

# Airports – Actions on Climate Change

ICAO – GIACC 1<sup>st</sup> Meeting  
Group on International Aviation and  
Climate Change

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Airports Council International  
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# Outline of Presentation

- ACI and Environment
- Constraints on Growth
- ACI Position Paper on Climate Change
- ACI Assembly Resolution on the Environment
- Airport Emissions Inventory
- Case Studies



# Airports Council International

- ACI has 580 members operating over 1647 airports in 175 countries and territories.
- In 2006, ACI members handled 4.4 billion passengers, 86 million metric tonnes of freight, and 72 million aircraft movements.

## **MISSION:**

- ACI advances the collective interests of the world's airports and promotes professional excellence in airport management and operations.



## ACI's Activity on the Environment

- World Environment Standing Committee
- Position Papers
- Policies and Recommended Practices
- ICAO CAEP Participation
- Training courses



# Airports and the Environment

Major environmental concerns at most airports

- Noise
- Local Air Quality
- Ground and Surface Water and Soil Quality
- Recycling and Sustainability
- Habitat and Wildlife Management

The importance of Climate Change varies with region



## Constraints on Airport Growth

- In parts of Europe, Climate Change is perceived as the main environmental impact of aviation.
- The growth of aviation and the lack of alternatives to fossil fuels are focusing pressure from environmental groups, community and governments.
- Climate Change is joining Noise and Air Quality as impediments to airport infrastructure improvements and congestion relief.



## ACI Position Paper on Climate Change

- Aviation should address global impacts.
- ACI supports ICAO leadership and emissions standards
- ACI supports integration of aviation CO<sub>2</sub> into global emissions trading system.
- ACI does not support capacity constraints, taxation or (non-legitimate aeronautical) charges.
- Need to identify measures and timeframe for addressing NO<sub>x</sub>, contrails/cirrus.
- **Airports should take action to minimise emissions within their control.**



## ACI Assembly Resolution on Climate Change (2007)

ACI member airports are encouraged to declare firm commitments on environmental goals within their own control, *including strategies to reduce carbon emissions, with the ultimate target of becoming carbon neutral.*





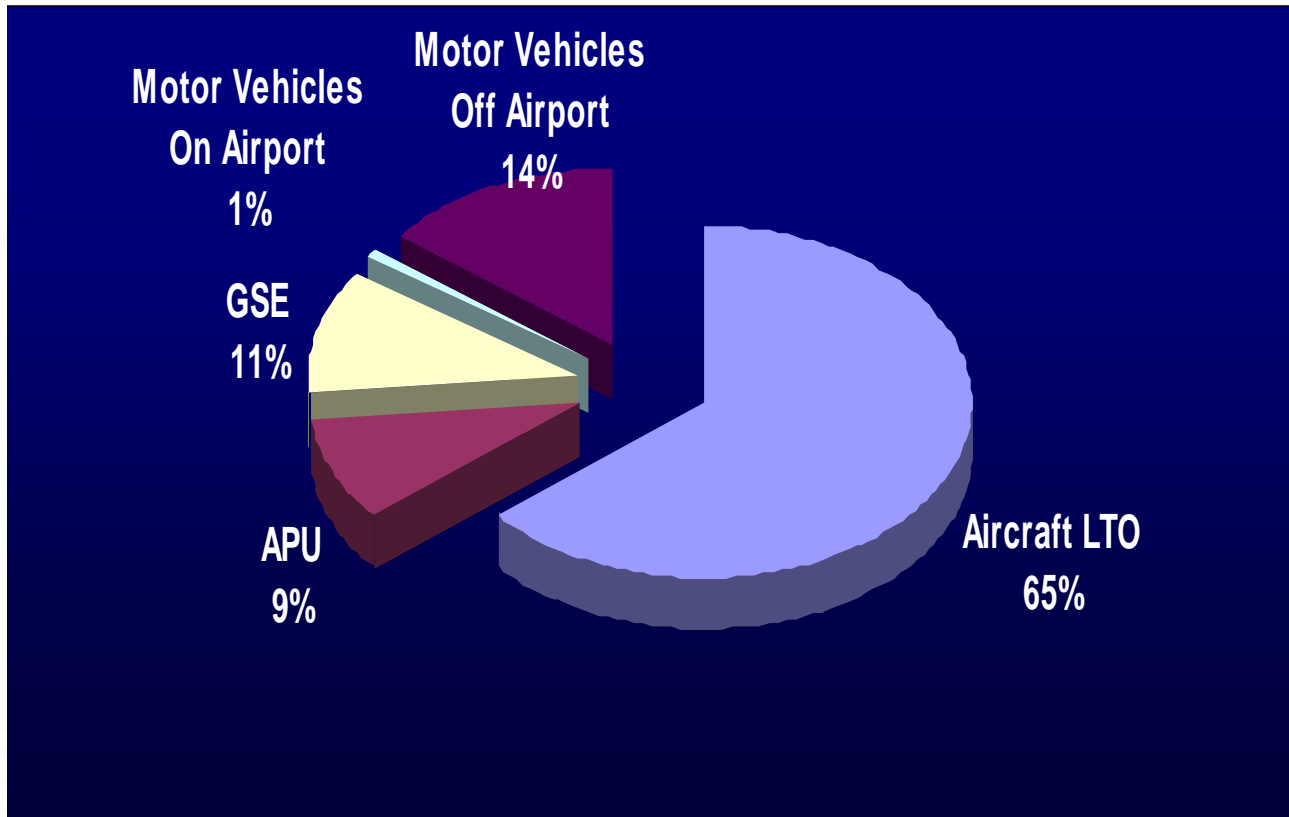
## Inventory - Airports' Contribution

- IPCC – Aviation contributes 2% of total CO<sub>2</sub> emissions - approximately 650 Mtonnes per year
- ACI estimates that airport sources contribute approximately 5% of aviation's CO<sub>2</sub> emissions - 30 Mt CO<sub>2</sub> per year
- Emission inventory methodology has not been standardised.
- Addressing airport-related sources requires close partnership with industry partners and local authorities



# Airport Emissions Inventories

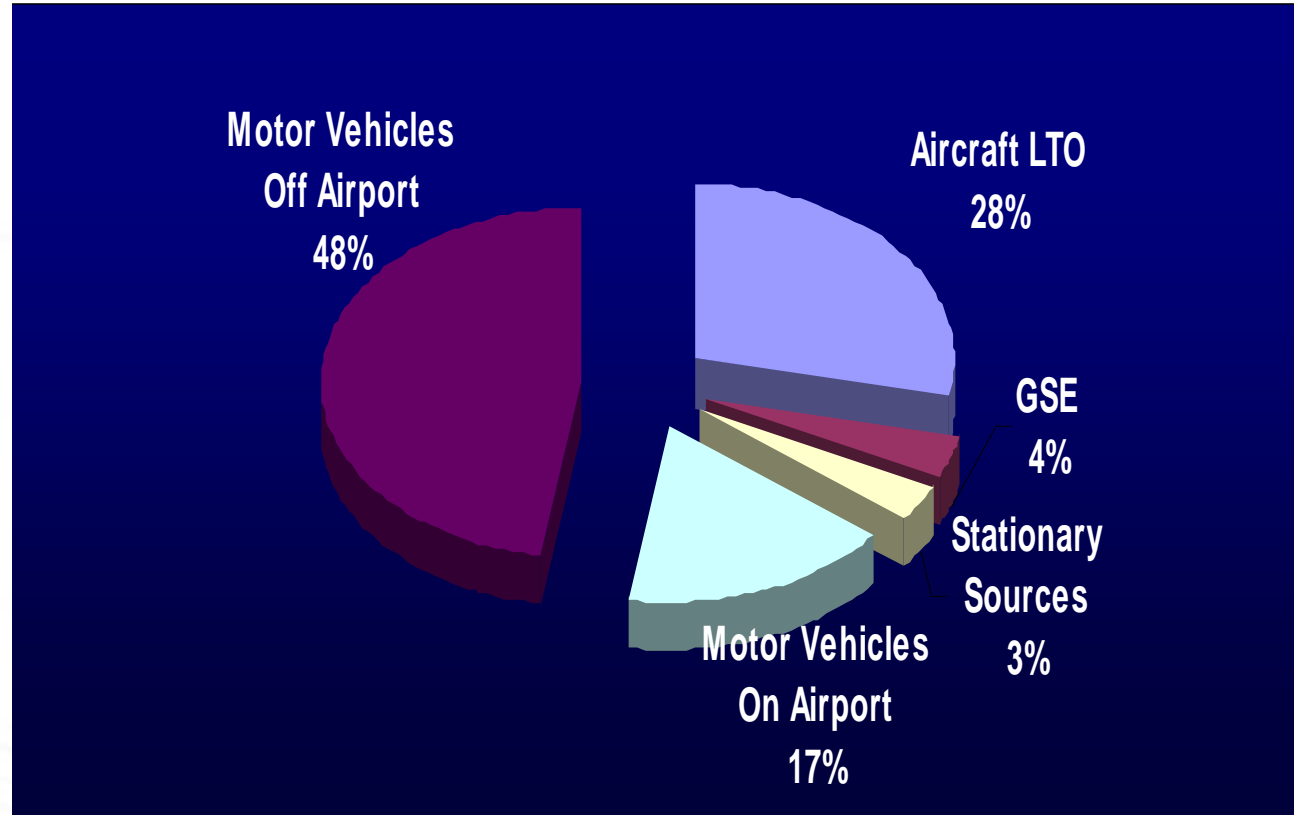
Vancouver  
YVR  
CO<sub>2</sub> 2004  
233 kt





## Airport Emissions Inventories (2)

Seattle-Tacoma  
SEA  
CO<sub>2</sub> 2006  
1200 kt





## Airport Actions to Reduce GHG Emissions

- Reduce energy usage in buildings
- Produce zero or low emissions energy
- Alternative fuel GSE
- Reduce vehicles accessing airport
- Encourage low or zero emissions vehicles
- Reduce aircraft fuel burn incl APU usage
- Emissions trading (major ground-based sources)
- Purchase offsets



## Reduce energy usage in buildings

### London Heathrow – Terminal 5

- BAA CO<sub>2</sub> target 15% below 1990 levels, despite growth
- Combined cooling, heating and power – excess heat from electricity generation used for heating in winter and absorption-cycle cooling in summer (80% energy used)
- Intelligent building management systems
- Rainwater harvesting
- Construction methods
- Recycled materials





## Produce zero emissions energy

### Vancouver

- 100 Solar panel hot water heaters – 3200 litres/hour

### And use energy more efficiently

- LED (light emitting diodes) installed on taxiways
- Terminal exterior and interior lighting replacements
- 30% reduction in use of Natural Gas since 2001.







## Produce zero emissions energy (2)

### La Palma

- First airport in Spain with wind generators for terminal's needs
- 2 x 660 kW wind generators
- Annual reduction 1800 t CO<sub>2</sub>

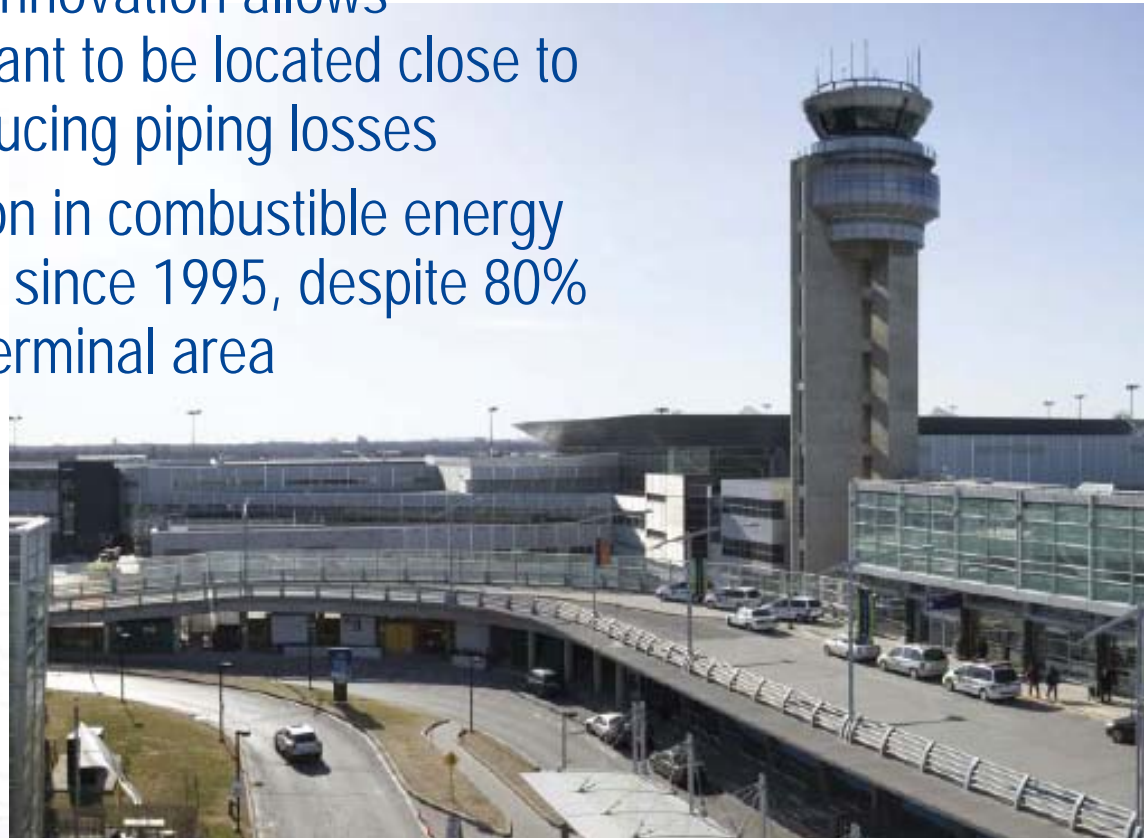




# Improve energy efficiency

## Montreal

- New high-efficiency heating plant
- Technology innovation allows plumeless plant to be located close to terminal, reducing piping losses
- 50% reduction in combustible energy consumption since 1995, despite 80% increase in terminal area







# Reduce vehicles accessing airport

Vancouver, Brisbane, Kuala Lumpur...

- Linking light or heavy rail to the airport







## Reduce vehicle emissions on airport site

Paris

Charles De Gaulle

- Automated metro line between terminals and train station replaces shuttle buses
- 140 000 PAX per day
- Reduction of 2500 t CO<sub>2</sub> and 15 t NO<sub>x</sub> per year.







## Reduce vehicle emissions on airport site (2)

### Dallas Fort Worth

- Measures to address Local Air Quality can provide GHG benefits.
- Ground vehicle fleet replacement – CNG (compressed natural gas), SULEV (super ultra low emissions vehicles), Hybrid and Electric vehicles.
- Rapid recharge station for Electric Vehicles >





## Reduce vehicle emissions on airport site (3)

Los Angeles

- Hydrogen filling station





## Reduce aircraft APU usage

Zurich, Narita, Hong Kong, LAX and many more

- Providing electrical power (440 Hz) and pre-conditioned air to aircraft at terminal gates
- Make usage mandatory
- Replaces APU usage and allows engine switch-off.





# Emissions trading under the Kyoto Protocol

## European airports

- Significant emissions sources such as power stations and heating plants at many European airports are subject to emissions trading under the Kyoto Protocol.



# ACI – Airport Carbon Management Charter

ACI developing guidance and evaluation scheme

- Airport carbon inventory mapping
- Carbon management milestones
- Guidance on mitigation actions and implementations
- Process to evaluate and rate airport carbon management





## Putting It All Together

LFV Sweden (17 Airports and ATC)

- Renewable energy sources
- Building energy efficiency
- Biogas buses
- Wood pellet burning boilers
- Public transport
- Alternative-fuel taxi priority lane
- Offset schemes

Achievement of Carbon Neutral  
Status

>> Also achieved by Christchurch Int  
Airport, New Zealand





## ATAG enviro.aero initiative

- ATAG – Air Transport Action Group – Airports, Airlines, Manufacturers, ANS Providers and others
- Communications initiative to address misconceptions and misinformation regarding Aviation and the Environment.
- To balance the debate and ensure aviation not singled-out unfairly





HOME

NEW ARRIVALS

Story headline would go here


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Full story ●●● 04/04/07

Story headline would go here

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Is this the kind of question we might ask in the polling section?

Yes  No

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Do you have questions you want answered? Then click here to ask our panel of experts ●●●

## clearer vision cleaner skies

A clear and concise introduction to the site, the campaign it supports, and who is behind it (emphasising the cross industry effort), providing succinct summaries and links to each of the site's main sections.

A clear and concise introduction to the site, the campaign it supports, and who is behind it (emphasising the cross industry effort), providing succinct summaries and links to each of the site's main sections. Maybe just another sentence or two.

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A short summary of what the discussion is about goes here and then link to the full story

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MARCH

**12** Meeting at a venue on an interesting subject  
More info ●●●

**19** Meeting at a venue on an interesting subject  
More info ●●●

Fly from...

Gatwick ▼

to...

Geneva ▼



Your Carbon Score

880

In 1997 this score would have been 1080, x% more but by 2017 we hope this will be reduced to only 700.

Did you know?

An interesting fact about the environment





This airport is heated by solar panels

- just one more way in which we are working to protect the environment



JCDecaux



## Closing Words

- Environmental pressure can delay or stop airport capacity projects
- Airports are taking action to address GHG emissions within their control
- The aviation industry must address both real and perceived environmental concerns if it is to be able to meet future demand for air transport
- ACI is committed to working with ICAO and industry partners towards achieving sustainable aviation development
- **We want to be part of your work**

# THANK YOU

James Cherry  
Airports Council International –  
Chairman World Governing  
Board

Aeroports de Montreal,  
Canada

