

*Commercial/Industrial New Construction
Exemplary Program*

***Energy Conscious Construction
Northeast Utilities: Connecticut Light & Power Company (CL&P)
and Western Massachusetts Electric Company (WMECo)***

PROGRAM OVERVIEW

Energy Conscious Construction (ECC) reduces capital and operating expenses by helping commercial and industrial customers develop energy-saving upgrades for new buildings and major renovations. ECC lowers future energy costs by utilizing two approaches—a simple prescriptive track for smaller, simpler projects and a comprehensive track for larger and more complicated buildings in early design stage.

For prescriptive projects, ECC provides design guidelines to the design community. Incentives that cover the added cost of these measures are offered by the utilities.

For comprehensive projects, ECC energy experts will work directly with the design team during the early stages of design. The process is usually started at the end of the schematic design stage. The specific building is modeled using DOE-2 by a third party. When necessary, the design team provides the cost estimate. The measures being considered for the facility are evaluated before the design documents are complete. An informed decision can be made since the estimated installation cost, estimated annual operating savings, and incentive are qualified. A final building simulation is done to finalize the interactive savings. Even though the program focus and incentives are electrical energy savings, analysis includes fossil fuel options.

Two main entities provide project services—project administrators and program administrators. Project administrators are responsible for developing project leads via customer contact and trade periodicals. The administrators are also responsible for answering general program and technical questions, evaluating plans, and establishing letters of agreement with participants. The administrators are responsible for the overall program, marketing, and administration, and also provide technical assistance on comprehensive projects.

The program has been designed to remove the market barriers that stand in the way of implementation of energy efficiency measures. Recognizing all the market barriers to each measure is important as well as the knowing the decision-makers. In new construction, the first cost of a measure is an important but not the only barrier. Therefore, the incentive is based on cost. Since in most cases the design community is the decision-maker for many of the measures, it is important that the designers believe that the incentive will pay the added cost of the measure. It is also important that the designers find program administrators credible. Design engineers will occasionally call with technical questions on projects out of the service territory. The engineers need to believe the measure cost will be covered and need to have any concerns addressed. This is accomplished by getting the cost estimates from the engineers when necessary. Also, all program administrators are engineers, who have

the technical knowledge necessary to interact effectively with design engineers. Program administrators also follow established quality assurances.

PROGRAM PERFORMANCE

In 2002, ECC had 310 participants, yielding an estimated 46 GWh of energy savings annually and reducing summer peak demand by 10 MW. From 1990–2001, ECC has had 2,300 participants, yielding an estimated 353 GWh of energy savings annually and reducing peak demand by about 80 MW. These figures include both Connecticut and Massachusetts customers.

Transforming a service market can be much more difficult than transforming markets for energy-efficient equipment or appliances. However, ECC has proven effective in achieving this kind of result for system design by educating the design community. Since ECC gets in on the ground floor of projects, its energy experts show the designers how it is relatively easy to incorporate efficiency techniques at this stage. These designers take these “lessons learned” and apply them to subsequent projects. ECC administrators receive a number of calls each year asking for input on projects out of the utility service territory.

This program is very effective in realizing energy savings for participants. Many customers say that without Northeast Utilities’ (NU) assistance, both financial and in an advisory capacity, they wouldn’t have taken part in this energy efficiency initiative. For example, Yofarm Manager Alfred Lechner noted: “We got an incentive of close to \$153,000, which basically for us was the initiative to go ahead with the project. And...we are twice as productive as we were before.” Yofarm has been so satisfied with NU’s wide array of energy-saving programs that it continues to enroll in a number of them and agreed to participate in a corporate advertising campaign with CL&P, promoting the effectiveness of the ECC program.

LESSONS LEARNED

The designers are the final decision-makers when it comes to efficiency (behind the walls). To get the most energy efficiency out of projects, it is important to understand the design community and make them an ally. The new construction design community is concerned with designing the building once, getting it built within budget and on time. ECC utilizes in-house energy experts since many in the design community see outside consultants as competitors. The ECC program design and marketing focuses on these needs.

Measures have been qualified based on the cost-effectiveness of the electrical energy savings. In the future, the qualification will include electrical system demand impact.

Easy to replicate, this program is one of a number of CL&P programs that the Connecticut Department of Public Utility Control is allowing the company to market to other utilities. The Connecticut regulatory agency was so happy with the cost and energy savings accrued through this and other C&LM programs, it issued Docket # 01-01-14 stating that CL&P has “developed high quality demand side management programs and [has] become proficient in implementing these initiatives. As a result, many C&LM programs can be packaged and marketed on a turnkey basis.”

PROGRAM AT A GLANCE

Program Name: Energy Conscious Construction (ECC)

Targeted Customer Segment: Commercial and industrial new construction projects and major renovation projects of existing buildings

Program Start Date: 1989

Program Participants (includes CL&P and WMECo): Final 2002 estimated = 310 participants, 1990 to 2001 = 2,300 participants

Approximate Eligible Population: Final 2002 estimated = 388 participants, 1990 to 2001 = 2,875 participants

Participation Rate: Cumulative program total estimated at 80%.

Annual Energy Savings Achieved (includes CL&P and WMECo): Final 2002 estimated = 45,971 MWh, 1990 to 2001 = 353,400 MWh; lifetime savings would be approximately 18 years times annual.

Peak Demand (Summer) Savings Achieved (includes CL&P and WMECo): Final 2002 estimated = 10 MW, 1990 to 2001 = 79.6 MW

Budget

Year	Utility Costs
2001	\$9,030,000
2002	\$8,900,000 est.
2003 (projected)	\$8,200,000
Year	Customer Costs
2001	\$10,000
2002	\$10,000 est.
2003 (projected)	\$10,000
Year	Total Costs
2001	\$9,040,000
2002	\$8,910,000 est.
2003 (projected)	\$8,210,000

Funding Sources: State conservation fund in CT, systems benefit charge in MA

Best Person to Contact for Information about the Program

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