Transportation Providers Sustainability Initiatives

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CIFFA
Forging Alliances

This report outlines the sustainability efforts of several prominent transportation providers across the air, ocean, and rail sectors in Canada. Each section highlights the initiatives undertaken by these carriers, their stated goals, and, where available, measurable results in reducing environmental impact and advancing sustainable practices. The report aims to provide a comparative overview of how different modes of transportation are addressing climate and environmental challenges. It is intended for educational purposes only, and each company must independently determine whether and how to adopt and implement any sustainability practices discussed herein.

Contents

Airline Carriers

Air Canada

- https://www.aircanada.com/ca/en/aco/home/about/corporate-responsibility.html#/

Key Initiatives:

- **Sustainable Aviation Fuel (SAF) Usage:** On Earth Day 2022, Air Canada dedicated SAF to four flights, reducing greenhouse gas emissions by approximately 39 tonnes of CO_2e.
- **Fleet Modernization:** The airline agreed to purchase 30 ES-30 electric-hybrid regional aircraft under development by Heart Aerospace, with expected service entry in 2028.
- **Direct Air Capture Investment:** Air Canada invested $6.75 million in Carbon Engineering to support the advancement of direct air capture technology.

Carbon Offsetting Program:

- **CHOOOSE Partnership:** In 2022, Air Canada partnered with CHOOOSE, a global climate technology company, to offer customers the option to purchase verified carbon offsets through the airline's Canadian and U.S. booking websites.

Waste Reduction Efforts:

- **Single-Use Plastics:** Since 2019, Air Canada has removed 47.8 million single-use plastic items from flights.
- **Textile Recycling:** The airline has recycled 16.8 tonnes of aircraft textiles since 2019.

Emissions Reduction Targets:

- **Net-Zero by 2050:** Air Canada has committed to achieving net-zero emissions by 2050.
- **Interim Goals:** The airline aims to reduce its greenhouse gas emissions by 20% by 2030 and 30% by 2040, compared to 2019 levels.
- **CORSIA:** subject to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), a global initiative by the International Civil Aviation Organization (ICAO) that requires airlines to offset emissions from international flights above 2020 levels

British Airways

- https://www.britishairways.com/content/en/ca/information/about-ba/ba-better-world/planet

Carbon Offsetting and SAF Initiatives:

- Carbon Removals Purchases: British Airways has committed to purchasing over £9 million worth of carbon removal credits as part of a six-year agreement, aiming to become the largest airline purchaser of carbon removals.
- Carbon Removal Projects: The airline is investing in projects such as enhanced rock weathering and reforestation to remove CO_2 from the atmosphere.
- Carbon Offsetting Program: British Airways offers customers the opportunity to purchase carbon removal credits through its online platform, CO_2llaborate

Emissions Reduction Goals:

- Net-Zero by 2050: British Airways aims to achieve net-zero emissions by 2050, with a focus on accelerating action to 2030.

Delta Air Lines

- https://www.delta.com/us/en/about-delta/sustainability

Carbon Offsetting and SAF Initiatives:

- SAF Procurement: Delta has secured long-term offtake agreements for over 200 million gallons of SAF annually, aiming for 10% SAF usage by 2030.
- Sustainable Flight Demonstrator Program: Delta has joined this program to help develop new aircraft designs aimed at reducing fuel burn and emissions.

Emissions Reduction Achievements:

- Fuel Efficiency Improvements: Delta has improved fleet-wide fuel efficiency by 5.5% since 2019.
- Electrified Ground Support Equipment: The airline has deployed 1,647 new electric ground service equipment units since 2020, with 31% of its critical ground service equipment fleet now electrified.

Lufthansa Group

- https://www.lufthansagroup.com/en/responsibility/climate-environment.html

Carbon Offsetting and SAF Initiatives:

- Fuel-Saving Projects: Lufthansa Group implemented 67 fuel-saving projects, resulting in a permanent elimination of 25,100 tonnes of CO_2 emissions.
- Sustainable Aviation Fuel Use: The group is investing in SAF to reduce its carbon footprint.

Emissions Reduction Achievements:

- Fleet Optimization: Lufthansa has adjusted aircraft deployment on specific routes by aligning aircraft size and frequency with passenger demand trends. This allows for more fuel-efficient operations, such as deploying newer, lower-emission aircraft and consolidating flights on underperforming routes
- Weight Reduction Initiatives: The group has implemented weight reduction measures to decrease fuel consumption.

United Airlines

- https://www.united.com/en/ca/fly/company/responsibility/our-environmental-commitment.html

Carbon Offsetting and SAF Initiatives:

- Sustainable Flight Fund: United Airlines has established a $200 million fund to support the development of SAF and other sustainable aviation technologies.
- Eco-Skies Alliance: This program partners with corporate customers to co-invest in SAF, helping to reduce the "green premium" associated with SAF.

Emissions Reduction Goals:

- Net-Zero by 2050: United has committed to achieving net-zero emissions by 2050.
- SAF Usage Targets: The airline aims to procure more than 400 million gallons of SAF annually by the end of 2030.

WestJet

- https://www.westjet.com/en-ca/who-we-are/environment

Emissions Reduction Achievements:

- **Fuel Emissions Intensity:** In 2023, WestJet reported an 11% reduction in fuel emissions intensity compared to 2019 levels.
- **Fleet Modernization:** The airline operates one of the youngest and most fuel-efficient fleets in North America, including the Boeing 737 MAX, which is approximately 13% more fuel-efficient than its predecessor.

Sustainable Aviation Fuel (SAF) Initiatives:

- **SAF Flight Program:** In 2022, WestJet operated 40 flights from San Francisco to Calgary using SAF, reducing greenhouse gas emissions by 186 tonnes.
- **SAF Advocacy:** WestJet is a founding member of the Canadian Council for Sustainable Aviation Fuels (C-SAF), advocating for the development and deployment of SAF in Canada.

Operational Efficiency Measures:

- **Winglet Technology:** WestJet was a North American pioneer in installing winglets on its aircraft, reducing fuel consumption by up to 2.7% per flight.
- **Aerodynamic Enhancements:** The airline partnered with Aero Design Labs to modify aircraft for improved fuel efficiency through drag reduction.
- **CORSIA:** subject to the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), a global initiative by the International Civil Aviation Organization (ICAO) that requires airlines to offset emissions from international flights above 2020 levels

Ocean Carriers

CMA CGM Group

- https://www.cma-cgm.com/sustainability

Key Initiatives:

- Carbon Neutrality by 2050: CMA CGM targets carbon neutrality by 2050, with intermediate objectives including reducing CO_2 emissions per transported container by 40% by 2030.
- Fleet Modernization: The company is modernizing its fleet with LNG-powered vessels, and exploring future fuels like bioLNG, hydrogen, and ammonia.
- Digital and Data Solutions: CMA CGM offers "Green Corridors" and "e-commerce" solutions to reduce carbon footprints in the supply chain. The company also leverages AI to optimize fuel consumption and routing.
- Eco-Design Ships: The company has started deploying ships that reduce fuel consumption with optimized hull designs and advanced air lubrication systems.

Measurement Results:

- 2022: CMA CGM reduced its CO_2 emissions by 6.5% per container carried.
- LNG Fleet: As of 2023, CMA CGM has 20 LNG-powered vessels, which emit 20-25% less CO_2 compared to traditional ships.
- Partnerships for Carbon Capture: CMA CGM has partnered with other industry players to explore carbon capture solutions.

Carbon Offsetting Program: CMA CGM | CARBON OFFSET

- CMA CGM offers a Carbon Neutral Shipping program. This initiative allows customers to offset their shipments' carbon footprint by investing in projects that generate measurable reductions in CO2 emissions.
    - Projects supported: CMA CGM partners with projects that focus on carbon sequestration, renewable energy, and energy efficiency. They focus on projects that are certified by recognized bodies such as Gold Standard and VCS.
    - Strategic investments: In addition to offsetting, CMA CGM is exploring alternative fuels (like LNG and biofuels) and working toward technological innovations for reducing emissions.
    - Sustainability commitment: As part of their sustainability strategy, CMA CGM is also focusing on achieving net-zero emissions by 2050, aligning with broader climate action goals.

- By choosing CARBON OFFSET, you will receive your personalized offsetting declaration confirming you have offset the carbon emissions of your maritime transport through a portfolio of projects carefully selected by CMA CGM. The Group has purchased Verified (or Certified) Emission Reductions (VERs or CERs), which are then removed from an official registry, such as Verified Carbon Standard.

COSCO Shipping Lines

- http://www.coscoshipping.com/english/sustainability

Key Initiatives:

- Emission Reduction Strategy: COSCO aims to achieve a 10% reduction in carbon intensity by 2025 (compared to 2020 levels) and 40% by 2030.
- Alternative Energy Research: COSCO is investing in the use of LNG, hydrogen, and biofuels, and exploring zero-emission technologies like wind and solar energy to power vessels.
- Green Shipbuilding: The company is also focused on designing eco-friendly vessels with lower fuel consumption and carbon footprints.
- Digitalization: The integration of advanced digital systems for route optimization, fleet management, and fuel consumption tracking.

Measurement Results:

- 2021-2022: COSCO reduced carbon emissions by 8.5% per container transported.
- Fleet Transition: By 2023, COSCO operated over 20 LNG-powered ships and committed to further expansion by 2030.

Carbon Offsetting Program: Environment

- COSCO SHIPPING Lines offers the EcoShipping service, which allows customers to offset the CO2 emissions associated with their shipments.
    - Carbon reduction strategy: COSCO's EcoShipping service focuses on offsetting emissions by funding projects that reduce or capture CO2. These can include renewable energy projects, reforestation, and methane capture.
    - Commitment to sustainability: COSCO is actively working on introducing low-carbon technologies into its fleet, as well as looking into cleaner fuels and energy-efficient shipping practices.

Evergreen Marine

- https://www.evergreen-marine.com/sustainability

Key Initiatives:

- Green Vessel Fleet: Evergreen has been transitioning to a fleet with higher efficiency, implementing energy-saving technologies like air lubrication and hybrid propulsion systems.
- Sustainable Fuels: Evergreen is working on adopting alternative fuels such as LNG, hydrogen, and ammonia in their vessels.
- Carbon Neutrality by 2050: The company is committed to achieving carbon neutrality by 2050, with an interim goal to reduce CO_2 emissions by 30% by 2030.
- Circular Economy Practices: Evergreen promotes circular economy principles in vessel recycling and waste management.

Measurement Results:

- 2022: Evergreen reduced its CO_2 emissions per container by 5% compared to the previous year.
- Fleet Transition: By the end of 2024, Evergreen plans to have 40% of its new vessels using alternative fuel solutions.

Carbon Offsetting Program: Maritime Biofuel Insets- Greencarrier

- Evergreen Marine offers Carbon Offset Services as part of its broader sustainability initiatives. The service allows customers to offset the carbon footprint of their ocean freight shipments by supporting carbon reduction projects globally.
    - Types of projects: Evergreen supports a variety of carbon offset projects, including forest conservation, reforestation, and renewable energy.
    - Verification: The company only uses projects certified by globally recognized standards such as VCS and Gold Standard.
    - Additional efforts: Evergreen is also exploring ways to reduce their own fleet emissions through cleaner technologies and alternative fuels.

Hapag-Lloyd

- https://www.hapag-lloyd.com/en/sustainability.html

Key Initiatives:

- Sustainability Strategy: Hapag-Lloyd aims to cut its CO_2 emissions by 25% by 2030 (compared to 2020 levels).
- Alternative Fuels: The company has been exploring biofuels, LNG, and is working on future-proof fuel technologies, including ammonia and methanol.
- Energy Efficiency Programs: Hapag-Lloyd is implementing energy-saving technologies, such as air lubrication systems and air flow-optimized designs to reduce fuel consumption.
- Carbon-Neutral Services: The company provides a carbon-neutral service option through its "Sustainability" offering, where customers can offset emissions.

Measurement Results:

- 2021: Hapag-Lloyd achieved a reduction of approximately 8% in CO_2 emissions per container transported compared to 2020.
- LNG Fleet: The company has incorporated LNG-fueled ships in its fleet, with a goal to reduce CO_2 emissions by 20% per vessel.

Carbon Offsetting Program: Your business, the EU Emission Trading System and container shipping- Hapag-Lloyd

- Hapag-Lloyd offers a CO2 Reduction & Offsetting program, providing customers the opportunity to neutralize the emissions associated with their shipments by contributing to carbon reduction projects. The company supports certified projects that deliver measurable reductions in greenhouse gas emissions.
    - Verified carbon credits: Customers can offset their shipments through verified credits that support a range of environmental initiatives, including reforestation and the development of renewable energy sources.
    - Project types: Hapag-Lloyd also focuses on renewable energy, energy efficiency, and forest protection projects.
    - Transparency: Hapag-Lloyd ensures that the projects are independently verified to maintain credibility and transparency.

Hyundai Merchant Marine (HMM)

- https://www.hmm21.com/eng/sustainability

Key Initiatives:

- Green Ship Strategy: HMM has launched the "Green Ship" initiative, focusing on increasing the number of eco-friendly vessels in its fleet.
- Alternative Fuels and Energy: The company is testing LNG, hydrogen, and ammonia as alternative fuels for its ships and is investing in technologies to reduce fuel consumption.
- Emissions Reduction by 2030: HMM aims to reduce its carbon emissions by 40% by 2030, relative to 2019 levels, as part of its long-term decarbonization strategy.
- Digitalization and Efficiency: HMM is leveraging big data and AI to enhance fuel efficiency, optimize routes, and track emissions across its global fleet.

Measurement Results:

- 2022: HMM reduced CO_2 emissions by 5% per container compared to 2021.
- Fleet Modernization: By 2025, HMM plans to incorporate 20 LNG-powered vessels into its fleet to meet its decarbonization targets.

Carbon Offsetting Program: Carbon Neutrality | Sustainability- Hyundai Worldwide

- Hyundai Merchant Marine (HMM) has been increasingly focused on environmental sustainability. They have committed to reducing the carbon footprint of their fleet and offer carbon-neutral shipping services through various carbon offset initiatives.
    - Carbon offset projects: HMM's program focuses on funding renewable energy and reforestation projects that meet recognized international standards like Gold Standard and VCS.
    - Emission reduction targets: The company has set goals for decarbonizing its fleet, adopting cleaner technologies, and moving toward green shipping options.
    - Green partnerships: HMM partners with several global sustainability organizations to enhance its carbon offset strategy and contribute to global efforts to combat climate change.

Maersk Line

- https://www.maersk.com/sustainability

Key Initiatives:

- Decarbonization Targets: Maersk is committed to achieving carbon neutrality by 2050. The company aims to reduce CO_2 emissions per transported container by 60% by 2030 (compared to 2008 levels).
- Sustainable Shipping Fuel: Maersk has been testing and incorporating sustainable fuels like biofuels and is exploring new technologies, such as ammonia and hydrogen, for future carbon-neutral ships.
- Green Fleet Investments: The company is incorporating dual-fuel ships and ships powered by green methanol. In 2023, Maersk launched its first vessel powered by green methanol.
- Sustainable Supply Chain Solutions: Offering carbon-neutral shipping solutions to customers through its "SeaCargo Charter" and carbon calculators.

Measurement Results:

- 2019-2023: Maersk has reduced CO_2 emissions by over 30% per ton-kilometer.
- 2022: The company reported the launch of its first green methanol-powered ship, a major milestone toward its decarbonization target.
- 2025 Goal: All new vessels ordered by Maersk must be able to run on green fuels.

Carbon Offsetting Program: ECO Delivery | Transportation Services| Maersk

- Through their CO2 Compensation Program, they offer carbon-neutral shipping services by allowing customers to offset the CO2 emissions associated with their shipments. Customers can choose to make their shipments carbon-neutral by investing in verified carbon offset projects that comply with international standards such as the VCS (Verified Carbon Standard).
    - Offset projects: Maersk supports reforestation, renewable energy, and methane capture projects that have a tangible, verifiable reduction in carbon emissions.
    - Transparency: Maersk provides detailed information to customers about the carbon credits purchased and the environmental projects funded.

MSC (Mediterranean Shipping Company)

- https://www.msc.com/sustainability

Key Initiatives:

- Sustainability Commitment: MSC has set a target to reduce carbon intensity by 50% by 2050, with a clear focus on alternative fuels, energy efficiency, and carbon-neutral solutions.
- Biofuels and Carbon Offsetting: MSC has committed to using biofuels and carbon offsetting schemes for certain shipments. The company has developed partnerships with biofuel producers and aims to scale sustainable fuel usage.
- Smart Shipping Technologies: MSC integrates smart technologies to reduce fuel consumption, including big data analysis for optimized route planning.
- Eco-Friendly New Builds: MSC has been investing in larger, more efficient vessels that optimize fuel usage through advanced hull designs and air flow reduction systems.

Measurement Results:

- 2022: MSC reduced CO_2 emissions by 12% per container compared to 2021.
- Carbon Offset Program: MSC's carbon offset program enabled customers to neutralize more than 5 million tons of CO_2 as of 2022.

Carbon Offsetting Program: Carbon Neutral Programme | MSC

- MSC (Mediterranean Shipping Company) introduced its Carbon Neutral Programme as part of its goal to reduce the environmental footprint of ocean freight. MSC works to mitigate emissions by providing customers the option to offset the CO2 produced by their shipments through a variety of high-quality carbon offset projects.
    - Carbon offset projects: MSC invests in certified projects such as reforestation, energy efficiency, and renewable energy initiatives that meet recognized standards like Gold Standard and VCS.
    - Scope of emission reduction: The company focuses on offsetting direct emissions from vessels, along with the broader environmental impacts throughout its supply chain.
    - Future goals: MSC also has long-term sustainability targets, including adopting green technologies to reduce their overall fleet emissions.

Ocean Network Express (ONE)

- https://www.one-line.com/en/sustainability

Key Initiatives:

- Carbon Neutrality by 2050: ONE has committed to achieving carbon neutrality by 2050, in line with global shipping industry targets.
- Green Fleet Development: ONE is investing in fuel-efficient vessels and exploring alternative fuels such as LNG, ammonia, and hydrogen to reduce its carbon footprint.
- Operational Efficiency: The company has implemented advanced data analytics to optimize shipping routes and improve fuel efficiency.
- Sustainable Practices for Customers: ONE offers services like carbon-neutral shipping options and carbon offset programs for customers.

Measurement Results:

- 2023: ONE reduced CO_2 emissions by approximately 10% per container transported compared to the previous year.
- Fleet Transition: ONE is progressively adding ships that use LNG and other eco-friendly fuels, aiming for significant fleet-wide sustainability improvements by 2030.

Carbon Offsetting Program: Ocean Network Express Launches Green Shipping Solution – ONE LEAF+ | ONE Thailand

- ONE has introduced the Carbon Neutral Program, which allows their customers to offset the emissions from their ocean freight. As a major player in global shipping, ONE offers a comprehensive carbon neutral solution to help customers reduce their environmental impact.
    - Offset mechanism: ONE offsets emissions by purchasing carbon credits from verified projects that focus on reducing emissions in sectors such as renewable energy, energy efficiency, and forest protection.
    - Sustainability initiatives: ONE is also making investments in new technologies to reduce its overall emissions. This includes initiatives to decarbonize their fleet and improve operational efficiency.

OOCL (Orient Overseas Container Line)

- https://www.oocl.com/eng/aboutoocl/sustainability

Key Initiatives:

- Sustainability Vision: OOCL has a goal of reducing its carbon emissions intensity by 25% by 2030, compared to 2008 levels.
- Alternative Fuels: OOCL is exploring the use of LNG and other alternative fuels as part of its long-term environmental strategy.
- Energy Efficiency: The company has been focused on improving vessel energy efficiency through hull design innovations, energy-saving devices, and digitalization to optimize operations.
- Carbon-Neutral Services: OOCL offers carbon-neutral shipping options and emphasizes sustainability in its operations, from vessel design to logistics solutions.

Measurement Results:

- 2022: OOCL achieved a reduction of 9% in CO_2 emissions per TEU compared to the previous year.
- Fleet Transition: OOCL has committed to using sustainable fuels across its new vessel orders, aiming for a greener fleet by 2030.

Carbon Offsetting Program: OOCL- Emissions Reduction

- OOCL has developed a Carbon Offset Program aimed at helping its customers offset the carbon emissions associated with their shipments.
    - Offsetting emissions: OOCL offers the ability to offset carbon emissions from ocean freight by investing in certified projects, which typically focus on renewable energy, energy efficiency, and reforestation.
    - Sustainability and transparency: OOCL has integrated environmental considerations into its operational framework, ensuring transparency in how the carbon offsets are managed and implemented. They provide regular reports on the offset projects.
    - Future goals: OOCL has also been exploring the implementation of LNG-powered vessels and other green technologies to reduce emissions from their fleet.

Yang Ming Marine Transport Corporation

- https://www.yangming.com/en-US/sustainability

Key Initiatives:

- Carbon Reduction Goals: Yang Ming has set a goal to reduce CO_2 emissions per unit of cargo by 20% by 2030.
- Energy-Efficient Ships: The company has focused on building energy-efficient vessels, incorporating fuel-saving technologies such as air lubrication systems and hull modifications to improve fuel consumption.
- Sustainable Shipping Fuels: Yang Ming is testing alternative fuels, including LNG, and is exploring the use of biofuels and other low-carbon energy sources for its vessels.
- Carbon Offsetting: Yang Ming offers carbon offset programs for its customers, allowing them to neutralize the emissions associated with their cargo shipments.

Measurement Results:

- 2022: Yang Ming reported a 6% reduction in CO_2 emissions per TEU (Twenty-foot Equivalent Unit) compared to the previous year.
- Future Plans: The company is committed to investing in LNG-powered ships as part of its efforts to meet long-term sustainability goals.

Carbon Offsetting Program: Reduce Carbon Emissions-陽明海運股份有限公司 | ESG 企業永續網

- Yang Ming Marine Transport Corp. offers a Carbon Neutral Shipping program that allows its customers to offset the emissions generated by their shipments. Yang Ming emphasizes its commitment to environmental stewardship and aims to achieve long-term sustainability in shipping.
    - Carbon offset projects: Yang Ming's carbon neutral program supports projects that reduce or capture carbon emissions, including reforestation, renewable energy, and energy efficiency projects.
    - Green initiatives: In addition to their carbon offset offerings, Yang Ming has adopted technologies aimed at improving fuel efficiency and reducing greenhouse gas emissions from its fleet.
    - Sustainability goals: The company is actively working on reducing its overall emissions and transitioning to more environmentally friendly operations.

ZIM Integrated Shipping Services

- https://www.zim.com/sustainability

Key Initiatives: ESG & Sustainability | ZIM

- Carbon Neutrality by 2050: ZIM has committed to reaching carbon neutrality by 2050, with intermediate goals to reduce carbon intensity by 20% by 2030.
- Green Ship Investments: ZIM has been focusing on incorporating energy-efficient vessels into its fleet, as well as retrofitting existing ships with energy-saving technologies such as air lubrication and fuel optimization systems.
- Alternative Fuels: The company is investigating the use of LNG and other clean fuels, including hydrogen, as part of its broader decarbonization strategy.
- Sustainability Partnerships: ZIM has entered into partnerships with environmental organizations to develop green logistics solutions and offer carbon offset programs for customers.

Measurement Results:

- 2022: ZIM reduced its CO_2 emissions by 8% per container transported.
- Fleet Expansion: The company is progressively integrating LNG-powered vessels into its fleet, aiming to have a substantial number of green vessels by 2027.

Carbon Offsetting Program:

- ZIM Integrated Shipping Services offers a Carbon Offset Program to support its sustainability objectives. The program allows ZIM customers to offset the emissions generated by their shipments by purchasing carbon credits tied to verified environmental projects.
    - Carbon offset options: ZIM collaborates with various certified environmental projects that focus on renewable energy, reforestation, and energy efficiency. These projects are independently verified by standards like VCS and Gold Standard.
    - Green shipping practices: In addition to carbon offsetting, ZIM is working to optimize its fleet and operations to minimize its carbon emissions, including exploring the use of alternative fuels and more fuel-efficient vessels.
    - Sustainability commitment: ZIM's broader sustainability initiatives include reducing air pollution, optimizing logistics, and advancing the adoption of green technologies within the industry.

Railways

Canadian National Railway (CN)

– https://www.cn.ca/en/delivering-responsibly/environment

Key Initiatives:

- Greenhouse Gas (GHG) Emissions Reduction: In 2022, CN reduced its Scope 3 GHG emissions intensity for fuel-and-energy-related activities by 4.3% from 2021, achieving 40% progress toward its 2030 target of a 40% reduction from 2019 levels.
- Waste Diversion: Approximately 94% of CN's operational waste was diverted from landfills in 2022, nearly meeting its annual target of 95%.
- Tree Planting: CN planted 114,000 trees in 2022, contributing to its goal of planting 3 million trees by 2030.

Measurement Results:

- Safety: CN improved its personal injury frequency rate by 19% from 2021, achieving 80% progress toward its 2030 target of a 55% reduction from 2019.
- Diversity: As of 2022, 27% of CN's executive management roles were held by women, and 20% of independent Board members identified as visible minorities, meeting its target of 50% diversity among non-management Board members.
- Net-Zero Commitment: CN has committed to achieving net-zero carbon emissions by 2050, with its target validated by the Science Based Targets initiative (SBTi).
- Emissions Reduction: The company has reduced locomotive carbon emissions intensity by 43% since 1993 and improved fuel efficiency by 15% compared to the industry average.

Canadian Pacific Kansas City (CPKC)

- https://www.cpkcr.com/en/sustainability

Key Initiatives:

- Hydrogen Locomotive Program: CPKC advanced the production of three hydrogen-powered locomotives and installed hydrogen fueling facilities in 2022, marking a significant step toward sustainable rail operations.

- Biofuel Usage: In 2023, CPKC utilized a 20% biofuel blend (B20) in 10 locomotives operating near Golden, B.C., completing over 500 fueling events and consuming 8.2 million liters of B20 fuel.

Measurement Results:

- GHG Emissions Reduction: CPKC has committed to reducing its well-to-wheel locomotive emissions by 36.9% per gross ton-mile by 2030, using a 2020 base year.

Glossary of Sustainability Terms

For Ocean, Rail, and Airline Providers in Canada

Environmental Terms

- Carbon Intensity (CI):
  GHG emissions per unit of transport activity, such as grams of CO_2e per tonne-kilometer (tkm) or passenger-kilometer (pkm), used to benchmark emissions reductions.
- Greenhouse Gas (GHG) Emissions:
  Total emissions including CO_2, CH_4, N_2O, and others, reported as carbon dioxide equivalent (CO_2e) across Scope 1 (direct), Scope 2 (indirect energy), and Scope 3 (value chain).
- Sustainable Aviation Fuel (SAF):
  Bio-based or synthetic jet fuel that results in significantly lower lifecycle GHG emissions than conventional fossil jet fuel. SAF is a key component in Canada's aviation decarbonization strategy.
- C-SAF (Canadian Council for Sustainable Aviation Fuels):
  An industry-led coalition aiming to scale SAF production and deployment in Canada to help meet net-zero aviation goals.
- Eco-Skies Alliance:
  A partnership (led by United Airlines) where corporate customers support the purchase of SAF. Canadian participation helps drive demand signals and investment in clean aviation fuels.
- LNG Fuels (Liquefied Natural Gas):
  Used in some next-generation marine vessels, LNG emits less CO_2 and air pollutants compared to conventional marine fuels. Considered a transitional fuel for low-carbon shipping.
- Eco-Design Ships:
  Ships designed to reduce fuel consumption, emissions, and underwater noise using hull optimization, air lubrication systems, and energy-efficient engines.
- Ballast Water Management:
  The treatment and management of ballast water to prevent the introduction of invasive aquatic species in Canadian waters, as required by Transport Canada regulations and IMO standards.
- Direct Air Capture (DAC):
  Technology that captures CO_2 directly from the atmosphere. Investment in DAC is being explored by Canadian stakeholders to offset hard-to-abate emissions.
- Emission Reduction Initiatives:
  Includes fuel switching, fleet renewal, electrification of rail corridors, route optimization, and port electrification. These initiatives are aligned with Canada's Net-Zero Emissions Accountability Act.

Climate Policy & Market-Based Mechanisms

- CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation):
  A global program developed by ICAO to cap international aviation CO_2 emissions from 2021 onwards. Canadian airlines participate under the federal government's commitment to ICAO standards.
- ICAO (International Civil Aviation Organization):
  A UN agency based in Montreal, Canada, which sets international aviation standards, including environmental performance (e.g., CORSIA and fuel efficiency targets).
- Offsetting:
  Purchasing carbon credits to compensate for emissions. Used to meet compliance (e.g., under CORSIA) or voluntary commitments.
- Insetting:
  Emission reduction projects that occur within a company's value chain, such as investing in SAF or electrification projects, rather than external carbon offsets.
- CHOOSE Partnership:
  A Canadian-aligned platform that allows passengers to voluntarily offset flight emissions by funding verified climate projects, often integrated with airline booking systems.

Measurement & Reporting

- Tonne-Kilometers (tkm):
  A measure of freight activity: one tonne of goods transported one kilometer. Common metric in rail and maritime carbon reporting.
- Passenger-Kilometers (pkm):
  Measures the transport of one passenger over one kilometer. Used to determine emissions intensity in aviation and passenger rail.
- Fuel Consumption per Tonne-Kilometer:
  Measures operational fuel efficiency. Lower numbers indicate better fuel performance.
- Lifecycle Assessment (LCA):
  Evaluation of emissions from all stages of a product's life (e.g., SAF production, engine use). Required for CORSIA eligibility and SAF certification in Canada.
- Noise Pollution Levels:
  Measured in decibels (dB), with mitigation plans required near urban airports and rail lines under Transport Canada regulations.

- **Particulate Matter (PM):**
  Fine emissions from combustion engines (especially marine and rail) that impact air quality. Regulated under Canada's Clean Fuel Regulations.

ESG Rankings

ESG rankings in the transportation sector help evaluate how well companies manage environmental, social, and governance risks, promoting sustainability and long-term resilience. Environmentally, they encourage emission reductions, cleaner fuel adoption, and better waste and pollution management. Socially, ESG assessments highlight fair labor practices, improved worker safety, and responsible community engagement—important in labor-intensive modes like trucking, rail, and shipping. These rankings also promote transparency in customer service and supply chain ethics.

From a governance perspective, ESG rankings reward strong oversight, regulatory compliance, and ethical leadership, reducing legal and operational risks. High ESG performance enhances brand reputation, attracts ESG-focused investors, and supports innovation through clean technology and infrastructure resilience. Overall, ESG rankings drive better performance and accountability across all areas of transportation.

MSCI ESG Ratings: https://www.msci.com/sustainable-investing/esg-ratings

MSCI evaluates companies on a scale from **AAA (leader)** to **CCC (laggard)**, focusing on their resilience to industry-specific ESG risks and opportunities.

Sustainalytics (a Morningstar company): https://www.sustainalytics.com/esg-ratings

Sustainalytics provides ESG Risk Ratings that assess a company's exposure to material ESG risks and how well those risks are managed.

FTSE Russell ESG Ratings: https://www.lseg.com/en/ftse-russell/esg-scores

FTSE Russell offers ESG Scores that measure a company's exposure to, and management of, ESG issues across multiple dimensions.

S&P Global ESG Scores: https://www.spglobal.com/esg/solutions/esg-scores-data

S&P Global's ESG Scores evaluate a company's performance on and management of material ESG risks, opportunities, and impacts.

ISS ESG Ratings: https://www.issgovernance.com/esg/ratings/corporate-rating/

ISS ESG provides Corporate Ratings, scoring companies from D- to A+ based on their sustainability performance on an absolute best-in-class basis.

Conclusion

This comprehensive overview of the sustainability initiatives across major airlines, ocean carriers, and railways servicing Canada highlights a strong collective commitment to reducing the environmental impact of transportation. Each sector has tailored its sustainability efforts based on its unique operational priorities, available technology, and customer demands. Common initiatives include reducing carbon emissions through fleet modernization, the use of alternative fuels, enhanced energy efficiency, and carbon offset programs.

The efforts of these companies demonstrate progress in making global transportation more sustainable, although achieving the necessary global reductions in emissions will require continued collaboration, investment in innovative technologies, and alignment of global regulations.

Disclaimer

The information provided herein is intended solely for educational and informational purposes related to the sustainability initiatives of transportation providers. While every effort has been made to ensure the accuracy and reliability of the data and references cited, the CIFFA Corp Sustainability Committee does not assume responsibility for any errors, omissions, or inaccuracies. This paper does not endorse any specific company, product, or practice and should not be considered as professional advice.

As each carrier has individual rules and regulations surrounding the access to bio friendly (or green) solutions for their clients, each member who is interested in pursuing such solutions should discuss this directly with their respective contract carriers for a better understanding of how these solutions can be applied either at a strategic level or when booking directly with the carrier.