



ICAO

ENVIRONMENT

ICAO SEMINAR ON
GREEN AIRPORTS

Supporting Airports: Reducing their environment footprint

Juliana Scavuzzi
Aviation Environmental Specialist
Airports Council International (ACI)
World





ICAO

ENVIRONMENT

ICAO SEMINAR ON
GREEN AIRPORTS



Airports Council International ACI



Membership

623 members

1,940 airports

176 countries



5 Regions

North America

Europe

Latin America/
Caribbean

Asia Pacific

Africa

**Promotes professional excellence
in airport management and
operations**

MONTREAL, CANADA, NOVEMBER 29-30, 2017

Airport Environment Management

- GHG Emissions
- Local Air Quality
- Noise
- Land Use Planning
- Community Engagement
- Water
- Soil
- Waste
- Energy
- Wildlife
- Eco-Design
- Construction
- Adaptation
- SAF



ACI supports airports in reducing their ENV footprint

- ACI ENV Committees
- Represents the world's airports at ICAO CAEP
- ATAG
- UNFCCC
- IATA
- Training/Capacity Building
- Publications
- Reports/Communications
- Programs – Airport Carbon Accreditation (ACA)
- Tools – **ACERT**





What ACERT does



- Calculates an airport GHG inventory
- Calculates the GHG performance of the airport
- Assists in joining Airport Carbon Accreditation
- Supports airports' commitment and communication on GHG and climate change



IT Requirements

- Excel 2010 and up

Airport Operational Data

- Annual data for Scopes 1 and 2





Airport Emissions

Scope	Description	Examples
1	Airport operator owned or leased emission sources (fossil and other)	Vehicle and machinery fuels, boiler house, furnaces, emergency generators, fire practice, surface de-icing, processes, even own aircraft (if any).
2	Airport operator purchased electricity, heat or steam emissions	Electricity from city utilities, heat from an external power plant.
3	Non airport operator owned sources of the airport system	Aircraft (engine, APU), GSE, engine tests, de-icing, landside access traffic, staff business trips, third party emissions.

Using ACERT

①

If seeking Airport Carbon Accreditation, choose desired level.

②

Enter the airport details

③

Enter operational data

Airport Carbon Emissions Reporting Tool
Version 5.0
ACI
2017

The requirements for Airport Carbon Accreditation are as follows:

Levels 1 & 2	Scopes 1 & 2	⇒ Other cells / Steps 7-9 optional	⇒ STEPS 1-6	ⓐ Grayed out sections can still be used
Level 3	Scopes 1 & 2	+ Scope 3	⇒ STEPS 1-9	
Level 3+	Scopes 1 & 2	+ Scope 3	⇒ STEPS 1-10	

ⓑ Make sure you can see columns A through K

STEP 1 - GENERAL AIRPORT INFORMATION

ⓐ Unit system: metric (e.g. metres, litres, kg); if necessary, convert your data first (use converter if needed)

Airport Name: Sample Regional Airport	Airport Operator: Airport Operator Ltd	Date of Report: 31.12.2017	
ATA Identifier: ACI (3 letters)	ICAO Identifier: WESC (4 letters)	Year of Inventory: 2017	
City: Airport City	ACI Region: Europe	First month of year: January	
Country: Switzerland			
Province: n/a (Canada only; otherwise select n/a)			

Inventory compiled by: Richard Sample	Number of Airport Operator Staff: 150	Full Time Equiv. movements: 28'000	
Position: Test Manager	Aircraft movements in inventory year: 2'150'000	passengers: 45'000	
email: my_email@mail.com	Passengers movements in inventory year: 45'000	tonnes: 2'100	
	Cargo in inventory year: 2'100	Employees: 2'100	
	Number of Tenant/concessionaire Staff: 2'100		

ⓐ 1 landing and 1 take-off (LTO) = 2 movements

Have you ever conducted a more detailed GHG inventory? Yes Most recent year **2014**

Use previous data to check plausibility.

Save your data:

STEP 2 - AIRSIDE VEHICLES, MACHINERY, GSE, FIRE TRAINING, GLYCOL

2.1 Fuel used in vehicles, including airside transport, machinery, ground service equipment (GSE)

Total Fuel used in Vehicles	Airport Owned Vehicles	Non-Airport, Tenant, or Airline Vehicles	Unit	
Gasoline	4'100		litre	
Diesel	40'500		litre	
Natural Gas	3'000		kg	
Propane	0		litre	
Biofuels:				
E-85 (corn)	500		litre	
E-85 (cellulose)			litre	
B-20			litre	
Input other fuels:				EF:
Fuel A	0		unit	kg CO ₂ /unit
Fuel B	0		unit	kg CO ₂ /unit
				Fuel A Fuel B

ⓐ Tenants include all airlines, government bureaus, concessionaires, freight companies, maintenance, contractors and other companies based at the airport.

ⓑ Electricity for electric vehicles will be included in Step 4.

ⓒ For biofuel blends, add non-biofuel portions to the fuel entries above

ⓓ The fuel unit (l or kg or any other) must match the EF unit used



ICAO

ENVIRONMENT

ICAO SEMINAR ON GREEN AIRPORTS

Results and KPIs

- GHG emissions
- Airport operator source breakdown
- Source group breakdown
- Electricity reporting
- Historic data
- KPIs

Sample Regional Airport Greenhouse Gas Emissions Inventory 2017



Sample Regional Airport Greenhouse Gas Emissions Inventory 2017

Identifier	ACI	Operational Data	2017
Airport	Sample Regional Airport	Passenger Movements	28000
Airport Operator	Airport Operator Ltd	Aircraft Movements	1350000
Country	Switzerland	Cargo (t)	45000
ACI Region	Europe	Traffic Units (or VLLU)	2400000
Report Date	31.12.2017	Airport Operator Staff (FTE)	150
ACA-Level	ACA Level 3	Average distance to the City (km)	19

Greenhouse Gas Emissions 2017

Scope Break Down:	(t CO2e)	2017
Airport Operator Scope 1	(t CO2e)	3383.3
Airport Operator Scope 2	(t CO2e)	24.2
Airport Scope 3	(t CO2e)	30042.3
Total Gross Emissions	(t CO2e)	33456.4
Offsets	(t CO2e)	500.0
Total Net Emissions	(t CO2e)	32956.4

Airport Operator Source Break Down:

Source	(t CO2e)	2017
Airside Vehicles	(t CO2e)	825.6
Building (gas/oil/coal)	(t CO2e)	2190.0
Fire Training	(t CO2e)	23.2
Emergency Generator	(t CO2e)	81.3
Oil/gas	(t CO2e)	134.5
Process (Waste/Water)	(t CO2e)	134.5
Electricity purchased	(t CO2e)	24.2
Heat Purchase	(t CO2e)	-
Total Scopes 1+2	(t CO2e)	3414.1

Source Group Break Down:

Source Group	(t CO2e)	2017
Airport Operator (Scopes 1+2)	(t CO2e)	3414.1
Aircraft (engine, APU)	(t CO2e)	19748.8
Public Ground Access	(t CO2e)	3071.8
Rest of Scope 3 (incl. staff travel)	(t CO2e)	7421.7

Electricity Reporting 2017

Reporting Method	(t CO2e)	2017
Scope 2: Location-based	(t CO2e)	27.8
Scope 2: Market-based	(t CO2e)	24.2

Key Performance Indicators 2017

KPI	2017
Airport Operator Carbon Intensity	22.8 (t CO2e/FTE)
Airport Carbon Intensity	13.3 (kg CO2e/ATU)
Air Traffic Carbon Intensity	8.1 (kg CO2e/ATU)
Share of Airport Operator on total Emissions	10.2%
Airport Calculator Infrastructure Intensity	4.62 (g CO2e/Pax)

Historic Data

t CO2e	2013	2014	2015	2016	2017
Scope 1	3430	3610	3570	3600	
Scope 2	555	520	160	50	
Scope 3	30300	30730	30700	31300	
Total	34315	34360	34450	35550	

Regional Airport Greenhouse Gas Emissions Inventory 2017

Region	Country	Report Date	Aircraft movements	Passengers	Traffic units
Switzerland	Switzerland	31.12.17	1350000	1950000	2400000

Greenhouse Gases (tonnes)

Scope	CO2	CH4	N2O	CO2e	CO2e %
Scope 1	3233.8	3.430	0.248	3383.3	10.13%
Scope 2	24.2	-	-	24.2	0.07%
Scope 3	24.2	-	-	24.2	0.07%
Total (Scopes 1 & 2)				3414.1	10.20%

Net Emissions (tonnes)

Category	CO2	CH4	N2O	CO2e	CO2e %
Net Emissions	32435	25	2	32956	100.00%

Electricity Reporting Summary

Reporting Method	(t CO2e)	El(g CO2e/kWh)
Location-based	27.8	25.3
Market-based	24.2	22.0

MONTREAL, CANADA, NOVEMBER 29-30, 2017



ICAO

ENVIRONMENT



ACERT: Output for ACA Online Application

- Data and information for the ACA online application
- Data has to be transferred manually
- * Refer to the ACA Guidance Manual

Airport Carbon Accreditation
Submit, Renew & Upgrade your Application

ⓘ This report provides information for the ACA Online Application for the "year 0" only. However, it does not contain information on the historic average of the years "-1" to "-5".

ⓘ Refer to the ACA Guidance and the ACA Online Application to properly transfer the data. Print this page for reference (formatted on 1 page portrait).

Part 1 General Airport and Accreditation Information

Year of Application (year 0):	<input type="text" value="2015"/>	
Airport:	<input type="text" value="ACI Test Airport"/>	
Airport Operator:	<input type="text" value="Test Airport Authority"/>	
Country:	<input type="text" value="Switzerland"/>	
Are you part of an airport group? (Y/N)	<input type="text" value="No"/>	
Do you apply for a "Small Airports Group" application? (Y/N)	<input type="text" value="No"/>	ⓘ See guidance for details
Annual Passengers:	<input type="text" value="1950000"/>	
Airport Carbon Accreditation Level:	<input type="text" value="ACA Level 3+"/>	→ ACA Online
Is this your first Level 3 (or 3+) application?	<input type="text" value="No"/>	
Yes = 1st time Level 3 or 3+ No = you are renewing at 3/3+ or upgrading from 3 to 3+		
Do you operate in a market with access to contractual agreements (e.g. green electricity, PPA, Guarantees of Origins, etc)?	<input type="text" value="Yes"/>	→ ACA Online
Your airport is in size band:	<input type="text" value="C"/>	→ ACA Online

Part 2 Carbon Footprint Section

Location-based reporting				ⓘ All airports must report the location-based emissions
Scope 1 emissions for the year	2015	<input type="text" value="3549"/>	t CO ₂ e	
Scope 2 emissions for the year	2015	<input type="text" value="28"/>	t CO ₂ e	
Total emissions of airport operator	2015	<input type="text" value="3577"/>	t CO ₂ e	
Scope 3 emissions for the year	2015	<input type="text" value="31546"/>	t CO ₂ e	
Market-based reporting				
Scope 1 emissions for the year	2015	<input type="text" value="3549"/>	t CO ₂ e	
Scope 2 emissions for the year	2015	<input type="text" value="24"/>	t CO ₂ e	
Total emissions of airport operator	2015	<input type="text" value="3573"/>	t CO ₂ e	
Scope 3 emissions for the year	2015	<input type="text" value="31546"/>	t CO ₂ e	

Part 3 Emission Reduction Section

Climate Adjustments: this section is not mandatory under Airport Carbon Accreditation (=optional section)

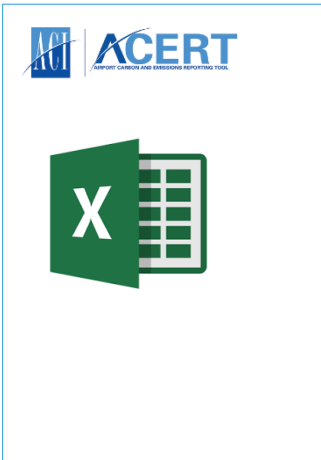
Do you claim climate adjustment (choose from list)?		<input type="text" value="Heat and Cool degree days"/>
Heat degree days for the year	2015	<input type="text" value="0"/>
Heat degree days for reference year		<input type="text" value="0"/>
Scope 1/2 emissions to be corrected for heat degree days		<input type="text" value="0"/>
Scope 3 emissions to be corrected for heat degree days		<input type="text" value="0"/>

ⓘ Check all your sources from the output page and add up accordingly: Heat production and/or purchased heat other

ACERT: What is available?

Tool and Guidance

The Model



The Manual



Training Material

The Tutorial



The Sample Airport





ICAO

ENVIRONMENT

ICAO SEMINAR ON
GREEN AIRPORTS

Thank you for your attention!



For ACERT, acert@aci.aero

For more information on ACI

www.aci.aero

Jscavuzzi@aci.aero