



# ENERGY SCIENCE FAIR

*for all students  
Grades 4-12*

Compete for  
Cash Prizes  
awarded for grades  
4-6, 7-9, 10-12  
Science, Analysis,  
or Engineering  
projects

## Youth Energy and Environmental Expo

Friday, April 25, 2008 10 am–12 noon

SUNY Canton - Miller Campus Center

(Winners displayed at the 2008 North Country Sustainable Energy Fair)

**Work toward solutions that will help our Earth!**

**Group and individual entries accepted.**

**Some travel grants available for field trip expenses.**

Suggested topics for projects include renewable energy, energy conservation and efficiency, green buildings, community education, and environmental impacts. Entries can include: models, demonstrations, posters, scrapbooks, photo displays, or representational or performance art. Your display should fit within a 4 ft. x 2.5 ft area (table top or floor). Students must be at the Science Fair to present their project to the judges. Awards announced at noon. Pre-registration required.

For more info: [www.ncenergy.org](http://www.ncenergy.org) or email [sep@clarkson.edu](mailto:sep@clarkson.edu).

Coordinated by Clarkson University Office of Educational Partnerships, and Community Energy Services' New York State Energy \$mart Communities Program and Project Green Teams

# YEEE Details

## SOME SUGGESTIONS FOR PROJECTS

Entrants are encouraged to identify, analyze, and work towards the solution of a particular energy or environmental problem. Entries can be in one of three categories – Science, analysis, or engineering/design. Create your own ideas or consider these suggestions:

- **Science:**

- \* Develop a hypothesis about some aspect of energy and design an experiment to test and prove that hypothesis

- **Analysis:**

- \* **Lighting in your school** - estimate how much electricity is used for lighting in your school and determine options and savings for solutions involving energy conservation/efficiency.

- \* **Characteristics of energy efficient homes** - Review electric and gas bills for 3-5 homes. Determine which house consumes the least amount of energy. Survey occupants and inventory energy use/efficiency aspects of each home to analyze differences in energy consumption.

- \* **Energy Efficiency** - Complete an energy audit of your home and identify improvements (audit kits available)

- \* **Renewable energy sources** - Evaluate the feasibility of using a renewable energy source for supplying some fraction of the heat or power consumed by your school or home.

- \* **Community education** - Identify a need for increased education and prepare a video to communicate an energy efficiency or environmental message to the general public (other media also acceptable)

- \* **Environmental impacts** - Show the environmental benefits of an alternative energy source or energy efficiency measures

- **Engineering/design**

- \* **Building construction** - Build a model house with and without insulation and other passive energy conservation measures. Test the efficiency of the insulation in maintaining temperature within the structure.

- \* **Alternative energy sources** - Build a model car or house and describe how it works.

- \* Build a model wind turbine or other energy conversion process to show how it works and how you can make it better.

For additional ideas and information, see these resources:

- o National Energy Education Development (NEED) <http://www.need.org>

- o DOE <http://www.eia.doe.gov/kids/>

- o NYSERDA - Get Energy Smart <http://www.getenergysmart.org/schools/teachers/curriculum.asp>

- o Alliance to Save Energy [http://www.ase.org/section/\\_audience/educators](http://www.ase.org/section/_audience/educators)

- o Energy Star <http://www.energystar.gov/>

- o Energy Hog <http://www.energyhog.org/>

- o KEEP energy education (<http://www.uwsp.edu/cnr/wcee/keep/>)

## GUIDELINES

- Entries can include: models, demonstrations, posters, film, scrapbooks, photo displays, or representational or performance art.
- The display should fit within a 4 ft. x 2.5 ft area (table top or floor) or poster size for a wall mount (3' x 4') and should clearly identify the title, participants and school or organization.
- The **entry form** must be completed and submitted BY April 4<sup>th</sup> (see attached).
- All entries must be set up Friday morning BEFORE 10 am.
- Students entering the competition will be required to attend science fair from 10 am-12 noon to present their project to the judges.
- There is NO entry fee to participate.

# YEEE Details (cont)

## PROJECT JUDGING CRITERIA

1. Project statement
  - Identify specific problem/project you are addressing
  - Identify specific goals for your final project
2. Selection and completion of activities used to reach your goals
  - Describe methods / steps used to complete project are described
  - Appropriate use of methods
3. Energy/environmental content / understanding used to complete the project
  - Evidence that grade-level appropriate understanding of energy/environmental concepts used
4. Evaluation of project solution - did you reach your goals?
  - Description of how students evaluated if their goals were met
  - Extent to which students reached their goals
5. Student leadership
  - Evidence that the students completed the project themselves
6. Documentation
  - Quality of materials displayed at competition
7. Communication of work with judges
  - Clear explanation of work completed
  - Effective answers to questions

For more information or help with identifying a project, mentor or materials,

- contact Community Energy Services, Inc ([greenteams.org](http://greenteams.org); 379-9466), or Susan Powers ([sep@clarkson.edu](mailto:sep@clarkson.edu)).

### YEEE Intent to participate form

School District: \_\_\_\_\_

Teacher: \_\_\_\_\_

Class/grade: \_\_\_\_\_

Number of projects: \_\_\_\_\_

Number of students: \_\_\_\_\_

Anticipated resource needs (tables vs. wall space, electricity, etc)

Teacher Contact information:

Phone number: \_\_\_\_\_

Email: \_\_\_\_\_

Comments or Questions?

Email information to [greenteams.org](http://greenteams.org) or mail to CES, 101 Main St., Canton, NY 13617