

AVIATION OPERATIONAL MEASURES FOR
FUEL AND EMISSIONS REDUCTION
WORKSHOP



Air Quality Management at Montréal International Airports



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Airport Panel – Part 2
Ottawa, 5-6 November 2002

Air Quality Management at Montréal International Airports

- Aéroports de Montréal manages Montréal International Airports: Dorval and Mirabel

	Dorval	Mirabel
Pax (2001)	8,168,559	1,372,598
Movements (2001)	196,236	36,207
Traffic	Scheduled pax	Charter, cargo
Setting	Urban	Agricultural

- All passenger flights to be handled at Dorval by the end of 2004



Air Quality Management at Montréal International Airports



since mid-80s

- unleaded fuel;
- acid rain programs;
- manufacture to hi-tech based economy;
- provincial and municipal regulation, etc.



Until recently, air quality issues were not on the priority list



Regional focus is now on road traffic induced air emissions ()



No pressure on ADM from the various agencies



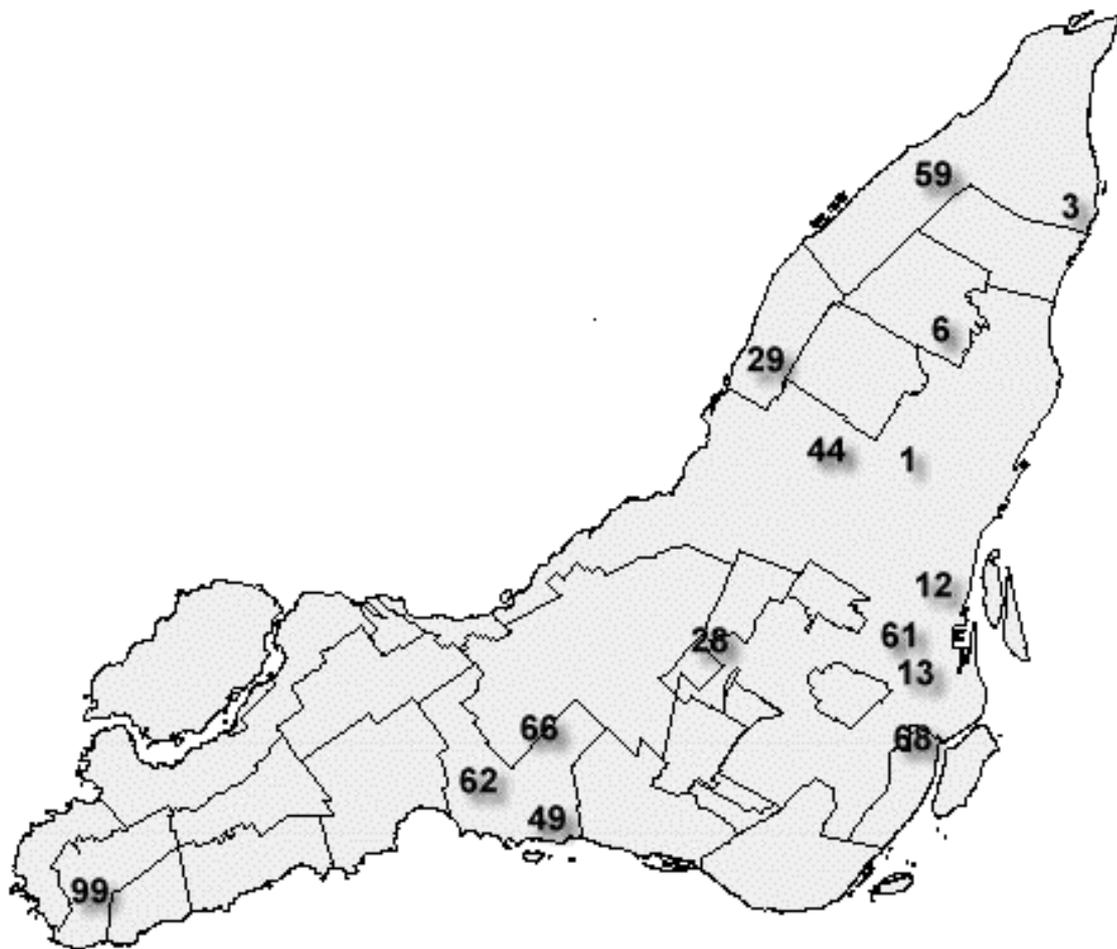
Air Quality Management at Montréal International Airports

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- Punctual air quality studies by TC
 - 1981: 3 months, 4 sampling sites
 - 1992: 12 months, 6 sampling sites
 - Continuous monitoring airside since Sept. 1997:
 - O₃, CO, NO, NO₂, VOC, PM_{2.5}
 - Most results under national-provincial-municipal regulatory levels (except O₃)
 - Results comparable to surrounding boroughs
 - TC mobile station in Dorval (1999-2000)
 - TC mobile station in Pointe-Claire (2000-2001)
 - Montréal monitoring network (since 1984)



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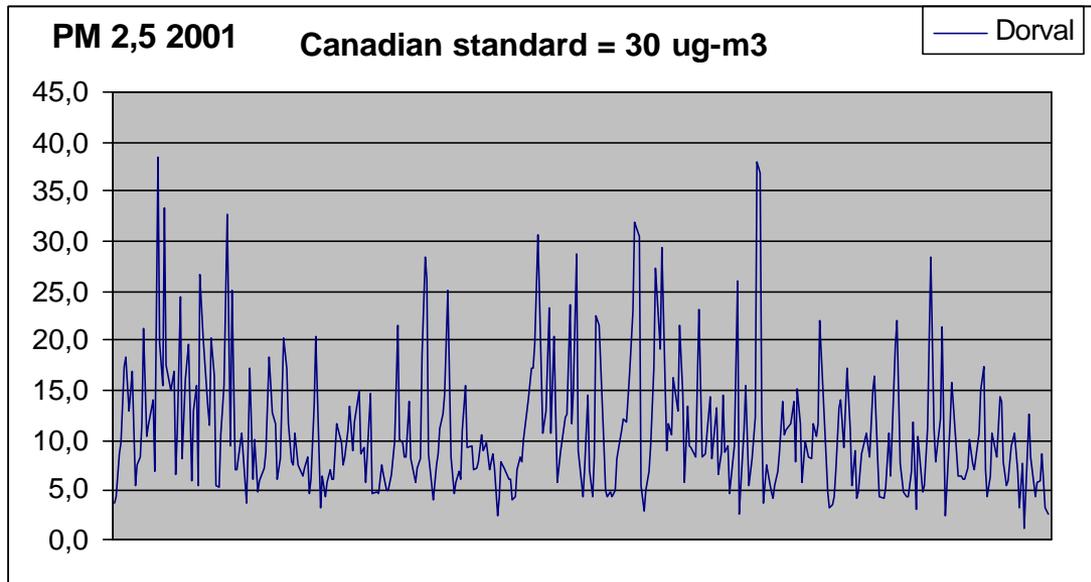
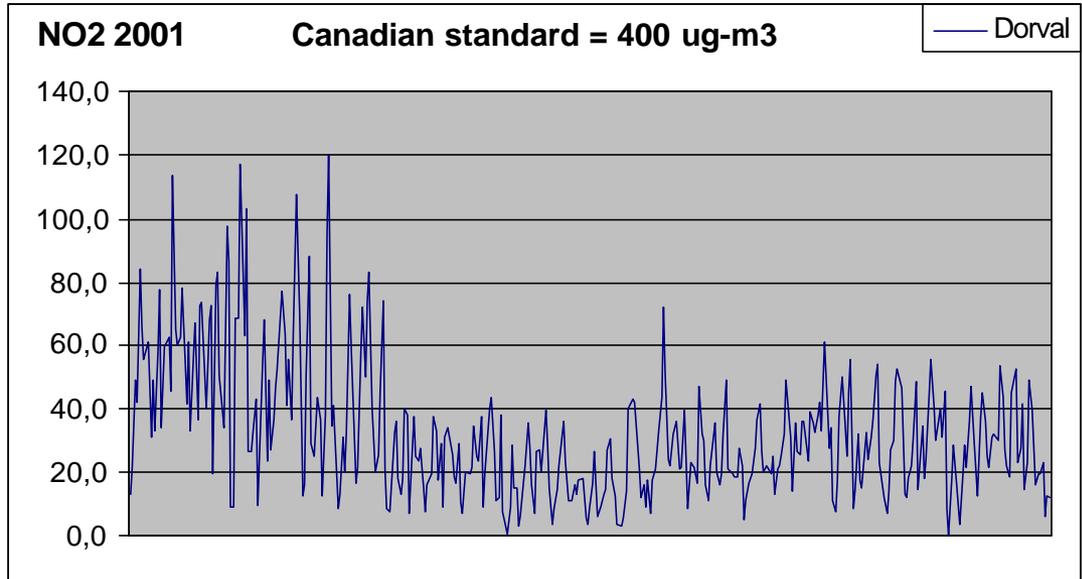




Dorval airport: station 66

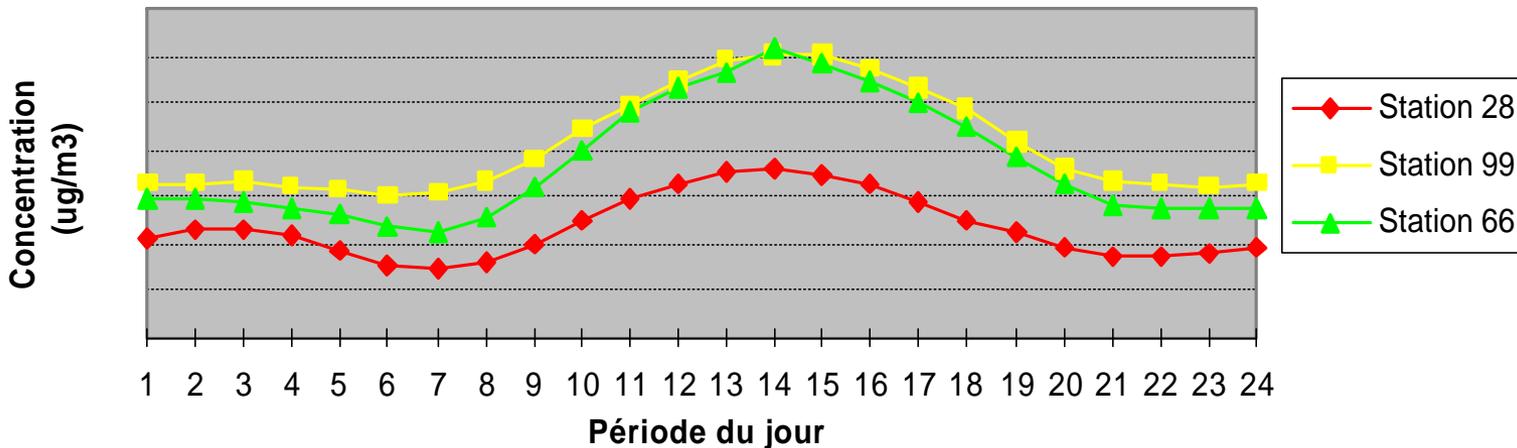
For on-line results: www.cum.qc.ca/rsqa



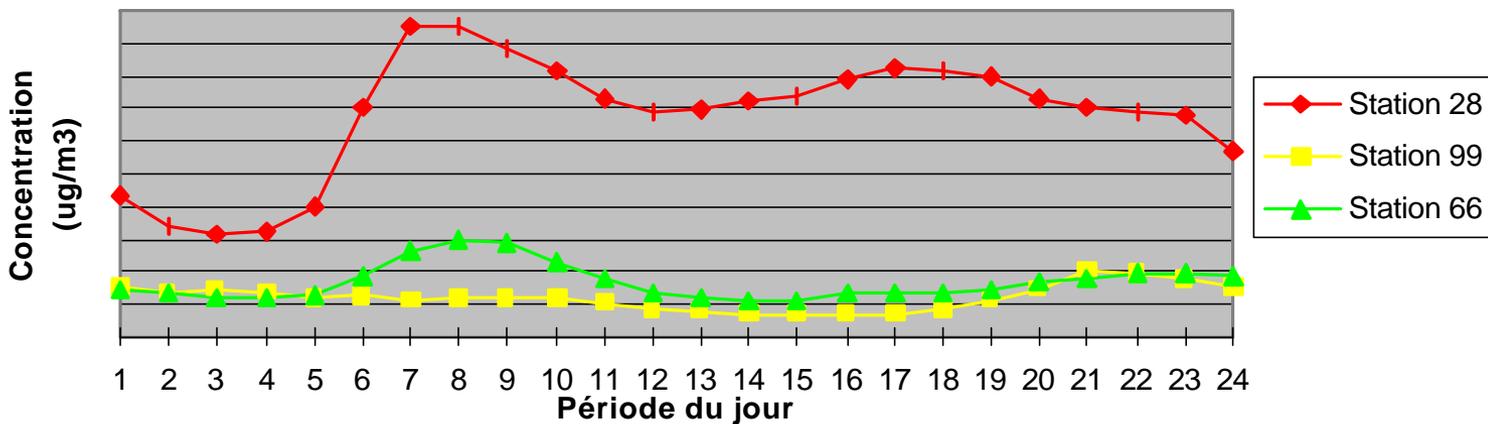




Variations journalières des moyennes horaires de l'O3



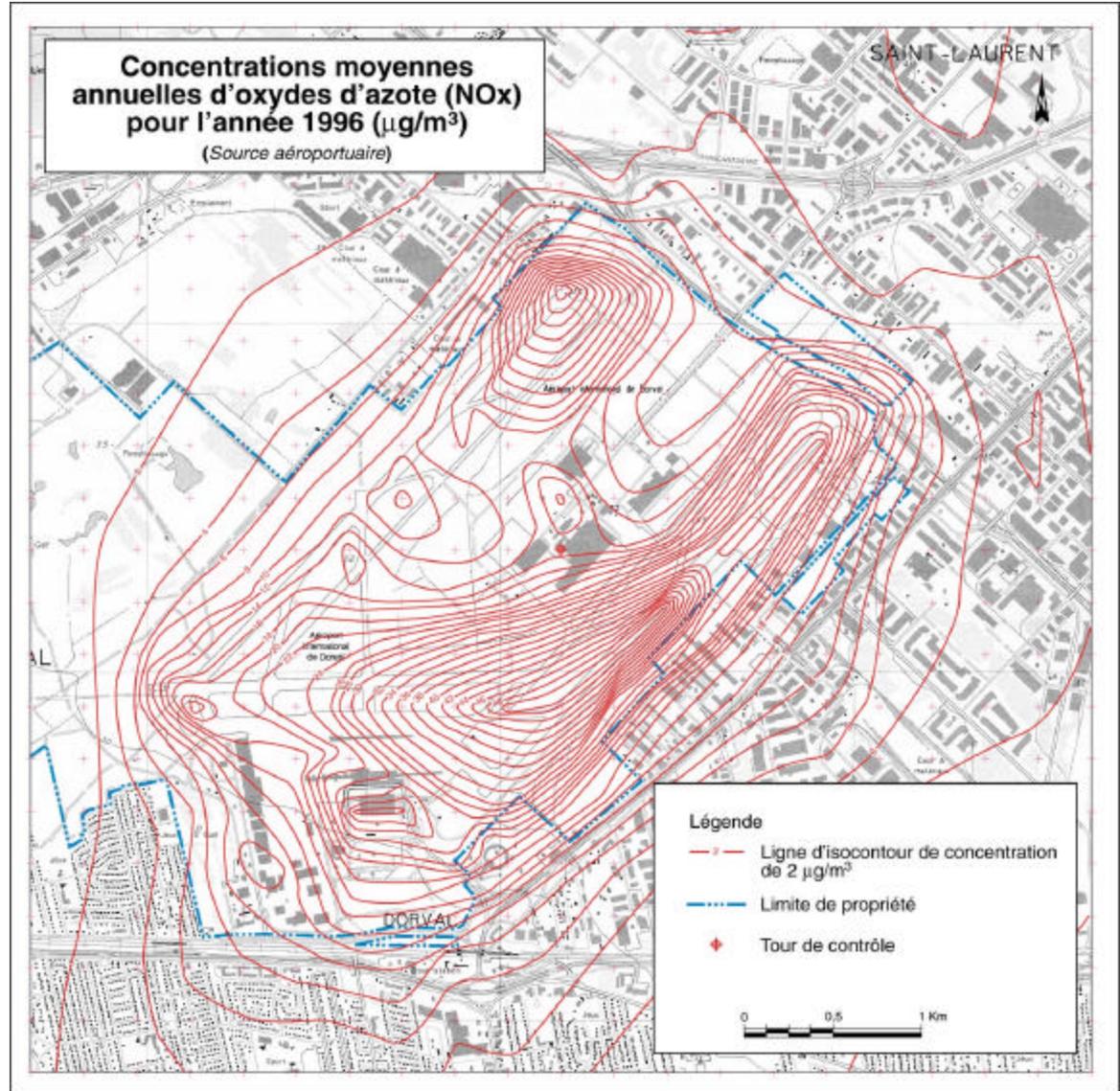
Variations journalières des moyennes horaires du NO



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- EDMS simulation in 1997 with 1996 data
- To adequately locate the monitoring station





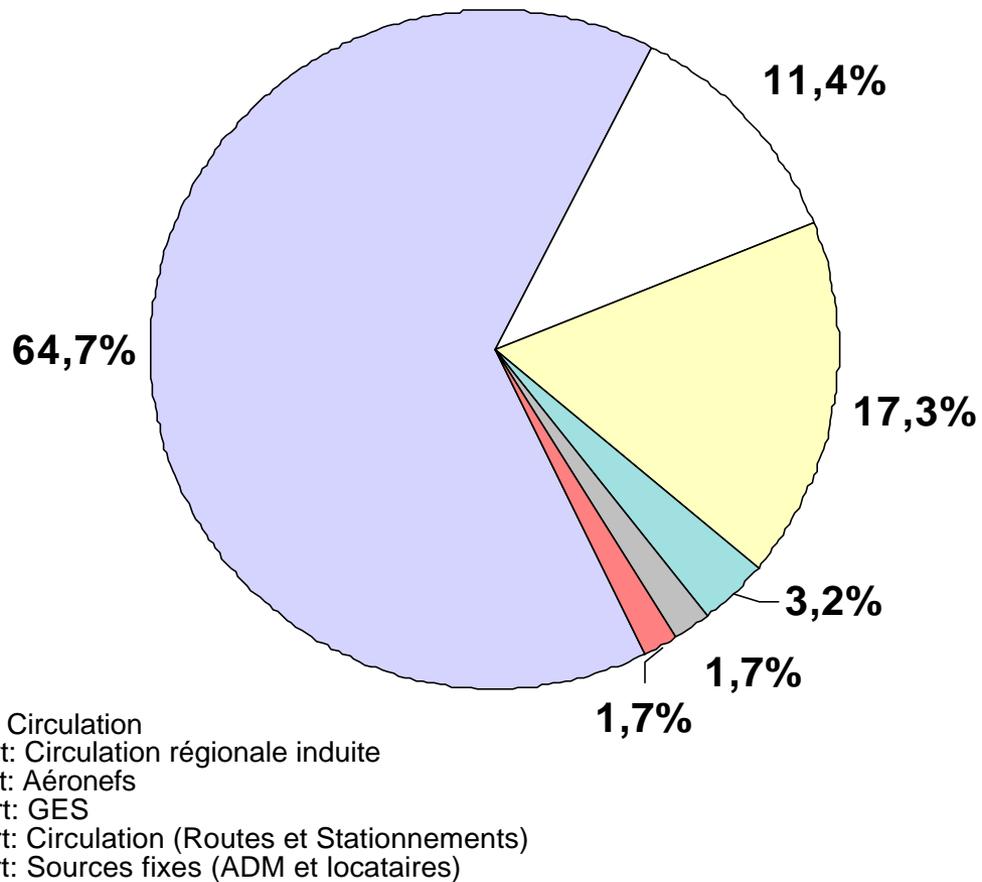
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- EDMS simulation in 1997 with 1996 data
 - To adequately locate the monitoring station
 - Main conclusions:
 - surrounding highway system produces more emissions than the airport activities
 - no location on the airport outside highway emission influence
 - aircraft represent 39% of total airport emissions
 - GSE represent 42% of total airport emissions



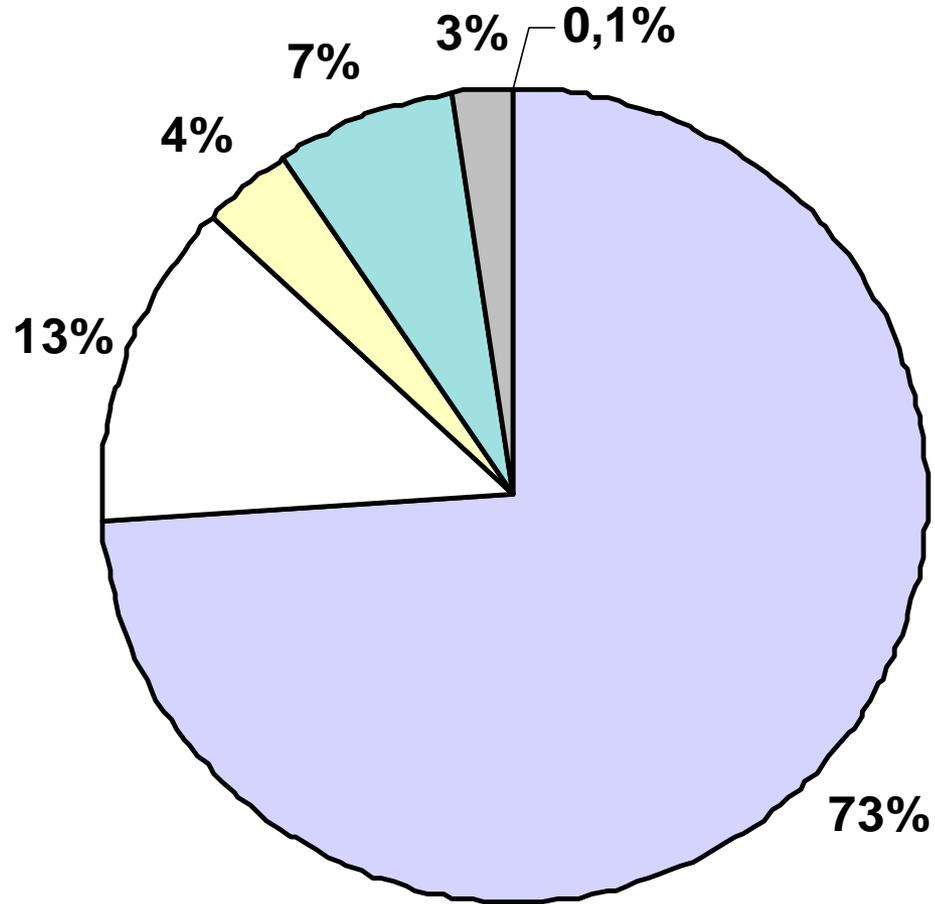


Nox: Regional data



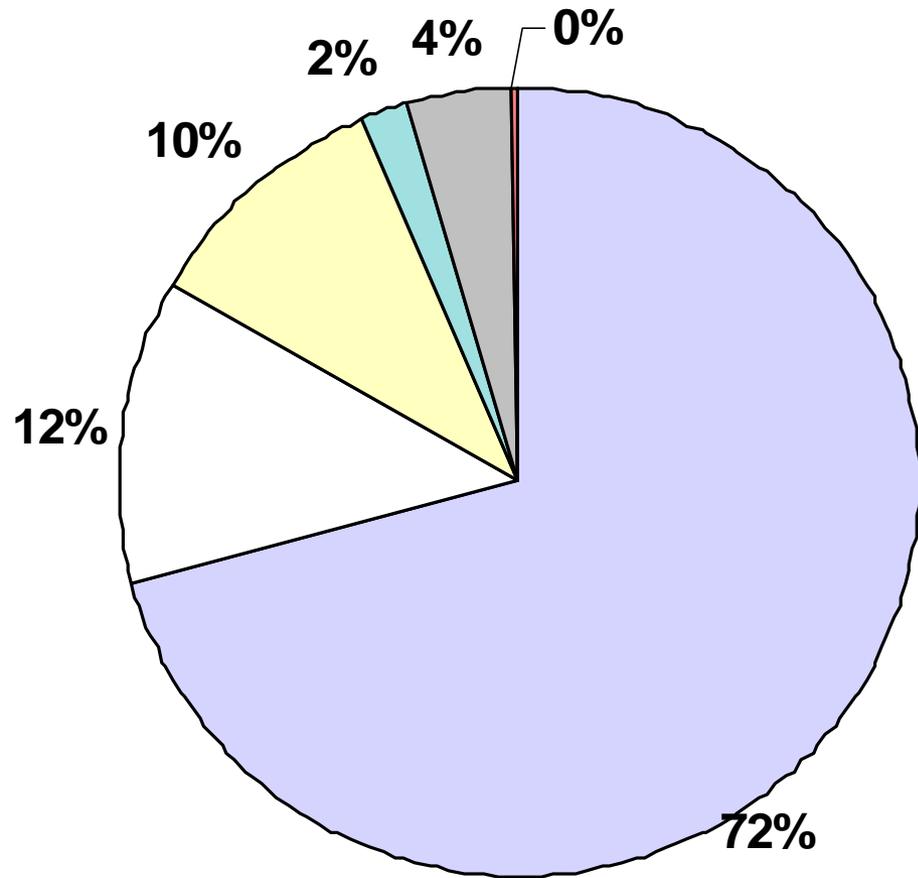


CO: Regional data



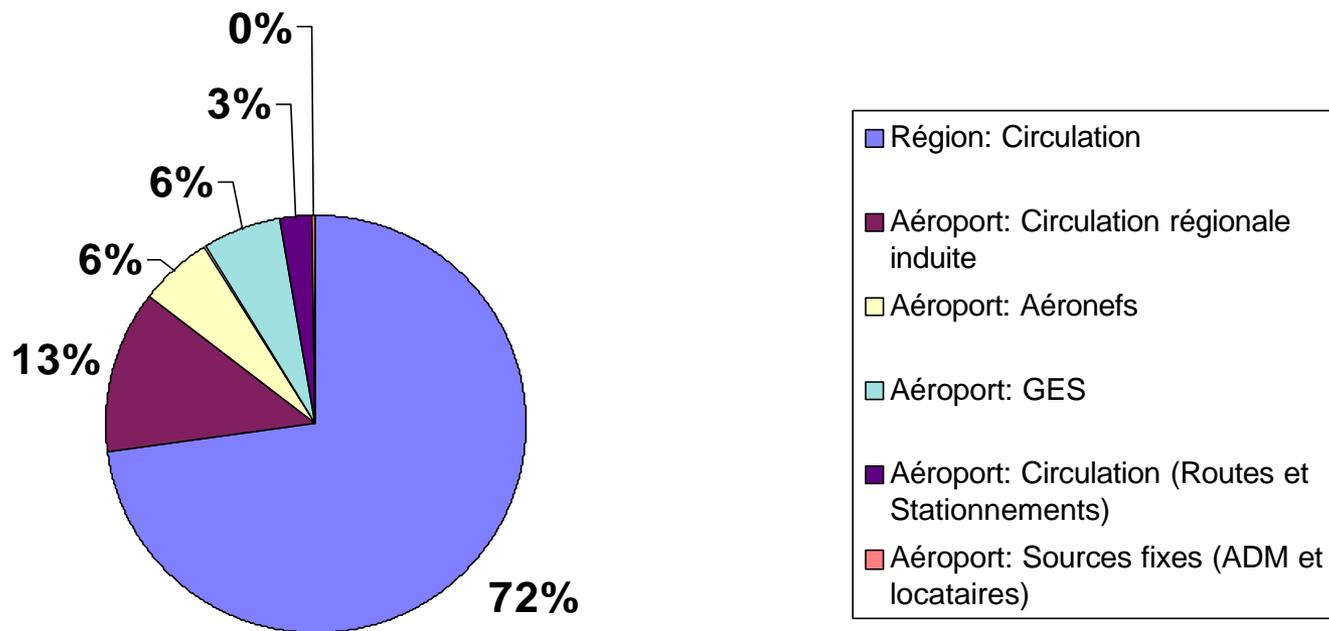


VOC: Regional data



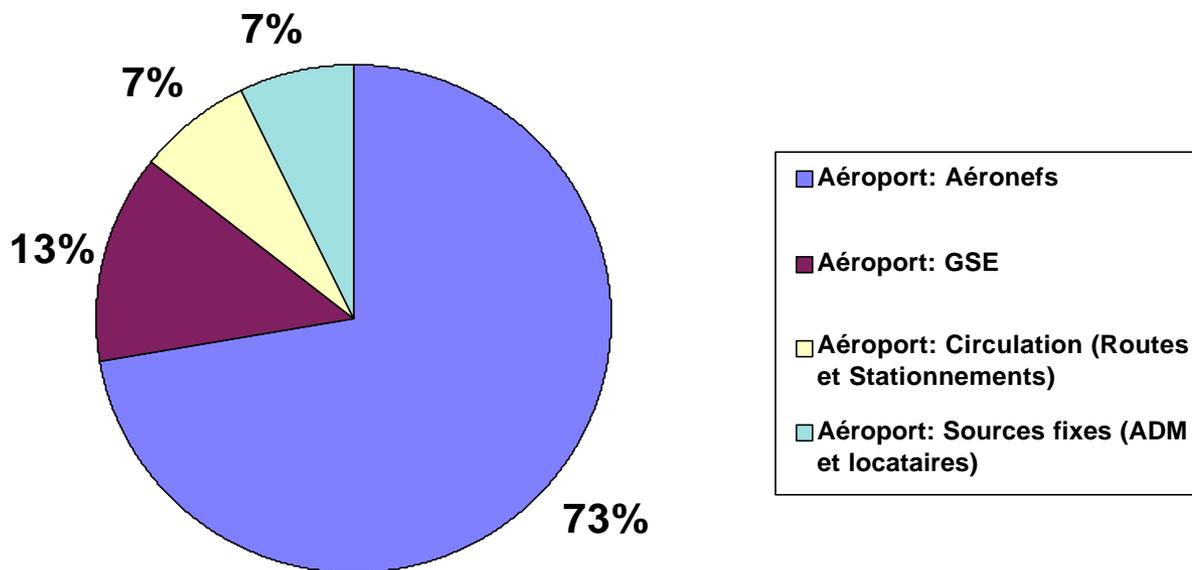


Total regional emissions (CO, NOx, VOC)



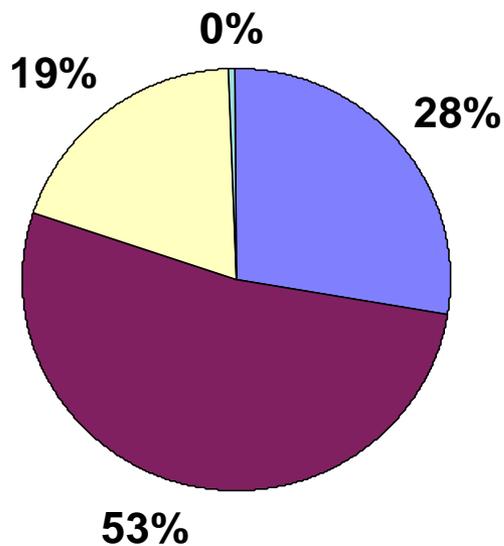


Nox: Airport data





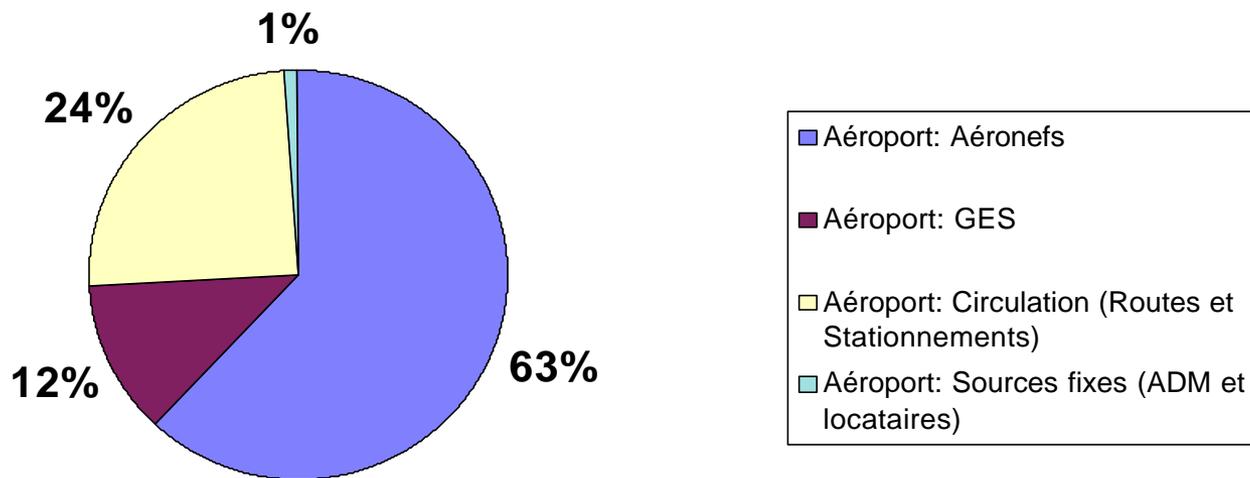
CO: Airport data



- Aéroport: Aéronefs
- Aéroport: GES
- Aéroport: Circulation (Routes et Stationnements)
- Aéroport: Sources fixes (ADM et locataires)

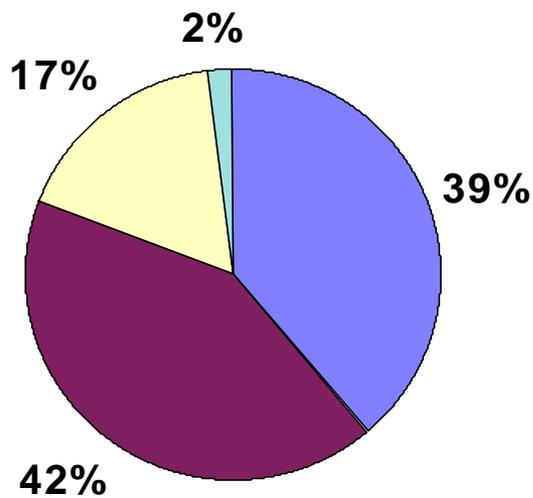


VOC: Airport data





Total airport emissions (CO, Nox, VOC)



- Aéroport: Aéronefs
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Air Quality Management at Montréal International Airports

Air emission reduction initiatives:

- ✈ Reduction of aircraft related emissions:
 - fleet renewal
 - fuel efficiency procedures
 - limited queuing
- ✈ Reduction of point source emissions by ADM:
 - interruptible systems at YMX = -20% energy
 - passing from high to moderate temperature heating plant at YUL = - 40% energy
 - new transborder finger at YUL = +30% volume but no additional energy usage



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Air emission reduction initiatives ()::

- ✈ Reduction of GSE related emissions:
 - GPU and PCA on all new bridges
 - usage of electrical equipment (low ceiling baggage handling areas)
 - alternative fuel initiatives from airlines

- ✈ ADM takes every opportunity to include air emission reduction in its projects and support its partners in their initiatives



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Further air emission reduction possibilities:

- ✈ Electrification of more GSE:
 - catering
 - water trucks
 - sanitary trucks
 - security cars, etc.
- ✈ Alternative fuel for taxis, bus shuttles, etc.
- ✈ Car pooling

Emission standards for off-road vehicles would help...



Air Quality Management at Montréal International Airports

The chicken and the egg dilemma:

- Air quality at the airport is not yet a regional priority
- Regional alternative energy demand and offer is limited
- ADM does not have the size to justify its own alternative energy infrastructure



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Under these circumstances, ADM favours implication in regional program:

- Improvement of road access to airport
- Commuter train and train shuttle projects

For small players, we must break the chicken and egg dilemma by creating an offer and a demand of alternative energy (minimal network of alternative fuel stations, transformation of government owned vehicle fleets, etc.)



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Thank you !

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