

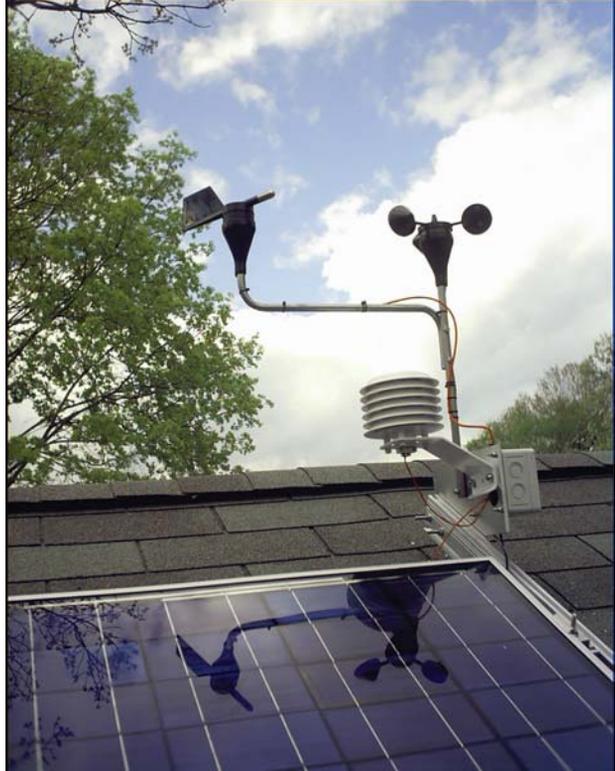


Challenge:

David Otten is a responsible homeowner in Newton, Massachusetts committed to the cause of solar energy. Mr. Otten was planning to install a photovoltaic array on the south-facing slope of his home's roof, however, the roof was heavily shaded by the overhanging tree limbs. It was unclear how much the shading would affect the performance of Mr. Otten's PV system.

Otten Residence

Newton, Massachusetts



Solution:

The solution for the Otten residence was to install a Heliotronics' *Feynman WD* package to monitor the output of their PV system.



"The Heliotronics Data Acquisition System has proved valuable to me in understanding how my system operates. The detailed information which it collects allows me to determine if my PV array is operating correctly. For example the performance of the array is affected by the incident sun light and the temperature of the array. Both of these variables are measured and displayed so that I can compare the data sheet specifications with my measured performance. During some hours of the day I have trees casting shadows on my array. The DAS has helped me quantify the performance penalties I am experiencing due to this shading... Heliotronics was recommended by many as the market leader and their experience in this field has saved me much time and effort."

-David Otten, Homeowner

Funding:

Many incentives are now available in Massachusetts to help reduce the cost of photovoltaic installations. The Otten's received \$3 per watt incentive for the initial purchase of their PV system from the Massachusetts Technology Collaborative's Solar to Market Initiative administered locally by the MassEnergy Consumers Alliance. The Otten's will also receive 38 cents per kilowatt-hour for energy produced by the array over the next three years. In addition, the Otten residence is eligible to sell the green tags (positive environmental attributes) from their clean energy installation at a rate of 6 cents per kilowatt-hour produced over the next three years. All of these financial incentives result in a savings of almost \$10,000.



Project Snapshot

Data Monitoring System: Heliotronics Feynman WD Package

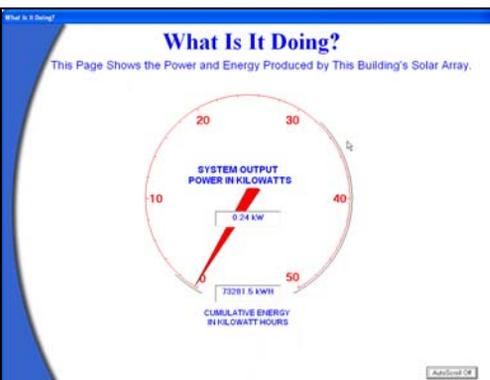
System Specs: monitors real-time PV power and energy output, system efficiency, array efficiency, inverter efficiency, AC/DC current and voltage, avoided emissions, irradiance, PV module temperature, ambient temperature, wind speed and wind direction

User Interface: Heliotronics' SunViewer™ educational display software accessible through personal computer

PV Installation: 22 Evergreen Photovoltaic modules

PV System Capacity: 2.17 kW AC (grid-connected)

Installation: Lighthouse Electrical



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