

Los Angeles Airport Creates Energy from Food Waste

Danielle Onorato | Jul 01, 2001



A six-month pilot program will test the effectiveness of converting food waste from the Los Angeles International airport (LAX) into energy for Californians.

The first-of-its-kind program, which began in April, was created through a partnership between the Los Angeles Department of Public Works (DPW) and Los Angeles World Airports (LAWA), which owns LAX along with three other regional airports.

Organized by LAWA's Environment Management Division, three times a week LAX caterer Gate Gourmet transfers between 50 and 75 pounds of leftover food waste to the DPW's Hyperion plant where it is treated and converted into energy.

Once at the plant, the food is ground up into tiny particles with an In-Sink-erator, a common home garbage disposal. The waste is mixed with water to create a slurry, which then is fed to a pilot digester and heated to speed the organic breakdown into methane gas and carbon dioxide. The methane gas is piped offsite to a neighboring power generation plant and converted into

electricity and eventually sold to the public power grid.

Residual biosolids are concentrated and recycled to enrich the soil on the airport grounds. And the wastewater generated during the recycling process is treated and reclaimed as irrigation water for public property.

To maintain consistency in the pilot, waste is collected only from one location, says Nancy Castles, LAWA's public relations director. "This way, we can extrapolate how much gas is produced" from the total amount of food waste that eventually will be sent to the plant, she says.

Currently, the airport sends approximately 80,000 tons of food waste annually to a landfill. Eventually, LAWA hopes to organize the 12 to 15 catering companies and 80 airlines that operate at LAX to bring food waste to a centralized location so that it can be converted to fuel.

“[We want to] take the food waste and use the same technology, which will relieve pressure on having to build more landfills,” Castles says.

Already, Hyperion's treatment plant is using biomass technology to convert sewage into electricity. Using the system, albeit on a smaller scale, will allow plant engineers to analyze comparable data to eventually expand the program, says Jerry Hernandez, the Hyperion plant's project manager.

Food is a highly organic material, he says. “Because of this, we expect to get more methane gas from the additional food waste than from using current methods of converting sewage into energy.”

The pilot actually was championed by city councilman Mark Ridley-Thomas, who asked the DPW and Sanitation Bureau of Los Angeles to look at all possible uses of food waste, and encouraged LAWA to set up the study.

“[Ridley-Thomas] had the vision to ... seek federal and state grants for this kind of program,” Castles says.

This funding paid for equipment such as tanks, pipes and a biomass system specifically for the food waste project.

Costs for the project are minimal. Castles says LAWA must create an operation with a central location where the 80 airlines and 12 to 15 catering businesses bring food waste. And because the DPW does not need to hire additional labor to transport the waste, the only costs are for a possible pipeline system and future receiving station where food can be processed before it goes to the digesters, Hernandez says.

Fortunately for both parties, transportation costs weren't a major issue. On a previous project, Castles says transporting waste to a processing plant 75 miles away led to exorbitant fees, and eventually caused the program's demise. But in the biomass pilot, LAX literally is shipping food across the street to the Hyperion plant.

“Landfills here are a great distance away and are diminishing at a rapid rate,” Hernandez says. “As we have to look for more areas for landfills, it just means we'll have to go further out into the state to find them, which translates to higher transport and collection costs.” The food waste pilot is a viable means of diverting waste from landfills, he says.

Additionally, with electricity and landfill costs rising, and with the airport's daily average of 300,000 visitors, passengers and workers, the food project could be a model that provides a huge pay-off.

“Once we get it going for LAX, we'd like to bring onboard the city of Los Angeles, hotels and restaurants located near the airport” to transport their food waste to the plant, Castles says.

According to preliminary results, “we're getting a higher percent of degradability so far, so it looks promising,” Hernandez says. This could be a boon for the other municipalities and airports throughout the country that are awaiting results of the program.