



2022 Report on Climate-related Risks and Opportunities

Reporting against the recommendations
of the Task Force on Climate-related
Financial Disclosures





Photo MATHEW KREISER

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1. Introduction

1.1 About VIA Rail

VIA Rail operates Canada’s national passenger rail service on behalf of the Government of Canada, meeting customer needs for intercity rail services and ensuring rail transportation services to regional and remote communities. To connect more than 400 communities, the Corporation runs more than 325 train trips¹ each week, covering a 12,500-kilometre network. Since its inception in 1977, VIA Rail operates as an independent Crown corporation, striving to offer a safe, accessible, efficient, reliable, sustainable, and environmentally friendly passenger rail service.

At VIA Rail, we are committed to sustainability and to the communities we service. Our 2021-2025 sustainability plan is based on six priorities that drive us to embed environmental, social and governance performance in all our operations to be future ready and to be more resilient.

1. Based on train trips operated in 2022.

Environmental

Climate Action

Mitigate impact on climate change and ensure readiness to adapt

Environmental Management

Minimize waste in our operations and drive circularity

Social

Employee Mobilization

Support employees to become sustainability ambassadors

Community Engagement

Further engage with community partners to extend our reach

Governance

Responsible Sourcing

Leverage sourcing as a key driver of sustainable practices

Credibility and Recognition

Demonstrate excellence in sustainability

1. Introduction

2. Examining our risks and opportunities

3. Decarbonizing our operations

4. Governance and risk management

We recognize the important responsibility we have to reduce the environmental impacts of our own operations and ensure the resilience of our buildings and infrastructure to climate change. This is why one key priority of our sustainability plan focuses on Climate Action and it is supported by three strategies:

1. Upgrade greenhouse gas (GHG) emissions reduction targets to support Canada's 2050 net-zero emissions ambition.
2. Improve fuel and energy efficiency in all operations.
3. Complete a review of climate change risks and implement an action plan.

As outlined in our sustainability plan, we are also actively increasing our understanding of climate risks and opportunities and are working on better integrating climate-related questions into our governance and internal processes, as it relates to our operations and the way we service our customers.

This report intends to better inform our stakeholders on climate-related risks and opportunities affecting VIA Rail's operations and supports our commitment to provide meaningful and transparent sustainability information to our stakeholders. It also meets the Canadian government's requirement for Crown corporations to demonstrate climate leadership by reporting on their risks and opportunities related to climate change, in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). It is a first report which will expand over time as we deepen our understanding of climate-related risks and opportunities and as we work on integrating them into critical governance and decisional mechanisms.

2. Examining our risks and opportunities

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Our climate is changing rapidly and impacts caused by climate change are broad and systemic. VIA Rail is anticipating increasingly challenging climate conditions for which we need to prepare, as well as changes to society and to our business environment as Canada transitions to a low-carbon economy.

Following guidance from the TCFD, VIA Rail is considering climate-related risks and opportunities from two angles:

1. physical risks resulting from climate change that can be acute (event-driven) or chronic (long-term); and
2. transition risks and opportunities that arise from the needed transition to a low-carbon economy.

The risks and opportunities that stand out most for VIA Rail are summarized in the three following tables. We also detail our approach to identifying and evaluating these risks in *Section 4.2 Risk management*.

2.1 Climate-related physical risks

VIA Rail regularly reviews and updates its operational processes and readiness plans, with the goal of improving its resilience to potential increases in climate hazards in the future. VIA Rail's Winter Readiness Playbook provides winter readiness operating plans to maintain service during difficult weather conditions and helps guide VIA Rail employees on business policies to ensure the safe and effective movement of customers. Similarly, the Seasonal Readiness Playbook provides a guide to effectively respond to severe weather events in spring, summer, and fall.

In December of 2022, VIA Rail's operations were severely impacted by both an intense winter storm and the derailment of a freight train operating on the same tracks as our passenger trains. Considering these events, VIA Rail reviewed its performance with the help of outside experts on a wide range of issues including our planning for storms, our operational response, our protocol around customer care and overall communications as well as how we can better accommodate our passengers in order to get them to their destination in similar situations. This exercise will help VIA Rail build resilience in view of increased weather events caused by climate change.

Climate-related physical risks

| Risk type and impact level | Risk | Potential impact to VIA Rail |
|---|--|---|
| <p>Acute</p> <p> High</p> | <p>Rise in extreme weather events The risk that more frequent and more severe climate hazards such as strong winds with heavy rain fall (flooding), snowfall, wildfires or others could cause delays in service and damage to infrastructure.</p> <p>The increase in severe weather events, such as storms and wind gusts, could have a direct impact on trains in service, increasing the risk of electrical and signal system failure, and malfunctioning.</p> | <ul style="list-style-type: none"> • Delays or interruptions in operations and service, as well as schedule changes negatively impacting VIA Rail’s offering, on-time performance and revenue generation. • Reduction in demand and revenue due to passenger rail seeming less reliable or appealing as a transportation option. • Increase in operating costs, including when operating on host railways’ infrastructure (VIA Rail owns only 3% of the track we use). • Increase in investments to adapt existing infrastructure, including stations, maintenance centres and tracks owned by VIA Rail, and to ensure that new infrastructure is resilient to such events. • Increase in lead times and cost volatility due to climate-related disruptions to the supply chain. |
| <p>Chronic</p> <p> High</p> | <p>Increase of weather variability The risk that increasingly variable weather patterns, such as a rise in temperature and freeze-thaw cycles could impact VIA Rail’s operations, facilities, infrastructure and workforce.</p> <p>Extreme weather such as extreme heat could prevent personnel from working as well as impact signal system, infrastructure and building materials.</p> | <ul style="list-style-type: none"> • Delays or interruptions in operations and service, as well as schedule changes negatively impacting VIA Rail’s offering, on-time performance and revenue generation. • Reduction in demand and revenue due to passenger rail seeming less reliable or appealing as a transportation option. • Increase in operating costs related to cooling systems, track maintenance as well as electrical and signal system monitoring and upkeep. • Impacts related to health or availability of VIA Rail workforce due to extreme temperatures. |

2.2 Climate-related transition risks and opportunities

Climate-related transition risks

| Risk type and impact level | Risk | Potential impact to VIA Rail | Level of control / influence over risk |
|---|--|--|--|
| Policy and legal  High | Increased carbon pricing The risk that increased carbon pricing could adversely affect the cost of traction fuel, as well as other energy needs and supply chain costs (rolling stock, customer food, etc). | <ul style="list-style-type: none"> Increase in operating cost due to VIA Rail's overall usage of diesel fuel, for which the cost may increase due to carbon pricing. | No influence |
| Policy and legal  High | New regulations prescribing increased efficiency The risk that new regulations could require VIA Rail to upgrade or replace its rolling stock or vehicle fleet, resulting in increased costs. | <ul style="list-style-type: none"> Increased investment required for more fuel-efficient rolling stock. | Some influence |
| Technology + Market + Reputation  High | Complexity of transitioning rolling stock to lower-carbon technology The risk that moving to cleaner technology could come with high complexity and costs, and that failing to do so could increase operational costs and might negatively impact VIA Rail's reputation as a low-carbon transporter. | <ul style="list-style-type: none"> Increase in cost and complexity for cleaner technology. Limitations in technology options as VIA Rail does not own most of the infrastructure it operates on. Reduction in VIA Rail's attractiveness as a low-carbon transporter due to slow transition to cleaner technology. | Some influence |
| Technology  Moderate | Competition for new sources of energy The risk that VIA Rail might encounter clean energy supply issues and increased cost, as many industries are looking to decarbonize their operations. | <ul style="list-style-type: none"> Lower availability of clean energy sources, such as biofuels, potentially jeopardizing VIA Rail's decarbonization initiatives. Rising energy costs. | No influence |

Climate-related transition opportunities

| Opportunity type and impact level | Opportunity | Potential impact to VIA Rail | Level of control / influence over the opportunity |
|--|---|--|---|
| Resource efficiency + Energy source + Products and services  High | Implementation of energy efficiency and fuel substitution measures The opportunity to reduce operational costs and GHG emissions through measures including increased efficiency, fuel switching and the use of new technologies. | <ul style="list-style-type: none"> Reduction in fuel consumption, GHG emissions, and operational costs. Increase in demand and revenue due to passenger rail’s appeal as a low-carbon transportation option. | Strong influence |
| Products and services  High | Replacement of rolling stock on long haul and regional routes The opportunity to replace fleet on long haul and regional routes with a more energy efficient and less polluting option. | <ul style="list-style-type: none"> Reduction in operational costs and GHG emissions possible through a reduction of fuel consumption. | Some influence |
| Market  High | Demand for low-carbon and efficient transport solution The opportunity to attract significant market share of travellers with existing and new low-carbon, flexible and comfortable transportation options. | <ul style="list-style-type: none"> Increase in demand and revenue due to passenger rail’s appeal as a low-carbon transportation option. | Strong influence |



3. Decarbonizing our operations

3. Decarbonizing our operations

3.1 Transition plan

Passenger rail helps reduce the transportation sector's impact on climate change. With bold climate action being a priority for Canada, VIA Rail has an important role to play in driving the transition towards a low carbon economy. VIA Rail reached its objective of reducing GHG emissions by 20% by 2020 compared to 2005 and is now progressing towards its objective to reduce GHG emissions by 30% or more by 2030. We are also currently reviewing this target to ensure it is aligned with Canada's commitment to net-zero emissions by 2050.

However, the road towards deep decarbonization of rail in Canada continues to be significantly challenging, accentuated by the complexity of operations and by the maturity of available technologies. As part of its sustainability plan, VIA Rail launched in 2022 the development of a decarbonization plan to help us identify short, medium and long-term measures, as well as major operational, financial and technological challenges in decarbonizing our operations. We already completed two important milestones:

1. A thorough review of our GHG emissions; and
2. An assessment of the preliminary upgraded GHG emissions reduction target and supporting improvements needed.

VIA Rail's decarbonization plan aligns with the trajectory outlined in the Rail decarbonization roadmap for Canada developed through the Railway Association of Canada and Transport Canada. Based on the conducted study, the proposed net-zero trajectory for rail is set to unfold in three overlapping stages:

- 1. "Efficiency improvements:** Railway decarbonization efforts have thus far been centered on enhancing equipment and infrastructure efficiency, and this must remain a top priority. All efficiency gains will assist in reducing the burden of decarbonization on fuels and propulsion technologies.
- 2. Low-carbon fuels:** The use of renewable content in diesel is currently regulated by the federal and provincial governments to a minimum of 5%; higher-blend rates are now technically possible and are anticipated to be increasingly authorized and used by 2030.
- 3. Alternative propulsion:** Alternative propulsion technologies, like electrification via battery or catenary systems, or hydrogen fuel cells, will eventually become commercially available and prevail in the longer term, as we reach the limits of what low-carbon fuels and efficiency measures can offer to reduce GHG emissions."

The timeframe of these stages aligns with Canada's climate strategy and commitment to net-zero emissions by 2050.

3.2 GHG profile

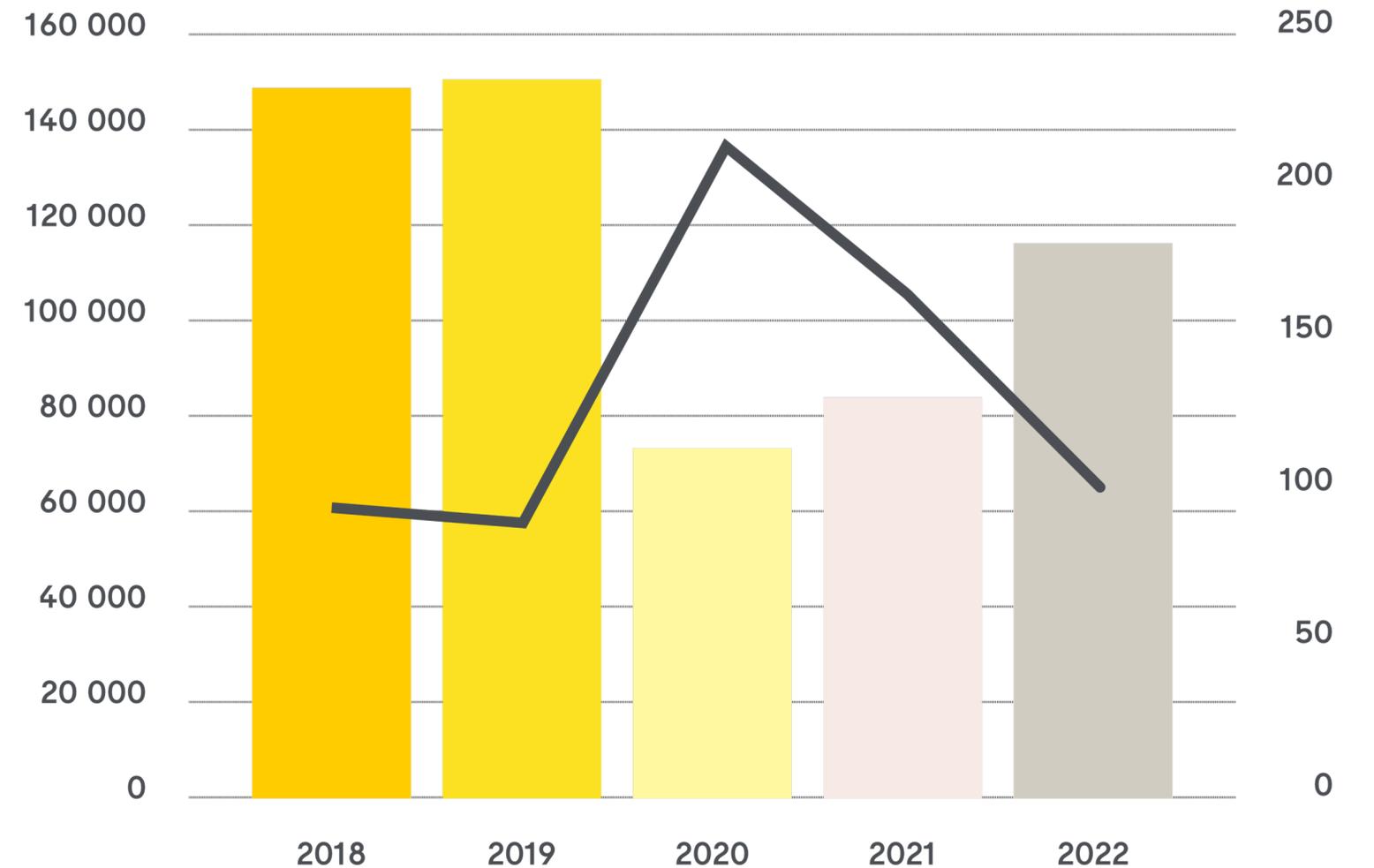
VIA Rail’s GHG emissions reporting is based on the ISO 14064 standard and applies emission factors from the latest Environment Canada National Inventory Report: greenhouse gas sources and sinks. Our GHG emissions inventory includes direct emissions (scope 1) and indirect emissions (scope 2)¹. We understand that our climate impact goes well beyond the strict perimeter of our direct operations. As such, VIA Rail completed the mapping of all other indirect emissions (scope 3)² in its value chain in 2022 and plans to integrate material scope 3 emissions in its inventory starting in 2023.

1. Scope 1 emissions relate to GHG emissions from combustion of fossil fuels and refrigerant releases at facilities owned by VIA Rail (maintenance centres, stations and offices) and owned mobile sources (rail locomotives and road vehicles). Scope 2 emissions relate to emissions from the generation of electricity and steam purchased and consumed at VIA Rail’s facilities.

2. Scope 3 emissions include all other indirect emissions not included in Scope 1 and Scope 2 and that occur in the value chain of a reporting company, including both upstream and downstream emissions.

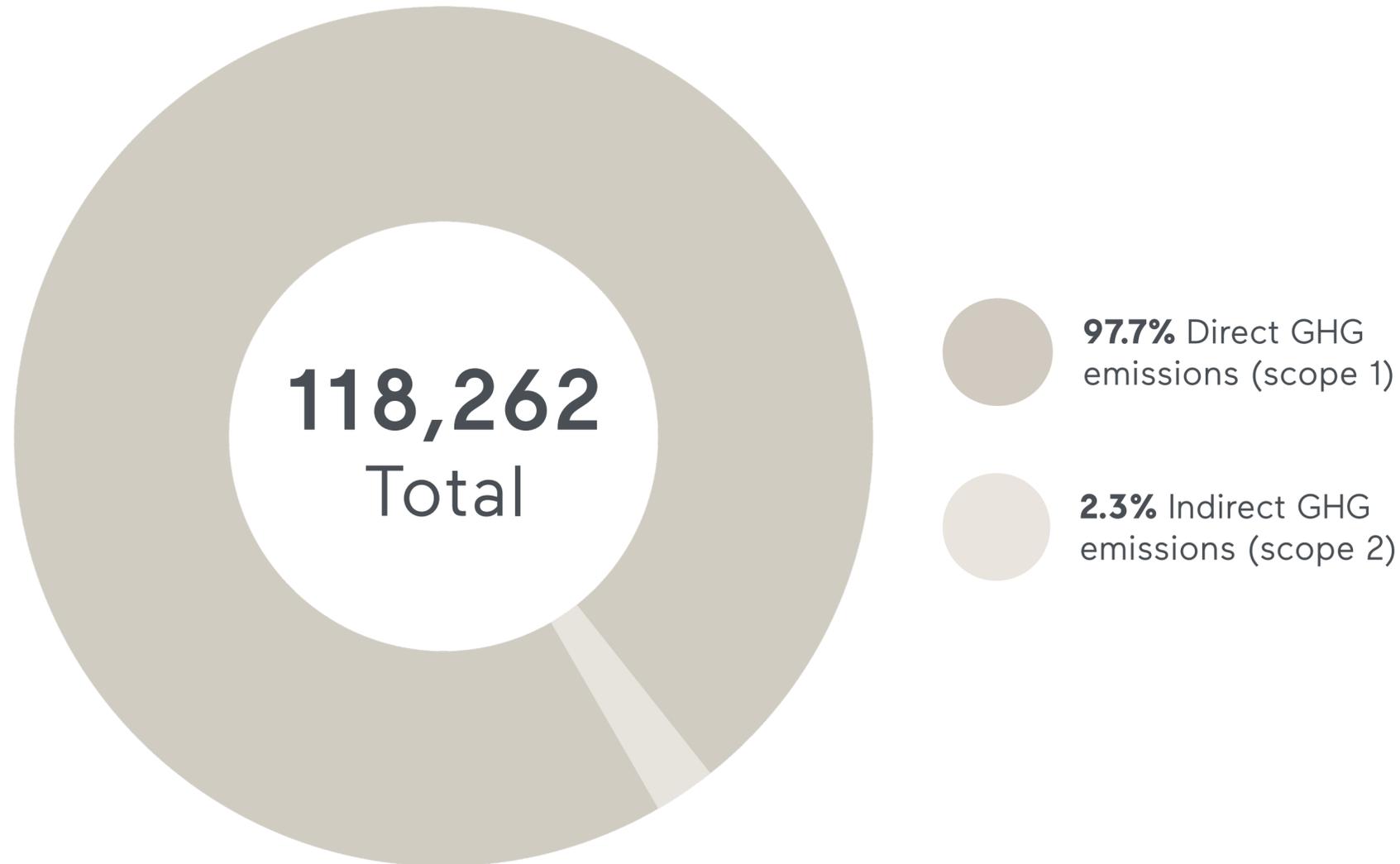
3. Due to COVID-19 restrictions, there was a sharp decline in operating frequencies and services, as well as in passenger traffic from 5 million in 2019 to 1.15 million in 2020, which caused absolute GHG emissions to decrease and GHG emissions intensity to increase drastically.

VIA Rail’s GHG Emissions³

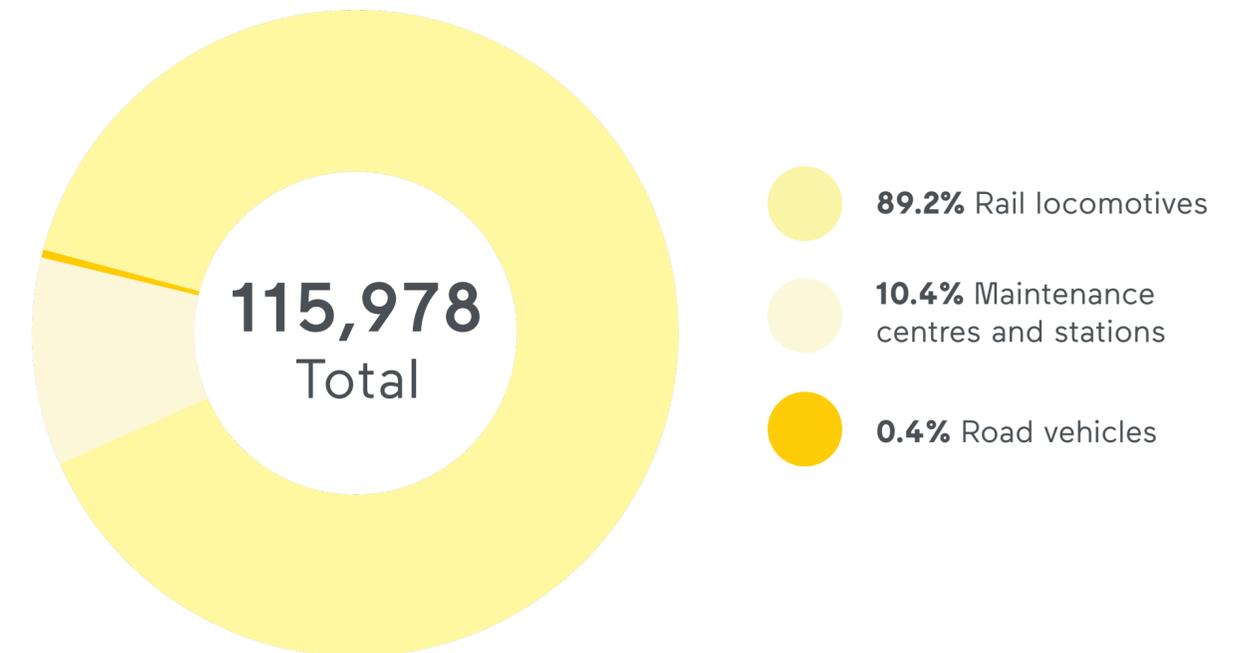


LEFT : ■ GHG emissions (Metric tonnes of CO₂e). RIGHT : ▲ GHG emissions intensity (Metric tonnes CO₂e/million passenger-kilometre)

Total 2022 GHG Emissions (Tonnes of CO₂e)



Direct GHG emissions (scope 1)



3.3 GHG reduction case studies

Fuel economy through artificial intelligence

In 2022, VIA Rail completed a pilot project through the Innovative Solutions Canada Testing Stream in collaboration with Transport Canada and start-up RailVision Analytics to test EcoRail, an artificial intelligence-enabled software.

EcoRail monitors driving behavior between station stops to determine improvements that will reduce fuel consumption. The software analyzes several variables, including the equipment being used, the season, and the schedule, to recommend the most fuel-efficient train handling behavior without affecting travel time. The initial six-month testing with locomotive engineers in VIA Rail’s simulators confirmed a potential reduction of up to 15% in fuel consumption and associated GHG emissions.

These positive results prompted VIA Rail to extend the pilot project at the end of 2022 and test the application in real train operations starting in 2023.

Corridor fleet replacement

VIA Rail’s Corridor Fleet Replacement program, which was introduced in 2018, will enable the Corporation to have cleaner and lower emission operations in the Québec City – Windsor corridor.

The new Corridor fleet locomotives comply with Tier 4 emission regulations set by the Environmental Protection Agency (EPA), which allow for a 85%-95% reduction in particulate matter (PM) and nitrogen oxide (NOx) emissions and will therefore significantly improve air quality. The locomotives have an electrodynamic braking system to lower overall fuel consumption. Additionally, it will be bidirectional, lowering emissions and turnaround times.

In addition to being one of the most environmentally friendly fleets in North America, it will provide our customers with an unparalleled, barrier-free, and accessible travel experience.



4. Governance and risk management

4. Governance and Risk management

4.1 Board and management oversight

Board of Directors

The Board of Directors (Board) oversees VIA Rail and holds management accountable for the Corporation's performance, long-term viability and the achievement of its objectives. The Board is accountable to VIA Rail's shareholder, the Government of Canada, and reports to Parliament through the Minister of Transport. It is notably responsible for approving VIA Rail's strategic direction and priorities, as well as the Corporate Plan, and for ensuring that key business risks are identified with adequate treatment plans and management systems put in place.

With respect to VIA Rail's Environmental, Social and Governance (ESG) strategy, the Board monitors its development and implementation, as well as its integration into VIA Rail's management, operations, and decisions. It also monitors VIA Rail's compliance with ESG-related statutory and regulatory requirements and industry standards, including ones associated to climate change, and for ensuring that where applicable treatment and programs are in place. In addition, the Board approves annually how management reports on ESG performance, which includes VIA Rail's sustainability and TCFD related information. Progress on VIA Rail's sustainability plan and on its Climate Action priority is also reviewed periodically by the Board.

The Board is responsible for overseeing and approving the overall Enterprise Risk Management (ERM) Framework and ERM Policy at VIA Rail. Once a year, Board members review the enterprise risk universe and risk responses and identify top strategic risks to be monitored. An enterprise risk update is provided during quarterly Board meetings to keep the Board informed of the evolution and status of top strategic risks, which include ESG-related risks.

The Board has established various committees, including the ones listed below. In addition to the activities described, each committee identifies, evaluates and assesses risks related to its responsibilities.

- **The Audit & Pension Investment Committee** (Audit Committee) is responsible, amongst others, for overseeing VIA Rail's internal and external audit process as well as its financial reporting and disclosure. The Audit Committee also reviews financial components and risks associated with VIA Rail's five-year Corporate Plan and annual operating and capital budgets, which could be influenced by climate-related risks and opportunities as these continue to be integrated into the business strategy.
- **The Stakeholder Engagement and Communications Committee** (Stakeholder Committee) oversees VIA Rail's stakeholder engagement initiatives, including communications and marketing strategies, key corporate reports such as the TCFD report, its ESG strategy, as well as VIA Rail's participation in the High Frequency Rail (HFR) Project.

• **The Major Projects / Fleet Modernization Committee** (Major Projects Committee) is responsible for overseeing and monitoring major projects and programs, such as the purchase and conditioning of a new Québec City – Windsor corridor fleet. The Major Projects Committee is also responsible for overseeing policies, practices and procedures regarding management of major projects, as well as monitoring capital spending.

Management Committee

The Management Committee is composed of VIA Rail’s core executive team. As a member of the Management Committee, the Chief Communications and Marketing Officer (CCMO) is responsible for VIA Rail’s sustainability plan, which includes reporting on progress in meeting GHG emissions targets and the oversight of the integration of climate-related risks in governance mechanisms. The CCMO reports directly to the President and Chief Executive Officer.

Within the Management Committee, the Chief Legal & Risk Officer (CRO) supervises the implementation of the ERM program. As part of the ERM governance, each risk theme is assigned to a Management Committee member or to a senior team member (Vice-President, Senior Director or Director level) who is considered as the accountable executive.

4.2 Risk management

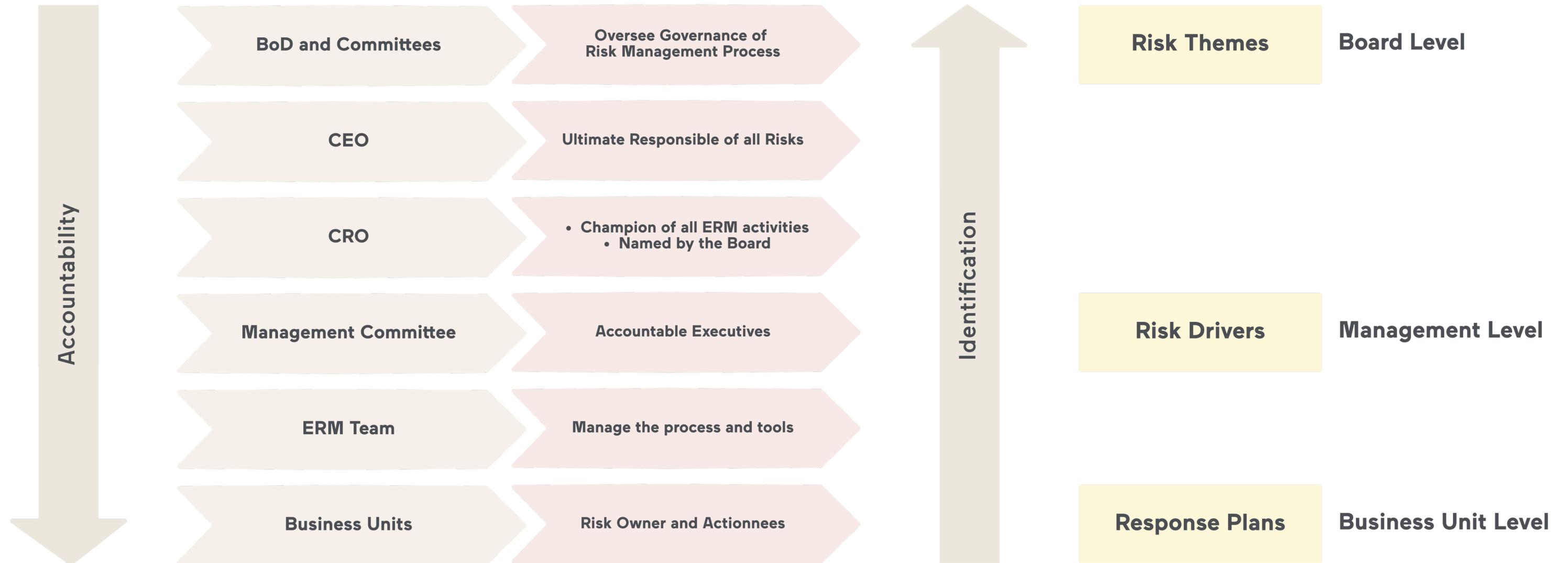
VIA Rail manages its risks based on the processes of ERM, project risk management and resiliency planning. In 2021, VIA Rail crystallized a new ERM reporting format. The improved governance structure allows for enhanced oversight from the Board of risk levels, perceived effectiveness of treatment plans, residual risks and executive accountability. It’s also more agile to assess and monitor risks, as well as supporting better decision-making in order to achieve the Corporation’s objectives.

In accordance with the improved governance framework, a three-tier approach has been implemented to identify, assess, and address (1) risk themes, (2) risk drivers and (3) response plans.

Risk themes represent key enterprise risks ranked from low to critical, according to their health and safety, financial, environmental, clientele, and human resources impacts. They are examined at the Board level. The Management Committee maintains oversight on key risk drivers and is responsible for assigning relevant risk owners to ensure appropriate risk management as well as the effectiveness of associated treatment plans.

Along with the ERM team, accountable executives conduct an annual enterprise risk identification exercise to review existing risk themes and risk drivers and identify new ones if need be. They also evaluate and review risk levels on an annual basis. On a quarterly basis, the ERM team updates the Management Committee on the status of treatment plans, controls and Key Risk Indicators (KRIs). ESG-related risks and broad climate-related risks encompassed in this enterprise-wide framework are subject to the same control and management procedures as other risk themes.

Risk management framework



ESG and climate-related risks

Currently, an ESG risk theme is part of VIA Rail’s ERM framework and high-level climate-related risks are part of the enterprise-wide risk universe under the risk driver Climate Action, which VIA Rail has identified as one of its top strategic risks for 2022-2023. As part of its initial response, more granular approaches to identifying and evaluating climate-related risks are being developed to cover physical and transition risks and opportunities.

For physical risks, a risk assessment was conducted in 2019 to gain a better understanding of the physical climate-related risks that could affect our business, our infrastructure, and our people. This risk assessment covered a selection of important buildings and infrastructure that VIA Rail owns, including 10 stations, 4 maintenance centres and around 300 kilometres of track. Not included in this assessment are the equipment and infrastructure owned by our service delivery partners, including most of the tracks our trains operate on.

The potential impacts of climate change were studied under two different climate scenarios and through climate variables such as heavy snowfall, freezing rain and high temperatures. The evaluation will allow us to integrate key findings in our ERM framework and focus on building resiliency for our buildings and infrastructure, while mitigating potential service impacts in the most affected regions.

For transition risks, a preliminary exercise was conducted in 2022 to map out key risks and opportunities and identify the most significant through a strategic workshop involving VIA Rail senior representatives from Sustainability, Communications, Legal, Finance, and Health and Safety, amongst others. These identified risks and

opportunities are a first step towards further exploring transition scenarios towards net-zero emissions commitment by 2050.

VIA Rail understands that climate-related risks could impact other risks that are already part of its enterprise risk universe. Physical risks that are more operational in nature could affect the risk level and response plans at the Business Unit level, while some transition risks such as transitioning to a low-carbon propulsion rolling stock are already directly integrated into the ERM framework. Risks and opportunities identified through these two approaches are being shared with different teams across the organisation so that they can be addressed at the right level.

As we evolve our governance and processes to better integrate climate-related risks in coming years, we will ensure we keep our stakeholders informed through our TCFD reporting.

on board

for

good