2022 CDP Climate Change Response

DELIVERING RESPONSIBLY

About this Report

Delivering Responsibly is at the heart of how CN is building for a sustainable future. The following report contains the data and information CN disclosed in response to CDP's 2022 climate change questionnaire.

GHISLAIN HOULE
Executive Vice-President and Chief Financial Officer
Signee of CN's CDP Climate Change Response

For the thirteenth straight year CN has responded to the CDP's questionnaire, outlining the company's actions to reduce emissions, manage and mitigate climate risks and to support the transition to a low-carbon future. We believe transparency regarding climate-related governance, risks and opportunities, strategy, and performance is critical to maintaining the trust of our stakeholders and allows our investors to better understand the implications of climate change on our business. We continue to strengthen our commitment to making a positive contribution to the fight against climate change. CN remains the leader in the North American rail industry, consuming approximately 15% less locomotive fuel per gross ton mile than the industry average.

CDP is a non-profit that runs the global disclosure system for investors, companies, cities, states and regions to drive companies and governments to reduce their greenhouse gas emissions (GHG), safeguard water resources and protect forests. CDP's annual environmental disclosure and scoring process is widely recognized as the gold standard of corporate environmental transparency. In 2022, 680+ investors with over US$130 trillion in assets and 280+ large purchasers with US$6.4 trillion in procurement spend requested companies to disclose data on environmental impacts, risks and opportunities through CDP's platform.

As an enabler of the economy, CN is committed to playing a key role in the transition to a lower-carbon economy. We believe our position in the supply chain will enable us to lead a step-change towards decarbonizing North America's freight sector.

DISCOVER MORE ONLINE

Transparent reporting is part of our commitment to be open about our business and to communicate our progress with focus, clarity and comparability. Our Delivering Responsibly website provides online access to our complete reporting suite.

www.delivering-responsibly.cn.ca

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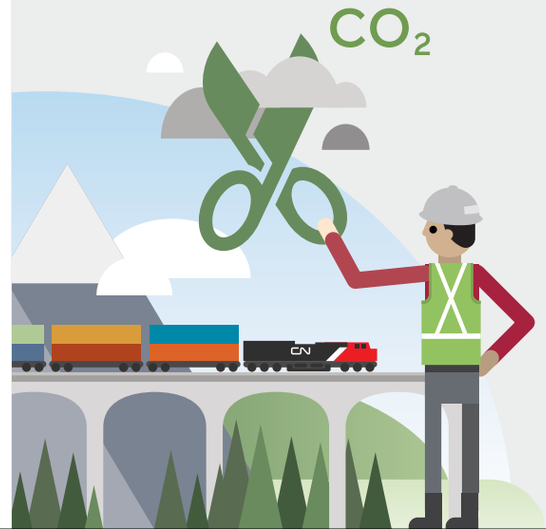

Introduction

C0 Introduction

An Introduction to CN

We recognize that our climate is changing, and that businesses must not merely adapt, but be part of the solution. As an enabler of the economy, CN is committed to playing a key role in the transition to a lower-carbon economy. Our climate change strategy provides a foundation for our response to climate change and identifies actions to mitigate risk and leverage climate-related opportunities.

INCREASING OUR LEVEL OF AMBITION

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

In 2017, CN became the first railroad in North America, and 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 the mid-term, CN commits to reducing Scope 1 and 2 emission intensity (tCO_2e/million tonne km) by 6% by 2022 based on 2017 levels.

CN remains the leader in the North American rail industry, consuming approximately 15% less locomotive fuel per gross ton mile than the industry average. Since 1993, we have reduced our rail locomotive greenhouse gas (GHG) emissions intensity by 43%, avoiding over 48 million tonnes of CO_2e. In 2021, we also became 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.

OUR BUSINESS AT A GLANCE

CN is a leading North American transportation and logistics company, and our 19,500-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	$14.5B REVENUES
$2.9B CAPITAL INVESTMENTS	22,604 EMPLOYEES (end of period)
19,500 ROUTE MILES	9 PORTS SERVED

C0 Introduction

Introduction to CN (continued)

OUR STRATEGY TO DECARBONIZE OUR BUSINESS

With approximately 87% of our Scope 1 emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail efficiency. As such, our SBTi target informs our low-carbon transition plan and business strategy which focuses on five key strategic areas: fleet renewals, innovative technologies, big data analytics, operating practices, and the greater use of renewable fuels.

In 2021, we announced a partnership with Progress Rail, a Caterpillar company, and the Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. We are also working to reduce our non-rail carbon footprint, which comprises approximately 17% of our total Scope 1 and 2 emissions, through ground fleet upgrades, retrofitting yards and buildings, and decarbonizing our vessel fleet.

BUILDING RESILIENCY AND BIODIVERSITY

As an enabler of trade, we also 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.

Launched in 2012, our EcoConnexions *From the Ground Up* and reforestation program promotes the greening of communities and First Nations situated adjacent to our rail network. Working together with our partners, Tree Canada and America in Bloom, we have assisted community groups to establish green spaces, tree plantings and mass reforestation projects in a sustainable, environmentally responsible manner. In total, since 2012, our EcoConnexions programs have planted more than two million trees – offsetting carbon emissions, improving air quality and the national landscape for future generations to enjoy. CN is well on its way to its target of planting 3 million trees by 2030.

COLLABORATING BEYOND 2030

We recognize the need to meet the deep decarbonization required beyond 2030 to achieve net-zero emissions by 2050. Decarbonizing rail transportation will continue to require innovative fuel-efficient technologies, the greater use of cleaner sustainable fuels, and designing innovative low emission supply chain solutions through investments and collaboration with various stakeholders. In support of our ambitious long-term goals, in 2021, we announced the purchase of a Wabtec's FLXdrive battery-electric freight locomotive – the first 100% battery heavy-haul locomotive which could reduce locomotive fuel consumption and emissions by up to 30%. These new technologies and the greater use of renewable fuels are key components in achieving an effective transition to a lower-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.

C0 Introduction

Reporting Data

C0.2 - C0.4
Our reporting data

The report covers data and information from January 1 to December 31, 2021 for our operations in Canada and the United States of America (U.S.). Financial information is disclosed in Canadian dollars throughout the response.

Boundary

C0.5
Our reporting boundary

CN's climate-related impacts are reported using a consolidated approach within an operational control reporting boundary.

Organizational Activities: Transport Services and Transport OEMS

C-TS0.7
Transport modes

The transport modes for which we are providing data include rail, heavy-duty vehicles (HDV), marine, and light-duty vehicles (LDV).

Unique Identifiers

C0.8
Our unique identifier codes

CN's unique identifier codes are as follows:

International Securities Identification Number (ISIN)
ISIN: CA1363751027

Committee on Uniform Securities Identification Procedures (CUSIP)
CUSIP: 136375102

Governance

C1 Governance

Board Oversight

C1.1 - C1.1d
Board-level oversight of climate-related issues, roles and climate-related competency

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 strategy 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 change strategy and performance. In 2021, the Board oversaw CN's Climate Action Plan for inclusion in CN's Management Information Circular.

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.

In 2021, three of 11 Board members had direct competence on climate-related issues. The criteria for assessing competence on climate-related issues is determined as part of the ESG category reflected in the Competency Matrix from the Management Information Circular. Specifically, climate-related competency would include Board member experience in managing and overseeing decarbonization strategies, as well as climate-related risks and opportunities and their impact, performance and relationship to the company's business and strategy. It would also include experience in understanding and assessing complex climate-related regulatory requirements, as well as stakeholder-led initiatives.

GOVERNANCE, SUSTAINABILITY AND SAFETY COMMITTEE

The Governance, Sustainability and Safety Committee (GSS) of the Board was created in 2021 and is responsible for the Company's environmental and sustainability disclosures including CN's Climate Action Plan, as well as the monitoring of the Company's progress against its set targets under such plan, and all related climate issues. In 2021, the GSS committee approved 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 physical risks. Specifically, the Committee approved the climate risk mitigation controls and initiatives to integrate climate risk management activities into the business plan.

C1 Governance

Management Responsibility

C1.2 - C1.2a

Highest management-level position(s) or committee(s) with responsibility for climate-related issues below board level

CN's executive management have responsibility in both assessing and managing climate-related risks and opportunities.

Name of the position(s) and/or committee(s)	Frequency of reporting to the board on climate-related issues
Executive Vice-President and Chief Operating Officer (COO)	More frequently than quarterly
Executive Vice-President and Chief Financial Officer (CFO)	More frequently than quarterly
Vice-President, Sustainability	More frequently than quarterly
Assistant Vice-President, Sustainability	More frequently than quarterly
Decarbonization Steering Committee	Quarterly
Sustainability Committee	Quarterly

EXECUTIVE VICE-PRESIDENT AND CHIEF OPERATING OFFICER (COO)

The Executive Vice-President and Chief Operating Officer (COO) is the highest-level management position with direct responsibility for climate-related issues. As part of the Executive Leadership Team, the COO reports directly to the President and Chief Executive Officer (CEO) and the Board on climate-related risks and opportunities, 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 our investments in 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 handing, train pacing, coasting and breaking strategies were implemented.

EXECUTIVE VICE-PRESIDENT AND CHIEF FINANCIAL OFFICER (CFO)

In parallel, the Executive Vice-President and Chief Financial Officer (CFO), working with the Vice-President, Sustainability, a newly appointed role in 2021, provides executive management oversight on our carbon strategies. With climate-related risks and opportunities impacting the business, the Sustainability function needs 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, 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.

C1 Governance

Management Responsibility (continued)

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 of Sustainability, and the Vice-President of Procurement. CN's Vice-President, 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, Sustainability. Critical matters are reported to the GSS Committee of the Board.

Employee Incentives

C1.3 - C1.3a
Incentives for the management of climate-related issues

The performance goals of the COO, CFO, Vice-President, Sustainability, and Assistant Vice-President, 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_2e/million gross ton mile) by 43% by 2030, based on 2019 levels.

EXECUTIVE VICE-PRESIDENT AND CHIEF OPERATING OFFICER (COO)

The Executive Vice-President and COO has included in his annual performance goals 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 in line with the Company's long-term science-based target to reduce GHG emission intensity (tCO_2e/million GTMs) by 43% by 2030, based on 2019 levels.

EXECUTIVE VICE-PRESIDENT AND CHIEF FINANCIAL OFFICER (CFO)

The Executive Vice-President and CFO has included in his annual performance goals 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 also in line with the Company's long-term science-based target to reduce GHG emission intensity (tCO_2e/million GTMs) by 43% by 2030, based on 2019 levels.

VICE-PRESIDENT, SUSTAINABILITY

The Vice-President, Sustainability, a newly appointed role in 2021, has included in her annual performance goals 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 in line with the Company's long-term science-based target to reduce GHG emission intensity (tCO_2e/million GTMs) 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 her performance goals.

C1 Governance

Employee Incentives (continued)

ASSISTANT VICE-PRESIDENT, SUSTAINABILITY

The Assistant Vice-President, Sustainability, also a newly appointed role in 2021, has included in her annual performance goals 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 in line with the Company's long-term science-based target to reduce GHG emission intensity (tCO_2e/million GTMs) by 43% by 2030, based on 2019 levels. Managing potential climate-related risks and opportunities to the business, such as climate change policy impacts, renewable fuel use and stakeholder engagement are also included in her performance goals, as well as the issuance of the company's public climate change disclosures.

MANAGEMENT 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.

These targets align with the Company's overall science-based target to reduce our GHG emission intensity (tCO_2e/million GTM) (which includes fuel consumption from locomotives, shipping vessels, trucks, company vehicles and operating equipment, and buildings and yard energy consumption) by 43% by 2030, based on 2019 levels.

ALL EMPLOYEES

All employees are responsible for upstream and operations cost control, which includes energy efficiency, and are educated on energy management best practices through our long standing EcoConnexions employee engagement program. Fuel efficiency, emission and energy reduction initiatives can be recognized through CN's People Awards for Excellence within the Rail Operations and Supply Chain Service Excellence category. Employees are also recognized for their efforts through our EcoConnexions employee engagement program, other internal communications, and on social media.

Risks and Opportunities

C2 Risks and Opportunities

Definitions

C2.1

Our definition of short-, medium- and long-term time horizons

Time horizon	From (years)	To (years)	Comments
Short-term	0	1	The short-term time horizon aligns with our annual planning and targets.
Medium-term	1	5	The medium-term horizon aligns with our five-year strategic plan.
Long-term	5	10	The long-term horizon aligns with our 2030 science-based target.

C2.1b

Our definition of substantive financial or strategic impact on your business

When identifying or assessing climate risk, the determination of whether it has a substantive financial impact is aligned with our corporate risk management framework taking into consideration the likelihood and the severity of the impact.

For operational and business-level risks, including climate-related risks, a substantive financial or strategic impact is defined as having a 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.

C2 Risks and Opportunities

Management Processes

C2.2

Process(es) for identifying, assessing and responding to climate-related risks and opportunities

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

Value chain stage(s) covered	Description of process
Upstream	**Process to Determine Substantive Financial or Strategic Impact** Climate change is integrated into our risk assessment processes, which consider both physical risks, including increased frequency of temperature extremes, flooding and sea level rise, fires, hurricanes, and tornadoes, as well as transition risks, including legal, policy and market impacts. At a company level, we use 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 our reputation and/or assets. In addition, 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 ESG disclosure events. **Case Study of Application to Physical Risks / Opportunities** We identified and assessed the volatility of fuel prices due to changes in the economy or supply disruptions. Fuel shortages can occur due to refinery disruptions, production quota restrictions, climate impacts such as severe weather events, and labour and political instability. Increases in fuel prices or supply disruptions may materially adversely affect the Company's results of operations, financial position or liquidity. During the three weeks between November 14 and December 4, 2021, CN's network in southern B.C. was shut down when we experienced 58 washouts over a 150-mile stretch following record rainfall. In response, we manage fuel price risk by offsetting the impact of rising fuel prices with a fuel surcharge program. While CN's fuel surcharge program provides effective coverage, residual exposure remains given that fuel price risk cannot be completely managed due to timing and given the volatility in the market. Additional measures include the regular review of the opportunity for geographical diversification of our fuel supplier locations and deployed trucks to deliver diesel fuel to the required locations. Our suppliers also consider the weather in their operations and proactively ensure our fuel tanks are maintained at required levels, which allow uninterrupted access to several days of inventory. **Case Study of Application to Transition Risks / Opportunities** From a transition risk perspective, we identified and assessed the risks associated with the availability, accessibility and operational impact 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 continued to work with our locomotive manufacturers to assess the potential risks of sourcing and using renewable fuels in our locomotives, allowing us to gain critical information to integrate mitigation strategies into our procurement approach, while also informing our technology and innovation needs. We continued to engage with fuel suppliers and locomotive manufacturers to test and explore the use of sustainable renewable fuel blends, beyond regulated amounts. This included a recent partnership with Progress Rail and Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and important steps in reducing GHG emissions in our existing locomotive fleet. In 2021, the use of sustainable renewable fuels in our fleet saved approximately 125,975 tCO_2e.

C2 Risks and Opportunities

Management Processes (continued)

Value chain stage(s) covered	Description of process
Direct operations	**Process to Determine Substantive Financial or Strategic Impact** Climate change is integrated into our risk assessment processes, which consider both physical risks, including increased frequency of temperature extremes, flooding and sea level rise, fires, hurricanes, and tornadoes, as well as transition risks, including legal, policy and market impacts. At a company level, we use 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 our reputation and/or assets. In addition, 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 climate-related risks and opportunities on our direct operations, which typically refer to existing and emerging regulations, technology changes, market, reputation and both chronic and acute physical weather events, 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 ESG disclosure events. **Case Study of Application to Physical Risks / Opportunities** We identified and assessed the risk associated with extreme cold. Due to its detrimental effects on steel, severe cold negatively impacts freight volumes moved by rail no matter the practices to strengthen the network. At -25°C and below, long compressed air brake systems on trains also become more vulnerable to malfunction. For example, in 2021, a 10-day sequence of extreme cold in Western Canada (under -25°C) forced us to deploy a combination of smaller trains and stoppages for safety reasons. In response, we self-impose speed restriction through our Cold Weather Slow Policy, a standing operating procedure that includes mandatory slow orders for train movement at specific extreme cold temperatures. In addition, CN has taken other measures to fortify its defences against temperature-based rail failure risks. These include a standard company-wide protocol of temperature based slow order bulletins to crews, significant investments in the train control system (CTC) enabling 99% of our main route to be protected under this method of control, and ongoing elimination of joints on continuous welded rail. Strict adherence to the four-tier restriction system, which calls for specific train length reductions in cold weather, is very effective in keeping the network safe. **Case Study of Application to Transition Risks / Opportunities** From a transition risk perspective, we identified and assessed the risk that the increasing price of carbon and enhanced emissions reporting regulations will yield increased direct costs. We are subject to a larger number of provincial, state and federal GHG reporting, verification, and carbon market regulations in Canada and the U.S. than most rail companies. Our HDV and Marine business units further differentiate our regulatory and reporting commitments from most of our competitors. These carbon pricing mechanisms have a direct impact on our operational costs, as well as the flow-through cost to our customers. Our process included the carbon price impacts from the Quebec and Nova Scotia GHG Cap-and-trade systems, which includes GHG reporting and verification obligations, the carbon taxes in British Columbia and Alberta as well as the federal backstop levy that came into effect in April 2019. We also assessed our exposure to the New Brunswick carbon tax rate on locomotive diesel ("light diesel oil"), which will increase from the current 10.73 cents per litre to 13.41 cents per litre, further impacting operating costs. In addition, we assessed our exposure to the Canadian Government's Federal Fuel Charge increasing by $15 per tonne yearly from 2023 to 2030, which aligns with the British Columbia, New Brunswick and Northwest Territories carbon tax requirements. From a response perspective, we put in place risk management strategies, allocating resources to meet our compliance objectives, establishing a climate action plan, and actively working with our suppliers to test and explore the use of sustainable renewable blends. Where relevant, we transfer carbon taxes on locomotive diesel through surcharges for our customers.

C2 Risks and Opportunities

Management Processes (continued)

C2.2a

Risk types considered in climate-related risk assessments

The following risk types are relevant and always included in climate-related risk assessments:

Risk type	Description of process
Current regulation	We use enterprise and operational risk management processes to identify, prioritize, and assess risks, including climate-related risks that have the potential to affect business strategy. Specifically, we monitor the potential impact of current federal, state and provincial regulations in Canada and the U.S. as they may affect our revenues, costs, and operational process requirements. For example, last year, we were impacted by the Quebec and Nova Scotia GHG Cap-and-trade systems, which includes GHG reporting and verification obligations. We were also required to pay carbon taxes in British Columbia and Alberta and were impacted by the federal backstop levy that came into effect in April 2019. As of April 1, 2022, we will also be exposed to the New Brunswick carbon tax rate on locomotive diesel ("light diesel oil"), which will increase from the current 10.73 cents per litre to 13.41 cents per litre, further impacting operating costs. In addition, we were exposed to the Canadian Government's Federal Fuel Charge increasing by $15 per tonne yearly from 2023 to 2030, which aligns with the British Columbia, New Brunswick and Northwest Territories carbon tax requirements. We have dedicated resources in relevant departments to support our ongoing commitments including climate science targets and net-zero ambition, which are supported by our Climate Action Plan. For example, members of our fuel procurement department in collaboration with the Assistant Vice-President of Sustainability and Manager, Climate Change, manage the regular reporting on our fuel purchases and the associated Emissions Trading System (ETS) allowances. These reports are also used internally to assess the risk of increasing direct costs and opportunities to manage them. For example, in 2021, we continued to report on our imports of locomotive and miscellaneous fuels into the province of Quebec and Nova Scotia. We furthermore engaged an external consultant to complete the third-party verification of our report.
Emerging regulation	We use enterprise and operational risk management processes to identify, prioritize, and assess risks, including climate-related risks that have the potential to affect business strategy. Specifically, we monitor the potential impact of emerging federal, state and provincial regulations in Canada and the U.S. as they may affect our revenues, costs, and operational process requirements. For example, we monitor and assess the potential impact of emerging regulations such as the Clean Fuel Standard, which the federal government is developing to reduce Canada's GHG emissions through the increased use of lower-carbon fuels, energy sources and technologies. In response, in 2021, we actively worked with fuel suppliers and locomotive manufacturers to test and explore the greater use of biomass-based fuel blends. Specifically, 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, the use of renewable fuels in our fleet saved almost 125,975 tCO_2e.
Technology	Technology is monitored as a transition risk driver in our enterprise and operational risk management processes. For example, we assess technology risks in the context of stringent locomotive air emission standards set by the U.S. Environmental Protection Agency (EPA) and Canada that require newly manufactured and re-manufactured off-road engines to be Tier 4-compliant and have idle emission controls. 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. We also assess the risks of not transitioning to lower emissions technologies especially driven by new mandates and regulations such as the Clean Fuel Standard and other existing renewable and clean fuel standards. Already the rail industry is currently researching the use of battery and hydrogen power for propulsion. These new fuel sources would represent significant implementation costs. In addition to making significant investments in Tier 4 locomotives, we are also investing in new-generation railcars, hybrid and electric vehicles, as well as pilot testing sustainable renewable fuel blends. For example, in 2021, we partnered with Progress Rail, a Caterpillar Company, and Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and represent important steps in reducing GHG emissions from our existing locomotive fleet, while alternative propulsion locomotive technologies are being developed. We also acquired our first battery-electric freight locomotive and plan to partner with Wabtec to put in service their next-generation FLXdrive technology, which can reduce fuel consumption and emissions by up to 30 percent. The capital expenditures for these types of lower emission technologies will be an important risk exposure to meet new mandates and regulations such as the Clean Fuel Standard and other existing renewable and clean fuel standards. The anticipated efficiencies and emission reductions from the technology are expected to be important and help open the door to new alternatives beyond the diesel-powered locomotives used today.
Legal	Legal risks to the Company are always included in the risk assessment process. Specifically, we monitor the risks associated with the violation of or potential non-compliance with laws and regulations such as, for example, discharges to air, land, and water or handling, storage, use, generation, transportation, and disposal of waste and other materials. We monitor these risks as well as the effectiveness of related mitigation strategies in alignment with our efforts to avoid non-compliances and potential lawsuits.

C2 Risks and Opportunities

Management Processes (continued)

Risk type	Description of process
Market	Through our climate-related risk assessments, we consider climate-related risks that could impact the markets we serve. Specifically, we assess the extent to which climate-related physical and transition risks could affect our customers, making it difficult for them to produce products in a cost-competitive manner that would in turn impact the markets we serve. For example, through our assessments, we have identified certain commodities moved by CN that could be adversely affected should consumer preferences for cleaner energy grow, including with respect to petroleum, chemicals, and utility coal markets in Canada. For example, according to the Canada Energy Regulator, thermal coal is expected to contract by 89% in Canada over the next 30 years, consistent with the recent Government of Canada's pledge to end the mining and use of thermal coal by 2030, as stated in the Canadian Emissions Reduction Plan, which could in turn drive the retirement of coal-fired generation capacity. A decline in coal production could impact our overall coal freight revenues, which in 2021 made up approximately 4.4% of our total freight revenue, representing $618 million. Note that $618 million coal freight revenue comprises both thermal and metallurgical coal.
Reputation	Climate-related events, such as floods, washouts, or extreme weather events that could lead to derailments or delays, have the potential to negatively impact CN's reputation with shareholders and stakeholders. Therefore, we include the potential impact of climate-related events and the associated disclosure and communication process in the risk assessment and mitigation process. We also recognize that with increasing public and investor concerns over climate change, a lack of disclosure on how we identify and manage climate change risks could expose us to potential reputational risk. Over the past few years, there has been an increase in investor interest on environmental, social and governance (ESG) factors, which includes responding to and mitigating climate risks. For example, following a shareholder proposal requesting a climate action plan and a non-binding advisory vote on the plan, we had our first inaugural vote in April 2021. The last vote was in May 2022 with 98% in support of our Climate Action Plan. This vote complements our long-standing and robust climate change plans and disclosures, as well as our public reporting on climate change in alignment with the TCFD recommendations covering governance, strategy and year over year GHG emission performance. Last year, we also assessed the increasing scrutiny on climate-related commitments, and strengthened our industry-leading approved science-based target and made formal net-zero commitments under the "Business Ambition for 1.5°C and UN "Race to Zero" Campaign. We also continued to strengthen the transparency and credibility of the information we publish publicly on climate-related issues, including concerning governance, risks, opportunities and performance. In 2021, climate-related disclosures were included in our Annual Report, Delivering Responsibly Sustainability Report, Data Supplement, Investor Fact Book, TCFD report and on our website. Our Delivering Responsibly website provides online access to our complete reporting suite including the most recent Sustainability Report and Data Supplement, TCFD Report and CDP Response, as well as an archive of past reports.
Acute physical	Through our climate-related risk assessments, we consider risk exposure to extreme weather events, including flooding, heat and cold extremes, cyclones and tornadoes. For example, we assess the impacts of extreme cold on our operations. Below -25°C, railway technologies (steel rail, steel wheels, and long compressed air brake systems) become more vulnerable to problems that can disrupt normal operations. For example, in February 2021, we experienced a 10-day sequence of extreme cold in Western Canada (under -25°C) forcing a combination of smaller trains and stoppages for safety reasons. We also assess the impact of episodes of flash flooding, which could result in landslides in unstable mountainous regions and mudslides further damaging rail bed support structures and cause overflows onto our tracks. Vulnerability and risks of tornadoes and cyclones are also assessed, particularly at our sites and network within the U.S. Tornado Belt, the Midwest and New Orleans area. For example, In November and December 2021, our network in southern B.C. was shut down due to 58 washouts over a 150-mile stretch following record rainfall. To respond to the physical impacts of climate change, we have in place several programs including extreme weather readiness plans, an emergency response planning program, inspection programs and strategies to deploy non-rail modes of transport.
Chronic physical	Through our climate-related risk assessments, we consider exposure to changes in chronic physical impacts, such as long-term weather change and increasing temperatures, which affect our infrastructure and our train operations significantly. To mitigate chronic physical risks associated with the increasing frequency of extreme weather, we refine our business resiliency and continuity plans to ensure the dependability of train operations. For example, chronic shifts in climate patterns, such as increased temperatures could cause rail to expand and buckle, resulting in more track repairs or speed restrictions to avoid derailments. In addition, shifts in climate patterns can also impact the markets and commodities we move. For example, the cold temperatures in early January and February 2019 caused unprecedented harvest delays, impacting the entire Western Canadian grain supply chain. Through resiliency planning, CN and its supply chain partners were able to adapt to move historically strong grain shipment volumes in November when the crop was finally harvested and ready to ship.

C2 Risks and Opportunities

Risk Disclosure

C2.3 - C2.3a

Climate-related risks with potential for a substantive financial or strategic impact on our business

Identifier • Risk type • Risk driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Response and explanation of cost calculation
Risk 1 • Current regulations • Carbon pricing mechanisms	Climate-related regulation, particularly carbon pricing mechanisms, could expose us to increased direct operating costs from federal, provincial/state carbon taxes, cap-and-trade purchases of credits for the use of fossil fuels, fuel distributor prices, and third-party services for GHG reporting and verification. Given that we operate across Canada and the U.S. and conducts activities in rail, trucking and marine transportation, we are subject to several provincial, state and federal climate-related regulations. For example, last year, we were impacted by the Quebec and Nova Scotia GHG cap-and-trade systems, which includes GHG reporting and verification obligations. We were also required to pay carbon taxes in British Columbia and Alberta and were impacted by the federal backstop levy that came into effect in April 2019. As of April 1, 2022, we will also be exposed to the New Brunswick carbon tax rate on locomotive diesel ("light diesel oil"), which will increase from the current 10.73 cents per litre to 13.41 cents per litre, further impacting operating costs. In addition, we were exposed to the Canadian Government's Federal Fuel Charge increasing by $15 per tonne yearly from 2023 to 2030, which aligns with the British Columbia, New Brunswick and Northwest Territories carbon tax requirements. These carbon pricing mechanisms have a direct impact on our operational costs, as well as the flow-through costs to our customers.	Long-term • Likely • Medium—high	The financial impact of our exposure to carbon price mechanisms is estimated to be within the range of approximately $200-450M. To calculate the financial impact, a climate transition scenario analysis was conducted to assess the impact of carbon-pricing mechanisms. A time horizon from 2019 (base year) to 2030 was applied using projections and assumptions consistent with our climate science-based target. The analysis was conducted for 1.8°C and 3.5°C of warming scenarios to provide relevant insights. Using our 2019 GHG baseline and estimated future emissions to 2030, we multiplied those emissions by the respective carbon pricing scenarios as forecasted by the IEA and Bank of Canada for Canada and the U.S. The estimated financial impact included the costs associated with paying provincial/state carbon taxes in Canada and the U.S., the Canadian federal backstop and purchasing allowances to cover the fuel imports into provinces such as Quebec and Nova Scotia over the time-period of 2019-2030. In addition, the estimates included the proposed yearly increases by the Canadian government to the Federal Fuel Charge of $15 per tonne from 2023 to 2030, which is expected to align with carbon tax requirements of British Columbia, New Brunswick, Northwest Territories.	Several risk mitigation strategies have been put in place to respond to our exposure to carbon pricing mechanisms as part of our 2030 Climate Action Plan. First, resources have been allocated to meet compliance obligations related to GHG emission reporting, third party verifications and carbon pricing scenario analysis. Internal resources are assigned to manage potential flow through costs to our customers through carbon surcharges. We have also 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. **Results of our Actions** We continued to engage with fuel suppliers and locomotive manufacturers to test and explore the use of sustainable renewable fuel blends, beyond regulated amounts. This included a recent partnership with Progress Rail and Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and important steps in reducing GHG emissions in our existing locomotive fleet. In 2021, the use of sustainable renewable fuels in CN's fleet saved approximately 125,975 tCO_2e. **Cost Explanation** We calculated the cost of $140,000 to manage the risk by quantifying the expenses related to meeting compliance obligations, which includes mandatory GHG reporting and third-party verification services.

C2 Risks and Opportunities

Risk Disclosure (continued)

Identifier • Risk type • Risk driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Response and explanation of cost calculation
Risk 2 • Market • Changing customer behaviour	Changing customer behaviour and climate-related regulations could impact the demand for products that currently represent a significant portion of our commodity portfolio, resulting in decreased revenues. According to Canada Energy Regulator, it is estimated that as non-emitting cleaner energy sources get cheaper and improvements to equipment and buildings reduce energy requirements, Canadian energy use could decline by over 15%, and the fossil fuel portion of the fuel mix could decline by 30% by 2040. These trends could impact consumer preferences for cleaner energy, and if combined with federal, state and provincial commitments to clean electricity, could affect certain commodities we move, including petroleum, chemicals, and utility coal markets in Canada. For example, in North America, policies and increasing use of renewable is sparking a possible decline of coal. According to the Canada Energy Regulator, thermal coal is expected to contract by 89% in Canada over the next 30 years. In Canada, the recent Government of Canada's pledge to end the mining and use of thermal coal by 2030, as stated in the Canadian Emissions Reduction Plan, could drive the retirement of coal-fired generation capacity. A decline in coal production could impact our overall coal freight revenues, which in 2021 made up approximately 4.4% of our total freight revenue, representing $618 million. Note that $618 million coal freight revenue comprises both thermal and metallurgical coal.	Medium-term • About as likely as not • Medium—high	The financial impact of our exposure to changing customer behaviour, in particular the demand for thermal coal, is estimated to be within the range of $400-700M. If consumer preference was to impact our thermal coal customers to the extent that all coal shipments ceased, it would reduce our rail freight revenues by up to 4.4% (618/14,477 million), equivalent to an estimated $618 million in 2021. The estimated financial impact range of $400M to $700M was based on the revenue mix of our business.	To respond to this risk, we continue to maintain on an ongoing basis a diversified and balanced portfolio of goods, while pursuing cleaner market for sustainable products and technologies. Our freight revenues are derived from seven commodity groups. The product and geographic diversity better positions us to face economic fluctuations and enhance potential for growth opportunities. As of December 31, 2021, no individual commodity group accounted for more than 28% of our total revenues. In addition, as part of our 2030 Climate Action Plan, we are promoting the environmental benefits of rail. **Results of our Actions** Over the past year, we continued to play a key role in the transition to a lower carbon economy by moving cleaner energy products. Specific results of our actions include: • Extending our reach through additional EV automotive distribution centres. • Leveraging our network reach into the lithium-rich regions of North America to offer supply chain solutions for concentrate products. • Moving cleaner energy alternatives, including methanol, solar panels and wind turbines. • Providing shipments of engineered wood sidings, wood chips and wood pellets from North American plants are in growing demand for customers looking for a more sustainable renewable fuel solution for residential, institutional, or industrial heating. • Recycling ferrous and non-ferrous scrap metal, largely from our shops and yards including rail, railcars, and locomotive parts. **Cost Calculation** The cost of $500,000 to manage this risk was calculated by quantifying the expenses associated with communicating with current and potential customers, internal resource time for exploring new revenue streams, advertising, and consultants expenses.

C2 Risks and Opportunities

Risk Disclosure (continued)

Identifier • Risk type • Risk driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Response and explanation of cost calculation
Risk 3 • Acute physical • Cold wave/frost	CN's success is dependent on our ability to operate the railroad efficiently. Severe cold events could disrupt operations and service for the railroad, affect the performance of locomotives and rolling stock, and disrupt operations for both CN and our customers. These types of business interruptions could result in increased direct costs to our operations, increased potential liabilities, and lower revenues. For example, extreme cold places extra stress on steel wheels and makes welded steel rails less flexible, thereby reducing the volumes we are able to move. At -25°C and below, frozen gaskets leak air at brake hose couplings, air hoses freeze, and air cannot move consistently through the full length of the compressed air brake system, thus rendering the system vulnerable to malfunction, forcing train length reductions. For example, in 2021, a 10-day sequence of extreme cold in Western Canada (under -25°C) forced us to deploy a combination of smaller trains and stoppages for safety reasons. Furthermore, snow can also disrupt rail operations, forcing trains to slow down and increase the risk of congestion on the network. Snow clearing in rail yards requires extra switching and resources. In addition, customer operations at terminals can also be affected by winter when the destination terminal cannot accommodate rail traffic. In these cases, we must occasionally hold trains at origin or along the route resulting in equipment taking longer to return for loading, creating delays and disruptions in the supply chain upstream.	Short-term • Virtually certain • High	The financial impact of exposure to extreme cold is estimated to be within the range of $90-150M. To calculate the financial impact, a climate scenario analysis was conducted on extreme cold to estimate its impact on our rail network in Canada, taking into consideration a long-term (2026-2030) horizon and the climate projection scenarios RCP 2.6 and RCP 4.5 of the IPCC. For the extreme cold scenario analysis, the total number of extreme cold days below -25°C was calculated across GIS latitude and longitude coordinates along our Canadian rail network at 498 sub-stations. Several factors that could have financial impacts were considered, including the three-tier restriction system, which calls for specific train length reductions. The financial impact figure was calculated by considering potential revenue loss due to extreme weather events affecting customer activities, higher costs associated with ensuring asset availability or addressing damage to assets and infrastructure, and maintenance costs and operations such as snow removal costs.	To manage the risk, we continuously update our annual extreme weather readiness plans, which outline operational best practices, capital investments, and operation and maintenance costs that could be attributable to changes in climate. **Results of our Actions** For example, as part of the Winter Plan for 2021-2022, details of best practices and investments for responding to extreme cold events were addressed. This included investments in 101 distributed braking cars enabling us to maintain train lengths in cold temperatures. We also implemented other best practices such as advanced weather forecasts, deploying generators across the network in case of power failures due to cold weather, installing sensor systems for detecting defects in railroad tracks, and implementing enhancements to operations centres to facilitate the flow of information to further improve rail service. We also 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. As a result, what used to take approximately 30 days to completely recover from a major network disruption four years ago can now be achieved in two weeks or less. For example, during the winter of 2020-2021, we hauled 162 billion gross ton miles (GTM), up 4.6% when compared to the 2019–2020 winter, and up 1.8% from a previous record of 159 billion GTMs moved during the winter of 2018–2019. **Cost Calculation** We calculated the $90 million cost of response based on costs incurred for the readiness program in addition to the costs incurred for the maintenance of infrastructure.

C2 Risks and Opportunities

Risk Disclosure (continued)

Identifier • Risk type • Risk driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Response and explanation of cost calculation
Risk 4 • Emerging regulation • Mandates on and regulation of existing products and services	New mandates and regulations, such as the proposed Canadian Clean Fuel Standard and other existing renewable and clean fuel standards in jurisdictions where we operate, could result in increased capital expenditures to invest in lower emission technologies. Cleaner, more fuel-efficient rail and non-rail equipment will be important in helping us continue to decouple growth from GHG emissions. Meanwhile, 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. Already, we are making significant investments in Tier 4 locomotives, new-generation railcars, hybrid and electric vehicles, as well as pilot testing sustainable renewable fuel blends. For example, in 2021, we partnered with Progress Rail, a Caterpillar Company, 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 and represent important steps in reducing GHG emissions from our existing locomotive fleet, while alternative propulsion locomotive technologies are being developed. We also acquired our first battery-electric freight locomotive and plan to partner with Wabtec to put in service their next-generation FLXdrive technology, which can reduce fuel consumption and emissions by up to 30%. The capital expenditures for these types of lower emission technologies will be an important risk exposure to meet new mandates and regulations such as the Clean Fuel Standard and other existing renewable and clean fuel standards. The anticipated efficiencies and emission reductions from the technology are expected to be important and help open the door to new alternatives beyond the diesel-powered locomotives used today.	Medium-term • Very likely • Medium—high	The railway industry, in collaboration with locomotive manufacturers, is engaged in various technology pilot programs. Pilot costs range from $4.5 to $10 million per locomotive. The estimated financial impact figure range of $500 million to $1 billion was calculated based on estimated new technology costs.	Various management strategies have been put in place to address the risk exposure from these new mandates and regulations which is included in our 2030 Climate Action Plan. In addition to the capital-intensive renewal of our fleet, the installation of fuel-efficient technologies and big data management analytics capabilities is helping us further reduce our carbon footprint as part of our climate action plan in alignment with our science-based target reduction of 43% GHG emission intensity by 2030. **Results of our Actions** Our locomotives are now equipped with energy management and data telemetry systems as well as distributed power functionality to help maximize locomotive operating effectiveness and efficiency. These innovative technologies enable us to continuously improve train handling, braking performance, and overall fuel efficiency, therefore, improving carbon efficiency and making services more attractive to customers. Investments in information technology enable deeper analysis to continue to identify, through big data analytics, additional opportunities for fuel conservation that will enable further emission reductions in the coming years. In 2021, we increased efficiencies and achieved an all-time record fuel efficiency of 0.879 U.S. gallons of locomotive fuel consumed per 1,000 gross tonne miles. We also partnered with Progress Rail, a Caterpillar Company, and Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and an important step in reducing GHG emissions from the existing locomotive fleet, while alternative propulsion locomotive technologies are being developed. For the first battery-electric freight locomotive, we plan to partner with Wabtec to put in service its next-generation FLXdrive technology, which can reduce fuel consumption and emissions by up to 30%. **Cost Explanation** The estimated annual R&D costs of $3 million reflects the spend associated with the development and deployment of smart systems including fuel-efficient technologies (e.g., WiTronix, AESS, Trip Optimizer) and big data management analytics capabilities.

C2 Risks and Opportunities

Opportunity Disclosure

C2.4 - C2.4a

Climate-related opportunities with the potential to have a substantive financial or strategic impact

Identifier • Value chain stage • Opportunity type • Opportunity driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Strategy to realize opportunity and explanation of cost calculation
Opportunity 1 • Upstream • Resource efficiency • Use of more efficient modes of transport	With 87% of our GHG emissions generated from rail operations, we see important cost saving opportunities from improving rail fuel and carbon efficiency in line with the Paris Agreement, anchored by our industry-leading approved science-based target and recent net-zero commitments under the "Business Ambition for 1.5C" and UN "Race to Zero" Campaign. Over the years, we have made significant progress decoupling volume growth from carbon emissions. Between 1993 to 2021, we reduced our locomotive emission intensity by 43%, avoiding over 48 million tonnes of emissions and continued to maintain our leadership position among Class I railways, consuming approximately 15% less locomotive fuel per GTM than the industry average. As we look forward, we see fleet renewal, innovative technologies, big data, and operating practices as important strategic opportunities to improve our fuel and carbon efficiency and save costs, which in 2021 amounted to $17M based on the fuel gallon savings from these initiatives. Reduced costs from fuel savings opportunities can be incurred by acquiring the most fuel efficient high-horsepower locomotives available and investing in innovative technologies such as the GE Transportation's GOLINC™ platform, data telemetry systems, and Distributed Power LOCOTROL eXpanded Architecture. These technologies maximize efficiency by working with our train crews and rail traffic controllers on best practices for fuel conservation. In addition, big data advancements also present important opportunities for us to use real-time information for on-the-job training on fuel conservation practices enabling further cost savings. For example, our in-house built Horsepower Tonnage Analyzer that instructs crews on how to optimize a locomotive's horsepower-to-tonnage enabled us to achieve an all-time record fuel efficiency of 0.879 U.S. gallons of locomotive fuel consumed per 1,000 GTMs in 2021.	Short • Virtually certain • Medium	The financial impact from locomotive fuel efficiency is based on 2021 performance, which amounted to approximately $17 M in fuel savings. The associated cost savings were estimated by multiplying the fuel gallons saved based on the average price of fuel for the previous year.	To realize the opportunity, we put in place a 2030 Climate Action Plan that is focused on several fuel efficiency initiatives. **Results of our Actions** First, we are using cleaner more fuel-efficient locomotives. For example, over the past two years, we acquired 110 of the most fuel efficient high-horsepower locomotives available, as well as Wabtec's FLXdrive battery-electric freight locomotive with anticipated fuel consumption and emission reductions of up to 30%. We are exploring and investing in innovative technologies to improve train handling, braking performance, and overall fuel efficiency. This includes equipping locomotives with GE Transportation's GOLINC™ platform, data telemetry systems, and Distributed Power LOCOTROL eXpanded Architecture to maximize efficiency by working with our train crews and rail traffic controllers on fuel conservation practices. Leveraging big data collected through our locomotive telemetry systems, we are improving performance and fuel conservation. For example, our in-house built Horsepower Tonnage Analyzer instructs crews on how to optimize a locomotive's horsepower-to-tonnage ratio, which in 2021 enabled us to achieve an all-time record fuel efficiency of 0.879 U.S. gallons of locomotive fuel consumed per 1,000 GTMs. Our Energy Management System also provides locomotive engineers with real-time information on train characteristics, performance, and terrain enabling them to compute the most efficient train settings and regulate speed. Finally, we are improving operating practices by moving from Precision Scheduled Railroading to Digital Scheduled Railroading to enable on-the-job training using real-time information on practices that promote fuel conservation. **Cost to Realize Opportunity** The cost to realize the rail fuel efficiency opportunities is calculated based on locomotive acquisitions, upgrades and fuel-efficient operations, which change annually. For example, in 2021 we spent $0.4 billion for equipment expenditures, which included the acquisition of 69 new high-horsepower locomotives as well as fuel-efficient technologies such as, WiTronix, AESS, Trip Optimizer and big data management analytics systems.

C2 Risks and Opportunities

Opportunity Disclosure (continued)

Identifier • Value chain stage • Opportunity type • Opportunity driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Strategy to realize opportunity and explanation of cost calculation
Opportunity 2 • Direct operations • Products and services • Development and/or expansion of low-emission goods and services	Increasing demand by our customers for low carbon freight transportation goods and services is presenting important opportunities for us to increase revenues from shipping heavy freight by rail over long distances versus other more carbon-intensive modes such as transport trucks. For example, according to the Association of American Railroads, shipping freight by rail is three to four times on average more fuel efficient than trucks and can reduce GHG emissions by up to 75% on average. This type of modal shift provides an opportunity to grow revenues within our intermodal and carload business segments, with customers looking to reduce their supply chain emissions by shifting freight shipments from truck to rail. The greater use of combined modes helps lower transportation costs by allowing each mode to be used for the portion of the trip to which it is best suited. Our strategy to further reduce our Scope 1 and 2 emissions will help maintain our position as a key enabler of supply chain decarbonization over the long-term, which will in turn contribute to reducing the Scope 3 emissions of our customers while increasing our revenues from the truck competitive business segment. For example, over the past few years, we have seen revenues from our truck competitive business segment reaching $8.7 billion which account for 59% of our revenues in 2021. Meanwhile, intermodal business alone increased 10% from 2020 to 2021. Over time, these revenues could continue to increase as we grow our market share of truck competitive business by better positioning the environmental benefits with our customers. This includes investing in the intermodal supply chain of the future using advanced technologies to improve decision-making, capacity, productivity, and service levels, including new container slot locations, storage methods, and traffic flows. We also aim to further densify our network by potentially developing, through partnerships, port and inland terminals to promote gateway growth and provide customers with a cost-advantageous intermodal route to Toronto and the American Midwest.	Medium-term • More likely than not • Medium—high	The financial impact related to providing low carbon freight transportation goods and services is estimated to be more than $1.0 and up to $8.7 billion. We calculated this range estimation based on our truck-competitive business revenue, which accounted for 59% of the revenue in 2021. Note, we cannot specifically quantify the financial amount of that opportunity due to restrictions governing public disclosure of sensitive forward-looking financial information.	To realize the opportunity, we have put in place a 2030 Climate Action Plan that includes actively engaging with existing and potential customers to position the environmental benefits that rail offers for long-haul shipments of freight over other modes of transport. We also invest in the expansion and strengthening of our 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. **Results of our Actions** In addition to our ongoing engagements with customers on the environmental benefits of rail, last year we also invested in the intermodal supply chain of the future using advanced technologies to improve decision-making, capacity, productivity, and service levels, including new container slot locations, storage methods, and traffic flows. **Cost to Realize Opportunity** The cost to realize the opportunity is included in our spend allocated to our capital program and has been estimated using the 2021 annual equipment and infrastructure investment. In 2021, we expended a $2.9 billion capital program, which included strategic initiatives to increase capacity, enable growth and improve our network resiliency including line capacity upgrades and information technology initiatives. This included: • More than $1.5B on track maintenance, including the replacement of rail and ties, carrying out bridge improvements, and other general track maintenance. • More than $250M on double tracks, sidings, and yard track expansion projects, the vast majority of which being in Western Canada (west of Edmonton), with, for example, more than 15 miles of additional double tracks. • Investments to continue multi-year infrastructure projects that will increase capacity at the ports of Vancouver and Prince Rupert in collaboration with the Government of Canada, the Vancouver Fraser Port Authority and the Prince Rupert Port Authority. We also continued to provide customers with transparent information on their GHG emissions from transportation of goods. For example, CN was one of the highest-rated companies celebrated in the CDP's Supplier Engagement Rating Leaderboard for engaging customers on climate change.

C2 Risks and Opportunities

Opportunity Disclosure (continued)

Identifier • Value chain stage • Opportunity type • Opportunity driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Strategy to realize opportunity and explanation of cost calculation
Opportunity 3 • Direct operations • Markets • Access to new markets	Increasing growth in the cleaner energy market is presenting opportunities to grow our revenues through access to this new and emerging market: Specifically, concerns over price volatility, potential scarcity of non-renewable fuels, and environmental concerns have led to the rapidly growing adoption of renewable and alternative sources of energy. Opportunities to deliver cleaner energy alternatives are being driven by new customer innovations in methanol, solar panels and turbines, which is strengthening North America's position in cleaner energy markets across Canada, the U.S. and export to Asia. Furthermore, important opportunities exist to connect the world to biomass-based fuels and energy sources from North American plants, with the growing demand from customers looking for a more sustainable renewable fuel solution. According to the BP Energy Outlook 2018, renewable share alone is expected to triple to ~13% of global energy generation by 2036, assuming government policies evolve at a similar speed as in the past. As such, based on global market predictions, our "Clean Energy" CAGR could increase to about 7% out to 2036. This would imply a growth of revenues from clean energy from about $250 million in 2020 to over $780M by 2036. In 2021, CN clean energy's share of its energy portfolio was 8%.	Long-term • More likely than not • Medium	We have estimated the financial impact of the clean energy market within a range of $750M to $1B. We based the calculation on global market predictions, which according to BP – Energy Outlook 2019 indicates the "Clean Energy" CAGR could increase to about 7% out to 2036. This would imply a growth of our revenues from clean energy from about $250M in 2021 to over $780M by 2036. We calculated our range of $750M to $1B based on the estimated clean energy market growth of 7% to 2036 using the global market predictions.	As one of the most efficient and environmentally friendly ways to move goods, rail has a tremendous potential to reduce the environmental impact of transportation by offering sustainable transportation solutions today and into the future. The allure of rail shipping as an environmental, efficient, and cost-effective mode of transport is especially compelling as we move towards a clean economy and as innovation continues to meet production to bring cleaner and more environmentally sustainable products to the marketplace. As part of our 2030 Climate Action Plan, we are working closely with our customers to further develop these business opportunities. This includes proactively engaging with clean energy customers to market the environmental benefits of shipping by rail. **Results of our Actions** For example, we continued to work 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. Made from compressed wood waste, like sawdust shavings, bark, etc., these high-heat, low-ash pellets are used as a biofuel for residential, institutional, or industrial heating. Wood pellets ship from Canada to Europe, the UK, and Asia. At present, wood pellets power an estimated 1% of the power grid in the UK. **Cost to Realize Opportunity** The costs of communicating with our customers and exploring opportunities to position our service is included in the Marketing and Sustainability functional budgets. The total costs associated with internal resource time, advertising, and consultants are estimated to be approximately $500,000.

C2 Risks and Opportunities

Opportunity Disclosure (continued)

Identifier • Value chain stage • Opportunity type • Opportunity driver	Company-specific description	Time horizon • Likelihood • Magnitude of impact	Potential financial impact figure and explanation	Strategy to realize opportunity and explanation of cost calculation
Opportunity 4 • Upstream • Resource efficiency • Use of supportive policy incentives	The implementation of energy-efficient upgrades in our buildings and yards is presenting us with opportunities to reduce our direct operating costs and avoid carbon emissions. Our $5-million annual CN EcoFund, combined with government and utility incentives and subsidies, has enabled the implementation of energy efficiency projects such as building and technology retrofits. For example, we continue to invest various energy efficient upgrades, including heating ventilation and cooling (HVAC) system upgrades, installation of more efficient air compressors and yard air lines to charge our train braking systems, and lighting upgrades to LED in our yards and buildings. These projects increase operational efficiency, reduce energy consumption and contribute to lowering emissions and reducing capital and operating costs. For example, between 2011 until 2020, we achieved a 30% reduction in electricity consumption at key yards, avoiding more than 171,000 tonnes of carbon.	Short-term • Virtually certain • Low	In 2021, we received approximately $359,676 in subsidies from various government and utility company programs for energy efficiency projects.	As part of our 2030 Climate Action Plan, we seek to pursue facilities projects to increase operational efficiency, reduce energy consumption and contribute to lowering emissions and reducing capital and operating costs. **Results of our Actions** Our $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. We continue to invest in retrofits to boilers, air compressors, HVAC systems, and LED lighting, enabling us to improve our carbon efficiency and save costs. Between 2011 and 2020, we achieved a 30% reduction in electricity consumption at key yards, avoiding more than 171,000 tonnes of carbon. 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. In 2021, subsidies from BC Hydro, Alectra Utilities, and Commonwealth Edison were received for energy efficiency projects implemented across our network. These projects mainly involved indoor and outdoor lighting upgrades from older technology to energy-efficient LEDs. **Cost to Realize Opportunity** The costs associated with this opportunity are integrated into our Sustainability and Facilities Management department budgets, which are estimated at $50,000.

Business Strategy

Low-Carbon Transition Plan

C3.1

Our business strategy includes a low-carbon transition plan that aligns with a 1.5°C world

ANNUAL GENERAL MEETING RESOLUTION

We have developed a low-carbon transition plan, which is part of CN's Climate Action Plan. We obtain feedback on our climate action plan from shareholder votes at our annual general meetings.

The first non-binding vote took place at our Annual General Meeting of Shareholders in April 2021. The last vote took place in May 2022 with 98% in support of the Climate Action Plan.

Our Climate Action Plan includes annual disclosure of our GHG emissions aligned to the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, a science-based 2030 emission intensity reduction target, and annual progress update. The plan has been outlined and disclosed for the second year in a row in our Management Information Circular.

KEY INITIATIVES

With approximately 87% of our direct GHG emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail efficiency. As such, 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.

Innovative Technology: 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: 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: CN is moving from Precision Scheduled Railroading (PSR) to Digital Scheduled Railroading (DSR) with advanced information technologies and automation to further improve operations, safety and ease of doing business. 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, the proposed 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. Furthermore, 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, in our locomotives, to achieve our target. In November 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 and important steps in reducing GHG emissions from CN's existing locomotive fleet. 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.

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. The extent of our ability to fully deploy and implement new technologies, as well as to obtain and use sufficient volumes of sustainable renewable fuels will require collaboration between locomotive manufacturers and fuel producers. This ecosystem of collaboration is a key area of focus for CN.

C3 Business Strategy

Scenario Analysis

C3.2 - 3.2a

Our use of climate-related scenario analysis to inform our business strategy and financial planning

We use both qualitative and quantitative analysis to inform our strategy.

Climate-related scenario	Risk • Scenario analysis coverage	Temperature alignment of scenario	Parameters, Assumptions and Analytical Choices
IEA SDS	Carbon pricing • Company-wide	1.6-2°C	In alignment with our climate risk process, we conducted a climate analysis using the IEA SDS scenario to assess 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. **Parameters:** The IEA SDS reflects a surge in clean energy policies and investment and is consistent with limiting the global temperature to 1.5°C, which aligns with our science-based target. **Assumptions:** 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 modelled 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. **Analytical Methods:** 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's 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. We determined that a long-term time horizon until 2030 for the analysis was relevant for our business as it aligns with our science-based target and the Government of Canada's 2030 GHG reduction target.
RCP 2.6	Extreme cold temperatures • Country/area	1.6-2°C	In alignment with our climate risk process, we conducted a quantitative climate scenario analysis on extreme cold to assess its financial impact on our rail network in Canada, taking into consideration a long-term (2026-2030) horizon using the RCP 2.6 scenario. **Parameters:** The RCP 2.6 scenario was identified as the best-case, low-emissions scenario in which end of century warming would remain below 2°C. **Assumptions:** The physical risk analysis was conducted for RCP 2.6 and RCP 4.5 scenarios, using data from the World Climate Research Programme. **Analytical choices:** The long-term horizon (2026-2030) was selected to better understand exposure and plan network resilience measures. 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.
RCP 4.5	Extreme cold temperatures • Country/area	2.1-3°C	In alignment with our climate risk process, we conducted a quantitative climate scenario analysis on extreme cold to assess its financial impact on our rail network in Canada, taking into consideration a 2026-2030 horizon. We are currently in the process of undertaking another climate scenario analysis for extreme heat over the short-term (2022-2030) and long-term (2030-2050) horizon. **Parameters:** The RCP 4.5 scenario was identified as the most likely given current announced climate mitigation strategies in which end of century warming would be between 2°C and 3°C. **Assumptions:** The physical risk analysis was conducted for RCP 2.6 and RCP 4.5 scenarios, using data from the World Climate Research Programme. **Analytical choices:** The long-term horizon (2026-2030) was selected to better understand exposure and plan network resilience measures. 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.

C3 Business Strategy

Scenario Analysis (continued)

C3.2b

Focal questions and results we seek to address by using climate-related scenario analysis

CARBON PRICING

What could be the financial impact of the increase in carbon pricing on our operations in North America relating specifically to our locomotive fuel emissions, which represent approximately 87% of our Scope 1 emissions?

How would the impact of this risk vary between a low emissions scenario in alignment with the well-below 2°C Paris Agreement goals using the IEA SDS scenario versus a business-as-usual, high-emissions scenario over the long-term to 2030 using Canada's Nationally Determined Contributions, which is aligned to a 3.5°C warming scenario?

The carbon pricing analysis indicated that in a 1.8°C scenario, CN could be exposed to a financial impact of approximately $750 million by 2030, where no science-based target (SBT) exists versus approximately $450 million where CN meets its SBT. Conversely, in a 3.5°C scenario, CN could be exposed to a financial impact of approximately $350 million by 2030, where no SBT exists, versus $200 million where CN meets its SBT. The results of the carbon pricing 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 – we have ongoing projects and investments in zero-emissions trucks for intermodal use in urban areas and a battery-electric freight locomotive which could reduce locomotive fuel consumption and emissions by up to 30%.

EXTREME COLD DAYS

What would be the financial impact of the gradual increase of extreme cold days on our rail network and operations, including with respect to railroad fluidity interruptions and delays in business operations, taking into consideration capital expenditures and operating expenditures as well as revenue impacts from delayed gross ton miles impacted?

What factors related to railroad efficiency would be most impacted (operations, maintenance, and replacement of damaged infrastructure, locomotive performance, delayed revenue/services)?

How does this impact vary between a low-emissions versus a high-emissions scenario over a 2026-2030 time-horizon using the RCP 2.6 and RCP 4.5 scenarios 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?

The extreme cold 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. We also learned that extreme cold days, on average, could be most pronounced on our operations in Alberta, Manitoba, Saskatchewan and British Columbia.

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.

Business Strategy

C3.3

Climate-related risk and opportunities are integrated into our business strategy

Business area	Description of influence
Products and services	**Influence on Strategy in the Time Horizon** Market risks and opportunities have a direct influence on our products and services strategy in the short, medium and long term. Our intermodal and carload business growth strategy has been influenced by the ability to position the environmental benefits of rail with our customers. Specifically, the movement towards carbon pricing in North America, coupled with growing pressures on our customers to reduce their supply chain emissions presents opportunities for our business. With approximately 87% of our Scope 1 GHG emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail efficiency. As such, to achieve our 43% science-based reduction target we are focused on five key strategic areas: fleet renewals, leveraging innovative technologies, big data analytics, operating practices, and the greater use of renewable fuels. In addition, we are positioning ourselves within the cleaner energy markets by transporting sustainable products such as wood pellets, wood chips, wind turbine components, solar panels, and biofuels. **Key Strategic Decisions** In 2021, the most substantial strategic decisions influenced by this opportunity included investments in the growth of our intermodal and carload business which are part of our $2.9 billion capital program. This includes key track expansions as well as replacement, upgrade, and maintenance of key track infrastructure to improve overall safety, fluidity, and efficiency. Efforts started in 2020 when we signed an Memorandum of Understanding (MOU) with Lion Electric to acquire 50 zero-emissions trucks for intermodal use in urban areas. In 2021, we announced the purchase of a Wabtec's FLXdrive battery-electric freight locomotive – the first 100% battery heavy-haul locomotive which could reduce locomotive fuel consumption and emissions by up to 30%.
Supply chain and/or value chain	**Influence on Strategy in the Time Horizon** Regulatory risks and opportunities associated with the decrease of carbon and air emissions and the increase of renewable fuel sources have a significant short-, medium- and long-term influence on our fuel procurement and management strategy, which includes the active engagement of our locomotive manufacturers as well as our fuel suppliers. In the medium term, the Canadian Federal Clean Fuel Standard, and other existing renewable and clean fuel standards in jurisdictions where CN operates, will also present an important opportunity for to further reduce our emissions. **Key Strategic Decisions** As part of our low-carbon transition plan, we made the strategic decision to engage our suppliers to explore the use of renewable fuels as an important part of how we meet our regulatory compliance obligations and efficiency objectives in line with our science-based target. For example, since 2021 we have partnered with Progress Rail, a Caterpillar company, and the Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and important steps in reducing GHG emissions from CN's existing locomotive fleet. In 2021, the use of renewable fuels in our fleet saved approximately 125,975 tonnes of carbon. In addition, to support of our ambitious long-term goals, in 2021, we announced the purchase of a Wabtec's FLXdrive battery-electric freight locomotive - the first 100% battery heavy-haul locomotive which could reduce locomotive fuel consumption and emissions by up to 30%.
Investment in R&D	**Influence on Strategy in the Time Horizon** Regulatory risks and opportunities associated with the increase in fuel efficiency and the use of renewable fuels also have a significant medium- and long-term influence on our R&D investment decisions. As the majority of our GHG emissions result from rail operations, the best way to reduce our carbon footprint is by continuously improving our rail fuel efficiency. Over the years, this focus has led us to strategically invest in new technologies to drive even greater efficiency through research and development. In the medium term, the Canadian Federal Clean Fuel Standard, and other existing renewable and clean fuel standards in jurisdictions where CN operates, will also present an important opportunity for to further reduce our emissions. **Key Strategic Decisions** As part of our R&D investment strategy and looking beyond 2030, we made the strategic decision to engage our suppliers to explore the use of renewable and alternative fuels as an important part of how we meet our regulatory compliance obligations and efficiency objectives in line with our science-based target. In 2021, the use of renewable fuels in our fleet saved approximately 125,975 tonnes of carbon. Since 2021, we have partnered with Progress Rail, a Caterpillar company, and the Renewable Energy Group (REG) to test high-level renewable fuel blends including both biodiesel and renewable diesel. Trials and qualifications of up to 100% bio-based diesel fuel are underway and important steps in reducing GHG emissions from CN's existing locomotive fleet. In addition, with Lion Electric Co., we committed to 50 zero-emission electric trucks to be deployed in cities across our network, such as Vancouver, Greater Toronto, Montreal and Hamilton. They will be tested for various tasks such as urban delivery, container shuttle service to port operations and cross-town service. The trucks are custom-built, produce no noise pollution and are estimated to remove 100 tonnes of GHG from the road annually. By using the zero-emission trucks in different settings, we want to identify where these trucks can make the most impact on how we service our customers and reduce emissions.

C3 Business Strategy

Business Strategy (continued)

Business area	Description of influence
Operations	**Influence on Strategy in the Time Horizon** CN's goal is to conducts its operations with minimal environmental impact, while offering a carbon-efficient and sustainable way to move goods. Regulatory risks and opportunities associated with the increase of fuel efficiency, use of renewable fuels, and carbon pricing, among other climate risks and opportunities, also influence our short- and medium-term operations strategy. As part of the our comprehensive Climate Action Plan and to comply with our environmental policy, we engage in a number of initiatives, including the use of fuel-efficient locomotives, trucks and other vehicles that reduce GHG emissions; increasing and building operational efficiencies; investing in energy-efficient data centres; reducing, recycling and reusing waste and scrap at our facilities and on our network; and engaging in modal shift agreements that favor low-emission transport services. CN combines its expert resources, environmental management procedures, training and audits for employees and contractors, and emergency preparedness response activities to help ensure that we conduct our operations and activities while protecting the natural environment. Our environmental activities include monitoring our environmental performance in Canada and the U.S., identifying environmental issues inside the Company, and managing them in accordance with our environmental policy, which is overseen by the Governance, Sustainability and Safety Committee of the Board of Directors. Certain risk mitigation strategies, such as periodic audits, employee training programs and emergency plans and procedures, are in place to minimize the environmental risks to the Company. **Key Strategic Decisions** The most substantial strategic decisions dealing with rail fuel efficiency are included our capital and operational spending. Over the years, our operating model, Precision Scheduled Railroading, has enabled us to use fewer railcars and locomotives to ship more freight in a tight, reliable and efficient operation. To continue to further improve operational efficiencies, we are moving to Digital Scheduled Railroading (DSR) which provides real-time information enabling on-the-job training on practices that promote fuel conservation.

C3 Business Strategy

Financial Planning

C3.4

Climate-related risks and opportunities influence our financial planning

REVENUES

As part of our financial planning processes, we assess the potential revenues and growth projections from individual commodity groups, which include impacts of climate-related risks and opportunities. Specifically, as part of the review of our intermodal business segment, taking into consideration market trends and customer demands for more environmentally friendly and fuel-efficient options for freight transportation through modal shift, we established growth targets and investment strategies. The time horizon for our financial planning related to revenues covers five years. For example, in our intermodal business, we forecast our revenues to inform the financial plans e.g., procurement, market and sales as well as investment and acquisition decisions, such as the addition of TransX to our organization in 2019.

DIRECT COSTS

We track the potential impact of climate-related events on our operating costs on an annual time horizon. Specifically, in 2020, we took into consideration the financial impact associated with compliance costs related to carbon pricing regulatory regimes (including fuel distributor flow-through costs, carbon taxes, and cap-and-trade allowance purchases associated with the import of fuel), operational costs from extreme weather events on our network, and operating costs to position the environmental benefits of rail with our customers.

As part of the financial planning process, we allocate the necessary funds through departmental operating budgets. In 2021, the magnitude of the operating costs (taking into consideration both the financial impact and management costs of climate-related risks) were estimated to be approximately $140,000 annually to ensure our compliance with carbon regulatory requirements, $85 million for weather events, approximately $500,000 for marketing the environmental benefits of rail, and approximately $3 million on fuel management to execute and improve current practices and develop and leverage supporting technologies.

CAPITAL EXPENDITURES

We furthermore allocate a significant budget to our capital program. In 2021, we spent approximately $2.9 billion in our capital program, of which $1.7 billion was invested to maintain the safety and integrity of its network, particularly track infrastructure. Our capital spending also included $0.8 billion for strategic initiatives to increase capacity, enable growth and improve network resiliency, including line capacity upgrades and information technology initiatives, and $0.4 billion on equipment capital expenditures, including the acquisition of 69 high-horsepower locomotives and 491 new grain hopper cars. The new locomotives will enable us to meet emission standards and drive even greater emission reductions across our business. In addition, in 2020 when we signed an Memorandum of Understanding (MOU) with Lion Electric to acquire 50 zero-emissions trucks for intermodal use in urban areas, and in 2021 we announced the purchase of a Wabtec's FLXdrive battery-electric freight locomotive – the first 100% battery heavy-haul locomotive which could reduce locomotive fuel consumption and emissions by up to 30%.

ASSETS

As part of our financial planning process, our Network Transportation and System Engineering function will assign specific budgets to ensure we plan for potential disruptions to our network and impact on our assets from extreme weather events. In 2021, the magnitude of the impact, taking into account both financial impact and management costs, was approximately $86 million for extreme weather events.

ACCESS TO CAPITAL

As part of our financial planning process, we factored access to capital from various state and provincial government efficiency incentive programs into our 2021 budget. CN's Sustainability and Facilities Management teams leverage these subsidies to implement energy efficiency projects in our buildings and yards. To maximize the opportunity, we continue to monitor funding opportunities from government and utility company subsidy programs. In 2021, the magnitude of the impact of these incentives was approximately $359,676, through subsidies from BC Hydro, Alectra Utilities and COMED. The added capital from these programs allowed us to complete several indoor and outdoor lighting upgrades from older technology to energy-efficient LED technology.

C3 Business Strategy

Financial Planning (continued)

C3.5 – 3.5a

Our spending/revenue that is aligned with the transition to a 1.5°C world.

LOW-CARBON SPENDING/REVENUE

In 2021, we announced our commitment to setting a target in line with a 1.5°C scenario and to net-zero carbon emissions. We are 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 part of our commitment, we see important opportunities to work with our customers to help them reduce their transportation supply chain emissions and meet their decarbonization targets, by leveraging rail for the long haul and trucking over shorter distances. The greater use of combined modes helps lower transportation costs, and it also reduces emissions.

For example, shipping freight by rail is three to four times on average more fuel efficient than trucks and can reduce GHG emissions by up to 75% on average according to the Association of American Railroads (AAR).

The revenue related to providing low carbon freight transportation goods and services is $8.7 billion, which we calculated based on our truck-competitive business revenue. This revenue accounts for 59% of the revenue in 2021.

Targets and Performance

C4 Targets and Performance

Emissions Targets

C4.1 - C4.1b
Emissions targets active in the reporting year

Our emissions targets during the reporting year were defined as intensity targets.

Target reference number • Year target was set • Target coverage • Scope(s) • Percentage of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure	Base year • Intensity figure that year	Target year • Target reduction from base year • Intensity figure in target year • Percentage change anticipated in absolute Scope 1 and 2 emissions (or Scope 3 category) • Is this a science-based target? • Target ambition	Target status in reporting year • Intensity figure in reporting year • Percentage achieved	Explanation, including target coverage and the plan for achieving, including emissions reduction initiatives
Int1 • 2017 • Company-wide • Scope 1 and 2 (location-based) • 100%	2019 • 11.61 tCO_2e/million gross ton miles	2030 • 43% • 6.6 tCO_2e/million gross ton miles • 22.5% • Yes, approved • Well-below 2°C aligned	Revised • 10.87 tCO_2e/million gross ton miles • 14.8%	In 2021, the Science Based Targets initiative (SBTi) approved our revised emissions reduction target, consistent with levels required to meet the goals of the Paris Agreement. CN commits to reduce Scope 1 and 2 GHG emissions 43% per million gross tonne miles by 2030 from a 2019 base year. The target replaces CN's previous target GHG emissions intensity (tonnes CO_2e/ million tonne kilometres) reduction of 29% by 2030, based on 2015 levels, covering total (100%) Scope 1 and 2 emissions. In 2021, we announced a commitment to setting a target in line with a 1.5°C scenario and to net-zero carbon emissions. CN is 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. **Plan for Achieving Target:** To achieve our 43% science-based reduction target, we are focused on locomotive carbon efficiencies from renewing our fleet, implementing innovative technologies, optimizing the use of big data, promoting best practice initiatives for fuel and energy conservation, and increasing renewable fuel blends. In 2021, we reduced our GHG emission intensity for Scope 1 and 2 by 3.3% from 2020, realizing a 15% progress towards our 2030 target. 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. The extent of our ability to fully deploy and implement new technologies, as well as to obtain and use sufficient volumes of sustainable renewable fuels will require collaboration between locomotive manufacturers and fuel producers. This ecosystem of collaboration is a key area of focus for CN. **Key Emissions Reduction Initiatives:** • Improvements in fuel efficiency and operating practices. • Increased use of renewable fuels in our locomotives. • Implementation of technology and use of big data.

C4 Targets and Performance

Emissions Targets (continued)

Target reference number • Year target was set • Target coverage • Scope(s) • Percentage of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure	Base year • Intensity figure that year	Target year • Target reduction from base year • Intensity figure in target year • Percentage change anticipated in absolute Scope 1 and 2 emissions (or Scope 3 category) • Is this a science-based target? • Target ambition	Target status in reporting year • Intensity figure in reporting year • Percentage achieved	Explanation, including target coverage and the plan for achieving, including emissions reduction initiatives
Int2 • 2021 • Company-wide • Scope 3: Fuel- and energy-related activities (not included in Scopes 1 or 2) • 100%	2019 • 3.61 tCO_2e/million gross ton miles	2030 • 40.3% • 2.16 tCO_2e/million gross ton miles • 18.3% • Yes, approved • Well-below 2°C aligned	Underway • 3.15 tCO_2e/million gross ton miles • 32%	In 2021, the Science Based Targets initiative (SBTi) also approved our new Scope 3 emissions reduction target, consistent with levels required to meet the goals of the Paris Agreement. In alignment with the SBTi framework for the transportation sector, CN has committed to reducing its well to wheel emissions. Specifically, we have committed to reduce Scope 3 GHG emissions from fuel and energy-related activities by 40% per million gross tonne miles by 2030 from a 2019 base year. This target covers 69% of total Scope 3 emissions, all other inputs to Scope 3 are excluded, namely capital goods, purchased goods and services, upstream transportation and distribution, and waste generated in operations. **Plan for Achieving Target:** To achieve our 40% science-based target, we are mainly focused on locomotive carbon efficiencies from renewing our fleet, implementing innovative technologies, optimizing the use of big data, promoting best practice initiatives for fuel and energy conservation, and increasing renewable fuel blends. As our Scope 3 target covers emissions from fuel and energy-related activities, these initiatives taken to reduce Scope 1 emissions from running locomotives will cascade to reducing the volume of fuel purchased. In 2021, we reduced our Scope 3 GHG emission intensity by 4.6% from 2020, realizing a 32% progress towards the 2030 target, which is based on 2019 levels. **Key Emissions Reduction Initiatives:** • Supplier engagement on increased use of renewable fuels. • Pilot programs on renewable and battery electric power for our locomotives.
Int3 • 2019 • Business division (Rail) • Scope 1 • 100%	2017 • 14.06 kg CO_2e/1,000 revenue tonne km	2022 • 6% • 13.2 kg CO_2e/1,000 revenue km • 4.1% • No, but we are reporting another target, which is science-based • N/A	Achieved • 12.97 kg CO_2e/1,000 revenue tonne km • 129.2%	Through the renewal of a long-standing Memorandum of Understanding (MOU) with Transport Canada, we committed to a 6% intensity-based reduction in locomotive GHG emissions, measured against a 2017 baseline and over five years ending in 2022. This covers 100% of our locomotive emissions. Refer to page 3 of the RAC MOU at www.railcan.ca/wp-content/uploads/2019/07/TC-RAC-MOU-2018-22.pdf. Emission targets will be measured against 2017 carrier-class emissions intensity levels as reported in the *2017 Locomotive Emissions Monitoring Report* (www.railcan.ca/wp-content/uploads/2019/12/2017_LEM_Report-1.pdf). **Plan for Achieving Target:** In 2021, CN achieved its 6% intensity-based reduction target by 2022 based on 2017 levels. To achieve this target, we focused on locomotive carbon efficiencies from renewing our fleet, implementing innovative technologies, optimizing the use of big data, promoting best practice initiatives for fuel, and energy conservation. **Key Emissions Reduction Initiatives:** • Fuel efficiency and technology improvements. • Purchase of new tier locomotives with improved fuel efficiency. • Increased use of renewable fuels.

C4 Targets and Performance

Emissions Targets (continued)

C4.2 - C4.2c

Other climate-related targets, including methane reduction targets and our net-zero target

Target reference number • Year target was set • Target coverage • Target type • Metric	Base year • Percentage in base year	Target year • Percentage in target year • Percentage in reporting year	% of target achieved relative to base year • Target status in reporting year • Is this target part of an emissions target? • Is this target part of an overarching initiative?	Explanation including target coverage, exclusions, and actions which contributed most to achieving this target
Oth 1 • 2020 • Country/region • Absolute • Renewable fuel production	2020 • 1.15%	2021 • 2% • 2.66%	177.7% • Achieved • Yes • Sustainable/ renewable fuel	The renewable fuel market presents another opportunity to reduce our emissions, and we have set a short-term year-on-year rolling target of 2% sustainable renewable fuel consumption for our Canadian locomotive fleet. It does not include our U.S. operations. The existing Renewable Fuel Standard regulation in Canada requires an average of 2% renewable blends in all diesel produced or imported into Canada. In 2021, both Ontario and Manitoba implemented Clean Fuel Standard regulations, in addition to the existing Clean Fuel Standard in place since 2008 in British Columbia. These existing standards across provinces in Canada where CN operates mandate higher percentage blends of renewable fuels in diesel, with 4%, 3.5% and 4% blends required respectively in the jurisdictions mentioned above. These newly implemented regulations have also contributed to the growth of use of renewable fuels in our fleet. In 2021, the continued collaboration with our suppliers enabled our procurement, fuel management and operations teams to increase our emissions savings from the use of renewable fuels to 125,975 tonnes CO_2e. In addition, we continue to work closely with our suppliers to increase the amount of blended fuel we receive and to obtain greater visibility on blend percentages to improve the quantification of the impact of renewable fuels on our emissions.

NET-ZERO TARGET

We are 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. This net-zero target will be aligned with our science-based target which covers our total (100%) Scope 1 and 2 emissions. We have committed to seek validation of this target by the Science Based Targets initiative (SBTi) in the next 2 years.

Our 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. Our 2030 Climate Action Plan focuses on five key initiatives: investing in locomotive fleet renewals, increasing the use of fuel-efficient technologies, leveraging big data analytics, enhancing our operating practices, and expanding the use of cleaner fuels. We recognize the importance of collaborating with suppliers, governments, supply chain partners, academics, and cleantech providers in achieving an effective transition to net-zero emissions by 2050.

We recognize that nature-based solutions have the potential to play a major role in addressing the twin and interlinked environmental crises humanity faces of climate change and nature loss. Trees can absorb air pollutants and offset carbon emissions. By planting trees, we are contributing to cleaner air and increased quality of life in the communities where we operate. Two million trees can absorb more than 96 million pounds of carbon dioxide a year, and can produce oxygen daily for up to 8 million people. We have a long-term goal of planting 3 million trees by 2030. Our progress against this goal is 77%.

In 2021, we planted 112,000 trees, for a total of 2.3 million trees since 2012. This includes our EcoConnexions Partnership program that collaborates with companies to reduce their emissions and drive sustainable business practices, as well as our EcoConnexions From the Ground Up and reforestation program helping communities establish green spaces and tree plantings.

C4 Targets and Performance

Emissions Reduction Initiatives

C4.3 - C4.3a

Emissions reduction initiatives active within the reporting year

Stage of development	Number of initiatives	Total estimated annual CO_2e savings in metric tons CO_2e
Under investigation	0	0
To be implemented	6	350,000
Implementation commenced	0	0
Implemented	7	303,977
Not to be implemented	0	0

C4.3b

Initiatives implemented in the reporting year

Initiative category	Initiative type • Estimated annual CO_2e savings (metric tons CO_2e)	Scope(s) • Voluntary or mandatory?	Annual monetary savings • Investment required	Payback period • Estimated lifetime of the initiative	Comments
Energy efficiency in production processes	Process optimization • 303,608	Scope 1 • Voluntary	$17 million • $373.6 million	4 - 10 years • >30 years	The estimated emissions savings relate to Scope 1 emissions covering our rail locomotives. In 2021, we continued to implement projects related to our rail locomotive emissions and energy efficiency strategy, which represent approximately 87% of our direct greenhouse gas emissions. This includes new locomotive acquisitions, fuel efficiency training for our locomotive crews, installation of new locomotive technologies such as Trip Optimizer, locomotive telemetry systems, and anti-idling devices. Our locomotive engineers receive real-time information on train characteristics, performance and terrain through an Energy Management System (EMS), which helps to compute the most efficient train settings and regulate speed. Our in-house-built Horsepower Tonnage Analyzer (HPTA) also instructs crews on how to optimize a locomotive's horsepower-to-tonnage ratio to minimize fuel consumption. These projects will help us achieve our science-based emissions intensity reduction target of 43% in 2030, based on 2019 levels.
Energy efficiency in buildings	Various projects • 183.60	Scope 2 (location-based) • Voluntary	$183,301 • $5.3 million	4 - 10 years • 11 - 15 years	We continue to work to reduce our Scope 2 emissions from electricity consumption at our buildings and yards. We continuously invest in energy efficiency projects including HVAC, lighting and air compressor upgrades. This includes a $5-million EcoFund to support energy and emission reduction projects. In addition, through our EcoConnexions employee engagement program, our employees receive training on energy efficiency practices at our yard facilities.

C4 Targets and Performance

Emissions Reduction Initiatives (continued)

C4.3c
Methods driving investment in emissions reduction activities

COMPLIANCE WITH REGULATORY REQUIREMENTS/STANDARDS

Through the U.S. EPA and Environment Canada Locomotive Emission Standards, we continue to follow through on our commitment to acquire, retire and upgrade locomotives to improve air quality, enhance rail fuel efficiency and reduce rail GHG emission intensity. Based on this obligation, we assess our locomotive fleet annually through financial optimization calculations to determine the budget that would be necessary to meet our commitments in the context of our business needs. In 2021, CN spent approximately $2.9 billion in its capital program, of which $0.4 billion was invested in equipment capital expenditures, including the acquisition of 69 high-horsepower locomotives.

EMPLOYEE ENGAGEMENT

Our employees are integral to our ability to reduce energy consumption. Our EcoConnexions employee engagement program focuses on embedding environmental sustainability into our corporate culture through targeted initiatives to reduce energy consumption, minimize waste and improve housekeeping practices at our yards and offices. Between 2011 to 2020, we have reduced energy consumption by 30% and avoided 171,000 tonnes of CO_2e emissions at key yards and facilities, diverted 200,000 tonnes of operational waste from municipal landfills, and completed over 1,500 projects to improve housekeeping and create cleaner, more efficient and safer workplaces.

DEDICATED BUDGET FOR ENERGY EFFICIENCY

Energy efficiency is part of our approach to achieving our science-based target to reduce our GHG emission intensity by 43% by 2030, based on 2019 levels. To meet this objective, we identify processes and equipment where the biggest reductions are possible by reviewing our energy management data information. Once identified, we conduct a business analysis to determine the key projects that could support our reduction initiatives. We then assess the projects based on saving potentials, investment needs and return on investment calculations. Feasible projects are financed through a dedicated energy management budget, facility-specific budgets and subsidies/grants. We have also established a dedicated EcoFund budget of $5 million annually for our emission and energy reduction activities as identified through our EcoConnexions employee engagement program.

INTERNAL INCENTIVES/RECOGNITION PROGRAM

Through our employee performance objectives, a percentage of the bonus structure is allocated to meeting corporate objectives, including our fuel efficiency target. These incentive contributions vary according to employee levels within the organization and the extent to which the employee contributes to meeting objectives.

C4 Targets and Performance

Low-Carbon Products

C4.5 - C4.5a

We classify some of our existing services as low-carbon products

The rail freight service we provide is on average four to five times more fuel efficient than highway freight transportation. One single freight train can carry the cargo load of over 300 trucks. As a result of this efficiency, CN helps customers avoid and/or reduce GHG emissions that would otherwise be generated from more carbon-intensive modes of transportation. This equates to a 75% reduction in CO_2e for freight transportation by rail that could have been moved by truck.

CARBON LIFECYCLE CALCULATION

Life cycle stage(s) covered by the low-carbon product/service: Use-stage

Functional unit used: Hauling an 81.6 tonne (average weight of a railcar) railcar for 1,000 kilometres by rail compared to trucking.

Reference product/service: Moving product with average long-haul truck with an average 6 miles per gallon fuel efficiency.

Estimated avoided emissions compared to reference product/service: 4 metric tonnes of CO_2e

To calculate avoided emissions including any assumptions, we applied an attributional approach to our Lifecycle Assessment and calculated the difference in combustion emissions between transporting by rail using CN's current fuel efficiency performance and movement by heavy truck using industry average fuel efficiency numbers.

We used the following Global warming potential factors from the IPCC 6th assessment report: (CO_2: 1, CH4: 27.9, N_2O: 273) and the emission factors in the Environment Canada's Inventory Report for Rail 2,724.8 and for trucking 2,965.6 measured in CO_2e (g/L).

Based on the fuel efficiency for both modes of transportation as well as an assumed payload per truck, we were able to estimate the combustion GHG intensity measured in grams of CO_2e per tonne km and calculate the avoided emissions for a defined distance and load weight.

56% of our revenue were associated with low-carbon products and services in the reporting year.

Emissions Methodology

C5 Emissions Methodology

Base Year Emissions

C5.2
Base year and base year emissions (Scope 1, 2 and 3)

Scope	Category	Base year start	Base year end	Base year emissions (metric tons CO_2e)
Scope 1	–	January 1, 2019	December 31, 2019	5,771,894
Scope 2	Location-based	January 1, 2019	December 31, 2019	164,641
Scope 2	Market-based	N/A	N/A	N/A
Scope 3	Purchased goods and services	January 1, 2019	December 31, 2019	384,934
Scope 3	Capital goods	January 1, 2019	December 31, 2019	445,895
Scope 3	Fuel-and-energy-related activities (not included in Scope 1 or 2)	January 1, 2019	December 31, 2019	1,845,296
Scope 3	Upstream transportation and distribution	January 1, 2019	December 31, 2019	56,373
Scope 3	Waste generated in operations	January 1, 2019	December 31, 2019	46,225

Emissions Methodology

C5.3
Protocol used to calculate Scope 1 and 2 emissions

We use the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition).*

Emissions Data

C6 Emissions Data

Scope 1 Emissions Data

C6.1
Gross global Scope 1 emissions

Year	Gross global Scope 1 emissions (metric tons CO_2e)
Reporting year	5,084,159

Scope 2 Emissions Reporting

C6.2
Our approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based
We are reporting a Scope 2, location-based figure.	We have no operations where we are able to access electricity supplier emission factors or residual emission factors, and are unable to report a Scope 2, market-based figure.

Scope 2 Emissions Data

C6.3 - C6.4
Gross global Scope 2 emissions in metric tons CO_2e

Year	Scope 2, location-based	Scope 2, market-based (if applicable)	Start date	End date
Reporting year	149,402	N/A	N/A	N/A

C6 Emissions Data

Scope 3 Emissions Data

C6.5

Our organization's gross global Scope 3 emissions (no exclusions)

RELEVANT AND CALCULATED SCOPE 3 EMISSIONS

Percentage of emissions calculated using data obtained from suppliers or value chain partners equals 100%.

Scope 3 category	Metric tons CO_2e	Emissions calculation methodology	Explanation
Purchased goods and services	157,816	Emissions for purchased goods were calculated using volumes of key purchased goods by type of material applied against applicable emission factors from the Greet 2019 and ICE 3.0 models. Emissions for purchased services were calculated following an environmental economic input-output methodology using data from the World Input-Output Database 2016. Emission factors on a tCO_2e per $ basis were calculated by economic sector. The sector-appropriate emission factor was then applied against the 2021 expenditures for that sector to calculate total emissions.	Volumes of purchased goods by type of material as well as dollars spent on purchased services were obtained directly from supplier invoice data in our SAP system. Note: Methodology for extracting volumes of rail and other track material was updated to reflect the year the goods were received by CN versus previous years' data, which was extracted based on the year the purchase order was issued. There can be a lag of several months between purchase order date and receipt of goods.
Capital goods	422,558	Emissions for capital goods were calculated using volumes of key capital goods by type of material applied against applicable emission factors from the Greet 2019 and ICE 3.0 models.	Volumes of capital goods by type of material were obtained directly from supplier invoice data in our SAP system. Note: Methodology for extracting volumes of rail and other track material was updated to reflect the year the goods were received by CN versus previous years' data, which was extracted based on the year the purchase order was issued. There can be a lag of several months between purchase order date and receipt of goods.
Fuel- and energy-related activities (not included in Scope 1 or 2)	1,514,156	Upstream emissions from the production of fuels used to operate our locomotives, HDV, and LDV fleets were calculated using the GHGenius version 5.01g calculation tool.	Litres and gallons of fuel purchased by jurisdiction were obtained from supplier invoice data in our SAP system.
Upstream transportation and distribution	53,314	Emissions were calculated following an environmental economic input-output methodology using data from the World Input-Output Database. Emissions were calculated by economic sector using emission factors on a tCO_2e per $ basis. The sector-appropriate emission factor was then applied against the 2021 expenditures for upstream transportation to calculate total emissions.	Dollars spent on upstream transportation and distribution were obtained directly from supplier invoice data in our SAP system.
Waste generated in operations	40,599	Emissions were estimated using standard emission factors multiplied by activity level formulas. Emission factors were obtained from various sources including Canada's National Inventory Report, 1990-2018, 2006 *IPCC Guidelines for National Greenhouse Gas Inventories Metal Industry Emissions*, and the Ecoinvent database V3.	Tons of waste generated by disposal method for 2021 were obtained from internal data sources.

C6 Emissions Data

Scope 3 Emissions Data (continued)

SCOPE 3 EMISSIONS THAT ARE NOT RELEVANT AS PER PROVIDED EXPLANATION

Scope 3 category	Explanation
Business travel	In 2018, business travel emissions represented less than 2% of Scope 3 emissions. They were considered negligible in the 2020 and 2021 reporting years.
Employee commuting	Employees travel to and from work using road transport (car or bus) or commuter train or subway. In 2021, employee commuting emissions represented less than 1% of Scope 3 emissions and were considered negligible.
Upstream leased assets	We lease railcars and some rail equipment. Emissions related to the operation of these assets are included in our Scope 1 and Scope 3 category 3 emissions.
Downstream transportation and distribution	As a transport and logistics services company, all distribution and transportation-related emissions are included in our Scope 1 and 2 emissions.
Processing of sold products	As a transport and logistics services company, we do not process sold products.
Use of sold products	We do not process sold products that are then used by third parties. We offer a transportation and logistics services.
End-of-life treatment of sold products	We do not process sold products and therefore end-of-life treatment of sold products is not relevant.
Downstream leased assets	We do not lease assets downstream.
Franchises	We do not own any franchises.
Investments	Operation of equity and debt investments (e.g. TransX) are included in Scope 1 or Scope 2. In alignment with the Corporate Value Chain Accounting Reporting Standard, emissions from operations of pension fund investments are considered optional at this point.

Biogenic Carbon Data

C6.7 - C6.7a
Carbon dioxide emissions from biogenic carbon

Carbon dioxide emissions from biogenic carbon are relevant to our organization. The biologically sequestered carbon we have reported – 112,995 metric tons CO_2e – relates to volumes of renewable fuel consumed by our locomotives, HDV, and LDV fleets.

C6 Emissions Data

Emissions Intensities

C6.10
Gross global combined Scope 1 and 2 emissions

Intensity figure	Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO_2e)	Metric denominator • Metric denominator: Unit total	Scope 2 figure used	Percentage change from previous year • Direction of change	Reason for change
0.000361509	5,233,561	Unit total revenue • 14,477,000,000	Location-based	-7.5% • Decreased	On a unit total revenue basis, our emission intensity decreased due to a combination of continued emissions reduction activities relating to fuel efficiency for our locomotives and other fleets, as well as energy reduction projects at our key yards. These initiatives are described in detail in response to question 4.3b, for example, lighting efficiency improvements in our yards through new equipment and increased locomotive, trucking and vessel fleet fuel efficiencies through new equipment and operational improvements and behaviours.

Emissions Intensities: Transport Services

C-TS6.15
Intensity (activity-based) metrics for our emissions from transport activities in Scope 1

Activity	Intensity figure	Metric numerator: emissions in metric tons CO_2e	Metric denominator: unit total • Percentage change from previous year	Explanation
HDV	0.00007940	217,120	2,734,602,311 • 0.2%	The reported intensity figure covers 100% of the Scope 1 emissions from our truck fleet. Our non-rail ground fleet, comprising intermodal equipment, trucking, our HDV fleet- CNTL and TransX trucks, makes up roughly 7% of our Scope 1 and 2 emissions. Over the past few years, we have been focused on improving the fuel efficiency of these fleets while also increasing our use of renewable fuels. Overall, our truck emission intensity in 2021 increased versus 2020 because of economic recovery. Our teams continue to be trained on fuel efficiency, from the use of aerodynamic components on trucks to innovative routing optimization initiatives. In 2021, we installed a new driver-centric fleet management system to improve hours of service management, enable a paperless workflow, and to drive further gains with respect to accident prevention and fuel efficiency.
Rail	0.00001297	4,413,456	340,369,212,918 • -3.1%	The reported intensity figure covers 100% of our Scope 1 rail transport emissions. Overall, in 2021 our rail emissions intensity on a tonne-km basis decreased and we achieved an all-time record fuel efficiency of 0.879 U.S. gallons of locomotive fuel consumed per 1,000 gross tonne miles. 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. 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.
Marine	0.00001043	146,860	14,077,656,517 • -7.1%	The reported intensity figure covers 100% of the Scope 1 emissions from our Great Lakes Vessel fleet. Overall, our marine emissions intensity in 2021 decreased versus 2020 due to the layup of three of the least efficient vessels in the fleet.
All	0.00001338	4,777,437	357,181,471,746 • -3.4%	The reported figure covers 100% of the Scope 1 emissions from our freight transportation fleets. In 2021, our overall freight transportation fleet emission intensity decreased versus 2020 due to locomotive fuel efficiency improvements and greater use of biofuels.

Emissions Breakdown

C7 Emissions Breakdown

Scope 1 Breakdown: GHGs

C7.1 - C7.2
Scope 1 emissions by greenhouse gas type

Greenhouse gas	Scope 1 emissions (metric tons in CO_2e)	GWP Reference
CO_2	4,640,508	*IPCC Sixth Assessment Report* (AR6 – 100 year)
CH_4	7,397	*IPCC Sixth Assessment Report* (AR6 – 100 year)
N_20	414,251	*IPCC Sixth Assessment Report* (AR6 – 100 year)

Scope 1 Breakdown: Country

C7.2
Scope 1 emissions by country/region

Country/Region	Scope 1 emissions (metric tons CO_2e)
Canada	3,761,897
U.S.	1,322,262

Scope 1 Breakdown: Business Breakdown

C7.3 - C7.3c
Gross global Scope 1 emissions breakdowns by activity

Activity	Scope 1 emissions (metric tons CO_2e)
Locomotives	4,413,456
Intermodal trucks	217,120
Marine fleet	146,860
On Company Service fleet	74,195
Miscellaneous fuel consumption	155,816
Intermodal equipment	76,711

Scope 1 Breakdown: Sector Production Activities

C-TS7.4
Gross global Scope 1 emissions by sector production activity

Sector production activity	Gross Scope 1 emissions (metric tonnes CO_2e)	Comment
Transport services activities	5,009,964	Our Scope 1 emissions that are dependent on being part of the transport services sector include emissions from our locomotive, marine and truck fleets, as well as emissions from the combustion of fuels to operate ancillary equipment in our yards. Excluded from this figure are the emissions from the operation of our company vehicles used mainly for work activities along our rail network.

C7 Emissions Breakdown

Scope 2 Breakdown: Country

C7.5
Gross global Scope 2 emissions by country/region

Country/Region	Scope 2, location-based (metric tons CO_2e)
Canada	54,234
U.S.	95,167

Scope 2 Breakdown: Business Breakdowns

C7.6 - C7.6a
Gross global Scope 2 emissions breakdowns by business division

Business Division	Scope 2, location-based (metric tons CO_2e)
Western	46,537
Eastern	7,698
Southern	95,167

Scope 2 Breakdown: Sector Production Activities

C-TS7.7
Our transport service activities: global Scope 2 emissions

Sector production activity	Scope 2, location-based, (metric tons CO_2e)	Comment
Transport services activities	149,402	Our Scope 2 emissions are related to the consumption of electricity in our buildings and yards, which are part of our service activities. Most of our offices are part of our industrial buildings and the electricity used for administrative purposes is not material compared to the electricity used for transportation activities.

C7 Emissions Breakdown

Emissions Performance

C7.9 - C7.9b

Gross global emissions (Scope 1 and 2 combined) compared to previous reporting year

Compared to the previous year, our gross global emissions have decreased.

Reason	Change in emissions (metric tons CO_2e)	Direction of change and emissions value percentage	Explanation
Change in renewable energy consumption	56,309	Increased by 2.4%	We consider the growth of the renewable fuel market as an important opportunity to further reduce our emissions by using biomass-based fuel blends in our fleets. In 2021, the use of renewable fuels in our fleet saved approximately 125,975 tonnes of carbon, which is an important milestone as we continue to work with our suppliers to increase our use of renewable fuels. We recorded an increase in volumes of renewable fuel consumed in 2021, as new provincial clean fuel standards came into effect in Ontario and Manitoba, which are jurisdictions where we operate.
Other emissions reduction activities	303,791	Decreased by 3.0%	The carbon emissions from locomotives decreased due to continued implementation of projects in 2021 related to our rail locomotive emissions and energy efficiency strategy, which represent approximately 87% of our Scope 1 greenhouse gas emissions. 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. 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. In addition, we achieved emissions savings from energy efficiency projects implemented at our key yards. This includes lighting and HVAC upgrades, as well as upgrades to air compressors. We calculated a reduction of approximately 303,791 tCO_2e from emission reduction activities related to locomotive fuel efficiency and energy efficiency in our buildings and yards. Based on the carbon reductions, we calculated a 3.04% reduction in emissions [(303,791/ 5,233,561) * 100 = 3.04% decrease] compared to 2020 emissions.

Our calculations in C7.9 and C7.9a are based on Scope 1 and location-based Scope 2 emissions figures.

Energy

C8 Energy

Energy Spend

C8.1 - C8.2
Percentage of total operational spend on energy-related activities

More than 10% but less than or equal to 15%.

Energy Consumption

C8.2 - C8.2a
Energy consumption totals for our energy-related activities

We only consume fuel and purchased or acquired electricity. We don't consume any – purchased, acquired or generated – heat, steam, or cooling.

Activity	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable + non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	452,284	18,617,412	19,069,696
Consumption of purchased or acquired electricity	HHV (higher heating value)	160,227	394,234	554,461
Total energy consumption	N/A	612,512	19,011,646	19,624,158

C8.2b
Applications of our consumption of fuel

We only consume fuel for the generation of heat (including combustion for engines). We don't consume fuel for the generation of electricity, steam, or cooling, or for co-generation or tri-generation.

C8 Energy

Fuel Consumption by Type

C8.2c
Fuel consumed by fuel type

Fuel type (Heating value is HHV)	Total MWh consumed by the organization	Comment
Other, please specify: Biomass	452,284	Biogasoline + Biodiesel
Oil	4,203	Furnace oil + stove oil
Gas	514,486	Natural gas
Other non-renewable fuels	18,098,724	Diesel locomotive + Diesel (others) + Propane (liquid) + Gasoline + Kerosene
Total fuel	19,069,696	All fuels listed above (and excluding feedstocks)

C-TS8.2f
Energy from the grid

We do not currently have any transport movements that directly source energy from the grid. As of 2019, we have been extending our investments in battery-electric vehicles to our On Company Service fleet. In 2021, the average emission factor for our LDV fleet was 19 gCO_2e/kWh.

C8.2g
Non-fuel energy consumption by country

Country	Consumption of electricity (MWh)	Consumption of heat, steam, and cooling (MWh)	Total non-fuel energy consumption (MWh)
Canada	334,892	36,204,125	36,539,017
U.S.	229,365	12,104,518	12,333,883

Transport-Related Energy Efficiency Metrics

C-TS8.5
Relevant efficiency metrics

Activity	Metric figure	Metric numerator: Unit total	Metric denominator: Unit total	Percentage change from previous year	Explanation
Rail	1,138	458,401 million gross ton miles	402.8 million gallons of fuel	1.8%	Overall, in 2021, our rail emissions intensity on a tonne-km basis decreased and we again achieved an all-time record fuel efficiency of 0.879 U.S. gallons of locomotive fuel consumed per 1,000 gross tonne miles. 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.

Additional Metrics

C9 Additional Metrics

Other Climate-Related Metrics

C9.1

Additional relevant climate-related metrics

Description	Metric value	Metric numerator	Metric denominator (intensity metric only)	Percentage change from previous year	Direction of change	Explanation
Other, please specify: MWh renewable fuel energy/ million tonne km	1.27	Renewable fuel energy consumption in MWh	Tonne km (millions)	83.5%	Increase	The existing Renewable Fuel Standard regulation in Canada requires an average of 2% renewable blends in all diesel produced or imported into Canada. In 2021, both Ontario and Manitoba implemented Clean Fuel Standard regulations, in addition to the existing Clean Fuel Standard in place since 2008 in British Columbia. These existing standards across provinces in Canada where CN operates mandate higher percentage blends of renewable fuels in diesel, with 4%, 3.5% and 4% blends required respectively in the jurisdictions mentioned above. These newly implemented regulations have also contributed to the growth of use of renewable fuels in our fleet. In 2021, the continued collaboration with our suppliers enabled our procurement, fuel management and operations teams to increase our emissions savings from the use of renewable fuels to 125,975 tonnes CO_2e. In addition, we continue to work closely with our suppliers to increase the amount of blended fuel we receive and to obtain greater visibility on blend percentages to improve the quantification of the impact of renewable fuels on our emissions.

Low-Carbon Technology Implementation

C-TS9.3

Tracking metrics for the implementation of low-carbon transport technology

Activity	Metric	Technology	Metric figure	Unit	Explanation
Rail	Fleet adoption	Other, please specify: New high-horsepower locomotives with reduced GHG and particulate matter emissions	69	Number of locomotives	We continue to upgrade existing locomotives and acquire new locomotives enabling us to not only meet our compliance objectives but also benefit from even greater fuel efficiencies. In 2021, we acquired 69 new high-horsepower locomotives.
HDV	Fleet adoption	Other, please specify: Trucks using diesel blended with renewable fuels	1,835	Number of trucks	CN's owner-operated CNTL trucking fleet and newly acquired TransX trucking fleet use diesel blended with renewable fuels when operating in Canada, in compliance with federal and provincial clean fuel regulations. As these regulations increase in stringency, emissions from our trucks will continue to decrease in intensity.

C9 Additional Metrics

Low-Carbon Investments

C-TS9.6 - C-TS9.6a

Investment in research and development of low-carbon products or services over the last three years

With approximately 87% of our direct GHG emissions generated from rail operations, we believe the best way to reduce our carbon footprint is by continuously improving our rail fuel efficiency. Over the years, this focus has led us to strategically focus on investing in new technologies to drive even greater efficiency through investments in research and development.

Activity	Technology area	Stage of development	Average percentage of total R&D investment over the last 3 years	Investment in the reporting year	Comments
Rail	Smart systems	Large-scale commercial deployment	41 - 60%	$3 million	In addition to the capital-intensive renewal of our fleet, the development and deployment of smart systems such as fuel-efficient technologies and big data management analytics capabilities, combined with employee training and communications, 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. We estimate the annual R&D costs associated with the development and deployment of smart systems to be $3 million.
Rail	Smart systems	Applied research and development	≤20%	$200,000	CN has invested in a five-year optimization research project with Université de Montréal to develop mathematical models that have the potential to improve operational and fuel efficiency (and reduce carbon emissions). These models focus on two key areas for efficiency improvements: optimized locomotive power on trains, and improved aerodynamics of intermodal trains. Preliminary results have been produced and are under review. CN is in Year 5 of this research project and thus the business impacts have not yet been realized. The work was also impacted by COVID-19 in 2020 and therefore the project was extended to six years to make up for lost research time.
HDV	Electrification	Pilot demonstration	21 - 40%		In 2020, we launched a pilot project to use electric trucks. Working with Lion Electric Co., we committed to 50 zero-emission electric trucks to be deployed in cities across our network, such as Vancouver, Greater Toronto, Montreal and Hamilton. They will be tested for various tasks such as urban delivery, container shuttle service to port operations and cross-town service. The trucks are being custom-built, produce no noise pollution and are estimated to remove 100 tonnes of GHG from the road annually. By using the zero-emission trucks in different settings, we want to identify where these trucks can make the most impact on how we service our customers and reduce emissions. The project is also spurring innovation and creating jobs in nearby communities.
Rail	Other: Alternative fuels	Pilot demonstration	≤20%		In 2021, we also announced a partnership with Progress Rail and 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 important steps in reducing GHG emissions from CN's existing locomotive fleet, while alternative propulsion locomotive technologies are being developed. This 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.
Rail	Electrification	Pilot demonstration	≤20%		In addition, in 2021, we 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.
LDV	Electrification	Small-scale commercial deployment	≤20%		As part of our sustainability strategy to reduce emissions through energy efficiency projects at our yard, CN is purchasing electric light-duty vehicle and charging stations for the transportation of mechanical engineers between our yards.

Verification

C10 Verification

Verification

C10.1

Verification applying to reported emissions

Scope	Verification/assurance status
Scope 1	Third-party verification or assurance process in place.
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place.
Scope 3	Third-party verification or assurance process in place.

C10.1a - C10.1c

Verification/assurance undertaken for Scope 1, 2 and 3 emissions

Scope	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Relevant standard	Proportion of reported emissions verified (%)
Scope 1	Annual process	Complete	Limited assurance	ISAE 3410	87%
Scope 2 location-based	Annual process	Complete	Limited assurance	ISAE 3410	100%
Scope 3 categories, including: Purchased goods and services • Capital goods • Fuel- and energy-related activities (not included in Scope 1 or 2) • Upstream transportation and distribution	Annual process	Complete	Limited assurance	ISAE 3410	100%

C10 Verification

Other Verified Data

C10.2 – C10.2a
Other verified climate-related information

Disclosure module verification relates to	Data verified	Verification standard	Explanation
C6. Emissions data	Year-on-year change in emissions (Scope 1)	Limited assurance in accordance with the ISAE 3410 standard	A third party has verified the change in our 2021 Scope 1 emissions from locomotive fuel consumption included in our total Scope 1 emissions figure reported in C6.1 versus the corresponding figure for 2020. Emissions from locomotive fuel consumption account for approximately 87% of our total direct emissions. We complete this verification on an annual basis to track our emissions performance.
C6. Emissions data	Year-on-year change in emissions (Scope 2)	Limited assurance in accordance with the ISAE 3410 standard	A third party has verified the change in our 2021 location-based Scope 2 emissions from consumption of electricity in our buildings and yards in C6.3 versus the corresponding figure for 2020. Data verified accounted for 100% of our Scope 2 emissions. We complete this verification on an annual basis to track our emissions performance.
C6. Emissions data	Year-on-year change in emissions (Scope 3)	Limited assurance in accordance with the ISAE 3410 standard	A third party has verified the change in our 2021 Scope 3 emissions from diesel fuel production included in our total Scope 3 emissions reported in C6.5 versus the corresponding figure for 2020. Data verified accounted for 92% of our Scope 3 emissions. We complete this verification on an annual basis to track our emissions performance.
C8. Energy	Other, please specify: Energy consumption for locomotive diesel fuel	Limited assurance in accordance with the ISAE 3410 standard	A third party has verified the 2021 diesel locomotive fuel consumption in MWh reported in C8.2c. Fuel consumption for our locomotives' accounts for 87% of our total direct fuel consumption. We complete this verification on an annual basis to track our energy performance.
C8. Energy	Other, please specify: Energy consumption for electricity	Limited assurance in accordance with the ISAE 3410 standard	A third party has verified the 2021 energy consumption from purchased electricity C8.2a. The figure reported accounts for 100% of our electricity consumption in our buildings and yards. We complete this verification on an annual basis to track our energy performance.

Carbon Pricing

C11 Carbon Pricing

Carbon Pricing Systems

C11.1 - C11.1b

Applicable carbon trading regulations

System name	Percentage of Scope 1 emissions covered by the ETS • Percentage of Scope 2 emissions covered by the ETS	Period start and end date	Allowances purchased	Verified Scope 1 emissions in metric tons CO_2e	Details of ownership	Comments
Quebec Cap and Trade	4.47% • 0%	January 1, 2021 - December 31, 2021	0	0	Purchases and imports of fossil fuels	In cap-and-trade jurisdictions, all purchases of fossil fuels within the jurisdiction include a carbon price component that is flowed through to CN by our fuel suppliers. In addition, CN must purchase emission allowances for any imports of fossil fuels from outside the cap-and-trade jurisdiction to be consumed within the jurisdiction. In 2021, CN had zero fossil fuel imports in the province of Quebec.
Nova Scotia Cap and Trade	0.96% • 0%	January 1, 2021 - December 31, 2021	0	0	Purchases and imports of fossil fuels	In cap-and-trade jurisdictions, all purchases of fossil fuels within the jurisdiction include a carbon price component that is flowed through to CN by our fuel suppliers. In addition, CN must purchase emission allowances for any imports of fossil fuels from outside the cap-and-trade jurisdiction to be consumed within the jurisdiction. In 2021, CN had zero fossil fuel imports in the province of Nova Scotia.

C11.1c

Tax systems in which we participate

Tax system	Period start date	Period end date	Percentage of total Scope 1 emissions covered by tax	Total cost of tax paid	Comment
BC carbon tax	January 1, 2021	December 31, 2021	11.9%	$30.9 million	Carbon tax obligations are tracked and paid monthly by Accounts Payable with support from the Taxation group.
Canada federal fuel charge	January 1, 2021	December 31, 2021	23.5%	$72.8 million	Carbon tax obligations are tracked and paid monthly by Accounts Payable with support from the Taxation group.

C11 Carbon Pricing

Carbon Pricing Systems (continued)

C11.1d
Strategy for complying with the systems we are regulated by

DESCRIPTION OF STRATEGY FOR COMPLYING WITH THE SYSTEM

Our strategy to comply with the emission trading and tax systems is to ensure we effectively monitor, forecast and plan for the impacts of carbon pricing and regulations on our business. On an annual basis, we report and verify our emissions, track our fuel consumption and import volumes to calculate regulated emissions, and submit the required verified reports, and pay our carbon tax and cap-and-trade liabilities promptly.

EXAMPLE OF HOW THE STRATEGY HAS BEEN APPLIED

For example, within each of the jurisdictions, we track our monthly fuel purchases and consumption data to estimate carbon cost impacts to the Company, as well as to determine our regulatory compliance obligations under the respective cap-and-trade or tax systems. Cap-and-trade compliance obligations are tracked by the Sustainability department, who arrange to participate in the quarterly emissions allowance auctions as required. Carbon tax obligations are tracked and paid monthly by Accounts Payable with support from the Taxation group.

Furthermore, to minimize our compliance risks and carbon price costs, our Fuel Procurement group has continued to follow a strategy to eliminate fuel imports across jurisdictions and source fuel locally as much as possible (except in emergency situations where local fuel is unavailable). In 2021, CN had no diesel fuel imports into the provinces of Quebec or Nova Scotia. In addition, our continued focus on our fuel efficiency and carbon management strategy will further enable us to minimize our exposure to carbon costs in the future.

Project-Based Carbon Credits

C11.2
Project-based carbon credits

We have not originated or purchased any project-based carbon credits within the reporting period.

C11 Carbon Pricing

Internal Price on Carbon

C11.3 - 11.3a
How our organization uses an internal price on carbon (GHG Scope 1)

CN has established an internal shadow price of carbon of $34.89 per metric ton.

CN's objective for implementing an internal carbon price include:

- Navigate GHG regulations
- Stakeholder expectations
- Change internal behaviour
- Drive energy efficiency
- Drive low-carbon investment
- Identify and seize low-carbon opportunities
- Supplier engagement

We have 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 a shadow price across the jurisdictions where we operate simplifies planning.

VARIANCE OF PRICE(S) USED

We review our internal price on carbon annually to account for the range of carbon costs across Canadian provinces that have implemented carbon price mechanisms through carbon taxes and cap-and-trade markets, or that have to adhere to the federal backstop. The annual review considers changes to the pricing schemes as well as our operations.

For business decisions that pertain to a single jurisdiction, such as the decision to import fuel versus purchasing local, we consider the actual carbon cost, yielding a variance of the price from $30 per tCO_2e (Quebec/Ontario) to $45 per tCO_2e (British Columbia).

IMPACT AND IMPLICATION

The use of the carbon price is critical for the development of a sound low-carbon transition plan in support of our carbon emissions reduction target. It is also a key input for scenario planning purposes.

For example, the carbon price is applied by our corporate procurement group to inform business decisions related to the purchase of fuel and propane. Our Sustainability and Tax groups apply the carbon price to ensure we meet our compliance obligations under Canadian regulatory requirements.

We internalize the cost of carbon-based on current and projected carbon tax and cap-and-trade carbon pricing analysis. Based on our analysis up until 2025, we have estimated our carbon price to be on average $34.89 per tonne of carbon in 2021, with an increase to $95 per tonne of carbon by 2025 for our Canadian operations.

Engagement

C12 Engagement

Supplier Engagement

C12.1 - 12.1a
Climate-related supplier engagement strategy

Type of engagement • Details of engagement	Percentage of suppliers by number	Percentage total procurement spend (direct and indirect)	Percentage of supplier-related Scope 3 emissions as reported in C6.5	Rationale for the coverage of our engagement	Impact of engagement, including measures of success
Innovation and collaboration (changing markets) • Collaborate with suppliers on innovative business models to source renewable energy	3%	32%	69%	With 87% of our direct GHG emissions generated from the use of fuel in our rail operations, representing the main source of Scope 1 and 3 emissions and our third largest spend category, we see engagement of our fuel suppliers as an integral part of our climate action plan. As such, we cover all our fuel suppliers, comprising 3% of suppliers managed by the Procurement group, through engagement. These fuel suppliers represent 32% of our managed procurement spend and 69% of our GHG emissions.	**Nature of Engagement:** Driven by clean and renewable fuel regulatory requirements, we are engaging with our fuel suppliers to collect information on the type and percentage renewable blend composition of our fuel supply. Understanding the fuel composition and the associated GHG emissions is critical for us to ensure we comply with renewable fuel regulations in Canada and continue to work towards our climate science targets. **Measure of Success and Threshold:** Last year, we measured our success on this engagement by increasing the overall percentage of biodiesel fuel in our rail locomotives above a threshold of 1.15% – the amount achieved in 2020. We also measure success by participation of at least one major fuel supplier in our testing pilots with locomotive manufacturers on the use of sustainable renewable fuel blends, beyond regulated amounts, in our locomotives, to achieve our target. The regulated amounts of renewable fuel blends vary by jurisdiction across Canada but is generally at 2%. **Impact of Engagement:** In 2021, the impact of our engagement with suppliers was successful. We achieved an overall 2.66% percentage of biodiesel fuel in our locomotives. The continued collaboration with our suppliers enabled our Procurement, Fuel Management and Operations teams to increase our emissions savings from the use of renewable fuels to 125,975 tonnes CO_2e, while simultaneously improving our fuel efficiency by 1.7%. We also announced a partnership with Progress Rail (our locomotive manufacturer) and Renewable Energy Group (REG) (our renewable fuel supplier) 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, important steps into reduce GHG emissions from our existing locomotive fleet. This program will allow CN and Progress Rail to better understand the long-term durability and operational impacts of renewable fuels on existing locomotives, especially in cold weather and to plan needed modifications to fully leverage their usage over the next decade.

C12 Engagement

Customer Engagement

C12.1b
Climate-related customer engagement strategy

Type of engagement • Details of engagement	Percentage of customers by number	Percentage of customer-related Scope 3 emissions as reported in C6.5	Rationale for selecting this group of customers and scope of engagement	Impact of engagement, including measures of success
Education/ information sharing • Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services	100%	0%	We proactively engaged with all our customers committed to carbon management who were interested to learn more about our performance and to help them understand how shipping their goods by rail will benefit their business. Engaging with customers committed to carbon management ensures we align our services with their climate-related objectives and in support of carbon saving strategies. In 2021, the engagement campaign to educate our customers on the climate impacts of our rail services was 100%. The education campaign included providing public forums for our customers to understand how shipping their goods by rail will benefit their business. For example, our web-based carbon calculator – the first of its kind in the industry – is a public forum that allows customers and potential customers to estimate the emissions from rail, marine and truck transportation. As the carbon calculator is a public forum, we assume all customers participate.	**Nature of Engagement:** We engage our customers committed to carbon management to educate them on the climate-related benefits of shipping their goods by rail for their business. **Measure of Success and Threshold:** We measure our success by the increase in the number of requests for our carbon emissions web-based calculator, with an exceedance threshold of 60% – the percentage achieved in 2020. We also measure success by the percentage of in revenues from our truck competitive business, with an exceedance threshold of 56% – the baseline percentage of our revenues from our truck competitive business. **Impact of Engagement:** Last year, the engagement with our customers on the environmental benefits of rail was successful. We received over 9,000 requests for carbon emissions calculations through our web calculator, an increase of more than 65% versus the previous year. Furthermore, the revenues from our truck competitive business increased from 56% in 2020 to 59% in 2021, representing an 3% increase.
Collaboration and innovation • EcoConnexions Partnership program	25%	0%	Launched in 2014, our EcoConnexions partnership program aims to both partner with and recognize customers who are committed to building an efficient and more sustainable future, including leveraging the environmental benefits of shipping heavy freight over long distances by rail rather than truck to reduce emissions. As part of this program, we engage with our top 200 customers to participate in the program, reaching 25% of our customers in 2021, where we have stronger relationships and opportunity to influence climate action.	**Nature of Engagement:** Each year, customers are invited to partake in the EcoConnexions partnership program and submissions are evaluated based on sustainable policies, energy efficiency, reporting to the CDP, and modal shift. Based on the evaluation, we recognize customers committed to building an efficient and more sustainable future. **Measure of Success and Threshold:** We measure our success by the increase in the number of customers participating in the program, with an exceedance threshold of 45 – the number of participating customers in 2020. **Impact of Engagement:** Last year, the EcoConnexions partnership program with our customers was successful. We increased customer participation from 45 customers in 2020 to 55 in 2021, influencing their performance on energy efficiency and carbon reporting. In addition, the engagement also contributed to increasing our market share from customers shifting from truck to our more sustainable rail transportation for long-haul shipments. We have also worked collaboratively with our customers to protect environmental ecosystems. We also increased the number of trees planted in recognition of our customers from 100,000 to 120,000 trees. Since the launch of the EcoConnexions partnership program in 2014, we have planted more than 600,000 trees in Canada and the U.S.

C12 Engagement

Climate-Related Requirements

C12.2 - C12.2a
Climate-related requirements for suppliers as part of our purchasing process

Climate-related requirements are included in our supplier contracts.

Climate-related requirement	Description of this climate related requirement	% suppliers by procurement spend that have to comply with this climate-related requirement	% suppliers by procurement spend in compliance with this climate-related requirement	Mechanisms for monitoring compliance with this climate-related requirement	Response to supplier non-compliance with this climate-related requirement
Setting a science-based target	As part of our climate action plan and consistent with our science-based target, we are engaging with key suppliers on their climate programs. Specifically, our engagement targets our suppliers of major and critical categories, including fuel suppliers, locomotive Original Equipment Manufacturers (OEM), and rail car manufacturers through the request for proposal (RFP) process. The key supplier requirements we assess relate to their carbon commitments, existence of climate science targets, as well as emissions performance. Several mechanisms are in place to monitor climate-related information, including through the RFP process, annual ESG screening as part of the Ecovadis process, annual supplier engagement meetings, and first party verifications.	40%	0%	First party verification Supplier scorecard or rating Supplier self-assessment	Retain and engage

Public Policy Engagement

C12.3
Direct and indirect engagement in activities to influence policy makers on climate-related issues

CN engages directly with policy makers and indirectly through trade associations that could influence policy, law, or regulation that may impact the climate.

The direct and indirect activities that could influence public policy are typically reviewed by the Government and Public Affairs department on an annual basis to ensure alignment with the strategic direction of the business, including our climate change strategic focus areas. Public policy decisions that could impact our overall climate strategy are communicated to the Sustainability team to be validated for consistency with our climate strategy. Where inconsistencies are noted, recommendations are proposed to ensure alignment.

CN's Climate Action Plan, included in our Management Information Circular available on our website is our public commitment to conduct our engagement activities in line with the goals of the Paris Agreement.

C12 Engagement

Public Policy Engagement (continued)

C12.3a

Policy, law, or regulation that may impact the climate that CN engages directly with policy makers

Focus of legislation	Legislation specifics	Geographic coverage • Country/Region	Corporate Position	Details of engagement
Carbon tax	We support provincial, state and federal climate-related regulations within Canada related to carbon taxes that support the Government of Canada's net-zero commitments. This includes: a) Quebec and Nova Scotia GHG cap-and-trade systems, which includes GHG reporting and verification obligations. b) British Columbia and Alberta carbon taxes. c) Government of Canada Federal backstop levy that came into effect in April 2019. d) Canadian Government's Federal Fuel Charge of $15 per tonne yearly from 2023 to 2030, which aligns with the British Columbia, New Brunswick, and Northwest Territories carbon tax requirements.	National • Canada	Support with no exceptions	We believe that involvement with leading policy makers on carbon taxes moves the transportation sector forward in identifying practical solutions that contribute to, and support, future policy developments in a manner that will foster low-carbon economic growth while ensuring significant GHG emission reductions. We engage with various Canadian federal and provincial governments on their cap-and-trade and carbon taxes to position rail freight as a viable low-carbon transportation solution.

C12.3b

Trade associations CN belongs to which are likely to take a position on climate change legislation

CN actively engages with the Railway Association of Canada (RAC) and American Association of Railroads (AAR) and publicly promotes their current positions on climate change. We have evaluated our engagement with these trade associations to ensure alignment with the goals of the Paris Agreement

Trade association	Is our position on climate change consistent with theirs?	The trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position	Funding provided in the reporting year	How we have influenced, or are attempting to influence their position?
Railway Association of Canada (RAC)	Consistent	The Railway Association of Canada (RAC) represents close to 60 freight and passenger railway companies. RAC's mission is to work with governments and communities across the country to ensure that Canada's rail sector remains globally competitive, sustainable, and most importantly, safe. We are a long-standing full member of RAC and actively engaged in initiatives such as the MOU with Transport Canada and the development of emissions targets. CN holds two seats on RAC's Board of Directors. Our Assistant Vice-President of Sustainability is a co-chair of the Environment Committee and works closely with RAC's Policy Analyst and Program Coordinator on matters of policy, emissions regulations, and climate risks and opportunities. RAC, in April 2019, announced that it has signed an MOU with Transport Canada to establish voluntary reduction targets for emissions produced by locomotives in Canada. This is the fourth MOU signed by RAC and the federal government since 1995, and it demonstrates the rail industry's long-time commitment to reducing locomotive emissions. (https://www.railcan.ca/news/fourth-memorandum-of-understanding-mou-signed-between-the-railway-association-of-canada-and-the-federal-government-for-reducing-locomotive-emissions/) In March 2022, RAC published five policy recommendations around sustainability including energy efficiency, clean and renewable fuels, and funding for low-carbon and net-zero technology in the Canadian rail sector. We also supported policy recommendations by RAC to the Government of Canada with respect to the Canadian Clean Fuel Regulation, which included ensuring Environment and Climate Change Canada work with fuel suppliers to ensure that renewable fuel content disclosure is make available, and creating a robust funding program to support research, development and deployment of low-carbon and net-zero technology in the Canadian rail sector.	$3,182,168	Our funding relates to our long-standing membership of the RAC and active engagement in initiatives such as the MOU with Transport Canada and the development of emissions targets. CN holds two seats on RAC's Board of Directors.

C12 Engagement

Public Policy Engagement (continued)

Trade association	Is our position on climate change consistent with theirs?	The trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position	Funding provided in the reporting year	How we have influenced, or are attempting to influence their position?
Association of American Railroads (AAR)	Consistent	Founded in 1934, the Association of American Railroads (AAR) is the world's leading railroad policy, research, standard-setting and technology organization that focuses on the safety and productivity of the U.S. freight rail industry. AAR full members include the 7 Class I freight railroads in the United States, Canada, and Mexico. Working with elected officials and leaders in Washington, DC, AAR advances sound public policy that supports the interests of the freight rail industry to ensure it will continue to meet America's transportation needs. The AAR positions freight rail as being ahead of other land modes of surface transportation when it comes to limiting its carbon footprint. Yet it also advocates and works with its members to enhanced operating practices and rail car components to minimize fuel usage by improving aerodynamics and reducing overall weight, friction between wheels and rail, and total horsepower required for moving the train. The AAR recently released a series of policy proposals in March 2021 aimed at effectively combating climate change. We engage with the AAR as a member of the organization and support them in promoting cleaner, greener, efficient, and environmentally responsible transportation solutions. Our Assistant Vice-President, Sustainability is a member of the Environment Committee and works with the AAR on matters of climate policy, and to position the environmental benefits of shipping heavy freight by rail as well as the industry's efforts to further decarbonize rail operations.	$3,853,967	Our funding relates to our membership with the AAR which includes supporting them in promoting cleaner, greener, efficient, and environmentally responsible transportation solutions.

C12 Engagement

Communications

C12.4

Information CN has published relating to our response to climate change and GHG emissions performance

Publication	Status	Page references	Content elements	Comments
Annual Report	Complete	VI, XIX, 5, 59, 67, 82	Governance Strategy Risks and opportunities Fuel efficiency Other metrics	We publish information on our sustainability initiatives, our fuel efficiency performance (directly relates to our locomotive emissions), as well as business risks related to climate change in our 2021 Annual Report, available on our website www.cn.ca.
Management Information Circular	Complete	42–44	Governance Strategy Risks and opportunities Emissions figures Emission targets Fuel efficiency	We publish information on our Climate Action Plan in our 2022 Management information Circular, available on our website www.cn.ca.
TCFD Report	Underway	1–21	Governance Strategy Risks and opportunities Emissions figures Emission targets	We publish a comprehensive view into how CN understands and manages the risks and opportunities associated with climate change in four sections: Governance, Risk Management, Strategy, and Metrics & Targets. The 2020 TCFD report is available on our website www.cn.ca.
Data Supplement	Complete	2–8, 18, 20	Emissions figures Emission targets Other metrics	We publish statistics related to our carbon inventory, emissions intensity, emissions targets and other energy and fuel efficiency metrics in our 2021 Delivering Responsibly Data Supplement, available on our website www.cn.ca.
Sustainability Report	Complete	14–32	Governance Strategy Risks and opportunities Emissions figures Emission targets Other metrics	We publish a comprehensive overview of how we drive sustainability including progress around the SDGs, our climate change strategy, our carbon reductions, and low-carbon transition plan, as well as building resiliency and biodiversity. The 2020 Delivering Responsibly Sustainability Report is available on our website www.cn.ca.

Biodiversity

C13 Biodiversity

Board and Executive Responsibility

C15.1

Board-level oversight and/or executive management-level responsibility for biodiversity-related matters

At CN, we have formalized board, executive and management level oversight, roles and responsibilities for biodiversity-related issues.

At the board level, the Governance, Sustainability and Safety Committee (GSS) of the Board is responsible for the Company's environmental sustainability, which includes our biodiversity-related issues. The Committee is responsible for monitoring performance against our biodiversity goals, which includes our current target to plant 3 million trees by 2030.

At the executive level, the Executive Vice-President and Chief Operating Officer (COO) is the highest-level management position with direct responsibility for environmental issues, including biodiversity-related targets.

At the management level, our Sustainability Committee comprises the Assistant Vice-President and senior management-level representatives from relevant business units and corporate functions that have oversight over or can influence critical levers in managing our environmental impacts, including those related to biodiversity.

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 program, we help communities establish green spaces and tree plantings. 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.

Commitments and Initiatives

C15.2 - 15.6

Commitments, initiatives, monitoring of performance and reporting on biodiversity

We routinely assess impacts on biodiversity in both our upstream and downstream value chain. This forms part of our actions to progress our biodiversity-related commitments covering land/water management, education and awareness.

We are committed to investing in projects that generate broader benefits for nature and society by greening communities and First Nations along our network as well as mass reforestation projects.

Our current goal is to plant 3 million trees by 2030. In 2021, CN planted 112,000 – which represents a 77% progress towards our 2030 target-for a total of 2.3 million trees since 2012.

Contact

We welcome comments, questions and feedback on this report. Please contact:

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FORWARD-LOOKING STATEMENTS: Certain statements included in this report are "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.

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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 ABOVE: Moose Lake, BC (photo by CN Employee Tim Stevens) **ON THE COVER:** Aberdeen, SK

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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