WARREN CENTRAL ENERGY MANAGEMENT CLUB

To Educate Others about Hydro and Solar Energy

Advisor: Nathan Dick

During the 2024 to 2025 school year, the Warren Central High School Energy Management Club wanted to teach others about solar energy and hydro energy while they also learned more about it. This was done at Richardsville Elementary School and Jennings Creek Elementary School. So, the club came up with a presentation and demonstrations to teach the students about both solar and hydro. The club also wanted to focus on energy conservation by using outlet timers to save electricity.

Dragon Energy Management Club

Members (from left to right):

- Sage Edwards
- Oli Layle
- Lillian Brown (president)
- Alyssa McFarland
- Luna Jones
- Kaelynn Gregory

Advisor:

- Nathan Dick

Various Projects

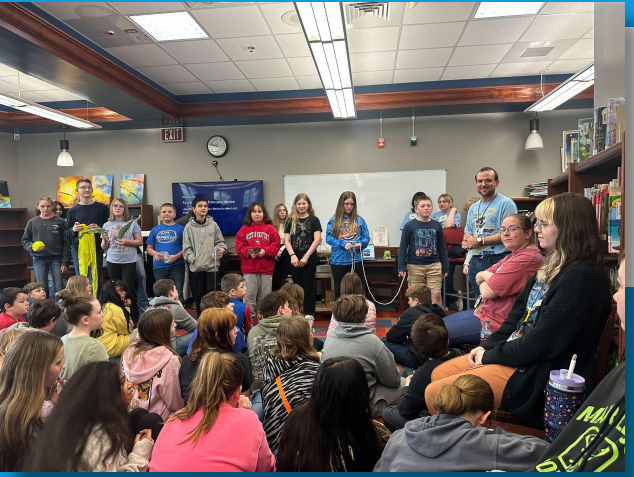
1) Visit to Richardsville Elementary School to learn and present about solar energy, hydro energy, renewable energy sources, and energy sustainability

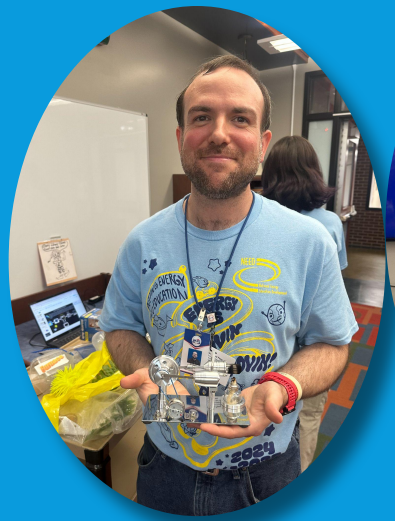
2) Selling UV bracelets to educate students and others about solar energy

3) Used outlet timers to conserve energy

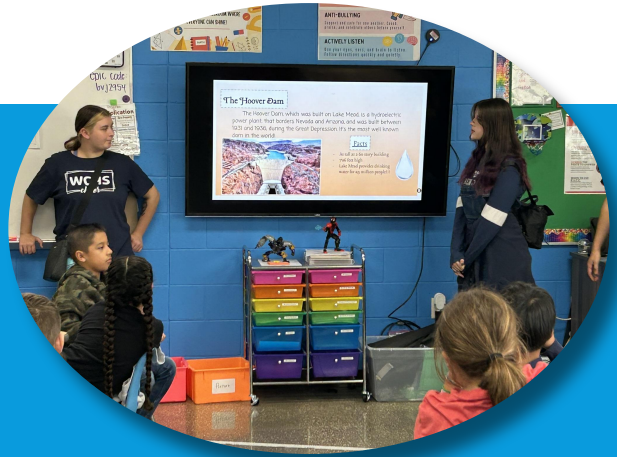
4) Visit to Jennings Creek Elementary School to present about Hydroelectricity

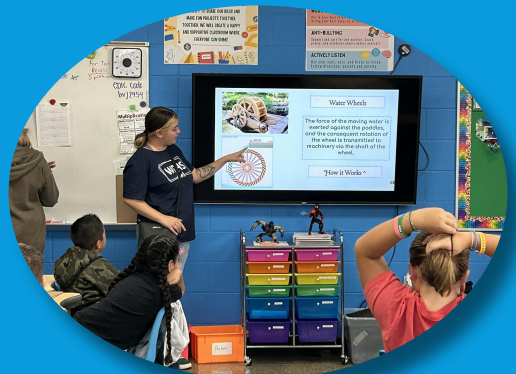
The WCHS Energy club visited the first net zero school in the nation (Richardsville Elementary) where we learned the opportunities around net zero and how it works, as well as a more in depth experience of how hydro and solar energy are to coincide in everyday life.

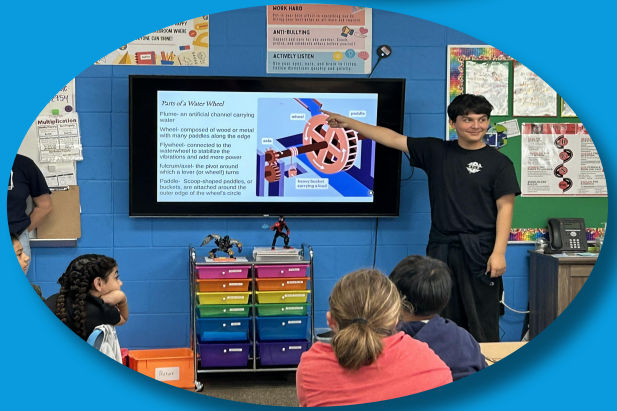




Jennings Creek Visit







Goals for our 24-25 Project

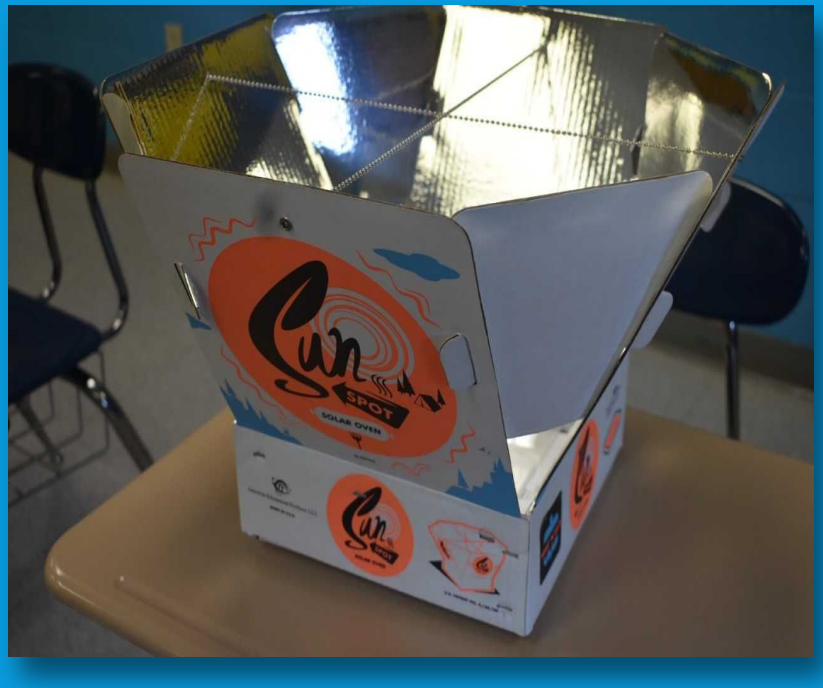
We would like to dive further into how a net zero environment affects our community. In doing so, we'd be given opportunities and examples to teach the younger generations on energy efficiency and sustainability. Our big-reach goal is to ultimately improve our environment and community health.

SOLAR BRACELETS

We wanted to introduce Solar Bracelets to present how Ultraviolet light is a part of solar energy.

Solar Oven

The use of solar energy can also be represented with cooking. This Solar Oven was constructed of mainly cardboard and aluminum foil. The infrared light is trapped inside the oven causing the food to heat up and be cooked. The effectiveness is determined by the ambient temperature.



Solar Panel

The club showed off Solar Panels to each group. These panels are equipped with an LED that illuminates when the panel is receiving enough light to give off a voltage.

We were able to show how using this was able to turn on a light bulb, and even charge a phone.

Richardsville Elementary School Uses of Solar

Outlet Timer Project

In order to help the school conserve money and energy, the club decided to use funds to purchase outlet timers to be used in the school.

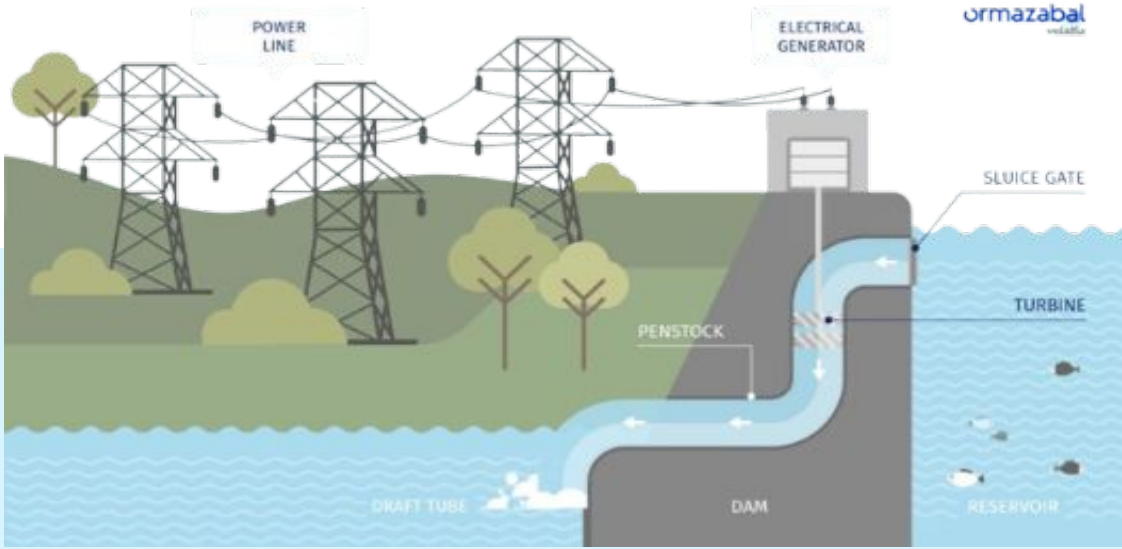
Timer Use	Amount of power drawn by device (watts)	Amount of time kept off (hours)	Amount of money saved per year ($)
calculators	12.9	10	6.01
Chromebook cart	5.2	10	2.42

The school is charged $0.1277/kW-hr.

What is a Dam?

- A structure built across a stream or river to hold back water

- When water is released through the dam, it spins a turbine connected to a generator that produces electricity



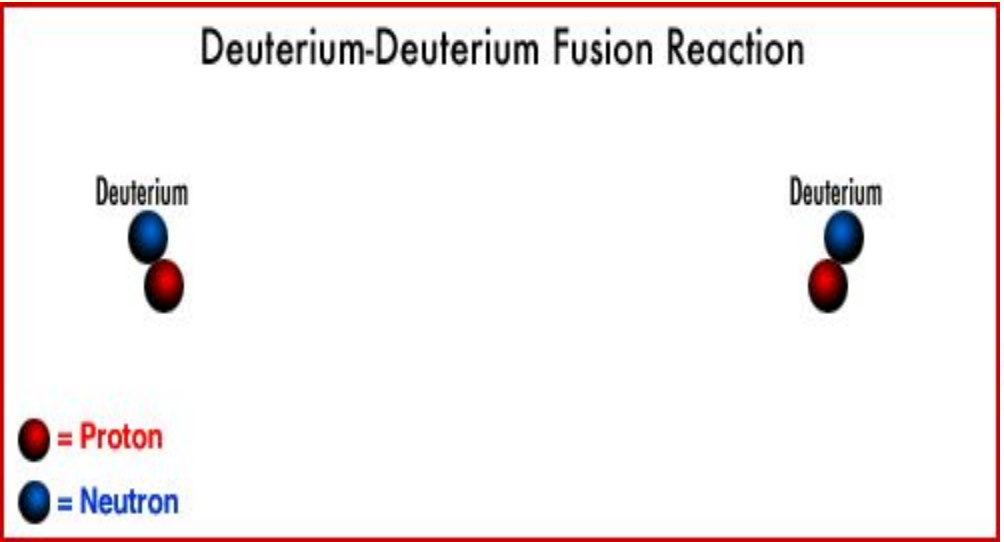
What is Solar Energy?

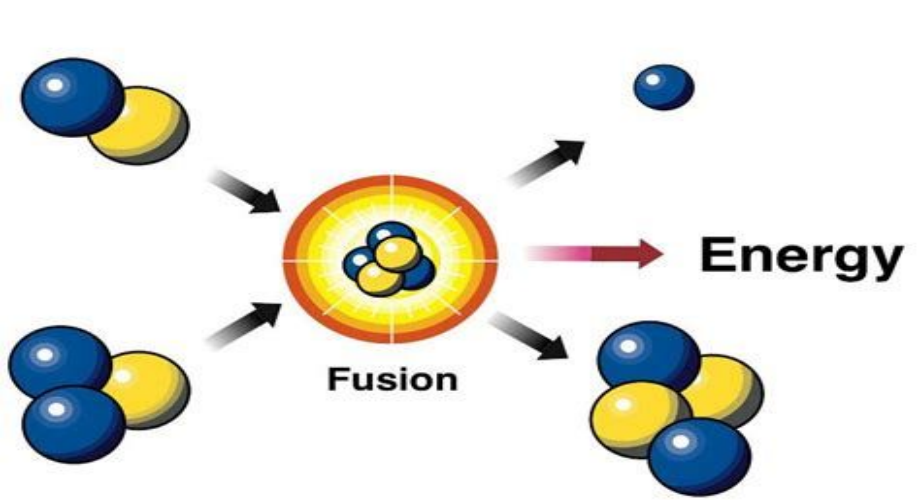
An energy source that can be captured in the form of light and heat from the sun.

This can provide cleaner energy and is ultimately a cheaper source.

How is Solar Energy Made?

Solar energy is created by nuclear fusion that takes place in the sun. Fusion occurs when protons of hydrogen atoms violently collide in the sun's core and fuse to create a helium atom. This process, known as a PP (proton-proton) chain reaction, emits an enormous amount of energy.





SPECIAL THANKS

We want to send a special thanks to the faculty and staff at Richardsville Elementary School and Jennings Creek Elementary School who graciously allowed us to visit their buildings and present to their students. As well as for the special tour they gave us to parts of their facility.