

Climate Change and Energy Efficiency Challenge

\$500 awards available for K-12 Educators

Cross-curricular projects preferred

Background

There has never been a more important time to reduce our energy use. Scientists have agreed that the amount of additional climate change we will experience in the future depends on how much we reduce our greenhouse gas emissions now. Educators can play a key role in educating students and their families on energy efficiency and conservation, thus reducing our carbon footprint.

The New York State Energy Research and Development Authority (NYSERDA) is offering awards of up to \$500 to spur creative approaches to encouraging energy-efficient behavior in the classroom, school, home, and community.

How many awards will there be?

NYSERDA will fund up to 30 innovative projects that increase students' energy and climate change knowledge and awareness while providing student leadership opportunities and outreach to the community.

How will winners be selected?

Points will be given for projects that:

- Include a measurable goal for reducing the carbon footprint of each student, family, or classroom.
- Show creativity in delivering the message of climate change and the need for energy efficiency and conservation.
- Include specific leadership roles for students where some form of community outreach is included. This can include projects such as students teaching other classes; students teaching families; students presenting their project to their school board or town/city government; or students hosting a press conference.
- Describe in detail the materials needed and activities to be carried out, including a timeline.
- Explain how the activities are correlated to New York State Learning Standards.
- Include a clear and concise budget. In-kind donations from merchants or community organizations are encouraged.

Extra credit will be given for:

- Schools with greater than 50% of students receiving free or reduced-price lunch.
- Projects involving two or more subject areas, (e.g., Science and Technology; English and Family/Consumer Science; Global Studies, Art and Science).

Who can apply?

Awards are available for educators whose schools or organizations are located in communities that are served by one of New York's investor-owned utilities: Central Hudson Gas & Electric Corp., Consolidated Edison of New York, Inc., National Grid, New York State Electric & Gas Corporation, Rochester Gas and Electric Corporation, or Orange and Rockland Utilities, Inc.

Though not required, preference will be given to projects that are interdisciplinary. The names and subject areas of all teachers involved must be stated on the application.

How can the funds be used?

- Purchasing supplies or equipment, such as portable watt meters, programmable thermostats, CFLs, etc. to use in hands-on activities related to energy efficiency that lead to student-led, school-wide and/or community education efforts.
- Materials for community education events.

How do you apply?

Submit one copy of the Application and Proposal, including:

1. Project Title – This will be used to announce the awarded projects.
2. Project Goal – Describe what measurable outcome you plan to accomplish and identify your target audience.
3. Work Plan and Timeline – List the activities you will complete to achieve the project goals. Show the timeline for the activities. Explain how your project correlates to the New York State Learning Standards.
4. Energy and Climate Change Content – Explain what energy efficiency and climate change topics will be taught during this project. Describe how the project provides students, their families, and the community a better understanding of energy efficiency and the need for reducing their carbon footprint.
5. Student Leadership and Outreach Plan – Explain how your project builds the leadership skills of your students. Describe how the students will take a leading role in creating and executing the project, including how your student team will reach out to the school community, local media, and/or local community with this project. Include an estimate of approximately how many people will receive this message.
6. Interdisciplinary Approach – To encourage cross-curricular projects, preference will be given to proposals that include two or more disciplines.
7. Budget – Provide a detailed project budget for up to \$500 and detail how funds will be allocated. Include specific information such as types of materials, equipment, and services needed for your project. Round all estimates to the nearest dollar, and include a list of matching funds or other funding resources, if applicable.

APPLICATION INSTRUCTIONS

Download an application at www.GetEnergySmart.org, and submit a completed Application and Proposal via email or fax: **Energy Smart Students Program**, Info@nyess.org
Fax: 1-412-431-5214 Phone: 1-866-552-4683

Proposals should be no longer than five pages and must be received by November 30, 2009. Awardees will be notified by December 18, 2009. Award checks will be made payable to the applicant's school or organization and will be mailed within approximately three weeks following award notification. Projects must be completed by May 15, 2010, and a detailed final report with receipts for materials purchased must be submitted to NYSERDA by June 1, 2010.

Climate Change and Energy Efficiency Challenge Application New York Energy Smart Students Program

Lead Teacher's Name: _____

Grade(s) taught: _____ Subject(s) taught: _____ Yrs.in teaching: _____

Project Title (which will be used to announce the awarded projects): _____

Co-applicant(s): _____

Grade(s) taught: _____ Subject(s) taught: _____ Yrs.in teaching: _____

(Add more co-applicants on separate page.)

School: _____

School Address: _____

City: _____, New York Zip Code: _____

School Phone: (_____) _____ School Fax: (_____) _____

Home Phone: (_____) _____ Email: _____

School District: _____

County: _____

Percentage of Students Receiving Free or Reduced-Price School Lunch: _____

Your school's or the majority of the student population's electric distribution utility is: (check one)

<input type="checkbox"/>	Central Hudson Gas & Electric Corp.	<input type="checkbox"/>	New York State Electric & Gas Corp.
<input type="checkbox"/>	Consolidated Edison of New York, Inc.	<input type="checkbox"/>	Orange and Rockland Utilities, Inc.
<input type="checkbox"/>	National Grid	<input type="checkbox"/>	Rochester Gas and Electric Corp.

Number of students involved in project: _____

Estimated number of additional students reached through this project: _____

Estimated number of adults reached through this project: _____

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Energy Smart Students Energy Education Grants

Since 2004, NYSERDA has awarded over \$31,000 in Energy Education Grants to fund 67 energy-related projects for K-12 students. Classroom teachers and informal educators have used their grants to fund creative projects that have spanned the wide range of energy-related topics. Review the examples below to help to determine your project idea.

Stop the Waste...Save the Planet

In a true leadership project, 10 high school students from McGraw Central School (Cortland County) made a positive change for their school. After obtaining energy documents from the school and identifying where energy-efficiency improvements could be made, the students conducted persuasive presentations to the Board of Education about how the school could make energy-efficient improvements. The students also presented information at a community booth to educate faculty, students, parents, and the community on the importance of energy conservation both at school and home in order to reduce individual contributions to global warming. Through this project, students worked with school maintenance staff to learn the mechanics of energy conservation, learned about the relationship between energy usage and environmental degradation, identified inefficiencies in the school, and empowered others to make better daily energy choices. As a result of their efforts, the school is implementing some of their proposed energy-efficiency improvements.

“The fact that energy is and will be actually conserved through the efforts of this project is our biggest accomplishment.”
Nicole Lener, teacher

Wind Over Union Vale

Sixth grade students at Union Vale Middle School (Dutchess County) took a hands-on approach to learning about renewable energy sources. The students studied the potential of installing and using a wind turbine on their school property to provide the school with an alternative, renewable energy resource. In this student-led project, the class set up a weather station and researched wind turbines to study the potential of wind energy at their school. The project team surveyed the site for conditions, contacted the local planning board to discuss zoning regulations, and contacted turbine vendors for cost estimates and to discuss the feasibility of installing a wind turbine at their school.

“The greatest accomplishment was student excitement and involvement in learning about wind power as an alternative source of energy.” Daniel Recktenwalt, teacher

Livingston County Students and CFLs: Making a Difference

During their Natural Resources and Energy Unit, 150 seventh grade students from Livonia Junior High (Livingston County) conducted home energy audits and discussed methods to reduce energy consumption, with a particular focus on compact fluorescent light bulbs (CFLs). The students then created pamphlets to educate their parents about the various benefits of using CFLs and the positive impact widespread use can have on the environment.

“The decisions our children make today impact our world tomorrow.” Linda Artuc, teacher

Recycled MPG's

To help understand the integrated relationship between math, science, and technology, high school students at John C. Birdlebough High School (Oswego County) created biofuel for use in diesel engines. They used materials readily available in the community and normally considered waste products. Through this project, students studied the current types of renewable energy sources being used, the feasibility of biodiesel production, and the environmental and economic factors of biodiesel production.

“We will continue to use and alter this learning activity in the future to make it bigger and better.” Kevin Doll, teacher

Racing Toward a Better Future

As part of their “Healthy Planet” unit, fifth graders from Public School 134 in Manhattan (New York County) learned about the uses and benefits of solar energy. To do so, the students designed, built, tested, and raced solar-powered cars. Students also visited a solar-powered building in New York City and invited guest speakers to teach them more about solar energy. As a culmination of the project, students created an advertising campaign to educate the school about the importance of energy conservation and renewable energy sources.

“The students were shocked and surprised at the human and environmental costs of our current energy consumption and wanted to educate others on how we can better care for our planet. I think the change in attitude and actions speaks to the success of this project. My 5th graders are now reminding teachers to turn off lights and air conditioners; they are also taking these messages home to their families.” JoEllen Schuleman, 5th grade teacher

Wind to Hydrogen to Vehicle Project

This project taught both teachers and eighth grade students at DeWitt Middle School (Tompkins County) about wind turbines, hydrogen, and fuel cell technologies. Through a six-hour workshop, teachers learned about fuel cells. In the classroom, students learned about wind-powered technologies and constructed their own wind turbines. To combine these lessons, the students saw a demonstration of a geared turbine used to create the process of electrolysis and to generate hydrogen for the fuel cells.

“Students and teachers in the workshop were involved in discussions and activities that indicated that they gained an understanding and appreciation for the need to rethink how we use energy.” Bob Walters, middle school technology teacher

Can New York Go Solar?

High school students at Nazareth Academy (Monroe County) investigated New York’s potential for solar power generation through this project. Solar Power Kits, from K’nex Corporation, were used for hands-on experimentation so students could manipulate solar panels to see how the changes affected the efficiency. Through this project, students learned about the importance of renewable energy sources and developed strategies to reduce their home electricity usage.

“I think the greatest accomplishment for this lesson was the fact that students went home and looked for ways to reduce their electricity use in their homes. This is something young teenagers have control over and where they can begin to make a difference.” Barbara Barker, teacher

Lighting the Way

After learning about energy efficiency in their classroom, high school students from Watkins Glen High School (Schuyler County) worked with their teacher, Karen Armstrong, to implement an inter-generational project in their community. Working with the Schuyler County Office for the Aging, Ms. Armstrong received a list of senior citizens who would be willing to have students visit and change their light bulbs. CFLs were purchased from the local Wal-Mart and an additional 15% were donated by Wal-Mart. Using their own vehicles and gas, students drove to 27 different homes and offered to replace the bulbs free of cost. Additionally, some students sourced materials from Ace Hardware (who donated the supplies) and returned to one home to make additional repairs.

“This was a population that would clearly benefit from the change, but one that would have difficulty making the change! As anticipated, the project has sparked interest in other students and many have asked ‘Which class does the light bulb change?’ It has sparked interest in the technology course, but students and teachers are bringing up the energy subject. It gives us a chance to educate many more than only those taking the course. It has also motivated many adults to make more changes at their own homes, which was a desired affect when the grant was first written. Overall, the project can be rated a huge success.” Karen Armstrong, high school technology education

Project Green Team

The Colton-Pierrepont Central School’s Green Team (St. Lawrence County), consisting of students in grades 5 through 12, conducted a community education program and a contest to reduce electrical consumption at home and at school. School staff and the students’ families participated by comparing their electricity use in 2007 with 2008. Using portable watt meters, families learned what appliances in the home used the most electricity, and then developed ways to conserve and be more energy efficient. Prizes were awarded to the families that saved the most electricity. Additionally, the students evaluated energy use at school and promoted an awareness of how small behavior changes, such as faculty members turning off computers and copiers at night, can make a big difference. The team’s efforts have resulted in reducing the school’s energy usage by an average of 7,738 kWh per month, saving the school an average of \$520 per month.

“We are taking the attitude of ‘Why wait until 2015 to reduce our electrical consumption?’ Even people who are not formally participating in the contests have indicated things like, ‘This has made me a lot more aware of what I am doing,’ leading me to believe that the impact of our project is greater than what can be easily measured.” Ginger Storey-Welch, teacher at Colton-Pierrepont Central School