

## ecoDemonstrator caps off week of sustainable aviation at ACY

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EGG HARBOR TOWNSHIP — The Boeing ecoDemonstrator 777 flew from Frankfurt, Germany, to Atlantic City this week, just in time to cap off a conference about sustainability in aviation here.

The retrofitted 18-year-old plane, which is testing 50 new technologies in the real world, stopped at Atlantic City International Airport for the end of a multiple-day CLEEN II Conference on sustainable aviation technologies.

The Federal Aviation Administration conference was held at the National Aviation Research and Technology Park at the airport, attracting about 100 people from major aviation companies around the nation, organizers said.

“CLEEN II focuses on ... technologies to reduce emissions, energy use and noise,” said Atlantic County chief of staff Howard Kyle, who is also on the NARTP board of directors. “This is the aircraft that implements the technology.”

The Greater Atlantic City Chamber hosted the Boeing plane and ran tours of it for chamber members and CLEEN II participants Friday.

“It’s great because instead of doing things in a lab and simulating using it in an aircraft, it’s using it in an aircraft,” said Gary Nickerson, of Seattle, after the tour. Nickerson works on activation systems — or flight controls — for Collins Aerospace and was in town for the CLEEN II meeting, he said.

He, too, is working on making flying more sustainable.

“I work to try to reduce the size of components, to reduce the weight and free up space on an airplane,” Nickerson said.

Kyle said it’s the first time CLEEN II has been held here. Last year it was at NASA Langley in Virginia, he said.

The Continuous Lower Energy, Emissions and Noise (CLEEN) program is the FAA’s main environmental effort to develop new aircraft and engine technologies and advance sustainable jet fuels, according to the FAA.

“A lot of the companies that attended were unfamiliar with what the technical center did here, and the research park,” Kyle said. “Now we are in the consciousness of a lot of influential companies.”

The research park is looking to expand and bring in more aviation companies, having targeted the aviation sector as the region’s best bet for diversifying the economy.

The ecoDemonstrator has components made of lighter or recycled materials and can run on biofuels as well as standard aviation fuels, said Boeing Lead Engineer of Sustainable Technology Christin Datz.

Datz said Boeing is also testing ways to keep perishable cargo cold in flight, to avoid the 20% spoilage rate that is the current average.

“We have created a cold chain ... and sensors to check the condition (of the cargo),” she said.

The plane is also testing less toxic primers and fire suppression materials.

“Halon is good at suppressing a fire, but we are looking to replace it without the effects on ozone,” Datz said. “Last year, the (FAA’s William J. Hughes Technical) Center tested a promising fire agent.”

Boeing spokesman Paul McElroy said the company created its first ecoDemonstrator in 2012. At that time, it was “entirely environmentally focused,” he said.

As it continued each year, Boeing expanded its focus. Now, it’s also testing smart cabin technologies to automate inventory control and preparation for takeoff and landing within the cabin, among other things.

But environmental improvements remain a priority.

This year’s plane is also testing Smart Vortex Generator equipment, in collaboration with NASA, McElroy said. It allows the small fins on airplane wings, which are used to keep airflow efficient, to move up and down as needed in response to temperature changes.

It is warmer closer to the ground, where the fins are needed, and the cold at altitude causes them to change shape and fold into the wing, reducing drag.

“It’s a shape memory alloy,” McElroy said. “We can teach the metal to change shape with the temperature.”

Boeing has estimated that an airline with 100 jets can save 3 million gallons of fuel a year by using the special equipment.