

ENERGY EFFICIENCY AND CONSERVATION

Introduction

- Purpose of the study is to assess how well the state is achieving two goals of its energy policy:
 - *to implement measures to reduce energy consumption and costs; and*
 - *to ensure low-income households can meet essential energy needs.*
- Benefits of energy efficiency programs are to: reduce demand and consumption; increase energy reliability; lower total energy bills for all consumers; improve the environment by lowering emissions; and provide direct and indirect economic development benefits.
- Obstacles to measuring direct results from energy efficiency include:
 - the increasing cost of energy makes it difficult for consumers to see “pocketbook” results such as lower energy bills; and
 - changes in the workplace and at home create greater demand for energy thus making it difficult to estimate what energy use would have been had the measures not been implemented.

Section I – Overview of Connecticut Energy Use

- Energy consumption is decreasing if measured as the amount of energy it takes to produce a dollar of gross domestic product.
- Cost of energy as a percent of GDP is on the rise and is approaching levels seen in the late 1970s and early 1980s.
- Connecticut is not a high energy-use state, ranking 44 in energy consumption, but experiences some of the highest prices in the country.
- Generation of energy is the primary driver of electricity costs, and the cost of fuel comprises 70 percent of generation costs.
- Connecticut home heating sources vary:
 - 60 percent of homeowners heat with oil; 26 percent heat with natural gas; 9 percent heat with electricity; and
 - 29 percent of renters heat with oil; 39 percent heat with natural gas; and 28 percent have electric heat.

Key Points

- Between the 2006-07 heating season and the 2008-09 heating season's projected costs, residents heating with oil can expect a 73 percent increase in heating costs and natural gas customers can expect a 50 percent increase.
- Low-income residents are especially hard hit since energy costs take a greater portion of income. That energy "affordability gap" is growing while at the same time federal low-income energy assistance has been shrinking – in 2002 it covered 29.9 percent of the gap while in 2007 it covered 12.8 percent of the gap.

Section II – Energy Efficiency Programs Nationally

- Although there is not a broad national policy to implement energy efficiency measures, 17 states have implemented efficiency or renewable resource standards (EERS) as state policy.
- There is a recognizable societal shift in attitude toward the positive benefits that energy efficiency and conservation measures have in transforming lifestyles and the economy.
- The *National Action Plan for Energy Efficiency* suggests a framework states can use in developing their energy efficiency programs.
- Connecticut appears to implement the components of the model, and the state is recognized as a leader in energy efficiency by American Council for an Energy-Efficient Economy (ACEEE), a national organization that evaluates and ranks states on their energy efficiency efforts.
- Connecticut is one of 20 states and D.C. that fund most of its energy efficiency programs through a surcharge on customers' electric bills. At 3 mills per kWh, Connecticut's surcharge is among the highest.
- **Areas for further review:**
 - While there does not seem to be one model for implementing state energy efficiency programs, identify ways to improve coordination among all energy efficiency programs.
 - Because the energy efficiency programs are primarily funded through electric ratepayers, there may be an emphasis on electricity saving only, rather than a holistic approach to what will produce the most energy savings to the consumer.

Section III – Connecticut Energy Efficiency: Ratepayer Funded Programs

Key Points

- Energy efficiency and conservation programs are funded by ratepayers, bond funding, federal funding, General Fund and other state financing mechanisms, and through individual donations.
- Connecticut Energy Efficiency Fund is the largest ratepayer-funded efficiency program in the state, with 2007 expenditures of \$100 million.
- Between 2004 and the second quarter of 2008, the CEEF served: 111,205 residential households including low-income households; and 15,003 commercial and industrial customers.
- In 2007 the calculated benefit and cost savings over the lifetime of the programs are:
 - The electric benefit cost ratio yields \$4 in electric savings for every \$1 spent on efficiency measures;
 - The *estimated* total resource benefit cost ratio, which factors in total energy savings, yields \$3 in energy savings for every \$1 spent on efficiency.
- Connecticut also supports a Clean Energy Fund through a 1 mill per kWh surcharge on electric bills, which funds renewable energy programs.
- **Areas for further review:**
 - Assessment of benefits measurement -- electric benefit cost ratio and total resource cost ratio
 - Comparison of CEEF actual expenditures to those indicated in the CEEF plan
 - Practice of only providing incentives for electric-based technologies
 - Examine CEEF participant and expenditure levels – 2007 participation levels were lower than 2006, yet spending was higher
 - Assess the process for CEEF goal-setting, utility performance, and program evaluation
 - Explore the structure and administration of the Electric Efficiency Partners program as well as requirements for participation in the program.
 - Coordination between the two ratepayer-sponsored funds.

Section IV – State-Funded Programs

- The Energy Conservation Loan Fund provides low-interest loans to homeowners within 200 percent of the median area income and since the programs inception in 1979 has issued over 21,000 loans.
- The Fuel Oil Conservation Program was created in 2007 legislation, but because of funding and administrative issues has not yet offered any programs.

Key Points

- The furnace rebate program, also created in 2007, was not operational because it had not received funding. In August 2008, the State Bond Commission allocated \$5 million for the program and the legislature authorized another \$5 million.
- Connecticut did not receive a high state ranking by ACEEE in terms of implementing energy efficiency measures in state facilities. The state does not have a good way of tracking energy use in state buildings, and it has been slow in using CEEF funds earmarked for state energy efficiency projects.
- **Areas for further review:**
 - Utilization of the energy conservation loan fund compared with other states
 - Issuance of loans appears low – 12 a month – and so will explore reasons for that – are loan criteria too stringent or does program does not receive adequate funding?
 - Determine whether the August 2008 legislation codified what was already occurring in the ECL program or whether it set stricter guidelines for residents when replacing furnaces or boilers and impact it may have on potential borrowers
 - Assess early usage of energy efficiency programs initiated (and/or funded) in the past few months

Section V – Low-income Programs

- The Connecticut Energy Assistance Program (CEAP) is the major cash assistance program to help low-income residents pay their heating bills. The bulk of the funding is through a federal block grant to the state Department of Social Services.
- DSS contract with the state’s 12 community action agencies (CAPs) to operate the program. Last year, the program provided assistance to more than 85,000 low-income households.
- Operation Fuel, a nonprofit agency, also provides energy assistance to low-income residents. Last year, the agency helped about 5,500 people pay their heating bills.
- Connecticut utilities are prohibited from shutting off or not reinstating service to “hardship” customers from November 1 to May 1. Utilities also help low-income customers pay off their back bills through matching payments and/or arrearage forgiveness.
- The state Department of Social Services receives block grant funding from the federal Department of Energy to administer a weatherization assistance program for low-income residents. The average annual funding has been about \$2.5 million.
- More than 90 percent of the clients in the weatherization program are homeowners, while only

Key Points

28 percent are homeowners in the CEAP program.

- DSS contracts with five CAPs to operate the program; annually about 900 units are weatherized statewide. Seventy-nine persons received furnace replacements and another 75 had their furnaces repaired, but another 100 are still on the waiting list for those services.
- Utility companies also operate weatherization programs for their customers supported with funds from CEEF. They assist more than 14,000 customers under their programs. The municipal utilities fund their own low-income weatherization programs and last year weatherized about 140 units.
- **Areas for further review:**
 - The impact the new CEAP benefit levels will have on assisting low-income residents with the energy “affordability gap”
 - The coordination of the state’s energy assistance programs with those sponsored by the utilities
 - Compare Connecticut’s utility-sponsored assistance programs to those in other states – especially those that offer rate differentiation
 - Further examination of the weatherization programs including: differences in participation rates; what is considered a “weatherized” unit; number of units completed; what measures are taken; per-unit costs; waiting lists; and impact of different programs’ measures on participant’s energy bills; and ways of coordinating cash assistance programs.
 - Explore ways to better coordinate assistance offered to CEAP recipients with the weatherization assistance program, so that weatherization is targeted to lowering energy bills for CEAP clients.