

# 2021 Task Force on Climate-related Financial Disclosures Report

DELIVERING RESPONSIBLY



# Increasing Our Level of Ambition

As a world-class transportation leader and trade-enabler, CN handles over \$250 billion worth of goods and carries more than 300 million tons of cargo annually, and is proud to be moving all these products in a sustainable way. CN's pledge to net-zero carbon emissions by 2050 further builds upon our commitment to short-, medium- and long-term targets, robust and transparent climate change disclosures, and our goal to continue to lead our sector in the transition to a low-carbon economy.

We believe rail has a tremendous potential to reduce the environmental impact of transportation. We are committed to playing a key role in the transition to a more sustainable world.

PICTURED: Kamloops, BC

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# About this Report

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Delivering Responsibly is at the heart of how CN is building for a sustainable future. Our 2021 Task Force on Climate-related Financial Disclosures Report supports our ongoing commitment to providing meaningful transparency on our approach to managing climate-related risks and opportunities across our business.



**JANET DRYSDALE**

Vice-President, Financial Planning and Sustainability

As a leader in sustainability, CN is pleased to provide our third report aligned to the recommendations of the Task Force on Climate-Related Financial Disclosures ("TCFD"). This disclosure reflects CN's long standing journey in climate change disclosures since 2009 through the Carbon Disclosure Project (CDP) and is aligned with our 2022 CDP Response.

Our approach to sustainability disclosure aligns with international standards, including the United Nations Global Compact (UNGC), the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), the United Nations Sustainable Development Goals (SDGs), the World Bank Mobility Goals and the Task Force on Climate-related Financial Disclosures (TCFD).

The TCFD recommendations, first launched in 2017, are designed to encourage consistent and comparable reporting on climate-related risks and opportunities by companies to their stakeholders.

Our TCFD Report provides a comprehensive view into how we understand and manage the risks and opportunities associated with climate change in four sections: **Governance, Strategy, Risk Management, and Metrics & Targets**. Throughout this report, we have sought to provide information on all four pillars and eleven recommendations.

This is a journey for all of us and we, at CN, will continue to work to refine and expand our disclosures to provide meaningful information to our stakeholders. We look forward to your feedback on how we can continue to strengthen our efforts and further advance the global dialogue around climate-related disclosures.

### READ MORE

Our Delivering Responsibly website provides online access to our complete sustainability reporting suite including the most current and historical publications of our: Sustainability Report, Data Supplement, CDP Response, and TCFD Report.

[www.delivering-responsibly.cn.ca](http://www.delivering-responsibly.cn.ca)

## OUR BUSINESS AT A GLANCE

CN is a leading North American transportation and logistics company, and our 18,600-mile network spans Canada and Mid-America, connecting ports on three coasts. We offer fully integrated rail and other transportation services, including intermodal, trucking, freight forwarding, warehousing and distribution. Serving exporters, importers, retailers and manufacturers, we move raw materials, intermediate goods and finished products to market, fostering the prosperity of the markets we serve.

## 2021 KEY STATISTICS

**>300M**

TONS OF CARGO MOVED

**\$2.9B**

CAPITAL INVESTMENTS

**18,600**

ROUTE MILES

**\$14.5B**

REVENUES

**22,604**

EMPLOYEES (end of period)

**9**

PORTS SERVED

# Building Momentum on Climate Leadership



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At CN, we recognize climate change is an unprecedented global challenge that requires immediate action to transition to a low-carbon economy. CN is well positioned to be part of the solution.

The past year has presented some significant challenges imposed by Hurricane Ida in the southern U.S in late August, as well as severe wildfires and devastating flooding in British Columbia that caused prolonged disruptions to CN's mainline.

We continue to manage evolving risks and opportunities through our climate strategy, which is focused on reducing the carbon footprint of both our rail and non-rail operations and our value chain, offering carbon-efficient transportation solutions to our customers, ensuring the resiliency of our rail network and collaborating with our stakeholders to accelerate the fight against climate change.

We have been making robust annual climate change disclosures for more than a decade and in 2020, CN became an official supporter of the TCFD. In 2021 and 2022, CN was recognized for climate leadership by global environmental non-profit CDP, securing a place on its prestigious 'A List' for our environmental disclosures and

our actions to mitigate climate risks and develop the low-carbon economy. CN is equally proud to have been recognized for our overall sustainability performance through inclusion on the Dow Jones Sustainability World Index for the 11th straight year.

CN was the first Class I railroad and among the first 100 companies globally to set an approved science-based carbon emission reduction target in 2017. In 2021, we were the first North American railroad to formally commit to setting a net-zero target by joining the "Business Ambition for 1.5°C" and the United Nations' "Race To Zero" campaign.

These targets build on positive momentum marked by constant efforts to improve our performance. Since 1993, we have reduced our locomotive emission intensity by 43%, avoiding over 50 million tonnes of greenhouse gas (GHG) emissions. We continue to maintain our leadership, consuming approximately

15% less locomotive fuel per gross ton mile than the average of our industry peers.

We will continue to build on our strong foundation while adapting our business to meet the risks and opportunities of climate change. Our strategic long-term approach to investments, together with our continued focus on efficiency and deployment of innovative technologies, as well as our commitment to enabling trade, position us to keep delivering long-term value to our stakeholders.

We have a pivotal role to play in contributing to the ongoing resilience and decarbonization of our customers' and North America's supply chains, and we are committed to deliver.

**TRACY ROBINSON**  
President and CEO

## SELECTED MEMBERSHIPS, COMMITMENTS AND RECOGNITION



Listed on the CDP's 2022 prestigious A List for our actions to cut emissions, mitigate climate risks and develop the low-carbon economy.



The Science Based Targets initiative (SBTi) defines and promotes best practice in science-based target setting and independently assesses and approves companies' targets.



CN is the first North American railroad to formally commit to setting a net-zero target by joining the United Nations' Race To Zero campaign and the Business Ambition for 1.5°C.



Listed on the Dow Jones Sustainability World Index for the 11th consecutive year and on the DJSI North American Index for the 14th consecutive year.

# Governance

Strong governance practices underlined by engagement and transparency are integral to our success. Oversight and management of climate-related issues are embedded within our governance structure.

## APPROACH TO CLIMATE GOVERNANCE

CN manages climate-related risks and opportunities at all levels of the organization: the Board provides supervisory oversight, while Executive Leadership is responsible for climate-related issues and promotes the engagement of Management and Employees to mitigate risks and realize opportunities.

The Board ensures that the skillset developed by directors through their business expertise and experience meets the needs of the Board. Board members have access to education and information on an ongoing basis.

■ Board Oversight  
■ Management Oversight

### Board of Directors

Supervises the management of CN's business and affairs including monitoring of internal controls, ensuring CN's business and financial strategy, risks, including climate-related risks and opportunities.

#### Audit, Finance and Risk Committee

Assists the Board in overseeing and monitoring management's identification and assessment of CN's major risk exposures to its business and strategy, including climate change and other sustainability risks and how they are addressed.

#### Governance, Sustainability and Safety Committee

Assists the Board in overseeing and monitoring CN's governance, sustainability, environmental, safety and security policies and practices relating to ESG matters such as CN's Climate Action Plan and progress against targets under such plan and related risks.

#### Human Resources and Compensation Committee

Assists the Board in overseeing and monitoring human resources policies and strategies, including diversity, equity and inclusion. Reviews sustainability-related performance goals for determining management's annual incentive compensation.

### Executive Leadership

The Executive Vice-President and Chief Financial Officer is the highest-level management position with direct responsibility for climate-related issues. In parallel, the Executive Vice-President and Chief Operating Officer, and the Vice-President Financial Planning and Sustainability, provide executive management oversight on our carbon strategies.

#### Decarbonization Steering Committee

Provides strategic support and decisions regarding CN's decarbonization investments and projects.

#### Sustainability Committee

Provides mitigation measures including climate-related matters that can influence critical levers in managing CN's environmental or social impact.

### Management Teams and Employees

Management oversees upstream and operations cost control, including energy efficiency, and are educated on energy management best practices through our EcoConnexions employee engagement programs. Through the program, our employees are provided with practical knowledge and tools to reduce energy consumption, minimize waste and improve good housekeeping practices.

# Board's Oversight of Climate-Related Risks and Opportunities

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### The Board of Directors

The role of the Board is to supervise the management of CN's business and affairs, with the objective of increasing shareholder value. This includes the monitoring of internal controls, ensuring that an appropriate risk assessment process is in place to identify, assess and manage the principal risks of CN's business and financial strategy. CN has identified climate change as an enterprise risk and as such, the Board supervises the management of climate-related risks and opportunities.

Risk oversight is achieved through strategic overview of significant risks and issues, including climate change, and business updates with the President and Chief Executive Officer, and executives. Company officers provide regular updates on the execution of business strategies, business opportunities, risk and safety management, ethical conduct, and detailed reports on specific risk issues. Specifically, all Board directors receive regular updates on the Company's climate change and performance towards targets as part of the briefing materials. In addition, Board members receive CN's sustainability report, which includes specific information on the Company's climate strategy and performance. In 2021, the Board oversaw CN's Climate Action Plan for inclusion in CN's Information Circular.

### Governance, Sustainability and Safety Committee

The Governance, Sustainability and Safety Committee (GSS) of the Board was created in 2021 to assist the Board in overseeing and monitoring CN's governance, sustainability, environmental, safety and security policies and practices relating to ESG matters. In addition, the GSS oversees the Company's ESG disclosures, including CN's Climate Action Plan and progress against targets under such plan and related risks.

In 2021, the GSS committee reviewed CN's commitment to set a target in line with a 1.5°C scenario and to achieving net-zero carbon emissions by 2050.

The GSS holds meetings four times a year to review performance on environmental compliance, strategies, and risks. The Board receives regular updates on the Company's climate change and fuel efficiency strategies and performance towards targets as part of the briefing materials provided before each Board meeting, approximately ten times per year.

### Audit, Finance and Risk Committee

The Audit, Finance and Risk Committee of the Board is responsible for monitoring risk management and internal controls, including climate-related risks. In 2021, the Audit, Finance and Risk Committee reviewed the results of the Company's Enterprise Risk Management and made the decision to approve the identification of the Company's net risks, which included the identification of climate change risks. Specifically, the Committee approved the climate risk mitigation controls and initiatives to integrate climate risk management activities into the business plan.

### Human Resources and Compensation Committee

The Human Resources and Compensation Committee assists the Board in overseeing and monitoring human resources policies and strategies, including diversity, equity and inclusion. It also reviews sustainability-related performance goals for determining management's annual incentive compensation.



## Advisory Vote on Our Climate Action Plan

In 2021, the Board of Directors of CN announced it will seek an annual advisory vote on the Company's Climate Action Plan.

The Plan includes annual disclosure of greenhouse gas emissions aligned with the recommendations of the TCFD, a science-based 2030 emission intensity reduction target, and annual progress updates.

*"Following the inaugural vote in April 2021, the last vote was in May 2022 during our Annual General Meeting of Shareholders, with 98% in support of our Climate Action Plan. This vote complements CN's long-standing and robust climate change plans and disclosures, its public reporting of its GHG emissions, its strategy to reduce emissions, as well as its year-over-year progress."*

**SHAUNEEN BRUDER**  
Chair of the Board

# Management's Role in Assessing and Managing Climate-Related Risks and Opportunities

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#### Executive Vice-President and Chief Financial Officer (CFO)

The Executive Vice-President and Chief Financial Officer (CFO) is the highest-level management position with direct responsibility for climate-related issues. In addition to overseeing the Finance function, the CFO, working with the Vice-President, Financial Planning and Sustainability, oversees CN's Sustainability team and reports directly to the President and Chief Executive Officer (CEO).

With climate-related risks and opportunities impacting the business, the Finance and Sustainability functions need to have direct responsibility for ensuring CN proactively identifies climate-related risks and opportunities, and for ensuring the Company establishes the right policies and programs to meet regulatory compliance obligations, corporate targets, and effectively mitigate potential risks.

For example, in 2021, the CFO and the Vice-President, Financial Planning and Sustainability continued to play an important role in ensuring the Company took a strategic approach to understand the impact of carbon pricing and emerging clean fuel regulations in Canada on our business. They also ensured the development of strategies to mitigate these risks and to capitalize on longer-term opportunities by supporting the use of renewable fuels.

#### Executive Vice-President and Chief Operating Officer

In parallel, as part of the Executive Leadership Team, the Executive Vice-President and Chief Operating Officer (COO) reports directly to the President and Chief Executive Officer (CEO) and the Board on climate-related risks, including fuel efficiency, winter readiness plans, and rail network resiliency and safety.

The COO's mandate is to drive operational and service excellence and enable the Company to run a safe, fluid, reliable, and efficient railroad. With approximately 87% of our direct GHG emissions generated from fuel consumption from rail operations, this mandate includes providing executive management oversight on the fuel efficiency strategy to meet relevant targets and oversight on implementation of innovative rail technologies.

For example, in 2021, CN spent \$0.4 billion on equipment capital expenditures including the acquisition of 69 efficient high-horsepower locomotives. In addition, fuel conservation practices such as locomotive shutdowns in yards, streamlined railcar handling, train pacing, coasting and breaking strategies were implemented.

#### Decarbonization Steering Committee

The mandate of CN's Decarbonization Steering Committee is to provide strategic support and decisions regarding the Company's decarbonization investments and projects, developed at the cross-functional working group level, comprising of subject matter experts who work to realize the projects. The committee includes the COO, the Chief Information and Technology Officer, the Vice-President, Financial Planning and Sustainability, and the Vice-President of Procurement. CN's Vice-President, Financial Planning and Sustainability chairs the bi-weekly meetings and reports directly to the COO. Critical matters are reported to the GSS Committee of the Board.

#### Sustainability Committee

The mandate of CN's Sustainability Committee is to monitor, assess, propose, and initiate mitigation measures for sustainability risks and opportunities, including climate related matters. The committee comprises director- and senior management-level representatives from relevant business units and corporate functions that have oversight over or can influence critical levers in managing CN's environmental or social impact. These include, but are not limited to, Operations, Facilities Management, Fuel Management, Procurement, and Sales and Marketing. CN's Assistant Vice-President, Sustainability chairs the quarterly meetings and reports directly to the Vice-President, Financial Planning and Sustainability. Critical matters are reported to the GSS Committee of the Board.



CN's head offices, Montreal, QC

# Incenting Our Management Teams and Employees

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### Embedding Climate and Sustainability Metrics into Executive Compensation

The performance goals of the COO, CFO, and Vice-President, Financial Planning and Sustainability include improvements in CN's fuel efficiency, in line with the Canadian rail industry medium-term emission intensity reduction target of 6% by 2022 from a 2017 baseline and the Company's long-term science-based target to reduce GHG emission intensity (tCO<sub>2</sub>e/million gross ton miles) by 43% by 2030, based on 2019 levels.

Oversight for managing potential climate-related risks and opportunities to the business, such as climate change policy impacts, renewable fuel use and stakeholder engagement is also included in the Vice-President, Financial Planning and Sustainability's performance goals.

### Management and Employees

Management is responsible for upstream and operations cost control, including energy efficiency, and is educated on energy management best practices through our EcoConnexions employee engagement program. Management at CN works collaboratively across the value chain to support sustainable production and consumption. Our employees are highly engaged in working together to optimize materials and minimize waste in our operations, which is also reflected by the

inclusion of emissions and energy efficiency strategy performance indicators in the relevant employees' annual performance objectives.

For example:

- The Fuel Management team's performance score is tied to the Company's Canadian rail industry emission intensity reduction target of 6% by 2022 from a 2017 baseline.
- The Facility Management team's performance score is tied to the year-over-year target of reducing our overall energy spend by 2%.
- The Sustainability team's performance score is tied to the implementation of the emissions and energy efficiency strategy and the execution of the Company's climate change communications.

The achievement of these performance indicators is linked to individual performance goals tied to annual compensation and bonus rewards as well as to employee recognition programs such as the CN's People Awards for Excellence.

In addition, the Annual Incentive Bonus Plan was amended in 2021 to include fuel efficiency as an individual component for all executives and senior management employees.



## Providing Environmental Programs and Tools to Engage Our Employees

Through our EcoConnexions engagement program, launched in 2011, participating employees are provided with practical knowledge and tools to reduce energy consumption, minimize waste and improve good housekeeping practices. Employees are responsible for upstream and operations cost control, which includes energy efficiency, and are educated on energy management best practices. Fuel efficiency, emission and energy reduction initiatives can be recognized through CN's People Awards for Excellence.

Employees are also recognized for their efforts through our EcoConnexions employee engagement program, other internal communications, and on social media.





# Strategy

We recognize that our climate is changing, and that businesses must not merely adapt, but be part of the solution. As a mover of the economy, CN is committed to playing a key role in the transition to a low-carbon economy.

## OUR CLIMATE STRATEGY

To manage climate-related risks and opportunities, we use a four-pillar framework to guide our climate strategy.

### Decarbonize Our Business

We are working to reduce the carbon footprint of both our rail and non-rail activities. We are also focused on reducing the emissions across our entire value chain. CN was the first Class I railroad and among the first 100 companies globally to set an approved science-based carbon emission intensity reduction target in 2017. In 2021, we were the first North American railroad to formally commit to setting a net-zero target by joining the “Business Ambition for 1.5°C” and the United Nations’ “Race To Zero” campaign.

### Enable the Transition to a Low-Carbon Future

We believe this transition also presents significant opportunities for our company. Rail has a tremendous potential to reduce the environmental impact of transportation. We have been making a positive contribution by offering carbon-efficient transportation solutions to our customers. We are also working with our partners to reduce emissions by maximizing efficiency in the supply chain. And we’re moving new products, from electric vehicles to solar panels, supporting growth in sustainable products and markets.

### Build Resiliency and Biodiversity

As an enabler of trade, we recognize the importance of ensuring the resiliency of our rail network. We are adapting to the physical impacts of climate change and undertaking climate change scenario analysis to explore climate vulnerabilities to enhance our resilience to climate-related risks. We also recognize the importance of biodiversity and protecting natural capital. Through our tree-planting and mass reforestation initiatives, we are helping to improve air quality, support biodiversity, and create resilient and sustainable communities.

### Collaborate with Stakeholders

We recognize the importance of collaborating with governments, supply chain partners, customers, suppliers, academics and cleantech to accelerate the fight against climate change. Through the Railway Association of Canada, we have been actively working with our industry peers and the Government of Canada since 1995 to address the impacts of rail activities on the environment. In 2021, we announced important partnerships with our suppliers regarding renewable fuels testing and the purchase of a battery-electric locomotive for joint pilot projects.

[READ MORE](#)  
Our Climate Strategy on  
Pages 17–22

# Understanding Our Climate-related Risks and Opportunities

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The impacts of climate change are broad and systemic. CN's value chain, industry and the global economy face both direct and indirect impacts.

### Key Climate-related Risks and Opportunities

We recognize that both climate-related risks and opportunities impact our business. As such, climate change is integrated into our risk assessment processes. We assess the potential financial impacts of climate-related risks and opportunities on our operations covering revenues, direct costs, capital expenditures, assets and access to capital. A clear understanding of the risks and opportunities related to climate change is fundamental to our strategy.

Risks are categorized as transition risks or physical risks. Transition risks result from a global transition to a low-carbon and climate-resilient economy that also present opportunities for our business. Physical risks result from extreme weather events and increasing global average temperatures.

### Integration into Business Strategy

Although our business is exposed to transition and physical risks, we are also well positioned to take advantage of climate-related opportunities. Climate-related risks and opportunities are key inputs into our business strategy. We assess the impacts on our services, supply chain, investments and operations. The outcomes from this assessment provide insights on climate-related events that are integrated into our planning for strategic decision purposes.

Our climate strategy is built on four key pillars: decarbonize our business; enable the transition to a low-carbon future; build resiliency and biodiversity and collaborate with stakeholders. We continually assess and enhance our processes for managing climate-related risk and leveraging opportunities in the way we manage our business and key assets by continuing to develop scenario analysis for use in key decision-making processes to consider risks over short-, medium-, and long-term time horizons.

### Deepening our Scenario Analysis

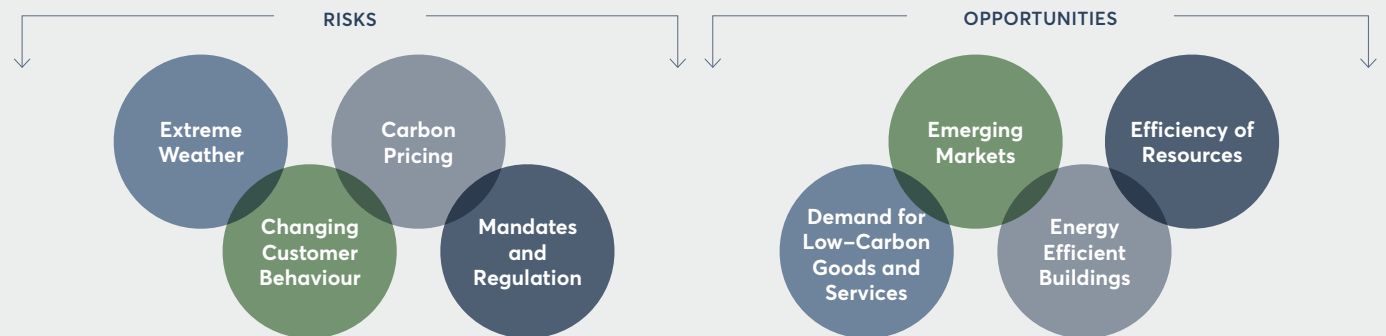
We are building our technical capability to model climate change impacts under multiple climate change scenarios. We recognize that building our capacity to assess and further integrate physical risk scenarios into strategic planning and risk assessment processes will serve to improve decision-making. This will be achieved by leveraging forward-looking assessments of climate-related factors informed by increasingly robust models. We aim to leverage the best available information to build capability, and continually improve our understanding of the potential impacts of climate change under multiple climate change scenarios for our business, supply chains and the communities in which we operate.

[READ MORE](#)

[2022 CDP Response, Pages 28-31](#)

## KEY CLIMATE-RELATED RISKS AND OPPORTUNITIES

Tables on pages 9-12 outline key climate-related risks and opportunities with potential impact to our business over short- (0-1 years), medium- (2-5 years) and long-term (5-10 years) time horizons and our approach to addressing each.



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Description	Type	Potential Impact to Business	Strategic Planning, Risk Mitigation and Opportunities	Metrics <sup>1)</sup>
<b>RISK</b>				
<p><b>Extreme Weather</b></p> <p>The risk that an increased severity and frequency of extreme weather events yields increased direct costs.</p> <p>More extreme weather and related events present risks to our network operations and infrastructure. For example, extreme heat can lead to rail misalignments and track buckling due to thermal rail expansion. Extreme cold can result in broken rails, frozen switches, and high rates of wheel replacements due to track freezing. In both cases, it has the potential to disrupt operations.</p> <p>Further, flash floods can result in land- and mudslides and cause overflows, damaging the support structures and tracks. Temperature extremes can also impact our sites and networks in the U.S., making our operations vulnerable to increases in tornado occurrences and intensity.</p>	<p><b>Physical:</b> Acute &amp; Chronic</p> <p><b>Risk level:</b> High</p> 	<p>May result in loss of revenue due to extreme weather events affecting customer activities.</p> <p>May result in higher cost associated with ensuring asset availability, or to address damage to assets.</p> <p><b>Time horizon:</b> Short, medium and long term</p> <p><b>Potential financial impact figure:</b> \$90-150 million</p> <p><b>Estimated cost of management:</b> ~\$100 million</p>	<p>We have several programs in place to respond to the physical impacts of climate change, including extreme weather readiness plans, an emergency response planning program, inspection programs and strategies to deploy non-rail modes of transport.</p> <p>We have established rapid-deployment teams to quickly take action when a service disruption occurs. These teams include staff to rework train schedules, as well as develop work and contingency recovery plans to deploy and manage needed equipment and repair crews.</p> <p>Year-over-year, we expend considerable costs towards the maintenance of our infrastructure to protect Company assets from wear and tear that could be attributable to changes in climate.</p>	<ul style="list-style-type: none"> <li>• Number of past, current, and projected weather events</li> <li>• Number of cold days (below -25°C)</li> <li>• Capital expenditure for climate-related events</li> <li>• Operational expenditure for climate-related events</li> </ul>
<p><b>Changing Customer Behaviour</b></p> <p>The risk that the decline in demand for products currently representing a significant percentage of CN's commodity portfolio due to changes to consumer behaviours and climate change regulations will yield decreased revenues.</p> <p>Increasing consumer preference for cleaner energy sources to limit the impacts of climate change, further accelerated by government commitments to clean energy, could affect commodities moved by CN, including petroleum and chemicals as well as coal.</p> <p>For example, policies and use of renewable energies are expected to spark the decline of coal in North America. In Canada, thermal coal is expected to contract by ~90% over the next 30 years, a trend that is driven primarily by regulations to phase out traditional coal-fired power plants by 2030.</p>	<p><b>Transition:</b> Market, Policy &amp; Legal, and Technology</p> <p><b>Risk level:</b> Medium—High</p> 	<p>May result in the loss of rail freight revenues by 4% if consumer preference was to impact our thermal coal customers to the extent that all coal shipments ceased.</p> <p><b>Time horizon:</b> Medium term</p> <p><b>Potential financial impact figure:</b> \$400-700 million</p> <p><b>Estimated cost of management:</b> ~\$0.5 million</p>	<p>To respond to this risk, we continue to maintain on an ongoing basis a diversified and balanced portfolio of goods, derived from seven commodity groups, while pursuing cleaner market for sustainable products and technologies. The product and geographic diversity better positions us to face economic fluctuations and enhance potential for growth opportunities.</p> <p>Furthermore, we engage with customers to promote the environmental benefits of rail to increase our market share. Over the past year, we continued to play a key role in the transition to a low-carbon economy by moving cleaner energy products. As of December 31, 2021, no individual commodity group accounted for more than 28% of our total revenues.</p>	<ul style="list-style-type: none"> <li>• Market demand and supply projections</li> <li>• Emissions regulations with potential impact on customer revenues</li> </ul>

1) Tables on pages 09-12 outline key metrics used by CN to assess climate-related risks and opportunities in line with the Company's strategy and risk management process.

## Climate-related Risks (cont.)

	Description	Type	Potential Impact to Business	Strategic Planning, Risk Mitigation and Opportunities	Metrics <sup>1)</sup>
<b>RISK</b>					
<p><b>Carbon Pricing</b></p> <p>The risk that the increasing price of carbon and enhanced emissions reporting regulations will yield increased direct costs.</p>	<p>Given that we operate across Canada and the U.S. and conduct activities in rail, trucking and marine transportation, we are subject to several provincial, state and federal climate-related regulations.</p> <p>Climate-related regulations, particularly carbon pricing mechanisms, will yield increased direct costs from increasing federal and provincial carbon taxes, cap-and-trade costs, flow through costs from fuel suppliers and the cost of third-party services for GHG reporting and verification.</p> <p>These carbon pricing mechanisms have a direct impact on our operational costs, as well as the flow-through cost to our customers.</p>	<p><b>Transition:</b> Market, Policy &amp; Legal, and Technology</p> <p><b>Risk level:</b> Medium—High</p>	<p>Climate scenario analysis, considering a time horizon from 2019 (CN's base year) to 2030 and using projections and assumptions established for the development of CN's science-based target, indicated a potential impact of up to \$450 million in carbon price.</p> <p><b>Time horizon:</b> Long term</p> <p><b>Potential financial impact figure:</b> \$200-450 million</p> <p><b>Estimated cost of management:</b> ~\$0.14 million</p>	<p>Several risk mitigation strategies have been put in place to respond to our exposure to carbon pricing mechanisms.</p> <p>Resources have been allocated to meet compliance obligations related to GHG emission reporting, third party verifications and carbon pricing scenario analysis. Through our Climate Action Plan and in line with our science-based target, we have established initiatives to reduce our GHG emissions and possible direct costs from carbon pricing mechanisms. The plan is focused on five strategic pillars: fleet renewal, improved operating practices, big data, innovative technologies and sustainable renewable fuel blends.</p> <p>Where relevant, we transfer carbon taxes on locomotive diesel through surcharges for our customers. Internal resources are also assigned to manage those flow through costs.</p>	<ul style="list-style-type: none"> <li>• Market demand and supply projections</li> <li>• Emissions regulations with potential impact on customer revenues</li> <li>• Price of carbon</li> </ul>
<p><b>Mandates and Regulation</b></p> <p>The risk that mandates on and regulations of services yield increased direct costs to transition to lower emissions technology.</p>	<p>New mandates and emerging regulations, such as the Canadian Clean Fuel Standard to be implemented in 2023, and other existing renewable and clean fuel standards in jurisdictions where we operate, will result in increased costs in R&amp;D, and in lower emission transportation technologies.</p> <p>The move towards renewable fuels or alternative energy sources will require significant capital expenditure. The rail industry is currently researching the use of battery and hydrogen power for propulsion. These new fuel sources would represent significant implementation costs.</p>	<p><b>Transition:</b> Market, Policy &amp; Legal, and Technology</p> <p><b>Risk level:</b> Medium—High</p>	<p>Requires increased investment in cleaner, more fuel-efficient rail and non-rail equipment to decouple growth from GHG emissions.</p> <p><b>Time horizon:</b> Medium term</p> <p><b>Potential financial impact figure:</b> \$500 million - 1 billion</p> <p><b>Estimated cost of management:</b> Over \$3 million</p>	<p>Various management strategies have been put in place to address the risk exposure from these new mandates and regulations.</p> <p>We monitor and assess the potential impact of emerging regulations in Canada and the U.S. and we engage with federal and provincial/state governments on climate policy agendas, advocating for positive policy outcomes. Through our Climate Action Plan, we have established initiatives to reduce our GHG emissions and possible direct costs from new mandates and regulations. We support the development and uptake of low-carbon technologies through research, collaboration and investment. In 2021, we worked with fuel suppliers and locomotive manufacturers to test the greater use of biofuels in our fleets and to pilot battery-electric locomotive technology.</p>	<ul style="list-style-type: none"> <li>• Fleet emissions intensity</li> <li>• Fleet fuel efficiency</li> <li>• Fleet air emissions intensity</li> <li>• Emissions regulations</li> <li>• Low-carbon research investment spent</li> <li>• % of MWh from renewable</li> <li>• Renewable fuel energy consumption</li> <li>• # of vehicles with electric drive-train</li> <li>• % of fleet equipped with smart system</li> </ul>

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Description	Type	Potential Impact to Business	Strategic Planning, Risk Mitigation and Opportunities	Metrics <sup>1)</sup>
<b>OPPORTUNITY</b>				
<p><b>Demand for Low-Carbon Goods and Services</b></p> <p>The opportunity to increase revenues resulting from increased demand for low-emission goods and services.</p>	<p><b>Transition:</b> Market</p> <p><b>Opportunity level:</b> Medium—High</p>	<p>May promote growth within our intermodal and carload business segments.</p> <p><b>Time horizon:</b> Medium term</p> <p><b>Potential financial impact figure:</b> Up to \$8.7 billion, based on our truck-competitive business revenue.</p> <p><b>Estimated cost to realize opportunity:</b> ~\$2.9 billion</p>	<p>We actively engage with customers to position the environmental benefits of rail. CN furthermore invests in the expansion and strengthening of the Company's rail network. Investments include key track expansion projects that will boost capacity allowing CN to better service our customers. Other program elements will focus on the replacement, upgrade and maintenance of key track infrastructure to improve overall safety, fluidity and efficiency.</p> <p>In 2021, CN's \$2.9 billion capital program included expansion projects such as the construction of about 15 miles of double track in Western Canada (west of Edmonton).</p> <p>CN furthermore continued to provide customers with transparent information on their GHG emissions from transportation of goods.</p>	<ul style="list-style-type: none"> <li>• Market demand and supply projections</li> <li>• Intermodal commodities growth projections</li> <li>• Emissions regulations with potential impact on customer revenues</li> <li>• Fleet (rail and truck) emissions intensity</li> <li>• Fleet (rail and truck) fuel efficiency</li> </ul>
<p><b>Emerging Markets</b></p> <p>The opportunity to increase revenues through access to new and emerging markets.</p>	<p><b>Transition:</b> Market</p> <p><b>Opportunity level:</b> Medium—High</p>	<p>May promote growth of our clean energy commodity segment.</p> <p><b>Time horizon:</b> Long term</p> <p><b>Potential financial impact figure:</b> \$750 million - 1 billion</p> <p><b>Estimated cost to realize opportunity:</b> ~\$0.5 million</p>	<p>We are working closely with our customers to further develop these business opportunities. This includes proactively marketing the environmental benefits of shipping by rail.</p> <p>For example, CN is working closely with our customers to provide supply chain solutions to transport wood pellets from North American plants to customers across the world looking to move to a more sustainable renewable fuel solution.</p>	<ul style="list-style-type: none"> <li>• Market demand and supply projections</li> <li>• Emissions regulations with potential impact on customer revenues</li> <li>• Market growth</li> <li>• Revenue growth</li> </ul>

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<b>OPPORTUNITY</b>					
	<p><b>Energy Efficient Buildings</b></p> <p>The opportunity to reduce direct cost by moving to more efficient buildings.</p>	<p><b>Transition:</b> Policy &amp; Legal, and Technology</p> <p><b>Opportunity level:</b> Low</p>	<p>Enables the reduction of Scope 2 emissions, while observing energy cost savings.</p> <p><b>Time horizon:</b> Short term</p> <p><b>Potential financial impact figure:</b> ~\$0.3 million</p> <p><b>Estimated cost to realize opportunity:</b> ~\$0.05 million</p>	<p>Our approximately \$5 million annual CN EcoFund, combined with government and utility incentives and subsidies, has enabled us to secure the necessary funding to drive energy-efficient upgrades in our buildings and yards.</p> <p>To maximize the opportunity, we continue to monitor funding opportunities from government and utility company subsidy programs that align with our procurement strategy. We actively submit project proposals and continue to collaborate with key utilities on identifying energy efficiency project opportunities. Specifically, in 2021, CN received subsidies from BC Hydro, Alectra Utilities, and Commonwealth Edison for energy efficiency projects implemented across our network.</p>	<ul style="list-style-type: none"> <li>Emerging regulations</li> <li>Scope 2 emissions</li> <li>% of MWh from renewable vs. non-renewable sources</li> <li>Renewable fuel energy consumption in MWh</li> <li>% of buildings with low-carbon energy products</li> <li>Energy and GHG emissions savings from retrofit projects</li> <li>Capital spent</li> </ul>
	<p><b>Efficiency of Resources</b></p> <p>The opportunity to reduce operating costs by increasing the efficiency of resources.</p>	<p><b>Transition:</b> Policy &amp; Legal, and Technology</p> <p><b>Opportunity level:</b> Medium</p>	<p>Enables the reduction of operating costs, while observing emission savings.</p> <p><b>Time horizon:</b> Short term</p> <p><b>Potential financial impact figure:</b> ~\$17 million</p> <p><b>Estimated cost to realize opportunity:</b> ~\$0.4 billion</p>	<p>With approximately 87% of our GHG emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail efficiency.</p> <p>In addition to the capital-intensive renewal of our fleet, the installation of fuel-efficient technologies and big data management analytics capabilities are helping us further reduce our carbon footprint and are part of our low-carbon transition plan in alignment with our science-based target reduction of 43% GHG emission intensity by 2030.</p>	<ul style="list-style-type: none"> <li>Emissions intensity</li> <li>Fleet fuel efficiency</li> <li># of vehicles with electric drive-train</li> <li>% of fleet equipped with efficiency technologies</li> </ul>

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# Scenario Analysis: Assessing the Resiliency of Our Strategy

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### Our Approach to Scenario Analysis

In alignment with our climate risk process, CN has undertaken qualitative and quantitative climate change scenario analysis to explore climate vulnerabilities to enhance our resilience to climate-related risks. Our scenario analysis capabilities has deepened our understanding of climate-related risks and opportunities. We have also taken further steps to translate these insights into tangible actions that will enable us and our customers to mitigate climate-related risks and take advantage of the opportunities that the transition to net zero will create.

The transition and physical risks were selected based on their likelihood and potential financial impact on direct costs. We determined that time horizons until 2030 and 2050 for the analysis were relevant for our business as it aligns with our current science-based target and commitment to net-zero emissions by 2050.

### Transition Risk Scenario Analysis

**CARBON PRICING:** We assessed the financial impact of carbon prices in North America up to 2030 related to our locomotive fuel emissions, which represents approximately 87% of our Scope 1 emissions, with respect to transition risk. We applied the Government of Canada's carbon price projections until 2030, which line up with the Bank of Canada's scenario that aligns with the well-below 2°C Paris Agreement goals. We also modeled the Bank of Canada's Nationally Determined Contributions (NDCs), which is aligned to a 3.5°C warming scenario by the end of the century. For the U.S., we analyzed the IEA's Sustainable Development Scenario leading to below 2°C and a prorated Bank of Canada's NDC scenario for our U.S. operations leading to 3.5°C.

### CHANGING CONSUMER BEHAVIOUR AND IMPACT ON

**THERMAL COAL:** We completed this transition risk scenario analysis to assess the financial impact of reduced production of thermal coal on our business in North America, considering a short-term time horizon of 2030 and a long-term one of 2050, using the IEA World Energy Model projections for thermal coal production in North America. We evaluated scenarios of increasing clean energy policies and investment and business as usual to obtain a range of potential impacts.

### Physical Risk Scenario Analysis

**EXTREME COLD:** The physical risk analysis focused on the impact of extreme cold temperatures on our rail network in Canada, taking into consideration a time horizon of 2026 to 2030. The analysis was conducted for Representative Concentration Pathways (RCPs) 2.6 and 4.5 scenarios, using data from the World Climate Research Programme, Climate Atlas, and Climate Explorer by calculating the total number of cold days impacting our Canadian and U.S. rail network between 2020 and 2030. We plan to consolidate learnings from these to expand the analysis to other risk types in order to identify potential material financial risks and to inform our business strategy related to climate change. The results of the scenario analysis are discussed with the Executive Leadership Team on an on-going basis.

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**CAUTIONARY STATEMENT REGARDING SCENARIO ANALYSIS:** There are significant challenges in predicting how the path to a low-carbon future may unfold. The use of scenarios can help highlight the breadth of risks and opportunities that climate change will pose. However, our risk and opportunity assessment work is ongoing, and the details and assessments are subject to change over time. As with all scenarios, the projections of each scenario should be treated with caution and should not be taken for forecasts or predictions. Accordingly, there can be no assurance that the scenario modeling or assessments presented in this report are a reliable indicator of the actual outcome.



## Increasing the Resiliency and Recoverability of Our Rail Network

We have programs in place to respond to the physical impacts of climate change, including extreme weather readiness plans, an emergency response planning program and inspection programs.

We have established rapid-deployment teams to quickly take action when a service disruption occurs. These teams include staff to rework train schedules, as well as develop work and contingency recovery plans. For example, our Winter Plan aims to ensure that our people and equipment remain ready to face winter. It outlines the measures we continue to take to meet the requirements of our customers safely and efficiently during the harsh weather ahead.

# Transition Risk Scenario Analysis

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Financial impact of carbon prices in North America		
Scenarios	IEA'S SUSTAINABLE DEVELOPMENT SCENARIO (SDS)	NATIONALLY DETERMINED CONTRIBUTIONS (NDCs)
<b>Description</b>	The scenario outlines a major transformation of the global energy system to achieve universal access to energy (SDG 7), to reduce the severe health impacts of air pollution (part of SDG 3) and to tackle climate change (SDG 13).	Beginning in 2020, countries act according to their pledges under the Paris Agreement. They reduce global warming, but their actions are not enough to limit warming to an additional 2°C above pre-industrial levels by 2100.
<b>Temperature Impact</b>	End of century warming below 1.8°C	End of century warming around 3.5°C
<b>Rationale for Selection</b>	Explore a best-case/low emissions scenario.	Explore a scenario that is likely considering announced climate mitigation strategies.
<b>Analytical Method</b>	To conduct the carbon price analysis, we multiplied the carbon price by the forecasted locomotive emission volumes to determine the financial exposure to carbon price. Scenario inputs included CN GHG locomotive fuel emissions for the 2019 baseline year, as well as emission projections up to 2030, taking into consideration forecasted business volumes as well as fuel efficiency gains in line with our climate science target.	
<b>Results and Outcome</b>	In a 1.8°C scenario, CN could be exposed to a carbon price financial impact of ~\$750 million by 2030, where no target exists versus ~\$450 million where CN meets its science-based target.	Conversely, in a 3.5°C scenario, CN could be exposed to a carbon price financial impact ~\$350 million by 2030, where no target exists, versus ~\$200 million where CN meets its science-based target.
<b>Implications on Strategy</b>	The results of the carbon price scenario analysis have informed and reinforced our commitment to achieving our climate science target and climate strategy. The growth of the renewable fuel market presents an immediate opportunity to further reduce our emissions and carbon costs by using sustainable renewable fuel blends in our fleets. We are aligned with the Canadian Clean Fuel Standard and are testing high-level renewable fuel blends through ongoing projects and investments in zero- emissions trucks for intermodal use and a battery-electric freight locomotive which could reduce locomotive fuel consumption and emissions by up to 30%.	

## Using the Price of Carbon as a Strategic Planning Tool

CN has established an internal price on carbon as a strategic planning tool, considering that addressing climate change is a business cost and opportunity.

The development of an internal price of carbon helps to identify revenue opportunities, risks, and creates an incentive to drive energy efficiencies to reduce costs. The use of the carbon price is furthermore critical for the development of a sound low-carbon transition plan in support of our carbon emissions reduction target. We review our internal price on carbon annually, considering changes to the pricing schemes as well as our operations.

CN established an internal shadow price of carbon of \$34.89 per metric ton CO<sub>2</sub>e for 2021.

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# Transition Risk Scenario Analysis

## CHANGING CONSUMER BEHAVIOUR AND IMPACT ON THERMAL COAL

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	IEA'S SUSTAINABLE DEVELOPMENT SCENARIO (SDS)	STATED POLICY SCENARIO (STEPS/SPS)
<b>Scenarios</b>		
<b>Description</b>	The scenario outlines a major transformation of the global energy system to achieve universal access to energy (SDG 7), to reduce the severe health impacts of air pollution (part of SDG 3) and to tackle climate change (SDG 13).	This scenario reflects current policy settings based on a sector-by-sector assessment of the specific policies that are in place, as well as those that have been announced by governments around the world.
<b>Temperature Impact</b>	End of century warming below 1.8°C	End of century warming around 2.6°C
<b>Rationale for Selection</b>	Explore a best-case/low emissions scenario.	Explore a scenario that is likely considering announced climate mitigation strategies.
<b>Analytical Method</b>	We calculated the historical proportion of North American thermal coal production transported by CN and assumed this proportion remained constant until 2050. We then used this proportion to map the IEA WEM coal forecasts to tons of thermal coal transported by CN. A time-horizon of 2030 was selected for the short-term and 2050 for the long-term. We determined that 2030 and 2050 were key timeframes of interest as they align with the Government of Canada's 2030 GHG reduction target and net-zero by 2050 commitments. Given the flows of movement of coal across the US-Canada border, we analyzed CN's operations in North America as a whole.	
<b>Results and Outcome</b>	Under this scenario, which has a more ambitious decarbonization policy, thermal coal volumes would decrease by 75% by 2030 and 94% by 2050. Assuming that CN maintains its same share of the contracting thermal coal market CN's thermal coal volumes and revenues would fall drastically, by 94% by 2050, representing a decline of ~\$430 million when comparing the 2019 base year.	Under the conservative STEPS scenario, which takes into account only stated policies to date, tons of coal are expected to decrease by 52% between 2019 and 2030 and by 80% between 2019 and 2050. Assuming that CN maintains its same share of the contracting thermal coal market, this translates to an 80% reduction of tons of coal transported by CN by 2050. If we expect thermal coal real revenues to fall by the same percentage as tons transported, this translates to a ~\$365 million reduction in revenue.
<b>Implications on Strategy</b>	The results of the market analysis have informed and reinforced our strategy to maintain a diversified portfolio of goods transported, to continue to position the environmental benefits of shipping by rail and to grow opportunities in new and sustainable products and markets.	



## Moving Cleaner Energy Alternatives

Rail shipping as an environmental, efficient, and cost-effective mode of transport is especially compelling as we move towards a low-carbon economy. We continue to play a key role in this transition by moving cleaner energy products including:

- Transporting methanol, solar panels and wind turbines – strengthening North America's position in cleaner energy markets across Canada and the U.S. and export to Asia.
- Providing shipments of wood chips and wood pellets to meet the growing demand for a more sustainable renewable fuel solution for residential, institutional, or industrial heating.
- Leveraging our network reach into the lithium-rich regions of North America to offer supply chain solutions for concentrate products.
- Extending our reach through additional EV automotive distribution centres.

# Physical Risk Scenario Analysis

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#### Extreme Cold

Impact of extreme cold temperatures on our rail network in Canada

	REPRESENTATIVE CONCENTRATION PATHWAY 2.6 (RCP)	REPRESENTATIVE CONCENTRATION PATHWAY 4.5 (RCP)
<b>Scenarios</b>		
<b>Description</b>	A very stringent scenario with carbon dioxide emissions declining to zero by 2100, starting in 2020. It also requires that methane emissions go to approximately half the levels of 2020, and that sulphur dioxide emissions decline to approximately 10% of those of 1980–1990.	An intermediate scenario with emissions peaking around 2040, then declining. RCP 4.5 requires that carbon dioxide emissions start declining by approximately 2045 to reach roughly half of the levels of 2050 by 2100. Associated warming results in physical climate impacts.
<b>Temperature Impact</b>	End of century warming below 2°C	End of century warming between 2°C and 3°C
<b>Rationale for Selection</b>	Explore a best-case/low emissions scenario.	Explore a scenario that is likely considering announced climate mitigation strategies.
<b>Analytical Method</b>	To conduct the extreme cold analysis, we calculated the total number of cold days (below -25°C) impacting CN's Canadian rail network between 2020 and 2030. For the extreme cold scenario analysis, the inputs included the number of extreme cold days below -25°C, and the four-tier restriction system, which calls for specific train length reductions, and the GIS latitude and longitude coordinates across our Canadian rail network at 498 sub-stations. Extreme cold days, on average, are most pronounced on our operations in Alberta, Manitoba, Saskatchewan and British Columbia.	
<b>Results and Outcome</b>	The physical scenario analysis indicated that in a 1.8°C scenario, the number of extreme cold days (-25°C and lower) that could impact CN's network by 2030 would decrease by 26% from 2020.	In a 3.5°C scenario, the number of extreme cold days that could impact CN's network by 2030 would decrease by 44% from 2020.
<b>Implications on Strategy</b>	The extreme cold scenario analysis continues to be discussed in the context of influencing our winter readiness plans, particularly in areas of extreme cold exposures. These strategies can include reducing carload train lengths, modal shift from rail to truck as well as adapting and right sizing the fleet. The analysis has helped us better understand exposure and plan network resilience measures.	

\* The Representative Concentration Pathways (RCPs) describe four different 21st century pathways of greenhouse gas (GHG) emissions and atmospheric concentrations, air pollutant emissions and land use, adopted by the IPCC.



## Increasing Resiliency in Extreme Cold

CN's success is dependent on our ability to operate the railroad efficiently. Severe cold events could disrupt operations and service for the railroad.

Through our Winter Plan and Grain Plan we diligently prepare by implementing specific measures to meet with winter's inevitable extreme conditions. Measures include: adding track patrols; obtaining accurate and timely forecasts; monitoring avalanches, landslides and water levels; keeping consistent flow of air through the brake lines; and applying our three-tier train length system. We also implement other best practices such as advanced weather forecasts, deploying generators across the network in case of power failures due to cold weather and enhancements to operations centres to facilitate the flow of information.

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# Decarbonizing Our Business

We continue to strengthen our commitment to making a positive contribution to the fight against climate change by decarbonizing our business.

PICTURED:  
Mixed freight train in northern Quebec

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## CLIMATE ACTION PLAN

With approximately 87% of our GHG emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail efficiency, and by applying those leading practices to the other fleets we operate, which include trucks, vessels, intermodal equipment, and on-company service vehicles. Our target informs our low-carbon transition plan and business strategy. To achieve our science-based target to reduce our GHG emission intensity by 43% by 2030 based on 2019 levels, we are focused on five key strategic areas.

### Fleet Renewal

Cleaner, more fuel-efficient equipment enables us to decouple our business growth from GHG emissions. We continue to purchase more fuel-efficient locomotives and in 2021, we acquired 69 of the most fuel-efficient, high-horsepower locomotives available.

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[2020 Delivering Responsibly Sustainability Report, Pages 16–22](#)

### Innovative Technologies

We continue to explore and invest in innovative technologies. We equip our locomotives with energy management and data telemetry systems as well as distributed power functionality to help us maximize locomotive operating effectiveness and efficiency. These innovative technologies will allow us to continuously improve train handling, braking performance, and overall fuel efficiency, therefore improving our carbon efficiency in the years to come.

### Big Data Analytics

Through our locomotive telemetry systems, we collect large amounts of data to improve performance and fuel conservation. In addition, Horsepower Tonnage Analyzer uses the data from the systems to optimize a locomotive's horsepower-to-tonnage ratio, further minimizing fuel consumption. Investments in information technology enable deeper analysis to continue to identify, through big data analytics, additional opportunities for fuel conservation that will present opportunities for us to further reduce our emissions in the coming years.

### Operating Practices

Real-time information enables on-the-job training on practices that promote fuel conservation. Capitalizing on our locomotive telemetry systems and advanced data analytics will help us identify additional opportunities for fuel conservation operating practices in the coming years.

### Cleaner Fuels

Driven by regulatory requirements, the growth of the renewable fuel market presents an immediate opportunity to further reduce our emissions by using sustainable renewable fuel blends in our fleets. In the medium term, Canadian Federal Clean Fuel Standard and other existing renewable and clean fuel standards in jurisdictions where CN operates, will continue to present an important opportunity for us to further reduce our emissions. We are also actively working with our fuel suppliers and locomotive manufacturers and are focused on testing and exploring the greater use of sustainable renewable fuel blends, beyond regulated amounts to achieve our target.

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## Partnering with Our Suppliers to Test Renewable Fuels

As part of our low-carbon transition plan, we made the strategic decision to engage with our suppliers to explore the use of renewable fuels.

Renewable fuels present an immediate opportunity to further reduce our locomotive emissions but could impact our procurement costs as well as operations where high blends of renewable fuels cannot be used in our trains based on supplier specifications. In response, our Fuel Procurement team is working with suppliers to gain greater transparency into blend rates for the fuel we receive.

In 2021, we announced a partnership with Progress Rail and Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel in support of our sustainability goals. Trials and qualifications of up to 100% bio-based diesel fuel are underway, an important step in reducing GHG emissions from CN's existing locomotive fleet while alternative propulsion locomotive technologies are being developed.

The program will allow CN and Progress Rail to better understand the long-term durability and operational impacts of renewable fuels on locomotives, especially in cold weather and plan needed modifications to fully leverage their usage over the next decade. This is an important part of how we meet our regulatory compliance obligations and efficiency objectives in line with our science-based target.

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## Planning for the Future: Testing Low- and No-carbon Technologies

We recognize the need for new low- and no-carbon technologies to meet the deep decarbonization required to achieve net-zero emissions by 2050.

As part of our sustainability strategy to reduce freight transportation emissions through innovation, we plan to continue to lead the sector by deploying low- and no-carbon technologies. We recently announced the purchase of Wabtec's FLXdrive battery-electric freight locomotive, the first 100% battery heavy-haul locomotive in support of our ambitious long-term goals.

The anticipated efficiencies and emission reductions from the technology will be significant, reducing locomotive consist fuel consumption and emissions by up to 30%, and will help open the door to new alternatives beyond the diesel-powered locomotives used today. This new technology is a key component in achieving an effective transition to a lower-carbon future.

We are also testing innovative solutions for our trucking and intermodal services, to advance the decarbonization of the entire transportation supply chain. In 2020, we signed a MOU with Lion Electric to acquire 50 zero-emission trucks for use in our intermodal terminals in urban areas. These zero-emission trucks, will be tested across our network beginning in 2023 and are expected to remove 100 tons of greenhouse gas emissions annually.



PICTURED:  
Rendering of our new battery-electric freight locomotive.



# Enabling the Transition to a Low-Carbon Future

We believe rail has a tremendous potential to reduce the environmental impact of transportation. We are committed to playing a key role in the transition to a more sustainable world.

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PICTURED: Vernon Marsh, WI

## THE ENVIRONMENTAL BENEFITS OF SHIPPING BY RAIL

### Helping Our Customers Reduce their Scope 3 Emissions

We play a key role in North America's supply chains. While we are committed to decarbonizing our own operations, we remain focused on maintaining cost effectiveness and improving our service and efficiency for our customers. Our transportation services form part of the Scope 3 emissions of our customers. We recognize we have the opportunity to work collaboratively with our customers to reduce their Scope 3 emissions and continue decarbonizing the transport supply chain.

### Collaborating for More Efficient Supply Chains

We are using fewer railcars and locomotives to ship more freight in a safe, tight, reliable and efficient operation. By working closely with customers and supply chain partners, including ports, we are driving further emission reductions across the entire supply chain. Through our EcoConnexions Partnership Program we aspire to collaborate and learn from each other and move towards a more sustainable future.

### Supporting Growth in Sustainable Products and Markets

Every year, we handle over 300 million tons of cargo from the food we eat, the wood to build our homes, the cars we drive, the appliances that make our lives easier, and the energy to power our activities. Many of these goods are being transformed into more sustainable products, and we are moving them in a sustainable way. We also continue to strengthen our position within cleaner energy markets such as wood pellets, wind turbine components, solar panels, and biofuels.

#### Reduces Carbon

# 75%

MOVING FREIGHT BY RAIL INSTEAD OF TRUCK REDUCES GHG EMISSIONS BY UP TO 75%<sup>1)</sup>

#### More Fuel Efficient

# 3-4x

TRAINS, ON AVERAGE ARE THREE TO FOUR TIMES MORE FUEL EFFICIENT THAN TRUCKS<sup>1)</sup>

#### Longer Hauls

# 480 miles

THE DISTANCE ONE TRAIN CAN MOVE A TON OF FREIGHT ON ONE GALLON OF FUEL<sup>1)</sup>

#### Avoids Congestion

# 300 trucks

ONE FREIGHT TRAIN CAN REPLACE OVER 300 BIG TRUCKS<sup>2)</sup>

#### Lower Air Emissions

# 90%

TIER 4 LOCOMOTIVES REDUCE PARTICULATE EMISSIONS BY AS MUCH AS 90%<sup>3)</sup>

1) The Association of American Railroads 2) The Railway Association of Canada 3) U.S. Environmental Protection Agency



# Building Resiliency and Biodiversity

We recognize that planting trees is important to tackle the twin crises of climate change and biodiversity loss. Our current goal is to plant 3 million trees by 2030.

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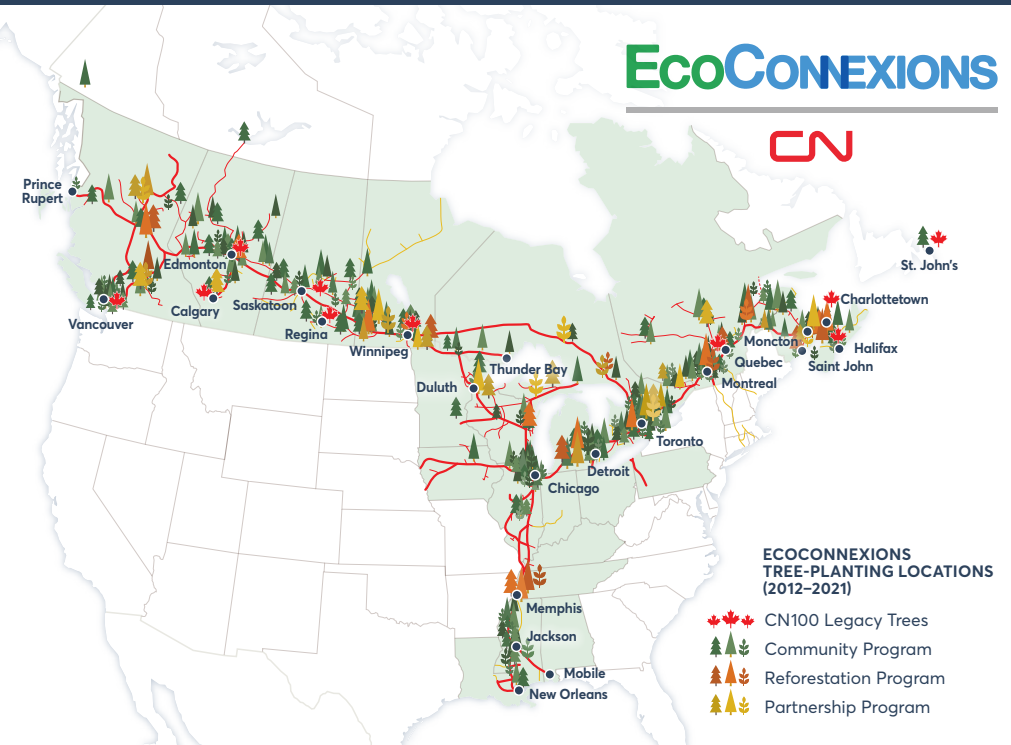
## REFORESTING ALONG OUR NETWORK

We believe trees are key to the transition to a net-zero economy, to protect and conserve ecosystems, to secure urban resilience to extreme weather events, to improve public health and to build a nature-positive future.

Since 2012, our EcoConnexions programs, in partnership with Tree Canada and America in Bloom, have been supporting the greening of communities and First Nations along our network as well as mass reforestation projects. We aim to have a positive impact beyond climate by investing in projects that generate broader benefits for nature and society.

**SUPPORTING THE GREENING OF COMMUNITIES:** Planting trees is one way we can give back to the communities along our rail lines. We work with our partners and local organizations to have a lasting impact and improve the national landscape for future generations to enjoy. Through our *EcoConnexions From the Ground Up* and Reforestation programs, we help communities establish green spaces and tree plantings.

**COLLABORATING FOR MASS REFORESTATION:** Since 2014, our EcoConnexions Partnership Program celebrates companies working to reduce their emissions and drive sustainable business practices. Each year, we recognize our winners by planting trees in their honour. Since the beginning of the program, we have planted over 600,000 trees in Canada and the U.S.



### Trees Planted

**2.3 million**

TREES PLANTED ACROSS NORTH AMERICA SINCE 2012

### Communities Engaged

**328**

COMMUNITIES HELPED SINCE 2012 TO ESTABLISH GREEN SPACES AND TREE PLANTINGS

### Our Partners



# Collaborating with Stakeholders

We recognize the importance of collaborating with governments, supply chain partners, customers, suppliers, academics and cleantech to accelerate the fight against climate change.

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PICTURED:  
Supply chain partner,  
the Port of Prince Rupert, BC

## CLIMATE CHANGE ENGAGEMENT AND COLLABORATION

Our goals are ambitious and will require the support and collaboration of several stakeholders, starting internally with our employees, supported by our Board and executive leadership team, as well as external partners who will play a key role as we collaborate to transition to a low-carbon future.

**EMPLOYEES:** The implementation of our climate strategy is supported through the leadership of the Board and our executive team as well as multiple functions. Through our EcoConnexions engagement program, our employees are provided with practical knowledge and tools to reduce energy consumption, minimize waste and improve good housekeeping practices in our yards.

**SUPPLIERS:** Achieving our target is dependent in part on the continuing successful development and availability of innovative technologies and the availability of sufficient volumes of cost-competitive sustainable renewable fuels in the years to come, which will require collaboration between locomotive manufacturers and fuel producers. This ecosystem of collaboration will be key to enabling our success in achieving our net-zero targets.

**CUSTOMERS:** Our goal is to provide cleaner, more sustainable transportation services to our customers. Shipping heavy goods by rail over long distances is three to four times more fuel efficient than trucks and has tremendous potential to reduce the environmental impact of transportation and help fight climate change. We are working with our customers to help them reduce their transportation supply chain emissions and meet their climate targets. We are also supporting the growth in sustainable markets by transporting sustainable products.

**SUPPLY CHAIN PARTNERS:** As we look to 2030 and beyond, we believe decarbonizing transportation will require designing innovative low-emission supply chain solutions through investments and collaboration. Our experience as operators of rail, truck and vessel fleets as well as our position in the supply chain will enable us to lead a step change towards decarbonizing North America's freight sector.

**GOVERNMENTS:** Through the Railway Association of Canada and in collaboration with our peers, we have been actively working with the Government of Canada since 1995 to address the impacts of rail activities on the

environment, through a Memorandum of Understanding (MOU). The 2018–2022 MOU supports the Government of Canada's commitments under the Pan-Canadian Framework on Clean Growth and Climate Change, and its vision for green and innovative transportation. It includes the development of a comprehensive pathway for aligning government and industry efforts to reduce emissions produced by the railway sector, identifying opportunities to advance clean technology, clean fuels, and innovation in the sector through research, policy or programs.

Recently, CN also supported the Government of Canada's commitment to achieving net-zero emissions by 2050 by becoming a founding corporate participant in the "Net Zero Challenge".

We also work with governments in the U.S. In 2021, we announced a grant from the Pennsylvania Department of Environmental Protection to help with the purchase of a new innovative Wabtec battery-electric locomotive.

[READ MORE](#)

[2022 CDP Response, Pages 26–27](#)



# Risk Management

A multi-disciplinary company-wide risk management process is used to assess short-, medium-, and long-term climate-related risks and opportunities.

Climate change is integrated into our risk assessment processes, which considers both physical and transition risks, including temperature extremes, flooding, hurricanes, and tornadoes, as well as legal, policy and market impacts.

At a company level, CN uses enterprise and operational risk management processes to identify, prioritize, assess, respond to, and disclose risks, including climate-related risks that have the potential to affect business strategy. For each risk (inherent or residual), a ranking is provided ranging from high to low, based on financial, operational, environmental, and reputational impacts (worst-case) and the associated likelihood of occurring. Current and planned mitigation activities are captured and

assigned ownership at the appropriate level. For example, ownership for enterprise-level risks resides at the executive level. We regularly report on our risks internally, highlighting substantive risks/opportunities that have the potential financial impact that is greater than 1% of revenue or is otherwise perceived as significant and could result in irreparable damage to CN's reputation and/or assets.

In response to increasing public and investor concerns over climate change, we have been strengthening the transparency and credibility of the information we publish publicly on climate-related issues, including governance, risks, opportunities and our performance. In 2021, climate-related disclosures were included as

part of our Annual Report, Management Information Circular, Delivering Responsibly Sustainability Report, Data Supplement, Investor Fact Book, TCFD Report and on our website.

The processes for upstream climate-related risks and opportunities, which typically refer to the impacts on our supply chain, take place on an ongoing basis at the operational level, and more formally on an annual basis during our climate risk assessment leading up to the business planning cycle and voluntary Environmental, Social, and Governance (ESG) disclosure events.

[READ MORE](#)

[2022 CDP Response, Pages 10–23](#)

## CLIMATE-RELATED RISKS AND OPPORTUNITIES

An important part of the TCFD's recommendations is the consistent categorization of climate-related risks and opportunities and the resulting financial impacts. Following these recommendations, CN identified the transitional risks and opportunities as well as the physical risks that are most pertinent to our business.



# Metrics & Targets

We are measuring and managing our performance using key metrics and setting clear targets to inform our decision-making and monitor progress over time.

A detailed overview of our emissions footprint is critical for guiding our decarbonization strategy.

In 2021, our total operational carbon footprint was 7,459,319 metric tonnes of CO<sub>2</sub>e. In 2021, our Scope 1 emissions were 5,113,920 metric tonnes of CO<sub>2</sub>e. Locomotives represent CN's largest source of GHG

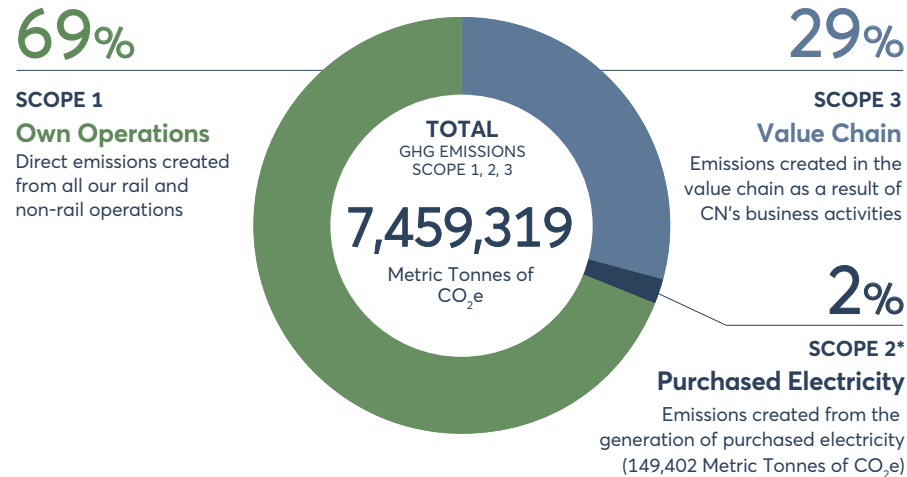
emissions. In 2021, 87% of our Scope 1 emissions were derived from direct combustion of fuel that powers our locomotives. Scope 2 emissions are comprised exclusively of purchased electricity emissions. In 2021, our Scope 2 emissions were 149,402 metric tonnes of CO<sub>2</sub>e. The largest source of our Scope 3 emissions come from the

production of fuel used in our activities. In 2021, our Scope 3 emissions were 2,195,996 metric tonnes of CO<sub>2</sub>e.

[READ MORE](#)  
2022 CDP Response, Pages 33–49

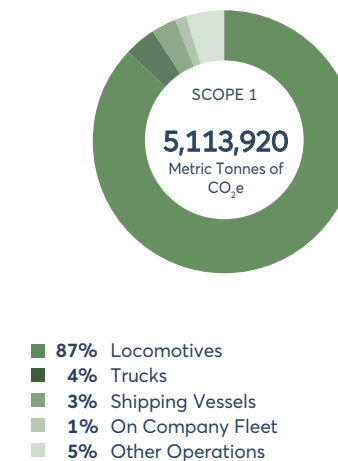
## GHG EMISSIONS BREAKDOWN

### TOTAL SCOPE 1, 2 & 3 GHG EMISSIONS (% of Total Metric Tonnes CO<sub>2</sub>e)

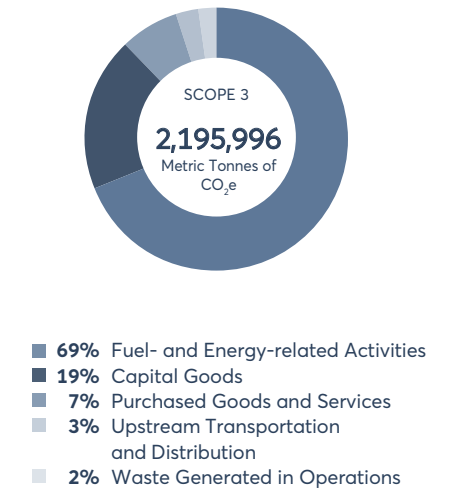


\*Our Scope 2 emissions are comprised of 100% of purchased electricity

### SCOPE 1 GHG EMISSIONS (% breakdown)



### SCOPE 3 GHG EMISSIONS (% breakdown)



1) Tables on pages 09-12 outline key metrics used by CN to assess climate-related risks and opportunities in line with the Company's strategy and risk management process.



# Industry-Leading Track Record of Carbon Efficiency

CN remains a leader in the North American rail industry, consuming approximately 15% less locomotive fuel per gross ton mile than the industry average.

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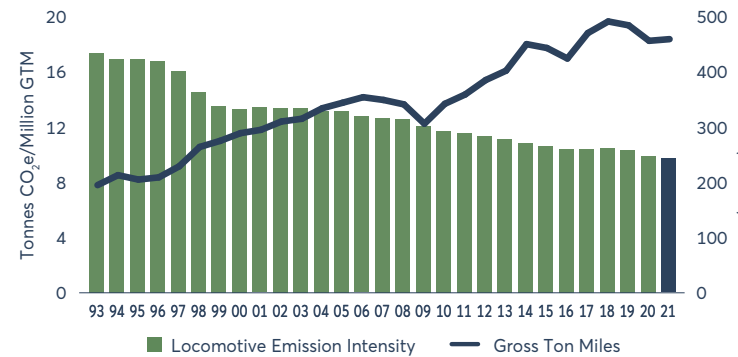
GHG Emissions Data

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### DECOUPLING GROWTH FROM CARBON EMISSIONS

Since 1993, we have reduced our rail locomotive GHG intensity by 43%, avoiding over 50 million tonnes of CO<sub>2</sub>e, and we remains a leader in the North American rail industry, consuming approximately 15% less locomotive fuel per gross ton mile than the industry average. In 2021, we improved our locomotive fuel efficiency by 1.2% over 2020 and achieved an all-time record of 1,131 GTMs per US gallon of fuel consumed.

**LOCOMOTIVE GHG INTENSITY vs. GROSS TON MILES (GTM)**  
(Tonnes CO<sub>2</sub>e/Million GTM vs. Traffic Billion GTM)



### SINCE 1993:

# 43%

REDUCTION IN LOCOMOTIVE GHG INTENSITY

Over

# 50 million

TONNES OF CARBON AVOIDED WHILE CONTINUING TO GROW IN THE VOLUME OF FREIGHT WE MOVE

PICTURED: Henry House, AB  
Photo by CN Employee, Tim Stevens



# Targets and Progress

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We are raising our level of ambition to deliver for a sustainable future, to make a meaningful difference for our people, our customers, and the many communities where we operate.

In 2017, CN became the first railroad in North America, and was amongst the first hundred companies globally, to set an approved science-based target. To ensure consistency with the most recent climate science and best practices that apply a well below 2°C scenario, and in the context of the Company’s acquisition of TransX, we revised our target in 2021. The new target, which was approved by the Science Based Targets initiative (SBTi)

in April 2021, commits CN to reducing Scope 1 and 2 GHG emissions by 43% per gross ton mile by 2030 from a 2019 base year. We also commit to reducing Scope 3 GHG emissions from fuel- and energy-related activities by 40% per gross ton mile by 2030 from a 2019 base year. In addition, CN commits through the renewal of a long-standing Memorandum of Understanding (MOU) with Transport Canada, to reducing Scope 1 and 2 emission intensity (tCO<sub>2</sub>e/revenue tonne km) by 6% by 2022 based on 2017 levels. We have also set a short-term year-on-year rolling target of 2% sustainable renewable fuel consumption for our Canadian locomotive fleet.

In 2021, we announced our commitment to setting a target in line with a 1.5°C scenario and to achieving net-zero carbon emissions by 2050. CN was the first North American railroad to formally commit to setting a net-zero target by joining the “Business Ambition for 1.5°C” and the United Nations’ “Race to Zero” campaign, as well as the Government of Canada’s Net-Zero Challenge which encourages companies to transition to net-zero emissions by 2050.

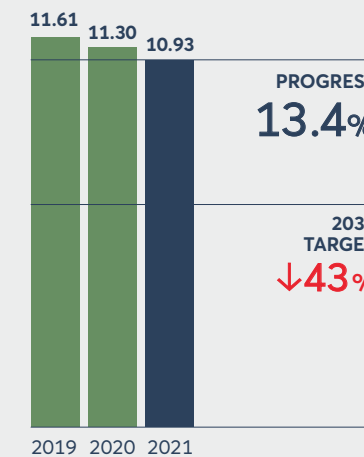
## OUR SHORT, MEDIUM AND LONG-TERM TARGETS

Target	Progress
<p><b>43%</b></p> <p>Scope 1 and 2 intensity reduction by 2030 based on 2019</p>	<p>In 2021, CN reduced its GHG emission intensity for Scope 1 and 2 by 3.3% from 2020. CN has realized a 13.4% progress towards its 2030 target.</p>
<p><b>40%</b></p> <p>Scope 3 intensity reduction by 2030 based on 2019</p>	<p>In 2021, CN reduced its GHG emission intensity for Scope 3 by 4.2% from 2020. CN has realized a 30.9% progress towards its 2030 target.</p>
<p><b>6%</b></p> <p>Scope 1 and 2 intensity reduction by 2022 based on 2017</p>	<p>In 2021, CN achieved its 6% intensity-based reduction target for Scope 1 and 2 emissions by 2022 based on 2017 levels.</p>
<p><b>2%</b></p> <p>Year-on-year rolling renewable fuel consumption in Canadian fleet</p>	<p>In 2021, continued collaboration with our suppliers enabled us to increase our emissions savings from the use of renewable fuels to 122,939 tonnes of CO<sub>2</sub>e.</p>

## Our Science-based Targets

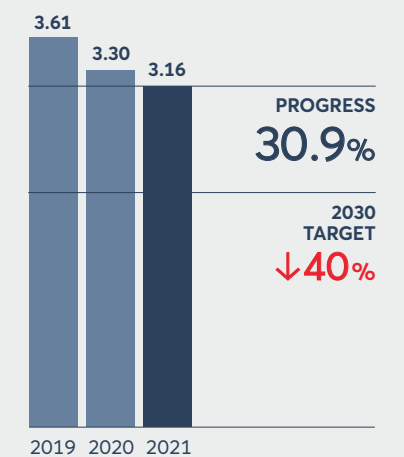
### SCOPE 1 & 2 GHG INTENSITY

(Metric tonnes of CO<sub>2</sub>e per million GTMs)



### SCOPE 3 GHG INTENSITY From Fuel- and Energy-related Activities

(Metric tonnes of CO<sub>2</sub>e per million GTMs)



# Decarbonization Trajectory

We are committed to achieving net-zero emissions by 2050. Decarbonizing transportation supply chains is complex and will require continued collaboration amongst governments, supply chain partners, universities, cleantech, fuel producers and locomotive/engine manufacturers. We are taking a phased approach to our plan as we don't yet have all the answers for how we'll reach net-zero by 2050. We are committed to advancing research necessary by conducting pilot projects and playing our part.

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## OUR PHASED APPROACH TO DECARBONIZE OUR ACTIVITIES

### Driving Operational Efficiency

Building on our leading track record of fuel and carbon efficiency, we continue to take actions big and small to further drive efficiency and reduce emissions in all our fleets and at our facilities.

### Transitioning to Cleaner Energy Sources

Driven partly by regulatory requirements, growth of the renewable fuel market presents a short and medium-term opportunity to further reduce our emissions by using sustainable renewable fuel blends in all our fleets.

### Shifting to Alternative Propulsion

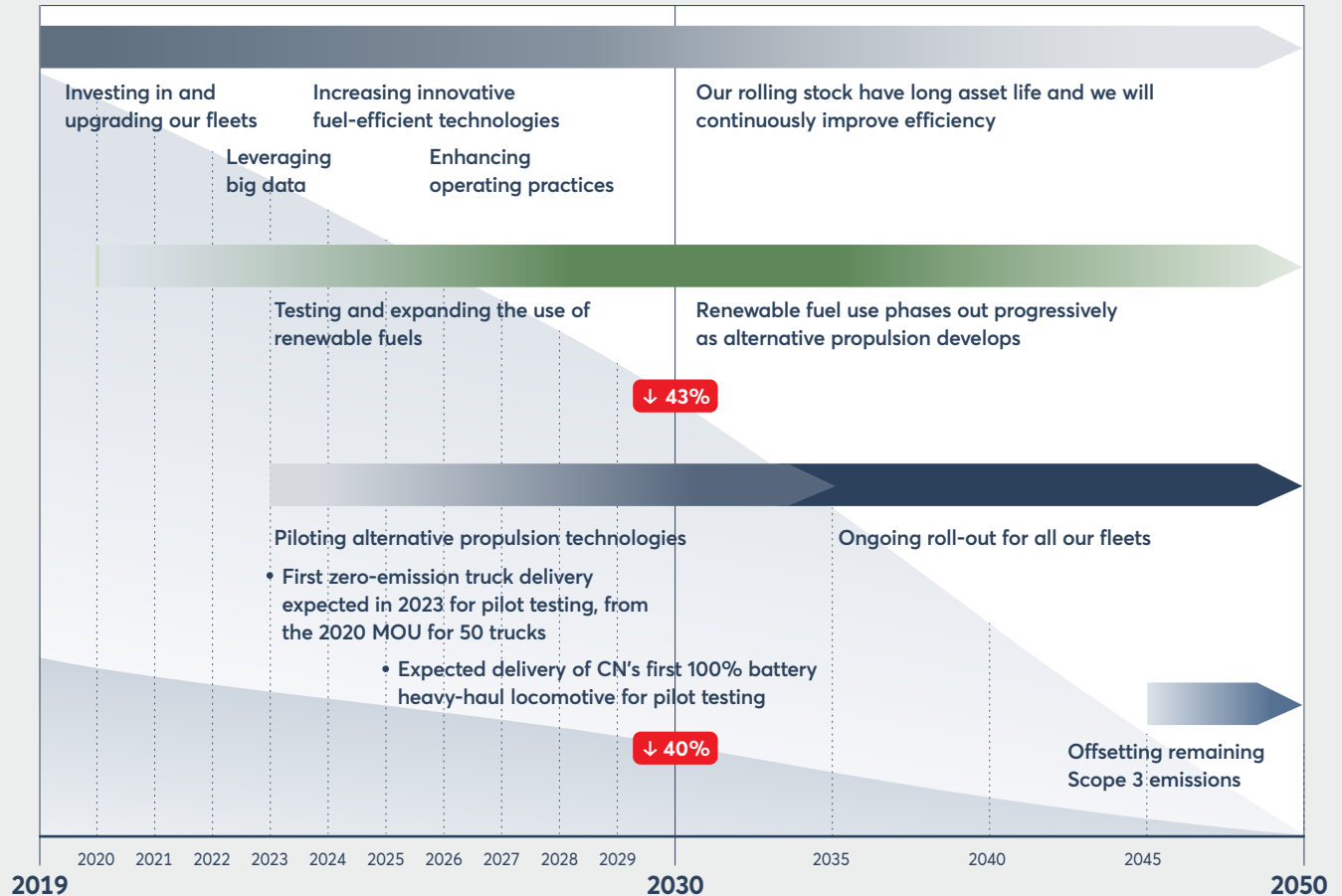
We are investing in the development of new locomotive, trucking and intermodal propulsion technologies required to advance the deep decarbonization of the entire transportation supply chain.

### Leveraging Nature-based Solutions

In line with the SBTi's Net-Zero Standard, we will 'neutralise' the hard-to-abate Scope 3 residual emissions that can't be avoided by investing in nature-based solutions.

### Climate Action Plan Implementation

### Pathway to 2050



\* We are working on our net-zero target and will be submitting to the SBTi for verification in 2023.

Scope 1 & 2 Emissions | Scope 3 Emissions from Fuel- and Energy-related Activities | Reduction Targets

Net-Zero

# GHG Emissions Data

For a comprehensive summary of the environmental metrics related to CN's operations please see our [Delivering Responsibly 2021 Data Supplement](#). For emissions methodology, please see our [CDP Climate Change Response](#).

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Data	Measurement	2021	2020	2019	2018	GRI	SASB
<b>Total GHG emissions (Scopes 1 and 2) <sup>a) b)</sup></b>	Metric tonnes of CO <sub>2</sub> e	<b>5,263,322</b>	5,404,241	5,935,911	5,965,175	-	-
Direct GHG emissions (Scope 1) <sup>b)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>5,113,920</b>	5,240,878	5,771,270	5,776,183	305-1	110a.1
Rail locomotives <sup>f)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>4,443,218</b>	4,502,814	4,962,923	5,095,382	305-1	110a.1
Intermodal CNTL trucks <sup>c)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>91,891</b>	99,932	140,760	149,620	305-1	110a.1
Intermodal TransX trucks <sup>d)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>125,229</b>	136,335	116,548	N/A	305-1	110a.1
Marine vessel fleet	Metric tonnes of CO <sub>2</sub> e	<b>146,860</b>	155,596	191,557	192,860	305-1	110a.1
On Company Service (OCS) fleet <sup>e)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>74,195</b>	79,104	95,552	95,664	305-1	110a.1
Intermodal equipment	Metric tonnes of CO <sub>2</sub> e	<b>76,711</b>	69,344	60,834	62,323	305-1	110a.1
Miscellaneous fuel emissions <sup>f)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>155,816</b>	197,755	203,095	180,334	305-1	110a.1
Indirect GHG emissions (Scope 2) <sup>g)</sup>	Metric tonnes of CO <sub>2</sub> e	<b>149,402</b>	163,363	164,641	188,992	305-2	-
<b>Other indirect GHG emissions (Scope 3) <sup>h) s)</sup></b>	Metric tonnes of CO <sub>2</sub> e	<b>2,195,996</b>	2,267,878	2,778,723	2,488,659	305-3	-
<b>GHG emission intensity <sup>l)</sup></b>							
Total GHG emissions (by rail freight revenue)	Metric tonnes of CO <sub>2</sub> e per thousand dollars of rail freight revenue	<b>0.38</b>	0.41	0.42	0.44	305-4	-
Total GHG emissions (by employee) <sup>s)</sup>	Metric tonnes of CO <sub>2</sub> e per full-time employee	<b>219</b>	227	222	235	305-4	-
<b>Impact of service</b>							
Rail emission intensity <sup>j) s)</sup>	Metric tonnes of CO <sub>2</sub> e per million GTMs	<b>9.69</b>	9.89	10.28	10.39	-	110a.1
CNTL truck emission intensity	Metric tonnes of CO <sub>2</sub> e per thousand kilometres travelled	<b>1.12</b>	1.14	1.21	1.21	-	110a.1
TransX truck emission intensity <sup>k)</sup>	Metric tonnes of CO <sub>2</sub> e per thousand kilometres travelled	<b>1.22</b>	1.20	1.16	N/A	-	110a.1
Marine vessel emission intensity	Metric tonnes of CO <sub>2</sub> e per million net ton miles	<b>15.23</b>	16.43	16.63	16.20	-	110a.1
<b>Target</b>							
Measure (GHG Scope 1 and 2 emission intensity) <sup>l) s)</sup>	Metric tonnes of CO <sub>2</sub> e per million GTMs	<b>10.93</b>	11.30	11.61	N/A	-	110a.2
GHG Scope 1 and 2 science-based target progress <sup>m) s)</sup>	% of progress towards target	<b>13.4%</b>	6.2%	N/A	N/A	-	110a.2
Measure (GHG Scope 3 fuel- and energy-related activities emissions intensity) <sup>n) s)</sup>	Metric tonnes of CO <sub>2</sub> e per million GTMs	<b>3.16</b>	3.30	3.61	N/A	-	110a.2
GHG Scope 3 science-based target progress <sup>o) s)</sup>	% of progress towards target	<b>30.9%</b>	21.1%	N/A	N/A	-	110a.2
<b>Total renewable energy consumed <sup>p) s)</sup></b>	Megawatt hours	<b>601,373</b>	410,946	468,759	444,660	302-1	110a.3
<b>Locomotive fuel efficiency <sup>q) s)</sup></b>	GTM per US gallon of fuel consumed	<b>1,131</b>	1,118	1,070	1,060	302-3	-

a) Our Scope 1 and 2 GHG emissions are consolidated based on an operational control approach.

b) Our GHG Scope 1 emissions include rail and non-rail emissions. The GHG Protocol was applied. We measured carbon dioxide, methane and nitrous oxide using emission factors and global warming potentials from the Environment Canada National Inventory report and the International Panel on Climate Change Sixth Assessment reports, respectively.

c) 2020 Intermodal CNTL emissions were restated due to reconciliations in diesel volumes and kilometres travelled.

d) 2019 and 2020 data has been restated to exclude non truck diesel consumption.

e) 2020 emissions data has been restated to account for errors in renewable fuels recorded.

f) 2019 and 2020 data has been restated to include TransX non truck diesel.

g) Our GHG Scope 2 emissions comprise electricity emissions only. The GHG Protocol was used to calculate the Scope 2 GHG emissions, covering carbon dioxide, methane and nitrous oxide. Scope 2 emissions were calculated using a location-based method. We applied North American utility cost per MWh conversion factors and used emission factors from Environment Canada's National Inventory Report and the U.S. EPA eGRID database to convert MWh into tonnes of CO<sub>2</sub>e.

h) Our GHG Scope 3 emissions include emissions from fuel production (of fuel for our locomotive, trucking, marine, and On Company Service fleets), purchased goods and services, capital goods, waste generated in operations, upstream and downstream transportation and distribution. Emissions were calculated using standard emission factors multiplied by activity levels or dollars of spend. 2020 emissions were restated to reflect new emissions factors and to account for reconciliations in fuel data.

i) Calculations for GHG emission intensity covers Scope 1 and 2 emissions only.

j) Rail emission intensity is a measure of the tonnes of CO<sub>2</sub>e generated by locomotives per million gross ton miles (GTM).

k) The emissions intensity of the recently acquired TransX trucking fleet is reported separately to provide year-over-year comparability. The TransX truck emissions intensity reported for 2019 has been restated to account for the previously overstated kilometres travelled.

l) GHG emissions are total Scope 1 and 2. Gross ton miles (GTM) include rail, marine vessels and trucks.

m) CN has set a science-based target to reduce corporate Scope 1 and 2 emissions per million GTMs by 43% by 2030, compared to a 2019 base year.

n) GHG emissions are total Scope 3 fuel- and energy-related activities. GTMs include rail, marine vessels and trucks.

o) CN has set a science-based target to reduce corporate Scope 3 emissions from fuel- and energy-related activities per million GTMs by 40% by 2030, compared to a 2019 base year

p) Renewable energy consumed includes biodiesel used in our locomotives, as well as location-based low carbon electricity.

q) Our fuel efficiency target is 6% improvement by 2022 from 2017, in line with the Railway Association of Canada MOU with Transport Canada.

r) 2020 and 2021 rail locomotives emissions has been restated to account for errors in locomotive diesel and biodiesel consumed and in allocation.

s) 2020 and 2021 data has been restated to reflect changes in rail locomotives emissions data.



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# Contact

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**FORWARD-LOOKING STATEMENTS:** Certain statements included in this report constitute "forward-looking statements" within the meaning of the *United States Private Securities Litigation Reform Act of 1995* and under Canadian securities laws, including statements based on management's assessment and assumptions and publicly available information with respect to CN. By their nature, forward-looking statements involve risks, uncertainties and assumptions. CN cautions that its assumptions may not materialize and that current economic conditions render such assumptions, although reasonable at the time they were made, subject to greater uncertainty. Forward-looking statements may be identified by the use of terminology such as "believes," "expects," "anticipates," "assumes," "outlook," "plans," "targets," or other similar words.

Forward-looking statements are not guarantees of future performance and involve risks, uncertainties and other factors which may cause actual results, performance or achievements of CN, to be materially different from the outlook or any future results, performance or achievements implied by such statements. Accordingly, readers are advised not to place undue reliance on forward-looking statements. Important risk factors that could affect the forward-looking statements in this report include, but are not limited to, expectations, estimates, projections and assumptions relating to: CN's fuel efficiency; the Company's ability to implement certain initiatives, including relating to emissions targets, scenario analyses, risk mitigation strategies, changes to enterprise risk management, future investments in and the availability of carbon emissions-reduction tools and technologies including through CN's fleet upgrades; the future availability of biofuels at commercially reasonable cost and in sufficient volumes; the impacts of existing and planned capital investments; North American and global economic growth; applicable laws, rules, regulations and government policies; the availability and cost of labour on the timelines anticipated and with the capabilities required, as well as the availability and cost of services and infrastructure; and capital investments and technology developments by third parties. Reference should also be made to Management's Discussion and Analysis in CN's annual and interim reports, Annual Information Form and Form 40-F, filed with Canadian and U.S. securities regulators and available on CN's website, for a description of major risk factors relating to CN.

Forward-looking statements reflect information as of the date on which they are made. CN assumes no obligation to update or revise forward-looking statements to reflect future events, changes in circumstances, or changes in beliefs, unless required by applicable securities laws. In the event CN does update any forward-looking statement, no inference should be made that CN will make additional updates with respect to that statement, related matters, or any other forward-looking statement.

PICTURED: Rivers, MB





# Our Sustainability Commitment

Delivering Responsibly is at the heart of how CN is building for a sustainable future. It means moving our customers' goods safely and efficiently, in an environmentally responsible manner, attracting, developing and retaining diverse talent, helping build safer, stronger communities, while adhering to the highest ethical standards. Five principles anchor our commitment:

## ENVIRONMENT

Conduct our operations with minimal environmental impact, while providing cleaner, more sustainable transportation services to our customers.

## SAFETY

Be the safest railroad in North America by establishing an uncompromising safety culture and implementing a management system designed to minimize risk and drive continuous improvement.

## PEOPLE

Provide a safe, supportive and diverse work environment where our employees can grow to their full potential and be recognized for their contributions to our success.

## COMMUNITY

Build safer, stronger communities by investing in community development, creating positive socio-economic benefits and ensuring open lines of communication.

## GOVERNANCE

Continuously improve our culture of integrity and ethical business, building trust and confidence with all our stakeholders.



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