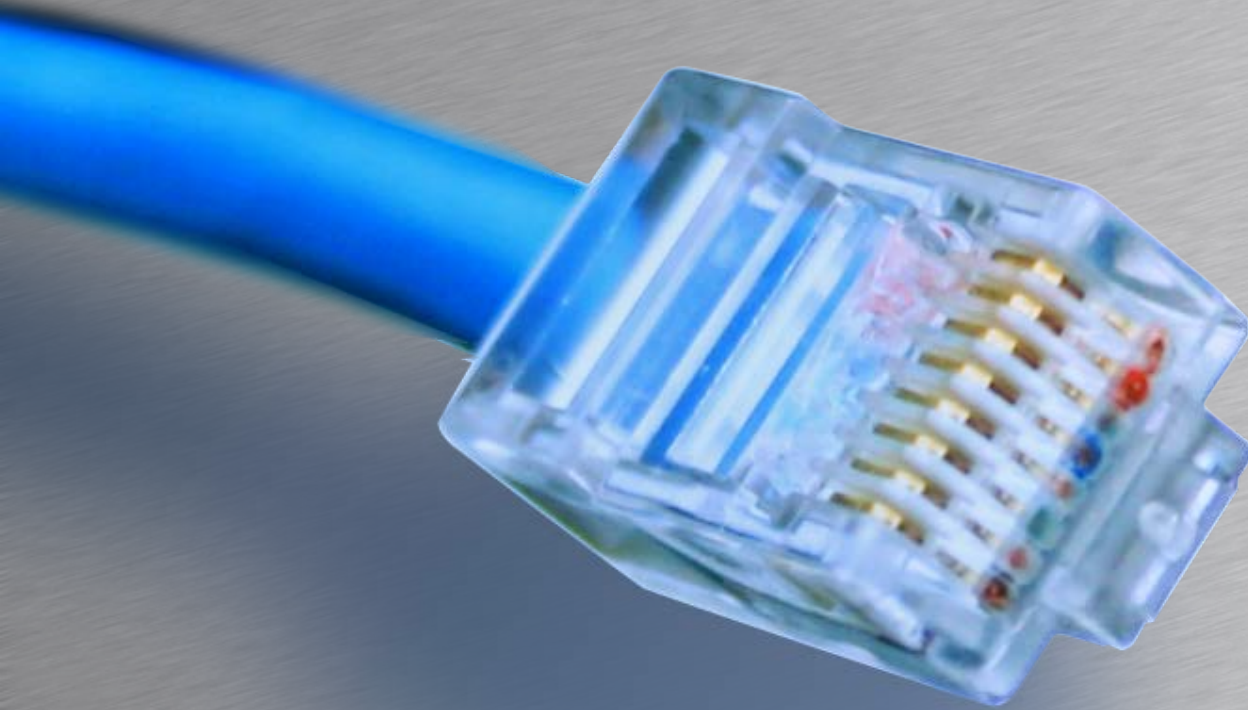


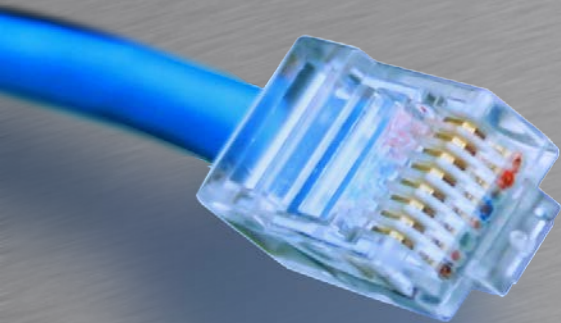
Solar Photovoltaic's in a High School Curriculum



Ed Evans

Mount View High School

In In the fall of 2012, I was approached by Rachel Lester from the **West Virginia Department of Energy** about a renewable energy grant tailored to schools that were located on reclaimed strip mines. We met with officials from her office and George Carico from the Center for Environmental Geotechnical and Applied Sciences (**CEGAS**) located at **Marshall University**. As result of the meeting we now have a 21 panel Solar Array, located at Mount View High School. The grant was a matching grant of \$45,000.00 from WVDOE and CEGAS and \$5000.00 from McDowell County Schools. The panels were installed and put online in April of 2012 to date they have produced 14.6 MWh of electricity.



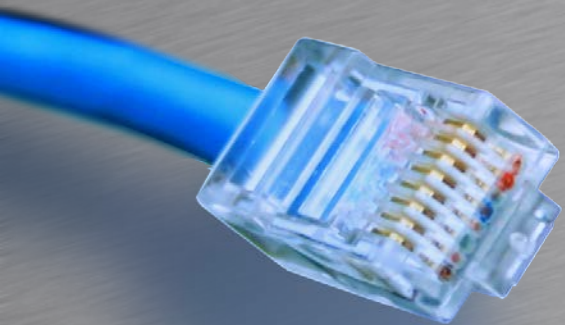
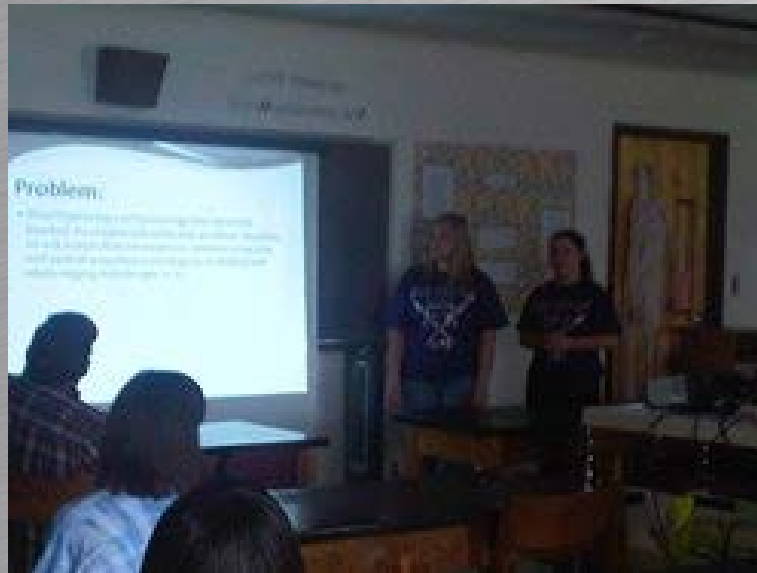
Benefits to the Curriculum

- ❖ The panels have become a source of pride to our students. They have been featured on two different TV stations and articles have been written in three different newspapers about them. Several individuals, students from other schools and two businesses have come to the school for solar energy presentations. We are becoming a demonstration site for solar energy.



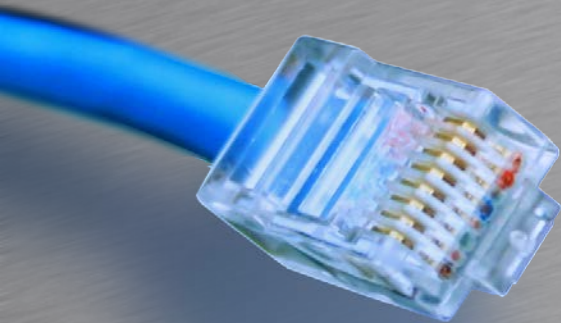
Benefits to the Curriculum

- ❖ McDowell County Schools participates in the West Virginia Health Sciences and Technology Academy (HSTA). In fact, there are four HSTA clubs at Mount View High School. One club developed research projects relating to energy savings for the county and optimal production times. These were presented at the State HSTA Symposium in May of 2013



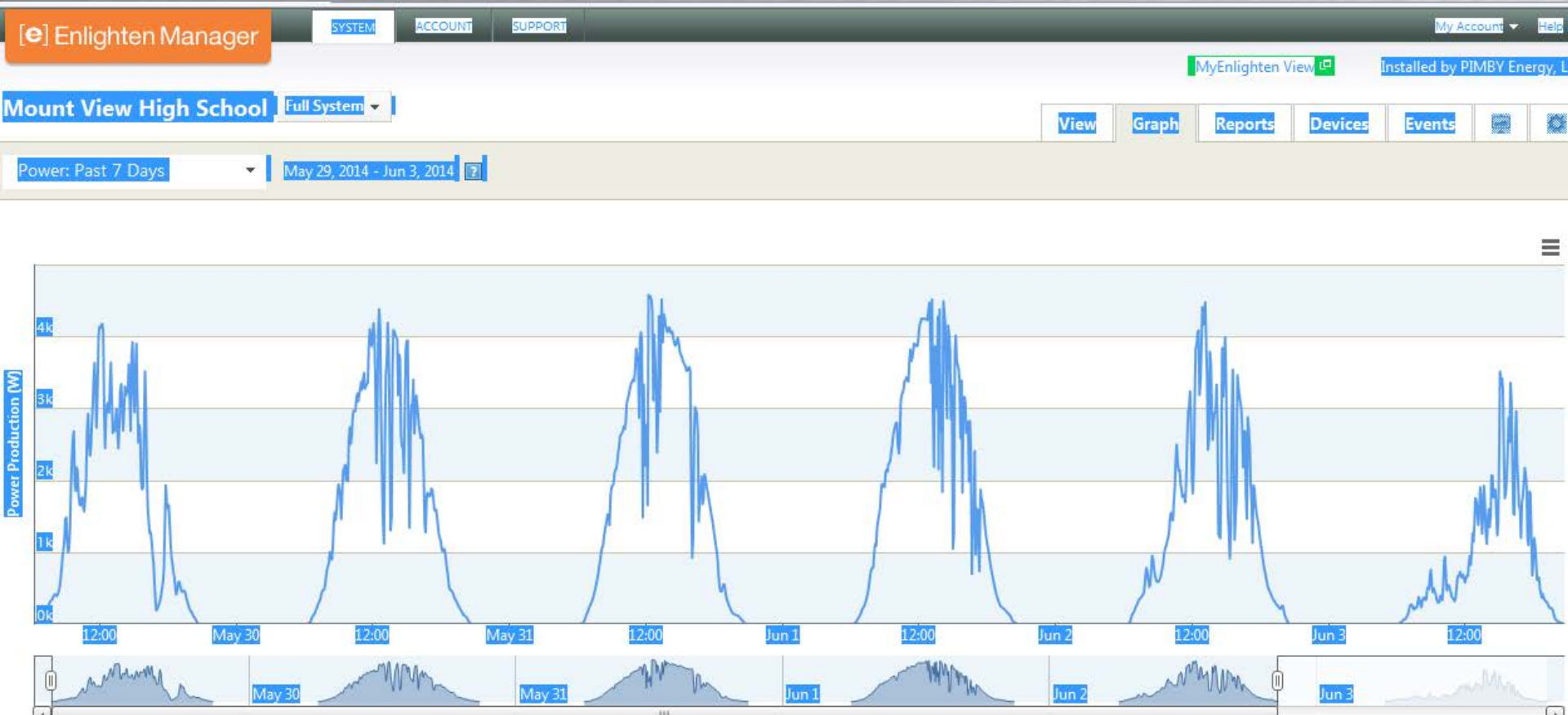
Benefits to the Curriculum

- ❖ Data generated from the array is located on the Enphase Energy site. This is real-time data generated at our school. The kids now have data sources they can use to manipulate in math and science classes. Few schools have access to any kind of REAL TIME data.



Benefits to the Curriculum

- ❖ The data from the Enphase site can be charts or graphs giving the students valuable exposure to statistics.



Benefits to the Curriculum

Monthly Energy Production Report

Mount View High School
Welch, WV

Generated for Ed Evans
on 06/04/2014



Week	Peak Power	Energy Produced
05/01/2012 - 05/07/2012	4.68 kW	149 kWh
05/08/2012 - 05/14/2012	4.72 kW	139 kWh
05/15/2012 - 05/21/2012	4.66 kW	181 kWh
05/22/2012 - 05/28/2012	4.71 kW	167 kWh
05/29/2012 - 05/31/2012	4.56 kW	81.8 kWh
May 2012 Total:		718 kWh
Previous Month Total:		397 kWh
Year to Date:		1.12 MWh

Production report for May 2014

One unexpected benefit has been a greater understanding of seasons.

Benefits to the Curriculum

Students actually know what they are paying for when they get a monthly electric bill. Concepts such as Kilowatt Hours are no longer a mystery.

In their explanations to guests they show the array to, they explain that electricity consumption is a combination of the amount of electricity (that is, the watt) and the period of time for which it is used. So a standard measure of electricity consumption is the amount of watts used over an hour: the watt-hour (Wh).

For example, an 4000 watt air conditioner turned on for one hour will use 4000 Wh of electricity or 4Kwh.

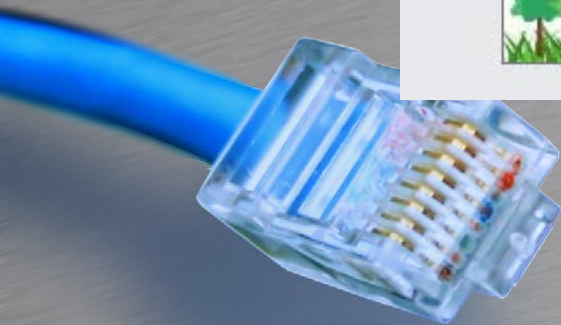


Benefits to the Curriculum

Finally they have a real understanding of “carbon footprint” What was once only a content to them, is now a real laboratory experience.

Your **Carbon Offset** for this month: 1,199 lbs

You have offset the equivalent of: **14 Trees**



Ed Evans

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