



EN-ROUTE TO SUSTAINABILITY  
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# Emission Quantification Methods: ICAO Carbon Emissions Calculator

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# Overview

- Background
- Methodology
- UN Users
- Next Steps

# Background

- **Methodology Developed through CAEP**
- **23 Member States**
  - Global representation
- **13 Observers**
  - Primary aviation stakeholder representation
  - Airlines, air navigation service providers, airports, manufacturers, UN (UNFCCC, WMO), international coalition of NGOs

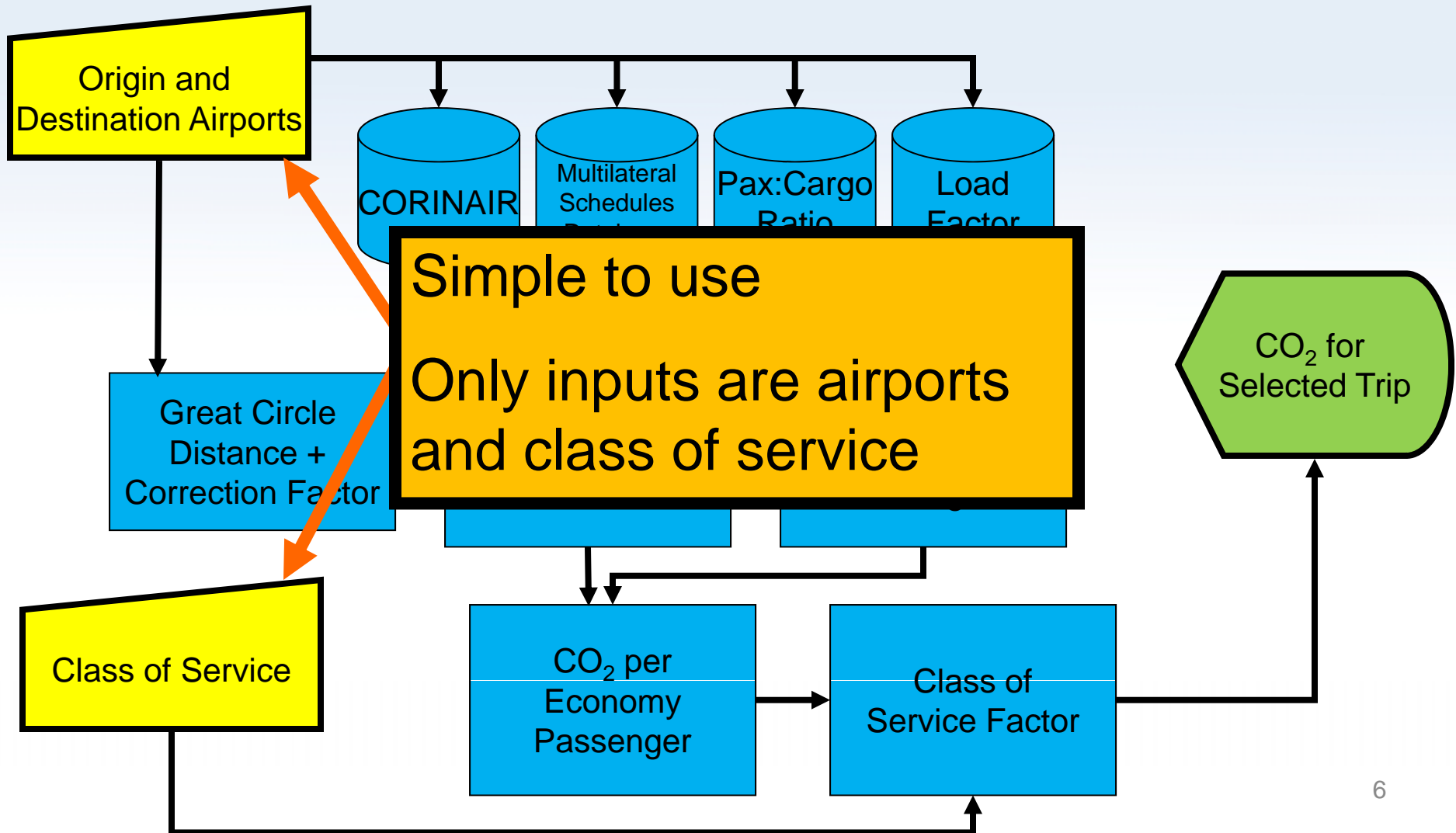
# Methodology

- **Objectives**
  - User-friendly, unbiased, tool to compute carbon emissions from air travel
  - Suitable for use with offset programmes
  - Best publicly available data
  - Fully documented

## Methodology (cont.)

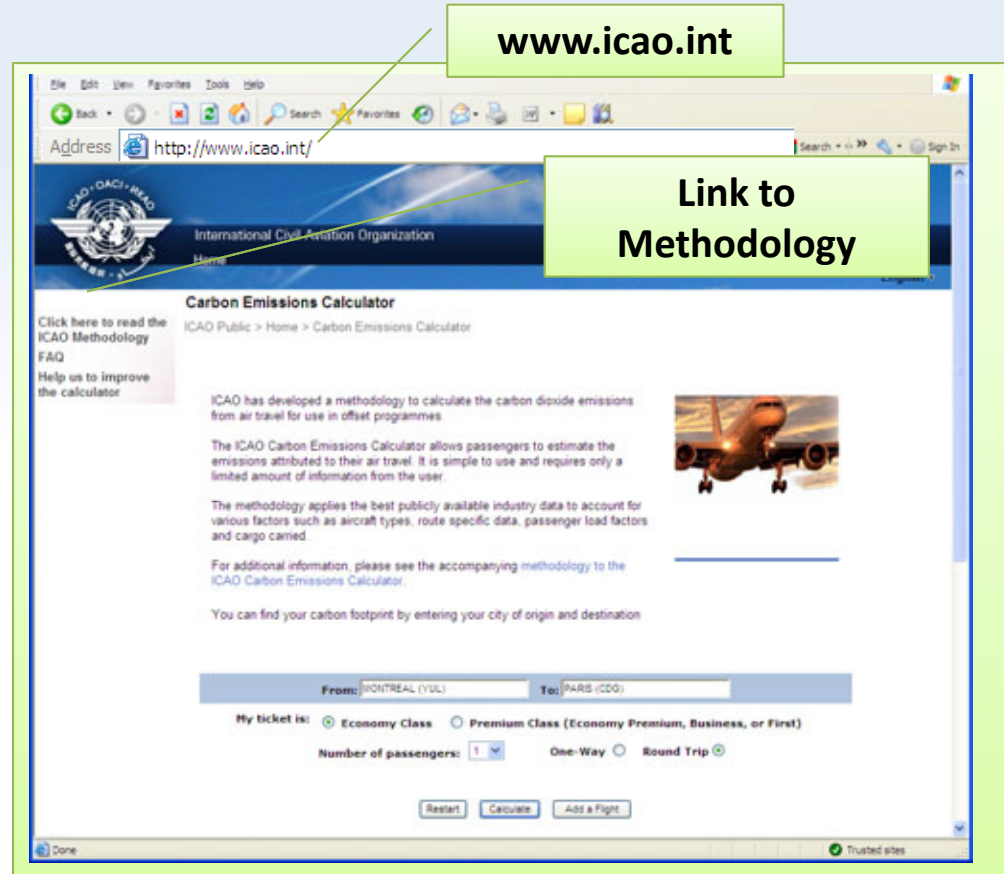
- **Developed by Experts from**
  - ICAO Secretariat
  - ICAO Member States
  - Universities
  - NGOs
  - International Air Transport Association – IATA (Airlines)
  - International Coordinating Council of Aerospace Industries Associations – ICCAIA (Manufacturers)
- **Methodology is internationally recognized and accepted**

# Aviation Carbon Calculation Methodology (concl.)



# ICAO Carbon Emissions Calculator (Public Interface)

- Transparent
- Easy-to-use
- Publicly available
- Delivers consistent estimates of CO<sub>2</sub> – suitable for use with offset programs
- Available since June 2008



# Climate Neutral UN Initiative

- October 2007: “greening of the UN” launched
- Includes moving the UN system towards climate neutrality
- Supported by UNEP through the Environmental Management Group (EMG)



# Climate Neutrality

- “Climate neutrality” is defined by the entire set of policies that an institution uses when it estimates its known GHG emissions, takes measures to reduce them, and purchases carbon offsets to “neutralize” those emissions that remain

- UNEMG (Environmental Management Group) EMG/AM.07/05/Rev.2

# Approach to Climate Neutrality

- Develop a Strategy / Action plan
- Identify criteria necessary to guarantee a credible climate neutral footprint
- Establish specific policies on waste management, paper use, recycling, sustainable procurement, building operation

# UN Interface

- Excel-based
- Designed to facilitate inventory preparation
- Accepts data from travel reservation / approval systems or travel agencies directly
- Available since April 2009

# UN Interface (concl.)

The screenshot displays the 'UN\_ICAO\_Calculator\_v1.1.xlsm' spreadsheet in Microsoft Excel. The interface is titled 'ICAO Carbon Emissions Calculator Version 1.1' and includes a disclaimer: 'Not for distribution outside of the UN system'. It features a 'Results' box with the following data:

Results	
Total CO <sub>2</sub> (tonnes):	2235.718
Total km flown:	17,367,854
Total trips:	1,543
Remarks: Run complete 24-Aug-2009 14:16	

The main data table is as follows:

Route	Class	CO <sub>2</sub> (kg)	Trip Distance (km)	Messages	Sug. Class
SCL-LIM-PTY-SCL-PTY-SCL	C	3044.7		19305	C 5683
EZE-MAD-BKK-MNL-BKK-MAD-EZE	C	7899.9		44884	C 20800
EZE-MAD-BKK-MNL-BKK-MAD-EZE	C	7899.9		44884	C 20800
EZE-MAD-BKK-MNL-BKK-MAD-EZE	C	7899.9		44884	C 20800
EZE-MAD-BKK-MNL-BKK-MAD-EZE	C	7899.9		44884	C 20800
EZE-MAD-BKK-MNL-BKK-MAD-EZE	C	7899.9		44884	C 20800
YUL-YYZ-HKG-BKK-CNX-BKK-HKG-YYZ-YUL	C	4348.7		30658	C 5683
MAN-LHR-MIA-PTY-MIA-LHR-MAN	C	2468.3		18424	C 5683
BKK-KUL-BWN-BKK	Y	423.1		4575	Y 20000
YUL-CDG-SEZ-CDG-YUL	C	3916.6		26722	C 5683
FIH-NBO-BKO-ABJ-NBO	C	2533.5		13145	C 5683
YOW-YUL-JFK-CCS-MIA-ORD-YOW	Y	959.3		9259	? 5684
SCL-GRU-CCS-SCL	Y	1076.8		11906	? 5683
MAD-CDG-YUL-CDG-MAD	Y	977.1		13170	? 5684
YUL-CDG-DKR-CDG-YUL	C	2894.1		19496	C 5684

The interface also includes input fields for 'Class of Service Column:' (set to B) and 'Route Column:' (set to A), a 'Click to Compute CO<sub>2</sub>' button, and radio button options for 'Compute CO<sub>2</sub> for all rows' and 'Compute CO<sub>2</sub> only if the CO<sub>2</sub> field is blank'. A 'Results' box is visible on the right side of the spreadsheet.

## UNEMG Decision

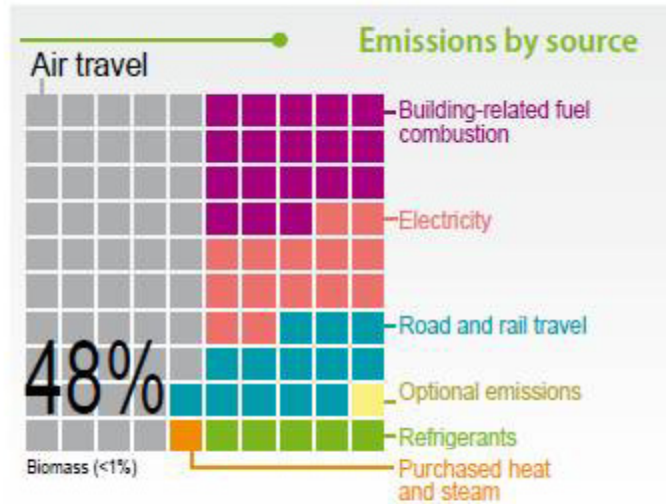
- *The UN Environment Management Group adopted the ICAO Carbon Emissions Calculator as the official tool for all UN bodies to quantify their air travel CO<sub>2</sub> footprint - April 2009*
- All 2008 UN air travel GHG inventories are being prepared using the ICAO Calculator

# Initial Results

## UN system facilities, travel and peacekeeping operations

key figures 2008

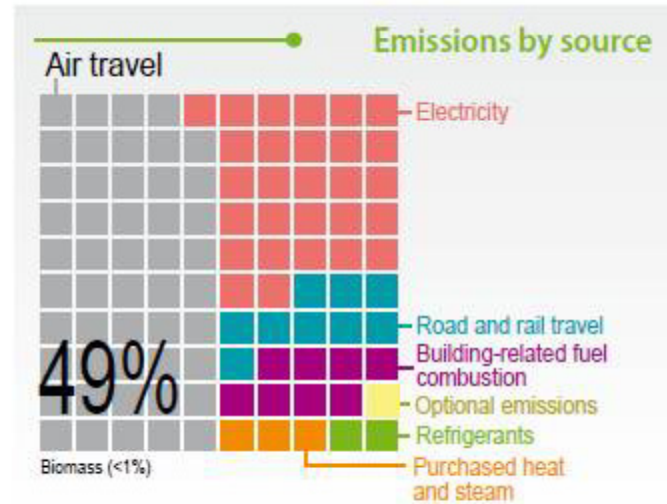
Total emissions	1'741'413 t CO <sub>2</sub> eq
Emissions per staff member	8.4 t CO <sub>2</sub> eq
Air travel per staff member	4.0 t CO <sub>2</sub>
Number of staff	206'954



## UN system facilities and travel

key figures 2008

Total emissions	769'108 t CO <sub>2</sub> eq
Emissions per staff member	8.3 t CO <sub>2</sub> eq
Air travel per staff member	4.0 t CO <sub>2</sub>
Number of staff	92'748



## Next Steps

- Phased approach for updating methodology and data through CAEP
- Try it out for yourself!