AÉROPORTS DE MONTRÉAL

Environmental Management at Aéroports de Montréal
FOR A SUSTAINABLE FUTURE

Introduction

AÉROPORTS DE MONTRÉAL (ADM) MANAGES, OPERATES AND DEVELOPS MONTREAL'S TWO INTERNATIONAL AIRPORTS (TRUDEAU AND MIRABEL) BY TAKING INTO ACCOUNT ALL OF THE SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS AND BY DEVELOPING GOOD RELATIONSHIPS WITH ITS PARTNERS AND STAKEHOLDERS.

Airports are essential infrastructure for trade, business and tourism and play a vital role in any community, especially in a big city like Montreal. The economic impacts in terms of employment, contribution to the GDP and tax revenue are significant: for example, according to a recent study[1], the approximately 200 businesses present at Montréal-Trudeau generate a total of 55,000 jobs, nearly 28,000 of which are direct.

As a socially responsible business, Aéroports de Montréal strives to minimize the impact of its activities on the environment. Harmonious coexistence with its surroundings, particularly with regard to protecting the environment, is at the heart of its mission. The Corporation has also adopted an environmental policy that identifies the main areas of improvement, as well as a commitment to sustainable development accompanied by an action plan.

Early on, the Corporation also established an environmental management system (EMS) that demonstrates its concern with continuously improving its processes and environmental performance. Its EMS has held ISO 14 001 certification since 2000. Each year, ADM invests significant amounts to develop projects and programs related to the protection of the environment.

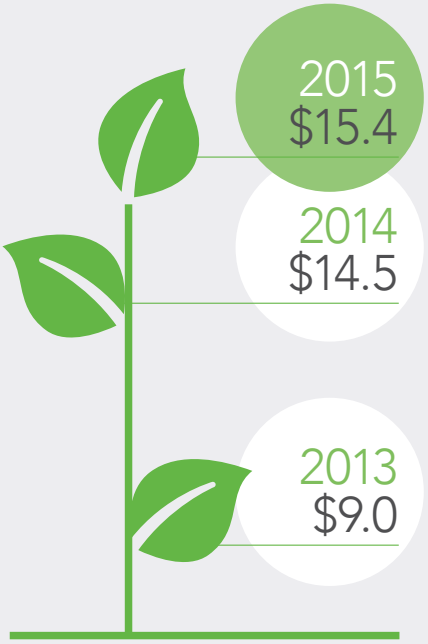
The Corporation is often regarded as a pioneer in environmental technology and procedures. We invite you to read this document and discover for yourself the efforts made by ADM to ensure a balance between the development of its services and airport terminals on the one hand, and the protection of the environment on the other hand.

James C. Cherry

President and Chief Executive Officer

INVESTMENTS IN THE ENVIRONMENT

(in millions of $)



1. Economic and fiscal impacts of the activities at YUL, 2015

Protection of Streams and the Environment

- With the aim of protecting the streams, major efforts are made in order to allow maximum recovery of the glycol used to de-ice planes. The de-icing centre has a highly efficient underground collection network, and used glycol is treated and reused for de-icing. Montréal-Trudeau is one of the few airports in the world to house such cutting-edge facilities.
- Given the winter conditions in Quebec, clearing snow and de-icing the runways are crucial for aviation safety. ADM now uses sodium formate and potassium acetate exclusively, as these products are recognized as being less harmful to the environment.
- Snow waste from the roads, parking lots, aprons and airplane manoeuvring areas is stored in dedicated areas. In the spring, runoff from the snow waste is diverted into a settling tank, allowing particles to settle before the water enters the storm drainage system.
- Water protection equipment, such as oil/water separators, trap hydrocarbons and solids from storm water.
- Emergency measures and specific protocols are in place in the event of an accidental oil spill.
- Rigorous follow-up on the quality of streams are performed continuously. More than 500 analyses are carried out annually on stormwater samples collected at the different outfalls of the Montréal-Trudeau and Mirabel airports. Automatic samplers were installed at the Bouchard Stream.
- The Montréal-Trudeau terminal includes the size of 33 football fields that constitutes an ecosystem of high ecological value.
- With regard to airport development projects, ADM carries out, when necessary, environmental impact studies in compliance with the applicable laws and regulations.
- Lastly, air quality at the airport is monitored by the City of Montréal and improves from year to year. Data collected is published on the City's website.

WINTER OPERATIONS

	2015		2014	
	YUL	YMX	YUL	YMX
Quantity of sodium formate applied (t)	**632**	**0**	820	0
Quantity of potassium acetate applied (L)	**74,228**	**5,440**	78,660	n.a.
Quantity of urea applied (t)	**0**	**100**	0	470
Quantity of salts applied on the parking lots and the road network (t)	**2,226**	**586**	1,566	543
Quantity of pure glycol* sprayed on aircraft (L)	**3,202,056**	**277,217**	2,333,000	200,000
Quantity of recycled glycol with 99.5% concentration (L)	**250,000**	**n.a.**	n.a.	n.a.

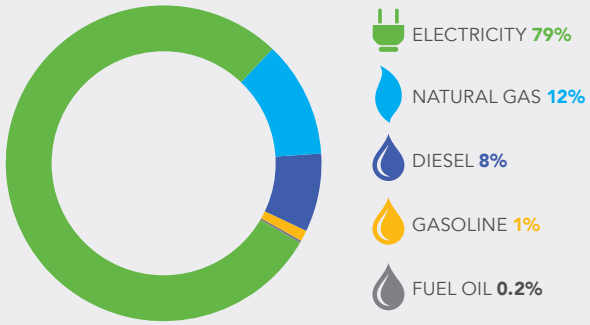
The runways and traffic lanes at Montréal-Trudeau are equal to 500km of highway.
The runways and traffic lanes at Montréal-Mirabel are equal to 313km of highway.
* Quantity per season 2013-2014 and 2014-2015.

– Number of days with snowfall: 68 in 2014-2015 and 93 in 2013-2014
– Number of days with freezing rain: 15 in 2014-2015 and 8 in 2013-2014

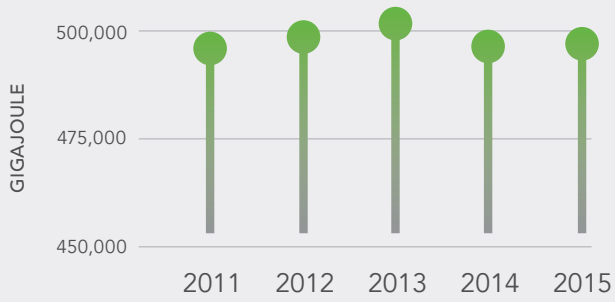
Energy Conservation and Renewable Energy

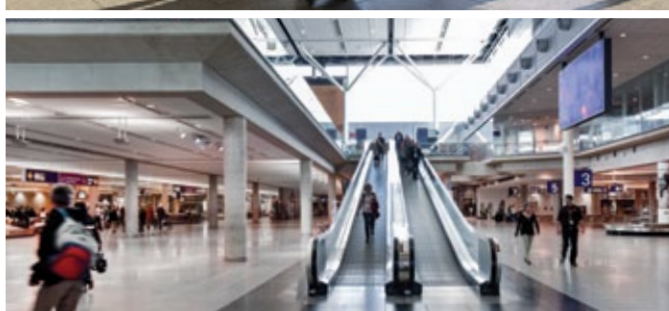
- In 2003, Montréal-Trudeau began using a high-performance thermal power plant that uses primarily natural gaz and green electricity from Quebec, hydroelectricity, as a main energy source. As it does not produce smoke plumes, the unit is located at the centre of the terminal, thereby reducing energy losses. It is four times more efficient than the old oil-fired unit.
- This unique heating unit is linked to a heating-ventilation-air conditioning (HVAC) system that is specially designed to recover and redistribute the hot or cold air in the airflows inside the terminal. Other devices are also geared toward energy efficiency, such as airtight revolving doors and speed regulators on escalators and moving walkways.
- A program in place for the last few years aims to gradually replace runway lighting and airside lamps with energy-efficient LED lights. Motion detectors to control lighting have also been installed in offices and elsewhere in the terminal.
- Aircraft parked at the boarding gate are provided with devices that supply electrical current and heated or cooled air in order to avoid using their own onboard fuel-based generators.
- Commercial aviation has a long-term goal of reducing its greenhouse gas (GHG) emissions and its reliance on fossil fuel by using biofuel, among other ideas. Montréal-Trudeau was chosen by Air Canada to carry out a project by Canada's Biojet Supply Chain Initiative (CBSCI). This three-year project, with its 14 participating organizations, aims to introduce 400,000 litres of renewable biojet fuel into the fuel supply chain.

2015 ENERGY CONSUMPTION MONTRÉAL-TRUDEAU AIRPORT



TOTAL ENERGY CONSUMPTION MONTRÉAL-TRUDEAU AIRPORT





A Smart Airport

- Montréal-Trudeau Airport is a world leader in airport technology designed to improve the fluidity of passenger flow. From an environmental viewpoint, the benefit of self-serve technology is that it makes it possible to process more passengers per unit of surface area, which results in a reduced environmental footprint while decreasing paper consumption.
- The terminal building and its 15,000 control instruments are managed remotely by a centralized high-performance computer system. Proactive management of the building thereby allows for a reduction in energy consumption while quickly detecting and correcting issues.
- To compensate for the many windows in the newer areas of the terminal, an innovative light-detecting and "smart" automated blinds system reduces the unnecessary influx of heat from direct sunlight and takes advantage of the warmth of the sun in winter.
- Terminal maintenance employees are equipped with electronic tablets allowing them to work efficiently without paper.
- Generally speaking, information technologies are an important aspect of operations. More than a hundred diverse systems contribute to the efficiency of daily operations and maximize the use of available space.

Recovery, Recycling, Reduction at Source

- Adhering to the 4R principle (reduction, reuse, recycling and recovery), ADM aims to recover 50% of its waste materials. Paper, cardboard, plastic, glass and metal are collected in multi-material collection bins throughout the airport terminal and offices.
- ADM also collects organic materials in the terminal building restaurants. Every year, an average of 150 tons is sent for composting.
- Other long-term programs aim to recover debris from repair or demolition work, reduce drinking water and paper consumption, and plan eco-responsible events.
- For example, the reclamation rate for materials from dismantling the Mirabel air terminal reached 96%, while the recuperation rate for residual materials from the international jetty expansion project was 95%.
- Used concrete and asphalt recovered from runways and traffic lane repairs are crushed on site and reused as foundation materials for service roads.
- ADM encourages sustainable sourcing, which means purchasing eco-friendly products and services.

AN AVERAGE OF **150 T** OF ORGANIC MATERIALS RECOVERED FROM TERMINAL BUILDING RESTAURANTS

96% RECOVERY AND RECYCLING OF DEBRIS FROM DISMANTLING THE FORMER MIRABEL AIR TERMINAL

95% RECOVERY OF CONCRETE AND ASPHALT (48,000 METRIC TONNES IN 2015)

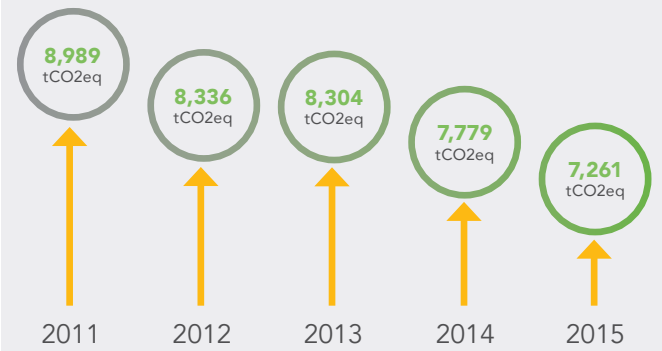
47% REDUCTION IN PAPER CONSUMPTION SINCE 2009

Reduction of GHG Emissions

- Reducing greenhouse gas (GHG) emissions have been a priority of ADM for several years.
- The many initiatives put forward in this regard have helped save 43,984 tons of CO_2 equivalent during the period 2004 to 2012. This exceptional performance allowed ADM to become the first airport authority in the world to sell carbon credits.
- In 2008, Aéroports de Montréal joined the global aviation industry by supporting the *Global Aviation Industry Commitment to Action on Climate Change*, signed by industry leaders.
- Montréal-Trudeau also became the first Canadian airport to receive Airport Carbon Accreditation (Level 2 – Reduction), in December 2014, and is now aiming for Level 3 – Optimisation.
- ADM set a new GHG emission reduction target to reach by 2020: to produce 5% fewer emissions than in 2013.

airport carbon accredited
REDUCTION

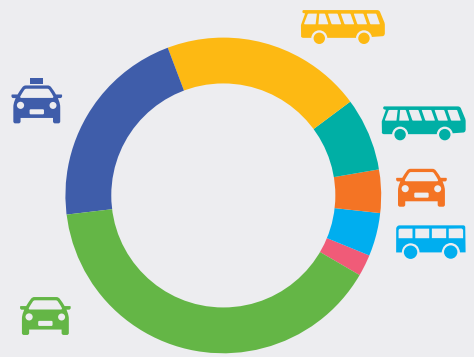
GHG EMISSIONS MONTRÉAL-TRUDEAU AIRPORT



Sustainable Transportation

- ADM is increasingly turning to sustainable transportation, starting with green initiatives for its fleet of light vehicles: the Corporation now favours more compact and energy-efficient vehicles, as well as electric vehicles.
- In response to an ADM requirement, the fleet of taxis at Montréal-Trudeau now consists of over 50% hybrid vehicles, resulting in a savings of 5,000 ton of CO_2 eq. per year. Moreover, as part of a pilot project, ten electric vehicles from Téo Taxi have also begun operating at Montréal-Trudeau.
- The renewal of the shuttle service between parking lots and the air terminal allowed ADM to introduce energy efficiency measures that translate into an approximately 35% reduction in fuel consumption.
- A free parking lot (CellParc) is available for people accompanying passengers in order to reduce traffic in the drop-off area and to reduce idling.
- Charging stations have been installed in the multi-level parking lot at Montréal-Trudeau for electric vehicles. Given the enthusiasm for this type of vehicle, ADM is increasing the number of parking spots equipped with charging stations.
- ADM's Écono-Écolo-Pratique program encourages employees to choose sustainable transportation, such as carpooling and public transportation, when travelling to and from work.
- The popularity of the 747 express bus connecting the airport to downtown is undeniable: ridership has now reached some 1.5 million people per year.
- Led by the Caisse de dépôt et placement du Québec, the Réseau électrique métropolitain (REM) project will include a branch connecting the Montréal-Trudeau Airport to Central Station. Entirely electric and clean while offering quick, reliable service, the REM will not only improve airport accessibility, but also lighten traffic and reduce the need for private vehicles.

MODAL SHARES, 2015

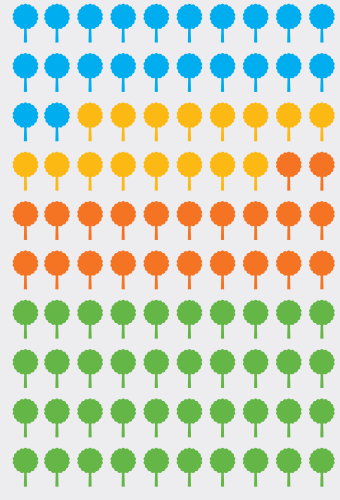


PRIVATE VEHICLES **49.8%**
TAXI / LIMOUSINE **26.3%**
CHARTER BUS **25.6%**
747 EXPRESS BUS **9.2%**
RENTAL VEHICLES **5.5%**
HOTEL SHUTTLES **5.5%**
OTHER **2.7%**

Green Initiatives and Promoting Natural Habitats

- As part of the redevelopment of its road network to Montréal-Trudeau, completed in 2013, ADM carried out an extensive greening program to beautify its access roads, to help reduce heat islands and to improve air quality. In all, 775 trees, 10,100 bushes and 38,500 perennials were added as part of this large-scale landscaping project.
- In partnerships with local communities, tree planting projects are carried out every year in accordance with the ADM Tree Policy. Financial contributions are also granted to certain community projects, such as the restoration of the Marcel Laurin Park woodland and the monarch habitat. Additionally, 96,000 trees were planted at Montréal-Mirabel as part of a GHG emissions offset project carried out with CO_2 Environnement.
- Aware that wildlife, particularly birds, represents a risk for aviation safety, efforts are underway by wildlife services to control wildlife around the airports. In particular, they use specially trained birds of prey (falcons, hawks, and eagles) to keep migratory birds away.
- Over the last few years, an increasing number of snowy owls have been entering the Montréal-Trudeau site in search of food. These beautiful animals are captured and relocated.
- Bees, however, are welcome. Beehives with over 600,000 bees were installed at Montréal-Trudeau and Montréal-Mirabel, and a bee-friendly garden was planted near the Montréal-Trudeau hives.

NUMBER OF TREES PLANTED AT MONTRÉAL-TRUDEAU AND IN NEIGHBOURING COMMUNITIES



EVOLUTION OF THE NEF 30 CONTOUR 1995-2014

* The number of people living under the noise footprint has declined by 92%.

EVOLUTION OF AIR TRAFFIC AND THE NUMBER OF PASSENGERS AT MONTRÉAL-TRUDEAU

Harmonious Coexistence with Communities

- Aéroports de Montréal strives to be an excellent corporate citizen and is involved in its community in multiple ways, such as within the Board of Trade of Metropolitan Montréal, Montréal International, Tourisme Montréal, the West Island Montreal Chamber of Commerce and the Chambre de commerce et de l'industrie de Mirabel.
- ADM collaborates with neighbouring cities and boroughs, including the City of Montréal, as part of the Sustainable Montréal 2016-2020 plan, participating, in particular, in programs aiming to improve the quality of life of citizens and the environment.
- ADM uses a standard practice of consulting with its stakeholders on its broad objectives, either directly, or through committees, such as the Community Advisory Committee and the Airline Consultative Committee. Among other initiatives, the land use plan, the airport master plans, the capital program and major expansion projects are subject to consultation according to established protocols.
- In partnership with Transport Canada, Nav Canada and the air carriers, as well as the surrounding cities and boroughs, ADM meets its responsibilities with regard to soundscape management. In fact, it has greatly improved since the phasing out of older generation jets. The number of people living within the NEF 30 contour has decreased considerably since 1995. Furthermore, the number of aircraft movements has remained stable, despite the increase in the number of passengers. For more information, refer to our *Soundscape Management at Montréal-Trudeau* brochure, available on our website.
- In conjunction with Montreal cultural institutions, ADM seeks to make Montréal-Trudeau not only a reflection of the city, but also a cultural and artistic showcase. In this way, the Aérogalerie offers passengers and visitors a variety of exhibitions throughout the terminal.
- ADM and its employees regularly take part in volunteer activities and support many charitable organizations, such as Kéroul, whose mission is to increase transportation accessibility.
- Lastly, ADM provides aviation enthusiasts with an airport activity observation park. Located near Runway 06R/24L, Jacques-de-Lesseps Park is well used, especially by the Airport Watch association.

Eco-friendly Buildings

- At the turn of the millennium, ADM undertook a major project to modernize and expand the Montréal-Trudeau airport facilities within the framework of sustainable development.
- The Montréal-Trudeau terminal holds BOMA BESt certification attesting to the excellence in energy and environmental performance of the building.
- All new buildings, such as the expansion of the international jetty inaugurated in May 2016, are equipped with a high-performance shell that reduces the need for heating or air conditioning.
- In 2016, a green roof and a living wall have embellished the terminal and contribute to the environnemental performance of the building.
- For the expansion of the international jetty, ADM wished to go even further by aiming for LEED® certification.

SIX FAVOURITES
AMONG THE LEED INITIATIVES PUT FORWARD FOR THE EXPANSION OF THE INTERNATIONAL JETTY

1 **WHITE ROOF**
The roof of the jetty is covered with a heat-welded membrane containing highly reflective white granules in order to counter the heat island effect.

2 **WATER CONSERVATION**
Restroom facilities are outfitted with low-flow equipment that makes it possible to conserve over 5M litres of drinking water per year – the equivalent of 50 Olympic-size swimming pools.

3 **ENERGY CONSERVATION**
Several measures were established in order to reduce energy consumption, particularly in heating and air conditioning.

4 **WASTE MANAGEMENT**
Thanks to the various programs implemented, around 95% of waste generated by the worksite was diverted from landfills.

5 **CHOICE OF MATERIALS**
As much as possible, the designers favoured recycled or locally sourced material, as well as FSC-certified wood.

6 **AIR QUALITY**
The products and materials used are free from contaminants, such as volatile organic compounds, in order to maximize the comfort and wellbeing of occupants.

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