Canada-U.S. Collaboration
Vehicle and Engine Emission Control

Presentation to the Mobile Sources Technical Subcommittee
Chicago, Illinois
May 7, 2014
A Long History of Collaboration to Reduce Transportation Emissions

- Canada-U.S. Air Quality Agreement (AQA) has resulted in a history of aligning air pollutant emission standards for vehicles and engines.
- In 1991, Canada and the U.S. signed the Canada–U.S. Air Quality Agreement (AQA) to address transboundary air pollution that leads to acid rain.
- In 2000, the Governments completed the Ozone Annex to the AQA to address air pollution that leads to the formation of ground-level ozone, a major component of smog.
  - the Annex included specific obligations towards alignment of regulatory standards for emissions from vehicles and engines
- More recently, the Canada-U.S. Regulatory Cooperation Council builds upon the existing collaborative framework under the U.S.-Canada AQA.
The AQC: An Effective Framework for Collaboration

• In 2007, the Canada-U.S. Air Quality Committee (AQC) approved a work plan for general areas of collaboration Environment Canada (EC) and the U.S EPA on vehicle and engine emission control.

• The work plan covers collaboration in the following key areas:
  – development of national air pollutant and GHG emission standards
  – administration of vehicle and engine compliance programs
  – development of international standards (e.g., IMO, WP-29)

The Canada-U.S. Air Quality Committee framework has been a successful bilateral mechanism to administer on-going regulatory collaboration on vehicle emissions.
Why collaborate on vehicle and engines?

• U.S. and Canada have:
  – common policy objectives on reducing emissions from the transportation sector
  – highly integrated transportation sectors
  – similar performance monitoring and verification priorities

• Coordinated efforts on regulatory alignment, administration and compliance programs enable us to:
  – minimize testing overlap
  – act upon non-compliance in a more targeted and efficient way, given expanded scope of regulated products
  – increase the breadth/depth of monitoring and verification
  – allow for more effective use of resources and avoid duplication
  – minimize industry burden while improving regulatory oversight and performance monitoring
EC-EPA initially collaborated on air pollutant emission regulations for on-road vehicles. Regulations are aligned for:

- light-duty vehicles and light-duty trucks
- heavy-duty vehicles and engines
- motorcycles

In June 2013, EC published a Notice of Intent to develop regulations to align with EPA’s Tier 3 vehicle emission and fuel standards and initiate early stakeholder consultations (proposed regulations are under development).

Area of collaboration was expanded to include air pollutant regulations for a range of off-road vehicles and engines. Regulations are aligned for:

- small engines (e.g., chainsaws, lawn mowers) (EC developing amendments to update)
- diesel engines (e.g., construction and farm equipment)
- recreational vehicles and engines (e.g., snowmobiles, outboard engines, personal watercraft)
Alignment of Greenhouse Gas Emission Standards for Vehicles and Engines

- In recent years, EC-EPA collaboration has broadened to GHG emission regulations for on-road vehicles.
- EC and EPA adopted aligned GHG emission regulations for new light-duty vehicles for model years through to the 2016 model year.
  - In December 2012, EC published proposed regulations for 2017-2025 to establish common national standards (final regulations expected in 2014).
- EC and EPA have adopted aligned GHG emission standards for on-road heavy-duty vehicles of the 2014-2018 model years.
Compliance Testing

- EC-EPA are collaborating in its compliance testing activities through:
  - sharing vehicle and engine test lists to avoid duplication
  - testing vehicle or engine types for which the other party is unable to do so
  - participating in correlation testing to ensure that EC-EPA labs deliver repeatable results

- EC regulations include provisions to accept an EPA certificate of conformity as a means of demonstrating compliance with Canadian emission standards.

- EC-EPA jointly working to improve compliance of products imported from emerging economies:
  - jointly conducted an evaluation of an emission testing laboratory in China
  - exploring potential outreach strategies to improve compliance of small engines
Data Sharing

- A data sharing framework was developed that provides guidelines and principles to enable the sharing of information in a systematic manner and in accordance with respective statutory, regulatory, or internal policy requirements.

- EC-EPA share data on an ongoing basis, including related to:
  - correlation or validation of tests results (i.e.; the monitoring and verification that our respective laboratories produce similar results);
  - information on suspected non-compliant vehicles and engines and path forward towards resolution;
  - information supporting the development of emission standards and test procedures;
  - vehicle and engine test selection lists to avoid duplication;
  - availability of vehicles and engines tested by EC to share with EPA;
  - data that support the development of compliance strategies by identifying vehicles or engines that warrant further testing and evaluation.
Research & Development

• EC-EPA collaborate in R&D projects that support regulatory development and related policies. Recent projects have included:
  – evaluating GHG emission reduction opportunities associated with mass reduction in light-duty vehicles
  – conducting power pack testing to inform the development of new emissions testing procedures for diesel hybrid trucks;
  – performing class 8 tractor-trailer chassis testing, pickup truck testing and engine dynamometer testing to support GHG standards regulatory development;
  – performing chassis dynamometer testing of diesel hybrid trucks and equivalent conventional truck to support development of a potential next phase of GHG standards for heavy-duty vehicles;
  – completing a joint evaluation of heavy-duty vehicle aerodynamic properties at Canada’s National Research Council wind tunnel, and coast down testing in Arizona, including analysis of coast down data.

• EC-EPA have also initiated enhanced collaboration of testing activities with Transport Canada to maximize efficiencies relating to the ecoTechnology for Vehicles Program.
Non-mandatory Programs to Achieve Reductions

- EC-EPA have collaborated to share best practices and lessons learned on various financing mechanisms and programs to promote greening of the legacy heavy-duty vehicle fleet.

- Natural Resources Canada (NRCan) and EPA have expanded the SmartWay program into Canada, providing one seamless cross-border program to cut climate and pollutant emissions from goods movement across North America.
  - NRCan-EPA collaborated to develop compatible assessment tools, partner education and recognition criteria; and a multi-lingual on-line fuel-efficient training course for truck drivers
  - In October 2013, both U.S. and Canadian-based partners received the 2013 SmartWay Excellence Award, the program’s highest recognition for top-performing partners.
International Maritime Organization

• Canada and the U.S. collaborate to reduce marine emissions through the IMO (MARPOL Annex VI).

• A joint Canada-US Emission Control Area (ECA) proposal to IMO was adopted in March 2010 which is now in effect and is significantly reducing air pollutants in coastal waters.

• Canada and the U.S. have adopted regulations to implement the ECA requirements domestically.

• In 2011, amendments to MARPOL were adopted making the Energy Efficiency Design Index (EEDI) mandatory for new ships.

• Canada-U.S. are continuing to work at IMO to develop:
  – the EEDI framework for ship types and sizes, and propulsion systems, not covered by the current requirements and the development of related guidelines;
  – technical and operational measures to further improve the energy efficiency of existing vessels.
World Forum for the Harmonization of Vehicle Regulations (WP-29)

- EC-EPA share information and consolidating resources to bring a North American perspective to the global standards-setting process at the U.N. forum.

- EC-EPA conduct regular teleconferences in advance of U.N. meetings (WP-29 and GRPE) to review agenda items and exchange views.

- EPA and EC participating actively in a working group on heavy-duty vehicle hybrids to establish a harmonized test method to measure pollutant emissions and CO$_2$ emissions from heavy-duty hybrid vehicles.

- EPA (Chair) and EC (Secretary) are active participants in the Electric Vehicles – Environment working group to help promote the deployment of electric vehicles – developing a global Electric Vehicle reference guide for environmentally-related requirements and regulatory activities being considered or already established by contracting parties.
The Regulatory Cooperation Council (RCC)

- In February 2011, Prime Minister Stephen Harper and U.S. President Barack Obama announced the creation of the Canada-United States Regulatory Cooperation Council (RCC).
  - objective of better aligning regulatory approaches in the two countries, where possible.

- Following stakeholders consultations, the RCC Joint Action Plan was released in December 2011.
  - set out 29 Initiatives across 5 broad sectors to begin the process of developing more closely aligned regulatory systems between Canada and the U.S.
Scope of the Initiatives set out in the RCC Joint Action Plan

- Environment
  - Mobile Sources
    - Light Duty Vehicles Emissions
    - Locomotive Emissions
  - Transportation
  - Agriculture and Food
  - Health & Personal Care Products, Workplace Chemicals
  - Cross-Cutting Issues
The RCC Light-Duty Vehicle Initiative

- The initiative set out in the RCC Joint Action Plan:

  "Refine and enhance the existing Air Quality Committee (under the U.S.-Canada Air Quality Agreement) work plan with regard to information sharing, technical work sharing, scientific collaboration and testing related to completed emission regulations for light-duty vehicles, which have been bilaterally coordinated."

- The RCC work plan for light-duty vehicle emission initiative built upon the existing collaborative framework under the US–Canada Air Quality Agreement (AQA)
RCC LDV Initiative: Progress Achieved

- EC published proposed regulatory amendments to address incompatibilities in GHG reporting for LDVs relative to the U.S.
- EC-EPA conducted several rounds of emission correlation testing of light-duty vehicles, to promote measurement accuracy for emission compliance testing.
- EC-EPA completed the sharing of compliance verification and in-use surveillance test results for 2011-12 to enhance program coordination and effectiveness.
- EC-EPA convened meetings to identify potential regulatory cooperation initiatives and reported to the Canada-U.S. Air Quality Committee at its annual meetings in 2012 and 2013.
- EC-EPA convened regular conference calls with automotive industry organizations to provide an update on work plan implementation.
The RCC Locomotive Emissions Initiative

- The initiative set out in the RCC Joint Action Plan:

  "Work together to reduce greenhouse gas emissions from locomotives, building on the already extensive collaboration and coordination between both governments on locomotive air pollutant regulations."

- The work plan for this initiative includes the following key elements:
  - a technology and infrastructure scan;
  - a workshop with industry experts;
  - development of a Canadian Memorandum of Understanding (MOU); and
  - work towards a Canada-U.S. voluntary action plan between industry and government that includes the development of GHG performance targets and a package of technical and operational measures to achieve them.
RCC Locomotive Initiative: Progress Achieved

- Multiple stakeholder teleconference calls held to date.
- The technology and infrastructure scan was finalized and circulated to stakeholders in September 2012.
- Transport Canada and the U.S. EPA co-hosted the 2012 Railroad Workshop with industry experts in October 2012.
- Transport Canada and the Railway Association of Canada announced a renewed Canadian MOU on September 16, 2013.
- Stakeholders are supportive of the proposed path forward to develop a Canada-U.S. voluntary action plan to reduce GHG emissions from locomotives.
  - Steering Committee has been established to oversee development of Canada-U.S. voluntary action plan
  Plan currently being drafted, with goal for completion later this year
RCC- The Way Forward

• The initial RCC Joint Action Plan is in the final stages of implementation.

• Canada and the US are committed to developing another phase of RCC work that:
  – takes into account the input received from stakeholders during consultations in the summer/fall of 2013
  – builds on progress to date and lessons learned through the implementation of the initial Action Plan

• Both governments plan to engage stakeholders in the development of the next phase of work.
Conclusion:

- Canada and the U.S. are working closely on harmonized regulatory programs to reduce vehicle and engine emissions and will continue to do so pursuant to:
  - the collaborative framework established under the Canada-U.S. Air Quality Agreement (AQA)
  - the broad policy objectives of the RCC.