



Offered as part of their Energy Smart Schools(SM) program, the New York State Energy Research and Development Authority (NYSERDA) has created the School Power Naturally (SPN) energy education project. Costing \$2.1 million dollars, the program places photovoltaic (PV) arrays on 50 schools to generate a portion of their electricity.



Photo Credit: Solar Works, Inc.

The PV systems are monitored using Heliotronics Epiphany™ series educational data acquisition systems. Real time data is brought to the classroom using SunViewer™, fun easy to use software. The project utilizes SunViewer.net™ to provide data from all of the systems over the Internet, either individually or in aggregate. The School Power Naturally program includes an ambitious program for development of relevant, standards based curriculum for grades 5 though 12.

School Power NaturallySM Program

New York State Energy Research and Development Authority



Darrow School Photo Credit: Solar Works, Inc.

Background:

When complete, School Power Naturally will represent the largest program of its kind in the country. The project provides funding from NYSERDA of approximately \$24,000 for each school and requires the schools to provide an additional cost share of \$1500. After a competitive selection process, 50 schools have been selected to receive identical 2 kilowatt solar arrays.

Solution:

Solar arrays by themselves offer little educational value. They don't move and often are placed on building rooftops where they cannot be seen or touched. Data monitoring and computer displays, designed to be fun and educational, offer an excellent way to bring the solar array to life in a fun and engaging way. Demonstrating the interplay between environmental variables, such as irradiance and temperature, and system performance offers a rich environment of multidisciplinary learning opportunities.

Utilizing feedback from the SPN curriculum development team, Heliotronics upgraded the SunViewer™ real time display software. The resulting improvements earned the following praise from William Peruzzi, Director of Curriculum Development and Training for the NYSEDA School Power Naturally project.

“The DAS software CD is like its own independent lesson that does not need embellishment”



SunViewer™ Display Software

The systems are being brought online rapidly in 2005. You can learn more about SPN and see the online data by visiting the School Power Naturally web site at:

www.schoolpowernaturally.org

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Photo Credit: Solar Works, Inc.

Project Snapshot

Data Monitoring System: Heliotronics Feynman™ Package

Monitoring 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 and wind speed.

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

PV Installation: Twenty 100-watt single crystal Sunline 20 solar modules from Astropower, SMA SunnyBoy 2500 watt inverter

PV System Capacity: 2 kW (grid-connected)

PV Mounting: System mounting approaches include sloped roof, flat roof with ballast, flat roof with pressure treated beams, wall or awning mount.

Installation team: Solar Works, Inc. is the lead contractor on the School Power Naturally project.

