POLLUTION PROBE
CLEAN AIR. CLEAN WATER.

Transportation Program Overview

Workshop on Ultrafine Particle Emissions from Transportation

September 18, 2019

Introduction

- Major focus of our work is addressing the challenge of decarbonizing the transportation sector
- Guiding strategies: technology neutral; working through partnerships with industry, governments, NGOs, academia; multi-modal/systems-level focus
- Our transportation partners are drawn from a variety of sectors

Recent Projects

Zero Emission Vehicle Charging in Multi-Unit Residential Buildings and for Garage Orphans

- Developed guidance document targeted at key stakeholder groups such as government (all levels), EVSE providers, property developers and managers, and utilities
- Report details key barriers and means to addressing them

Framework for Municipal Zero Emission Vehicle Deployment

- Provides support to Canadian municipalities seeking to increase ZEV uptake in their communities
- Report provides customizeable suite of over 150 actions for municipalities

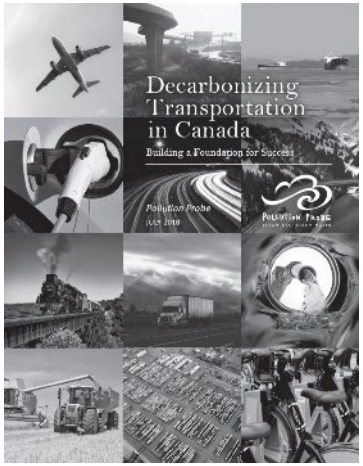
City of Toronto Electric Mobility Strategy Assessment Phase

- Project laid groundwork for City's ambitious Electric Mobility Strategy
- Report incorporates results of primary and secondary research, a lit review, best practices from case studies, data analytics, and stakeholder workshop

Recent Projects

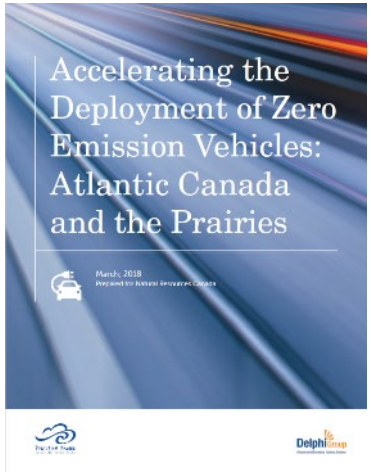
Decarbonizing Transportation in Canada: Building a Foundation for Success

- Presents comprehensive policy options framework
- Explains key factors influencing transportation energy demand
- Systems-level, multi-modal focus
- Supported by Toyota Canada



Accelerating the Deployment of Zero Emission Vehicles: Atlantic Canada and the Prairies

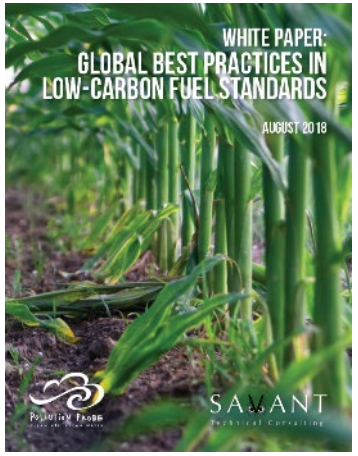
- Research and extensive stakeholder consultation to develop solutions for enhancing deployment of ZEVs in Atlantic Canada and the Prairies
- Supported by NRCan, Bruce Power, GAC, CVMA and The Delphi Group



Recent Projects (Cont'd)

White Paper: Global Best Practices in Low-Carbon Fuel Standards

- Technical paper focussed on elements of LCFS policies such as life-cycle assessment, indirect land-use change, and sustainability criteria
- To inform the development of the federal Clean Fuel Standard (CFS)
- Supported by Imperial Oil Foundation, Savant Technical Consulting/University of Toronto



Electric and Hydrogen Vehicle Advancement Partnership

- Served as independent third party to implement EHVAP initiative on behalf of Government of Ontario
- Aim was to build foundation for achievement of Ontario's goal of 5% ZEV sales by 2020
- Built extensive network of transportation/EV stakeholders

Past Pollution Probe Transportation Projects

- ***EV-Grid Gap Analysis Study*** (NRCan – 2017)
- ***Pathways Initiative Workshop and Report*** (Imperial, RAC, OTA, Toyota, CFA – 2016)
- ***Roundtable Series on Emerging Transportation Technologies*** (ECCC – 2012-2016)
- ***Report on Cost and Adoption Rates for Fuel Saving Technologies for Trailers in the Canadian Freight Sector*** (ECCC – 2015)
- ***Electric Mobility Adoption and Prediction (EMAP) Project*** (NRCan and LDC partners – 2013-2015)
- ***City of Calgary Electric Vehicle Strategy*** (City of Calgary – 2015)
- ***Business Case for Electric Vehicle Use in Service Vehicle Fleets (Project EVAN)*** – (TAF, Ontario, ECCC, PWU – 2013)

Current Work on Transportation Regulations and Policy Development

Canada's Zero Emission Vehicles Strategy

- Extensive, foundational participation as members of Advisory Group and five expert working groups

Proposed Clean Fuel Standard

- Participation in initial consultations and in Multi-Stakeholder Consultative Committee

HDV and LDV Standards

- Technical and policy support to ECCC, focussing efforts on stringency, barriers and opportunities associated with implementation

Promoting Sustainability in Freight Transportation

- Participation in Management and Technical Review Committees of Locomotive Emissions Monitoring (LEM) Program led jointly by Railway Association of Canada and Transport Canada

Future Outlook and Considerations

- On-road freight is the fastest growing source of transportation emissions in Canada
- Aviation is the most challenging transportation sector to decarbonize
- Carbon pricing will likely lead to significant increases in (fossil) fuel prices
- ICE vehicle fuel economy improvements may be leading to significantly increased UFP emissions
- There is growing interest in alternative marine fuels, and opportunities for work in this area are likewise growing
- The use of autonomous vehicles is expected to grow significantly in the near future, so is the use of car- and ride-sharing services
- Leading nations have already set timelines for banning the sale of personal ICE vehicles
- The electrification of transportation will continue to be a growing trend in Canada and a core focus of Probe's transportation work

Thank You

Steve McCauley
Senior Director, Policy
smccauley@pollutionprobe.org

Melissa De Young
Director
mdeyoung@pollutionprobe.org

Derek May
Senior Project Manager
dmay@pollutionprobe.org

208 - 150 Ferrand Dr., Toronto
T. 416 926 1907 x 252

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