

# Students For Energy Efficiency

## Program Overview

### Introduction

Why care about energy? Put simply, our futures depend on it. According to the Idaho Energy Plan, the best path to ensuring a reliable low-cost energy supply involves energy efficiency and the integration of renewable energy sources. Energy efficiency is something we can all embrace.

As a neighbor and community partner, Idaho Power created the *Students for Energy Efficiency* (SEE) program to give Idaho students the opportunity to participate in energy assessments of their schools and use science and math skills to evaluate and make recommendations where energy improvements can and should be made. The program works in cooperation with the Idaho Office of Energy Resources. This hands-on program enables students to build up their knowledge of energy while giving them a practical application to real-life energy efficiency improvements, technologies and careers.

The project is designed as a “learning lab” where students dive into topics about energy use, measurement and how to use energy more efficiently. The focus is on lighting, building envelope, plug load/phantom load and energy usage data. The assessments, performed by students with teacher guidance, can be completed on a flexible timeline by each participating school to fit class schedules, building use, etc.



### Targeted Educational Standards

The *Students for Energy Efficiency* program addresses the following topics:

- **What is Energy?**
- **How is Energy Used?**
- **How is Energy Measured?**
- **How can Energy be Used More Efficiently?**

*These four topics reinforce Idaho Department of Education Content Standards for Science*

## Presentation Format

*"This high school has a problem. And it not only affects the high school students, faculty and administration, but the surrounding communities as well. In fact, it's more than just a problem, it's a crime! That is the only way I know how to describe the events continually occurring in the classrooms, auditorium, gymnasium and hallways of your high school. And do you know to what crime I am referring? The waste of valuable energy resources."*

Following this direct approach designed to get the attention of the student team participants, the facilitator begins a three-hour training session targeting the identification, measurement and reduction of energy usage in the high school.

Using a Crime Scene Investigation (CSI) format, students selected by the participating teacher receive training in the use of equipment and the proper procedures for conducting assessments of lighting levels, appliance wattage usage, occupancy durations and times, etc. After the training, students and teachers use the educational materials and equipment supplied by Idaho Power perform to an assessment of their entire school building and prepare a report of their findings for use by school administration.

## Students Take *Charge* In Creating A More Energy Efficient Idaho

As part of the SEE program, students perform an **Energy Scene Investigation**. Here's an excerpt from the training curriculum:

*"The school assessment you are about to perform is really an Energy Scene Investigation, or ESI. Just like the Crime Scene Investigation (CSI) units featured in television programs, you will conduct an investigation of where energy is being wasted in your school, using appropriate equipment and techniques, and report your findings to school administration."*

### **Students perform an energy assessment, compile a report on their findings and recommendations, and then ...**

The information collected into a report by students will lead to recommendations for behavior changes (turning lights off, powering down computers) and technology upgrades (replacing magnetic ballasts with electronic ballasts, upgrading lighting, installing occupancy sensors) which will be presented by the students to school administrators and community groups. Additional audiences may include local government officials and staff from the governor's Office of Energy Resources. Potential funding to implement the energy efficiency recommendations includes the American Recovery and Reinvestment Act (ARRA) and school district budgets.

**Participating schools are also encouraged to apply for additional financial assistance through Idaho Power's energy efficiency incentive programs:**

### **Easy Upgrades (simple retrofits)**

Incentives of up to \$100,000 per year for simple energy-saving retrofits to existing commercial buildings, including schools. A menu of eligible retrofits includes improvements such as new lighting, HVAC equipment, and controls.

### **Building Efficiency (commercial construction)**

Incentives of up to \$100,000 per project designed to offset part of additional capital expenses for more efficient lighting designs, cooling systems, controls and building shell in new commercial industrial and school construction projects.

### **Custom Efficiency**

The Custom Efficiency program assists large commercial and industrial customers in identifying and paying for energy efficiency improvements. Through the Custom Efficiency program Large and Mid-sized Commercial and Industrial customers can save money on utility bills, save energy, qualify for financial incentives—up to 70 percent of the cost for an energy-saving project and increase productivity with newer, better equipment.

## Additional Participation Benefits For Teachers And Students

### Teachers who serve as project sponsors receive:

- One Energy Scene Investigation (ESI) kit to keep for future classroom and school use.
- A *Students for Energy Efficiency* curriculum in a three-ring binder
- A CD containing a copy of the training presentation, the curriculum, energy assessment forms, and additional energy assessment references
- One Continuing Education (CE) credit hour
- Stipend of \$250, supplied by Idaho Power, after successful project completion

### Each Energy Scene Investigation kit contains:

- Light Level Meter
- Magnetic/Electronic Ballast Detector
- Kill-A-Watt Meter
- Room Occupancy/Light Sensor
- Surge Protector Power Strip
- Tapeless Tape Measure



### Students participating in the SEE program receive:

- Hands-on training on the proper use of the ESI kit equipment
- Valuable experience in a realistic school community project which they can promote on college admission and scholarship applications
- Exposure to the energy industry as a potential career option
- Satisfaction in assisting their school in using energy more efficiently while reducing operating expenses

### Idaho Communities

Schools participating in the SEE program provide benefits to their communities in reduced energy demand and energy efficiency awareness.

## Sign Up for the 2010-2011 Season of *Students for Energy Efficiency*

Idaho Power is excited to offer this unique, exciting student-led program for a second year to high schools in its Idaho service territory.

Visit the Idaho Power Web site at [www.idahopower.com/SEE](http://www.idahopower.com/SEE) to let Idaho Power know you are interested in registering your school for the second round of trainings scheduled for Fall 2010, or contact John Bernardo, energy educator at 208-388-5543 or [jbernardo@idahopower.com](mailto:jbernardo@idahopower.com).

