

The River Street Bakery is located within the Ypsilanti Food Cooperative at 312 River Street, in Ypsilanti's historic Depot Town. The Bakery is unique in that all the bread is baked in a wood-fired oven that uses scrap wood to heat it. The bakery also has 30 solar photovoltaic panels, 6kw, installed on the roof and supplies all the power needed for the mixers, lights, refrigeration, and computers. This makes the loaves of bread made with 100% renewable energy.

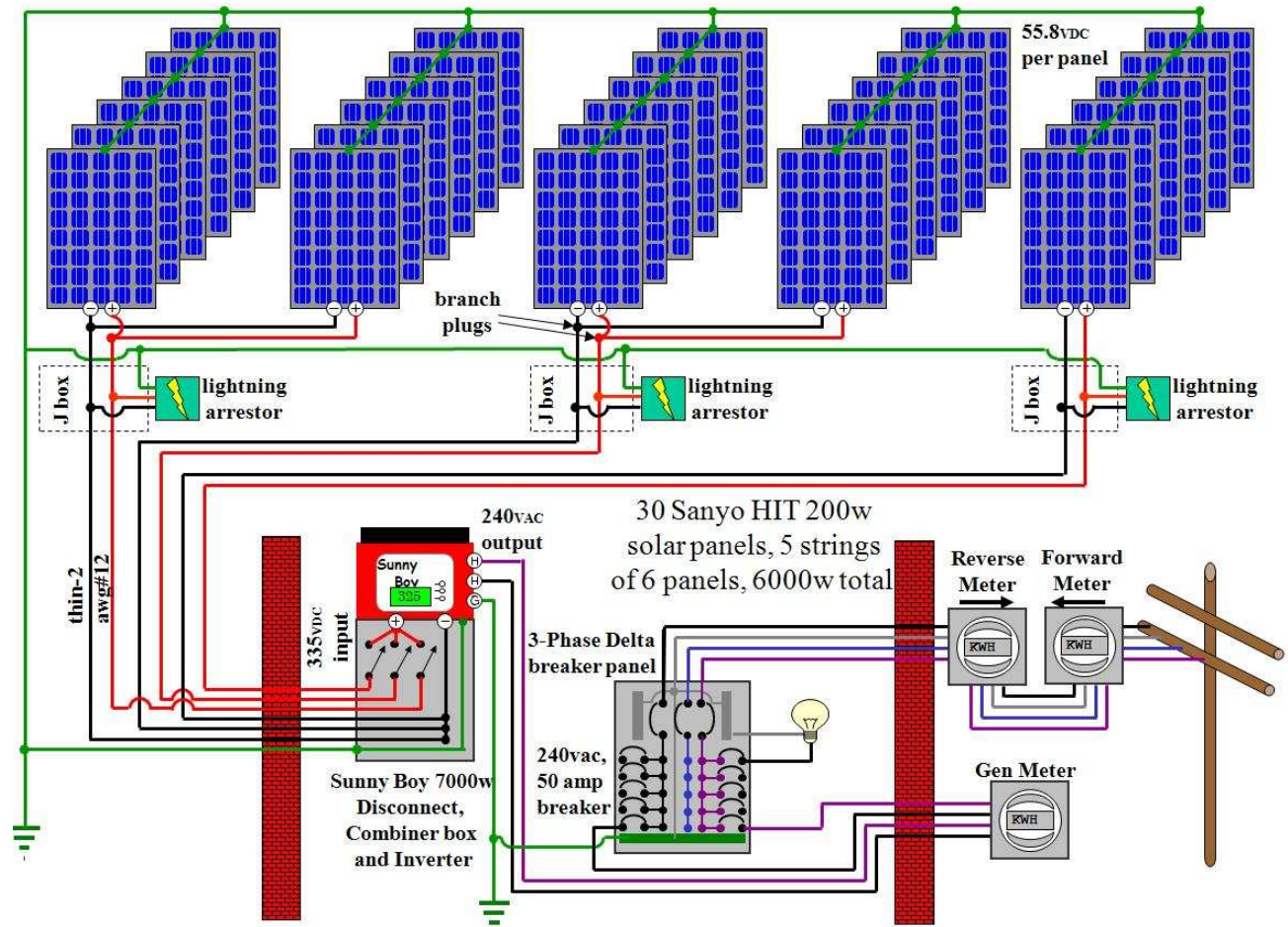


The solar panels were installed in the fall of 2010 by a group of volunteers. The system was funded by the Ypsilanti Food Cooperative and the generous grant from the State of Michigan. The total cost of the installation was \$44,765.82 or \$7.46 per installed watt.

## How Solar Power is Captured

As illustrated in the diagram below, sunlight penetrates the photovoltaic panels, which converts a portion of that light into electrical current. The panels are mounted at a fixed 38 degree angle to maximize annual solar collection at our location. This electrical current is direct current (DC) which is carried through a wire to a disconnect switch that can turn the system off for maintenance. The DC power is then routed to the Sunny Boy inverter, which converts DC electricity into standard, 110 volt, 60 cycle alternating current (AC) that we find in an ordinary wall outlet. The power is now ready to be used and is routed to the Bakery's electrical service panel for distribution to individual circuits.

The solar installation is connected to the utility company (DTE) under a *net-metering* program. This is a system of three utility meters which measure: power generated by the solar panels, energy that enters the building from DTE, and energy that is *exported* from the building back to the utility. DTE Energy reads these meters monthly and itemizes the information on our monthly bill. Any excess power generated gives us *credit* which can be used when the sun is not shining. The Bakery consumes all of the power from the current 6KW system and hopefully will bank enough power to be used later when the sun is not shining, making the Bakery 100% solar powered. Real-time energy graphs for this and other systems and can be found at SolarYpsi.org.

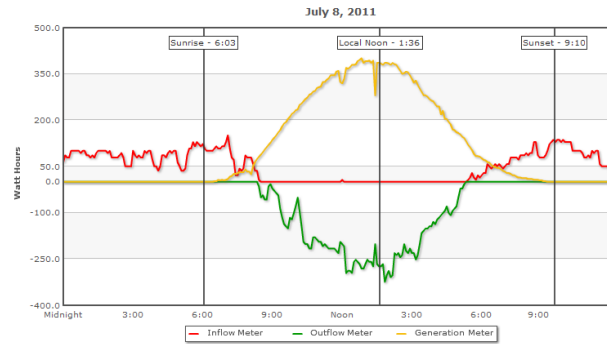


The picture below shows the generation utility meter which measures the energy coming from the thirty photovoltaic panels. The “customer access box” below the utility meter contains a pair of wires that we are allowed to connect to independently read the meter for our monitoring program. The diagram in this pamphlet shows that the thirty panels are wired as five strings in parallel with each string having six panels wired in series.



The AC power leaving the inverter is then routed out of the building where it is connected to this utility meter to measure the generated power and routed back into the building and connected to the electrical service panel. When someone uses power in the building, energy will flow from the solar installation and be consumed by what every appliance was tuned on. If there is more demand for power then the solar installation can provide, power of the utility will also flow in and be consumed by the building.

Graphs showing the power coming into the Bakery (red), exported out (green), and generated from the sun (yellow) can be seen at **SolarYpsi.org**, then clicking on the River Street Bakery link. The website also has photos of the installation and details about the project.

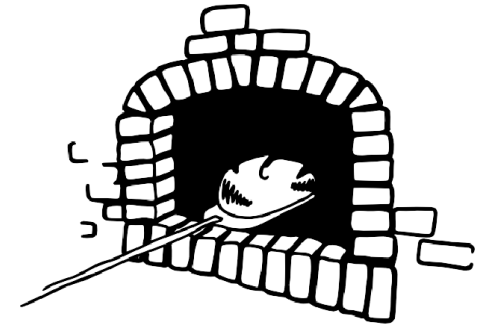


The solar installation at the River Street Bakery is unique in several ways. This is the third solar installation within the Ypsilanti Historic District. Having the panels on the roof of building preserves the Historic character of the front of the building while adding renewable energy. The installation makes the Bakery 100% solar power and the bread it bakes made from 100% renewable energy. The solar installation is also the first net-metering customer to use utility meters with a customer interfaces, so that we can read the meters directly and plot the information on the SolarYpsi.org website.



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# River Street Bakery



## Solar Power

**The River Street Bakery is located in Ypsilanti’s Depot Town in Southeast Michigan. In 2010 a group of volunteers installed 30 solar photovoltaic panels on the roof of the bakery. This system provides about 6KW of renewable energy that is used by the bakery. Stop by and learn about solar power in Michigan.**

**Daily 9:00am to 9:00pm**

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[www.YpsiFoodCoop.com](http://www.YpsiFoodCoop.com)