

**Remarks for Michael Rousseau
Executive Vice President and Chief Financial Officer
Air Canada
IATA Alternative Fuel Symposium
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Thank you Doug for that kind introduction and good morning everyone.

It is a pleasure to be here speaking to you today.

Although at first it might seem a bit odd for a financial executive to be addressing a group of alternative fuel experts, I can assure you that what you do has a very direct bearing on what I do. Fuel is one of Air Canada's largest cost items, so as CFO I keep a close eye on any and all developments related to fuel. I'm also very focused on social responsibility reporting.

At the same time, changes in accounting requirements and practices are drawing people like me into your world.

More and more, companies are quantifying and required to account for the environmental impacts of what they do. Long gone are the days when what economists euphemistically call "negative externalities" – otherwise known as pollution – could be set out and forgotten like, well, yesterday's trash.

I think this heightened accountability is a very good thing, speaking both financially and from the standpoint of Corporate Social Responsibility.

My purpose today is to give you Air Canada's perspective on some of the issues around alternative fuels that you will be discussing over the next two days. I would also like to speak a bit about what we are doing to meet the challenge of curbing GHG emissions.

Context

To begin, Canada is a full and active participant in multilateral efforts to combat global warming, including through the reduction of GHG emissions. Among other things, our country is a signatory to the Paris Accord and through ICAO it also supports CORSIA (*Carbon Offsetting and Reduction*

Scheme for International Aviation), under which aircraft operators will have to purchase offsets, or “emission units”, for the growth in CO2 emissions in international aviation covered by the agreement.

For its part, Air Canada has aligned itself with and adopted IATA’s ambitious targets for GHGs. These include carbon neutral growth from 2020 and reducing emissions by 50 per cent relative to 2005 levels by 2050.

Air Canada has long been a full supporter of domestic initiatives to reduce GHGs. For example, in 2005, through a national industry association, Air Canada and other Canadian carriers signed on for the world’s first voluntary agreement to reduce GHG emissions by airlines.

Subsequent to this, in 2012 Air Canada signed *Canada’s Action Plan to Reduce GHG Emissions from Aviation* with the Federal Government and other key aviation stakeholders. This partnership set an aspirational goal to reduce GHG emissions by improving fuel efficiency by an average rate of 2 per cent annually until 2020, measured against a 2005 baseline.

Going forward, Canada’s progress will be benchmarked against both IATA’s 1.5 per cent efficiency improvement target and the *Action Plan’s* 2 per cent aspirational goal.

Air Canada Progress

Air Canada is committed to these goals and has demonstrated continual progress in terms of its environmental performance. Between 1990 and 2016, Air Canada improved fuel efficiency by 40 per cent.

In 2016 alone, our fuel efficiency improved by 4.3 per cent compared to 2015. During the year, our efficiency projects combined saved over 13,800 tonnes of fuel, or approximately 44,400 tonnes of CO2e [equivalent].

We think these are solid accomplishments. We are proud of them. At the same time, there is no denying we were incentivized in at least three ways to do these things. These incentives remain in effect, so we intend to do more.

First, there are societal expectations. While it is true that in Canada airlines only contribute about 4 per cent of domestic emissions, people everywhere expect we will work to reduce these as part of an overall effort to address climate change. People justifiably demand accountability and want corporations to respect the environment.

We agree.

Air Canada has made Corporate Social Responsibility a priority. In 2016 the Reputation Institute – the world’s leading reputation-based research advisory firm – listed Air Canada among the top 100 companies in the world for CSR reputation. We were the only Canadian company on the list, and one of only two passenger airlines the Reputation Institute recognized that year.

Second, reflecting these changed societal expectations, there are new regulations to modify behavior. This includes in Canada carbon pricing and, globally, other market-based measures.

Finally, there is self-interest.

As I mentioned, fuel is one of our largest expenses – \$2.6 billion last year and is expected to be above \$3.2 billion in 2017, our largest cost bucket.

So, as part of our overall corporate transformation, we have made reducing our vulnerability to high fuel prices – in part by increasing efficiency – a core part of our strategy.

All this to say, for societal, regulatory and financial reasons, airlines like Air Canada have excellent reasons to improve fuel efficiency. This brings with it the benefit of reduced emissions.

Four Pillars

To achieve reductions, Air Canada has adopted the four pillar approach. These include improved operations, such as removing excess equipment from aircraft to reduce weight and fuel burn. Removing only one kilogram of weight fleetwide translates into a savings of:

- 16,180 litres of fuel,
- US\$10,200 in lower fuel costs,

- and 41 fewer tonnes of GHG emissions released over the course of a single year.

A second pillar is improved infrastructure. In our case, we have worked with airports and air navigation service providers to secure more direct routes and smoother landing approaches, which translate directly into lower fuel burn.

A third pillar is Market Based Measures. Air Canada has been deeply engaged in this area. We had a representative on the Government of Canada's ICAO delegation that negotiated CORSIA.

In 2016, Air Canada became the first airline to voluntarily join the Carbon Pricing Leadership Coalition. Launched in 2015 by the World Bank's International Monetary Fund, the goal is to expand the use of effective carbon pricing policies. Air Canada joined this coalition for the opportunity it provides to learn about and help craft carbon pricing policy for aviation in Canada.

Nonetheless, we have our reservations about the current carbon pricing model being implemented in Canada. We are working hard as an industry to make sure it is effective and appropriate for the unique and important role that aviation plays in the Canadian economy and landscape.

Our concern is that unlike CORSIA, which will direct money collected back into reducing aviation emissions, there is no such provision to earmark money raised in Canada for reducing GHGs from aviation in Canada. We believe this money should be used for such things as alternative fuel research. This leaves us apprehensive that costs will rise for travellers but they and the industry will see no corresponding benefit with respect to aviation emissions.

This brings me to the fourth pillar, technology. This includes investment in new, fuel-efficient aircraft, on which we have spent nearly \$10 billion in the past decade. Today, Air Canada has one of the most modern, efficient fleets in operation. We continue to receive new aircraft, including this month the first of 61 ultra-efficient Boeing 737 MAX aircraft that we have on order.

The investment in new aircraft has been the prime driver of the 40 per cent fuel use improvement we have achieved since 1990. Today, Air Canada is essentially operating on the leading edge of what current technology allows with respect to aircraft fuel efficiency and emissions reduction.

For this reason, we are looking to other technology for further emission reductions to meet our GHG targets and obligations, the most promising of which is biofuel.

Air Canada and Biofuel

Air Canada operated its first biofuel flight in 2012. This was a flight from Toronto to Mexico City, flown under the Airbus “Perfect Flight” program, to demonstrate biofuel’s potential. It was timed to coincide with the Rio +20 UN sustainable development conference.

The feedstock was used cooking oil and this biofuel, plus other measures based on the four pillars I mentioned, yielded a 40 per cent CO₂ emission reduction for the flight.

Later that summer, we operated a second biofuel flight. It took Canadian Olympic team members from Montreal to London for the Olympic Summer Games.

These flights further solidified our commitment to biofuel’s development and use. And they also gave us some practical experience to identify some basic requirements we have for its adoption.

Biofuel Requirements

First, biofuels must meet ASTM Standards and be certified as drop-in for use in existing aircraft engines. This includes the ability to mix them with conventional fuel and to have them delivered through the same infrastructure. They must also be sustainably sourced over the entire production life cycle – not detracting from food production or contributing to deforestation – which is crucial for public acceptance and something we insist on as a responsible corporation.

Price is also a consideration. As he watched the Rio flight being fueled back in 2012, our director of fuel purchasing was overheard to say “that’s liquid gold” being poured into the aircraft. And while there has been some progress in reducing costs, there clearly remains a way to go.

I am confident, though, as cheap and plentiful feedstocks are identified and production and infrastructure achieves scale, the price will fall.

Moreover – and as an accountant I am not happy about this – it is also likely that conventional fuel prices will rise with the price of oil and this, combined with carbon pricing mechanisms, will also make alternative fuels more price competitive.

Another important requirement is that there be ample availability and a consistent supply. In 2016 we used nearly 5 billion litres of jet fuel so the demand is enormous and alternative fuels will not be available in sufficient quantity to displace conventional jet fuel anytime soon. Even to have a meaningful impact on overall emissions, the scale of production will have to be quite considerable, which presents a clear challenge.

Finally, related to this, is location. A prime consideration as we develop the alternative fuel infrastructure is ensuring local production and proximity to airport fuel storage and distribution facilities.

Canadian Research

We believe Canada is well-positioned to play a meaningful role in addressing these issues and contributing to the development of bio-fuels. This is due to our country's abundant natural resources, the depth of our scientific and research community, and our experience with refining fuels. We foresee the potential for a Canadian-sourced feedstock, bio-refining in Canada, and a strong Canadian market demand. These creates exciting opportunities for job creation in an emerging industry.

Air Canada has been actively participating in all these areas.

This includes working with government bodies such as Environment Canada on the Clean fuel standard and in workshops held by the Natural Resources Council to be sure the voice of aviation is included in policy making for the Forestry and Agriculture sectors, where there is the greatest promise for finding a suitable feedstock.

In 2014, we joined the BiofuelNet Canada Aviation Task Force. This forum created an opportunity for ongoing collaboration between academic, industry, government and other stakeholders on aviation-related biofuel issues.

One example of a study we participated in through this group was undertaken with Airbus. It sought to identify feedstocks and technologies with the most potential for commercial production of aviation biofuel in the country. Also participating in the research were SkyNRG, the Waterfall Group and Novo Energy.

More recently, through our membership in GARDN, the Green Aviation Research and Development Network, we participated in two projects related to the development of alternative fuels.

Supply Chain

One of these is Canada's Biojet Supply Chain Initiative (CBSCI). It is a three-year collaborative project with 14 stakeholder organizations that is aiming to introduce approximately 220,000 litres of sustainable aviation biofuel into a shared fuel system at Toronto's Lester B. Pearson International Airport. In fact, as we speak the biofuel is being shipped and should arrive in Toronto later this month.

Previous Air Canada biofuel flights used biojet that was segregated and loaded separately into an aircraft via tanker truck. The objective of this project is to start developing an operational framework for a Canadian supply chain that will introduce biojet into a multi-user, co-mingled airport fuel supply system, and develop "best practices".

A number of airports around the world are already doing something similar. This approach is viewed as good way to test and develop the infrastructure we will eventually need if alternative fuels are to be used in meaningful amounts.

The CBSCI project is a first in Canada. An important aspect is that it is aimed at leading to a sustainable, Canadian supply chain of biojet using renewable feedstocks. Canada has abundant agricultural and forestry biomass resources, with globally recognized sustainable production and harvesting practices. In fact, I sit on the Board of Directors of Resolute Forest Products, a global leader in forest sustainability.

The biojet will be blended with petroleum jet fuel to meet all technical quality specifications before being introduced into a shared fuel tank at Pearson.

The CBSCI project will also identify supply logistic barriers that arise when aviation biofuels are introduced at major Canadian airports.

CBSCI includes a strong research component with the participation of Queen's University, the University of Toronto, and McGill University, who will be assisting in modeling feedstock availability, identifying and addressing barriers to biojet adoption in co-mingled fuel systems and implementing the IATA Sustainability Meta Standard.

This underscores the importance of partnerships and information sharing in biofuel research.

Contrail Project

This past spring, Air Canada participated in another GARDN project that involved researching aircraft contrails. This is the Civil Aviation Alternate Fuel Contrail and Emissions Research program, or CAAFCER.

Contrails are trailing clouds that are sometimes formed from an aircraft's engine exhaust by condensing water vapor, depending on the external weather conditions. Some of the water vapor comes from the air around the aircraft, while some of it is added by the exhaust. Persistent contrails are of interest to scientists who suspect they may be an agent contributing to global warming.

The project was led by the National Research Council of Canada. In April and May of this year Air Canada operated five commercial biofuel flights on Airbus A320 aircraft from Montreal to Toronto, using a high, 40 per cent blend of HEFA biofuel.

An aircraft from the NRC followed behind our aircraft and collected samples of the contrails from these flights. As part of the project, the NRC also captured contrail samples from six other regular Air Canada flights on this route for comparison. The results will be shared this spring.

Conclusion

By way of conclusion then, I believe you can see that Air Canada is deeply committed to the development of alternative fuels in Canada, which itself aims to be a leader in this field.

It is essential that we succeed in developing safe, sustainable and affordable biofuels if our industry is to meet its ambitious emission GHG reduction targets on schedule. To do this will require not only long-term commitment from the industry, but also supportive public policy to facilitate research and ensure sufficient resources are properly directed to achieving these goals.

Gatherings such as this give me confidence that we have committed, bright people, who are highly motivated, working on this very important challenge. You should know as well that Air Canada is eager to be your partner and to offer its support to help you in your work.

I therefore wish you the very best for this conference and success in your drive to make the future cleaner and greener for all us.

Thank you