



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



Alignment of Air Pollutant Emission Standards for Vehicles and Engines

- 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 Oct. 2012, EPA published a final rule implementing more stringent GHG emission standards for light-duty vehicles of the 2017 to 2025 model years
 - 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 CO₂ 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.

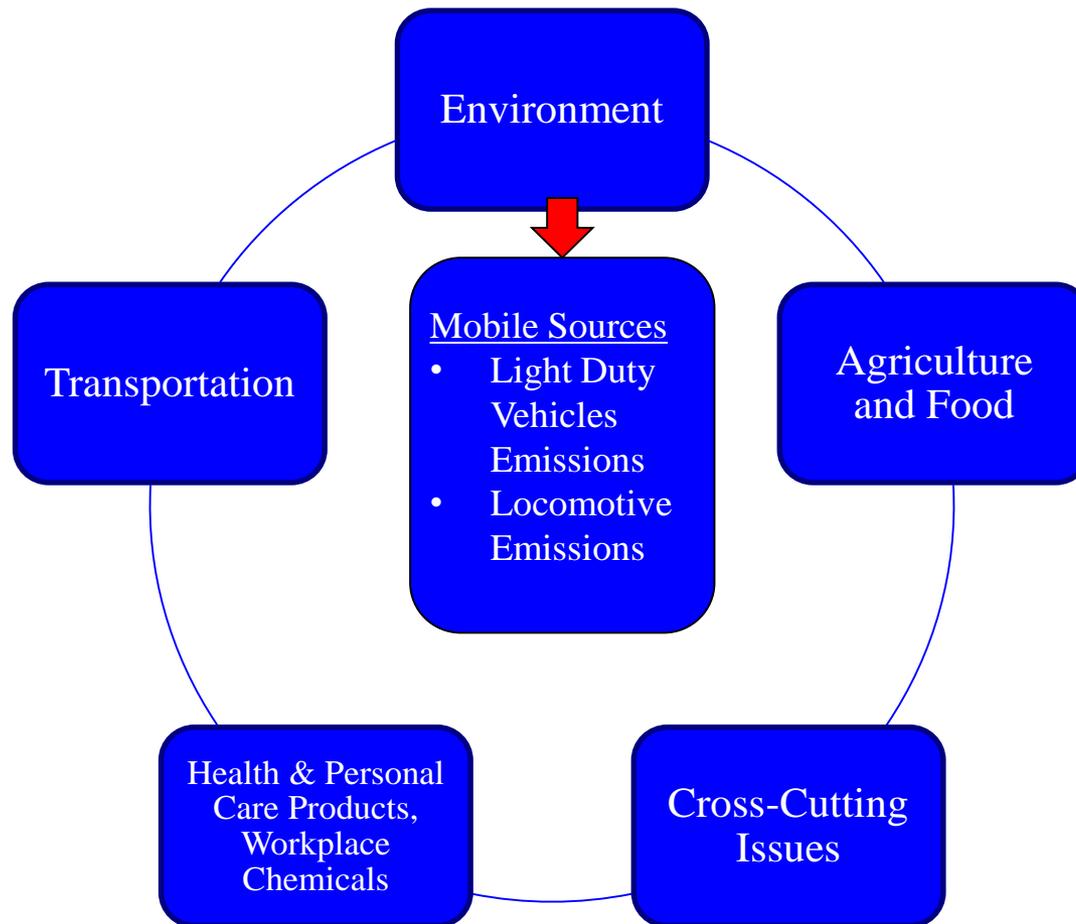


The Regulatory Cooperation Council (RCC)

- 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



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.

