

BOSTON TURNS TO TURBINES

Turbines of a non-aviation sort have made their appearance at Boston Logan International Airport

BY CAROLE SHIFRIN

Wind turbines—20 of them—stretch regally across the parapet of the roof of the three-story Logan Office Center in a demonstration project expected to provide about 2 percent of the building's monthly energy use, about the equivalent of power required for 10 to 12 single-family homes.



“IT’S about producing some renewable energy and being environmentally responsible and starting to make some difference in our sustainability at Massport.” — Sam Sleiman, director of capital programs and environmental affairs, Massport

The four-foot high wind turbines, each with five three-foot blades, capture wind power coming off Boston Harbor to contribute to the electricity needs of the building, which serves as Massport's headquarters. Built to

withstand winds of up to 120 mph, the turbines produce their maximum electricity at about 20 to 25 miles per hour, says Sam Sleiman, Massport's director of capital programs and environmental affairs. But he adds

they can produce electricity down to about 7 mph, which is common at the water's-edge airport.

The wind turbines, expected to provide electrical output of about 100,000 kilowatt hours a year for an annual savings of about \$13,000, are visible from one of Logan's terminal but mostly visible from the community across the harbor and the city of Boston.

The building-integrated wind turbines are made by AeroVironment, Inc., of Monrovia, Calif., and were



installed in March by Groom Energy Solutions of Salem, Mass. They already are producing electricity. “Basically, when they produce electricity, we use that whole electricity,” Sleiman says. “When they’re not producing electricity—when we have a calm day and there isn’t any wind—we are meeting our needs from the grid, from the electrical suppliers.”

Terry Civic, Massport’s manager, utility control, says the wind turbine blades and motor housing are made of polycarbonate plastic, while the base of the 90-lb. system is galvanized steel, with stainless steel boltings. Electricity being produced by the turbines is fed through electrical connections

in conduits on the roof into four inverters and hooked into the building’s electrical infrastructure.

The system is monitored electronically. “There’s an independent meter dedicated to the output of all 20 wind turbines,” Civic says, “with a data logger that feeds us back information on the production of the turbines on a real-time basis.” Maintenance needs are minimal, she adds, basically involving a visual inspection from the roof to make sure, for instance, that electrical connections are tight and the structural bolts are properly torqued.

There is a strong possibility there will be more wind turbines at Logan. “We have many buildings on the water edge here at Massport

and there is a potential for a lot more than those 20 on the roofs of these buildings,” Sleiman says. “But before we install any more, we want to go through six to eight months, maybe nine months’ evaluation period to understand throughout the year how much electricity they produce and whether they meet our expectations.”

With an overall program cost of about \$150,000, it will take about 12 to 13 years for the electricity generated to pay for the wind turbine installation. “But it’s not just about payback,” he says. “It’s about producing some renewable energy and being environmentally responsible and starting to make some difference in our sustainability at Massport.” ■

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