MILLION Solar ROOFS

SUCCESS STORIES

The goal of the Million Solar Roofs Initiative is to install one million solar energy systems on U.S. buildings by 2010. President Clinton announced the Initiative on June 26, 1997 in a speech before the United Nations Session on Environment and Development. The Initiative focuses on two types of solar energy technology — photovoltaics that produce electricity from sunlight, and solar thermal systems that produce heat for domestic hot water, space heating or heating swimming pools. The U.S. Department of Energy leads this effort in partnership with the building industry, other federal agencies, utilities, the solar energy industry, financial institutions, state and local governments, and non-governmental organizations. These partnerships concentrate on removing market barriers and developing and strengthening demand for solar energy products and applications. As progress is made toward the goal of one million solar roofs, greenhouse gases and other harmful emissions will be reduced, high tech jobs will be created, and the U.S. solar energy industry will retain its competitive edge.

Project: Patagonia, Inc.

Type: Grid Connected PV

Location: Reno, Nevada

Background: Patagonia, Inc. is a Ventura, California-based outdoor wear company with a commitment to environmentally benign business practices. Whether it's Patagonia's use of organic cotton, its introduction of a synthetic fleece made of recycled plastic bottles, or its payment of an "Earth Tax" used to fund its Environmental Grants Program, the company has a history of protecting the environment. Consistent with its history, it is only fitting that in June 1999 Patagonia unveiled the first solar energy system in Nevada under the Million Solar Roofs Initiative. The 4.6 kW system was installed to reduce Patagonia's energy needs from the power company, to support the solar industry, and to show business and industry that these types of systems can have economic benefits if one takes a long-term view.

The Corporation for Solar Technology and Renewable Resources helped finalize the project. The solar energy system was installed on the south side of Patagonia's facilities in Reno, Nevada. Sierra Pacific Power's net-metering program will provide additional savings. Patagonia would like to install additional panels every year.

Other features were also installed at the facility to help control its internal climate and increase energy efficiency. These features include special energy efficient heating and cooling systems, insulation, and skylights. Patagonia's commitment to the environment is also evident by its use of recycled carpets and ceiling tiles.

System Description: The PV system consists of 16 APC panels mounted on the south face of the Patagonia, Inc. distribution center. All the energy generated by this 4.6 kW system is fed directly back into Patagonia's internal power grid. Patagonia is also connected to the utility grid as the system only generates a portion of their total power needs and does not include battery storage. The Trace inverter has a 20 kW capacity that will allow Patagonia to expand the system over time. The system was designed by a local firm, Independent Power Systems.

Financing: The system was treated as a capital expense within the Patagonia organization. No specialty financing was pursued.

Climate: The system generates power for approximately 8.5 hours a day during the summer months. Its wintertime performance is 6.5 hours per day. The weather is predominately dry with little humidity. Total annual precipitation is 5-6 inches. There are approximately 310 days of sunshine per year.

Installed Cost: System costs totaled approximately $48,000, not including installation of the panels (which was done in house).

Optimum Maintenance Costs: Maintenance costs are unknown at this time, but are expected to be minimal.

Environmental benefit: Independent Power Systems has estimated that the system will save approximately 10,365 pounds of carbon dioxide emissions per year, 11,402 grams of sulfur dioxide emissions per year, and 15,548 grams of nitrogen oxide per year.

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