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Solar Boston Initiative
Increasing solar energy in Boston to 25 MW by 2015

Boston Building Materials Co-Op Becomes a Solar Energy Leader

Summary

Solar panels are sprouting up all over Boston. In July of 2008, the Boston Building Materials Co-Op installed a series of solar panels on the roof of their headquarters in Roxbury, MA. The 9.9 KW system cost a total of $72,060. To offset the cost, the Co-Op received a rebate of $34,580 from the Massachusetts Technology Collaborative (MTC), which provides rebates for solar installations throughout the state.

Since the Boston Building Materials Co-Op is based on green principles, installing solar panels on their roof to reduce energy bills was not a difficult decision for the staff to make; "It's part of our DNA," said Co-Op manager Matthew St. Onge.

Company Background

The Co-Op's goal is to provide clear, honest advice to all comers on maintaining and improving homes. The Co-Op sells new housing materials, including kitchen cabinetry and countertops, doors, windows, storm products, weatherization materials, energy and water saving products, and environmentally friendly materials. The Co-Op also teaches a number of classes designed to help individuals sharpen their home improvement skills.

The Boston Building Materials Co-Op was founded in 1978, and has roughly 1000 active members. The Co-Op belongs to, and is governed by, its members.

The Building Materials Resource Center, a nonprofit spin-off of the Co-Op, is a building materials re-use store that collects donations of new and used materials and distributes them at low cost to the general public with steep discounts available to lower income households. The BMRC served over 1,350 homeowners and non-profit customers last year. The Co-Op has already gotten good press from its solar panels; it has been featured on WGBH's Greater Boston Today program as well as Boston.com's green energy blog.

Solar Panels

Solar panels collect solar energy and convert it directly into usable electricity using photovoltaic cells. The two panel arrays used at the Co-Op (pictured right) are excellent examples. The panels were manufactured by Evergreen Solar, and they were installed by Borrego Solar Systems Inc. on July 28, 2008.

During the hot summer months, these panels provide 70% of the total electricity used by the Co-Op, and are projected to provide 50% of their electricity on average. Excess electricity can be sold back to the grid, effectively rolling the electricity meters backwards thanks to the state's net metering legislation. Though the Co-Ops photovoltaic array is a fairly recent installation, they have so far provided significantly lower, more stable energy bills with no maintenance troubles whatsoever. The Co-Op has also noticed no operational difference since installing the system. "Either the power's coming from NSTAR or it's coming from the panels – it makes no difference…this lets people know it's doable."- Matthew St. Onge

Energy Efficiency Measures

The environmentally conscious Boston Building Materials Co-Op put a lot of effort into making their building green long before they installed solar panels. Having built the structure themselves, they implemented a range of energy conservation measures, including a passive solar design that naturally captures the maximum amount of solar heat and super-insulated walls. They strive to provide a green example in everything they do, going so far as to use environmentally friendly cleaning materials, recycle all paper, cardboard, glass, and plastic, and encouraging staff to bike to work. During a routine audit, NSTAR helped with small improvements such as replacing the standard fluorescent light fixtures with ones that are more energy efficient.

Renewable Energy Results

Though the panels initially cost $72,060, the Co-Op expects the payback period to be only 5-6 years. Considering how hassle-free the installation process was, as well as the fact that the panels generate 50% of the Co-Op's total electricity, the Co-Op is considering additional solar panels for their warehouse building, as well as a green roof and a small wind turbine.

This is one of two case studies prepared by Solar Boston, a half-million-dollar program launched in June of 2007 that aims to encourage widespread adoption of solar energy in Boston. For further information, visit our Solar Boston Interactive Map to see active renewable energy installations within the City and to calculate the solar potential of your own rooftop: **http://gis.cityofboston.gov/solarboston/**