



Summer Workshop on Sustainable Energy

June 20-22, 2011

For middle-and high-school teachers teaching STEM classes

Brought to you by The Ohio State University Department of Electrical and Computer Engineering and American Electric Power under a grant from the US Department of Energy

This two and one half-day workshop will consist of five modules, each with a lecture, followed by hands-on activities or tours.

Each teacher who completes the workshop will receive a set of four Lego Power House kits for his or her classroom, and a certification of attendance. Lunch will be provided.

Location:

The Ohio State University Columbus campus

Cost:

\$10 per teacher

Schedule:

Monday (6/20) - 8:30 a.m. to 5:00 p.m.

Tuesday (6/21) - 8:30 a.m. to 5:00 p.m.

Wednesday (6/22) - 8:30 a.m. to 12:00 p.m.

Application Deadline April 30, 2011

Enrollment is limited to 30 teachers

To apply, please download the application at <http://ece.osu.edu/sustainableworkshop>

Questions? Contact Wendolyn Flores at floresw@ece.osu.edu.

Module 1: Basics of electric power

Introduces safety, the electric power system structure, and how the electricity is generated, transmitted, and distributed. The lab will demonstrate electric field phenomena under high voltage, and use a 1 MV impulse generator that simulates lightning and a 5MV Tesla transformer.

Module 2: Basics of Smart Grid

Presents the smart grid concept and related key technologies. The lab demonstration includes the Virtual Smart Grid test platform at OSU and real Smart Grid facilities at American Electric Power (AEP).

Module 3: The power from the sun

Focuses on photovoltaic-related technologies. The lab has circuit level demos, such as power output with and without advanced conditioning circuitry, and a tour of Nanotech, OSU's Ohio Wright Center for Photovoltaics Innovation and Commercialization.

Module 4: Smart lighting

Introduces smart light concepts for energy conservation. Lab includes tour and demonstration of the OSU smart lighting lab.

Module 5: Future power grid

Introduction to future power grid concepts, such as the zero-emission home and the DC network. We'll start from the AC/DC war between Edison and Tesla, go through one hundred years of power engineering, and finally present the need for a new breed of power engineers in the near future. The lab demonstration will be at research labs in OSU and AEP.