

DO-IT-YOURSELF AIRPORT GREENHOUSE GAS INVENTORY TOOL (ACERT v2.0)

WHAT?

ACI's Airport Carbon and Emissions Reporting Tool (ACERT) is a self-contained Excel spreadsheet that enables an airport operator to calculate its own greenhouse gas (GHG) emissions inventory. The tool is available at no cost to airports and can be used without emissions or environmental expertise, inputting readily available operational data.

Methodologies are consistent with the ACI Guidance Manual on Airport Greenhouse Gas Emissions Management (2009). Emissions are divided according to ownership and control of the source:

Scope 1: emissions owned and controlled by the airport operator, such as electricity generation and airport vehicles.

Scope 2: emissions from the off-site generation of electricity purchased by the airport operator.

Scope 3: emissions are those owned and controlled by airport tenants and other stakeholders including:

- Aircraft activity in airport area;
- Airline and other tenant vehicles, ground service equipment (GSE) and electricity usage;
- Ground access vehicles (GAV) for staff and passengers including buses and trains.

WHY?

In order to manage GHG emissions, an operator needs to understand the sources, quantities and ownership of emissions at the airport. An inventory can assist the airport operator to set goals and target mitigation efforts.

In addition, ACI would like to use ACERT data to compile regional and global aggregate emissions, enhancing understanding of airport contribution to total aviation industry emissions.

WHO?

ACERT will be useful for:

- Airports with no dedicated environmental staff or budget for consulting fees, and;
- Airports developing GHG management on a voluntary (non-regulated) basis.

Input for ACERT can be completed by operations, planning or maintenance staff with no emissions training or expertise.

HOW?

Data is entered into a self-explanatory Excel spreadsheet. For the calendar year of the inventory, the following information is needed:

- Total aircraft, passenger and cargo movements;
- Fuel use by airport and tenant vehicles, buildings, emergency generators and fire training;
- Electricity (and heat) purchased by the airport operator and tenants;
- Aircraft movements categorised either by specific aircraft type, or by generic aircraft type, or total fuel loaded on to aircraft;
- Aircraft taxi and APU usage times and engine run-ups;
- Glycol de-icer use, and;
- Either a detailed landside traffic study or estimates of passenger and staff ground access such as use of public transport, and car, taxi, bus and train activity.

WHAT OUTPUTS?

ACERT automatically generates an inventory report (see sample extract on following page) that includes a summary table of GHG emissions and pie charts. This stand-alone report also contains detailed notes on the assumptions and caveats and a check-list to aid review (not illustrated here).

HOW GOOD?

An ACERT inventory is of sufficient quality to help setup an airport GHG reduction programme. The tool has been tested at several major airports including Zurich, Toronto and SeaTac. Results indicate that ACERT Scope 1 and 2 emissions were within 5-10% of those from the detailed inventories. SeaTac Senior Environmental Program Manager, Russ Simonson, said, "ACERT is both comprehensive and cost effective, and an excellent tool for understanding an airport's GHG emission sources, regardless of the size and staffing at the airport. This tool gives airport operators the information they need to begin managing GHG emission reduction programs."

ACERT v2.0 now includes an option for inputting total fuel loaded on aircraft, and vehicle and aircraft biofuels with non-zero net CO₂. It should not be used in place of any model required by local regulation.

ACERT v2.0 has been approved for the mapping requirements of Level 1 (Mapping) and Level 2 (Reduction) of *Airport Carbon Accreditation*. *Airport Carbon Accreditation* is the only airport-specific carbon management standard and is available in the ACI Europe, Asia-Pacific and Africa regions. www.airportcarbonaccreditation.org

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WHERE?

ACERT is available for free by emailing ACERT@aci.aero where support is also provided. Also visit www.aci.aero.

Airport Carbon and Emissions Reporting Tool

SEA 2011

ACERT

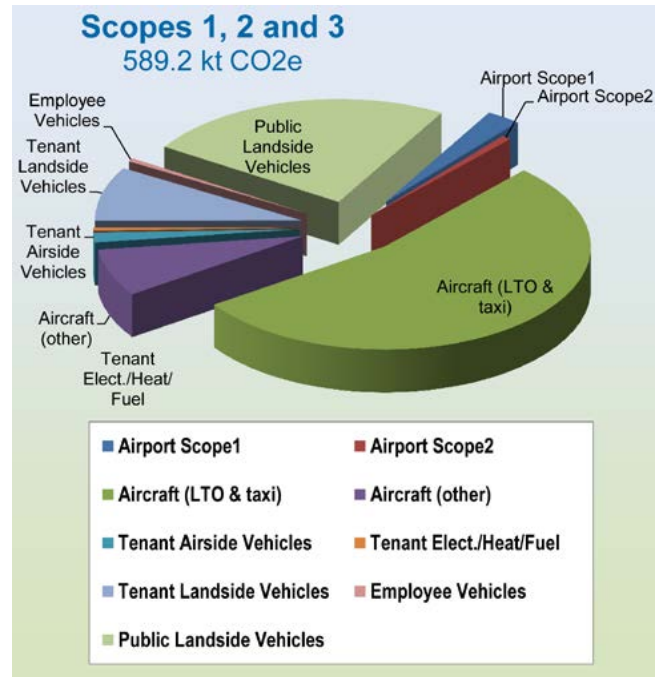
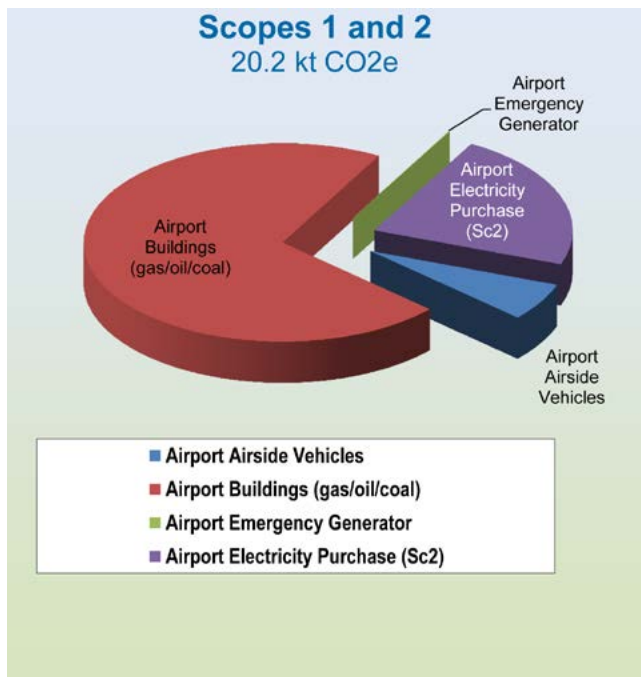
Airport: Seattle-Tacoma International Airport Country: United States Aircraft mvmts: 314,947
 Report Date: 18/6/2012 Ems Factor: 31.3 g CO₂/kWh Passengers: 32,819,796

| Entity | Source | Scope | Greenhouse Gases (t) | | | CO _{2e} | CO _{2e} % | |
|---|----------------------------------|--------------------------|--|-----------------|------------------|------------------|--------------------|-------|
| | | | CO ₂ | CH ₄ | N ₂ O | | | |
| Airport Operator | Airport Airside Vehicles | 1 | 1,212 | 0.25 | 0.10 | 1,249 | 0.2% | |
| | Airport Buildings (gas/oil/coal) | 1 | 14,421 | 0.26 | 0.03 | 14,435 | 2.4% | |
| | Airport Emergency Generator | 1 | 16 | 0.00 | 0.00 | 17 | 0.0% | |
| | Airport Electricity Purchase | 2 | 4,537 | | | 4,537 | 0.8% | |
| Airport Operator Sub-total | | | | | | 20,238 | 3.4% | |
| Tenants (including airlines, government, shops etc.) and Employees | Tenant Aircraft (LTO & taxi) | 3 | 307,489 | 9.66 | 27.82 | 316,316 | 53.7% | |
| | Tenant Aircraft APU | 3 | 42,149 | 1.32 | 3.81 | 43,359 | 7.4% | |
| | Tenant Aircraft Engine Run-ups | 3 | 456 | 0.01 | 0.04 | 469 | 0.1% | |
| | Tenant Aircraft De-icing | 3 | 0 | | | 0 | 0.0% | |
| | Tenant Airside Vehicles | 3 | 8,947 | 1.73 | 0.74 | 9,211 | 1.6% | |
| | Tenant Buildings (gas/oil/coal) | 3 | 2,827 | 0.03 | 0.03 | 2,837 | 0.5% | |
| | Tenant Electricity Purchase | 3 | - | | | - | | |
| | Tenant Fire Training | 3 | 48 | 0.08 | 0.39 | 170 | 0.0% | |
| | Tenant Landside Vehicles | 3 | 48,411 | 17.22 | 4.04 | 50,024 | 8.5% | |
| Airport Employee Vehicles | 3 | 3,142 | 1.14 | 0.26 | 3,246 | 0.6% | | |
| Tenant Sub-total | | | | | | 425,634 | 72.2% | |
| Public (including Passengers) | Ground Access Vehicles | Cars, taxi | 3 | 126,643 | 40.71 | 10.57 | 130,776 | 22.2% |
| | | Bus, shuttles | 3 | 12,181 | 1.05 | 0.99 | 12,510 | 2.1% |
| | | Rail | 3 | 22 | - | - | 22 | 0.0% |
| Public Sub-total | | | | | | 143,308 | 24.3% | |
| TOTAL | Total emissions (tonne) | | 572,502 | 73.47 | 48.82 | 589,180 | | |
| Summary | t CO_{2e} | CO_{2e} % | Total CO_{2e} Emissions (t) | | | 589,180 | 100% | |
| Airport Scope 1 | 15,701 | 2.66% | | | | | | |
| Airport Scope 2 | 4,537 | 0.77% | | | | | | |
| Airport Scope 3 | 568,942 | 96.57% | | | | | | |

The aircraft emissions calculations were based on generic aircraft data.
 The landside traffic calculations were based on estimated traffic data.

(* Data for illustration only)

Airport GHG Inventory



THANKS

ACERT was initially developed by Transport Canada and its consultant EBA with the Canadian Airports Council. A global version was developed with the further assistance of Zurich Airport and Toronto Pearson Airport.

