13th UIC Sustainability Conference

VIENNA 2016

VIA Rail Canada
Emissions and Air Quality

Improving Environmental Efficiency

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12, 13, 14 October 2016

Who We Are

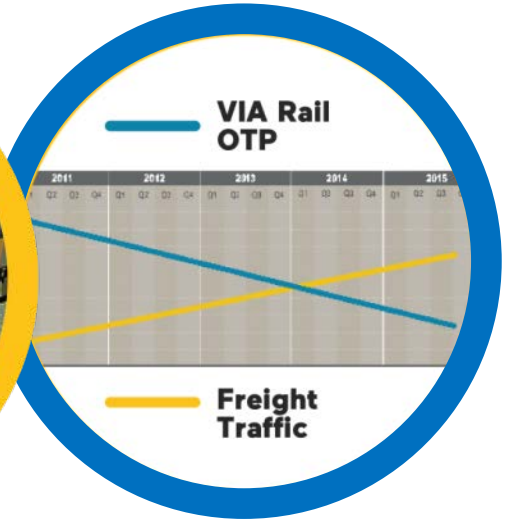
VIA Rail operates Canada's national passenger rail service on behalf of the Government of Canada.

1885

1919

1977

CURRENT IMPACT



What We Stand For

Mandate: Provide a safe, cost-effective and environmentally responsible service from coast to coast in both official languages

Mission: To be the smarter way to move people

Services: Inter-city, long-distance and regional services to meet essential transportation needs in Canada

Our business in Numbers

Vienna 2016

Our key assets reflect the breadth of our business, from the employees who work for us, the passengers we serve, the locomotives and train cars we operate and the buildings we occupy

ACTIVE EMPLOYEES AS OF THE END OF THE CALENDAR YEAR

2,577

PASSENGER TRIPS

3.8 million

TRAIN CARS (IN SERVICE)

444

LOCOMOTIVES

73

of which 71% have been rebuilt for improved operational and environmental efficiency

TRAIN STATIONS

121

of which 54 are heritage stations

OFFICES

7

1 head office, 6 regional

MAINTENANCE CENTRES

4

state-of-the-art facilities

Transportation Criteria Air Contaminants (CAC) Emissions

In 2013, the transportation sector in Canada generated 56.0% of all NOx emissions and 9.2% of all PM emissions.

Rail transportation was respon-sible for 11.1% of NOx and 4.6% of PM emissions.

NOx emissions intensity from total railway operations decreased by 56.1% from 1990

Legal Context

2011-2015 Memorandum of Understanding: Between the Railway Association of Canada members and Transport Canada in alignment with the USEPA.

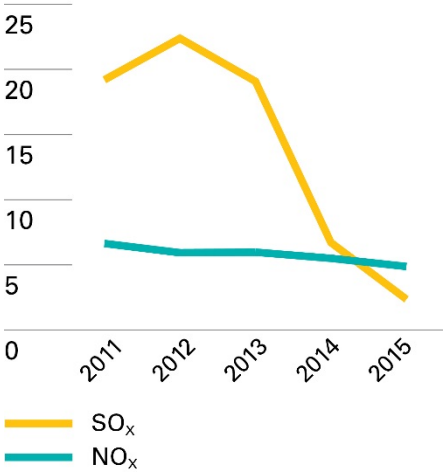
Addresses Locomotive Emissions: Includes measures, targets and actions to reduce CACs generally and reduce GHG emission intensity by 6% from rail operations based on 2010 levels, by the end of 2016.

In force until December 31, 2016: Transport Canada will enforce regulations for both CACs and GHGs in alignment with the USEPA.

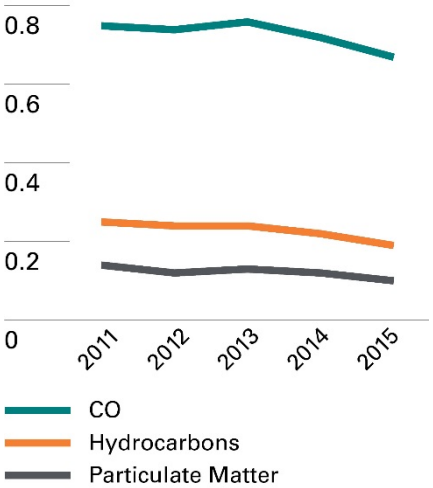
Performance

Cleaner Technologies

NO_X AND SO_X EMISSIONS
Kilotonnes



CO, HYRDROCARBONS AND PARTICULATE MATTER
Kilotonnes



CAC emissions for passenger rail in Canada

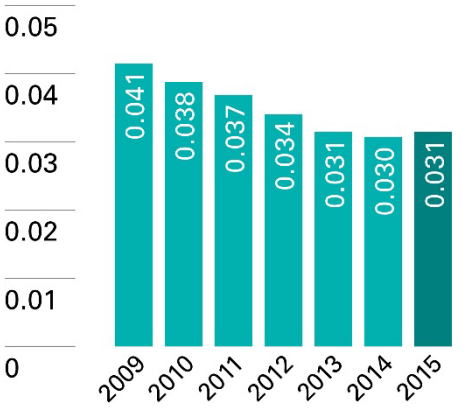
Key Initiatives

- Use of Ultra Low Sulphur Diesel
- Upgrade of our locomotive fleet towards more cleaner technologies

Performance

Fleet Renewal and Optimization

FUEL CONSUMPTION
Litres of fuel per revenue passenger-kilometre



24%
reduction since 2009

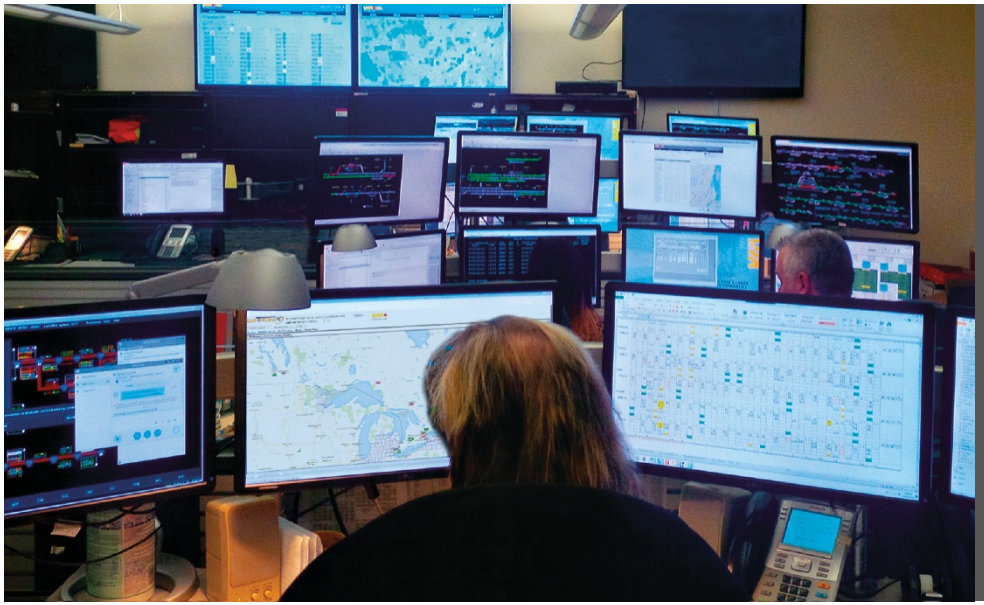
Reduction in fuel consumption by 24% per passenger-km (20 million liters of fuel)

Key Initiatives:

- Renovated our General Motors GPA-30 fleet (Tier 0)
- Ensured better deployment of locomotive engines
- Optimized the cycling of cars

Performance

Telemetry Wi-Tronix



Key Initiatives

Use of telemetry Wi-Tronix to improve train handling behaviours

Enabled better use of brake handling from power brakes to dynamic brakes

Performance

Locomotive Engineer Training

Key Initiatives

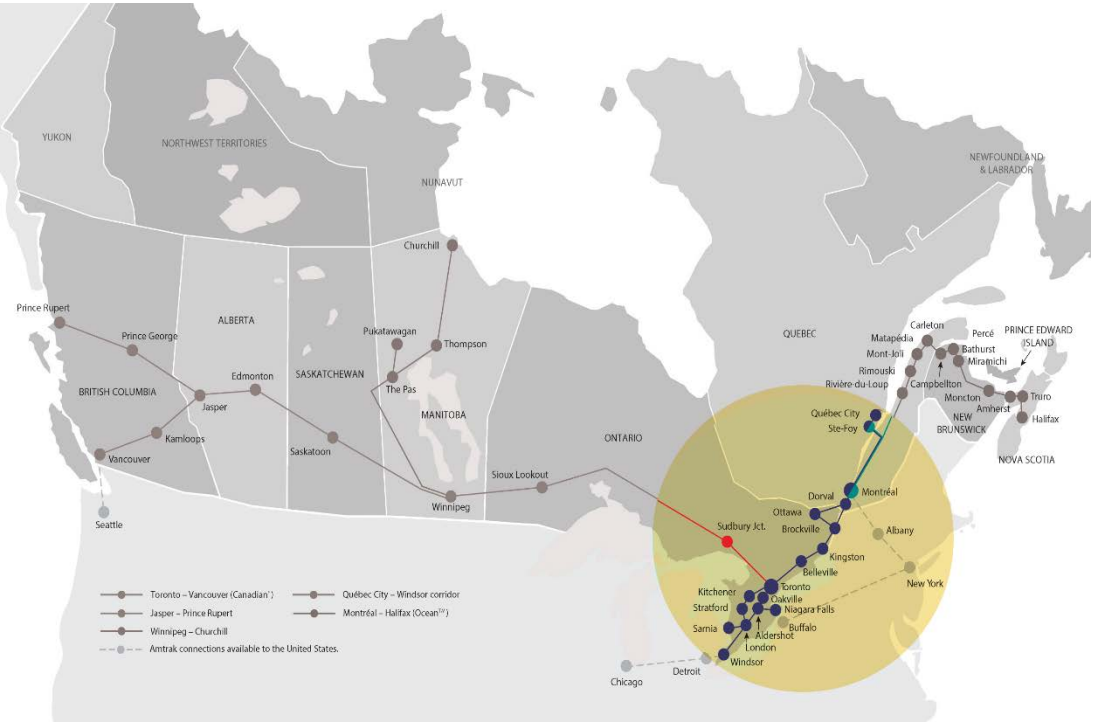
Provided training to Locomotive Engineers to reduce train idling and improve fuel efficiency

Locomotive Engineer scorecards are driving performance enabling savings from 1300 litres to 800 litres

Future Focus

High Frequency Rail: Currently proposing a dedicated passenger rail track which is forecasted to reduce air pollutants and improve fuel efficiency.

Upgraded Fleet: Currently proposing a budget to the Government of Canada for an even cleaner more efficient fleet



Impact Measurements

VIENNA 2016

COST

$5.25 BILLION

INCLUDING:

INFRASTRUCTURE

ELECTRIFICATION

ROLLING STOCK

HOW

HYBRID ELECTRIC AND **DIESEL**

USING NEW FLEET

WHEN

5 YEAR

DEPLOYMENT

RIDERSHIP

IN 2015
2.6M

IN 2023
7.2M

BENEFITS

CARBON EMISSIONS AVOIDED:
12.5 MILLION tCO2e

EQUIVALENT OF CANADIAN CAR POOL REDUCTION:
2.8 MILLION

336,600
PERSON YEARS OF PERMANENT EMPLOYMENT

REDUCE TRIP TIMES BY **1/3**

TRIPLE THE NUMBER OF TRAINS PER DAY IN THE CORRIDOR

IMPROVE ON-TIME PERFORMANCE TO OVER **95%**

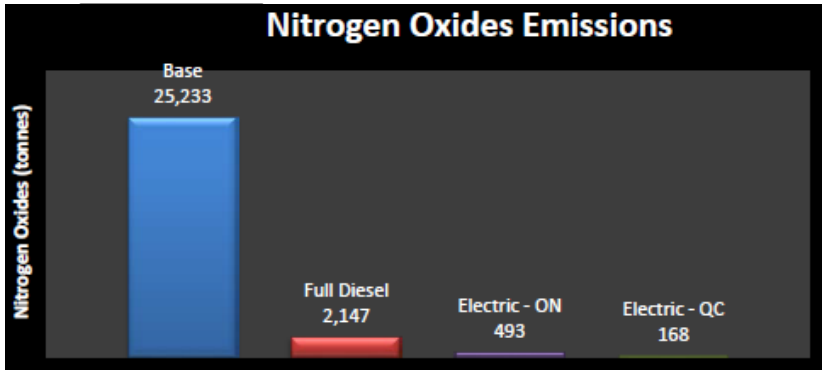
GOVERNMENT OF CANADA SUBSIDY

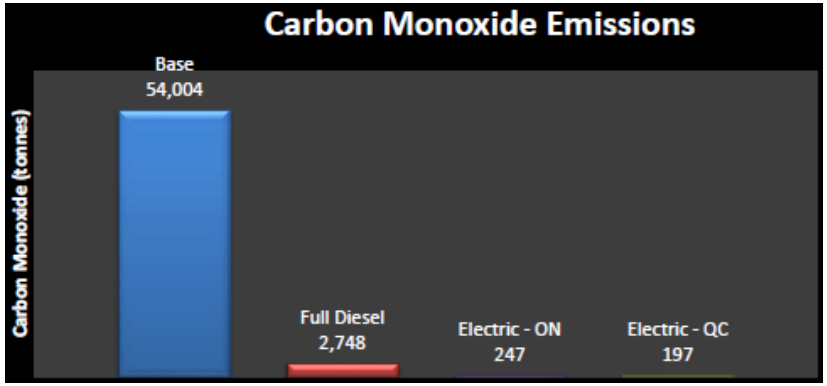
FOR VIA RAIL NOW:
$222 MILLION*

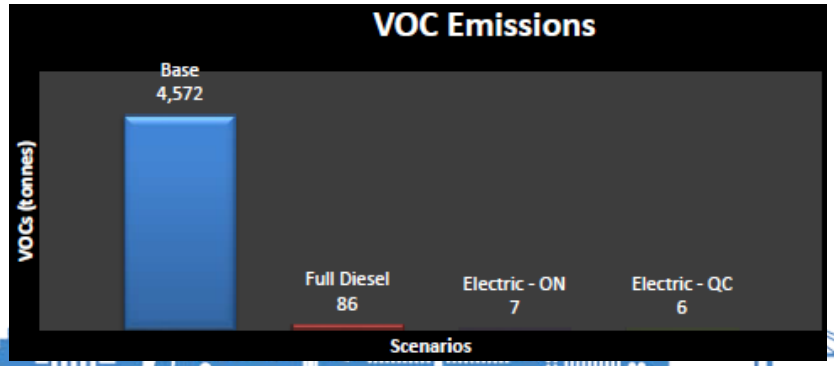
FOR VIA RAIL WITH DEDICATED TRACKS:
$0 (BY 2024)

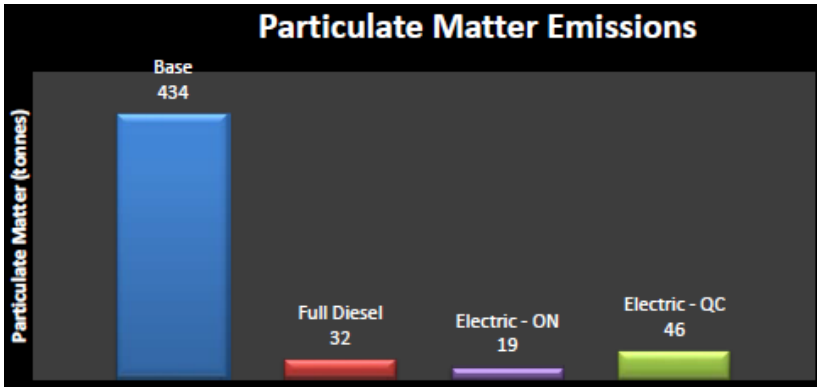
*EXCLUDING PENSION COSTS

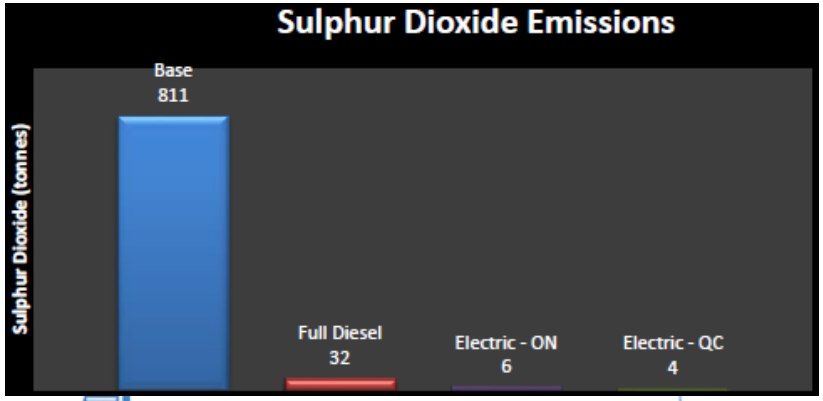
Impact Measurements











Next Steps

New Regulations: We are expecting new regulations on future commitments for both carbon and CAC reductions

UIC Commitments: Continue to follow our carbon emission reduction commitments under the UIC

Forecasted Fleet Renewal: Awaiting further direction from the Government of Canada on our dedicated track project and fleet renewal project