

OUR SOLAR SUNFLOWERS



Northeast Wisconsin Technical College
Green Bay, Wisconsin
March 13, 2008

Northeast WI Technical College

- ▣ Two year technical college
- ▣ 9 county district, population 400,000+
- ▣ 6000+ full time equivalent students with over 40,000 customers each year
 - Associate degrees and technical diplomas in 70+ programs
 - Apprenticeships
 - 35+ certificate options
 - Contracted business services
 - Continuing education

Tracking the Sun



Tracking the Sun



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Partners

- ▣ Northeast Wisconsin Technical College
- ▣ Wisconsin Public Service
- ▣ Green Bay Botanical Garden
- ▣ Focus on Energy
- ▣ Wisconsin Technical College Foundation
- ▣ Private donors: Bob and Leslie Shade
- ▣ Jeff DeLaune
- ▣ Students



Location

- ▣ Green Bay Botanical Garden
 - 47 acre gardens located adjacent to NWTC
 - Pedestrian Traffic
- ▣ Landscape Horticulture Building
 - 5000 s.f. satellite building adjacent to the green Bay Botanical Garden Visitor Center
 - ½ of electricity used in facility will be generated by our solar sunflowers.



The System

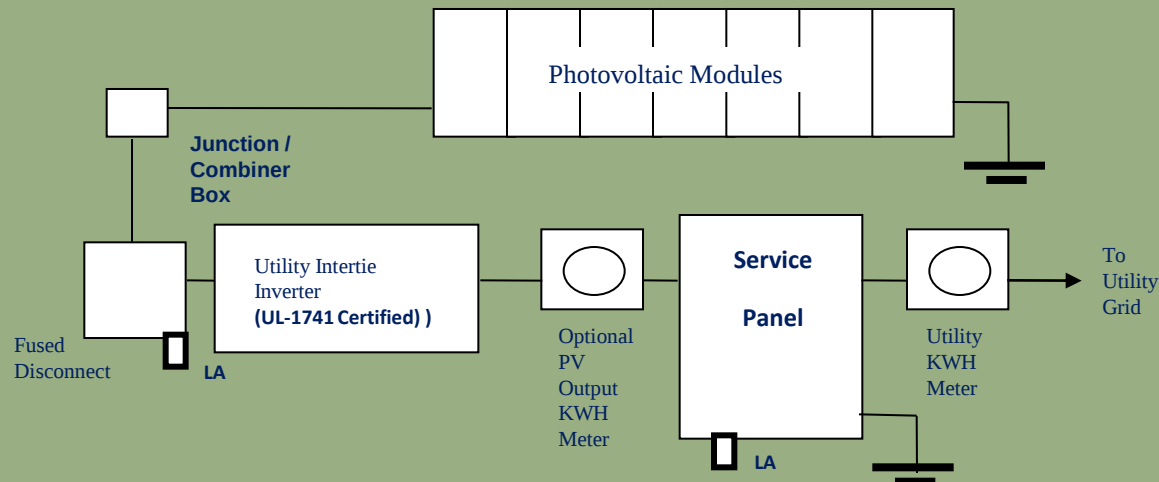
- ▣ **SOLAR ENERGY** is converted into direct current electricity by the solar modules. The direct current is converted into alternating current by the inverter, feeding it directly into the buildings electrical panels.

- ▣ **System Capacity: 4 Kilowatt, 2 – 2016 Watt PV Arrays**
 - **Estimated Energy Production: 6000 kilowatt hours per year**
 - ▣ About enough energy to power a conservative household
 - **Offsets burning 6000 lbs of coal annually**
 - **Offsets 14,000 lbs of CO₂ production annually**
 - **Equivalent Energy of 10 barrels of oil per year**



SYSTEM COMPONENTS

- ▣ **Solar Modules:** Manufactured by Sharp
 - Sharp is the worlds largest manufacturer of solar modules with production in Tennessee
- ▣ **Dual Axis Trackers:** Wattsun, by Array Technology
 - The trackers locate the brightest spot in the sky to optimize energy production morning to night
- ▣ **Inverters:** SMA made in Germany
 - SMA is the worlds largest inverter company





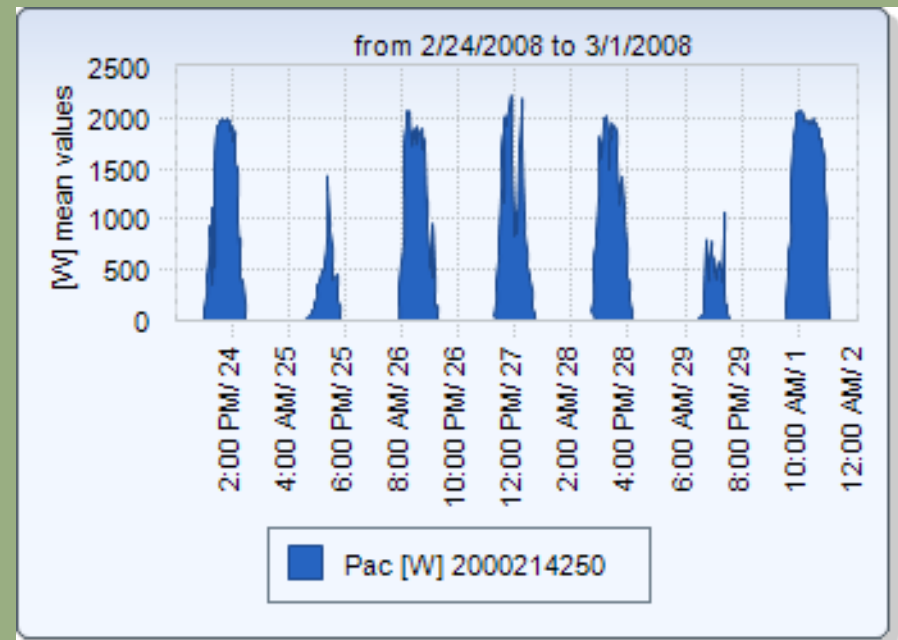
Installation

- ▣ System installation began in the spring of 2007
 - Masonry
 - Electrical Power Distribution
 - Electricity
 - Electronics
 - Electrical Apprenticeship
 - Landscape Horticulture



Results

- ▣ Installation completed August 2007
- ▣ Trackers began operation on August 28, 2007
 - CO₂ Offset: 1984 kg
 - Energy cost reduction: \$284
 - Energy : 2834 KWH
- ▣ Continuous use by program students



Mayor's Beautification Award



The Future

- ▣ 5 certificate offerings
 - Renewable Energy – Solar
 - Renewable Energy – Wind
 - Sustainable Design
 - Biofuels
 - Sustainable Food Supply
- ▣ Green Modules infused in curriculum
- ▣ Additional Renewable Energy Projects

