## Zero energy project makes it easy to be green

# IMT Solar: TIA Portal Application Awards- 2012

**Company Name:** IMT Solar
**Location:** North Tonawanda, NY
**Website:** www.imtsolar.com
**Key Business Activity:** Providing quality control test and measurement equipment to the solar energy industry
**Name of Application:** REVTOS measurement system



S7-1200 in mechanical room panel



Screen capture from 12" comfort panel showing all power information for entire home



Screen capture from 12" comfort panel showing the "Green Home"

### Explanation of the application:

- Monitoring, data logging, and control of a zero-energy Green Home being used for long-term research and development on a college campus. Renewable energy systems monitored include an 8kW Solar PV system, a 2.5kW wind turbine, Solar Thermal hot water system, and a 4-well Geothermal system. NYSERDA funded the monitoring through our SUNYGREENSNY clean energy training grant.

### What challenges led you to look at a new solution?

- We had a very short window for completing this application and needed a solution that would allow us to meet the deadlines.

- Because the home will be "stressed" to simulate a family of four living in it full time, we needed a system that would allow us to do control functions in addition to monitoring and data logging functions. (To use hot water from the Solar Thermal system and to add additional electrical loads that a family of four would use, etc.)

### What Siemens automation products were chosen for this project and why?

- We utilized the Siemens S7-1200 PLC's, 9" and 12" Comfort Touch Panels, WinCC Advanced Runtime, and TIA Portal for configuration of the complete system.

- With two of us doing the overall system programming and configuration, we felt the TIA Portal would give us the flexibility and code reusability to meet the timelines of the project. Further, Siemens' Sm@rtService feature would allow instructors on other parts of the campus to be able to bring the data from the Green Home into their classrooms over the campus intranet.

### What features in the TIA Portal addressed your project challenges?

- Automatic screen scaling in WinCC Advanced. Since we were using three HMI systems with differing screen sizes, the automatic scaling function allowed us to reuse screens and parts of screens with no modification.

- Ease of network configuration. With a project consisting of multiple PLC's and multiple HMI's which all needed to communicate together, the TIA Portal method of ProfiNet configuration made this a very simple task.

- Sm@rtService. It allows all instructors campus-wide to bring the pertinent information from the Green Home directly into their classrooms...showing real-time the same screens that would be seen inside the home.

- Reuse of code. TIA Portal easily allowed us to build reusable functions within the project itself. And the Library capability will allow us to easily reuse much of our code and configurations for future projects.

### How has your business improved?

- By meeting and exceeding the original scope of the project and getting it done on-time, we have gained much exposure to additional projects of a similar nature. Because of the effectiveness of TIA Portal, we believe we are saving 25% or more on our engineering time.