

# ICAO Environmental Tools

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- Quantifying fuel consumption from current and future aviation activities can be challenging
- So can quantifying the benefits from measures
- ICAO has developed tools to help
- These tools can do much more than help with an action plan





## ICAO Carbon Emissions Calculator

Allows passengers to estimate CO<sub>2</sub> emissions from their air travel



## ICAO Fuel Savings Estimation Tool (IFSET)

To assist States in estimating fuel savings from operational improvements



## ICAO Green Meetings Calculator

To support decision making in minimizing CO<sub>2</sub> emissions from air travel to attend meetings



# Estimating aircraft fuel burn and CO<sub>2</sub> emissions:

## ICAO Carbon Emissions Calculator



- Proliferation of tools for calculating “carbon footprint” from aviation
  - Results differ by factor of 4 or more!
  - Unknown data sources and methodologies (black box)
  - Inconsistent basis for offsetting



- **Objectives**
  - User-friendly, unbiased, tool to compute carbon emissions from air travel
  - Suitable for use with offset programmes
  - Best publicly available data  
**(transparency)**
  - Fully documented
- Methodology developed through CAEP
- Special interface developed to support Action Plans





- **Methodology Developed through CAEP**
  - **23 Member States** , global representation
  - **15 Observers**, primary aviation stakeholder representation
- **Expert input provided 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**
- **All UN air travel GHG inventories are prepared using the ICAO Calculator**



- ICAO is committed to continuous improvement of the Calculator
- Current work involves:
  - Updated passenger emissions methodology and data sources
  - Development of methodology for air cargo





# Estimating Fuel Savings from Operational Changes:

## ICAO Fuel Savings Estimation Tool



- Allows those States without modelling and/or measurement capabilities to estimate fuel savings from operational improvements
- Consistent with CAEP-approved GHG models
- Consistent with Global Air Navigation Plan
- Easy-to-use / minimal data requirements
- Better than using a rule of thumb



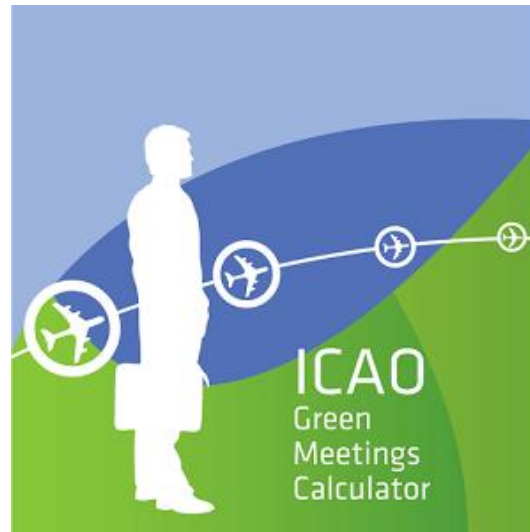
- The tool can estimate:
  - Effects of shortening / eliminating level segments on departure and arrival
  - Effects of shorter routes (either in time or distance)
  - Effects of cruising at different altitudes
  - Effects of reduced taxi times



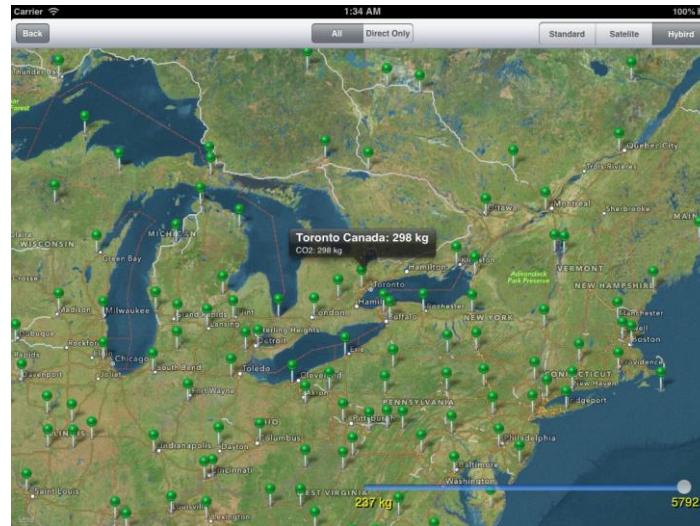
- **The tool does not:**
  - Replace detailed modelling or measurement of fuel consumption
  - Estimate fuel consumption from airborne holding
  - Compute emissions other than fuel consumption



# Planning Meeting Locations: ICAO Green Meetings Calculator

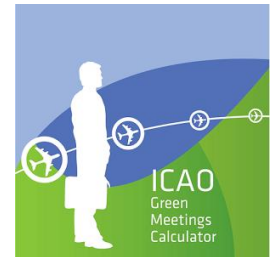


- Developed in response to request from UN Travel Offices
- Supports decision-making by selecting meeting location with minimum CO<sub>2</sub> footprint from air travel



All of ICAO's environmental tools are available free of charge from:

<http://www.icao.int/env>



*\*The special interface to the ICAO Carbon Emissions Calculator is available through the APER portal.*

