



Ypsilanti Food Cooperative
312 N. River Street
Ypsilanti, Michigan 48198
734-483-1354
Grant PSC-08-31

March 1, 2009 through April 30, 2009
Report by Dave Strenski

Complete Task

- 50% Expansion of Solar installation at Cooperative
- 30% Installation of Solar panels at City Hall
- 50% Utility meter reading program
- 50% Building of solar.ypsi.com website
- 30% Solar educational outreach

Progress over the past two months

We are currently working with local electricians bidding on the wiring of the solar power into the buildings. So far two have responded and requested tours of the buildings and more details about the scope of the work. We hope to have the electrician selected by early May.

With the discovery that the Sanyo panels we purchased are slightly different than the ones currently installed, we need to invent a way to attach the new panels to the existing rack. We were able to stack both clamps on the same bolt. In the picture below the older panels are on the right and the newer panel is on the left.



This is what the roof looked like before installation



This is what the roof looks like after the installation. The panels are not wired together yet, but will be once we have an electrician swap the inverter for this system.



With the panels being a slightly different size, we had to re-calculate the lengths of the UniStrut members needed to build the rack for City Hall. These calculations are finished and that material will be ordered shortly.

Eastern Michigan University student Nik Estep and his professor Dr. William Sverdlik accomplished the biggest progress by pulling together all the loose ends to get the real time monitors working. We have installed a small/cheap laptop in the Cooperative that is connected to the utility meters and to the Internet. The laptop runs continuously reading the pulses coming from the three meters (inflow, outflow, generation) and pushed the information to a database every minute. A program on the website gather data every 5 minutes and plots it on a real time graph. You can see the graphs at the temporary site (<http://treads.emich.edu/solar>). Nik has also worked on the Solar Ypsi website adding a “currently being generated” meter and creating links to the graphs.

We have also purchased the web domain SolarYpsi.com so we have a permanent domain name to park all this information.

Once the system is installed at City Hall we should be able to replicate this monitoring program there.

We have added a new solar presenter to the project. Hans Steiner is interested in building his career in renewable energies and has learned the presentation and we are currently arranging a meeting for him to give his first presentation. Our next scheduled presentation will be at the Ypsilanti Food Cooperative May 30th.

Anticipated energy saving

The Cooperative has already realized a small amount of energy saving from having the real time energy-monitoring program running. Looking at the evening energy consumption for several nights in a row, we noticed that a couple of nights used more power than others. It was determined that some lights were being left on over night. We have talk with the store employees to double check all the lights are off before locking up the store. Real time monitoring is already changing our energy behavior.

Expenditures compared to budget

Fitzpatrick Engineering billed us an additional \$451.25 for resolving what type of material to use for the rack for City Hall. Adding this to the original bill for \$2,093.44 and the \$100.00 paid to Gary Turner for the drawings, our total for engineering is \$2644.69. This is still (1155.31) under our budget of \$3,800 for this work.

Noteworthy Accomplishments

Real time monitoring of power generation, consumption, and exportation running.

Panels for the Ypsilanti Food Cooperative expansion is done.

Found additional volunteer to give solar presentations.

Risk to the project

DTE has changed net-metering. We no longer need a generation meter for DTE and we can now use a bi-directional meter for inflow/outflow. We still need a meter for generation for the monitoring program and we need to make sure the new bi-directional meter will work with our monitoring program.

Deviations from the Statement of Work

None.

Money Spent in the Past Two Months

\$451.25 additional fee to Fitzpatrick for understanding the risks of swapping stainless steel with hot-dipped galvanized steel.