

Methacton Electric Car Club

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In 2011 we acquired a 1980's boxtruck to complement our solar-powered electric car. This newsletter highlights some recent projects we completed for the truck.

Solar roof modules on the truck

To charge our car and provide power at events

This year, the Methacton Electric Car Club embarked on a journey to power our electric car with nothing but sunlight. To this end, we installed nine 245-Watt solar panel modules on our box truck: 6 on the roof and 3 on the side of the truck, making an awning. We also created outlets that other devices can use to tap into the solar power.

We were greatly assisted in completing this project by some of our corporate sponsors: Soligent graciously donated the solar modules, PV Racking donated the materials to mount the modules on the roof, DEKA Batteries donated and discounted eight batteries (12v, 265 Ah) that will provide us energy at any time or under any weather conditions, and MidNite Solar provided a discounted inverter. We cannot thank them enough for their help.

This will allow us to charge our car when away from home at events such as the 21st Century Automotive Challenge at Penn State, power the interactive displays inside our truck, and serve as an alternative energy source for events such as Earth days. For instance, our truck will debut at our next event, the Philadelphia Solar Sprint Competition at the Franklin Institute, and will provide the energy for their stage and setup.



A solar module on the roof of our truck.

Vegetable oil conversion

Making the truck run exclusively on renewable fuels

The Methacton Electric Car Club has recently converted our box truck to run on 100% vegetable oil, a project we began in fall 2013. Again, our corporate sponsors were invaluable in making this project possible by allowing us to purchase and install a vegetable oil conversion kit inside our truck along with Golden Fuel Systems providing a discount on the kit. Vegetable oil will be poured into the vegetable oil tank, passed through filters, heated, and fed directly into

the engine. We would also like to thank Catering by Design for providing waste vegetable oil for the project.



Our vegetable oil tank.

Inside the truck: an alternative energy classroom

Educating the public about energy through interactive displays

Another major project is to convert the inside of our box truck into a mobile renewable energy classroom. Students developed interactive displays to educate the public about the workings of the truck, the viability of alternative energy, and the need to recycle and conserve energy. Our exhibits include:

- A game where guests must determine whether various household objects can be recycled.
- A computer containing educational energy-themed video games.
- A slot car track powered by a solar module that guests can manipulate.
- A display showing the path of vegetable oil from tank to engine.
- A monitor that displays the amount of energy the solar modules have generated.
- A display that represent houses on and off the grid.



A display that uses solar panels to power slot racing cars.

- A bike that guests pedal to light up bulbs; guests must pedal faster to light the less efficient bulbs. This is a hands-on way to show the benefits of efficient lighting.



The 2013-14 Methacton Electric Car Club. This is one of our largest groups ever.

We would like to thank the Methacton Home & School Association , The Education Foundation for the Methacton Community and Ambler Savings and Trust Bank for their generous donations.



The inverter and batteries that store the charge from the solar roof modules.

Visit us at the Franklin Institute on May 31, 2014 for the Philadelphia Junior Solar Sprint hosted by Sun Power Builders.

Follow us on Twitter [@MethactonECC](https://twitter.com/MethactonECC) for future events & updates

We thank you for your support of the Methacton Electric Car Club. With your help, we will continue to educate the public, one car at a time.