



CASE STUDY

Classroom Energy Challenge Promotes Student Sustainability Initiatives

The Central New York Regional Planning and Development Board (CNYRPDB) is a public agency that was established in 1996 to serve five central New York counties: Cayuga, Cortland, Madison, Onondaga, and Oswego. CNYRPDB provides a comprehensive range of services associated with the growth and development of communities in Central New York with a focus on: energy management, economy development, environmental management, community development, and communications.

CNYRPDB collaborated with Energy Training Solutions (ETS), a firm that provides energy curriculum programming and teacher training, to plan and implement Classroom Energy Challenge (CEC) programs. The CEC and KiloWatch are free programs that were developed to broaden the level of understanding of energy sustainability, to provide value to diverse school audiences, and to promote cost-effective strategies that reduce energy consumption in homes and schools.

CHALLENGE

The CEC is a flexible, six-unit program for 5th and 6th grade enrichment classes to improve their energy awareness and energy literacy through a variety of energy related challenges. It integrates science, math, and language arts instruction and provides learning experiences that correspond to state and national learning standards. KiloWatch involves middle school students, faculty, and staff in an energy management approach specifically for school buildings. Students are trained to use specialized equipment that allows them to monitor energy use throughout their schools and learn about technologies and practices that save energy by conducting experiments and energy audits. CNYRPDB implemented the CEC pilot at two schools in the Syracuse City School District.

SOLUTION

KiloWatch teams were formed at both H.W. Smith and Ed Smith schools, where they monitored energy-related behaviors along with utility data to analyze the results of their efforts. As part of the program, energy savings were evaluated from September 1, 2014 through May 31, 2015. The performance of the buildings was measured against established baselines using standard industry protocols. At both schools a KiloWatch formation was created, which included a kickoff assembly program, along with the KiloWatch Conservation Pledge which allowed members of the school community to make a personal commitment to energy conservation. Students at both schools also conducted an energy investigation of the building and learned how to use the auditing equipment to collect data. Additionally, students participated in a training module on the most effective ways to influence behaviors in a school setting and monitored energy-related behaviors, as well as monthly utility usage.

Along with monitoring energy usage at the schools, students evaluated their use of hot water, heating, and cooling at home. They focused on educating parents/guardians about their use and how to cut costs by using programmable

CHALLENGE

- Improve energy awareness and energy literacy through a variety of energy related challenges through CEC programs

SOLUTION

- Kilowatch teams were formed at both H.W. Smith and Ed Smith schools, where they monitored energy-related behaviors along with utility data to analyze the results of their efforts
- Students at both schools conducted an energy investigation of the building and learned how to use the auditing equipment to collect data
- Students participated in a training module on the most effective ways to influence behaviors in a school setting and monitored energy-related behaviors, as well as monthly utility usage

RESULTS

- 6.5% total energy savings for the school and participating homes during the 2014-2015 school year
- Saving 31,153 kWh = 8.5 tons of CO2 reduction, which equates to the planting of a little over 2 acres of trees
- 30% improvement in student knowledge of energy efficiency and conservation

CONTACT INFO

Central New York Regional Planning & Development Board

100 Clinton Square, Suite 200,
126 North Salina St.,
Syracuse, NY 13202

Tel: (315) 422-8276

Fax: (315) 422-9051

e-mail: mail@cnyrpd.org



thermostats, taking shorter showers, and the use of insulation. Students then communicated what they learned with their families and pitched new energy efficient/conservative knowledge to help persuade their families to make changes.



Photo Credit: CNYRPDB

RESULTS

Overall, the CEC resulted in 6.5% total energy savings for the schools during the 2014-2015 school year. The 31,153 kWh of savings translates to 8.5 tons of CO₂ reduction, which equates to the planting of a little over 2 acres of trees.

Students completed a pre and post assessment to help with determining the impact of the CEC. The results of the assessment showed a 30% improvement in student knowledge of energy efficiency and conservation, how to save money on energy costs, and the effect that energy consumption has on our environment.

The KiloWatch and classroom curriculum at both schools were finalized and reviewed with the CNYRPDB to evaluate program success, obstacles and lessons learned. A program summary and brochure were developed to promote this program to other schools across New York State.

RESULTS UPDATE

In the 2015-16 school year, the CEC was once again successfully implemented in the Syracuse School District, at Ed Smith and H.W. Smith middle schools. CNYRPDB aims to expand the CEC program to ten additional schools in the 2016-17 school year.

TESTIMONIAL

“NYSP2I made it possible for our organization to implement a program called the Classroom Energy Challenge at two schools in Syracuse, NY. Over 275 teachers, students, and their families have learned about energy sustainability and conservation measures. The program increased the level of understanding of energy issues within the school community and promoted cost-effective conservation actions that reduce energy consumption in homes. There was a 6.5% energy savings documented during the project for participating schools and homes (a 31,153 kWh reduction) and a 30% improvement in student knowledge of energy issues.”

- Chris Carrick
Central New York Regional Planning
and Development Board

NYSP2I PARTNERS



10 Regional Technology Development Centers

Funding provided by the New York State Department of Environmental Conservation.

© 2016 Rochester Institute of Technology
Any opinions, results, findings, and/or interpretations of data contained herein are the responsibility of Rochester Institute of Technology and its NYS Pollution Prevention Institute and do not represent the opinions, interpretation or policy of the State.

For more information please contact us:

111 Lomb Memorial Drive, Bldg. 78
Rochester, NY 14623

Tel: 585-475-2512
Web: nysp2i.rit.edu
e-mail: nysp2i@rit.edu

