



FLORIDA SOLAR ENERGY CENTER®

Creating Energy Independence



*Dr. James Fenton, Director
February 15, 2013*

A Research Institute of the University of Central Florida



Regional Test Center (RTC)

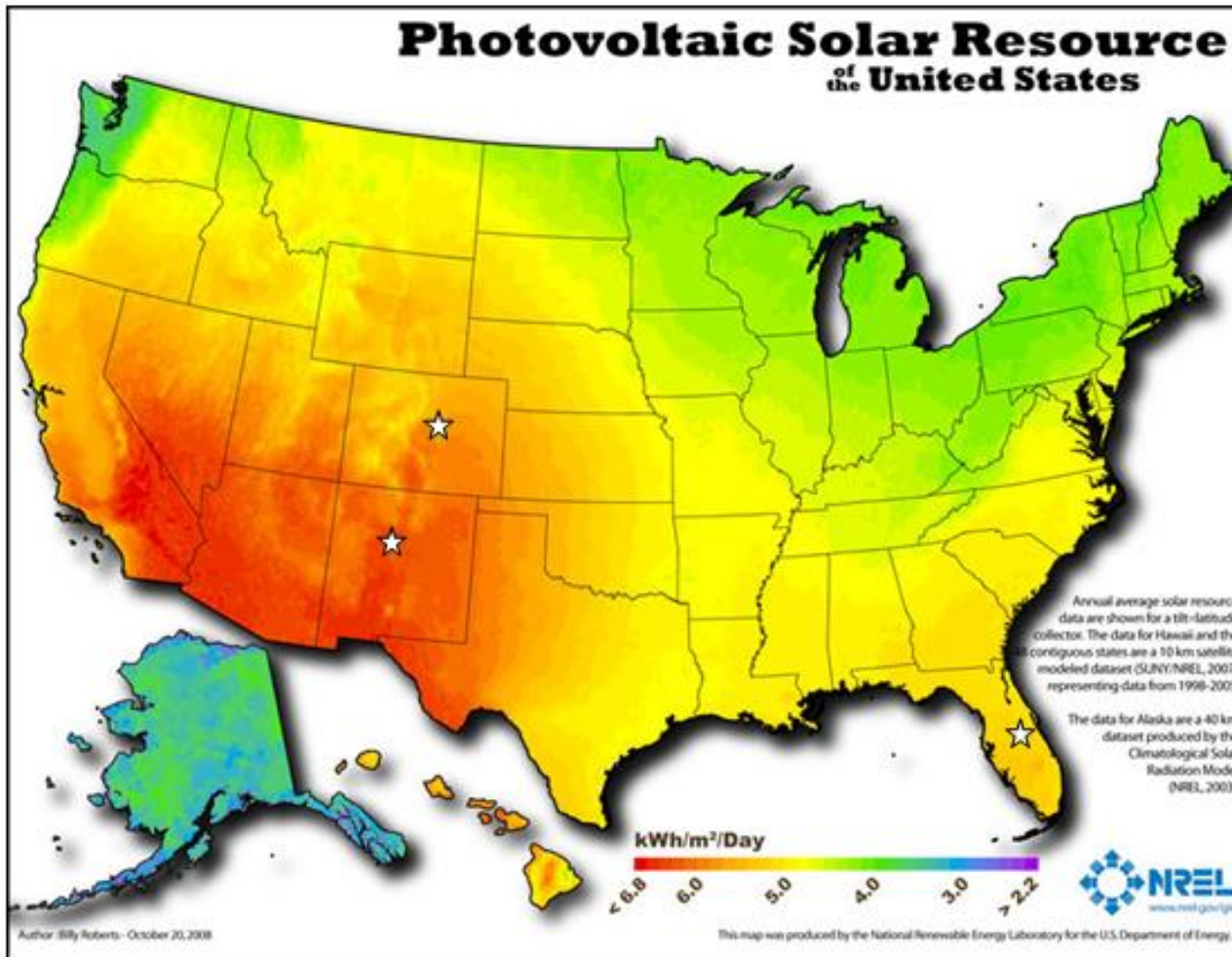


Figure 1: Location of DOE's Regional Test Centers: 1. Denver, CO at the SolarTAC facility, managed by the National Renewable Energy Laboratory (NREL) (Steppe climate); 2. Albuquerque, NM at the National Solar Thermal Test Facility managed by Sandia National Laboratories (Sandia) (hot-dry climate); and 3. Orlando, FL at the University of Central Florida managed by the Florida Solar Energy Center (FSEC) (hot-humid climate)



Regional Test Center (RTC) -update



RTC Site Concept (UCF)

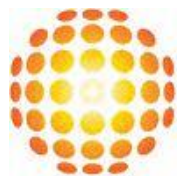
- 20-acre site at the southeast corner of campus
 - site plan completed and permitted
- First 4 participant companies chosen
 - Thin film and crystalline silicon
- Timing constraints has put local facility into play
 - Auxiliary site being developed for first 3 participants



Economic Development Proposal (EDAP2013)

- Opportunity to support infrastructure for jobs growth high tech industry.
- Provide locations for testing & validation of new products by entrepreneurs and researchers
- Working closely with main campus on integration of this innovation center with current incubators and current EDC programs





SEPATM

solar electric power association



2013 Project of Distinction

SunSmart E-Shelter Program received

Honorable Mention

February 5, 2013





Map View

- All
- Progress Energy FPL
- Alachua
- Broward

Select a Florida School

- Abess Park Elementary School
- Alta Vista Elementary
- Apollo Elementary
- Arlington Middle School
- Boynton Beach Community High School
- Brevard Community College

Innovation Education

The EnergyWhiz Olympics is all about clean energy and creative kids.

Each year, on the first Saturday in May, hundreds of students converge at the Florida Solar Energy Center in Cocoa, Florida to participate in renewable energy themed events.

Take a look at our [EnergyWhiz video](#) and see for yourself.



Energy Whiz Olympics



Experiments



Science Fair



Games and Activities

Data

View data from solar systems installed at schools

Featured Story

Solar Installations Finish Up on Emergency Shelter Schools

COCOA, Jan. 14, 2013 – More than 100 Florida schools are being equipped to better assist state residents to weather powerful storms. A 10-kilowatt solar electric array at each of the selected emergency shelter schools will provide emergency power in the event of storms.

The ground-mounted solar systems supplement a portion of the schools' electricity during normal operations while charging a bank of back-up batteries.

About Us.

The SunSmart program has worked to increase the deployment of solar energy systems to schools, colleges, and other public buildings; which has been funded through several grant awards.

There are two main parts to the program: The E-Shelter program, which provides free solar energy systems of approximately 10kW to public schools/colleges that have been designated by the state as enhanced hurricane protection area (EHPA) shelters; and



Daily Program Performance Stats

AC Energy Generated	70 kWh
Dollars Saved	\$36.89
Carbon Saved	990 tons
No. of Schools Online	90

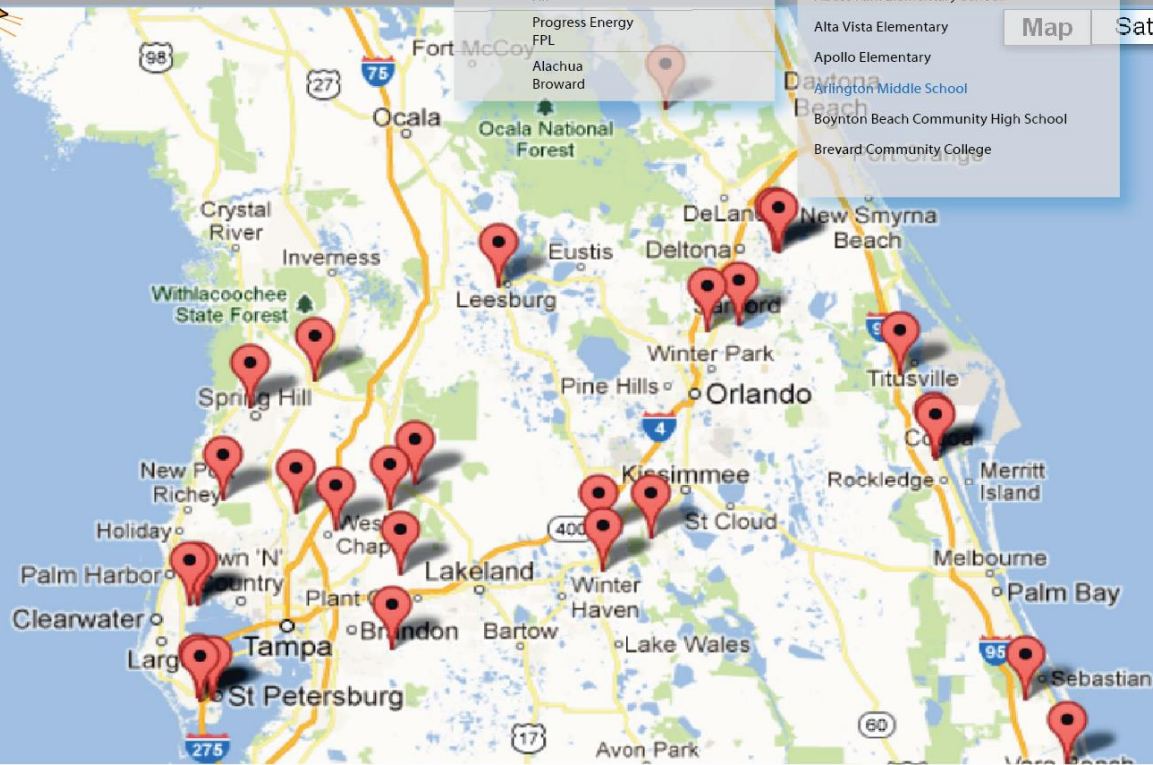


Map View ▶ Select a Florida School ▶

- All
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Map ▶ Satellite ▶



EnergyWhiz Schools:

Site Name	City	County	Utility	System Size
A. Crawford Mosley High School	Lynn Haven	Bay	Progress Energy	10 kWh
Jinks Middle School	Panama City	Bay	Progress Energy	10 kWh
Starke Elementary School	Starke	Bradford	Progress Energy	10 kWh
Everglades High School	Miramar	Broward	Progress Energy	10 kWh
Kingsway Elementary School	Port Charlotte	Charlotte	Progress Energy	10 kWh
Pinecrest Elementary School	Immokalee	Collier	Progress Energy	10 kWh
Eden Park Elementary School	Immokalee	Collier	Progress Energy	10 kWh
DeSoto Middle School	Arcadia	DeSoto	Progress Energy	10 kWh
Abess Park Elementary School	Jacksonville	Duval	Progress Energy	10 kWh
Arlington Middle School	Jacksonville	Duval	Progress Energy	10 kWh
LaVilla School of the Arts	Jacksonville	Duval	Progress Energy	10 kWh
Bellview Elementary	Pensacola	Escambia	Progress Energy	10 kWh
Lipscomb Elementary	Pensacola	Escambia	Progress Energy	10 kWh
East Gadsden High School	Havana	Gadsden	Progress Energy	10 kWh

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Progress Energy

Progress Energy has been a partner of the SunSmart Schools program since 2010. They have expanded the program and developed their own SunSense Schools Program. An additional 30 schools now have photovoltaic systems. Their monitored energy data is included on the EnergyWhiz website.



ENERGYWHIZ

Connecting Schools, Teachers and Students with Solar Energy.

See Solar In Action



Map View



Select a Florida School

All

Progress Energy
FPL

Alachua
Broward

Abess Park Elementary School

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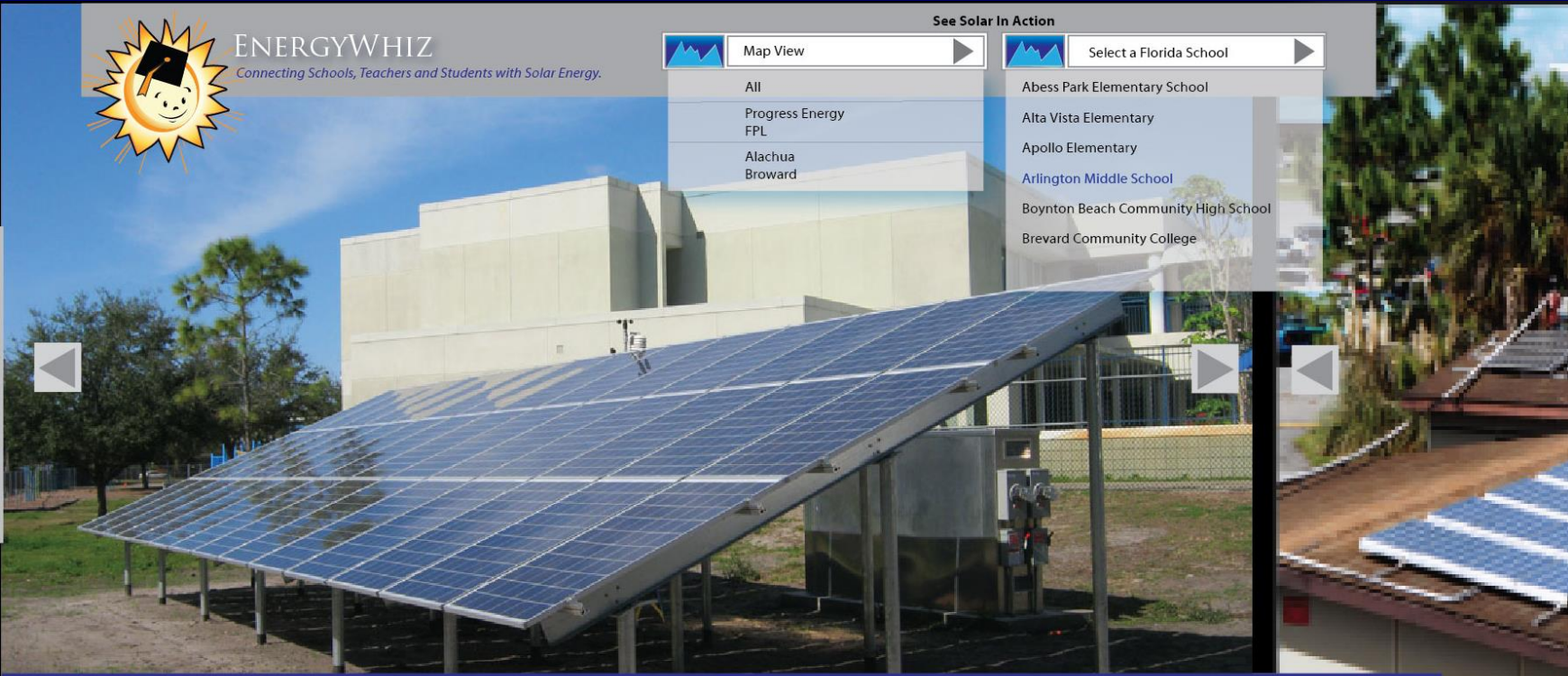
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Jan -17-2013

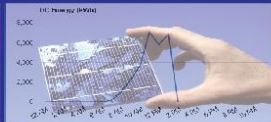
Jan -17-2013

Hourly/Daily/
Monthly

Download
Data



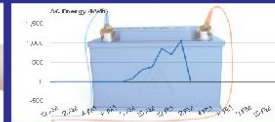
Irradiance



DC Energy Data



AC Energy Data



Battery voltage



Photos

Site Name: Fairmount Park Elementary

City: St. Petersburg, FL
County: Pinellas
Latitude: 27.7653
Longitude: -82.6889
Comissioned: 2012-02-01
System Size: 10.08 kW
Array Area: 50 sq. ft.
Utility: Progress Energy

How a "Grid Connected Battery Backup" PV System Works



Daily Program Performance Stats

AC Energy Generated 70 kWh

Dollars Saved \$36.89

Carbon Saved 990 tons

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Developed and Maintained by the Florida Solar Energy Center, a research institute of the University of Central Florida.

EnergyWhiz Schools energy data is part of the SunSmart Schools E-Shelter Program, which is supported by the U.S. Department of Energy and the Florida Department of Agriculture and Consumer Services under the American Recovery and Reinvestment Act, 2010-2012.

FSEC K-12 Education & Professional Development for Teachers

- **EnergyWhiz Olympics** – @ 1000 participants
 - FSEC is working with FDACS (FL Energy Office), FPL, Progress Energy, Gulf Power, BrightHouse Networks, OUC and several school districts to offer regional EnergyWhiz Olympics events
- **Student Groups (4th – College Level)** – @ 500 students last year
- **Teacher Workshops** – Mini-Solar and Battery Car Building, Solar Cookers, Solar and Hydrogen Fuel Cells @ 200 teachers
- **Presentations, Special Events and Other Outreach** – @ 10,000 reached



Central Florida Clean Cities Coalition

What is Clean Cities?

- Established by the U.S. Department of Energy in 1993 - Office of Energy
- Efficiency and Renewable Energy's Vehicle Technologies Program
- 100 volunteer coalitions with 13,000 stakeholders across U.S.
- Saved more than 4.5 billion gallons of petroleum since inception

Goal: Reduce petroleum consumption by 2.5 billion gallons per year by 2020



Central Florida Clean Cities Coalition

Brevard, Flagler, Indian River, Lake,
Okeechobee, Orange, Osceola, Seminole,
St. Lucie and Volusia Counties



- Population: 3.7 million
- Designated by DOE in 1999
- Current projects include school bus fleet conversion to LPG; accelerated electric vehicle charging station deployment project; Get Ready Central Florida electric vehicle project
- Stakeholders include OUC, Duke Energy, TECO as well as public and private fleets and alternative fuel providers



Funding Awarded - US DOE FOA 708

Implementation Initiatives to Advance Alternative Fuel Markets

- Central Florida will lead consortium of Florida's Clean Cities Coalitions in a two-year program to overcome barriers to greater use of alternative fuels and vehicles in Florida
- Central Florida, Florida Gold Coast, North Florida and Tampa Bay will develop a statewide network of alt fuel vehicle stakeholders to transform the market and accelerate the use of AFVs statewide

