

BMO Financial Group

# 2021 Climate Report



# BMO's Net-Zero Ambition: To be our clients' lead partner in the transition to a net-zero world.

Our 2021 Climate Report lays out the elements of our approach to climate, utilizing the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD).<sup>1</sup> You can read more about our efforts to help build a sustainable world through banking in our 2021 Sustainability Report.

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## In this report

*We, us, our, bank* and *BMO* mean Bank of Montreal and its subsidiaries.

### Reporting period

Covers the fiscal year ended October 31, 2021.

We published our last report in December 2020. Past reports are on our website <https://our-impact.bmo.com/reports>

### Reporting framework

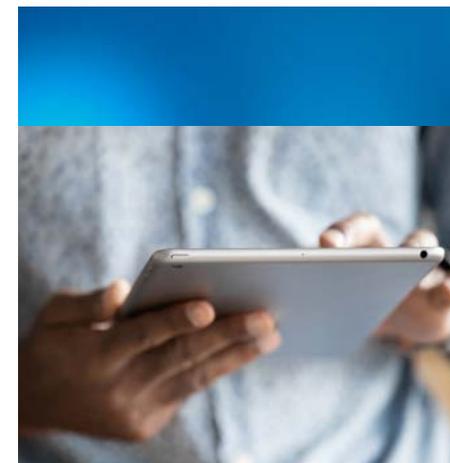
Task Force on Climate Related Financial Disclosures (TCFD).

### Data

Unless otherwise noted:

- as of October 31, 2021
- enterprise-wide
- may be rounded
- dollar amounts are in Canadian dollars

◆ KPMG has provided limited assurance of this figure. KPMG's Independent Limited Assurance Report is on [page 43](#).



BMO's approach to sustainability is integrated into our business strategy and corporate governance.

### Sustainability reporting suite

- Sustainability Report and Public Accountability Statement
- Sustainable Bonds Impact Report
- GRI Index
- SASB Disclosure
- Sustainability Report Data Pack and Glossary

### Learn more here

- Annual Report to Shareholders
- Management Proxy Circular

<sup>1</sup> This report includes voluntary disclosures on climate-related opportunities and risks, governance, strategy, risk management and metrics and targets, that may not be, and are not required to be, incorporated into our required disclosures where we use a definition of materiality established under applicable securities laws for the purpose of complying with the disclosure rules and regulations promulgated by applicable securities regulators and applicable stock exchange listing standards.

# Message from the Chief Sustainability Officer



BMO is committed to a sustainable future. As a globally recognized leader in sustainability, we take seriously our accountability to act on the urgent issue of climate change. Our history of climate action, including being carbon neutral in our own operations since 2010, provides a foundation we continue to build on. In 2021, we declared our Net-Zero Ambition *to be our clients' lead partner in the transition to a net-zero world*, underscoring our commitment to be a part of the solution, playing our part to achieve real decarbonization in the economy.

Guided by our Purpose to **Boldly Grow the Good in business and life**, we took concrete actions on our Net-Zero Ambition in 2021, launching the BMO Climate Institute, quantifying baseline financed emissions and setting targets in key lending sectors, further developing climate scenario analysis in our Enterprise Risk and Portfolio Management approach, and joining the UN-sponsored Net-Zero Banking Alliance. This Climate Report is the culmination of that work and shows what we've done and where we are going.

We acknowledge the release of the Intergovernmental Panel on Climate Change's (IPCC's) Sixth Assessment Working Group I and Working Group II Reports, and the urgency in their messaging. I had the privilege to be in Glasgow during the COP26 United Nations Climate Conference and came away with a renewed hope that private players will continue to advance the Paris goals with a focus on net-zero emissions by 2050. Recognizing the need to move with pace, we have taken concrete action. In advance of COP26, BMO became a member of the UN sponsored Net-Zero Banking Alliance (NZBA), building on our earlier founding membership of the Net Zero Asset Managers initiative.

As our CEO Darryl White notes in his message in our [2021 Sustainability Report](#), and as members of the NZBA, we recognize the critical role of banks in catalyzing climate action and financing a just energy transition to a net-zero economy. To advance this work we are building the infrastructure to quantify financed emissions across multiple sectors of our portfolio, analyzing scientifically credible decarbonization pathways across those sectors, and developing approaches for target setting. We are a member of the Partnership for Carbon Accounting Financials (PCAF), a global partnership of financial institutions to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments, which we have applied in this year's report (see Metrics and Targets section at [page 27](#)). While imperfections in climate data remain, we have not allowed that to delay implementation of our climate strategy or our climate-related disclosure. The urgency of climate action necessitates progress on our net zero commitments and so we are disclosing financed emissions baselines and targets based on current data and methodologies despite these limitations.

Our team of climate experts at the BMO Climate Institute is building a center of excellence at the crossroads of climate change science, policy and finance to help bridge the transition to a net-zero economy. The BMO Climate Institute has recently published its ground-breaking paper, [Decarbonizing Canada's housing market](#), which demonstrates the power of the Institute to play a thought leadership role on climate topics.

We continued our climate risk work in 2021, further developing and embedding climate scenario analysis capabilities within our Enterprise Risk and Portfolio Management (ERPM) approach. Moving into 2022, our focus will be to broaden this work across additional sectors and further embed climate in our strategy and risk management approach.

Meeting the Paris Agreement objectives of global net-zero carbon emissions by 2050, will require coordinated efforts between the public and private sectors. Markets, governments and economic systems will need to align to support and fund an inclusive transition that supports the energy needs of the global economy in order to achieve these goals. At BMO, we are doing our part to build a sustainable world through banking. We are committed to supporting our clients in the transition to net zero, to help them optimize their businesses for a net-zero future, reducing emissions and capturing new opportunities along the way. This is how we will live our Purpose Boldly Grow the Good in business and life for a sustainable future.

A handwritten signature in black ink, reading "Michael Torrance". The signature is fluid and cursive, with a large initial "M" and "T".

**Michael Torrance**  
Chief Sustainability Officer  
BMO Financial Group

# About BMO

BMO Financial Group is a highly diversified financial services provider based in North America. We provide a broad range of products and services through three operating groups, which are supported by corporate services, including technology and operations.

1817

Canada's first bank, established in 1817

8<sup>th</sup> largest

bank in North America by assets

12+ million

customers globally

\$988 billion

in total assets

43,000+

employees

## Personal and Commercial (P&C) Banking

Serves eight million personal and commercial banking customers across Canada, and more than two million personal, business and commercial banking customers through BMO Harris Bank in the United States.

- Personal Banking
- Commercial Banking

## BMO Capital Markets (CM)

Provides a complete range of products and services to corporate, institutional and government clients.

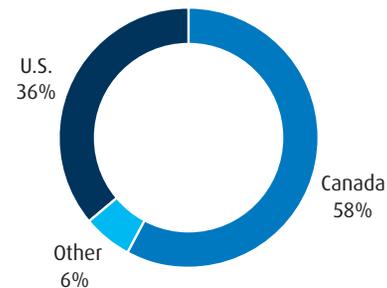
- Investment and Corporate Banking
- Global Markets

## BMO Wealth Management (WM)

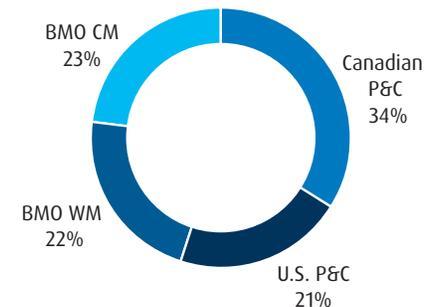
Provides a wide spectrum of wealth, asset management and insurance products and services to individuals and families, business owners and institutions.

- BMO Private Wealth
- BMO InvestorLine
- BMO Wealth Management U.S.
- BMO Global Asset Management
- BMO Insurance

Reported Net Revenue<sup>1</sup> by Geography



Reported Net Revenue<sup>1</sup> by Operating Group<sup>2</sup>



<sup>1</sup> Reported net revenue is reported revenue net of insurance claims, commissions and changes in policy benefit liabilities ("CCPB") and is a non-GAAP measure. For further information, see the Non-GAAP and Other Financial Measures section on [page 45](#).

<sup>2</sup> Percentages determined excluding results in Corporate Services. Bank of Montreal brands the organization's member companies as BMO Financial Group.

# How climate aligns with our Purpose

BMO's Purpose to **Boldly Grow the Good in business and life** inspires us all to aim higher, to drive meaningful impact for our customers, employees and communities. Our Bold Commitments for a thriving economy, a sustainable future, and an inclusive society are measurable business-led goals to grow the good. They evolve as community needs, BMO priorities, and market realities change.

Building on our Bold Commitment for a sustainable future, BMO has made a new, focused commitment to drive the economic transition to a net-zero world. Our **Net-Zero Ambition: to be our clients' lead partner in the transition to a net-zero world** recognizes the critical role we, as a financial institution, play in catalyzing climate action, financing a just transition to a net-zero economy, and working with our clients to understand the risks and opportunities of this transformation. You can read about how we are integrating this ambition into our business starting on [page 13](#).

## BOLDLY GROW THE GOOD

IN BUSINESS AND LIFE

We updated these commitments in 2021 to reflect our Net-Zero Ambition and our long-term commitment to climate.

### Sustainable financing



Target: \$300 billion  
increased by \$150 billion in 2021

Mobilize \$300 billion in capital to clients pursuing sustainable outcomes by 2025 (through green, social and sustainable lending, underwriting, advisory services, and investment)

### Impact investing



Target: \$250 million

Deploy our impact investing fund, seeded with \$250 million in capital

### Net-Zero Ambition

Target  
Net Zero  
by 2050

Be our clients' lead partner in the transition to a net-zero world - targeting net-zero financed emissions in our lending by 2050

## Our history of climate action

2007

First purchase of renewable energy

2009

Made a 5-year, \$10 million commitment to become lead investor in the Greening Canada Fund for carbon offset projects  
Named to the CDP's Global 500 Carbon Disclosure Leadership Index for the first time

2018

Began reporting in line with TCFD  
Delivered climate change risk and disclosure training to BMO's Board of Directors

2020

Achieved 100% renewable electricity across global operations  
Included climate change in our risk appetite statement  
BMO Global Asset Management became a founding member of Net Zero Asset Managers initiative (NZAM)  
Restricted direct financing for any project or transaction that involves exploration or development in the Arctic National Wildlife Refuge (ANWR)  
Developed digital climate risk analytics platform in collaboration with BMO's AI Labs

2008

Established operational greenhouse gas footprint and set first emissions reduction target  
Became the first Canadian financial institution to achieve ISO 14001:2004 certification for a large office building

2010

Achieved carbon neutrality in operations  
Named to CDP Global 500 Carbon Performance Leadership Index for the first time

2019

Established first sustainable finance target and established Sustainable Finance team  
Issued first sustainability bond  
Conducted our first climate-related scenario analysis pilot  
Incorporated climate change into enterprise-wide risk taxonomy

2021

Joined the Partnership for Carbon Accounting Financials (PCAF) and began to quantify financed emissions across initial sectors of focus in accordance with the PCAF approach  
Signed UN Principles for Responsible Banking  
Launched the BMO Net-Zero Ambition, aligned to BMO's Purpose  
Established the BMO Climate Institute, to power our goal of being our clients' lead partner in the transition to a net-zero world  
Established an Energy Transition Group within BMO Capital Markets  
Joined the UN-convened Net-Zero Banking Alliance (NZBA)

# 2021 Task Force on Climate-Related Financial Disclosures (TCFD) summary

The table below summarizes our approach to capturing climate-related opportunities and managing risks, and reflects the guidelines of the TCFD. In 2021, we made significant advancements in our approach to climate-related governance, strategy, risk management and metrics and targets.

## Governance

Climate risk and opportunity are embedded in our governance structure

### Supporting responsible business behaviour, performance and our long-term sustainability

#### Board

Presentations on BMO's climate strategy have been made to the full Board of Directors.

Engagement on climate-related topics has taken place with the Audit and Conduct Review Committee (ACRC) and the Risk Review Committee (RRC) including the topics of:

- Sustainability related governance
- Sustainability related disclosure, including the Climate Report
- Climate-related risk
- BMO's Net-Zero Ambition and climate strategy

#### Management

Management of BMO's approach to climate involves various Executive Committee members and senior leaders including:

- Chief Executive Officer
- General Counsel
- Chief Risk Officer
- Chief Strategy and Operations Officer
- Chief Financial Officer
- Heads of Operating Groups
- Chief Sustainability Officer
- Head, Enterprise Risk
- Head of Risk Frameworks and Regulatory Capital Oversight
- Special Advisor to the CEO on ESG
- Head of Investor Relations
- Head of Sustainable Finance
- Head of Alternatives, ESG and Innovation at BMO GAM

#### Management committees, forums and working groups

Management engages in several management forums and working groups including:

- ESG Executive Forum
- Sustainability Council
- Disclosure Committee
- Risk Management Committee
- Reputation Risk Management Committee
- Enterprise Regulatory Committee
- Sustainable Finance Steering Committee
- BMO GAM Investment Committee
- Impact Investment Fund Investment Committee
- Sustainable bonds working group
- Climate scenario analysis working group
- Climate leads working group

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## Strategy

We are integrating climate opportunities into our business, building on our existing strengths and capabilities

### Net-zero outcomes as a key organizing principle for our business

- Announced BMO's Net-Zero Ambition to be our clients' lead partner in the transition to a net-zero world.
- Joined market-leading initiatives including the Net-Zero Banking Alliance, Partnership for Carbon Accounting Financials, and Principles for Responsible Banking.
- BMO Global Asset Management joined the Net Zero Asset Managers initiative, Climate Engagement Canada, and signed the Canadian Investor Statement on Climate Change.

### Expanding climate-related capabilities across our operations

- Established the BMO Climate Institute.
- Delivered a climate change training course available to all BMO employees.

### Advancing our climate strategy

- Established an Executive Committee approved climate strategy focused on commercial growth opportunities and fulfilling commitments, with Board-level engagement.
- Established the Climate Leads Working Group with the participation of BMO's operating groups and central functions for the advancement of our climate growth strategy.
- Established an Energy Transition Group within BMO Capital Markets.
- Advancing our carbon neutrality strategy, BMO became the first global bank to invest in future offsets generated by Direct Air Capture technology in partnership with Carbon Engineering.

## Risk management

We consider climate change to be a transverse risk driver that manifests through our identified material risks

### Incorporating climate considerations in our environmental and social risk framework

- Added climate-related physical risk and transition risk to the enterprise-wide risk taxonomy (climate change is a material risk, included in our taxonomy as a subset of environmental and social risk).
- Introduced a Statement on Coal Lending and associated lending policy updates.
- Introduced risk tolerance thresholds for carbon-related assets key risk metric aligned to science-based net-zero decarbonization pathways.
- Developed sector specific guidance and launched a new Environmental and Social Risk Rating (ESRR) Assessment Tool for the petroleum and mining sectors.

### Expanding climate-related scenario analysis and capabilities

- Established a Climate Scenario Analysis Working Group to design and implement a repeatable climate scenario analysis program.
- Conducted climate-related scenario analysis on London portfolio oil and gas and metals and mining borrowers.

### Engaging with stakeholders on climate

- Established climate-related risk as an engagement priority for BMO GAM.
- Engaged with some of our top suppliers through the CDP Supply Chain program.

## Metrics and targets

We track and report on opportunities and risks associated with climate change

### Measuring progress toward our commitment to climate action

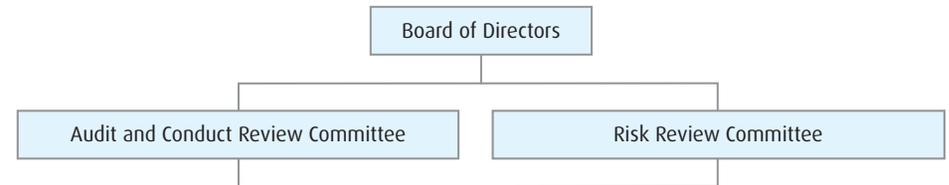
- Quantified and disclosed Scope 1 and 2, and Scope 3 (categories 5,6 – waste generation and business travel).
- Established a 30% emissions reduction target within our own operations by 2030 using science-based approaches
- Achieved carbon neutrality each year since 2010 and achieved 100% renewable electricity each year since 2020.
- Quantified and disclosed our financed emissions (BMO's Scope 3 emissions, category 15 - investments) for lending related to upstream oil and gas, lending related to power generation in Canada, lending for the purchase of personal vehicles in Canada, and residential mortgage lending in Canada.
- Targeting net-zero financed emissions in our lending by 2050, we have begun to set intermediate targets for financed emissions reduction that we plan to achieve in partnership with our clients.

# Governance

Climate risk and opportunity are embedded in our governance structure.

At BMO, climate risk and opportunity are managed, monitored and reported on through our organizational structure. The chart below illustrates how climate governance functions at the Board, executive and management levels. You'll find more information about our governance structure in the [2022 Management Proxy Circular](#).

## Board and Board committees



## Executive management team



## Management

\*Including Head of Enterprise Risk and centrally supported by Head of Risk Frameworks & Regulatory Capital Oversight

## Management committees and forums

- ESG Executive Forum
- Sustainability Council
- Disclosure Committee
- Risk Management Committee
- Reputation Risk Management Committee
- Enterprise Regulatory Developments Committee
- Sustainable Finance Steering Committee
- Impact Investment Fund Investment Committee
- BMO Global Asset Management (GAM) Investment Committee

Board-level oversight of sustainability is embedded in the charter of the Audit and Conduct Review Committee.

BMO’s directors are recruited and evaluated based on a skills matrix that includes understanding and experience with corporate responsibility and sustainable development practices. Nine of our 12 current independent directors have this experience. You’ll find more information about the skills and experience of our directors in our [2022 Management Proxy Circular](#).

The Chair of the Audit and Conduct Review Committee has a strong background in climate change and sustainability and led Ernst & Young’s global Climate Change and Sustainable Services practice. Board members receive ongoing training on sustainability topics, including climate risk and disclosure, and the training is available to all directors, including members of subsidiary boards.

In 2021, the full Board of Directors received two presentations on BMO’s climate strategy.

Board committee	Role in climate governance	Frequency	Evaluation metrics
Audit and Conduct Review Committee	<p>Assesses the effectiveness of BMO’s governance of sustainability issues, including climate change.</p> <p>Approves BMO’s Sustainability Report and Public Accountability Statement prior to disclosure, including the Climate Report.</p>	<p>Meets seven times annually and more frequently as important matters arise.</p> <p>BMO’s General Counsel and Chief Sustainability Officer met with the Audit and Conduct Review Committee to discuss climate-related issues three times in 2021.</p>	<p>Reviews and approves sustainability disclosures, including the Climate Report.</p> <p>Metrics include sustainable finance tracking, carbon-related assets, operational and financed emissions and targets.</p>
Risk Review Committee	<p>Assists the Board in fulfilling its risk management oversight responsibilities.</p> <p>This involves overseeing the identification, assessment and management of BMO’s environmental and social risks, including our risk culture, adherence by operating groups to risk management corporate policies and procedures, and compliance with risk-related regulatory requirements.</p> <p>Reviews our risk management framework and provides guidance for the governance of our risk-taking activities.</p> <p>Reviews revisions to the Risk Appetite Framework, including the addition of a qualitative statement and key risk metric (KRM) referencing climate change in 2020 and the updates to both in 2021.</p>	<p>Meets nine times annually.</p> <p>BMO’s Chief Sustainability Officer and Head of Risk Frameworks &amp; Regulatory Capital Oversight met with the Risk Review Committee to discuss climate-related risk issues once in 2021.</p>	<p>Reviews the risk appetite statement for environmental and social risk annually, reviews key risk metrics on lending to carbon-related assets as a percentage of total loans and acceptances, net of allowance for credit losses on impaired loans quarterly, and receives ad hoc presentations on environmental and social risk and climate change.</p>

# Management's role

## General Counsel and Executive Committee Sponsor for Sustainability

Appointed by the CEO to be Executive Committee sponsor for sustainability. BMO's General Counsel reports directly to the CEO and is accountable for, among other things, legal and regulatory risk, reputation risk, business conduct, ethics and sustainability.

## Chief Risk Officer (CRO)

Provides independent review and oversight of enterprise-wide risks and leadership on risk issues, developing and maintaining a risk management framework and fostering a strong risk culture across the organization. Reports directly to the CEO, is head of Enterprise Risk and Portfolio Management (ERPM), and reports to the Board's Risk Review Committee on environmental and social risk matters including climate change.

ERPM provides risk management oversight, supporting a disciplined approach to risk-taking in independent transaction approval and portfolio management, policy formulation, risk reporting, stress testing, modelling and risk education.

## Chief Strategy and Operations Officer

Leads enterprise transformation and drives strategic direction, brand, Purpose and impact commitments, including climate strategy.

## Chief Financial Officer (CFO)

Jointly responsible for the Enterprise's Disclosure Controls and Procedures and is chair of the Disclosure Committee. Reports directly to the CEO and provides the Board's Audit and Conduct Review Committee with fiscal year end evaluation of the Disclosure Controls and Procedures.

## Chief Sustainability Officer

Reporting to the General Counsel, oversees sustainability strategy and leads bank-wide initiatives on environmental and social risk, climate change strategy, environment, social and governance (ESG)-focused investor relations, sustainability-related disclosure, operational sustainability and the bank's own approach to sustainable finance with Treasury and our Sustainable Finance team. This mandate includes:

- Monitoring climate-related issues
- Developing policies, governance mechanisms and strategies to manage climate-related risks and opportunities with Enterprise Risk and Portfolio Management
- Providing advisory support to operating groups on identifying, assessing, managing, monitoring and reporting on climate risk associated with our clients and transactions
- Producing and publishing climate-related disclosures.

## Climate and executive compensation

Sustainability is embedded in our strategy, fundamental to the bank's Purpose and integrated into our executive compensation design. 25% of executive variable pay funding is tied to the completion of our Purpose and strategic objectives, or to non-financial goals. Each year we include ESG in these Purpose and strategic objectives, as well as in the individual goals for executives, to capture opportunities and manage risks in areas such as sustainable finance, climate change, human rights and diversity, equity and inclusion. This approach is central to delivering on our strategy, and bold commitments for a thriving economy, a sustainable future, and an inclusive society. See our 2022 Management Proxy Circular to learn more.

Oversees the Sustainability team including the BMO Climate Institute:

- BMO Climate Institute was launched in 2021, as a key part of our Net-Zero Ambition. Overseen by the Chief Sustainability Officer, the Institute analyzes the impacts of climate change, provides insights for our business, clients and partners and convenes partnerships for bankable climate action with industry, government, academia and investors, informed by data-drive research and expertise. [See page 17](#) for more information about BMO Climate Institute.
- The Sustainability team more than doubled in size in 2021, bringing a wide range of expertise to help support our Net-Zero Ambition. The team collaborates with partners across the bank to advance climate-related opportunities and risk management, including ERPM, Sustainable Finance and the lines of business, Corporate Real Estate and Procurement.

## Head of Enterprise Risk

Reporting to the CRO, leads several teams that are actively embedding climate change considerations across the risk management framework including Risk Frameworks and Regulatory Capital Oversight, Operational Non-Financial Risk, Model Development, Model Risk, Risk Reporting and Portfolio Management, and Stress Testing.

## Head of Risk Frameworks & Regulatory Capital Oversight

Reporting to the Head of Enterprise Risk, works with Risk Management Leadership to embed climate change and environmental and social risk considerations into the Enterprise Risk Management Framework across all material risks.

### Special Advisor to the CEO on ESG

Reporting to the Chief Strategy and Operations Officer, advises on the development and application of BMO's sustainability strategy and approaches to climate change. Chairs the BMO Sustainability Council and BMO Climate Institute.

The Sustainability Council includes senior leaders from across the bank, including the lines of business and Corporate Services. Provides oversight and leadership for our sustainability strategy, including our Net-Zero Ambition, and meets quarterly to discuss sustainability topics, including risks, opportunities and disclosures related to climate change. The council participated in the following climate-related discussions in 2021:

- Update on BMO's operational sustainability priorities
- Introduction to power purchase agreements
- Overview of BMO's 2021 climate scenario analysis program and artificial intelligence capabilities project
- Overview of BMO's Net-Zero Ambition
- Update on ESG regulatory developments in the U.S., Canada, and internationally including the growing U.S. regulatory focus on climate and ESG
- Update on BMO's sustainable procurement program
- Introduction to BMO's climate risk analytics platform including case studies
- Overview of BMO's approach to financed emissions quantification and target setting.

### Investor Relations

Reporting to the CFO, oversee the bank's engagement with fixed income and equity investors.

### Operating Groups

Heads of BMO Capital Markets, BMO Wealth Management and Personal and Commercial Banking lead strategies to capture business growth opportunities, including those associated with climate finance. Each operating group organizes itself differently to capture climate-related opportunities.

Management-level leads include (among others):

- **Head of Sustainable Finance** – mobilizes sustainable finance opportunities with customers across all lines of business, and includes sustainable finance specialists who are responsible for building customer engagement and identifying market opportunities for products and services as the sustainable finance market grows.
- **Head of Alternatives, ESG and Innovation at BMO GAM** – works with the Responsible Investing team to help investors understand and use their influence to drive climate action.

To better capture sustainable finance opportunities associated with the transition to a net-zero future, in 2021 BMO established a new **Energy Transition Group** to support clients exploring potential energy transition alternatives. The new group is co-headed by one of BMO's Vice Chairs, Investment and Corporate Banking, and BMO's Managing Director and Head, Sustainable Finance. It includes BMO's existing Sustainable Finance group established in 2019. Both groups are supported by BMO's Sustainability team and the BMO Climate Institute, and work across the enterprise to grow and innovate our sustainable finance products and services including sustainable finance advisory and impact investing platforms. [See page 18](#) for more information about the Energy Transition Group's activities.

### Management committees, forums and working groups

Management committees and forums oversee climate-related governance at BMO. These include the ESG Executive Forum, BMO Sustainability Council, Disclosure Committee, Risk Management Committee, Reputation Risk Management Committee, Enterprise Regulatory Developments Committee, Sustainable Finance Steering Committee, Impact Investment Fund Investment Committee and BMO GAM Investment Committee.

Working groups are set up as needed to advance climate-related opportunity and risk management approaches and to promote consistency and alignment across the enterprise. They include representatives from across teams. In 2021, the following working groups focused on climate-related topics: Sustainable Bonds Working Group, Climate Scenario Analysis Working Group and the Climate Leads Working Group.

# Strategy

We are integrating climate opportunities into our business, building on our existing strengths and capabilities.

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At BMO, we know that meeting the goal of net-zero emissions by 2050 is going to mean massive transformation in every sector of the economy. Governments and financial industry regulators around the world are focusing on climate change: how to support a gradual, just transition that addresses environmental and social impacts to affected workers, communities and Indigenous peoples and includes traditionally economically marginalized people in new industries, the orderly adoption of new energy sources and technologies, and expectations for climate risk management.

As a global bank, we aim to help drive this transformation by partnering with our clients to accelerate the low-carbon transition, including identifying and advancing climate solutions that meet net-zero objectives and social justice goals. Our clients will play a critical role in the transition to a net-zero carbon economy and we believe this transition presents opportunities – from gains in efficiency to growing customer demand for sustainable finance and transition finance products. A potential challenge to achieving net-zero financed emissions by 2050 will arise from any divergence between client transition plans and net-zero decarbonization trajectories. This could occur, for example, where client investments to decarbonize and transition their business achieve emissions reduction later than 2030 or 2050 net-zero targets. Additionally, achievement of decarbonization goals will depend to a large extent on successful implementation of government policy aligned with net-zero objectives.

BMO is working with our clients on this journey through product innovation. Our ambition is clear: **to be our clients' lead partner in the transition to a net-zero world**. Our client partnership strategy focuses on supporting the decarbonization efforts of our clients, rather than divestment strategies that we believe do not support emissions reduction in isolation.

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We are doing this by integrating climate opportunities into our business strategy, leveraging our expertise, platforms and finances to support our clients and drive economy-wide solutions to achieve a net-zero future. BMO's four-part climate strategy was presented to and approved by the Board of Directors in 2020.

# BMO'S Net-Zero Ambition

To be our clients' lead partner in the transition to a net-zero world

## Commitment

Acting on our commitment to a sustainable future, we're playing our part to drive the transformation toward a net-zero world.

- Maintaining carbon neutrality and 100% renewable electricity purchases for our operations and setting a 30% emissions reduction goal by 2030.
- Targeting net-zero financed emissions in our lending by 2050 with intermediate targets for financed emissions reductions that will be achieved in partnership with clients.
- Commit to transparency in emissions measurement and performance.

## Capabilities

BMO Climate Institute provides thought leadership at the intersection of climate change and finance, allowing us to be the premier advisor to clients and partners on climate risk and opportunity.

- Leverage BMO's sophisticated analytical capabilities to understand the impacts of climate change.
- Generate insights that enable our business, clients and partners to adjust and flourish in the evolving climate landscape.
- Provide thought leadership informed by data-driven research and expertise.

## Client Partnership

We are committed to helping our clients adapt to climate change, offering a tailored suite of green advisory, investment and lending products and services to support their transition to a net-zero global economy.

- Engage with customers to advance climate adaptation strategies.
- Enable our clients' net-zero transitions with a tailored suite of green advisory, investment and lending products.
- Be a 'one-stop-shop' for clients to meet the full range of ESG needs.

## Convening for Climate Action

BMO is driving insights and bringing together industry, government, researchers and investors to catalyze the climate conversation, collaborate on solutions and accelerate a socially and economically just net-zero transition.

- Unite BMO employees and equip them with knowledge to inform meaningful climate policy and business decisions.
- Develop solutions for climate sensitive sectors in North America.
- Explore the synergies between climate and social justice goals.



# Commitment

We are taking comprehensive steps across our financing activities and operations to drive solutions that contribute to a net zero world. Our approach is guided by our commitment to and participation in many market-leading initiatives.

## Net-Zero Banking Alliance (NZBA)

Industry-led and convened by the United Nations, the NZBA brings together leading banks who are committed to working with their clients to align their lending and investment activity with pathways to net-zero emissions by 2050. We joined the NZBA in October 2021 and we are committed to setting intermediate and longer-term financed emissions reduction targets that we will seek to achieve by working with our clients.

## Partnership for Carbon Accounting Financials (PCAF)

PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the GHG emissions associated with their loans and investments. We joined PCAF in January 2021, and have begun to quantify and disclose finance emissions in accordance with PCAF's Global GHG Accounting and Reporting Standard for the Financial Industry (the PCAF Standard) as an important step toward setting Paris-aligned targets for our portfolio.

## Principles for Responsible Banking (PRB)

The PRB are a framework for a sustainable banking system. We joined in February 2021, committing to align our business strategy with the UN Sustainable Development Goals, the Paris Climate Agreement and relevant national and regional frameworks. Through our Net-Zero Ambition, and led by the BMO Climate Institute, we are embedding the objective of maximizing positive impacts and minimizing negative impacts in relation to climate change in our business strategy and advancing that goal with our clients and other stakeholders.

## Net Zero Asset Managers initiative (NZAM)

NZAM is an international group of asset managers committed to supporting the goal of net-zero GHG emissions by 2050 or sooner and to supporting investing aligned with net-zero emissions by 2050 or sooner. BMO GAM was a founding signatory in December 2020 and has set interim targets toward a goal of 100% net zero assets under management by 2050. BMO GAM developed a net-zero methodology for listed equity assets based on the Net Zero Investment Framework of the Paris Aligned Investment Initiative.

## Climate Engagement Canada (CEC)

The CEC is a finance-led initiative that drives dialogue between Canadian institutional investors and industry to promote a just transition to a net-zero economy. BMO GAM is a founding member and sits on its Steering Committee. Through CEC membership BMO GAM commits to engaging Canadian investee companies on a just transition to net zero.

## International Sustainability Standards Board (ISSB)

BMO supports the new ISSB in its aims to develop a common set of consistent, comparable and reliable global sustainability standards to meet stakeholder needs.

## Understanding the impact of climate change in our portfolio

Implementing industry-leading approaches developed by these initiatives is helping us develop a detailed understanding of our financed emissions and the scientific decarbonization pathways that apply to our portfolio.

This will inform our climate strategy and the actions we can take to facilitate economy-wide emissions reductions in partnership with our clients, all of which will be documented in a Board-approved transition plan. Significant work is already underway, led by BMO's Sustainable Finance team and Energy Transition Groups and the BMO Climate Institute. [See page 13](#) for details.

## Glasgow Financial Alliance for Net Zero

The Glasgow Financial Alliance for Net Zero (GFANZ) brings together the financial sector Race to Zero initiatives to mobilize and elevate net-zero ambitions ahead of the United Nations Climate Change Conference (COP26). BMO is a member of GFANZ through its membership in NZBA and NZAM.

Joining the NZBA reinforces the commitments made as part of our Net-Zero Ambition and provides us with an internationally consistent framework and guidelines for setting intermediate portfolio decarbonization targets, using robust science-based guidelines. By joining, we commit to playing a significant role in financing the climate transition and supporting collaborative approaches between the public and private sectors to reach the global goal of net-zero emissions by 2050.

BMO GAM's commitment to the NZAM builds on our existing actions on climate change, including an active engagement approach that asks investee companies to adopt net-zero targets and incorporating climate change into our voting policy.



### Canadian Investor Statement on Climate Change

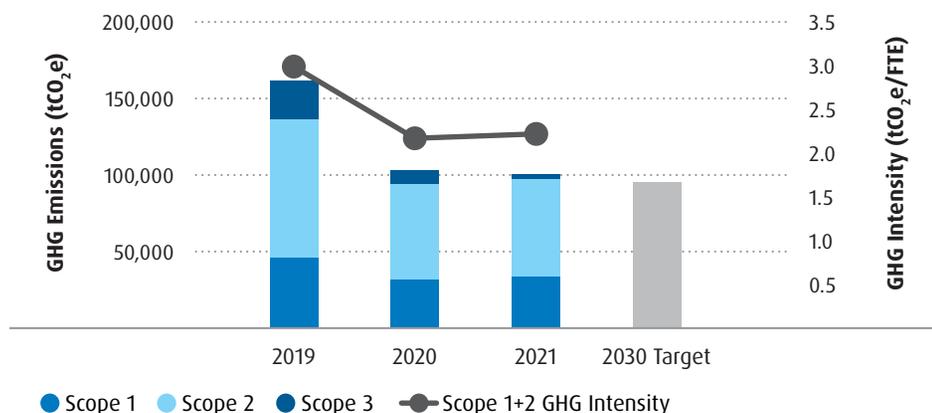
BMO GAM was a founding signatory to the Canadian Investor Statement on Climate Change where we commit to taking action to support achieving net-zero global emissions by 2050.

#### Commitment to carbon neutrality and 100% renewable electricity purchases

BMO first achieved carbon neutral status in our operations in 2010 and we have continued to maintain carbon neutrality each year. Our carbon neutral strategy ensures net-zero emissions in our operations and stimulates the market for emissions management technologies that supports achieving net-zero emissions in our portfolio and economy wide. It is based on a three-pronged approach<sup>1</sup> that includes:

- Reducing operational emissions:** Our operational environmental management system is aligned with the principles of ISO 14001 and to our own sustainable design and construction guidelines that include energy performance specifications for office and retail construction and renovation projects. We maintain ISO 14001 certification at two office buildings in Canada and have achieved Leadership in Energy and Environmental Design (LEED) certification at 13 locations globally. We track and analyze our Scope 1 and 2 GHG emissions and our Scope 3 GHG emissions associated with waste generation and business travel. BMO has set and achieved four successive multi-year enterprise-wide emission reduction targets since 2008. In 2021, we set a new target to reduce operational GHG emissions by 30% by 2030, compared to a 2019 baseline using science-based approaches. We are making progress toward this target by investing in energy-saving initiatives such as lighting retrofits, heating and cooling infrastructure upgrades, as well as building envelope and operational efficiency improvements. In 2020 and 2021, we saw emissions reduction that reached or came close to the 2030 target, largely attributable to COVID-19 related remote working conditions. Return to office could increase emissions relative to 2020 and 2021 in future years but the overall emissions reduction target from the 2019 baseline will continue to be pursued.
- Matching electricity with renewable sources:** In 2020, we set an annual goal to match 100% of our global electricity usage with electricity procured from renewable sources. We purchase unbundled Renewable Energy Certificates (RECs), which helps to clean the electrical grids where we operate while investing in the renewable energy market and creating demand to stimulate its growth.
- Investing in high-quality carbon offsets:** We purchase offsets to neutralize remaining Scopes 1, 2 and operational Scope 3 emissions. In 2021, we committed to purchasing our first carbon removal offsets (see box to the right).

#### BMO's operational greenhouse gas emissions



<sup>1</sup> Information on BMO's carbon neutral strategy is available on our [website](#).

### Tracking our operational emissions

Understanding the environmental impact of our operations is important as we transition to a net-zero world. [See page 28](#) for the metrics and targets we use to track our operational greenhouse gas emissions.

#### Direct Air Capture

Direct Air Capture (DAC) is one of the few technologies that removes CO<sub>2</sub> from the atmosphere and is expected to be key in the global transition to net zero. In 2021, BMO became the first bank in the world to publicly announce the pre-purchase of DAC carbon removals using Carbon Engineering technology.

BMO pre-purchased 1,000 tonnes of carbon removal units through BeZero Carbon's climate solutions platform, with the removal planned to be delivered by a large-scale facility utilizing Carbon Engineering's (CE) DAC technology. CE is a Canadian company whose mission is to develop and commercialize a technology that removes CO<sub>2</sub> directly out of the atmosphere at megaton-scale. They are engineering what is expected to be the largest Direct Air Capture (DAC) plant in the world that is projected to capture 1 million tonnes of CO<sub>2</sub> from the atmosphere each year when complete.

CE's DAC technology, paired with geologic sequestration, is the only solution to qualify for the BeZero Carbon Rating Framework's highest AAA+ rating and aligns with the NZBA implementation standards that require a robust approach to the role of offsets.

As an early adopter, BMO is supporting Canadian innovation to accelerate the development, commercialization and deployment of carbon removal technologies at scale.



> Rendering of a large-scale Direct Air Capture plant utilizing Carbon Engineering technology.



Established in 2021, the BMO Climate Institute is a centre of excellence that bridges climate policy and science with business strategy and finance to unlock solutions for both clients and the bank. Led by a multidisciplinary team with climate-related expertise, the Institute leads BMO's efforts to convene stakeholders and drive thought leadership to advance the low-carbon transition and enhance resilience.

In collaboration with BMO Artificial Intelligence (AI) Labs and external partner Climate Engine, the BMO Climate Institute has developed a geospatial platform capable of analyzing over 80 climate-related risk drivers and outcomes including temperature, precipitation, flooding, wildfires, wind, drought, crop health, soil moisture and others. The platform quantifies historic changes and projects the physical impacts of climate change under different global temperature scenarios and time horizons. The BMO Climate Institute is advancing experimentation within the bank on the use of this advanced technology for analyzing climate risk and identifying client advisory opportunities.

The Institute developed a climate change essentials training course for all BMO employees in 2021. The course explains what climate change is, the risks and opportunities for businesses, BMO's Net-Zero Ambition and the role each employee can play. Future courses will build on these basics and be tailored to equip BMO employees of specific lines of businesses with the knowledge and tools to support our clients in their transition to a net-zero world.

In 2022, the Institute plans to advance the bank's climate strategy and engagement by convening operating groups to stimulate product innovation and deepen client relationships, advance BMO's digital strategies on climate analytics and coordinate collaboration with industry, government and academia to promote innovation and solutions for financing decarbonization and adaptation.

### Climate Analytics

BMO's climate analytics platform is capable of providing a high-resolution (i.e., property level) assessment of physical climate risk including:

- Historic change over time to understand how business-relevant parameters (e.g., water availability) have deviated from their predictable historic norms;
- Current exposure to climate risks based on statistical modelling of historic and recent data; and
- Future projection based on robust scientific modelling to quantify the evolution of climate risks across a variety of different global temperature scenarios and time horizons.

In 2021, BMO's climate analytics platform was used to assess exposure of physical climate hazards across multiple time horizons and warming scenarios for more than 400,000 unique properties. Use cases are being evaluated including strategies to manage credit risk.

# Client partnership

We are partnering with our clients to help them adapt to climate change impacts and contribute to the transition to a net-zero global economy.

Sustainable finance is an important tool we can use to drive the transition to a lower carbon economy. We see a significant opportunity to differentiate ourselves leveraging our sustainable finance strategy to be our clients’ lead partner in the transition to a net-zero world. That includes developing innovative and tailored new products and business services related to climate change, and accessing new markets with financial solutions that can assist customers during their transition to a net-zero carbon economy. We are developing strategies to capture this opportunity across each of our lines of business. Capturing these opportunities has the potential to facilitate net zero-aligned decarbonization, but a successful transition will also require effective government policies aligned to the net-zero goal in the jurisdictions in which we operate.

Under the leadership of our General Counsel and Executive Committee sponsor for sustainability, and the Chief Strategy and Operations Officer, BMO established a Climate Leads Working Group in 2021. Consisting of 24 BMO leaders from across the bank’s central functions and operating groups, the group started to meet in the summer of 2021 to advance a climate growth strategy that aims to accelerate initiatives across the bank and develop emerging businesses.

## Sustainable financing

Sustainable financing includes green, social and sustainable underwriting, advisory services, lending and investments. BMO Capital Markets has underwritten significant amounts of sustainable debt and created a dedicated advisory capability to support our clients in their work on sustainability.

### Green financing by outcome (\$ billions)

	Total since fiscal 2019		
<b>Green</b>	<b>\$70.55</b>	<b>100%</b>	
Low-carbon energy	\$28.67	41%	
General green <sup>1</sup>	\$20.10	28%	
Green buildings	\$8.34	12%	
Waste management	\$7.47	11%	
Clean transportation	\$3.83	5%	
Sustainable agriculture	\$2.14	3%	

In 2021, we increased our commitment to sustainable financing to \$300 billion in capital to companies pursuing sustainable outcomes by 2025.

Since fiscal 2019, BMO has mobilized \$71 billion in green finance, including capital mobilized in support of clean transportation, low-carbon energy, green buildings, waste management, sustainable agriculture and other general green purposes including deals with multiple benefits. For bond underwriting, along with equity and debt financing, we account for the total deal value where BMO played a lead role, and our proportionate share of the deal value where we played a non-lead role. For advisory, lending and investment we account for the total monetary value of the deal, the authorized loan, or the investment.

<sup>1</sup> Includes green labelled transactions or transactions that involve multiple green outcomes such as those listed here.

You can read about the volumes and types of sustainable finance transactions in our [2021 Sustainability Report](#).

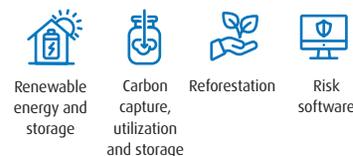
## Impact investing

As part of our \$300 billion commitment to sustainable financing, we launched our Impact Investment Fund in 2019 and seeded it with \$250 million of our own assets, which we invest in sustainability solutions and companies that are making a positive sustainability impact. You’ll find information about investments made through the fund in our [2021 Sustainability Report](#).

The objective of the Fund is to find and scale impactful solutions that facilitate the achievement of our corporate clients’ sustainability goals across three themes.

### Decarbonization

Electrification, energy efficiency, energy storage, GHG emission sequestration and other solutions



### Circular economy

Waste management, recycling, sustainable products, packaging and materials and other solutions



### Sustainable food and agriculture

Production efficiency improvements, product innovations and other solutions



The Fund supports scalable technologies that address these areas of sustainability. It looks for companies with proven technology and some level of commercial revenue, that can make use of additional capital to scale their business. Proof of impact is a key investment criterion. Processes for assessing impact are outlined in our [Operating Principles for Impact Management Disclosure Statement](#).

## Energy Transition Group

In 2021, BMO Capital Markets created the Energy Transition Group. The group helps clients achieve decarbonization strategies by evaluating energy technologies and pairing core products and services with specialty products, such as the BMO Impact Fund and themed loans to advance financing for opportunities that are not yet bankable on their own.

The Energy Transition Group provides knowledge, tools and support, including research from the BMO Climate Institute, to BMO’s industry groups as they engage with clients on their energy transitions. It draws on industry sector specialists from within the Energy, Power Utilities & Infrastructure, Metals & Mining, Industrials, Food Consumer & Retail and Sustainable Finance groups to provide a broad range of expertise in energy transition developments and opportunities, including:

- Hydrogen and fuel cells
- Energy transition finance
- Electricity storage
- Low-carbon fuels and renewable natural gas
- Carbon capture, use and sequestration
- Energy transition minerals
- Renewable and nuclear power
- Electric mobility and zero emission vehicles
- Nature-based solutions
- Energy demand-side management
- Circular economy solutions including waste-to-value processes.

# Convening for climate action

We are collaborating for climate action through participation in many initiatives, working groups and multi-stakeholder partnerships. These collaborations support the development of climate change knowledge and expertise, including a better understanding of the risks and opportunities related to climate change and the transition to a net-zero carbon economy.

## Equator Principles (EP) Association

BMO has been a signatory to the Equator Principles since 2005. We represent North America on the EP Association Steering Committee, were actively involved in the EP4 update, which included climate change, Indigenous rights, and environmental and social risk management in its scope and chair the Cross-Sector Biodiversity Initiative to develop and share good practices related to biodiversity and ecosystem services in the extractive industries.

## UNEP FI TCFD Pilot Projects for Banks – Phase III

BMO is participating in Phase III of the UNEP FI TCFD banking program to enhance our TCFD implementation. We are actively engaged in modules focused on climate stress testing, physical and transition risk tools, sectoral and regional climate risk, real estate, portfolio implied temperatures methodologies, climate risk management and disclosure best practices, economic impacts of climate change, and supporting client transitions and underwriting

## Canadian Bankers Association – Environmental Risk Specialists Group

BMO is participating in an industry forum that monitors regulatory developments and drafts submissions to domestic and international regulators on consultations related to climate risk, engages on climate scenario analysis matters, shares best practices for climate risk disclosures, particularly in line with the recommendations of the TCFD.

## Canadian Chamber of Commerce – Net-Zero Council

BMO sits on the Canadian Chamber of Commerce’s Net-Zero Council, a group dedicated to advancing business leadership on climate change, and that aims to inform government policy through numerous channels, including through the Government of Canada’s Net-Zero Advisory Body.

## Bank Policy Institute (BPI)

BMO is participating in the Climate Working Group of BPI, a nonpartisan public policy, research, and advocacy group, representing leading banks in the United States.

## ISO Technical Committee 207 on Standardization in the Field of Environmental Management

A member of BMO’s Sustainability team is the Chair of Canada’s Mirror Committees to ISO’s Technical Committee 207. This work is focused on creating tools to address environmental and climate impacts, including related social and economic aspects, in support of sustainable development. Scope of work includes environmental management systems, auditing, verification/validation and related investigations, environmental labelling, environmental performance evaluation, life cycle assessment, climate change and its mitigation and adaptation, ecodesign, material efficiency, environmental economics and environmental and climate finance.

## ISO Technical Committee 322 on Standardization in the Field of Sustainable Finance

A member of BMO’s Sustainable Finance Team is the Chair of Canada’s Mirror Committee to ISO’s Technical Committee 322 on Standardization in the Field of Sustainable Finance. Its work will promote the integration of sustainability considerations, including environmental, social and governance practices in the financing of economic activities.

## Sustainable Finance Action Council (SFAC)

BMO is a participant in the SFAC and in Technical Expert Groups. The council is working on necessary infrastructure to advance sustainable finance in Canada, including key areas like data availability and taxonomy development.

## UNEP FI Principles for Responsible Banking Resource Efficiency Target Setting Working Group

BMO is participating in the UNEP FI Principles for Responsible Banking Working Group on Resource Efficiency Target Setting. The work is focused on creating guidelines and setting targets related to financing the transition towards a resource efficient and circular economy.

## BMO’s Sustainability Leaders Podcast



BMO’s Sustainability Leaders Podcast won the 2021 International Business Awards *Stevie Award* for the best business podcast. Launched in 2019, the podcast is focused on advancing the dialogue on leading approaches to sustainability. Topics in 2021 included climate change, human rights, social equity, affordable housing, biodiversity and the transition to a net zero world. <https://sustainabilityleaders.bmo.com/en/home/sustainability-leaders-podcast/>

### Partnership for Carbon Accounting Financials (PCAF) Working Groups

BMO is participating in working groups with other financial institutions to develop and implement a harmonized approach to assess and disclose the GHG emissions associated with our loans and investments, including a Canadian working group and working groups focused on commercial and residential real estate and motor vehicle lending.

### Climate Risk Consortium, Risk Management Association

BMO joined the Consortium in 2022, the first industry consortium dedicated to the sole purpose of advancing best practices in climate risk management within the financial services industry. The consortium will advance best practices and create thought leadership across all three lines of defense and other aspects of climate risk management.

### Climate risk industry forums and working groups

We participate in several other climate risk industry forums and working groups, including those organized by the Institute of International Finance (IIF), Institute of International Bankers (IIB), Bank Policy Institute (BPI), Global Risk Institute (GRI), Global Association of Risk Professionals (GARP), Risk Management Association (RMA) and the International Association of Credit Portfolio Managers (IACPM). These forums provide a way to get timely updates on industry and regulatory developments, an opportunity to share best practices, and in some cases are avenues to provide industry feedback on government or regulatory discussion papers or consultations.

### Climate Action 100+

BMO GAM was a founding member of this US\$60 trillion global investor engagement collaboration, which is working to ensure that the world's largest corporate greenhouse gas emitters take necessary action on climate change.

### Climate Engagement Canada

In 2021, BMO GAM became a founding member of the Canadian investor engagement collaboration where we commit to lead engagement with Canadian corporations to promote a just transition to a net-zero economy. BMO GAM serves on the steering committee.

### Canadian Investor Statement on Climate Change

In 2021, BMO GAM co-authored and became a founding signatory to the Canadian Investor Statement on Climate Change, which brings together Canadian institutional investors to support a transition to a net-zero economy informed by Indigenous perspectives, calling for increased climate accountability at public companies and outlining climate actions investors themselves commit to. The Statement was supported by \$5.5 trillion in assets under management representing 35+ investors.

### Transition Pathway Initiative

BMO GAM supports the Transition Pathway Initiative, which assesses companies' preparedness for the transition to a lower-carbon economy.

### BMO GAM policy engagement

BMO GAM continues to engage with policy makers to encourage robust action on climate change. BMO GAM recently supported the Global Investor Statement to Governments on the Climate Crisis ahead of COP26, and engaged with the Ontario Capital Markets Modernization Taskforce on mandated climate disclosure for regulated companies in line with the TCFD recommendations.

# Risk Management

We consider climate change to be a transverse risk driver that manifests through our identified material risks.

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At BMO, we consider the physical and transition risks arising from climate change to be transverse risk drivers that could have an impact on the material risks in our risk taxonomy.

In 2020, we incorporated specific climate considerations as part of our enhanced environmental and social risk framework by formally identifying climate change as a material risk to the bank and including it in our enterprise-wide risk taxonomy as a subset of environmental and social risk. In 2021, we added climate-related physical risk and transition risk to the taxonomy. We anticipate that the taxonomy may evolve as we enhance our understanding of how climate-related impacts could manifest as risks to the bank.

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# Risk Management Framework

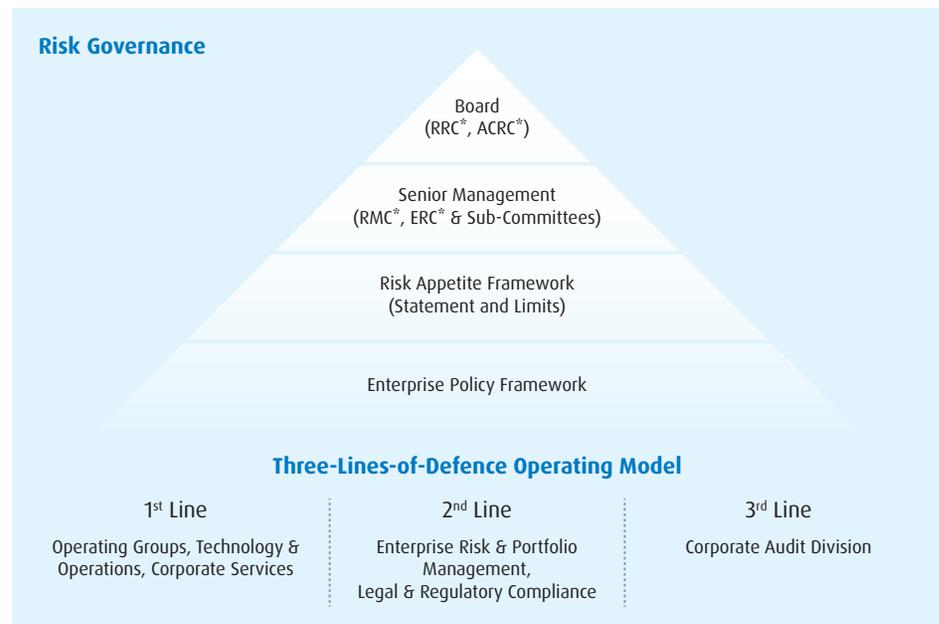
We are embedding climate change considerations across our Enterprise-wide Risk Management Framework (ERMF). Overseen by the CRO, the ERMF defines our approach to risk management, including risk governance and the risk management lifecycle. It is enabled through people, process and technology, and leverages tools including modelling and analytics, stress testing, and the risk taxonomy that defines our material risks. It is underpinned by our risk culture. You'll find more information about our ERMF the 2021 Annual Report and MD&A.

Embedding climate change considerations into our ERMF means efficiently leveraging existing risk governance mechanisms and processes in the risk lifecycle, updating them where needed, and building new capabilities where necessary to identify, assess and manage the potential impact of climate change on our clients, portfolios and operations. For example, our evolving climate scenario analysis program ([see page 25](#)), informs our process for climate-related risk identification, assessment and management.

We have a qualitative risk appetite statement for environmental and social risks, including climate change. In 2020, we established the first Board-reported climate change Risk Appetite Statement and associated key risk metric, which measures our lending to carbon-related assets as a percentage of our total net loans and acceptances, net of allowance for credit losses for impaired loans. In 2021, we established risk tolerance thresholds for the metric that came into effect in 2022 and were informed by our financed emissions and decarbonization pathway modelling analysis ([see page 42](#)).

## Enterprise-Wide Risk Management Framework

<b>Risk Management Approach</b>	Maintain Strong Capital and Liquidity	Diversify. Limit Tail Risk	Optimize Risk Return	Understand and Manage	Protect our Reputation
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<b>Risk Culture</b>	Tone from the Top	Accountability	Effective Communication and Challenge	Incentives
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\*RRC: Risk Review Committee, ACRC: Audit and Conduct Review Committee, RMC: Risk Management Committee, ERC: Enterprise Regulatory Committee

# Identifying, assessing, and managing climate-related risks

ERPM and the Sustainability team work with the lines of business (including the BMO Capital Markets Sustainable Finance team and the BMO Global Asset Management team) and Corporate Services (including Risk) to manage E&S risk within our organization and to make progress towards achieving our sustainability goals. BMO's Net-Zero Ambition is one of those goals.

ERPM and the Sustainability team, working with the Operating Groups, monitor and respond to evolving international standards and regulations. We keep informed of evolving practices related to climate-related risk by conducting independent research, participating in global forums with our peers, maintaining an open dialogue with our internal and external stakeholders, and monitoring regulatory developments, best practices and initiatives from non-regulatory international bodies.

We consider the physical and transition risks arising from climate change to be transverse risk drivers that could have an impact on our material risks in our risk taxonomy over the short (0-1 years), medium (1-3 years) and longer term (3-20 years). Physical risks are risks associated with a changing climate, resulting in both acute and chronic physical effects. Transition risks are risks associated with the shift to a net-zero carbon economy. For a discussion of BMO's material risks and their definitions, please see pages 81-113 in our 2021 Annual Report and MD&A. Set out below is a discussion of how climate-related risk could impact some of our material risks.

## Credit and counterparty risk

Climate-related risks could affect our exposure to credit and counterparty risk by impacting our customers' revenues, costs, or access to capital such that they may become unable to meet their financial commitments to BMO. Borrowers may face losses or increases in their operating costs as a result of acute or chronic changes in climate conditions and/or climate-related policies, such as carbon emissions pricing, sector-based targets or emissions caps. Revenues may be affected by new and emerging technologies, which could disrupt the existing economic system and displace demand for certain commodities, products and services.

We are documenting our environmental and social risk framework, including climate change, by weaving it into existing policies and procedures. In 2020, we updated several financing guidelines to address environmental risks, including climate change, and we apply enhanced due diligence to transactions with customers operating in environmentally sensitive industries. Our Environmental and Social Risk Financing Guideline includes direction on how to develop an understanding of specific climate change impacts on the borrower and its operations, including regulatory and/or legislative changes. This includes efforts to develop an understanding of borrowers' climate change adaptation and mitigation strategies.

## Managing risk arising from customer and client relationships

To identify, assess and manage specific climate-related risks arising from our customer and client relationships, we follow internal guidelines that outline the scope of E&S risk and establish procedures, including enhanced due diligence, to determine the extent of our exposure to any such risk. To avoid over-exposure to any one sector or geographic region that might be exposed to climate-related risks, we maintain a diversified lending portfolio. We continue to conduct sector-specific reviews across our lending portfolio to assess potential exposure to climate-sensitive industries. As these sector-specific reviews are ongoing, the identified climate risks for each sector may be amended or updated in the future.

## Sensitivity to climate risk of BMO lending exposures, as at October 31, 2021

Industry	Primary climate risk	% of net loans and acceptances
Residential mortgages	Physical and transition	28.6%
Consumer instalment and other personal loans	No significant risk	16.3%
Financial	Physical and transition	11.1%
Service industries	No significant risk	9.5%
Commercial real estate	Physical and transition	9.1%
Manufacturing	Physical and transition	5.9%
Retail trade	No significant risk	3.6%
Wholesale trade	No significant risk	3.1%
Agriculture	Physical and transition	2.9%
Transportation	Physical and transition	2.7%
Credit cards	No significant risk	1.7%
Utilities	Physical and transition	1.5%
Oil and gas	Transition	1.2%
Construction (non-real estate)	Transition	0.9%
Other	Not assessed	0.5%
Mining	Physical and transition	0.4%
Government	Transition	0.4%
Financing products	No significant risk	0.2%
Communications	No significant risk	0.2%
Forest products	Physical	0.2%

### Operational non-financial risk

BMO's exposure to operational risks could be heightened by climate-related physical and transition risks. Physical risks from environmental events, such as droughts, floods, wildfires, earthquakes, and hurricanes and other storms could also potentially disrupt our operations and result in lower earnings and higher losses. Climate risk assessment is part of BMO's Property Risk Management Framework. Our business continuity management preparations, including our Emergency Response and Preparedness Plans, provide us with the capability to restore, maintain and manage critical operations and processes in the event of a business disruption.

In addition, we understand that our exposure to operational risks related to our use of resources could be heightened by climate-related transition risks. Changes in climate patterns and climate-related policies may result in increases in the operating and capital costs associated with the energy and equipment used to heat, cool and power our facilities. We manage energy consumption through energy savings projects such as lighting, HVAC and controls upgrades. If the lifespan of assets (e.g. HVAC equipment) are negatively impacted, we modify our capital forecasting. We monitor the regulatory landscape for new fuel or energy taxes and carbon pricing regulations that could affect our operating costs on an ongoing basis through our internal risk management group, feedback from third-party facilities management service providers and participation in industry associations.

Changing climate patterns and climate-related policies may also affect the operating and capital costs of our suppliers. Suppliers may choose to pass these costs on to their customers, which could result in higher purchasing costs for BMO. Consistent with our Supplier Code of Conduct, BMO's Sustainable Procurement program considers current and future suppliers' sustainability performance and risk management, including risks related to climate change. We utilize a rigorous supplier selection process to determine which risks could have a substantive financial or strategic impact on our organization. All requests for proposal (RFPs) include a comprehensive set of sustainability questions that seek to understand proponents' practices related to environmental and social responsibility.

### Legal and regulatory risk

We may be exposed to an increasing legal and regulatory compliance risk as well as potential litigation and liability costs. Globally, financial services regulators and supervisors are in the process of introducing principles related to management of climate-related financial risk which we will consider as we continue to embed climate risk into our enterprise risk management framework. Legal and regulatory risks could arise from our actual or perceived actions, or inaction, and those of our clients in relation to climate change and other environmental and social risk issues, or our disclosures related to these issues.

### Strategic risk

Understanding our climate-related risks and opportunities over the short, medium and longer term will help us develop climate-resilient business strategies and make decisions that aim to reduce those risks and enhance opportunities for growth. Which financial mitigants are chosen to manage the risks, their effectiveness and cost may also result in shifts in our business strategies.

Government policies that support the transition to a lower-carbon economy, potential regulatory or supervisory approaches and the increasing severity of climate events may make consumers more aware of climate change and result in changes to consumer behaviour. To help reduce the future impact of climate change, retail and wholesale consumers may shift their behaviour towards climate-friendly consumption and request financial services and products that align with a positive climate impact or choose to change institutions. Investors are also shifting their expectations in respect of climate change and a growing number are incorporating climate related risk considerations into investment decisions.

Conversely, government policies may diverge from consumer and investor preferences and the Bank could be encouraged, through policies, taxes, and/or regulation, to pursue products and services that are inconsistent with those preferences or market-based capital allocation.

This increased awareness of and demand for climate-friendly services, products and increased reporting about banks' climate-related risk profile may inform and influence adjustments to our business and investment strategies.

### Reputation risk

Increasingly, investors, customers and stakeholders are calling on financial institutions to play a key role in addressing climate-related risks and impacts. How we manage and report on climate-related risks and opportunities could result in new or heightened reputation risks for the bank. Indirectly, reputational risks may also manifest as stakeholders look to hold banks responsible for financing clients who are viewed as responsible for negative impacts of climate change.

### Engaging with suppliers on climate risk

Participation in the CDP Supply chain program is helping us understand climate risk in our supply chain. In 2021, we engaged some of our top suppliers through the program. They provided GHG emissions data and information on how they are managing climate risk and opportunity. You'll find more information about sustainable procurement program in our 2021 Sustainability Report.

# Climate-related scenario analysis

BMO is developing a climate scenario analysis program to explore climate-specific vulnerabilities in order to enhance our resilience to climate-related risks, in line with the TCFD recommendations. The climate scenario analysis program leverages existing risk capabilities in combination with climate-specific expertise. This program includes the evaluation of transition risks and/or physical risks, where relevant and potentially significant, across a selection of climate-sensitive portfolios and we will continue expanding analyses across sectors and risk types, in line with internal policies and any applicable regulatory requirements. Utilizing scenario analysis to gain a deeper understanding of climate-related risks is relatively new and is rapidly evolving. As we enhance our knowledge of climate-related impacts, and continue to consider comprehensive climate-based scenarios, our approach to analysing these scenarios will evolve as data modelling techniques and data availability improve. These efforts will help identify potential material financial risks and may inform our business strategy in relation to climate change going forward.

Physical and transition risks have long time horizons with high uncertainty about how policy and socioeconomic factors might evolve. They are global and economy-wide in nature, complex, and vary from region to region and sector to sector. Scenario analysis is a useful tool that allows us to understand the potential scale of our exposures to and impacts of the risks associated with climate change. It also helps us evaluate the risks and our financial capacity to adapt and meet our strategic objectives, including climate targets.

We have conducted climate scenario analysis pilots on a selection of climate sensitive sectors in our lending portfolio, including upstream oil and gas, commercial real estate, residential real estate, agriculture and metals and mining. The table below summarizes the scenario analysis pilots conducted in 2019 and 2020.

## Scenario analyses completed to date

	Oil & Gas	Commercial Real Estate	Agriculture	Metals & Mining
<b>Transition risks assessed</b>	Policy Technology Market	Policy Regulatory	Policy Market	Policy
<b>Physical risks assessed</b>	Not assessed	Acute risk	Chronic risk and acute risk	Not assessed
<b>Climate scenarios assessed</b>	Disorderly transition – Carbon tax scenario on oil and gas sector: a pure carbon tax rises quickly and is applied in isolation to the sector  Orderly transition – Integrated REMIND 2-degree scenario: a carbon tax builds up slowly and the scenario captures energy interactions across the globe	Orderly transition (2°C) – climate policies introduced early and become gradually more stringent; net-zero carbon emission achieved before 2070; 67% chance of limiting global warming to 2°C  Disorderly transition (2°C) – climate policies introduced beginning in 2030; sharper emission reductions needed to reach net-zero carbon emissions by 2070  Hothouse world (3°C+) – currently implemented policies are preserved; emissions grow until 2080 leading to global warming of 3°C or more; irreversible climatic changes occur		REMIND model coupled with the MagPIE (Model of Agriculture Production and its Impacts on the Environment) integrated assessment modelling framework. BMO evaluated two immediate action transition scenarios:  Immediate 2°C – collective action is taken now to reduce emissions towards a 2°C target  Immediate 1.5°C – immediate action is taken now to reduce emissions towards a 1.5°C target
<b>Time horizon</b>	Short term: 2021 Long term: 2040	Short term: Immediate Medium term: 2030 Long term: 2040+		
<b>Climate risk metrics</b>	Scenario-adjusted risk rating and probability of default.	Potential impact on credit losses.		

We continue to build our internal capacity to conduct climate change scenario analysis. Scenario analysis is led by ERPM, in collaboration with the Operating Groups, the Sustainability team and Technology & Operations. In 2021, we introduced a Climate Scenario Analysis Working Group to consider how scenario analysis can support our assessment of opportunities and risks and to design and implement a repeatable climate scenario analysis program. The working group includes representatives from ERPM, the Sustainability team and the BMO Climate Institute, Technology and Operations, Economics and the Operating Groups. Taking a holistic and multi-disciplinary approach, the working group aims to promote consistency in design and implement a repeatable climate scenario analysis program, leveraging existing stress testing capabilities and augmented with climate-specific expertise.

The approach will generate quantitative assessments of transition and physical risks on selected industries, and over time, enterprise wide. Where quantitative analysis is challenging, we are working to incorporate qualitative overlays. Learnings from previous pilots as well as evolving industry best practices are being used to inform this development work and expand analysis to other sectors in our portfolio.

## 2021 scenario analysis on BMO’s London portfolio

BMO London Branch continues to deliver against its plan to meet U.K. Prudential Regulation Authority (PRA) climate risk requirements. In 2021, significant progress has been made in the analysis of the London loan portfolio to better understand client sensitivities to climate risk, focusing on the sectors most at risk from a climate transition. This includes the capture of client level climate data and the development of a plausible transition risk scenario based on the imposition of a carbon tax. Our approach continues to evolve in line with industry best practice and as the availability of complete, accurate and comparable data allows. This analysis does not represent a forecast and potential impacts are uncertain given the forward-looking nature of the assessment. Climate risk is embedded in the Branch risk taxonomy and risk appetite with the CRO Europe holding senior management function accountability.

<b>Metals &amp; Mining</b>	
<b>Transition risks assessed</b>	The impact of emissions on a client’s credit rating and associated sensitivity to a carbon tax.  Qualitative assessment of client exposure to climate risk across a range of factors, including, but not limited to, revenue composition (fossil fuels versus energy transition minerals), costs, supply and demand, decarbonization strategy.
<b>Physical risks assessed</b>	Not assessed.
<b>Climate scenarios assessed</b>	Assumed a range of carbon taxes identified in the Network for Greening the Financial System orderly and disorderly scenarios.
<b>Time horizon</b>	Point-in-time analysis on a static portfolio as a proxy for future business model.
<b>Climate risk metrics</b>	Potential impact on credit ratings and corresponding credit losses, net income after tax (NIAT), regulatory capital and return on equity (RoE).

# Metrics and Targets

We track and report on opportunities and risks associated with climate change.

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At BMO, we organize our climate related metrics and targets using the Greenhouse Gas (GHG) Protocol. We quantify, disclose and may set targets against our scope 1, 2 and 3 emissions. Scope 3 emissions related to our value chain include category 15 “Investments”, often referred to as “financed emissions” in the banking context. We track and report our operational greenhouse gas emissions, financed emissions and carbon-related assets.

In 2021, we significantly expanded our metrics and target setting by beginning to quantify and disclose finance emissions by sector in accordance with PCAF’s Global GHG Accounting and Reporting Standard for the Financial Industry (the PCAF Standard). We have also begun to model decarbonization pathways using science-based, credible, low or no overshoot climate transition scenarios, with the aim of developing targets and action plans as part of our Net-Zero Ambition.

## **A note about data challenges**

We continue to improve the climate-related data that we utilize, and, to this end, we have partnered with third-party data providers and continue to build and refine our climate-related data collection, tracking and analysis capabilities. This may lead to refining our calculations over time. While we have high confidence in certain classes of climate data, such as measurements regarding our operational emissions, much climate data is limited in availability, and even when available, can be variable in terms of quality.

As the quantity and quality of the data improve, we anticipate that we may periodically restate our baseline emissions and, possibly, our emissions reduction targets. As progress against our baselines and targets continues to evolve, the progress made against our targets will also develop. While a lag may occur in the progress made against any recalibrated targets, we are committed to pursuing the best data and modelling capabilities available and transparently updating our calculations, as necessary.

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# Operational greenhouse gas emissions



> BMO Tower  
790 N Water St  
Milwaukee, Wisconsin  
Photo: Marty Peters Photography

Understanding the environmental impact of our operations is important as we transition to a net-zero world. We focus on reducing our energy use and associated GHG emissions using an enterprise-wide energy management plan that includes operational efficiency improvements and capital upgrades to our buildings.

Proudly carbon neutral since 2010, in 2020, we reached our goal to match 100% of our global electricity use by investing in Renewable Energy Certificates (RECs). In 2021, we achieved our goal to reduce operational emissions by 15% from a 2016 baseline. We also set a new target, utilizing science-based approaches, to reduce our GHG emissions 30% by 2030 compared to our 2019 baseline.

We use the following environmental indicators to track and manage our GHG emissions. In 2020 and 2021, we saw emissions reduction that reached or came close to the 2030 target, largely attributable to COVID-19 related remote working conditions. Return to office could increase emissions relative to 2020 and 2021 in future years but we will continue to target a 30% reduction by 2030 from the 2019 baseline.

	2021 <sup>1</sup>	2020	2019	Target
GHG emissions from fuel (tCO <sub>2</sub> e) (Scope 1)	33,661	31,621	45,672	30% reduction by 2030 vs. 2019
GHG emissions from electricity and steam (tCO <sub>2</sub> e) (Scope 2)	63,634	62,661	90,457	
GHG emissions from waste generated in operations (tCO <sub>2</sub> e) (Scope 3 category 5) <sup>2</sup>	1,047	676	982	
GHG emissions from business travel (tCO <sub>2</sub> e) (Scope 3 category 6) <sup>3</sup>	1,919	7,778	24,655	
Total operational GHG emissions (tCO <sub>2</sub> e)	100,261	102,736	161,766	
Carbon credits retired (tCO <sub>2</sub> e)	36,715	40,317	71,853	
GHG reductions from renewable energy credits purchased (tCO <sub>2</sub> e)	63,546	62,419	89,913	
Net operational GHG emissions (tCO <sub>2</sub> e)	0	0	0	Carbon neutral operations annually
Global electricity use procured from renewable sources	100%	100%	100%	100% annually

<sup>1</sup> In 2021, we shifted the time period of our operational emissions calculations in order to accelerate disclosure. Energy consumptions and greenhouse gas emissions reported for 2021 reflect the period from August 1, 2020 to July 31, 2021. We did not restate results for prior years, which were calculated based on our fiscal year. All results reflect twelve months of operations and are comparable. An independent third-party, Morrison Hershfield, has provided reasonable assurance for all of BMO's Scope 1 and Scope 2 emissions and some of Scope 3 emissions. The verification statement can be found on our [website](#).

<sup>2</sup> Scope 3 category 5 emissions include indirect GHG emissions from BMO's solid waste sent to municipal landfills (North America only).

<sup>3</sup> Scope 3 category 6 emissions include indirect GHG emissions from employee business travel in non-company owned assets.

# Financed emissions

Financed emissions are the total GHG emissions of our clients attributable to BMO. They are a significant contributor to any bank’s Scope 3 value chain emissions.

In 2021, we began to quantify the GHG emissions associated with our lending activities in accordance with the PCAF Standard. Guided by this approach, our process for financed emissions quantification and decarbonization pathway modelling is sector-specific, uses widely accepted metrics, is grounded in science, and is adaptable as data availability improves and decarbonization pathways evolve.

Individual sectors and sub-sectors face unique challenges in the transition to a net-zero future. Our initial analysis focused on four sectors in our portfolio that contribute to global emissions: upstream oil and gas, power generation, motor vehicles, and real estate.

Within these broad sectors, we evaluated financed emissions and decarbonization pathways for the stages of each sector’s value chain where climate impacts are concentrated, where we have significant lending exposure, where sufficient data was available, and where we are seeing stakeholder interest. Applying this approach, our financed emissions baseline analysis for 2021 focused on lending related to upstream oil and gas, lending related to power generation in Canada, lending for the purchase of personal vehicles in Canada, and residential mortgage lending in Canada.

## BMO’s Net-Zero Ambition

Our Net-Zero Ambition includes a commitment to align GHG emissions from our financing with the ambition of a net-zero world by 2050. This is a global economy-wide policy objective. Corporations, including banks, cannot reach net zero in isolation. Aligning our portfolio to net-zero pathways depends on changes in the real economy, which are influenced by public policy and by simultaneous transitions occurring in each sector’s value chain. Banks can influence this transition by engaging with clients, offering tailored products and services, supporting public policies and supporting innovation. In this context, we believe it is important to chart decarbonization pathways that are sector-specific, align with the latest climate science, and demonstrate strategic action to support the economy in achieving net-zero outcomes. This will facilitate our strategic planning and risk management and inform our partnership with clients in the transition to a net-zero world.

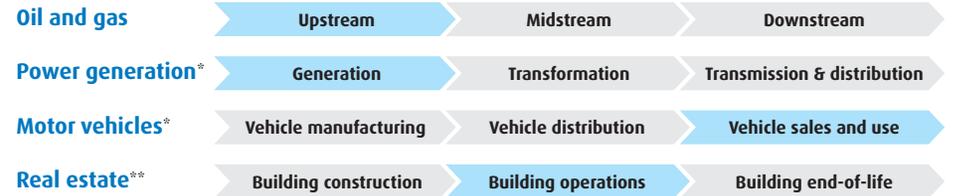
BMO was assisted in the development of decarbonization targets by Guidehouse. Guidehouse is a leading global provider of consulting services, with broad capabilities in management, technology, and risk consulting and a leader in development and implementation of net-zero climate strategies for financial institutions. Guidehouse is the global secretariat for PCAF and works with over 175 financial institutions to develop and support implementation of carbon accounting methodologies across asset classes and is a long-term technical partner with the Science Based Targets initiative (SBTi).

## PCAF Standard

PCAF’s [Global GHG Accounting and Reporting Standard for the Financial Industry](#) (the PCAF Standard) outlines a non-linear process for financial institutions to align their portfolios with the Paris Agreement objective of net-zero emissions by 2050. Our approach to financed emissions quantification, decarbonization pathway modelling and strategy and action planning is guided by this process.



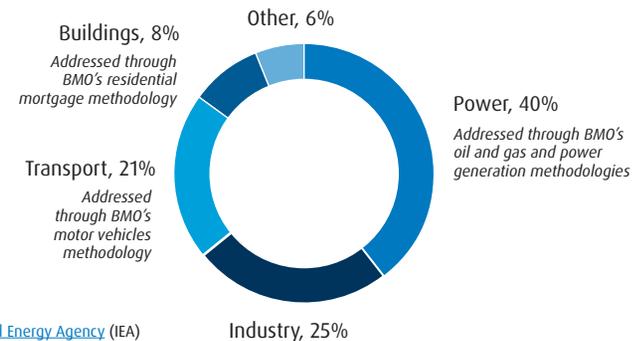
## Scope of BMO’s initial financed emissions and decarbonization pathway modelling



● Included in BMO’s initial financed emissions baseline calculations and decarbonization pathway modeling

\* Our initial analysis includes our Canadian portfolio only.  
 \*\* Our initial analysis includes our Canadian mortgage portfolio and financed emissions baseline quantification only.

## Global energy-related CO<sub>2</sub> emissions by sector



Source: [International Energy Agency \(IEA\)](#)

The table below summarizes the scope of our financed emission baseline and characteristics of the decarbonization pathway modelling and target setting completed to date.

Sector	Baseline scope		Decarbonization pathway modelling and target setting					
	Activity	Geography	Emissions	Methodology	Climate scenario	Reporting metric	BMO 2019 baseline	BMO Target
Oil and gas	Upstream oil and gas lending portfolio	Global	Scope 1 and 2	Sectoral decarbonization	IEA NZE IPCC net-zero-aligned	tCO <sub>2</sub> e/TJ	Canada: 5.3 tCO <sub>2</sub> e/TJ Rest of world: 3.4 tCO <sub>2</sub> e/TJ	Targeting a 33% reduction in portfolio emissions intensity by 2030
			Scope 3	Absolute emissions	IEA NZE GCAM NZE IPCC net-zero-aligned	ktCO <sub>2</sub>	38,914 ktCO <sub>2</sub>	Targeting a 24% reduction in <b>absolute</b> scope 3 emissions by 2030
Power	Power generation lending portfolio	Canada	Scope 1	Sectoral decarbonization	GCAM NZE Canada	tCO <sub>2</sub> /MWh	0.11 tCO <sub>2</sub> /MWh	Targeting a Canadian portfolio carbon intensity of 0.06 tCO <sub>2</sub> /MWh by 2030, equivalent to a 45% reduction, which is indicated by an 88% share of low-carbon power generation
				Capacity alignment	GCAM NZE Canada	Share of low-carbon power generation in the portfolio	78%	
Motor vehicles	Personal vehicle lending portfolio	Canada	Scope 1 and 2	Capacity alignment	IEA NZE Government of Canada	Share of new loan originations to zero emissions vehicles	5.9%	Targeting 100% of new loans for new light-duty cars and passenger trucks in Canada to be ZEV by 2035
Real estate	Residential mortgage portfolio	Canada	Scope 1 and 2	Refer to <a href="#">Sector focus: Real estate (residential mortgages)</a>				

### Sector-specific

We used a sector-based approach to prioritize best available data in accordance with PCAF’s data quality hierarchies, and baseline metrics to help us understand sector-specific decarbonization pathways. This will enable us to support our clients in their transition, deliver on our Net-Zero Ambition and influence emissions reductions in the real economy. We plan to expand sector coverage over time. While we have evaluated and continue to assess emerging approaches for cross-sectoral portfolio level methodologies (i.e. temperature alignment), we have decided not to pursue these approaches at this time due to data quality limitations and our application of the PCAF methodology.

### Science-based

We benchmarked sector portfolio carbon intensities against the sectoral and/or geographic emissions trajectories that scientific climate scenarios suggest would be needed to achieve a net-zero world by 2050, using a 2019 baseline. We evaluated 29 climate scenarios to identify the most appropriate and credible benchmarks for our focus sectors, applying the following criteria:

- Scenario aligned to a net-zero outcome by 2050, also known as 1.5C
- Scenario has low-to-no overshoot in temperature increase above 1.5C
- Scenario conservatively relies on negative emissions technologies
- Scenario has reasonable assumptions on carbon sequestration
- Scenario has granular sector-level emissions and activity data to model decarbonization pathways for BMO’s selected sectors
- Scenario has granular geographic data to model decarbonization pathways for Canada or North America.

### Net-Zero Banking Alliance (NZBA)

We have developed an approach to target setting that is consistent with the commitments BMO has made as a signatory to the UN-convened NZBA, including:

- Transition all operational and financed emissions to align with pathways to net zero by 2050 or sooner, including clients’ scope 1, 2 and 3 emissions where significant and where data allows.
- Set scenario-based intermediate targets for 2030 for priority GHG-intensive and GHG-emitting sectors using decarbonization scenarios that are well-recognized, no/low overshoot, and rely conservatively on negative emissions technologies.
- Targets are approved by the CEO and reviewed by the Board of Directors.
- Targets will be pursued by prioritizing client engagement, offering products and services to support clients’ transition, engaging on corporate, industry and public policy, and scaling up financing for credible climate solutions.
- Within 12 months of signing the NZBA, we will publish and share with UNEP FI for review, targets and progress against a Board-level reviewed transition plan setting out actions and climate-related sectoral policies.
- At least every five years, we will review and, if necessary, revise our targets to ensure consistency with the latest climate science.

Climate scenario	Macro assumptions
IEA's 2021 Net Zero by 2050 (IEA NZE)	<ul style="list-style-type: none"> <li>Global population steadily increases, reaching 9.6 billion in 2050.</li> <li>GDP is projected to increase by 147% from 2020 to 2050.</li> </ul>
GCAM's Net Zero 2050 (GCAM NZE)	<ul style="list-style-type: none"> <li>Global population steadily increases, reaching 9.3 billion in 2050.</li> <li>GDP is projected to increase by 108% from 2020 to 2050.</li> </ul>
IPCC net-zero-aligned scenario AIM/CGE 2.0 SSP1-19	<ul style="list-style-type: none"> <li>Global population steadily increases, before plateauing at 8.5 billion in 2050.</li> <li>GDP is projected to increase by 179% from 2020 to 2050.</li> </ul>
IPCC net-zero-aligned scenario AIM/CGE 2.0 SSP2-19	<ul style="list-style-type: none"> <li>Global population steadily increases, reaching 9.2 billion in 2050.</li> <li>GDP is projected to increase by 120% from 2020 to 2050.</li> </ul>
IPCC net-zero-aligned scenario MESSAGE-GLOBIOM 1.0 SSP2-19	<ul style="list-style-type: none"> <li>Global population steadily increases, reaching 9.2 billion in 2050.</li> <li>GDP is projected to increase by 121% from 2020 to 2050.</li> </ul>

We used the International Energy Agency's 2021 Net Zero by 2050 (IEA NZE) scenario as our primary benchmark, which limits warming to 1.5C with no or low temperature overshoot (50% probability). Our decarbonization pathways and targets were also informed by:

- The Intergovernmental Panel on Climate Change (IPCC) net-zero-aligned scenarios
- The Global Change Analysis Model (GCAM) Net Zero 2050 scenario developed by the Network for Greening the Financial System (NGFS) where it provides more granular sector- or geographic-specific data that more closely aligns to the composition of our portfolio
- Where possible, other industry initiatives, net-zero-aligned climate policy targets of local governments and Nationally Determined Contribution (NDC) plans.

There is no broad agreement on which scenarios to use to benchmark performance. We used these scenarios and the sectoral decarbonization pathways they propose to inform our targets. That does not mean that we necessarily adopt all of assumptions used in the models, regarding macroeconomic or sectoral variables or projections, as part of our net-zero action plan. Models are, inherently, not blueprints, compliance frameworks or predictions, but rather offer insights into what types of decarbonization pathways could lead to a net-zero future. We are supportive of efforts to facilitate cross-industry collaboration to enhance comparability of decarbonization targets with our peers. We will also closely monitor development of decarbonization pathways by Government and will revisit our approach where those policy goals and plans are known.

### Widely accepted metrics

Our selection of metrics was informed by the Science-Based Targets Initiative (SBTi) sectoral decarbonization approach (SDA), which plots a physical carbon intensity pathway that converges with the 2050 sectoral carbon intensity. We measure carbon dioxide equivalents where emissions other than CO<sub>2</sub> are material to the sector, for example methane emissions from oil and gas operations, otherwise we measure carbon dioxide emissions in order to align our baselines with the metrics from the SDAs. We emphasized physical carbon intensity (tonnes of carbon dioxide emissions normalized by a unit of output specific to the sector), rather than economic carbon intensity (tonnes of carbon dioxide emissions normalized by loan value), because it aligns with

the SDA approach, allows for easier comparison within sectors and between clients of different sizes, and aligns with the requirements of the NZBA. We supplemented our analysis of physical carbon intensity with metrics that reflect the actions needed to drive sectoral carbon intensity reductions, such as technology alignment, following the Paris Agreement Capital Transition Assessment (PACTA) capacity alignment approach.

### Adaptable based on data availability

We identified significant challenges and complications in quantifying financed emissions and target setting, mainly because reporting across industries is not yet standardized and in some cases data quality is low or data availability is limited. Without complete and high-quality data of the type we need, we have produced estimates based on assumptions and extrapolations. We have used the best available data in accordance with the PCAF Standard's data hierarchies that scores data on a scale of 1-5 where data quality score 1 is the most certain. We aim to provide comprehensive and accurate information to our stakeholders. While imperfections remain, we have not allowed that to delay implementation of our net-zero strategy. The urgency of climate action requires us to make immediate progress on our net-zero commitments and so we are disclosing baselines and targets based on current methodologies despite these limitations.

The financial sector, and the whole economy, need more and better-quality company-level data, including emissions data and activity data, to quantify financed emissions and set targets that are decision useful. As discussed on [page 27](#) of this report, we expect our baselines, including with regard to financed emissions, to evolve and be restated as data availability and quality improve. We expand on the challenges with sector-specific data in our sector focus sections below. We also expect to update and restate our decarbonization pathway modelling as climate models, scenarios and methodologies evolve in line with climate science. We expect Canada-specific pathways and scenarios to develop and may adopt new scenarios as they become available.

### Impact on strategy

Understanding financed emissions baselines, scientific decarbonization pathways and industry decarbonization initiatives provides insight upon which we will develop transition action plans. As discussed in the Strategy section above, BMO's Sustainability team, the BMO Climate Institute and Enterprise Risk are working with our lines of business and external stakeholders to understand, develop and implement strategies and actions to make progress toward financed emissions reduction targets.

Banks, including BMO, cannot align their portfolios with net-zero outcomes in isolation. Getting there depends on coordinated efforts between the public and private sectors. We will continue to engage with governments and encourage clear climate policy to achieve ambitious decarbonization goals.

We recognize our role as thought leaders and an important information source in taking on the significant work of quantifying and disclosing our financed emissions and decarbonization modelling, monitoring progress in our portfolio, and being transparent about our findings and the challenges we faced in doing this work.

Our efforts continue and we hope will, over time, become more decision useful and informed by better data and policy direction.

The sections below describe our work to date on upstream oil and gas, power generation in Canada, lending for the purchase of personal vehicles in Canada and residential mortgage lending in Canada.

## Sector focus: Oil and gas (upstream)

There are significant opportunities for fossil fuel industries to reduce emissions and provide needed energy and inputs in the transition to a net-zero emissions future. In science-based and net zero-aligned climate scenarios like those of the IEA and IPCC, the oil and gas sector remains part of the primary energy demand mix in 2050. Decarbonization of the operations of oil and gas companies is therefore a critical element of the green transition. Our Net-Zero Ambition is focused on partnering with our clients to support their decarbonization efforts. Divestment strategies do not support real world emissions reductions and could result in a disorderly net-zero transition that does not address the economic and social needs of the communities affected. We support our clients in their efforts to reduce emissions and anticipate that our clients will, over time, transition their businesses in support of a low-carbon economy. To this end, we are prioritizing engaging with our clients to support their transitions plans. In addition to our support, government policies have a role to play in ensuring that all companies are empowered to begin their respective transitions and fulfill the goals of their transition plans.

### Baseline calculation

#### Clients' scope 1 and 2 emissions

Includes our global portfolio of upstream oil and gas borrowers operating in Crude Petroleum Extraction and Natural Gas Extraction NAICS codes, as at fiscal year end 2019.

Builds on an existing key risk metric, **carbon-related assets** (see page 42), which is calculated using the same set of borrowers.

Calculates scope 1 and 2 carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) emissions from energy used in operations and fugitive emissions of companies.

We estimated emissions in accordance with the PCAF Standard approach for business loans and developed a data hierarchy based on data availability:

- Sourced publicly disclosed emissions data for 32% of the portfolio.
- We evaluated the statistical correlation between disclosed emissions and company revenue and used disclosed emissions to calculate average emissions per million dollars of revenue, or per million dollars of outstanding loan, and extrapolated to the remainder of the portfolio as needed depending on available data.

Company disclosed emissions data is not always comparable or externally assured, and we acknowledge the risk that the data may be incorrect. We also acknowledge that there remains a risk that, despite generally strong correlation, extrapolated data could diverge from actual company data if that data were known. We will continue to explore ways to collect actual company data and update our analysis in future years, as this data becomes available and increasingly reliable. Our analysis covers fiscal year 2019 since company disclosed 2020 emissions data was not yet available.

We accounted for our loan's share of borrower emissions by applying an attribution factor calculated as the outstanding loan amount divided by the sum of total equity and debt (for private companies) or total enterprise value including cash (for public companies).

We calculated the PCAF data quality of the portfolio as the average data quality score assigned to each borrower, weighted by outstanding loan value.

Upstream oil and gas financed emissions baseline summary		2019
Canada	<b>Loans outstanding (\$M)</b>	\$2,917
	<b>Scope 1 and 2</b>	
	Financed emissions (ktCO <sub>2</sub> e)	887
	Portfolio PCAF data quality score	2.1
	Economic emissions intensity (tCO <sub>2</sub> e/\$ millions loan outstanding)	304
Rest of world	Physical emissions intensity (tCO <sub>2</sub> e/TJ)	5.3
	<b>Loans outstanding (\$M)</b>	\$5,636
	<b>Scope 1 and 2</b>	
	Financed emissions (ktCO <sub>2</sub> e)	1,382
	Portfolio PCAF data quality score	4.0
Global	Economic emissions intensity (tCO <sub>2</sub> e/\$ millions loan outstanding)	245
	Physical emissions intensity (tCO <sub>2</sub> e/TJ)	3.4
	<b>Data sources</b>	<ul style="list-style-type: none"> <li>• Internal risk and reporting tool</li> <li>• S&amp;P Trucost Capital IQ</li> </ul>
	<b>Loans outstanding (\$M)</b>	\$8,553
	<b>Downstream scope 3</b>	
Global	Financed emissions (ktCO <sub>2</sub> e)	38,914
	Portfolio PCAF data quality score	3.4
	Economic emissions intensity (tCO <sub>2</sub> e/\$ millions loan outstanding)	4,550
	Physical emissions intensity (tCO <sub>2</sub> e/TJ)	62.2
	<b>Data sources</b>	<ul style="list-style-type: none"> <li>• Internal risk and reporting tool</li> <li>• S&amp;P Trucost Capital IQ</li> <li>• IPCC Guidelines for National Greenhouse Gas Inventories (2006)</li> </ul>

### Borrower data quality scoring

Source of emissions data	Data quality score
Publicly disclosed with third party assurance	1
Publicly disclosed without third party assurance	2
Estimated using emissions per million dollars of revenue	4
Estimated using emissions per million dollars of outstanding loan value	5

### Clients' downstream scope 3 emissions

Includes the same set of borrowers and time period we used for client scope 1 and 2 emissions.

Calculates downstream scope 3 CO<sub>2</sub> emissions from the ultimate combustion of the oil or gas product produced by our borrowers.<sup>1</sup> Current methodologies and data availability regarding oil and gas product end uses led us to assume 100% of oil and gas produced is burned. In reality, some oil and gas product would have alternate uses with different scope 3 emissions profiles, such as plastics and other petrochemicals. Over time, we hope to refine our understanding of product end uses and refine our calculation of downstream scope 3 emissions.

We estimated emissions in accordance with the PCAF Standard approach for business loans and developed a data hierarchy based on data availability:

- Sourced borrower-level production data for 76% of the portfolio and applied international default emission factors based on carbon content of primary energy products from the IPCC.
- We evaluated the statistical correlation between emissions calculated based on production and company revenue and used this emissions data to calculate average emissions per million dollars of revenue, or per million dollars of outstanding loan, and extrapolated to the remainder of the portfolio depending on available data.

We will continue to explore ways to collect actual company data and update our analysis in future years. As this data becomes available and increasingly reliable our analysis of Scope 3 emissions may evolve.

We accounted for our loan's share of borrower emissions by applying an attribution factor calculated as the outstanding loan amount divided by the sum of total equity and debt (for private companies) or total enterprise value including cash (for public companies).

We calculated the PCAF data quality score for the portfolio as the average data quality score assigned to each borrower, weighted by outstanding loan value.

### Borrower data quality scoring

Source of emissions data	Data quality score
Estimated using oil and gas production data	3
Estimated using emissions per million dollars of revenue	4
Estimated using emissions per million dollars of outstanding loan value	5

### Climate scenarios and decarbonization pathway modelling

#### Clients' Scope 1 and 2 emissions

We measured physical emissions intensity as tonnes of carbon dioxide equivalents (including carbon dioxide and methane) per terajoule of primary energy produced (tCO<sub>2</sub>e/TJ).

We benchmarked our alignment with the Paris Agreement using the IEA NZE and net-zero-aligned IPCC scenarios as a benchmark. The relative weight of emissions from CO<sub>2</sub> (25%) and CH<sub>4</sub> (75%)<sup>2</sup> are used to calculate combined scope 1 and 2 emissions trajectories for upstream oil and gas.

The combined IEA NZE trajectory shows a net-zero-aligned emissions intensity of 0.04 tCO<sub>2</sub>e/TJ for the oil and gas sector by 2050, reaching 1.14 tCO<sub>2</sub>e/TJ by 2030, equivalent to a 70% reduction by 2030.

### Oil and gas decarbonization pathway modelling and target setting summary

<b>Activity focus</b>	Global upstream oil and gas portfolio
<b>Emissions scope</b>	Scope 1, 2 and downstream scope 3 emissions
<b>Metric</b>	Scope 1 and 2: Carbon intensity (tCO <sub>2</sub> e/TJ) of primary energy Scope 3: Absolute emissions (tCO <sub>2</sub> )
<b>Scenarios</b>	IEA NZE GCAM NZE IPCC net-zero-aligned scenarios AIM/CGE 2.0 SSP1-19, AIM/CGE 2.0 SSP2-19, MESSAGE-GLOBIOM 1.0 SSP2-19
<b>Net-zero-aligned target</b>	Scope 1 and 2: Targeting a 33% reduction in portfolio emissions intensity by 2030. Scope 3: Targeting a 24% reduction in <b>absolute</b> scope 3 emissions by 2030.

The IEA NZE scenario shows a 56% reduction in absolute CO<sub>2</sub> emissions (tCO<sub>2</sub>) from energy transformation globally by 2030 (see Figure 1) and a 51% reduction in emissions intensity (tCO<sub>2</sub>/TJ) by 2030 (see Figure 2).

Over 75% of scope 1 and 2 emissions of upstream oil and gas companies come from methane (CH<sub>4</sub>) emissions from venting.<sup>2</sup> According to the IEA, methane emissions from fossil fuels should fall drastically between 2020 and 2030 as a result of a concerted global effort to deploy all available reduction measures and technologies.<sup>3</sup> The IEA NZE scenario shows a 78% reduction in absolute CH<sub>4</sub> emissions (tCO<sub>2</sub>e) from energy transformation globally by 2030 (see Figure 3) and a 76% reduction in emissions intensity (tCO<sub>2</sub>e/TJ) by 2030 (see Figure 4). The trajectory for methane reductions is steeper given the early application of mitigation technologies.

#### Industry analysis

BMO's portfolio focus is Canadian oil and gas. As noted in a recent IEA report on Canadian energy, Canada aims to remain a major global oil and gas supplier beyond 2050 and is also one of the few major global fossil fuel producers committed to achieving net zero by 2050. That same report notes that the emissions intensity of oil sands has fallen by 32% since 1990 and that of upstream natural gas by 13% since 2010. The IEA also notes that the industry forecasts a 17-27% reduction in emissions intensity from oil sands operations over the period 2018-2030, which is projected to hold oil and gas emissions to 194 Mt by 2030 as efficiencies are balanced with production growth.

<sup>1</sup> Greenhouse gases other than CO<sub>2</sub> are excluded due to relative immateriality and to align our financed emissions baselines with the metrics used in the selected climate models and decarbonization pathways.

<sup>2</sup> Source: McKinsey, <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-future-is-now-how-oil-and-gas-companies-can-decarbonize>

<sup>3</sup> Source: IEA, <https://www.iea.org/reports/net-zero-by-2050>

This leaves an additional reduction of 56 Mt/year in the oil and gas sector by 2030 required to reach Canada’s enhanced 2030 Paris Agreement target. Canada plans to leverage methane emissions regulations, investments in renewable energy infrastructure and carbon capture utilization and storage (CCUS) technology, deploy hydrogen production from natural gas, and improve efficiencies with next generation technology to drive down emissions throughout the value chain and to align with the country’s objective to be net zero by 2050.<sup>1</sup>

Scope 1 and 2 decarbonization goals established within the Canadian oil and gas industry, including the Oil Sands Pathways to Net Zero initiative (the “Pathways Initiative”), lay out a path forward to reduce emissions of 68 Mt of CO<sub>2</sub>e/year and achieve operational net-zero emissions in three phases to 2050, with 32% achieved by 2030. The Pathways Initiative includes electrification, fuel substitution and energy efficiency to carbon capture, process improvements and the implementation of emerging technologies. A major CCUS transportation line connecting oil sands facilities in the Fort McMurray, Christina Lake and Cold Lake regions of Alberta to a carbon storage hub near Cold Lake is a key element of the strategy. The transportation line would be expanded in phases to gather captured GHGs from more than 20 oil sands facilities and it would

also be available to other industries interested in capturing their own emissions.<sup>2</sup> This initiative is credible and sets out a trajectory for decarbonization of the Canadian energy sector scope 1 and 2 emissions that would achieve net zero by 2050.

Additionally, since 2019, every jurisdiction in Canada has had a price on carbon pollution, which will apply a \$170 per tonne carbon price by 2030,<sup>3</sup> and since 2020, the Government of Canada has a regulated methane reduction goal for the oil and gas sector of 40% to 45% by 2025 relative to a 2012 baseline.<sup>4</sup> In 2021, Canada was the first country to support the Global Methane Pledge, committing to reduce global methane emissions by 30% below 2020 levels by 2030. As announced at COP 26, Canada has committed to develop a plan to reduce methane emissions by at least 75% below 2012 levels by 2030.<sup>5</sup> This goal aligns with the IEA decarbonization pathway for methane, the largest contributor to CO<sub>2</sub>e for upstream oil and gas. Consistent with this policy, our analysis shows multiple feasible options to minimize scope 1 and 2 GHG emissions from oil and gas operations, but reduction of methane emissions is an achievable and consequential aspect of emissions reduction for upstream oil & gas production. It is also aligned with government and industry goals.

Figure 1: World scope 1 and 2 CO<sub>2</sub> emissions from energy transformation

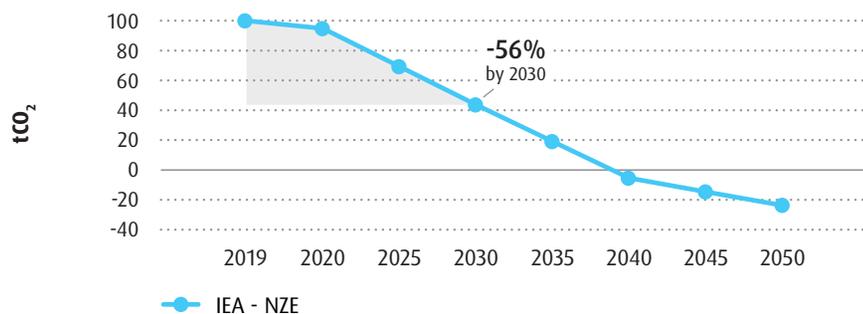


Figure 2: World scope 1 and 2 CO<sub>2</sub> emissions intensity from energy transformation

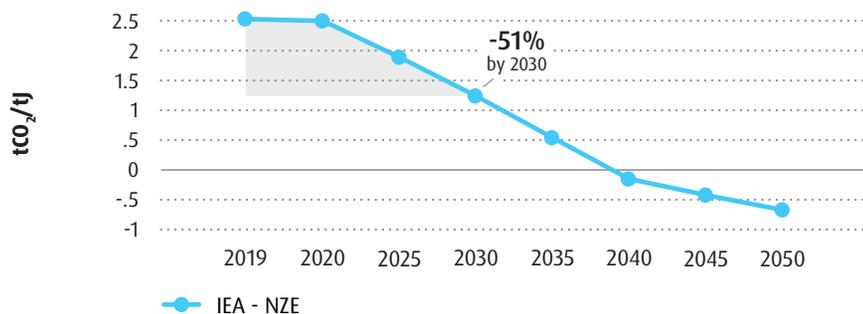


Figure 3: World scope 1 and 2 CH<sub>4</sub> emissions from energy transformation

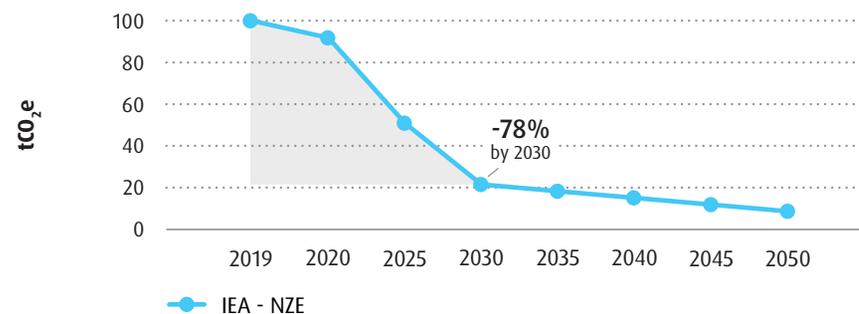
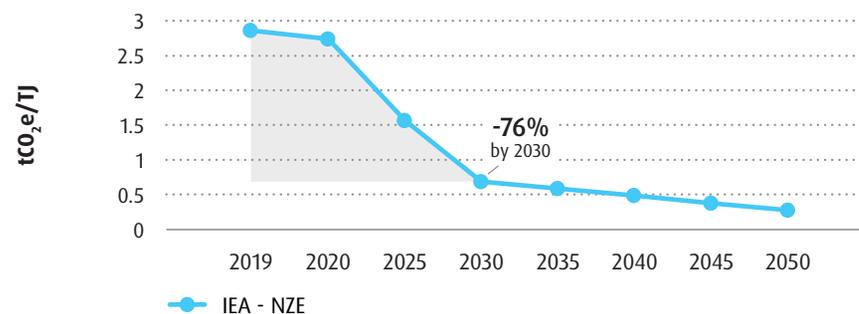


Figure 4: World scope 1 and 2 CH<sub>4</sub> emissions intensity from energy transformation



<sup>1</sup> Source: IEA, <https://www.iea.org/reports/canada-2022>

<sup>2</sup> Source: Oil Sands Pathways to Net Zero, <https://www.oilsandspathways.ca/>

<sup>3</sup> Source: Government of Canada, <https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/putting-price-on-carbon-pollution.html>

<sup>4</sup> Source: Government of Canada, <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/factsheet-general-information-regulations-reduction-methane.html>

<sup>5</sup> Source: Government of Canada, <https://www.canada.ca/en/environment-climate-change/news/2021/10/canada-confirms-its-support-for-the-global-methane-pledge-and-announces-ambitious-domestic-actions-to-slash-methane-emissions.html>

### BMO target

BMO is targeting a 33% reduction in portfolio emissions intensity by 2030. This target would be achievable with a 30% reduction in CO<sub>2</sub> emissions consistent with industry led initiatives and CH<sub>4</sub> emissions reductions consistent with the Global Methane Pledge as adopted by the Government of Canada. This target is somewhat lower than the IEA’s global combined CO<sub>2</sub> and CH<sub>4</sub> pathway to 2030 but represents a material emissions reduction goal that is based on the scientific insights discussed above, existing and proposed government policy aligned with net zero, and credible industry initiatives that will lead to net-zero emissions from operations by 2050. It is expected that industry decarbonization efforts from 2030 to 2050 will accelerate and may exceed global decarbonization trajectories which is how net zero 2050 will be achieved. Consistent with the recommendations of the IEA, we expect Canadian policy makers to define clear targets for emissions reductions in Canada’s oil and gas sector to align with stated plans to continue oil and gas exports beyond 2050 while achieving Paris Agreement commitments and a 1.5C pathway.<sup>1</sup> We will continue to monitor the net-zero-aligned policy development of the Government of Canada and adjust our targets as appropriate to reflect these goals.

### Clients’ downstream Scope 3 emissions

The oil and gas sector’s downstream scope 3 value chain emissions are the most material source of emissions for the sector.

There are significant methodological challenges for quantifying scope 3 emissions generally and particularly for this sector, including how to define the scope and how to use such quantification to inform emissions reduction strategy. Scope 3 emissions for oil and gas are the scope 1 and 2 emissions for other sectors, so there is inherently “double counting” in the scope 3 methodology. By implication, reduction of scope 3 emissions for this sector is tied largely to consumption and emissions management across the broader economy. Reducing scope 3 emissions could be achieved with growth and development of lower hydrocarbon production, advancing carbon capture, use and storage technologies across the economy, changes in market demand, or increasing alternate uses for oil and gas product. From a financed emissions perspective, reduction targets could be achieved by these broader economy-wide shifts or our own strategy.

We use the granular data on global and Canadian future primary energy mix in the GCAM NZE scenario to model emissions pathways for primary energy combustion, and to understand the associated technology shifts. GCAM NZE pathways show a 24% reduction in emissions from primary energy combustion by 2030 for both Canada and globally (see Figure 5).

We also looked at primary energy demand trajectories from several net-zero-aligned scenarios including the GCAM NZE scenario, three IPCC scenarios and the IEA NZE. These scenarios offer insights into changing demand for oil and gas within pathways aligned to net zero. These trajectories are indicative of net-zero-aligned scope 3 emissions reduction pathways for the upstream oil and gas sector and have a wide range based on different underlying assumptions for possible net-zero pathways (see Figure 6). As this illustrates, there is a wide range of possible future scenarios of oil and gas demand that would be aligned with science-based net-zero pathways.

### BMO target

BMO is targeting a 24% reduction in **absolute** scope 3 emissions by 2030. This could be the result of a reduction in global oil and gas demand, the use of carbon capture and storage technology across the economy, increasing alternate uses for oil and gas products and BMO’s own strategic exit from non-Canadian oil and gas announced in 2019.

<sup>1</sup> Source: IEA, <https://www.iea.org/reports/canada-2022>

Figure 5: CO<sub>2</sub> emissions from primary energy combustion (GCAM NZE)

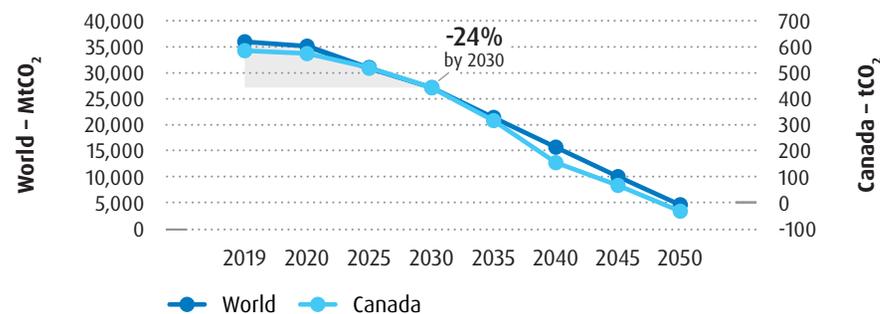
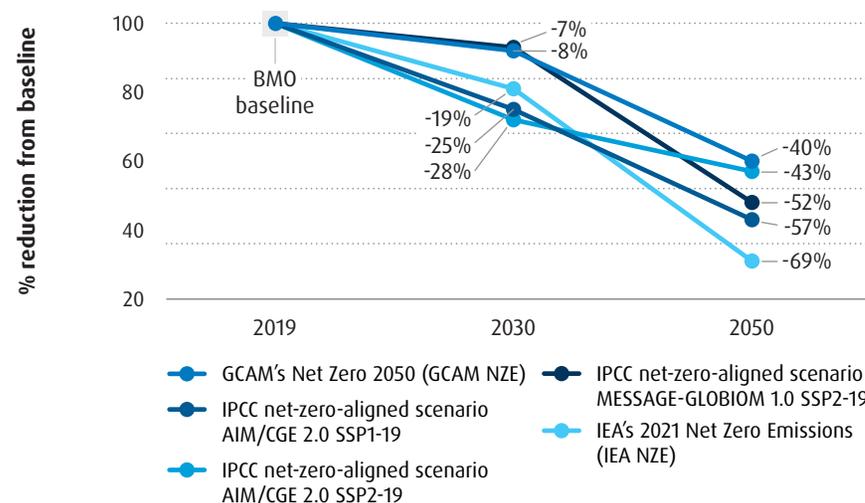


Figure 6: Oil and gas demand in net-zero-aligned pathways to 2030 and 2050



Scenario	Change in oil & gas demand by 2030*	Change in oil & gas demand by 2050*
GCAM's Net Zero 2050 (GCM NZE)	-8%	-40%
IPCC net-zero-aligned scenario AIM/CGE 2.0 SSP2-19	-28%	-43%
IPCC net-zero-aligned scenario MESSAGE-GLOBIOM 1.0 SSP2-19	-7%	-52%
IPCC net-zero-aligned scenario AIM/CGE 2.0 SSP1-19	-25%	-57%
IEA's 2021 Net Zero Emissions (IEA NZE)	-19%	-69%

\* % decrease compared to 2019 levels

## Sector focus: Power generation

Power generation is the sector with the largest energy-related emissions in the world today. In science-based and net-zero-aligned climate scenarios like those of the IEA and IPCC, global power generation more than doubles by 2050 as a result of population growth, increased economic activity, and rapid electrification of end uses, and renewables, in particular solar and wind, become the leading global source of electricity generation.

According to the IEA NZE scenario, the power sector will be the first to achieve net-zero emissions due to the low costs and widespread policy support and maturity of renewable energy technologies.<sup>1</sup> In this scenario, solar and wind will be the leading sources of electricity globally before 2030.<sup>1</sup> Adding battery storage systems with renewable energy will improve the power system flexibility and maintain electricity security. Other opportunities in the decarbonization of the power sector will include the continued use of hydropower and nuclear power, maturing other technologies through retrofitting coal and gas-fired capacity with carbon capture utilization and storage (CCUS) or co-firing with hydrogen-based fuels, and increasing generation using bioenergy.

Canada already has one of the cleanest electricity systems in the world, with over 83% of production from non-emitting sources, and aims to increase that to 90% by 2030.<sup>2</sup>

### Baseline calculation

Includes our Canadian portfolio of pure-play power generators and the power generation share of businesses operating in the electric power distribution and natural gas distribution sectors, as at fiscal year end 2019.

Builds on an existing key risk metric, **carbon-related assets** ([see page 42](#)), which is calculated using the same set of borrowers.

Calculates scope 1 carbon dioxide (CO<sub>2</sub>) emissions from the fuel burned to generate the electricity.<sup>3</sup> Scope 2 emissions associated with electricity used in power generation facility operations are immaterial and have not been calculated.

We estimated emissions in accordance with the PCAF Standard approach for business loans, and developed a data hierarchy based on data availability:

- Sourced publicly disclosed emissions data where available.
- In the absence of emissions data, we sourced electricity generation data for 45% of the portfolio and estimated emissions based on company electricity generation by generation type (i.e. gas, coal, and oil) using national emission factors. Consistent with PCAF emission factors and international standards, we assumed zero emissions from low-carbon generation (i.e. hydro, wind, solar, biomass and nuclear). Where all or a portion of a borrower's generation mix was unknown, we applied average national emission factors.

- We evaluated the statistical correlation between emissions calculated based on generation and company revenue and used this emissions data to calculate average emissions per million dollars of revenue, or per million dollars of outstanding loan, and extrapolated to the remainder of the portfolio depending on available data.

### Power generation financed emissions baseline summary

	2019
<b>Loans outstanding (\$M)</b>	\$1,339
<b>Scope 1</b>	
Financed emissions (ktCO <sub>2</sub> )	221
Portfolio PCAF data quality score	3.5
Economic emissions intensity (tCO <sub>2</sub> /\$ millions loan outstanding)	165
Physical emissions intensity (tCO <sub>2</sub> /MWh of electricity generated)	0.11

#### Data sources

- Internal risk and reporting tool
- Emission factors from Canada's National Inventory Report (2020)
- PCAF emission factor database
- Publicly available disclosures
- S&P Trucost Capital IQ

### Power generation by source (% of total loans outstanding)

	2020	2019
Low-carbon generation in portfolio	76%	78%
Fossil fuel-based generation in portfolio	23%	20%
Other (unclassified)	1%	2%

<sup>1</sup> Source: IEA, <https://www.iea.org/reports/net-zero-by-2050>

<sup>2</sup> Source: IEA, <https://www.iea.org/reports/canada-2022>

<sup>3</sup> Greenhouse gases other than CO<sub>2</sub> are excluded due to relative immateriality and to align our financed emissions baselines with the metrics used in the selected climate models and decarbonization pathways.

Company disclosed emissions data is not always comparable or externally assured, and we acknowledge the risk that the data may be incorrect. We also acknowledge that there remains a risk that, despite generally strong correlation, extrapolated data could diverge from actual company data if that data were known. We will continue to find ways to collect actual company data and update our analysis in future years, as this data becomes available. Our analysis covers 2019 since company disclosed 2020 emissions data was not yet available.

We accounted for our loan’s share of borrower emissions by applying an attribution factor calculated as the outstanding loan amount divided by the sum of total equity and debt (for private companies) or total enterprise value including cash (for public companies).

We calculated the PCAF data quality score for the portfolio as the average data quality score assigned to each borrower, weighted by outstanding loan value.

### Borrower data quality scoring

Source of emissions data	Data quality score
Publicly disclosed with third party assurance	1
Publicly disclosed without third party assurance	2
Estimated using electricity generation data	3
Estimated using emissions per million dollars of revenue	4
Estimated using emissions per million dollars of outstanding loan value	5

### Climate scenarios and decarbonization pathway modelling

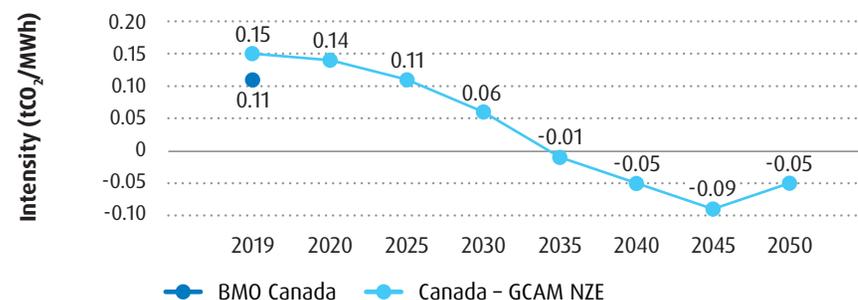
We measured physical emissions intensity using tonnes of carbon dioxide per megawatt hour of electricity generated (tCO<sub>2</sub>/MWh), and benchmarked our alignment with the Paris Agreement using the GCAM NZE scenario for emissions from the Canadian power sector. In this scenario, the Canadian power sector will reach net-negative emissions by 2035 due to the application of negative emissions technologies such as Bioenergy Carbon Capture and Storage (BECCS).

The GCAM NZE trajectory shows a net-zero-aligned emissions intensity for Canada of -0.05 tCO<sub>2</sub>/MWh by 2050, reaching 0.06 tCO<sub>2</sub>/MWh by 2030, equivalent to a 63% reduction by 2030. BMO’s Canadian portfolio baseline carbon intensity of 0.11 tCO<sub>2</sub>/MWh is below the GCAM NZE average for Canada (see Figure 7). The baseline 2019 share of low-carbon electricity generation of BMO’s portfolio is 78%.

### Power generation decarbonization pathway modelling and target setting summary

<b>Activity focus</b>	Canadian power generation portfolio
<b>Emissions scope</b>	Scope 1 emissions from fuel combustion for electricity generation
<b>Metric</b>	Carbon intensity (tCO <sub>2</sub> /MWh of electricity generated) Share of low-carbon power generation in the portfolio
<b>Scenario</b>	GCAM NZE Canada
<b>Net-zero-aligned target</b>	Targeting a Canadian portfolio carbon intensity of 0.06 tCO <sub>2</sub> /MWh by 2030, equivalent to a 45% reduction, which is indicated by an 88% share of low-carbon power generation.

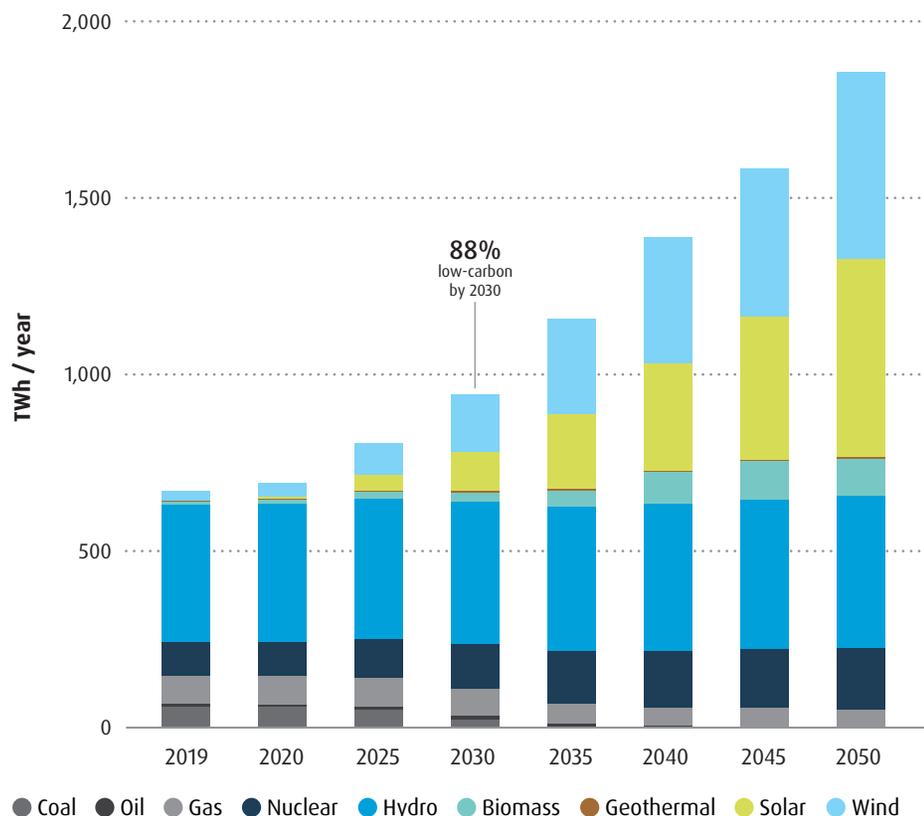
Figure 7: Power generation scope 1 decarbonization pathway (tCO<sub>2</sub> / MWh)



**Industry analysis**

The GCAM NZE scenario shows that in Canada the share of low-carbon electricity generation reaches 88% by 2030 (see Figure 8).

**Figure 8: Canada electricity generation by source**



Derived from GCAM NZE scenario. Low-carbon electricity generation includes nuclear, hydro, biomass, geothermal, solar and wind.

Canada is already a world leader in renewable electricity production and generates a larger share of electricity from non-emitting sources than most developed economies. Regulations are in place in Canada that require the phase out of conventional coal-fired electricity by 2030, and the Government of Canada has plans to invest in the clean grid of the future by supporting increased renewable power generation capacity and the deployment of grid modernization technologies such as power storage.<sup>1</sup> Canada estimates that a doubling or tripling of the supply of clean power is required to meet a 2050 net-zero goal. To meet this, Canada’s share of renewables-based electricity generation (hydro, wind, solar, biofuels) is projected to grow to 80% by 2050. Consistent with the recommendations of the IEA, we expect that Canada will develop a strategy to substantially increase zero-emissions generation and interconnection capacity.<sup>2</sup>

These initiatives, if successful, will support electrification and increase the share of renewable electricity generation aligned with net zero by 2050 pathways. If these initiatives are not successful it will be more difficult for BMO to achieve portfolio decarbonization. We are continuing to monitor government plans and policies aligned to net zero and may revise our approach to targets to align with credible government policies as they arise.

**BMO target**

BMO is targeting a Canadian portfolio carbon intensity of 0.06 tCO<sub>2</sub>/MWh by 2030, equivalent to a 45% reduction, which is indicated by an 88% share of low-carbon power generation.

<sup>1</sup> Source: Government of Canada, <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/healthy-environment-healthy-economy.html>

<sup>2</sup> Source: IEA, <https://www.iea.org/reports/canada-2022>

## Sector focus: Motor vehicles (sales and use)

The global transport sector emitted 7 Gt CO<sub>2</sub> in 2020, making up 21% of global emissions.<sup>1</sup> The IEA projects growth in the global passenger car fleet from 1.2 billion vehicles in 2020 to almost 2 billion in 2050.<sup>1</sup>

Decarbonizing the transport sector will require stringent fuel economy standards, a rapid penetration of zero emission vehicles (ZEV), introduction of next generation battery technology, decarbonization of the electricity grid, and interventions through policy, supply infrastructure and consumer behaviour. According to the IEA NZE scenario, the share of ZEVs needs to reach 65% of new vehicle sales globally by 2030, and nearly 100% by 2050 (see Figure 9).

### Baseline calculation

Includes our Canadian portfolio of retail consumer motor vehicle loans,<sup>2</sup> as at fiscal year end 2019 and 2020.

Calculates “tank-to-wheel” carbon dioxide (CO<sub>2</sub>) emissions of each vehicle in the portfolio:<sup>3</sup>

- Scope 1 emissions from fuel combustion
- Scope 2 emissions from the electricity used to charge electric vehicles (EVs) and plug-in hybrid electric vehicles.

Vehicle emissions are calculated based on vehicle efficiency and fuel type from known vehicle make and model (96% of the portfolio in 2019 and 97% in 2020) and estimated vehicle distance traveled derived from regional statistical data. We estimated emissions in accordance with the PCAF Standard approach for motor vehicle loans by:

- Sourcing the Vehicle Identification Number (VIN) for each vehicle
- Using publicly available information to identify the vehicle’s characteristics, including make, model year, fuel type, etc. Where vehicle fuel type was unknown, we assumed gasoline
- Mapping the vehicles to publicly available data on fuel efficiency in miles per gallon of fuel and/or kilowatt hour per mile of electricity. When fuel efficiency data was not available, we used regional PCAF emission factors per kilometre travelled for an average passenger vehicle
- Estimating annual fuel and electricity consumption using average regional (provincial) distance driven data from Statistics Canada
- Calculating emissions using provincial emission factors from Canada’s National Inventory Report.

When fuel efficiency data was not available, we estimate emissions using PCAF emission factors per kilometre travelled.

We accounted for our loan’s share of borrower emissions by applying an attribution factor calculated as the outstanding loan balance divided by the loan value at origination. Where an attribution factor could not be calculated due to data availability, we assume 100% attribution.

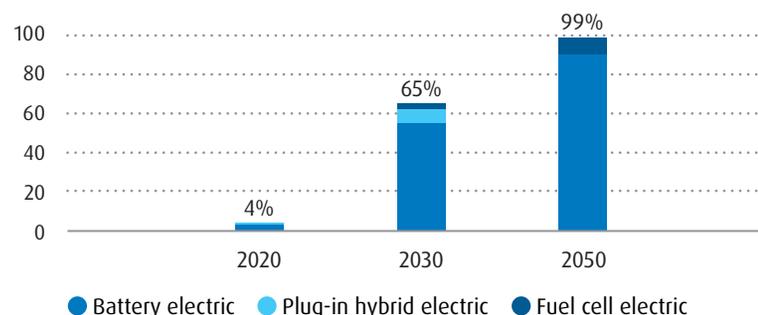
We calculated the PCAF data quality score for the portfolio as the average data quality score assigned to each vehicle, weighted by outstanding loan balance.

<sup>1</sup> Source: IEA, <https://www.iea.org/reports/net-zero-by-2050>

<sup>2</sup> Includes passenger cars only.

<sup>3</sup> Greenhouse gases other than CO<sub>2</sub> are excluded due to relative immateriality and to align our financed emissions baselines with the metrics used in the selected climate models and decarbonization pathways.

**Figure 9: Global share of battery electric, plug-in hybrid and fuel cell electric vehicles in total light duty sales in the IEA NZE**



### Motor vehicles financed emissions baseline summary

	2020	2019
<b>Loans outstanding (\$M)</b>	\$7,809 ◆	\$7,752
<b>Scope 1 and 2</b>		
Financed emissions (ktCO <sub>2</sub> )	828 ◆	855
Portfolio PCAF data quality score	3.1 ◆	3.1
Economic emissions intensity (tCO <sub>2</sub> /\$ millions loan outstanding)	106 ◆	110
Physical emissions intensity (kgCO <sub>2</sub> /vehicle-km financed)	0.23 ◆	0.23
<b>ZEV share</b>		
ZEVs in portfolio (% of total loans outstanding)	2.5%	2.1%
New ZEVs in portfolio of new loans originated (% of loans outstanding)	4.3%	5.9%

### Data sources

- US Department of Transportation National Highway Traffic Safety Administration for vehicle information
- US Department of Energy for fuel efficiency (2021)
- Statistics Canada for annual distance travelled (2009)
- Emission factors from Canada’s National Inventory Report (2020)
- PCAF emission factors database

### Vehicle data quality scoring

Source of emissions data	Data quality score
Estimated using vehicle fuel efficiency	3
Estimated using PCAF emission factors per kilometre travelled	5

### Climate scenarios and decarbonization pathway modelling

We measured physical emissions intensity as kilograms of carbon dioxide per vehicle-kilometre financed (kgCO<sub>2</sub>/vkm) and benchmarked our alignment with the Paris Agreement using the IEA NZE scenario for global emissions from passenger vehicles.

The IEA NZE trajectory shows a net-zero-aligned emissions intensity of 0.01 kgCO<sub>2</sub>/vkm by 2050, reaching 0.17 kgCO<sub>2</sub>/vkm by 2030, equivalent to a 54% reduction by 2030.

BMO's baseline carbon intensity of 0.23 kgCO<sub>2</sub>/vkm is below the IEA NZE global average, likely because fuel efficiency standards in North America are higher than the global average, and supported by our portfolio's share of ZEVs (2.1%), which is currently double the global average (1%) (see Figure 10).

### Industry analysis

Governments have set goals to transition national vehicle stocks to ZEV. As part of the Canadian net-zero policy objectives for example, the Government of Canada has set a mandatory target for all new light-duty cars and passenger trucks sales to be ZEV by 2035.<sup>1</sup> Many major vehicle manufacturers have also made commitments to electrify their product offering in line with similar goals.

The Canadian government goal of 100% of new sales of light-duty cars and passenger truck sales to be ZEV by 2035 is a swifter pathway to net zero than the IEA contemplates and therefore net zero 2050 aligned. The Canadian government is developing interim 2025 and 2030 targets. This initiative, if successful, will support ZEV penetration aligned with net zero by 2050 pathways. If this initiative is not successful, it will be more difficult for BMO to achieve 100% ZEV by 2035. We will monitor these developments and adjust our targets to 2030 as government policy becomes clearer.

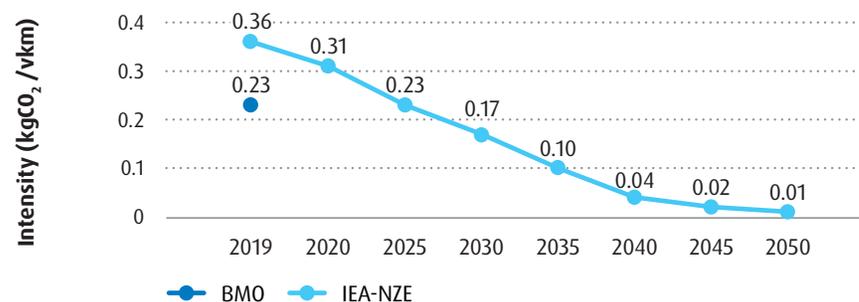
### BMO target

BMO is targeting 100% of new loans for new light-duty cars and passenger trucks in Canada to be ZEV by 2035. This is more ambitious than the IEA NZE scenario that shows 100% of new vehicle sales reached by 2050, but aligns with explicit Government of Canada policy goals.

### Motor vehicle decarbonization pathway modelling and target setting summary

<b>Activity focus</b>	Canadian personal motor vehicle lending portfolio
<b>Emissions scope</b>	Scope 1 and 2 "tank-to-wheel" emissions from vehicle fuel combustion and electricity consumption
<b>Metric</b>	Share of new loan originations to zero emissions vehicles
<b>Scenarios</b>	IEA NZE Government of Canada
<b>Net-zero-aligned target</b>	Targeting 100% of new loans for new light-duty cars and passenger trucks in Canada to be ZEV by 2035.

Figure 10: Passenger vehicle scope 1 and 2 decarbonization pathway (kgCO<sub>2</sub>/vkm)



<sup>1</sup> Source: Government of Canada: <https://www.canada.ca/en/transport-canada/news/2021/06/building-a-green-economy-government-of-canada-to-require-100-of-car-and-passenger-truck-sales-be-zero-emission-by-2035-in-canada.html>

## Sector focus: Real estate (residential mortgages)

Globally, real estate floor area is expected to increase 75% between 2020 and 2050, of which 80% will occur in emerging and developing economies.<sup>1</sup> Meanwhile, buildings in advanced economies, such as North America, have long lifetimes and around half of the existing buildings stock will be standing in 2050.<sup>1</sup> To decarbonize the buildings sector in the IEA NZE scenario, energy efficiency and electrification are the leading drivers, followed by growth in renewable electricity generation, and behaviour change. Energy efficiency includes improved envelopes for new and existing buildings, heat pumps, energy-efficient appliances, and bioclimatic and material-efficient building design.

### Baseline calculation

Includes our Canadian portfolio of residential mortgages for attached homes, detached homes, and condominiums, as at fiscal year end 2019 and 2020. Our Canadian portfolio accounts for over 90% of BMO's residential mortgage portfolio in 2019 and 2020. Home equity lines of credit are excluded per the PCAF Standard methodology since funds could be used for non-residential purposes. Mortgages for investor-owned properties are excluded per the PCAF Standard methodology since they would fall under commercial real estate.

Calculates all energy-related CO<sub>2</sub> emissions<sup>2</sup> of the property:

- scope 1 emissions from fuel combustion
- scope 2 emissions from the electricity use.

For the portion of the portfolio where property floor area data was available (81% of the portfolio in 2019 and 85% in 2020), we estimated emissions in accordance with the PCAF Standard approach for mortgages by:

- Estimating annual property energy consumption using the average household energy use per square metre, by fuel type, by province, and by property type Natural Resources Canada.
- Calculating emissions using provincial emission factors from Canada's National Inventory Report.

For the remainder of the portfolio, we estimate emissions using provincial emission factors per dwelling calculated using Natural Resources Canada and National Inventory Report data.

We accounted for our loan's share of borrower emissions by applying an attribution factor calculated as the outstanding loan balance divided by the property value at origination. Where an attribution factor could not be calculated due to data availability, we assume 100% attribution.

We calculated the PCAF data quality score for the portfolio as the average data quality score assigned to each mortgage, weighted by outstanding loan balance.

There are significant data challenges associated with quantifying financed emissions from the real estate sector and data quality is currently low. As long as we depend on provincial average energy use data to calculate building emissions, it will not be possible to track the decarbonization of our portfolio. Property-level data on the home energy efficiency and/or actual energy consumption of homes is needed but is not readily available in Canada. We will re-evaluate our ability to set a net-zero-aligned financed emissions reduction target for this sector as data quality and our ability to track progress evolves.

<sup>1</sup> Source: IEA, <https://www.iea.org/reports/net-zero-by-2050>

<sup>2</sup> Greenhouse gases other than CO<sub>2</sub> are excluded due to relative immateriality.

<sup>3</sup> Loans outstanding include only eligible assets per the PCAF methodology for residential real estate and therefore vary from residential mortgages outstanding loan balances reported in BMO's Supplementary Financial Information package.

<sup>4</sup> Physical emissions intensity is calculated for properties where floor area data was available (81% of the portfolio in 2019 and 85% in 2020).

Achieving the levels of decarbonization needed to align with net-zero pathways for the real estate sector in Canada depends on many complex and interrelated economy-wide dynamics. National, provincial, and municipal governments have a role to play by updating building standards and energy codes, encouraging the growth of low-carbon fuel sources and providing incentives to accelerate home energy retrofits. Utilities companies have a role to play to increase in low-carbon electricity generation and implement carbon capture and storage technology at scale in the electricity sector. And the financial sector has a role to play too by supporting our mortgage customers through the provision of products and services intended to make homes greener. Considering these challenges, interdependencies and opportunities for real estate sector decarbonization, which we examine in more detail in our paper [Decarbonizing Canada's housing market](#), we are not setting a financed emissions reduction target for this sector at this time. As data quality and availability improve, we will revisit this approach.

### Residential mortgages baseline summary

	2020	2019
<b>Loans outstanding (\$M)</b> <sup>3</sup>	<b>\$102,693</b> ♦	\$99,148
<b>Scope 1 and 2</b>		
Financed emissions (ktCO <sub>2</sub> )	<b>1,123</b> ♦	1,155
Portfolio PCAF data quality score	<b>4.2</b> ♦	4.2
Economic emissions intensity (tCO <sub>2</sub> /\$ millions loan outstanding)	<b>10.9</b> ♦	11.7
Physical emissions intensity (kgCO <sub>2</sub> /m <sup>2</sup> financed) <sup>4</sup>	<b>29.2</b> ♦	29.2

#### Data sources

- National Resources Canada for average household energy use (2018)
- Emission factors from Canada's National Inventory Report (2020)

### Residential mortgage data quality scoring

Source of emissions data	Data quality score
Estimated using property floor area and provincial energy use data by property type	4
Estimated using emission factors per dwelling	5

# Carbon-related assets

Lending to carbon-related assets is a Board level key risk metric for BMO’s Risk Appetite.

Recommended by the TCFD, it measures the value of net loans and acceptances connected to the oil and gas and utilities sectors as a percentage of total net loans and acceptances, net of allowance for credit losses for impaired loans. It does not include water utilities, independent power producers, electricity transmission and distribution companies, renewable electricity producers, nuclear electricity producers and waste management companies. We acknowledge the TCFD’s 2021 update to the guidance document *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*. In this guidance, the TCFD revised its suggested definition of carbon-related assets to include all non-financial groups identified by the TCFD, including energy, transportation, materials and buildings, agriculture, food and forest products. BMO is updating its methodologies to calculate carbon-related assets and will consider how to incorporate the new guidance in future reporting.

We established risk tolerance thresholds for lending to carbon-related assets in 2021, informed by our financed emissions and decarbonization pathway modelling analysis. The thresholds came into effect at the beginning of fiscal 2022, and will be updated annually, taking into account decarbonization pathway modelling, TCFD recommendations, industry practice and government policy goals such as the Canadian Government’s targeting of a 40-45% emissions reduction below 2005 levels by 2030.

Our 2021 lending to carbon-related assets was approximately \$8.9 billion, representing 1.9% ♦ of our total lending portfolio. Our exposure to carbon-related assets has been declining since 2019, resulting from strategic decisions on capital allocation and prioritization of opportunities by the bank.

	2021	2020	2019
Lending to carbon-related assets (%)	1.9% ♦	3.0%	3.3%

# Independent Practitioners' Limited Assurance Report

To the management of Bank of Montreal (BMO):

We have undertaken a limited assurance engagement of the following selected indicators:

Topic	Indicator(s)
Sustainable Finance <sup>1</sup>	<ul style="list-style-type: none"> <li>Capital to companies pursuing sustainable outcomes (\$ billions)</li> </ul>
Financed emissions – Motor vehicles <sup>2</sup>	<ul style="list-style-type: none"> <li>Loans outstanding (\$ millions)</li> <li>Scope 1 and 2 financed emissions (ktCO<sub>2</sub>)</li> <li>Portfolio Partnership for Carbon Accounting Financials (PCAF) data quality score</li> <li>Economic emissions intensity (tCO<sub>2</sub>/\$ millions loan outstanding)</li> <li>Physical emissions intensity (kgCO<sub>2</sub>/vehicle-km financed)</li> </ul>
Financed emissions – Residential mortgages <sup>2</sup>	<ul style="list-style-type: none"> <li>Loans outstanding (\$ millions)</li> <li>Scope 1 and 2 financed emissions (ktCO<sub>2</sub>)</li> <li>Portfolio PCAF data quality score</li> <li>Economic emissions intensity (tCO<sub>2</sub>/\$ millions loan outstanding)</li> <li>Physical emissions intensity (kgCO<sub>2</sub>/m<sup>2</sup> financed)</li> </ul>
Climate Change <sup>1</sup>	<ul style="list-style-type: none"> <li>Lending to carbon related assets (%)</li> </ul>

Collectively, the “subject matter information” are denoted by the symbol ♦ in the accompanying BMO’s 2021 Climate Report (the “Report”) covering the fiscal year ended October 31, 2021.

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Report, and accordingly, we do not express a conclusion on this information.

## Management’s Responsibilities

There are no mandatory requirements for the preparation, publication or review of climate information. As such, BMO applies the following “applicable criteria”:

- The Global GHG Accounting and Reporting Standard for the Financial Industry (2020) issued by the Partnership for Carbon Accounting Financials to calculate the Financed Emissions Indicators. The Standard can be found at <https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf>; and
- The internally-developed measurement methods to calculate metrics within the Sustainable finance and Climate change topics as described in the Glossary of Terms on pages 80-83 within BMO’s 2021 Sustainability Report which can be found at <https://our-impact.bmo.com/reports>.

Management is responsible for the preparation and presentation of the subject matter information in accordance with the applicable criteria. Management is responsible for determining the appropriateness of the use of the applicable criteria. Management is also responsible for such internal control as management determines necessary to enable the preparation and presentation of the subject matter information that is free from material misstatement, whether due to fraud or error.

## Practitioners’ Responsibilities

Our responsibility is to express a limited assurance conclusion on the subject matter information based on evidence we have obtained. We conducted our limited assurance engagement in accordance with Canadian Standards on Assurance Engagements (CSAE) 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information* and CSAE 3410, *Assurance engagements on greenhouse gas statements*. These standards require that we plan and perform our engagement to conclude whether a matter(s) has come to our attention that causes us to believe that the subject matter information is materially misstated.

The nature, timing and extent of procedures performed depends on our professional judgment, including an assessment of the risks of material misstatement, whether due to fraud or error, and involves obtaining evidence about the subject matter information.

Our engagement included, amongst others, the following procedures performed:

- Through inquiry and observation, obtained an understanding of BMO’s systems and processes, including their control environment relevant to reporting the subject matter information.
- Where estimates were involved, evaluated whether BMO’s methods for developing estimates were appropriate and consistently applied.
- For selected loans, validated the mathematical accuracy of inputs into the calculations as well as the calculations themselves, including observing consistency between inputs into the calculations and source data.

<sup>1</sup> As at and for the year-ended, October 31, 2021

<sup>2</sup> As at and for the year-ended, October 31, 2020

## Independent Practitioners' Limited Assurance Report

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

We believe the evidence we obtained is sufficient and appropriate to provide a basis for our conclusion.

### Practitioner's Independence and Quality Control

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Control (CSQC) 1, *Quality Control for Firms that Perform Audits and Review of Financial Statements, and Other Assurance Engagements* and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

### Significant Inherent Limitations

Non-financial information, such as that contained in the Report, is subject to more inherent limitations than financial information, given the qualitative characteristics of the underlying subject matter and methods used for determining this information. The absence of a significant body of established practice on which to draw allows for the selection of different but acceptable evaluation techniques, which can result in materially different measurements and can impact comparability.

### Specific Purpose of Subject Matter Information

The subject matter information has been prepared and presented based on the applicable criteria. As a result, the subject matter information may not be suitable for another purpose.

### Conclusion

Based on the procedures performed and evidence obtained, no matters have come to our attention to cause us to believe that the subject matter information of BMO is materially misstated.

A handwritten signature in black ink that reads "KPMG LLP". The signature is written in a cursive, slightly slanted style. Below the signature is a horizontal line that starts under the "K" and ends under the "P", extending across the width of the signature.

**Chartered Professional Accountants, Licensed Public Accountants**

February 28, 2022

# Forward-looking statements and non-GAAP measures

## Cautionary statement regarding forward-looking information

Certain statements in this report are forward-looking statements under the United States Private Securities Litigation Reform Act of 1995 (and are made pursuant to the 'safe harbour' provisions of such Act) and applicable Canadian securities legislation. These forward-looking statements include, but are not limited to, statements with respect to sustainable lending and underwriting targets, net-zero financed emissions targets and reducing operational GHG emissions. Forward-looking statements are typically identified by words such as "targeting", "committed", "commitment", "ambition", "goal", "expect", "plan", "will", "may", "aim to" and other similar expressions.

By their nature, forward-looking statements are based on various assumptions and are subject to inherent risks and uncertainties. Certain statements made in this report use a greater number and level of assumptions and estimates and are over longer time frames than many of our required disclosures. These assumptions and estimates are highly likely to change over time. In addition, our climate risk analysis and net-zero strategy remain under development, and the data underlying our analysis and strategy remain subject to evolution over time. As a result, we expect that certain disclosures made in this report are likely to be amended, updated or restated in the future as the quality and completeness of our data and methodologies continue to improve.

We caution readers of this report not to place undue reliance on our forward-looking statements as the assumptions underlying such statements may not turn out to be correct and a number of factors could cause actual future results, conditions, actions or events to differ materially from the targets, commitments, ambitions, plans or goals expressed in the forward-looking statements. Such factors include, but are not limited to: the availability of comprehensive and high-quality GHG emissions data, the evolution of our lending portfolios over time, the need for active and continued participation of stakeholders (including enterprises, financial institutions and governmental and non-governmental organizations), the development and deployment of new technologies and industry-specific solutions, international cooperation, the development of regulations internationally, our ability to successfully implement various initiatives under expected time frames, the compliance of various third parties with our policies and procedures and legal requirements and those other factors set out on page 19 of BMO's 2021 Annual Report. We caution that the foregoing list is not exhaustive of all possible factors. These factors should be considered in addition to other uncertainties and potential events, and the inherent uncertainty of forward-looking statements.

BMO does not undertake to update any forward-looking statement, whether written or oral, that may be made, from time to time, by the organization or on its behalf, except as required by law.

## Non-GAAP and Other Financial Measures

Results and measures in BMO's Management's Discussion and Analysis dated December 3, 2021 for the fiscal year ended October 31, 2021 ("2021 Annual MD&A") and this document are presented on an IFRS basis. We use the terms IFRS and Generally Accepted Accounting Principles (GAAP) interchangeably. Reported net revenue by geography and by operating group are non-GAAP ratios. Readers are cautioned that non-GAAP ratios do not have standardized meanings. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results. For additional information regarding measures net of CCPB and a reconciliation of reported revenue net of CCPB, see Non-GAAP and Other Financial Measures starting on page 25 of the 2021 Annual MD&A. This information and the reconciliation are incorporated by reference. The 2021 Annual MD&A is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on BMO's website at [www.bmo.com/investorrelations](http://www.bmo.com/investorrelations).

Need help?

Email us at: [sustainability@bmo.com](mailto:sustainability@bmo.com)



## BMO's Sustainability Leaders Podcast

BMO's Sustainability Leaders podcast series introduces you to the innovative minds and diverse perspectives that are pushing the boundaries in sustainability good practice.

<https://sustainabilityleaders.bmo.com/en/home/sustainability-leaders-podcast/>



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