

CANADA’S RAILWAYS: MOVING THE CIRCULAR ECONOMY

A Submission to the Standing Committee on Industry and Technology

RECOMMENDATIONS

- 1. ABANDON REGULATED INTERSWITCHING EXTENSION**
- 2. INCENTIVIZE INVESTMENT**
- 3. INCREASE SHORTLINE SUPPORT**

INTRODUCTION

The Railway Association of Canada (RAC) applauds the Standing Committee on Industry and Technology (INDU) for studying the development and support of the electronics, metals, and plastics recycling industry.

Railways are a backbone of the Canadian economy, moving \$350 billion worth of goods and millions of passengers annually. Railways also help underpin the Canadian circular economy, moving millions of tonnes of recycled and recyclable products each year.

From metals to minerals, plastics to rubber, and waste to scrap, our members move Canada towards a circular economy. They move these products, and many others, on the safest railways in North America at among the lowest freight rates in the entire world.

Rail is green transportation. Despite moving 50 per cent of Canada’s exports, railways represent only 3.6 per cent of Canadian transportation emissions. With an over 25 per cent improvement in fuel efficiency since 2005 and over \$20 billion invested in Canada over the past decade, railways are well positioned to continue elevating their role in both decarbonization and the development of the circular economy.

RAC members are pleased to provide background, insights, and recommendations below to assist the Committee with its deliberations.

BACKGROUND

In 2022, railways moved more than 116 million tonnes of freight across product categories considered relevant to this study. This is a conservative estimate as it does not include carloads of manufactured products or recycled and recyclable products transported in intermodal containers. The publicly available data is illustrated in Figure 1.

FIGURE 1 – Railway Carloadings of Recycled and Recyclable Products, 2022

	Metals	Minerals	Plastic and rubber	Metallic waste and scrap	Non-metallic waste and scrap
Carloads	157,791	1,019,635	48,124	47,997	9,132
Tonnes	14,193,438	93,749,756	4,250,801	3,986,275	538,174

Source: Statistics Canada, Monthly Railway Carloadings Survey

Whether it is aluminum from smelters in Saguenay or chemicals and plastics from the Alberta Industrial Heartland, railways facilitate the trade of important Canadian products. The product categories represented in Figure 1 are key business lines for Class 1 and shortline railways.

Metals and minerals are a significant growth category for Class 1s. In 2022, for metals and minerals, CN and CPKC each reported over 20 per cent year-over-year revenue growth.¹ Metals and minerals account for 82 per cent of originating carloads on Canadian shortlines; and as high as 90 per cent for Quebec shortlines.

Examples of metals and minerals moving on Canadian railways include aluminum, copper, nickel, iron ore, steel products, other base metals, aggregates, and others. Roughly half of Canadian critical minerals move by rail, with more capacity possible as the industry expands.

Plastics like polyethylene and polyvinyl chloride (PVC) are regularly transported by rail. Not represented in Figure 1 are chemical products relevant to the Committee's study. Most Canadian chemicals production is handled by Class 1 railways. Caustic soda, sulfuric acid, and pulp mill chemicals, among others, are typically hauled hundreds of kilometres by rail to their destinations.

Waste and scrap, both metallic and non-metallic, also move by rail. For example, Quebec North Shore and Labrador Railway (QNS&L) operates a metal scrap yard in Labrador City. Used metals are loaded and transported to Sept-Îles where they are loaded onto vessels and taken for recycling. QNS&L and Tshiuetin Rail also collaborate to move recyclable materials.

The Southern Railway of British Columbia (SRY) supports the local movement of both recyclable metals and plastics. In one example, a metals recycling customer sorts large volumes of mixed metals based on inherent characteristics (ferrous, non-ferrous, density, etc.). It then shreds the segregated metals and moves the homogenous products by rail to destinations where they can be further re-processed and refined or containerized for export where they become part of the inputs into other goods and products.

PRACTICING CIRCULARITY

Railways don't just move the circular economy; they directly participate in it. This is perhaps best exemplified by how railways turn waste into energy by recycling scrap rail ties.

Turning Waste into Energy

Each year, millions of old rail ties are sent to cogeneration and industrial facilities where they are used as a solid fuel for energy recovery.

Among its eight scrap rail tie processors, CPKC has an agreement to send approximately 500,000 scrap ties each year to a Cielo Waste Solution refinery in Dunmore, Alberta to produce renewable liquid fuels (to divert 40,000 metric tonnes from the landfill annually).

CN collects, chips, and ships its legacy rail ties. It sends them, in one example, to Kruger who uses the wood waste to power its biomass cogeneration plants in Trois-Rivières and Brompton, Quebec. In 2020, the partnership diverted over 751,000 of CN's rail ties and generated about 186 GWh of clean energy at Kruger facilities.

Canadian shortline railways have similar agreements whereby scrap rail ties (most being over 25 years old) are diverted from landfill and used as a renewable fuel.

Waste Diversion

Railways are active recyclers. CN diverts 90 per cent of its waste from landfills through its reduce-reuse-recycle-renew programs. CPKC diverted 6,655 metric tonnes of hazardous and non-hazardous waste from landfills through recycling, compost, and recovery operations in 2020.

¹ CN 2022 Annual Report; CP 2022 Annual Report. CPKC's category includes metals, minerals & consumer products.

Railways recycle products from paper to plastic, batteries to electronic waste, oils to lubricants, and scrap to decommissioned railcars. They also seek to maximize the life of their materials. CN's locomotive modernization program, for example, reuses locomotives and rail tracks at secondary lines and yards before selling them to companies that recycle them into steel products. CPKC's wastewater treatment plant investments are improving treatment capacity, monitoring, control systems, and effluent quality.

Other railways, both passenger and freight, are taking important sustainability actions. VIA Rail is on track to offer a zero-waste experience on its new Corridor fleet by 2025 by reducing packaging and materials and improving waste collection.

As Ontario builds public transit capacity, Metrolinx is reducing waste from construction activities. In one example, 80 per cent of waste produced during Hazel McCallion LRT construction was diverted from landfill. Another Metrolinx example: 12 kilograms of batteries and electronic waste were recycled from the Hurontario project last year.

Canadian freight railways – from Class 1s to shortlines – are transporting what was once waste and is now fuel. Whether it is wood pellets, tallow, grain by-products like dried distillers' grains (DDG), ethanol, or canola meal, railways are a vital link in the biofuel supply chain. SRY, for instance, delivers about 50,000 tonnes of Canadian canola meal annually to animal feed producers in BC's Abbotsford and Fraser Valley region. Rail is ready to increase its role in extending the uses of by-products like meal to divert what would have otherwise been waste.

RAIL: A GREEN MODE

While practicing and moving circularity, rail is a green mode of transport. Trains, on average, are three to four times more fuel-efficient than trucks.

Just one locomotive can haul a tonne of goods more than 220 kilometres on a single litre of fuel, while removing upwards of 300 trucks from our congested roads in the process. Each passenger train replaces dozens of cars, reducing emissions and improving transit times.

Shifting just 10 per cent of freight from trucks to rail, for context, would reduce GHG emissions by approximately four megatonnes of carbon dioxide equivalent – enough to take more than one million cars off the road every year.

Railways are already fuel efficient, but they are continuing to improve through innovation and investment. Since 2005, Canada's freight railways reduced their GHG emissions intensity – the rail sector's carbon footprint relative to its traffic – by 25.1 per cent. In 2021, freight fuel efficiency improved by 1.2 per cent to 226 revenue tonne-kilometres per litre (another consecutive record).

RAC members are at the forefront of green innovation. CPKC is using solar power to produce hydrogen for its experimental fuel cell locomotives. CN's fuel-efficient technologies, like locomotive telemetry systems and Trip Optimizer, along with blending biodiesel, are contributing to substantial emission reductions. Other railways are also innovating to lower emissions. VIA Rail, for example, is piloting EcoRail – an AI-enabled software that provides driving recommendations to locomotive engineers to reduce fuel consumption.

RAIL: A COST-EFFECTIVE MODE

Canada has among the lowest freight rates in the world as confirmed by an independent study² by respected consultancy CPCS in January 2023. Canadian freight rates are 11 per cent lower than American rates and far lower than European rates. To move one tonne of goods one mile by rail in Canada, it costs 4.16 U.S. cents. Robust competition between Canadian railways is keeping rates low. Rail is a cost-effective option for recycled and recyclable materials, among others.

RAIL: A RELIABLE MODE

Not only do railways keep costs and emissions low, they also maintain high performance. There is significant evidence, including new evidence in April 2023³, that Canadian railways are reliable, resilient, and efficient. While average rail terminal dwell times remained below eight hours in 2022, port dwell times ballooned to 157 hours. Despite a global pandemic, the war in Ukraine, extreme weather events, labour disruptions and shortages, and economic uncertainty, Canadian railway reliability and performance remained top of class.

RAIL: AN INVESTING MODE

Class 1 railways reinvest 20-25 per cent of every dollar earned straight back into their networks. Over the past decade, railways have invested about \$21 billion in their Canadian assets. Railways paid nearly \$17 billion in taxes at various levels of government over the same period.

Healthy capital investment means improving safety, fuel efficiency, and supply chain fluidity. It also means railways can create jobs – adding to the national community of 34,000 railroaders and ensuring they are well compensated. The average industry wage in 2022 was \$102,000.

RAIL: A SAFE MODE

Safety is the top priority for every railway and every railroader. Canada's railways are the safest in North America and continue to improve. In 2021, railways set another consecutive record in the safe transportation of dangerous goods – reducing the dangerous goods accident rate by 6.9 per cent compared to 2020.

Of the hundreds of thousands of dangerous goods carloads that move by train each year (comprising essential chemical and petroleum products) over 99.99 per cent reach their destination without a release caused by an accident.

Railways are significantly safer than motor vehicles. Average annual fatalities in rail are 26 times lower than motor vehicle-related fatalities and serious injuries are 167 times lower.

RECOMMENDATIONS

The following recommendations are included to support the rail industry's role in the circular economy as the green, safe, reliable, and cost-effective choice for the transportation of recycled and recyclable products.

1. ABANDON REGULATED INTERSWITCHING EXTENSION

The federal government is temporarily extending the regulated interswitching distance from 30km to 160km for 18 months across all commodities in the Prairie provinces.

² Online: <https://www.railcan.ca/wp-content/uploads/2023/02/International-Comparison-of-Railway-Freight-Rates.pdf>

³ Online: [SPARK-RAC-CTRF-REPORT-2023-EN5.pdf \(railcan.ca\)](https://www.railcan.ca/wp-content/uploads/2023/02/SPARK-RAC-CTRF-REPORT-2023-EN5.pdf)

Expanding regulated interswitching would increase transit times, trigger congestion, require more assets and crews, provide unfair advantage for U.S. railways, and discourage private-sector investment into critical rail infrastructure – all while increasing emissions.

Long-Haul Interswitching (LHI) already provides a so-called regulatory remedy for shippers while avoiding the damaging impacts of cost-based, or even non-compensatory, regulatory rates that drive investment dollars and jobs out of Canada. LHI rates are set based on market rates for comparable traffic while an extended regulated interswitching rate is cost-based.

If extended regulated interswitching is implemented again in Canada, U.S. carriers will solicit Canadian traffic under the regulatory regime just like they did during the failed pilot from 2014-17. The reverse will not be true for U.S. traffic. This will put CN and CPKC at a competitive disadvantage relative to U.S. carriers. It will result in a loss of Canadian investment dollars and jobs.

Instead of enacting investment barriers and incentivizing inefficiencies that slow the movement of recycled and recyclable goods, the federal government should focus on tangible solutions like incentivizing investments in infrastructure and innovation.

2. INCENTIVIZE INVESTMENT

Railways' strong performance is a direct result of significant and sustained private investment. Class 1 annual Canadian capital spending is over \$2 billion per year. In contrast with the disincentivizing nature of regulated interswitching, the government should adopt policies that maximize investments.

Canadian railways are disadvantaged due to slower tax depreciation relative to U.S. railways and the trucking industry in Canada. The playing field must be levelled to ensure Canadian rail remains competitive.

To support an acceleration of investments to increase capacity, the government should implement further support in the form of tax policies and accelerated depreciation measures. A robust funding program to support research, development, and deployment of low-carbon and alternate fuel technologies in the Canadian rail sector would further support decarbonization efforts.

3. INCREASE SHORTLINE SUPPORT

Shortline railways are essential to growing the circular economy. Approximately 20 per cent of Canadian carloads originate on a shortline railway. As highlighted in above examples, shortlines play a key role in transporting recycled and recyclable goods.

To date, neither the New Building Canada Plan nor the National Trade Corridor Fund (NTCF) have been a substantial source of funding for shortline railways, despite their sizeable impact and the irreplaceable regional and economic development they create.

The federal government should create a dedicated, multi-year capital funding program to support shortline infrastructure investments similar to other jurisdictions (U.S., Quebec) to make funding programs available to shortline railways.

ABOUT RAC

The Railway Association of Canada (RAC) represents close to 60 freight and passenger railway companies. The RAC also counts a growing number of industrial railways and railway supply companies in its associate membership. As part of the fifth largest rail network in the world, RAC members are the backbone of Canada's transportation system.