

Transport Canada Update to the ASCENT Advisory Board

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Transport Canada

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Purpose

Update on Government of Canada's priorities and Transport Canada's activities related to aviation research.





Pan-Canadian Framework on Clean Growth and Climate Change

- Announced in December 2016, the Framework is Canada's plan to grow economy while reducing emissions and building resilience to adapt to a changing climate.
- To achieve Canada's international commitment of taking action to address climate change and lower greenhouse gas emissions.
- To support investments in clean technology research development and demonstration, including to advance research in areas that can reduce greenhouse gas emissions and other pollutants.



Sustainable Development Vision

- The Sustainable Federal Strategy is developed for three years, from 2016 to 2019.
- Canada set thirteen aspirational goals to support its sustainable development vision, including:
 - Effective action on climate change.
 - Low-carbon government.
 - Clean growth.
 - Clean energy.
 - Safe and healthy communities.
- Goals, targets and actions support the sustainable development goals and contribute to the other international agreements and initiatives.
- Canada is partner in actions others are taking that support its goals and targets.



Transport Canada's Responsibilities

- Ensures a safe, secure, efficient and environmentally responsible Canadian transportation system
 - Assess safety, security and economic implications in proposed environmental measures
- Regulates all emissions from the aviation, marine and rail sectors – leads Canadian participation and involvement at the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO)
- Removes barriers to enable take-up of clean technologies – e.g., modernized and harmonized codes, standards, test protocols, targeted incentives, research



The Current Approach

The Government of Canada set several targets related to greenhouse gases emissions:

- Reduce Canada's total greenhouse gas emissions by 30% relative to 2005 emission levels by 2030.
- Reduce greenhouse gas emissions from federal government buildings and fleets by 40% below 2005 levels by 2030.
- To monitor the transition to a low-carbon economy, Canada track its greenhouse gas intensity, or emissions of carbon dioxide equivalent.
- Take a leading role in international agreements and initiatives on climate change, including negotiations on greenhouse gas emissions in the maritime and aviation sectors.



Other Engagements by Canada

- **Canada has renewed its contribution agreement with the Federal Aviation Authority to support research by the ASCENT Center of Excellence until the end of March 2018.**
- **Under Canada's *Action Plan to Reduce Greenhouse Gas Emissions from Aviation*, Canada's aviation sector is working with the federal government to increase fuel efficiency and decrease greenhouse gas emissions.**
- **Through its Pan-Canadian Framework, Canada has committed to a carbon price for all provinces and territories by 2018 as a way to reduce emissions, drive innovation and encourage pollution reduction by people and businesses, based on greenhouse gas emissions.**

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April 18-19, 2017



Common Objectives

- Key strategic objective for ICAO, Canada and the US
- Long history of close working relationships
- ICAO's environmental goals include reducing or minimizing:
 - aircraft noise
 - impacts on air quality
 - impacts on the global climate
- R&D is a key component
 - Improved measurement / understanding
 - Clean technology
 - Efficient operations





Canadian Environmental Research Priority Areas and US Collaborations

1. Aviation Impacts on the Global Climate

- Support to ICAO CORSIA (ASCENT 001)
- Aviation Emissions Impacts in the Arctic (support from FAA)

2. Aviation Impacts on Air Quality

- Cdn measurement technology for new ICAO nvPM standard and methodology (linkages with ASCENT and GARDN)

3. Aviation Alternative Fuels

- Fuel, engine and flight testing (ASCENT 001&029/GARDN/NRC)
- Support to ICAO Alternative Fuels Task Force (ASCENT 001)
- Contrail and Emissions (ASCENT 024/GARDN/NRC)
- Unleaded avgas testing (FAA PAFI/NRC/EC)

Green Aviation Research & Development Network (GARDN II)

Public-Private Partnership (*selected projects)

- Canada's Biojet Supply Chain Initiative
- Producing Biojet from Cdn forest residues
- Biojet Contrail and Emissions Research
- Greening the Aerospace Supply Chain
- Integrated Electric Propulsion Systems
- Next Generation Combustor for Small Gas Turbine Engines



Green Aviation
Research & Development
Network

Groupement Aéronautique
de Recherche et Développement
en eNvironnement

Next Steps: Continued Opportunities for Expanded Collaborations

- **NASA Study Confirms Biofuels Reduce Jet Engine Pollution**
- The findings are the result of a cooperative international research program led by NASA and involving agencies from Germany and Canada, and are detailed in a study published in the journal Nature (15 March 2017)

