Education and Engagement

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Cross-Cutting Effort: Education and Engagement

**K-12 Education**
- Interactive lessons, hands-on activities, and curriculum materials
- Partnerships with teachers and schools
- Dissemination activities
- Connections with national curriculum endeavors

**Outreach and Workforce Development**
- Create interest in STEM related careers
- TCIPG summer schools
- Research opportunities for undergraduates

**Consumer Education and Public Information**
- Energy information for an informed public
- Consumer acceptance of smart grid technologies and policies
Overview

TCIPG Education strives to:

• Relate school math and science to power and energy issues
• Create interest in STEM disciplines and careers
• Illustrate issues necessary for consumer acceptance and use of smart grid technologies
• Create a primer for a cyber secure power workforce
Curriculum Goals

• Educate about existing systems and structures

• Communicate a vision for future power system configurations

• Illustrate challenges, trade-offs and decisions that go into power system design and operation

• Create interest in further learning
Pre-University Interactive curricula

- Power and Energy applets
  33,000 visits in the past year
  900 CD’s distributed
- Tesla Town for the iPad
K-12 Teachers and Students

- Print materials
  - Lesson plans
  - Posters
  - Trading cards
Outreach Ambassadors

Share
Excite
Advocate
Demonstrate
Disseminate
Donate
Teach
Electrify
Partnerships and Connections

• IEEE Science Kits for Libraries
  – community events
  – kits related to the science of electricity
  – available for checkout throughout system of 594 libraries

• Project Lead the Way
  – 4,782 middle and high schools
  – impacting over 400,000 students in all 50 states

• KidWind
  – trained over 7000 teachers
  – impacted more than 500,000 students
Engagement and Public Learning

• Parents and children learn together
• Publicize the importance of knowing about electricity production and delivery
• Illustrate challenges, trade-offs and decisions that will come with modernization of the electric grid
• Communicate the importance of consumers as a smarter grid becomes a reality
Outreach Events

- Engineering Open House
- Illinois Public Engagement Symposium
- Toronto Science Rendezvous
- International Society for Technology in Education - Annual Meeting
- ASEE Annual Meeting
Consumer Education and Public Information

- Illinois State Fair’s Illinois Energy Zone
- Energy Education Council
- Smart Grid Customer Engagement Working Group
- Smart Grid Customer Education Symposium
- Orpheum Children’s Science Museum solar-powered outdoor playhouse
Future Efforts

• Partnering with Engineer Guy to develop a video and related classroom activities that illustrate how transformers work

• Working with representatives from utilities and EPRI to define best and worst workplace cyber secure practices and make these available to appropriate audiences

• Consumer information modules and guidelines for distributed generation and energy management systems

• TCIPG Summer School 2013
Equally critical to the success of this effort is the education of all interested members of the public as to the nature, challenges, and opportunities surrounding the Smart Grid and its implementation.”

- The Smart Grid: an Introduction (oe.energy.gov)

Engaging learners of all ages
Increasing public awareness
Educating for a cyber secure workplace