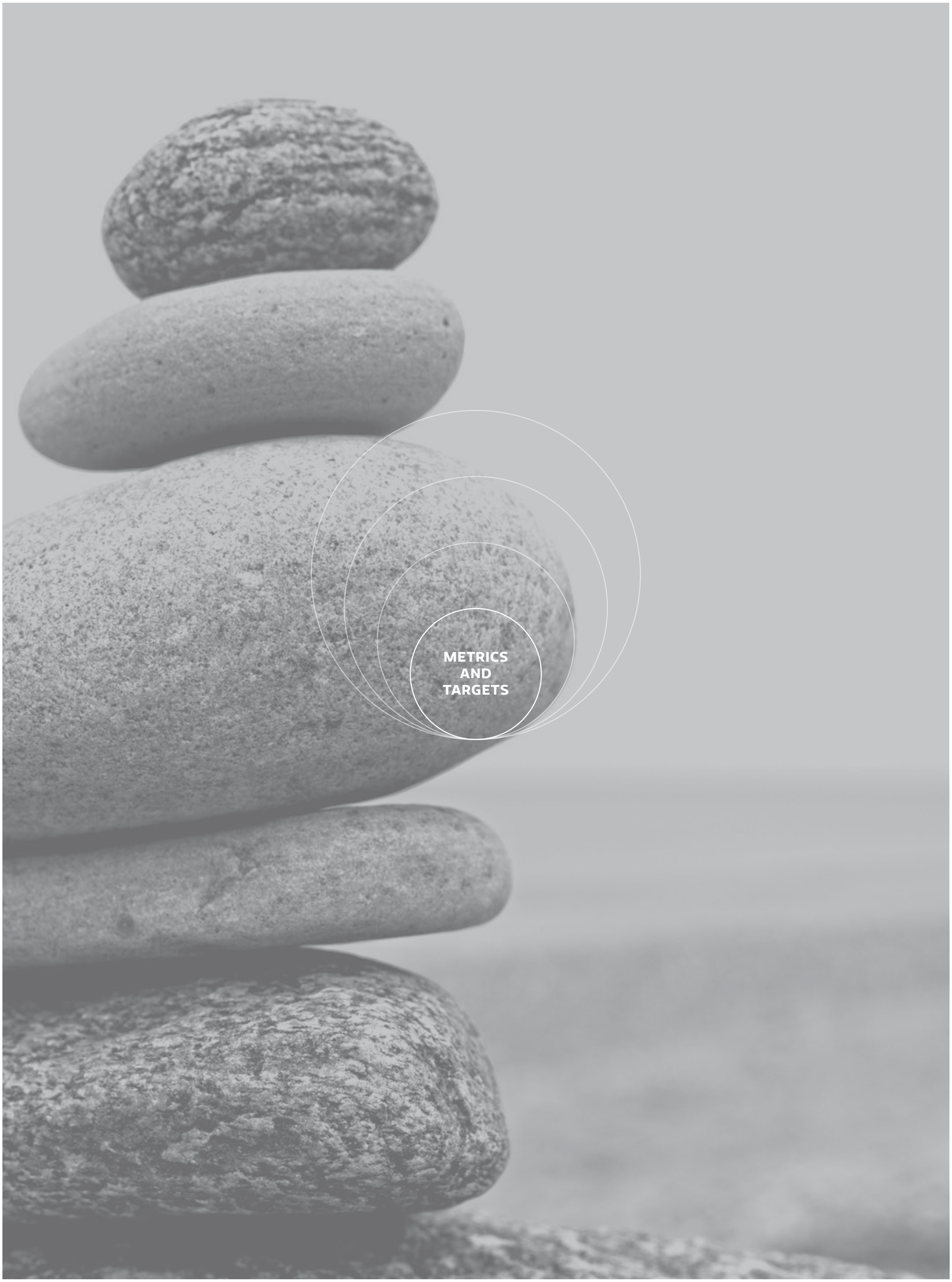
Our Environmental and Social Policy Statement is an evolving document, which we review annually and update to reflect our strategy and any key developments. The results of the review are presented to the Global Franchise Committee, and material amendments are presented to the Nominating and Governance Committee of the Board of Directors for their consideration.

For more information, our Environmental and Social Policy Statement can be found here.

BUSINESS CONTINUITY

Both acute and chronic physical risks from climate change have the potential to impact our facilities around the world. Our Corporate Services and Business Continuity Management (BCM) teams lead efforts to evaluate and prepare for the effects of such risks on our direct operations. When events are forecast, BCM reviews business unit plans for recovery strategies, such as transference or relocation, including options to recover critical business processes. In 2019, the team monitored and reacted to 26 global weather and natural hazard events, including hurricanes, wildfires, blizzards and earthquakes.

ACCOUNTABILITY	FRM			ESRM	REGULATORY RELATIONS	CSO/GSF
Risk Type	**Credit**	**Market**	**Operational**	**Reputational**	**Compliance**	**Strategic**
Definition	Risk of loss due to failure of counterparty to repay obligations	Risk of losses due to near-term changes in market conditions leading to impact on asset prices	Risk of losses due to failure of business processes, policy or impacts to key business property, systems or personnel	Risk of negative perception of the firm may harm client relationships and profitability	Risk of fines, sanctions and loss of profitability due to failure to comply with existing and new regulations	Risk resulting from ineffective strategic decisions, misunderstandings of market and client perceptions; inability to respond to changes in regulation, market conditions, client demands
Physical Risk Examples	Wildfire damages residential homes, leading to defaults	Storm event damages key energy infrastructure leading to price spikes	Storm damages local infrastructure keeping key personnel from getting to office	Market and client perceptions of mismanagement of physical risks	Office disruptions due to physical impacts interrupt compliance operations	Ineffective identification, assessment and management of physical climate impacts
Transitional Risk Examples	Changes in regulations adversely impact client finances	Changing regulations impact commodity prices	Changes to regulation alter relations with key suppliers	Changes in perception of certain carbon intensive industries harm firm brand	Financial impacts of climate-related bank regulation	Risk of changes to market regulations that undermine firm strategy
Example Steps Taken to Date	• Developed risk identification heat maps • Mapped risks to credit portfolios • Ran scenario analysis on transitional and physical risks • Explored and tested metrics to measure and manage climate credit risks	• Conducted scenario analysis to understand impacts of shifting regulations • Mapped and prioritized physical risks to various energy markets to assess potential impacts	• Conducted scenario analysis examining impact of Category 5 hurricane on NYC • Integration of climate considerations into risk process • Worked with external risk experts to create physical risk heat map of firm properties	• Development and co-chair of cross-divisional climate change risk working group • Implementation of ESRM policy which incorporates climate risk considerations in due diligence processes • Engaged with diverse set of external stakeholders regarding expectations for managing climate risk	• Submitted response to Prudential Regulatory Authority regarding MSI's climate change risk management plan • Provided feedback on PRA's Biennial Exploratory Scenario draft • Surveyed landscape of global regulators to understand trends in climate regulation	• Partnered with FRM to develop and inform a number of climate scenarios across a range of transitional and physical impacts • Co-developed Climate Change University • Published climate-related thought leadership through the Institute for Sustainable Investing • Led the onboarding of climate and ESG data across the firm to help identify and assess risk and opportunities


METRICS
AND
TARGETS

Metrics and Targets

Morgan Stanley has a long record of mobilizing capital at scale to tackle global sustainability challenges, including climate change. We are deeply committed to delivering long-term value for clients, shareholders and other stakeholders as economies and sectors transition to low-carbon models. We are also committed to making our own business operations as well as our lending and investing practices as sustainable as possible.

Metrics and targets drive our efforts in these areas. Below, in line with TCFD recommendations, we report on progress against our targets driven by climate-related risks and opportunities.

Net-Zero by 2050

In September 2020, building on over a decade of leadership on climate change, Morgan Stanley announced a commitment to achieve net-zero financed emissions by 2050. This new target, which focuses on "financed" emissions, is complementary to our existing commitment announced in 2017 to be carbon neutral in our operations by 2022.

A critical challenge to achieving this goal is the lack of standardized tools and methodologies around measuring and disclosing financed emissions. Morgan Stanley is also committing to taking a leadership role in developing the tools and methodologies needed to measure and manage our carbon-related activities in appropriate ways.

As part of that effort, Morgan Stanley recently joined PCAF's Steering Committee and will seek to play a leadership role in capacity building. Once consistent, robust and comparable metrics and methodologies are available, the firm will set its initial financed emissions reduction targets while continuing to help find solutions for our clients.

Throughout this process, we commit to transparent reporting that will help stakeholders understand our progress. While our interim targets and progress will change over time, our commitment to reaching net-zero financed emissions by 2050 will guide our decisions.

Supporting the Low-Carbon Transition

Our business units are on pace to meet our commitment to mobilize $250 billion to support low-carbon solutions by 2030. They are building expertise, supported by GSF and the Institute for Sustainable Investing, to serve our clients' growing interest in ESG issues and in climate change specifically. Survey data from the Institute suggests rapidly accelerating interest in climate-focused solutions among asset managers, asset owners and individual investors. In response, we are developing accessible new products, such as Morgan Stanley Impact Quotient® (see page 15). Our early work in 2013 in scaling green-bond financing has catalyzed new opportunities and continues to drive sector innovation in green and sustainable bonds.

Through 2019, we helped channel $80 billion into low-carbon financing, up $50 billion from 2018.

Assessing and Managing Climate Risk

As described on page 24, Morgan Stanley participated in a pilot of the PACTA tool developed by 2 Degrees Investing. This provided an initial understanding of how our relevant lending portfolios align with scenarios developed by the International Energy Agency (IEA) to deliver a technology mix pathway that keeps the planet below the 2°C warming threshold. We will continue to use the PACTA tool and others to help us track climate metrics in our portfolios.

Minimizing Our Environmental Footprint

Since 2012, Morgan Stanley has reduced its overall operational footprint by more than 35%. In 2017, we set an ambitious target to achieve carbon neutrality across our global operations by 2022.

Our approach combines sourcing 100% of global operational electricity needs from renewable sources and offsetting any remaining GHG emissions. To this end, Corporate Services is exploring on-site power generation, securing power purchase agreements, buying renewable energy credits and pursuing carbon offsets.

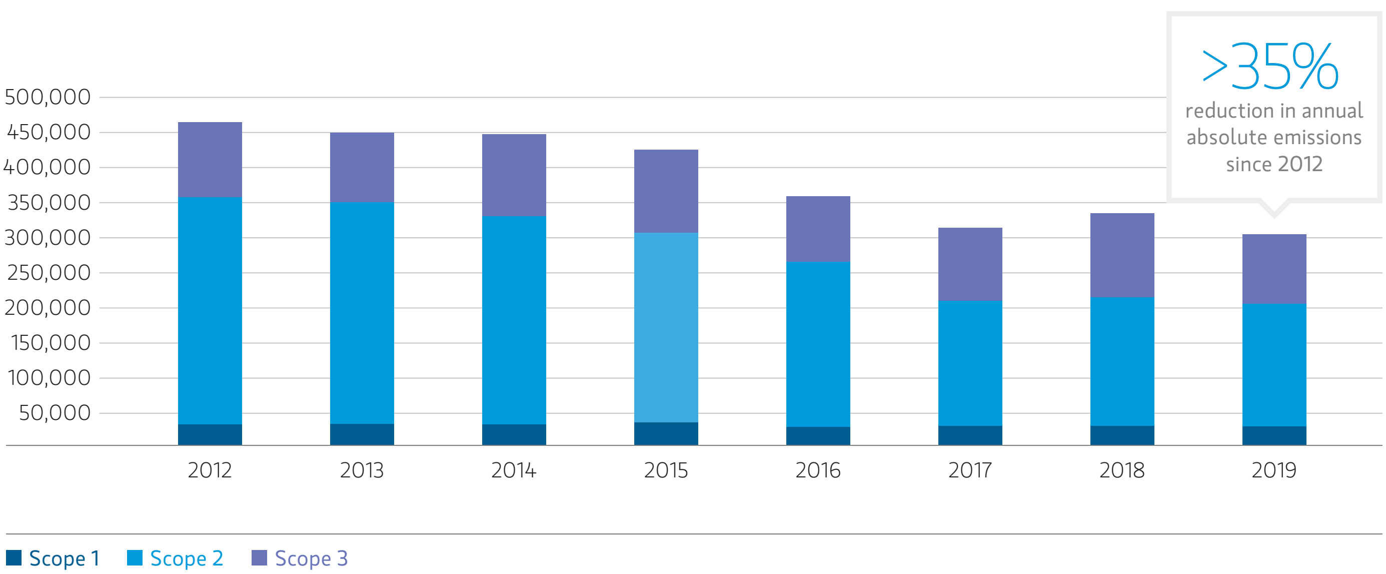
While we pursue these shifts in how we source energy, our operational (Scope 1 and 2) emissions intensity per square foot of real estate continues to fall. Overall emissions increased from 2017 to 2018, but decreased in 2019. Our indirect (Scope 3) emissions, including business travel, increased in 2017 and 2018, but declined in 2019.

In September 2020, Morgan Stanley announced it would be facilitating the construction of two wind farms that will deliver a significant portion of the firm's renewable energy required to achieve our commitment to 100 percent carbon neutrality and 100 percent renewable electricity by 2022. The wind farms will bring new, additional renewable energy to the North America electrical grid and be built in central Illinois. The renewable electricity production will account for 70 percent of the firm's electricity consumption and 40 percent of our carbon footprint globally.

Progress on Emission Reductions, Operational Carbon Neutrality Target

ANNUAL OPERATIONAL CARBON FOOTPRINT (mtCO_2e)

	2012	2013	2014	2015	2016	2017	2018	2019
SCOPE 1	30,990	30,598	31,257	33,871	27,611	29,459	29,816	28,254
SCOPE 2[1]	326,997	321,436	300,711	272,721	237,082	178,348	183,876	176,164
SCOPE 3[2]	107,967	98,960	117,322	118,903	94,210	106,711	122,004	99,890
TOTAL	**465,954**	**450,993**	**449,290**	**425,495**	**358,903**	**314,518**	**335,696**	**304,308**



[1] Scope 2 calculated using market-based methodology
[2] Only includes the following Scope 3 categories: Business Travel and Downstream Leased Assets

As a financial transaction, the Virtual Power Purchase Agreements (VPPA) produces clean energy and renewable energy certificates (RECs).

This project was achieved through collaboration between Corporate Services, Commodities and GSF. Global Capital Markets also joined the partnership for one of the wind farms to provide construction loan financing to the developer. The Commodities Team will manage the wind farms' energy pricing in the market while providing the firm long-term fixed pricing for RECs.

Conclusion

Morgan Stanley recognizes that climate change poses risks to the global economy, our business, clients, investors and local communities. We also understand that the widespread societal inequalities revealed by the coronavirus pandemic may be exacerbated by the impacts of a changing climate. We believe we have both an obligation and an opportunity to mobilize capital toward solutions to these systemic global challenges.

This report summarizes Morgan Stanley's commitment to inform, develop and implement solutions that help our business, clients and stakeholders prepare for and respond to the complex and evolving risks posed by climate change. Given our highly dynamic business, the rapidly evolving technological landscape and shifting public opinions around the urgency of climate change, our journey will continue to evolve.

As we work towards net-zero financed emissions by 2050, we will further integrate climate risks and considerations into our business decision-making and report regularly on our actions. We understand there will be much to learn on the road ahead, and are expanding our efforts to collaborate with industry bodies, climate scientists and data specialists, academia and nongovernmental organizations to address the climate challenge. As new insights, data, models and tools become available, we will assess and, where appropriate, incorporate these into the firm's ongoing assessment of climate change and report our progress in future reports.

For more information on our climate change-related activity and broader sustainability efforts, see:

- Our latest Sustainability Report
- Our Sustainability webpages
- The Morgan Stanley Institute for Sustainable Investing webpages
- Our 2019 CDP Climate Change Questionnaire

FORWARD-LOOKING STATEMENTS

Certain statements in this report may be "forward-looking statements." These statements are based on management's current expectations and are subject to uncertainty and changes in circumstances. These statements are not guarantees of future results or occurrences. Actual results and financial conditions may differ materially from those included in these statements due to a variety of factors, including, among others, global sociodemographic and economic trends, energy prices, technological innovations, climate-related conditions and weather events, counterparty financial health, insurance applicability, legislative and regulatory changes, and other unforeseen events or conditions, and the precautionary statements included in this report and those contained in Morgan Stanley's filings with the Securities and Exchange Commission (SEC). Any forward-looking statements made by or on behalf of Morgan Stanley speak only as to the date they are made, and Morgan Stanley does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made. In addition, while this report describes potential future events that may be significant, the significance of those potential events should not be read as equating to materiality as the concept is used in Morgan Stanley's filings with the SEC.

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