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Airports See Success in Reducing Emissions

By JEAN-MARIE MACABREY, ClimateWire

SITGES, Spain -- While the world continues to complain about one kind of pollution from airports -- noise -- there has been some major progress in reducing their climate-related emissions.

From eco-taxis to biofueled buses to heating systems run on wood chips, a number of European (and American) airports have been implementing innovative plans to deal with climate change in their land-based activities.

A group of researchers from the Central European Institute of Technology (CEIT), an Austria-based research and development center, reported on their progress as part of a study financed by the Austrian ministry for transport. Yesterday, the CEIT presented its report here at an international conference on sustainable cities.

Last year, the 440 airports that are members of Airports Council International Europe, or ACI Europe, pledged to reduce the climate impact of their activities and to try to go carbon neutral. Austria's CEIT researchers have been trying to take a holistic view of how the airports' efforts fit in with regional transportation plans.

"You can substantially reduce CO2 emissions if you think about the whole process -- how people get to the airport, what kind of vehicles are used there, the heating and cooling systems, etc.," said one of the report's authors, Christian Eizinger, in an interview.

Stockholm's airport wins the prize

Eizinger said the Stockholm-Arlanda airport is probably the hands-down winner in actively battling global warming. "They have the kind of public support for environmental programs that is necessary in order to get things done," he explained. "It's not only a question of CO2 reduction but also a matter of minimizing costs and of attaining energy independence."

The Stockholm airport is serviced by a fleet of "eco-taxis" -- hybrids or renewable fuel-powered cars -- which run on lines outside the terminals that are separate from those used by ordinary taxis. According to the Austrian report, 35 percent of all taxis at the airport are now eco-taxis, representing an estimated reduction of 3,770 metric tons of CO2 for 2007.

"As the airport is a very important hub for taxi traffic, many taxi operators took up the idea of installing cars driven on renewable fuels," reads the report. Stockholm-Arlanda's goal: All taxi vehicles operating at the airport will meet the official criteria for environmentally "clean" cars by 2011.

The Stockholm airport is also serviced by two local bus companies that use locally produced diesel fuel made from rapeseed. A similar effort is being made at the airfield level. A policy states that new vehicles operating at Stockholm-Arlanda must be environmentally clean vehicles, and last year, the airport initiated a project to have 100-percent-clean vehicles and ensure the supply of biofuels for vehicles operating within the airport by 2012.

"The result is a growing fleet of cars and buses that run on renewable fuels," reads the report. "Each biogas-powered bus saves approximately 50 metric tons of CO2 annually. If all vehicles and machinery are de-fossilized by 2012, the emissions from ground-service equipment and other vehicles will be cut by about 6,000 metric tons annually."

Missing link in U.S.: a train that goes to the airport

As for U.S. airports, the Austrian researchers note that Oregon's Portland International Airport has begun replacing its fleet of ground-support vehicles with alternative-fuel vehicles. They also mention that Los Angeles International Airport has built the first airport-based retail hydrogen-fueling and generation station.

Boston's Logan International Airport is also mentioned in the report, for setting aside approximately 100 parking spaces for hybrid and alternative-fuel vehicles as part of 2007 Earth Day celebrations. There is a fundamental difference in approach, however, between most European airports and U.S. airports such as Washington Dulles: Isn Europe, priority has traditionally been given to public transportation, particularly trains, from cities to airports.

"In Europe, we say: 'Don't get people into cars in the first place -- first build a public transport link directly from the city to the airport, so they won't need cars at all,'" explained Eizinger, for whom this is the best way to reduce CO2 emissions within a wider airport context.

Several European airports, such as Athens, Hamburg, Linz, London Heathrow and Paris Orly, do provide carpooling or car-sharing services for passengers, airlines and airport staff. At Heathrow, more than 6,000 people from 300 airport companies are members of the car-sharing program -- the largest such scheme in Europe -- operated by BAA, the airport's owner.

Yet many in Europe, especially passengers fearful of missing their planes because of traffic jams, feel that nothing -- not airport shuttle vans, nor carpooling, nor clean-fuel buses -- can replace a reliable, traffic-free railway connection to the airport.

In some extreme cases, this train connection can be several hundred miles long, as some European airlines are now offering hub-to-hub train segments as part of their air fares. An example: Air France-KLM operates high-speed trains between Paris-Charles de Gaulle Airport and a Brussels railway station for passengers landing in Paris who wish to complete a trip to Brussels by train rather than by plane. Lufthansa offers a similar service between Cologne and Frankfurt, Germany.

Many European capitals feature conventional train connections to their airports, but Vienna has gone further. According to CEIT's Eizinger, since 2008 airline passengers have been able to use a clean taxi service to go from their Vienna apartments or hotels to the City Air Terminal, where they can check in their luggage before boarding a nonstop train to the airport. The Austrians claim their system is unique in the world.

Other ways to cut CO2 -- and operating costs

Aside from on-ground transportation, Europe's airports are adopting a variety of other CO2-reducing techniques, many of which also cut operational costs. According to the CEIT study, the LFV Group -- the authority responsible for operating Sweden's airports -- cools its buildings at Stockholm-Arlanda largely with water from a nearby lake, enabling the airport to reduce the number of its cooling units.

Furthermore, the heating system at the Stockholm airport relies mainly on burning wood pellets. These have allowed the airport to reduce its annual CO2 emissions by approximately 94 percent since 1990 (from 16,000 to 1,000 metric tons).

Aéroports de Paris (ADP), which runs Paris airports, announced last year that it will draw upon a layer of hot groundwater beneath Orly airport to cover one-third of its heating needs. ADP thus hopes to save 7,000 metric tons of CO2 each year, out of the 27,000 metric tons currently produced yearly by Orly airport's gas heating system.

Vienna airport uses a different method to meet its heating needs: The airport is supplied with hot water via a pipeline from a nearby oil refinery. The airport claims that this system reduces both its fuel requirements and carbon dioxide emissions by roughly 5 percent compared to direct heating with fuel oil.

Aircraft fuel at the Vienna airport is delivered from a nearby refinery to the airport, then to the aircraft, not by trucks but by a pipeline and underground hydrants. The CEIT's report notes that Seattle-Tacoma International Airport has also implemented a fuel-piping system.

Like U.S. airports such as San Francisco, various European airports -- Zurich, Munich, Paris Orly, Rome, Salzburg and Stuttgart -- have taken advantage of their vast stretches of terminal and hangar rooftops to install solar panels.

These airports, according to Eizinger, produce solar energy for their own use or put some of their solar-produced electricity into local grids for use by households in the region, or do both.

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