

Multifamily Housing Energy Efficiency Workshops



In 2004, Connecticut's Energy Conservation and Management Board recognized that the multifamily housing building owners and operators were not participating in the energy efficiency programs of the Connecticut Energy Efficiency Fund (CEEF). They asked ISE to develop model programs that will help increase awareness, participation, and ultimately result in energy savings for those who live in multifamily housing.

Public housing authorities and private housing managers throughout the state attended energy efficiency workshops this October, hosted by Housing


and Urban Development (HUD), ISE, and the US Department of Energy's Northeast Combined Heat and Power Applications Center. Mike Schoepfle, ISE's energy technical coordinator, said "The housing representatives were very interested in how energy efficiency and combined heat and power technologies could save them and their tenants money on rising energy bills."

Housing managers and tenants are struggling to meet the same rising energy costs as every other consumer in the state. In addition, HUD notified the housing authorities that they are required

to complete a federally mandated energy audit every five years to determine the energy efficiency of their buildings. They also encourage attendees to participate in performance contracts which allow them to use their energy savings to cover up front costs of renovations.

"One of the negative aspects of buying energy efficient products is the potential for higher up-front costs, but with performance contracting, consumers can cover those costs with their energy savings," said Schoepfle. Attendees learned how energy audits help maximize energy and cost savings

and how projects can be financed through the Connecticut Housing Investment Fund (CHIF) and the Connecticut Housing Finance Authority (CHFA). At the workshops, Connecticut Light and Power and United Illuminating representatives shared information about CEEF programs that can help fund energy efficient lighting and appliances.

Many of the attendees were unaware of the ways they could address their rising energy bills. Schoepfle said, "We accomplished the main goal of the workshops: to bring together people that need these services with people that provide services." 



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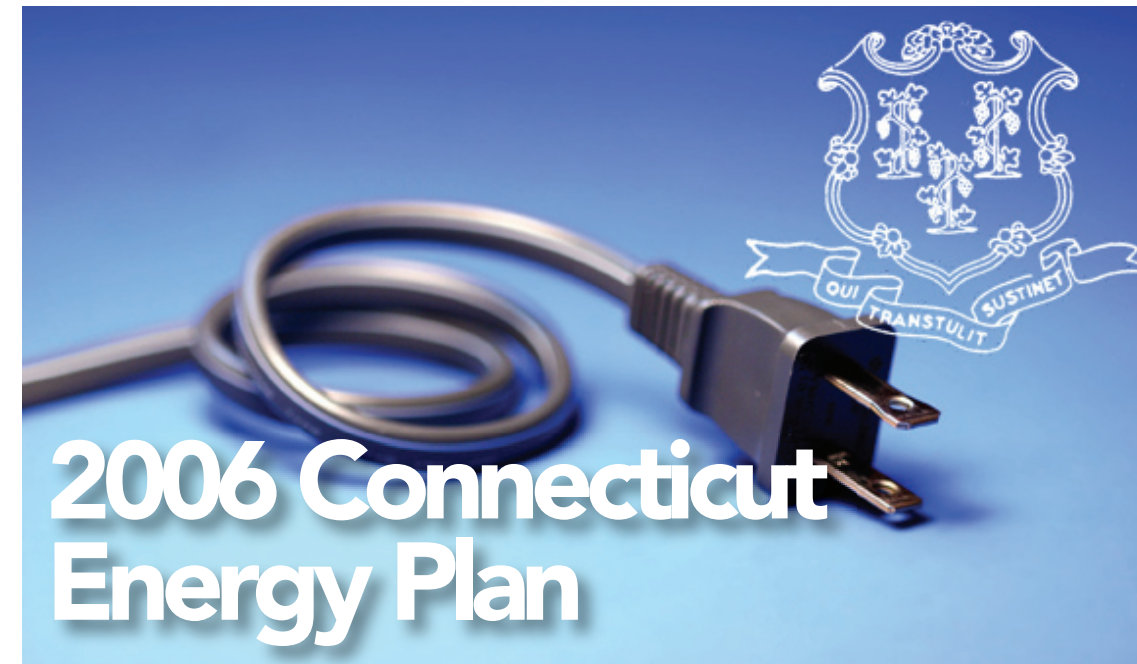
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2006 Connecticut Energy Plan

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The Connecticut Energy Advisory Board (CEAB) released the draft 2006 Connecticut Energy Plan on November 4, 2005. This opened the public comment period before the finalization of the Plan in January 2006.

Rising energy costs, concerns for Connecticut's dependence on fossil fuels, and issues related to electric transmission congestion, especially in southwestern Connecticut, are the main drivers of the Plan. Oil prices of more than \$70 a barrel, fuel shortages after hurricanes Katrina and Rita, and upcoming Federal Energy Regulatory Commission's Federally Mandated Congestion Charges (FMCC) for energy constraints within the state have all affected energy budgets and the reliability of energy supply in the state.

CEAB goals set out in 2004 and 2005, and several bills passed in the 2005 State Legislative session helped to shape the direction of the CEAB's 2006 Connecticut Energy Plan. PA 05-1: An Act Concerning Energy Independence set forth legislation establishing Department of Public Utility Control solutions to the state's energy congestion problem and new policies on distributed generation (DG) and combined

heat and power (CHP) to support electric generation in the state. The bill also directed an expansion of the Connecticut Energy Efficiency Fund to include all municipally owned electric companies and state's natural gas utilities, and calls for seasonal and time-of-day electric rates.

Recommendations in the 2006 Plan support CEAB's goals to reduce both the state's peak electric demand and use of fossil fuels by 10% by 2010. These goals support changes needed to reduce current energy use and to mitigate FMCC. To meet these goals, CEAB has mapped out eight initiatives in the plan (See figure above)

Mitigation of FMCC will result in savings on an expected rate increase statewide. ISO-New England and the Federal Energy Regulatory Commission (FERC) established Locational Installed Capacity (LICAP) charges in New England. The actual cost of energy will vary by zone, depending on the relationship between the amount of electric capacity needed, the ease of moving inexpensive power into a region and the actual energy produced in that region. It is estimated that Connecticut's LICAP charges will be \$341 million

THE EIGHT INITIATIVES

- Promote energy efficiency and conservation
- Manage the state's electric load shape to reduce FMCC
- Promote distributed generation (DG) and combined heat and power (CHP)
- Promote clean renewable energy technologies
- Create fuel diversity and reduced dependence on fossil fuels
- Develop transportation and land use policies that reduce energy use
- Launch a public education program and guide legislative efforts
- Explore creating an "Energy supply and demand-side technology business cluster."

annually, totaling up to \$2.8 billion by 2010.

Initiatives included in the 2006 Connecticut Energy Plan will help the state to decrease electric demand to reduce what customers will be charged in FMCC. At the same time, the measures reduce our dependence on foreign oil, reduce emissions from burning fossil fuels, make the state more energy independent and improve energy delivery and electric system reliability. The measures also support planned growth with an emphasis on improving the use of existing infrastructure, maximizing resources, and improving the efficiency of the state's transportation system.

CEAB is developing a website to provide information about the Plan initiatives and to help track progress on the goals. The Plan can be seen at CEAB's website www.ctenergy.org.



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Green Wave to Hit Connecticut Schools

Higher energy costs and concerns for student health and achievement are leading the way to change in Connecticut. This spring, the Connecticut Green Building Council (CTGBC), a long-time advocate of environmentally sound building standards, conducted a study of the perceived benefits and barriers to high performance "green" school buildings in the state. "Green" buildings use daylighting, provide excellent indoor air quality, utilize environmentally sound technologies and materials, and typically use 20-40% less energy than standard code built buildings.

CTGBC, in a project funded by the Kendall Foundation and the CT Clean Energy Fund, partnered with the Institute to facilitate a stakeholder process to gather the data needed. Thirty experts in education, health, environment, state policy, and design met over 5

months to examine the issues related to building environmentally friendly, energy efficient "green" buildings.

Stakeholders learned about the national standards which are used to measure "green" buildings, including Leadership in Energy and Environmental Design (LEED), Green Globes, Collaborative for High Performance Schools (CHPS) and DOE's EnergySmart Schools. They also discussed public perceptions of "green" buildings from each of their backgrounds. This exercise will help proponents of high performance construction to promote and explain the importance of "green" buildings in Connecticut.

Stakeholders agreed that there are four strong benefits to "green" schools, including: cost effectiveness; improved health of all occupants; enhanced student learning; and benefits to the environment. Perceived barriers

include: lack of understanding by policy-makers, taxpayers, designers, and builders; current contracting process and politics; fear and resistance to change; and higher up-front costs.

Last spring in the Connecticut State Legislature, a bill supporting high performance, green schools passed in the Senate, but did not reach the House floor before the end of the session. With continually rising energy costs, an aged statewide stock of school buildings, ongoing issues of "sick buildings" and strapped town budgets, the time for state support of healthier, more efficient and less expensive schools has come. CTGBC and "green" schools advocates hope that the legislature can build upon the stakeholders' work to pass and implement high performance schools into Connecticut's future.



Surveying Connecticut Schools in an Effort to Save Energy



Energy Curriculum Unveiled

This spring, students in High School classrooms across the state will be exploring energy. Teachers representing 38 schools agreed to pilot the new Connecticut Energy Education Program. The teachers viewed the curriculum for the first time at the Institute for Sustainable Energy's booth at the National Science Teachers' regional conference, held at the Hartford Convention Center in October 2005.

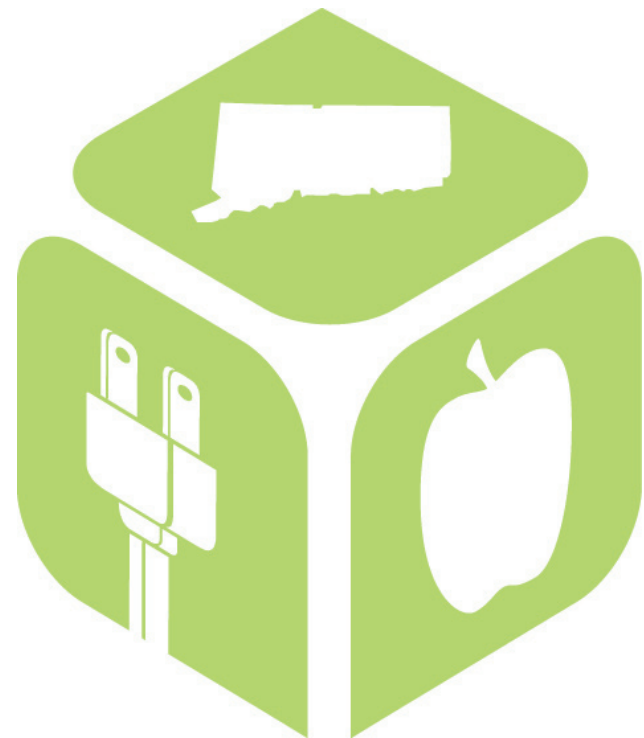
Learning modules have been developed to help Connecticut teachers and students understand more about energy and how their choices can impact our future. Topics include Fundamentals of Energy, Air Quality and Climate Change, and Energy Efficiency. Each topic area will include information, lessons, experiments, games and activities, and Connecticut Issues. "The hallmark of the program will be its interdisciplinary nature," states Laurel Kohl, ISE's Education Specialist. She and University Assistant Karen Schroeder have been working with a steering committee of educators and energy specialists over nine months to develop the program.

Funded by the Connecticut

Energy Efficiency Fund, the program will be web-based and open to teachers of all subjects in the state. The curriculum will be aligned with the State of Connecticut Frameworks and Standards which guide districts in providing quality education for students, and include lessons for science, mathematics, social studies, and language arts classrooms.

"140 teachers reviewed the program at the NSTA conference. They shared what they liked and gave us great ideas on how to improve the program. They were really excited about what we are putting together and can't wait until spring when we can get it into their classrooms for trials," said Schroeder.

The program is unique in that it brings together many available energy resources which, until now, have not been tied into State educational objectives. Under the different energy topic, teachers will have the website and tools they need to teach the most current information. Students will be able to explore how Connecticut is affected by our energy usage and participate in creating their own solutions to the challenges of the future.



Connecticut Energy Education
www.ctenergyeducation.com

What do you find out when you benchmark 115 Connecticut schools and survey 235 more?

You find that there is a potential state-wide energy cost savings of \$34 to \$50 million annually by renovating our public schools.

The Connecticut Green Building Council, Connecticut Clean Energy Fund and the Kendall Foundation sponsored the survey conducted by the Institute for Sustainable Energy of Connecticut's public schools in an effort to compare State data to national standards and prove energy savings potential.

Before the statewide survey, ISE benchmarked 115 schools using EPA Energy Star standards which grade buildings' energy efficiency on a 1-100 scale. They found that nearly 60% of the benchmarked schools scored between 0-25 on the Energy Star test, while another 25% of schools scored between 26-50. Only 15% scored between 51-100.

Benchmarking revealed that if a school in the lower range improved their score to at least 50, it could save thousands of dollars annually in energy costs. This summer, ISE polled every school system in the state and asked a few simple questions about their buildings' ages, sizes and use of natural gas, oil, propane, and electricity. ISE's goal was to determine if the benchmark scores represented Connecticut's public schools on average. They sought to

find out if the potential for energy savings was widespread.

Superintendents returned the surveys of 235 schools. Dr. Pete Johnson, a statistics professor at ECSU, confirmed that the pool of over 300 surveyed and benchmarked schools was statistically representative of the more than 1026 public schools in the state.

The survey ultimately showed that if all the public schools in the state brought their energy efficiency to an Energy Star score of at least 50, districts could save an estimated \$34.2 million on energy costs annually. If they set their sights on the Energy Star award level and brought their scores up to 75, they could save over \$51.2 million. This year, with oil costs up 60%, natural gas 70%, and electricity up at least 15%, Connecticut schools are finding it harder to balance energy budgets. Energy cost savings can mean the difference between exorbitant spending on heating and lighting, or more money for books and programs. Schools can use the survey's information to improve efficiency, and concentrate on education.

