

Solar-Powered Trailer Project for the Ivy Academy NGSL Racing Team

The NGSL Electric Vehicle Racing Team competes in the Chattanooga Green Prix and Green Power USA circuits, aiming to maximize efficiency and achieve the highest number of laps within a 90-minute period on a single set of batteries. Currently, gas generators are used for charging, but the team plans to convert its transport trailer into a solar charging station equipped with three 650-watt solar panels, a 5000-watt inverter, and a charge controller. This upgrade will allow for battery charging with renewable energy, reducing emissions and enhancing sustainability.

The solar-powered trailer will decrease reliance on gas generators, showcase a scalable clean energy model, and provide a mobile power source for disaster relief.



Solar Backpack Project

The Ivy Academy NGSL STEM team has designed and built a portable Solar Backpack power system. This innovative solution will provide charging for laptops on trails, support disaster relief efforts in the local community, and offer essential power for teachers and students in Ukraine. The initial prototype has been successfully completed. The goal is to produce 20 additional units for use in disaster relief efforts. [Solar Backpack project video](#)



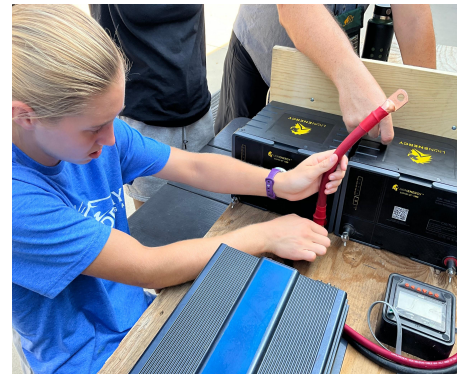
Tiny House Renewable Energy Educational Center

Last year, Ivy's NGSL students participated in TVA's Uplift Program, dedicating the school year to improving energy efficiency in school buildings and educating Ivy Academy's students and staff on making their homes more energy-efficient. Their exceptional efforts earned a \$25,000 grant to build a tiny house. The students would like to transform the tiny house into a Renewable Energy Education Center. The students are now seeking additional funding to equip the center with a 1200-watt solar tracking system, a small wind turbine, and a high-efficiency air conditioning system. Once completed, the center will be used to train students in solar and wind technology, energy efficiency practices, and home energy audits.



Previous project (Animal center)

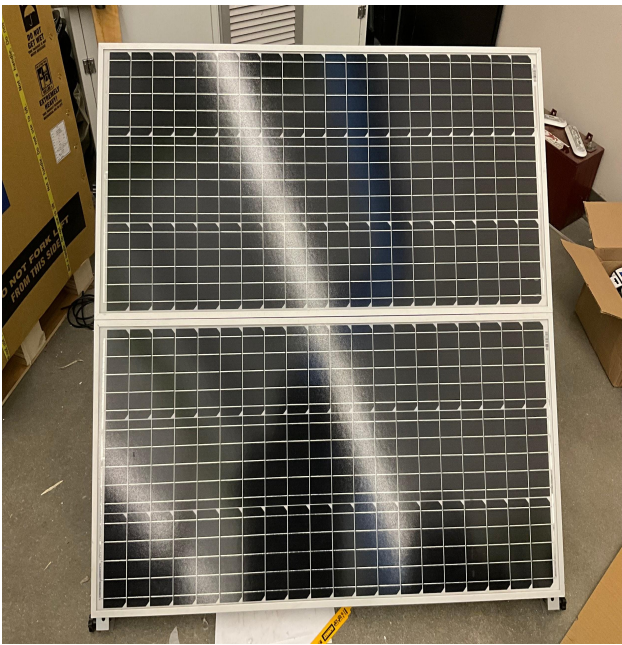
The students installed a solar power system on the school's animal center barn, providing sufficient energy to power the lighting, exhaust fans, automatic feeders, and automatic watering system.



Previous project: students designed, built, and cooked lunch (boiled Peanuts) with two styles of solar cookers.



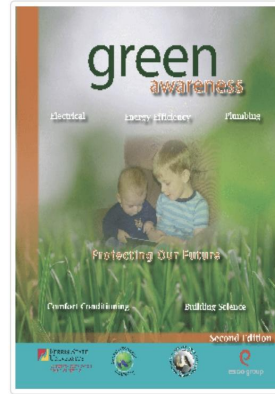
Previous project: Ivy Academy High School is an environmental outdoor school. This requires us to provide Off Road wheelchairs so all students can participate in all the activities. The High School students designed and built portable solar charging stations for the wheelchairs that can be placed in any location on Campus.



The Green Awareness Industry Credential was awarded to Ivy Academy's High School student Emmaleigh Noles.



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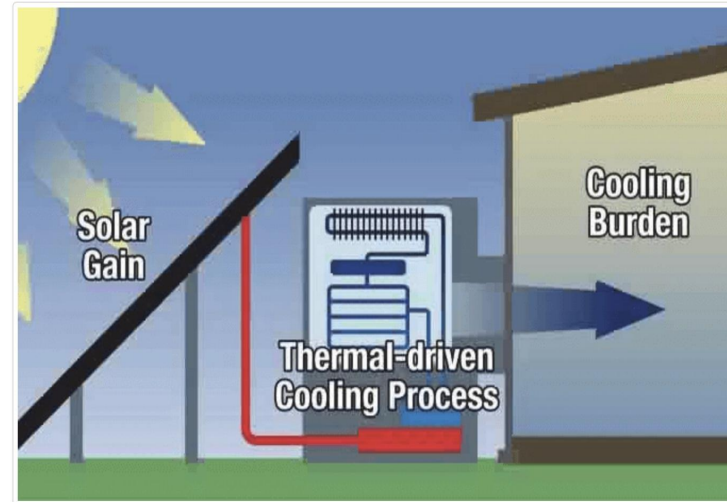
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Previous project: students Designed, built, and installed a water catching system on the new animal center that will be utilized to keep the center clean and water the animals.



Ivy Academy's Electric Vehicle racing team placed 1st and 2nd in this years Chattanooga GreenPrix. The students worked most of the year designing and building an energy efficient electrical system that powered both race cars to 1st and 2nd place. This year's team is the 1st to complete a Green Prix race using Lithium batteries.

