



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

May 1, 2009 through June 30, 2009
Report by Dave Strenski

Complete	Task
100%	Expansion of Solar installation at Cooperative
40%	Installation of Solar panels at City Hall
80%	Utility meter reading program
80%	Building of SolarYpsi.com website
50%	Solar educational outreach

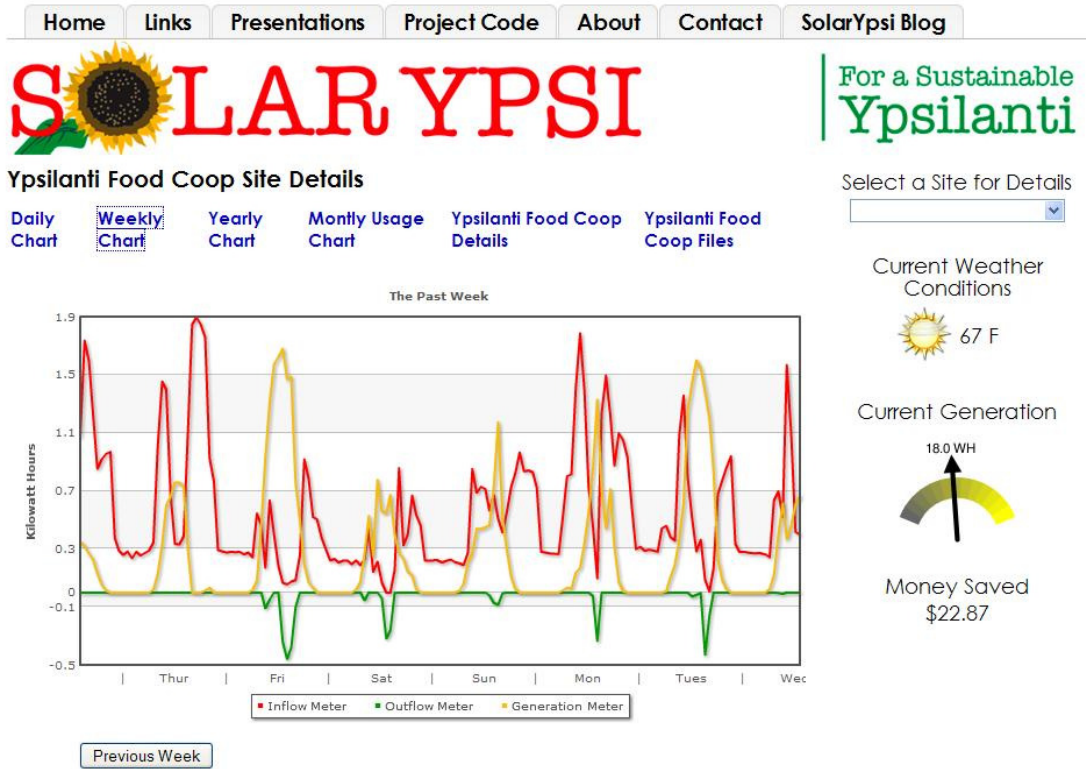
Progress over the past two months

We are finished with the Ypsilanti Food Cooperative solar expansion. The panels were installed during the past reporting period and during the past two months we were able to hire the electrician to replace the inverter with a larger one and wire in the new panels. Here is a picture of one of the electricians wiring the new inverter.

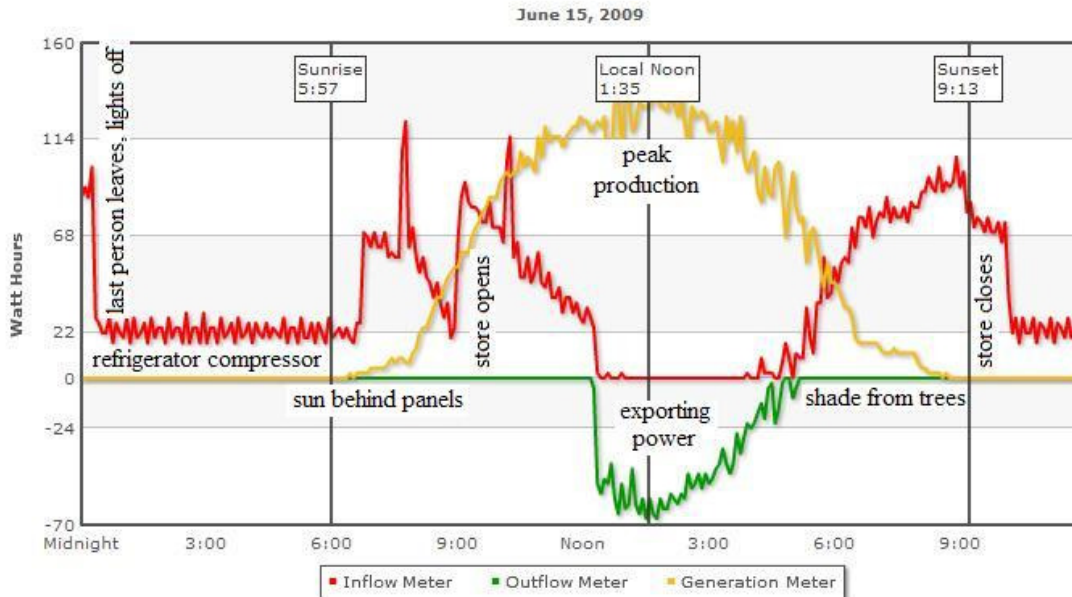


Volunteers Nik Estep continues to make great progress with the SolarYpsi.com website and graphing program. We had an issue with the method in which we were updating and

graphing the data, causing trouble for the website hosting service. Nik had to rewrite the entire process, removing the database and using simpler flat files for holding the data. Here is a screen shot of the week that we turned on the new panels. You can see that we are now exporting power every day.



Here is a picture of a typical daily graph. We added labels to explain what's going on.



Starting just past midnight, we can see the last employee leaving the store and turning off the computers and lights. From midnight to about 7:00am we see a steady night time load with the compressors from the refrigerators and freezers cycling on and off. From 6:00am to about 8:00am we can see the sun rise, but in the summer time, the sun actually rises in the north-east, so the sun is very low in the sky and behind the panels. We are generating power from ambient light. At 8:00am the sun is due east. After 8:00am the sun is in front of the panels and power generation rises quickly. Around 7:00am you can also see employees coming to work and getting ready to open the store. 9:00am the store opens and our electrical usage rises. All morning long our power generation grows and at 12:00pm we start to export excess power back to the utility grid. Local noon is defined as when the sun is directly overhead. At this point the sun's rays are hitting the panels perpendicularly and generating their peak amount of power. After local noon the power starts to drop off, and you can see a steady transition from solar power back to utility power. There are some trees in front of the store that are taller than the building. You can see that at about 7:00pm the trees start to shade the panels. At about 8:00pm there is another step, when the sun moves from the south-west to the north-west and the sun is again behind the panels. The store closes at 9:00pm and you can see the last employee leaving the store around 10:00pm and the electrical load dropping once again to our steady night time load.

We have also finished installing the display system for the Cooperative and the graphs are being displayed continuously. It is already drawing more attention to the project as customers at the store see how much power we are generating.



The City Hall project has been delayed as we sorted out the budget and got money moved from one line item to another. We are waiting on the steel for the rack. Corinne has sent UniStrut a check today and we should have the steel in two weeks. All the fasteners have been ordered.

Volunteer Adam Chase gave solar presentations at Estabrook School in Ypsilanti. Volunteer Hans Steiner has made great progress and setting up more solar presentations,

We have talks scheduled for both Ann Arbor and Ypsilanti District Libraries, and Whole Food grocery store. Dave Strenski and Nik Estep will be giving a technical presentation to the Ann Arbor Computer Society about the monitoring program and graphing program.

Anticipated energy saving

The Cooperative is now benefiting from the additional solar panels on the roof. We also continue to benefit from monitoring our power usage. With the display system now up and running in the store, we expect this to give even more positive feedback to the employees to conserve energy.

Expenditures compared to budget

We spent \$808 for the computer display system for the Cooperative, which is under the \$1500 we budgeted.

Noteworthy Accomplishments

The Cooperative solar expansion is finished.

Risk to the project

None at this time.

Deviations from the Statement of Work

None.

Money Spent in the Past Two Months

\$808 – computer display

A financial statement will be prepared to cover other expenses paid over the past two months.

Submitted by Dave Strenski and Corinne Sikorski