

**Conservation and
Load Management
Plan
Years 2003-2004**

Submitted jointly by:

**The Connecticut Light and Power
Company**

and

The United Illuminating Company

January 13, 2003

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CHAPTER ONE: OVERVIEW

In accordance with Conn. Gen. Stat. § 16-245m(d), The Connecticut Light and Power Company (“CL&P”) and The United Illuminating Company (“UI”) (together, the “Companies”), have developed the comprehensive plan for the implementation of cost-effective energy conservation programs and market transformation initiatives set forth in this filing (“Plan”). The Plan encompasses the Companies’ responses to the directives of the Department of Public Utility Control (“DPUC” or “Department”) in its decisions in Docket No. 01-01-14 and Docket No. 02-01-22. The Companies respectfully request the Department to approve the Plan for implementation in 2003 and 2004.

This Plan was developed for the years 2003 and 2004 in conjunction with the Energy Conservation Management Board (“ECMB.”) Since its inception, the ECMB has held meetings in public on a regular basis and encouraged input from public parties. The DPUC Decision dated September 19, 2001 in Docket No. 01-01-14 adopted a process for obtaining public comment by approving a “Roadmap” developed by the ECMB. The ECMB has been following this process, and in response to input on this Plan from approximately 20 members of the public, the ECMB is developing a matrix showing its responses to public suggestions made since the Department’s Decision dated May 29, 2002 in Docket No. 02-01-22. This Public Comment Matrix will be provided to the Department in late January 2003. The Companies have provided a list of all the comments and their suggestions to the ECMB as Attachment 1.

Overall Goals and Objectives

The overall goals in Conservation and Load Management (“C&LM”) are to advance the efficient use of energy, reduce air pollution and negative environmental impacts, and promote economic development and energy security in Connecticut.

Specific objectives to achieve these goals are to:

- Reduce energy costs and increase aggregate productivity through cost-effective C&LM initiatives;
- Create an energy efficiency “ethic” through communication of the economic and environmental value of efficient energy use;
- Increase measurable energy efficiency to strongly position Connecticut businesses and organizations for success in the global economy;
- Transform markets by creating lasting energy efficiency and load management improvements in markets and standard practices;
- Capture lost opportunities in market-driven events such as new construction, renovation, remodeling and equipment replacement;
- Provide a high quality program that meets customers’ needs and that addresses market barriers to energy efficiency, especially for special needs groups;
- Allocate C&LM resources in an equitable manner across all customer sectors;

- Pursue uniform statewide programs between CL&P and UI;
- Pursue increased use of third party planning and delivery of programs;
- Demonstrate measurable success in achieving energy efficiency goals, in terms of environmental and economic betterment;
- Take advantage of potential interface between C&LM and future green power choices for customers through marketing and other outreach; and
- Seek linkages to other funds and environmental initiatives.

Conservation and Load Management Activities for Southwestern Connecticut (“SWCT”)

Beginning for the summer of 2002, the Companies took specific actions in C&LM to support potential electricity shortages in SWCT. The Department addressed these issues in Docket Nos. 02-01-22 and 02-04-12. In this Plan, the Companies propose to continue many of the activities begun in 2002, as well as add additional efforts to utilize C&LM funds to support that critical area. These activities will target all 52 towns of SWCT, especially the 16 priority towns as designated by ISO-NE. Chapter 7 summarizes activities planned for SWCT in 2003.

UI agrees with the Department’s determinations that C&LM efforts are particularly important in Southwest Connecticut in its Decision in Docket 02-04-12. As discussed in Chapter 7 of this filing, UI believes that a portfolio of programs, developed in conjunction with the ECMB and the Department, will best address the Department’s concerns for mitigating the constraints in SWCT.

New Activities for 2003-2004

This is the fourth filing made by the Companies since the restructuring legislation was passed by the state of Connecticut. The plans for 2000, 2001 and 2002 have moved the Companies into a new era of C&LM by providing for services to all classes of customers for a wide array of end uses. The Companies have some of the most comprehensive programs in the country, and these programs are aimed at key strategic objectives.

This Plan for 2003 and 2004 builds upon the strengths of the recent past, but adds new elements called for by the future. Some new areas for 2003 and 2004 include:

- *Modifications to existing programs.* The Companies are planning changes to programs such as the Residential Retail Lighting Program and Residential Appliance Program. As evidenced by the number of market actors and dropping prices of ENERGY STAR[®] compact fluorescent light bulbs (CFLs) and dishwashers, these initiatives have brought the markets to a more mature stage of transformation. Therefore, a change of focus is now needed. Rather than providing incentives in the form of rebates alone, the Companies are proposing to modify the programs towards activities with manufacturers and retailers aimed at having them stock and ship to Connecticut a significantly higher proportion of ENERGY STAR product, relative to standard efficiency product. This is particularly true in the CFL segment, but will also be pursued in other appliance segments.

Another program modification is being proposed in the C&I RFP program. Based upon directives from the Department to expand the RFP program to all customer classes, in

2003 the Companies propose to open the existing C&I program to residential customers on an equal footing to C&I customers.

Other program modifications include ongoing efforts in the C&I programs to phase-in new efficient technologies and phase out those that are nearing standard practice. As these changes occur, the Companies utilize appropriate changes in incentives. These topics are explained in Chapter 2.

- *Development of new programs for priority areas of need and in response to public and regulatory input.* Several members of the public have suggested that the Companies develop a program which improves the efficiency of heating ventilation and cooling (HVAC) systems in homes, including the ductwork which carries the warm or cool air. Thus, for 2003 and 2004, the Companies are proposing the Residential Heating and Cooling program which is aimed at improving the efficiency of HVAC systems of homes in the state.

In response to Order No. 2 of the Department's May 29, 2002 Decision in Docket No. 02-01-22, incentives for renewable technologies are offered in two programs: the C&I RFP program and the C&I New Construction program.

The Companies are also proposing a program aimed at replacing inefficient refrigerators in homes with high efficiency ENERGY STAR refrigerators. These programs are explained in Chapter 2.

- *Termination or refocusing of previous programs in response to new situations or market needs.* Due to issues with the technology, the Hot Shot Water Heating program will be the subject of RD&D efforts in 2003 rather than program efforts. Additionally, due to market saturation, CL&P's Spectrum program for electric heat has been terminated, and its budget has been reallocated to new programs.

The Companies believe it is important to continuously improve their C&LM activities. Thus, even though this is a plan for two years, the Companies expect to have an update in approximately one year to allow for new developments or new public input. In the update, the Companies propose to update the plan for 2004 as well as to add plans for the year 2005.

Strategic Focus and Quality Control

The strategic focus of the Companies' C&LM programs is a result of a multi-level collaborative process involving the Companies and a diverse group of stakeholders. These stakeholders include the DPUC, ECMB, Connecticut governmental, consumer and business interests, national and regional environmental and energy efficiency organizations, design professionals and energy services providers.

The Companies participate in national and regional efforts with organizations such as the Consortium for Energy Efficiency (CEE), the American Council for an Energy-Efficient Economy (ACEEE), Northeast Energy Efficiency Partnerships (NEEP) and other utility and public benefit fund organizations in developing a long range focus for energy efficiency. These activities include market baseline research, development of efficiency standards, exchange of programmatic ideas and concepts and the assessment of need for incentives. These efforts result in many of the energy efficiency concepts and measures on which the programs are based.

In developing the C&LM plans, the Companies work with each other, DPUC Staff, the ECMB and its consultants and other Connecticut stake-holders to determine the appropriate areas and levels of emphasis and funding to best serve Connecticut's needs. In recent years there has been a high level of cooperation and collaboration between the Companies to develop programmatic consistency and common implementation where appropriate.

The collaborative efforts also carry beyond the strategic aspects of the programs into the implementation arena. The Companies actively seek the assistance and involvement of design professionals and trade-allies in implementing the programs. Design professionals are a major participant in bringing the programs to the new construction market and effectively achieving market penetration. Trade-ally knowledge of program benefits helps produce many of the energy efficiency gains in existing buildings and industrial processes. Regional programs, such as CoolChoice for high efficiency commercial air conditioning and MotorUP for premium efficiency motors, have increased market impact by leveraging the combined efforts of multiple efficiency programs. In the residential arena, partnerships with the U.S. EPA and DOE and other efficiency programs built around the ENERGY STAR brand has led to increased levels of market transformation, an example of which is the recent increases in washing machine and refrigerator efficiency standards. These regional efforts would have been virtually impossible without the collaborative efforts to develop efficiency standards described above.

To ensure the value that the C&LM programs bring to Connecticut's electric consumers, the Companies have a foundation of effort behind all the programs. The Companies employ a professional staff equipped with management which utilizes technical procedural and accounting systems to manage and control the programs. Company staff and third-party energy engineering consultants evaluate project and program energy and economic assumptions to determine cost-effectiveness, and inspect projects after implementation to assure compliance. Programs are evaluated by independent consultants to assess the effectiveness of the programs and the persistence of the energy savings. The Companies use the results of these evaluations to continually improve program offerings by reinforcing areas of success and strengthening weaknesses.

Planned 2003-2004 Budgets

Following are five sets of tables: Table A (including Table A-1), Table B, Table C, Table D and Table E. Table A for each Company provides a summary of the 2001 and 2002 C&LM budget previously filed with the Department and a planned 2003 C&LM budget. At this juncture, the 2004 budget is expected to be same as the 2003 budget, prorated for any sales increase impact on the three mills charge. Table A-1 is a combination of both Companies' 2003 budget and is provided in response to Order No.15 from Docket No. 01-01-14.

Table B for each Company provides key information, including cost-benefit ratios for each program for 2003. Table C for each Company provides a breakdown of the 2003 budget into categories of expenses. Table D for each Company provides a detailed 2003 marketing budget. Table E for each Company provides a breakdown of the 2003 C&LM budget by percentages and dollars targeted for SWCT towns.

CHAPTER TWO: JOINT PROGRAMS OF UI AND CL&P

RESIDENTIAL PROGRAMS

SmartLiving Catalog

- Objective: Over time, the goal of the SmartLiving™ Catalog is to further transform the market for energy efficient lighting products and other earth friendly products. Specific objectives include the following:
- Work with manufacturers to increase the number of ENERGY STAR fixtures and bulbs available in the market.
 - Educate consumers on the value of a wide range of energy-efficient products and services and, by so doing, influence current and future buying decisions.
 - Increase consumer purchases of energy efficient lighting fixtures.
 - Provide a link between emerging products and the retail market.
 - Support other market transformation initiatives by facilitating product introduction, consumer education, and trade ally support.
 - Develop an energy efficiency ethic, especially among children.
- Target Market: CL&P and UI residential customers, regardless of fuel type used for heating; builders; building officials; and other trade allies. While the catalog has been mailed in the past to all customers, the Companies are evaluating options for targeting mailings in late 2003 or 2004.
- The catalog is designed to overcome market barriers, while appealing to the large segment of the residential market that shops through catalogs in addition to shopping in stores.
- Program Description: CL&P and UI publish direct mail catalogs, updated twice a year, that offer energy efficient products. The catalogs also feature customer education; information on new technologies; other earth friendly, “healthy home” products and services; and promotion of other residential C&LM programs. Products can be ordered directly over the phone or by mail. The catalog includes activities for children that educate and inform them about energy efficiency while entertaining them.
- New technologies are also introduced and featured in the SmartLiving Catalog, such as front loading washing machines and other ENERGY STAR appliances, high efficiency HVAC systems, and advanced lighting products such as energy efficient table lamps. Equipment purchase or technology replacement inquiries generated by the

“Featured Technology” section are referred by CL&P directly to appropriate retailers and/or manufacturers.

Marketing Strategy: Before the SmartLiving Catalog is issued and within the first few weeks of its arrival in mailboxes, it is promoted through a variety of channels, including print and mass media. Bill inserts are used strategically throughout the year to reinforce the mailings of the catalog and take advantage of seasonal events (start of heating season, holidays, etc.). It is also marketed through home and trade shows. A copy of the catalog is provided as part of routine customer contact, and to participants in other C&LM programs. Builders, building officials, and other trade allies also receive the Catalog. Customers can also go to the SmartLiving Center and receive assistance in ordering catalog items.

Incentive Strategy: Incentives are designed with the intention of increasing market penetration of energy efficient fixtures and bulbs and increasing the number of products that manufacturers produce and retailers carry. UI and CL&P have increased prices in the catalog in 2002 in an attempt to better align catalog and average retailer prices. The incentives will support this alignment and continue the movement to retail prices. The incentives will also support emerging and specialty products that are not well established in the marketplace, such as dimmable compact fluorescent bulbs, recessed cans with reflectors, and bulbs and lamps which incorporate photocells.

New Program Issues: Some changes planned for 2003 and 2004 include utilizing advertising space in the catalog; increasing over time the amount of space provided for energy education; moving closer to retail pricing; decreasing mailing costs by reducing the size of the catalog; decreasing printing costs by using a flip format which eliminates the needs for special inserts; and adding coupons and referrals to retailers.

SmartLiving Centers

Objective: To provide technical assistance, training, information and education to homeowners, home buyers, home builders, architects, designers and children in energy efficient building techniques and products in order to transform the home building/remodeling market over time.

Target Market: Residential new construction, remodeling, renovation, and equipment replacement markets. Key market actors include homeowners, home buyers, architects, builders, designers, retailers, other trade allies and children. Other market actors include building officials, realtors, appraisers, and mortgage lenders.

Program Description: SmartLiving Centers serve as high-profile, centrally located facilities for promoting energy-efficient products and ideas to educate customers about conservation. The centers feature training sessions and seminars, special events and tours all geared toward teaching customers to use energy wisely with an eye on the environment. Specific project seminars are planned which feature energy efficient technologies and target “do-it-yourself” homeowners.

The SmartLiving Centers feature hands-on, interactive displays/demonstrations of energy efficient appliances, lighting technologies and new construction practices. The Companies’ staff or contractors provide technical assistance and project design support.

The centers are there as a resource to cross promote a variety of C&LM programs. They also complement the local retail marketplace and include those retailers in promotions and displays at the centers.

The SmartLiving Centers feature the following facilities and programs:

- Participating retailer information;
- ENERGY STAR and other energy efficient product displays and information;
- Information about participating in the ENERGY STAR Homes program and other C&LM programs;
- Energy and environmental reference library;
- Portable exhibits to support home shows;
- Interactive displays for children and adults;
- Meeting rooms for associations and businesses to utilize;
- Individual or group tours;
- Refreshments, a friendly atmosphere, and “a one-stop resource for energy efficiency information and ideas.”

- SmartLiving Catalog purchasing center

Marketing Strategy:

The SmartLiving Center is promoted through media such as radio and newspapers, cable TV, the Internet, trade publications, brochures, the SmartLiving Catalog, targeted mailing, trade shows, home shows and special events.

New Program

Issues:

In 2003 and 2004, some additional activities are planned. First, to address needs in SWCT, CL&P is planning a large exhibit that will move from place to place in the SWCT area of the state, and UI is planning to continue its SmartLiving Center which is already in SWCT. Both Companies plan to utilize their SmartLiving efforts in conjunction with the Community Based Program (CBP). These exhibits in SWCT planned by CL&P could serve many of the purposes of the existing centers and also provide a center of activity for the extra marketing expected in SWCT for the CBP.

In addition, over 2003-2004, CL&P plans to relocate its existing center on the Berlin Turnpike to a larger location with more parking which is more suitable to a wider range of education and community activities. Plans for the new center include retailer displays on a rotational basis. There may also be mobile displays in 2003 and 2004.

ENERGY STAR Appliances

- Objective:** The ENERGY STAR Appliances Program was originally designed to establish high-efficiency clothes washers, and later other major ENERGY STAR consumer appliances (refrigerators and room air conditioners) as standard, competitive product offerings in the Northeast. This is a regional market transformation initiative, coordinated by Northeast Energy Efficiency Partnerships (“NEEP”).
- Target Market:** CL&P and UI residential customers who purchase new appliances in retail stores and residential new construction.
- Program Description:** Program strategies have been developed to directly address the key market barriers. Specifically, the Companies will partner with both manufacturers and retailers to offer training and education on energy efficient appliances to local retail sales staff and consumers. The Companies will also work collaboratively with manufacturers and retailers in the design and placement of point-of-purchase display collateral for use at the retail outlets.
- “In-store promotions” (including demonstrations and “How To” clinics) and product display and demonstration at the SmartLiving Center will be conducted to assist retailers in promoting the program and to educate consumers on the positive benefits and quick payback provided by the energy efficient technologies.
- Past efforts and rebates have been successful in initiating transformation of the market. Such “per unit” strategies driven primarily by the utility or entity seeking market transformation are generally accepted as the first stage of the market transformation process. Plans now are to begin replacing utility-driven “per unit” consumer rebates in 2003 with promotions jointly developed and supported by retailers and manufacturers as well as the Companies. This will allow a broader enhancement of program impacts. In addition to rebates, the Companies, together with the manufacturers and retailers have begun discussions of strategies which take the existing high recognition of ENERGY STAR as a brand to the next level of understanding. At this level, the label is reinforced as a credible symbol of energy efficiency that consumers can rely on when making a choice in the retail marketplace that results in long-term savings on utility bills.
- Marketing Strategy:** Consumers obtain most information used in purchasing appliances from retailers. Therefore, the primary marketing strategy is the enlistment of retailers, and the provision of training and point-of-purchase marketing support. The Companies also participate in a strong consumer marketing campaign in conjunction with national and regional marketing efforts where the technologies and the ENERGY

STAR brand are promoted to consumers. Venues include home shows, consumer home magazines, newspapers, television and co-operative advertising with retailers. The program is also promoted and supported through the SmartLiving Catalog and the SmartLiving Centers.

Incentive Strategy:

Incentives may be paid directly to manufacturers and/or retailers who provide high efficiency equipment, to consumers in the form of rebates, or provided on a cooperative basis in the context of planned promotions. The direction of the incentive is to be flexible, controllable and strategic with targeted promotions of customer rebates.

New Program
Issues:

The Companies plan to build off previously established momentum to buy efficient equipment by working with trade allies in an effort to create a situation where, to the extent possible, predominantly high efficiency equipment is displayed at retail locations in the state. To address issues in SWCT, the Companies plan special promotions in that area. Efforts in SWCT will be in conjunction with the SmartLiving Centers exhibits in SWCT and the CBP.

UI and CL&P plan to integrate the Pool Pump Timer Rebate Program, begun in the summer of 2002 as a pilot, into the Appliance program in 2003.

The Companies recognize the need to provide increased emphasis on program features that provide kW reductions in SWCT. The kW reductions that can be realized by encouraging consumers to retire an old, inefficient appliance and replace it with an ENERGY STAR model can provide benefits to SWCT. The Companies plan to conduct several focused cost-effective turn-in events for window AC units in SWCT. The exact number and the details of the events will be conducted based upon further program design and consumer response.

Retail Lighting

Objective: The Retail Lighting Program is designed to support the development, introduction, sale and use of energy efficient, high quality residential lighting products through national and local market distribution channels.

The overall goals of the program are to continue to create and sustain positive change in the residential lighting market, and increase availability, consumer acceptance and use of energy efficient hard-wired and screw-based lighting products. Specific program elements are designed to address identified market barriers.

Target Market: CL&P and UI residential customers who purchase new lighting fixtures from retailers and lighting suppliers as part of replacement/renovation activities or remodeling and new construction projects.

Program Description: In the past the Companies have provided point-of-purchase (“POP”) rebates for ENERGY STAR fixtures and qualifying CFLs. The Companies offered instant rebates and mail-in rebates. Staff and/or contractors also enlisted lighting retailers and suppliers to participate in promoting and stocking ENERGY STAR products (CFLs and fixtures). This approach has been very successful in stimulating transformation of the market for many types of products, particularly spiral CFLs. The Companies will retain coupons for certain products, which will be used in conjunction with targeted promotions.

Over time rebates will begin to be replaced with more market-based initiatives. Given the acceptance already seen in the spiral CFL market, the Companies have, in fact, already removed continuous availability of the rebate from these products. In a fashion similar to that for appliances, the Companies are developing a non unit strategy which emphasizes partnerships and cooperative activities with manufacturers and retailers.

To help achieve long-term objectives, the Companies, in cooperation with the regional lighting working group facilitated by NEEP, work with manufacturers and retailers to intensify the manufacture and distribution of lighting products that have not yet been accepted as well as the spiral CFL. In particular the emphasis will be on specialty bulbs, for example dimmable and three-way technology, and on fixtures including the higher end product found in lighting showrooms as well as mass-market fixtures.

Marketing Strategy: The Companies plan to participate in a consumer marketing campaign in conjunction with the marketing efforts for the NEEP Regional

ENERGY STAR Lighting Initiative. Print and media advertising will continue. Supplemental marketing featuring ENERGY STAR lighting will be done through home shows, open-houses, consumer “home” magazines, newspapers, television and cooperative advertising with retailers.

Special events provide good opportunities to broaden education to consumers and will be executed to supplement retailer efforts. The SmartLiving Center displays ENERGY STAR products available at local stores and serves to demonstrate and educate consumers regarding ENERGY STAR lighting. CFLs and energy efficient lighting fixtures will continue to be offered through the SmartLiving Catalog.

Incentive Strategy:

Incentives for the remaining rebates will be designed with the intention of setting coupon levels high enough to gain the attention of the buyer in order to influence their buying decision. In time, as energy efficient bulbs and fixtures gain a larger market share, the Companies’ rebate amounts will be gradually eliminated as simultaneous efforts toward other marketing incentives, including potential buy-downs, stocking incentives and manufacturer incentives are further developed. This strategy is consistent with regional efforts currently being promoted. The direction of the incentive is to be flexible, controllable and strategic.

New Program
Issues:

The Companies plan to build off the significant momentum to buy efficient equipment by working with trade allies. To address issues in SWCT, the Companies plan special promotions in that area. Efforts in SWCT will be in conjunction with the SmartLiving Centers exhibits and the CBP.

ENERGY STAR Homes

Objective: The overall goal of the ENERGY STAR Homes program is to increase builder and consumer awareness and understanding of the benefits of energy efficient building practices, and to effect permanent market movement to more energy efficient residential construction in the State of Connecticut. A key objective is to facilitate improvements in the building energy code and to develop and maintain the linkage between utility energy efficiency programs and building energy code upgrades in residential new construction.

Target Market: The Companies will target new residential construction projects of all types including single and multifamily dwellings. In addition to prospective new home buyers, key market actors to be targeted include developers, builders, real estate agents, mortgage bankers, appraisers and building officials. Furthermore, the Companies will target appropriate agents of single and multi-family housing for low-income families, including Public Housing Authorities, community development entities, and organizations such as Habitat for Humanity.

Program Description: The ENERGY STAR Homes Program is part of a national energy efficiency campaign sponsored by the Environmental Protection Agency (EPA) and the Department of Energy (DOE). It was created to help home builders and buyers design and construct homes that use substantially less energy than homes built with standard construction practices. Beyond the marketing logos and program guidelines provided by the above federal agencies, the Companies' activities center on active, ongoing participant recruitment and training (covered below in the Marketing Strategy section), home certification, and the provision of incentives.

Home Certification – an ENERGY STAR Home is one that scores at least an 86 on the Home Energy Rating System (“HERS”). The HERS scoring mechanism is one that rates the home by assessing the building components' energy efficiency value as well as inspecting and testing the overall performance as specified in the plans.

Incentives - The Companies offer incentives to program participants in order to overcome market barriers to participation.

Custom Builder Incentive - The Companies offer developers and builders incentives to build ENERGY STAR Homes that are based on builders' individual needs.

Lighting - for each home the Companies will provide hardwired, ENERGY STAR lighting fixtures, three of which can be high efficient, low some bath fan/light combinations, with a maximum total incentive cap. The bath fan/light combinations are an excellent way to help

participants meet the program requirement of mechanical ventilation thereby promoting adequate indoor air quality according to EPA guidelines.

Appliances - The Companies plan to use the concept of an "ENERGY STAR Kitchen", perhaps as a builder option, to encourage the installation of more energy efficient appliances. The Companies will offer incentives for energy efficient appliances.

GFX Heat Recovery Coil - This device when used in conjunction with an electric hot water heater can provide energy savings by capturing heat from home drain pipes. (The GFX incentive is available only for electric water heaters.)

Central Air-Conditioners - The Companies will provide rebate incentives targeting a substantial portion of the incremental costs for participants meeting the agreed upon SEER and EER thresholds. There may be an increase in the national efficiency standard which may necessitate a subsequent adjustment to program requirements.

Marketing Strategy:

The ENERGY STAR Homes program is marketed to generate both a "pull" for these homes through mass marketing to customers as well as a "push" to developers and builders through face to face contact.

Targeted marketing may include newspaper, magazine, electric bill inserts, radio, and TV.

Face to face contact will be accomplished through agents of the Companies and involve presentations, field training and demonstration, home shows, and seminars at the SmartLiving Centers.

In 2003, the Companies will include a rebate for Geoexchange systems as part of its ENERGY STAR Home program in recognition of the close relationship of these programs. For example, customers in the Geoexchange are required to build to the ENERGY STAR Homes standard and are eligible for rebates and incentives under that program as well.

Incentive Strategy:

Incentives are designed with the intention of overcoming market barriers by increasing the awareness of the benefits of ENERGY STAR Homes among consumers, builders, lenders, realtors and other market players; by increasing the number of builders who are qualified to build ENERGY STAR homes, and increasing the market share for the program. The program offers various incentives for the purchase and installation of appliances such as refrigerators, lighting and bathroom ventilation fans. There are also incentives for GFX Heat Recovery Coil, and per ton incentives for central air conditioners meeting the

SEER and EER thresholds. In addition, the program currently provides the HERS certification to ENERGY STAR qualifying homes.

New Program Issues:

Now that this program is established, the Companies are exploring new factors which may influence the future of efficient new construction. For example, there is a potential for federal tax credits for efficient construction practices. In 2003, the Companies will initiate a planning process to consider this and other factors which will guide this program to the next level of market transformation. There may be a need to request a technical session with the Department in the summer of 2003 to discuss the next generation of this program.

In 2003, along with the Energy Star Home rating, CL&P will pilot an alternative residential new construction offering called Code Plus. This new offering will focus primarily in SWCT and will be streamlined from the existing Energy Star Homes rating procedure. Relying on the state's building code standards, Code Plus homes will be required to attain a state energy code score which is higher than the minimum required in homes already.

Residential Heating and Cooling

- Objective:** To reduce energy use and system peak demand through residential central air conditioning system improvements. Another objective is to improve indoor air quality.
- Target Market:** This program targets residential HVAC installations in new and existing homes. Equipment efficiency upgrades will be promoted to all Connecticut customers purchasing new systems or replacing existing central air conditioning units that are failing or have failed. In SWCT, the program will also identify and retrofit inefficient existing systems (early retirement), similar to the efforts during the summer of 2002.
- Program Description:** This program was developed in response to Order No. 10 in the May 29, 2002 Decision Docket No. 02-01-22. This is a comprehensive program which has several components to it. It is a continuation and expansion of existing residential HVAC program efforts, and it includes a prescriptive component for the replacement market in all parts of the state, a retrofit approach for SWCT, and a systems approach for the replacement market in SWCT. CL&P and UI will offer the various components of this program as appropriate to their own service territories.

For the prescriptive component for the entire state, CL&P and UI will jointly offer incentives for selected efficient (high SEER and high EER) HVAC equipment to all respective residential customers and HVAC distributors. Incentives will be set to help offset the incremental price of upgrading a new or replacement air conditioning or heat pump system. For 2003, the companies will promote the ENERGY STAR brand and equipment (and efficiency levels), with emphasis on high EER units.

Secondly, in the summer of 2002, the Companies also began a retrofit program which will be continued as a subset of this program solely for reducing system demand on certain electric circuits in southwest Connecticut. This focus will have different incentives. Rebates from these two programs cannot be combined.

Qualifying Targeted Existing Equipment for Retrofit

- 1) Existing equipment must have been installed prior to 1992.
- 2) Central air conditioning and central heat pump systems in residentially classified buildings.
- 3) Less than 9 SEER and/or 8.1 EER.
- 4) System must be operational.

Qualifying Replacement Equipment for Retrofit

- 1) Equipment must meet minimum SEER and EER thresholds.
- 2) Equipment must have a thermal expansion valve (TXV).
- 3) Air handler and condenser and must have an American Refrigeration Institute (ARI) rating and be matched according to those standards.
- 4) The incentives offered under this program element will be prescriptive and are contingent on certain installation criteria including proper sizing, appropriate refrigerant charge, and sufficient airflow across coils.

The Companies plan to directly engage and negotiate with manufacturers and their distributors to develop cooperative promotions designed to leverage program investments and access the resources and marketing expertise of these industry/market actors.

Thirdly, the Companies also plan to supplement the equipment incentives in the SWCT area with comprehensive HVAC system installation services designed to improve the performance and efficiency of the installed system (specifically including reducing duct/distribution system leakage and verifying control strategies). CL&P and UI will work with HVAC equipment manufacturers and their distributors to identify, train and equip preferred or qualifying contractors to provide the comprehensive, performance-tested HVAC system installation services.

A/C Tune Up:

The Companies will develop a program utilizing existing HVAC contractors to send out certified and trained technicians to test, diagnose and tune up residential air-conditioning systems per the requirements and protocols developed by the Companies. HVAC contractors would also inspect duct systems before or after tune up.

All work protocols will be consistent with the pursuit of best practices as described above in the installation services discussion. For example, measured A/C parameters include refrigerant liquid pressure, drybulb evaporator temperature, refrigerant suction line pressure and temperature, condenser dry bulb temperature, the return air wetbulb temperatures, condenser air entering temperature, liquid line temperature, refrigerant added or removed.

Duct Sealing:

There are several avenues to explore to initiate a duct-sealing program. Local HVAC contractors could perform services on all new and retrofit installations of heating and cooling systems. Another alternative is to hire outside contractors to perform all work.

There could also be participation by both. Contractors would be required to perform a Duct Blaster test. This test could be done alone or in conjunction with Blower Door test.

Marketing Strategy: The equipment rebate element of the program will be marketed to residential customers with ducted central air conditioning systems through mass media, direct mail and through contractors supported by program marketing messages and materials. Cooperative marketing arrangements with manufacturers and distributors that lead to industry initiated promotions will be pursued. In the SWCT area, similar but more aggressive marketing and outreach strategies will be employed, including cross-program referrals as part of the Community Based Projects' umbrella offering.

Incentive Strategy: Statewide equipment rebates similar to those offered in 2002 will continue for 2003. These rebates are based upon incremental costs and incremental energy savings because the customers are already in the market for a new or replacement system. The incentive offer will specifically be enhanced to promote ENERGY STAR equipment (and efficiency levels), and will emphasize higher EER systems.

In the SWCT area, the Companies plan to offer additional incentives. They will be designed to promote the purchase and performance-tested installation of very high performance/ reduced demand HVAC systems.

New Program Issues: The comprehensive, performance-tested system installation approach needs to be developed and will require significant attention and resources by the Companies if it is to be available in time to be a useful load response program for 2003.

Engaging the manufacturers and distributors needs to begin soon to provide them with (and negotiate) the program plans early enough to influence equipment production, ordering, and ultimately stocking for CT and, more importantly, for SWCT.

Refrigerator Early Retirement

Objective: To reduce system peak demand by identifying and replacing high-use full-size refrigerator/freezer models with new ENERGY STAR models.

Target Market: Residential customers in SWCT with older, inefficient refrigerators greater than 14 cf. The units must be in working order (cooling) and in-use at the time of pick-up or certification for eligibility in the program. There will be minimum electricity consumption thresholds that existing units will have to meet in order to qualify for the program. The thresholds will be based on configuration (side-by-side, top-freezer, etc), age, and AHAM (Association of Home Appliance Manufacturers) energy-use data for the existing model. While the emphasis will be on homes in SWCT, the program will not turn away anyone who contacts the companies for service outside that area.

Program Description: In many homes and apartments, refrigerators are the single largest users of electricity. Older (pre-1992) units can use 2000 kWh or more per year. Advancements in refrigerator technology have created an opportunity to capture energy savings by replacing existing units with newer energy efficient models. Some new ENERGY STAR refrigerators use less than 500 kWh annually. This program will focus on identifying and replacing existing units with new efficient ENERGY STAR models. Additional ENERGY STAR models will be considered for inclusion in the program as they become available (compact refrigerators, freezer-only units, etc).

Marketing Strategy: The program will be marketed to residential customers in SWCT with primary or secondary working refrigerators and/or freezers through mass media, direct mail, retailers, and through contractor referrals.

Incentive Strategy: Rebates will be given to customers who replace existing, working units with an ENERGY STAR model.

New Program

Issues: Emphasis will be placed on replacing units in SWCT. Efforts will be made to coordinate this program with the SWCT HVAC Programs. Planning options include use of an outside contractor to implement the program including proper disposal of the replaced units and development of a retailer based program among others.

Low Income

Objective:

The objectives of the Low Income Program are:

- To provide comprehensive weatherization, energy conservation and education services to low-income customers in order to reduce their energy burden; and
- To make utility bills more affordable, and houses more energy efficient and comfortable.

Target Market:

Customers (a) whose income is below 200 percent of the federal poverty level, (b) whose energy burden (percent of total annual income spent on energy) is high, and (c) who have not received weatherization services in the prior 18 months.

The Companies will also target low-income customers facing other challenges that may interfere with their ability to take advantage of conservation services. For example, group living settings such as residential treatment facilities, group homes, halfway houses and shelters.

Program Description:

The program offers a full range of energy conservation measures to address inefficient lighting, water heating, inefficient heating equipment, refrigeration and insufficient insulation. Measures include (where cost-effective) CFLs, lighting fixtures, water heater wraps or replacement low-flow shower-heads, low-flow faucet aerators, waterbed insulated covers, door sweeps, thermostats, weatherization and insulation, energy efficient refrigerators and freezers, broken window replacement, and burner and furnace repairs or replacements.

The Neighborhood Canvassing Program provides weatherization services to low income customers in targeted communities. Services can include CFLs, low-flow shower-heads, low-flow faucet aerators, waterbed insulated covers, energy efficient torchieres and table lamps. CL&P customers requiring additional weatherizations services will be referred to WRAP for a follow-up visit.

The program coordinates CL&P and UI funded services with those funded by the State and the Department of Energy. Some conservation services are funded by The Connecticut Natural Gas Corporation and Yankee Gas Service Company. CL&P services are administered and coordinated by the Weatherization Residential Assistance Partnership (WRAP Unit). UI's Program Administrator coordinates these services to low income communities through its vendor and/or the Community Action Agency (CAA). Such coordination enables CL&P and UI to

leverage their outreach to low-income communities and to serve more families.

The following services are delivered by contractors who have been selected through either a competitive bidding process or by a CAA:

- Conduct a fuel-blind energy survey of the household;
- Identify causes of high electricity use related to lighting and appliances;
- Identify solutions to high-use problems by working cooperatively with customers in their homes;
- Install all cost-effective energy saving measures including those listed above;
- Educate customers on use and care of conservation measures to ensure continued savings;
- Provide budget and credit counseling when appropriate and requested;
- “Piggy-back” service delivery whenever possible to services being delivered through public or utility funding, to reduce administrative costs as well as the inconvenience to the customer with multiple home visits;
- When requested conduct periodic energy conservation workshops to reinforce education provided during home visits; and
- Conduct neighborhood canvassing to targeted areas to maximize program participation.

Energy use education will be provided to every household visited and budget management and counseling will be provided when needed and requested. CL&P will also send a newsletter (“Help Line”), which contains energy education, conservation tips, safety information, and other useful resource listings to participants. CL&P and UI will also provide training for the network of CAAs that deliver direct services.

Intake will be conducted by several entities including UI’s staff, the Special Assistance group within CL&P and UI’s Collections Department, CAAs, WRAP (CL&P only) and the Department of Social Services. INFOLINE also refers customers to these intake organizations.

CAAs

CL&P and UI have an agreement with each of the CAAs within their respective service areas to offer expanded services to low income customers. These services include:

- Working with the CAAs to develop educational materials to be provided to customers at the time of audits, and installations by CAAs or subcontractors. The materials will focus on the end uses that require the highest electricity use in each home, including lighting, cooking, heating, cooling and appliances. Customers will be informed about the best ways to manage these uses more efficiently;
- CAAs will continue to expand their outreach activities in order to increase participation by customers not traditionally served;
- CAAs will continue to refer customers, if eligible, to CL&P (NU Start) and UI (Matching Payment Program) for appropriate payment assistance, winter protection, and/or to the appropriate human service agency for non-energy-related services;
- CAAs will provide fuel assistance funds if a customer is eligible and will follow up with all referred customers with telephone calls or home visits, if necessary, to ensure appropriate service delivery.

Marketing Strategy:

The following initiatives will be pursued to market low income weatherization programs:

- Both CL&P and UI will continue to take advantage of the broad awareness among Connecticut citizens of the availability and expertise of INFOLINE and build on a well-established, highly respected organization. Specifically, build on INFOLINE's visibility and marketing of the 211 emergency help telephone number. (Both Companies still refer customers to 211 for assistance when a customer is in need of a service neither company provides.)
- Expand outreach to CAAs, social service agencies, mental and public health agencies, senior citizen organizations, family welfare agencies, public housing authorities, half-way houses, churches, mosques, synagogues, and the Connecticut Association for Human Services to disseminate the information necessary to reach the target market.
- Simplify the message delivered to all entities and to the target low-income population to maximize understanding, and therefore participation.
- The WRAP unit provides information and clarification on any of the weatherization services provided by CL&P. UI's Program

Administrator provides this information.

- The WRAP unit will administer recruitment mailings for CL&P in coordination with the CAA. UI's Program Administrator provides recruitment listings for vendor and CAA.

Specific marketing tactics for low-income customers will include the following:

- CL&P will publicize the program in the newsletter "Help Line", which is mailed to low-income, elderly and disabled customers;
- CL&P and UI will continue the "Good Neighbor Energy Calendar" that provides energy tips and publicizes the program; and
- CL&P and UI will provide bill inserts advertising availability of the program to eligible customers.

Incentive Strategy:

Incentives are designed to pay for 100 percent of all measures that are cost effective regardless of heating or domestic hot water fuel source. Measures included in the program are lighting, low-cost water measures and replacing tenant owned refrigerators to maximize the potential energy savings. There is a co-pay requirement for landlord owned refrigerators.

New Program Issues:

Research is currently being considered to incorporate a blower door guided weatherization component and an enhanced onsite audit program for the CL&P program. Possible program changes are intended to provide a more detailed and thorough offering of conservation services to eligible customers. UI currently provides blower door testing for total electric customers.

eesmarts

Objective: The vision of the energy education program is to develop an energy conservation ethic among students encouraging both students and their parents to incorporate energy conservation practices in their schools and homes.

This vision incorporates a short and long-term objective. The short-term objective is to complete the Grades 6-12 curriculum development as soon as practicable. With the completion of these grades eesmarts will have a K-12 curriculum offering to UI and CL&P territory schools. In each grade students are taught about different energy topics, conservation and energy efficiency and how these subjects affect their lives at home, at school and in the community.

The long-term objective of the program is to create a demand for the knowledge of energy efficiency, create the infrastructure to supply the demand and then support the market.

Target Market: The energy education program will target the primary and secondary students (grades K-12) throughout UI and CL&P territories.

Program Description: eesmarts is a curriculum-based program which currently includes a Grade K-3 dinosaur series. This series includes a big story book with unique characters that teach children about energy and efficiency, a comprehensive teacher guidebook that gives teachers detailed lessons and background information, and a classroom poster that reminds them of the behaviors they have learned.

The Grade 4-5 curriculum is an experiment and activity based box set. Teachers can use these lessons to teach their students about electricity, fossil fuels, renewable energy, reading electricity bills and understanding electricity usage.

The middle school and high school curriculum will contain the same messages in age appropriate detail. All portions of our curriculum are compliant with the CT State Department of Education framework, National Science Standards and CT Mastery Test skills (where appropriate).

A long-term objective is to develop strategic alliances that will ultimately influence the State Board of Education to include energy conservation education as a mandated component of a student's curriculum. UI plans to assume the lead responsibility for development of a long-term strategy for a statewide energy education program. Such strategies will include, but not be limited to, the

development of the necessary statewide infrastructure to embrace and support energy efficiency education in grades K-12. The eesmart program is integrated into existing curriculum through modules which are supportive of the state's Mastery Test, the State Framework, and the National Science Standards.

In addition, other alliances with Federal and State agencies like EPA, DOE, Rebuild America, State Board of Education, Office of Policy & Management (OPM), and the Connecticut Energy Council for Teachers (CONNECT) will be developed. The success of these alliances will be instrumental in achieving the long-term objective of a statewide energy education program.

Marketing Strategy:

The energy education program will be marketed by the Companies' Community Relations departments, account executives, the contractors for the program, their partners, and web sites. The primary audiences for the marketing strategy are: curriculum developers, superintendents, teachers and other education leaders, as well as the media and public officials. In addition to direct marketing efforts, UI and CL&P are attending various teacher association conferences and meeting and affiliating with area museums and parks. The SmartLiving Center is an integral part of the program.

Community Based Program (“CPB”)

Objective: Increase the adoption of energy efficiency measures by using a community-based pilot approach in SWCT in 2003 and 2004.

- Build enthusiasm and establish an energy efficiency and conservation ethic within SWCT.
- Create an “umbrella” conservation identity under which all of the Companies’ programs and promotions can be implemented.

Target Market: The CBP will focus on small commercial and residential (including low-income) customers within key areas of SWCT, as well as on schools and other municipal buildings. However, the CBP will provide a broad range of services to all segments of the community through the utilities’ current programs.

Program Description: The CBP will target key areas in SWCT for efficiency and resource conservation with a unified message that is supported by community officials and is promoted to businesses and residents of the community. A community structure will coordinate targeted efforts over a period of 18 to 24 months by focusing on the following:

- Electric efficiency;
- Resource savings such as water, natural gas and oil;
- General energy-related safety;
- Housing improvements for low-income residents.

The community-based structure will have flexibility on how to implement and promote the program, such that the exact nature of the program will depend on what the selected areas want to do.

The CBP will be implemented by a variety of entities, including municipal officials, the utilities, private contractors and energy service companies and interested local businesses, requiring a high degree of cooperation and collaboration between and among the implementers. The CBP will primarily promote participation in the Companies’ existing energy efficiency programs, but will also provide enhanced and innovative ways for the community to save other resources.

The CBP will coordinate with other economic or environmental improvement activities being undertaken in the community. These could be associated with a number of different initiatives, including but not limited to, US EPA’s ENERGY STAR Buildings, Green Lights and Rebuild America, or other utility-sponsored efforts to make businesses more competitive and efficient.

The CBP will enlist civic organizations such as the local Chamber of Commerce, Lions Club, Rotary, Civitan and other civic organizations,

to disseminate education and information, and to help sponsor “energy efficiency” and/or “environment” days in the community to promote the Community Based Program.

Marketing Strategy:

The Companies will work with community leaders and volunteers on a coordinated campaign to raise the level of consciousness among the citizens in the pilot community through an education and awareness campaign. These efforts will be coordinated with ongoing consumer education about electric industry restructuring and the benefits of managing energy use efficiently in order to minimize costs and protect the environment. The messages will also remind customers that they are paying for these efforts through the system benefits charge on their electric bills.

In addition to promoting its energy efficiency programs through normal channels, and using respected community leaders to promote the CBP, the CBP will include sponsoring and participating in community events that could include energy fairs, ethnic festivals, public building openings or renovations, workshops for high school students in efficiency or environmental skills, craft fairs, or any other activity where messages about energy efficiency and environmental stewardship could be promoted. Torchiere turn-ins, demonstrations of efficient and renewable technologies, information on recycling, how to reduce energy and water consumption or improve water quality, and information on C&LM programs could be a part of each of these types of events.

The messages will be reinforced through school curricula like the eesmarks existing school program where students can learn to save energy and the environment. Programs in the community parks that promote the environment and water conservation may also be included.

These efforts could be tied to a community recycling effort, making the connection between re-use and the saving of scarce resources. In addition, household hazardous waste collection could be included. The Companies also intend to integrate their efforts to the extent practicable to the ENERGY STAR and the Rebuild America Programs.

New Program Issues:

In 2003 and 2004, the Companies plan to provide a refrigerator retirement program and the comprehensive HVAC program in the SWCT area. These could be integrated with the CBP. They also plan to integrate this program with SmartLiving Center and/or exhibits in SWCT which will be set up on a short term basis and then moved from place to place.

Energy Conservation Loan

- Objective:** To provide financing to customers who would otherwise find it difficult to fund C&LM measures.
- Target Market:** Owners of residential single and multifamily buildings with an average annual income below 115 percent of the median income in Connecticut.
- Program Description:** This is a state mandated program subsidized by Connecticut utilities that offers favorable interest rates for loans designed for energy conservation. This program is available for all fuel types. Interest rates are based on the annual income of the owner, family size, and the town in which the house exists. Owners of one-to-four unit dwellings can receive loans of up to \$15,000. Owners of multifamily properties of five or more units can receive loans of up to \$2000 per dwelling with a cap of \$60,000 per building through the Multifamily Energy Loan Program (MEL). The Companies subsidize these loans so that low interest rates (6 percent) are available.
- Connecticut Housing Investment Fund (CHIF) administers the program for the State of Connecticut. Homeowners meet with their CHIF loan officer and then customers arrange for the measures to be installed using moneys secured through the loan.
- Marketing Strategy:** The state Department of Economic and Community Development (DECD) and CHIF are the primary marketers of this program. In addition, the Companies market this program to all new service hookups and at the SmartLiving Centers.
- New Program Issues:** The Companies plan to promote the program to reach a wider pool of potential candidates by reaching audiences unfamiliar with the program. The Companies will also evaluate integrating ENERGY STAR washers and refrigerators into the program.
- Program Evaluation:** In response to Order No. 13 of the Department's Decision dated May 29, 2002 in Docket 02-01-22, the following program evaluation is offered:
- The Energy Conservation Loan program (ECL) provides financing at below market rates to single family and multi-family residential property owners for the purchase and installation of cost-saving energy conservation improvements. Single family properties consist of 1 - 4 units and multi-family properties are 5 or more units. The program is administered by CHIF and is funded by DECD.
- The following are eligibility requirements for single family and multi-family property owners:

Single Family

- Borrower must be a titleholder and Connecticut resident.
- No energy audit required.
- Mortgage recorded on the Land Records and agreement signed not to further mortgage property.
- \$400 minimum loan amount, \$15,000 maximum loan amount.
- Repayment of loan is for maximum of 10 years.
- Maximum income is 115% of the area median income (AMI) by family size.
- Interest rate is 1, 3 or 6%. Rates vary according to the borrower's family size and AMI.

Multi-Family

- Borrower must be a titleholder and Connecticut resident.
- Energy audit required and measures being financed have to indicate a payback that exceeds the monthly debt service on the loan by a minimum of 10%.
- Mortgage recorded on the Land Records.
- \$2,000 per unit minimum loan amount, \$60,000 per building maximum loan amount.
- Repayment of loan is for maximum of 10 years.
- No income requirements.
- Interest rate is 3% if majority of tenants are low income, otherwise interest rate is 6%.

The following are energy efficiency measures eligible under the program:

- Automatic Set-Back thermostats
- Caulking and Weather-stripping
- Insulation
- Heat Pumps
- Replacement Heating Systems
- Replacement Roofs
- Replacement Windows
- Solar Systems and Passive Solar Additions

The ECL program requires the borrower to select his/her own contractor. CHIF encourages the borrower to obtain multiple bids and verify that the contractor has a current license to do business in Connecticut. Ninety days following the loan closing, the borrower is required to submit written evidence that the measures outlined in their Loan Commitment Letter have been installed and the contractor paid. The borrower submits a Work Completion document signed by the contractor and proof of payment. The state does not require a post-

completion inspection. Inspections will be done by the state if borrowers fail to submit post-completion documentation.

Each year an independent auditor completes a SAS 70 program audit. The audit reviews the internal control structure policies, procedures and control objectives provided by CHIF. The audit does not address energy cost effectiveness.

In 2002, UI will pay a subsidy of \$75,000 to the DECD for the fiscal year ended June 30, 2002. The CL&P payment will be \$207,000.

The Companies found that the features of the program are primarily targeted to non-electric improvements. Since the primary features of the current conservation programs are focused on electric energy savings, there is no overlap between this program and the current C&LM offerings of the Companies.

The Companies believe that the most beneficial way to work with this program is to increase awareness in the target market as part of the ongoing marketing activities of the current C&LM programs. Therefore, the Companies will expand their marketing efforts in 2003-2004 to include the Energy Conservation Loan Program.

COMMERCIAL AND INDUSTRIAL (“C&I”) PROGRAMS

C&I RFP

Objective: To promote competitive market development in the C&LM industry by encouraging third parties to bid to undertake C&LM projects on a competitive basis. The C&I RFP program is aimed at energy efficiency potential from C&I and residential projects that are not participating through other existing C&LM programs.

Target Market: The minimum C&I customer size is 350 kW of demand and the minimum project energy saving is 100,000 kWh per year or 100 kW per year (can be aggregated sites). Customers of CL&P and UI, energy service companies and other third party service providers representing customers are eligible to participate in this program. Special emphasis will be made in SWCT by offering special bids during 2003 and 2004.

The respondents to the RFP can be any customer, organization, group or individual who contracts with CL&P or UI to provide energy savings from an approved energy efficiency project. It is expected that bidders typically will be of two types: 1) customers with significant in-house technical capability, or 2) customers allied with firms that specialize in implementing energy efficiency projects and have a staff of professionals trained to identify energy efficiency opportunities, calculate potential savings, design system modifications, manage construction and installation of energy efficiency measures, and measure energy savings.

Program Description: The program offers incentives for measurable energy savings achieved by the installation of energy efficiency measures as specified in a project agreement. Eligible improvements include energy efficient equipment, products, and measures that are cost-effective. The estimated savings are verified using approved protocols. The estimated savings are measured from a baseline that is established either by the minimum code efficiency or what the customer would install without utility intervention.

Some eligible measures include replacing standard fluorescent lighting with high efficiency fluorescent lighting, installing variable speed drives on motors, installing lighting controls to reduce lighting operating hours, and replacing low efficiency air conditioning equipment with high efficiency equipment.

Measures that are not eligible include any new construction or major renovation projects, any power producing project such as cogeneration, and -- except for renewable energy -- switching from electric energy to another fuel (fuel switching).

Because one of the program's goals is to assess the degree to which projects require incentives, this program will not have published incentives. Each proposal will need to identify the required incentive amount. All bids are evaluated based upon a comparison of energy savings and other price and non-price variables. Non-price variables include such factors as whether the project includes items other than lighting (HVAC and process) and whether the environmental impacts reduce on-site emissions or waste stream impacts. All projects must be qualified on the basis of established cost-effectiveness criteria.

The RFP solicits responses for proposals in two tracks, a Project Track and a Study Track. The Project Track seeks proposals that can be developed in a short period of time and still have sufficient detail to accurately estimate energy savings, project costs and other parameters. The Study Track seeks proposals for projects which appear to have sufficient energy savings but need additional study due to complexity, engineering study costs or other reasons.

Marketing Strategy: CL&P and UI have a list of potential bidders and key customers whom the Companies contact through the mail, in person and over the phone. The Companies also market through newspapers and their websites. Collateral materials are available to educate these groups on the RFP Program. Potential bidders are invited to "informational meetings" and "bidder's conferences" to learn how to participate in the program

Incentive Strategy: Incentives are intended to be market driven in that bidders (or potential participants) request the incentive level that is needed to implement a retrofit or replacement energy efficient project. In this strategy, competition is achieved by having a bidder's project compete for the available incentive dollars which typically results in the incentive requests exceeding the budgeted funding. However, customers this year will be required to pay a portion of the project's implementation costs.

New Program Issues: CL&P and UI began to implement this program jointly in 2000 and plan to continue joint implementation in 2003 and 2004. In 2003 and 2004, the Companies will be conducting three joint bidding rounds that will be focused solely on SWCT and two CL&P service territory bidding rounds. UI anticipates that the increased UI incentive pool resulting from the three SWCT rounds will stimulate additional interest in the RFP program among UI customers and trade allies and promote greater competition. The projects accepted in SWCT will need to meet the minimum kW reduction as well as the kWh requirement.

Also for 2003 and 2004, commercially available renewable technologies will be eligible for consideration and residential projects meeting the kW and kWh reduction thresholds may compete with the C&I projects on an equal footing. Further, the utilities will be examining ways to increase the amount of competition in each round.

Small Business Energy Advantage

Objective: To provide cost-effective, turnkey C&LM services for small business customers.

Target Market: All Commercial & Industrial (C&I) customers, excluding municipal and government accounts with an average 12-month peak demand of 100 kW or less are eligible for this program. In 2003 and 2004 plans are to emphasize SWCT.

Program Description: The Companies provide (through a network of approved contractors) direct or turnkey services to minimize the amount of effort required for the customers to improve efficiency operations. These direct services include energy assessments and installation of measures. Typical projects range from \$4,000 to \$10,000 in total cost.

Because financial constraints are one of the primary barriers for this market, usually there are no up-front customer costs. The Companies pay incentives for relevant energy-efficiency measures within cost-effectiveness constraints. To cover the customer's share of the costs, Energy Advantage offers a zero-percent financing option to credit-qualifying customers. The loan repayment term, which is determined by the payback on the project, is set at a level which normally will provide the customer with a positive annual cash flow based upon the estimated energy savings resulting from measures installed.

Further, this program includes an educational component to inform the customers of the benefits that can be achieved through energy efficiency efforts.

Marketing Strategy: This program will be marketed through the contractor network and targeted direct mail. A joint brochure has been completed.

In 2003 and 2004, increased marketing will take place. The Companies will explore a variety of additional marketing activities such as: targeting specific industries or neighborhoods, and working with trade groups, chambers of commerce, the Connecticut Department of Economic and Community Development and town officials. Based upon exploration of these additional avenues, those which offer promise will be implemented. Additionally, the program will be marketed through the Community Based Program.

Incentive Strategy: Incentives for lighting measures are prescriptive and capped within cost-effectiveness constraints. Incentives for non-lighting measures are custom-designed within cost-effectiveness constraints. In addition to the incentives, the Companies offer zero-percent financing where

the customer's share of project cost can be paid in tandem with their utility bill (i.e., one check).

New Program

Issues:

Both Companies are increasing the budget for this program in 2003 and 2004 in order to serve more of the large market potential and specially allocating a large budget share to SWCT. In addition, there will be efforts to obtain both kW and kWh savings in this program in SWCT. In SWCT, CL&P plans to add a new retrofit HVAC portion of the program.

C&I New Construction/Energy Blueprint

Objective: The program is designed with three primary objectives. The first and most important is to minimize lost opportunities in new construction and renovation and introduce energy efficiency concepts to the architect/engineering (A/E) community, trade allies, building contractors, commercial realtors, customers, etc. Second is encouraging the A/E community to consider comprehensive energy efficiency alternatives as standard practice. Demonstrating the benefits of selecting efficient options during the design stage is the third objective.

Target Market: The target market is specifically new construction and major renovation projects within the C&I sector. This program offers a series of services and incentives based upon the proposed building's complexity, energy savings potential, scope of work, and the desire of the owner and his design team to participate.

There are two tracks that a project can follow, either Prescriptive or Comprehensive. The Prescriptive track is generally for smaller, nonresidential buildings, usually less than 50,000 sq. feet in size or smaller projects with limited conservation opportunities. The Comprehensive track is generally available for larger, nonresidential buildings in early design stages with numerous conservation opportunities. Generally, the Comprehensive track focuses on larger facilities with more complex energy-efficiency options and requires an approved modeling analysis.

Program Description: Technical and financial assistance from design through construction. Technical specialists provide options and recommendations. Implementation is by the customer.

Marketing Strategy: This program will be marketed both to professionals in the construction business and to customers. It is expected that efforts to customers will focus on the prescriptive component of the program, while the efforts to reach professionals will focus on the comprehensive portions of the program.

For architects, engineers, and construction managers the Companies make personal contacts and presentations at professional meetings. In addition, the Companies may obtain mailing lists of industry professionals for direct mail marketing and also utilize print ads in professional publications. Use of construction activity reports allows the Companies to have direct contact with designers or other construction business professionals at the early stage of a project when it is timely to incorporate energy efficiency at the design stage.

Incentive Strategy: Incentives are based on the difference between the standard efficiency of a measure or technology and the high efficiency alternative. Typically, the standard efficiency option is installed if there is no utility involvement. Further, such incentives can be prescriptive or non-prescriptive. Incentives are based upon buildings being designed to a certain standard and not set for specific technologies.

Design Team Incentives – The companies utilize a variety of incentive mechanisms such as Brainstorming Honorariums, Design Incentives, and Design Grants to compensate the Design Team. These mechanisms are designed to accomplish two important stages in energy efficient design: (1) they encourage a customer and their Design Team to involve the utility at the earliest possible stage of construction, and (2) they encourage the customer’s Design Team to improve the overall energy efficiency of the project by using high efficiency alternatives. These interactions provide opportunities to impact the standard practices of these key market players.

New Program
Issues:

The Companies continue to emphasize this lost opportunity program and in 2003 and 2004 expect its activity level to keep pace with changes in the new construction market. In addition, special consideration for peak demand reduction may be developed, especially in SWCT. Technologies that are being considered are fluorescent lighting with dimmable ballasts, building management systems capable of specific load management, and thermal storage. The Companies will also be exploring new emerging technologies in this program and coordinate marketing and program delivery with the Load Management programs.

There may also be special considerations for installing renewable resource technologies. The two types of renewable technologies being considered are photovoltaic and wind power. The Companies will develop standard cost-effective incentives for mature renewable resource measures.

Operations and Maintenance RFP

Objective: To improve Operations and Maintenance (O&M) practices through one or more third-party initiatives which will lead to sustained energy savings in facility O&M. The program was initiated in late 2001 with a request for proposals and is continuing with the implementation of the selected proposals in 2003.

Target Market: Commercial and industrial customers are the target market for the implementation phase of the program.

Program Description: A Request for Proposals was issued in the fourth quarter of 2001 which resulted in 22 proposals being received. The proposals were evaluated and nine were selected for the second stage interview process. Of these nine proposals three were selected to move to the final stage of detailed proposal development.

Two programs will assist customers in establishing management systems for energy that will improve the information available to management and assist in evaluating and understanding the value of energy efficiency and load management during financial decision making. In 2002 these programs were targeted to Southwestern Connecticut part of the Companies' focus in that area and this focus will continue in 2003.

The other program which is planned to be funded in 2003 deals with developing training and certification to increase efficiency in the compressed air systems operation areas. In this program, national and regional trade associations are developing the training to be offered as part of their ongoing training programs. This program will also leverage efforts by the DOE and energy efficiency programs in other states to increase market penetration.

Marketing Strategy: The program is now in the third-party implementation phase in which the program implementers, with the assistance of the Companies will target appropriate market participants in each of the three program areas.

Incentive Strategy: Incentives or other reimbursements will be tailored based upon the specific nature of each proposal. Among proposals of merit, the Companies will favor those with significant cost sharing with other parties and those with lower costs.

New Program Issues: The Companies will continue to work with the third-party program implementers to foster the development of the sustainable aspects of each of the three program areas.

CHAPTER THREE: CL&P-SPECIFIC PROGRAMS

RESIDENTIAL PROGRAM

Residential Audits

- Objective:** The goal of the program is to provide quality audit services to customers while educating them about energy saving measures and practices.
- Target Market:** Non-low income Residential Customers using electric or oil heat.
- Program Description:** A direct descendant of the CONN SAVE program, which was disbanded in 1990, this program provides on-site home energy audits, including low cost, unbiased information on ways to lower energy consumption, and installation of electric water heating measures including water heater tank wraps, pipe wraps, and low-flow shower heads. Weatherization, water heating conservation measures, and lighting measures which are determined to be cost-effective are also installed at the time of the audit, depending on the electricity usage at the unit.
- A contractor goes to homes of customers requesting audits. The audit generates a home energy rating; then the contractor performing the audit offers energy-saving advice and technical assistance to enable the customer to implement conservation measures.
- In addition, an on-line audit is available at the Company's website.
- Marketing Strategy:** The program is marketed to interested customers through customer service centers and at the SmartLiving Center.

COMMERCIAL AND INDUSTRIAL PROGRAMS

C&I Custom Services

Objective: The major goal is to effect energy efficiency by being involved in the initial energy using equipment purchase decisions. To this end, the Company will endeavor to identify and support the implementation of all available cost-effective measures for every conceivable end-use by offering services tailored to customers' individualized, specific needs.

Target Market: Existing C&I customers of all sizes with the means of identifying specific electric energy-efficiency opportunities. In 2003-2004, CL&P will be focusing especially on SWCT.

PRIME audits are available to industrial customers in the SIC classification range of 2000 to 3999. PRIME provides a productivity audit to achieve greater manufacturing efficiencies through more efficient, streamlined processes and waste minimization.

Program Description: The Company provides focused studies for customers who are not certain which measures they want to install as well as focused studies for customers who have a specific project in mind. Incentives are paid for those measures that are cost-effective. Implementation is by the customer.

CL&P offers the Tailored HVAC component of Custom Services to customers that are considering either replacement or installation of new large-scale heating, ventilation, and/or air conditioning equipment. Technical expertise and incremental cost-based incentives are available for Tailored HVAC. The primary target of the service is projects with packaged HVAC equipment totaling generally over 30 tons, or any size chilled-water system. Smaller packaged equipment projects are typically addressed using either Express HVAC Services or the Prescriptive Area of Custom or New Construction and Major Renovation Services (NC&MR). HVAC systems in large new construction and major renovation projects are addressed in the Comprehensive Area of NC&MR with approaches similar to Tailored HVAC.

The Company continues to expand the scope and role of the traditional energy audit within the manufacturing sector to include environmental, production, and process issues through PRIME. Through this program CL&P continues to work directly with industrial customers to improve the energy efficiency of various processes, both existing and planned. Financial assistance is available.

Marketing Strategy: This program will be marketed to customers, trade allies, industry professionals, and ESCOs.

For trade allies the Company will increase personal contacts and presentations at meetings. The Company will also utilize additional print ads in trade ally publications. The Company will obtain mailing lists of professionals and send direct mail pieces to them.

For customers, the Company will tie this marketing effort to cooperative advertising with trade allies and link it to general advertising.

Incentive Strategy: Prescriptive and non-prescriptive incentives are offered. Prescriptive incentives are intended to pay for 100% of the incremental cost. Non-prescriptive incentives fall into one of two categories; "Add-On" or "Up-Grade".

An "Add-On" measure is defined as adding an optional piece of equipment to a system which improves electrical efficiency. Such equipment is not essential to the current operation of that system. Examples are energy management systems or variable frequency drives on existing injection molding machines. The incentive for an "Add-On" measure is intended to pay 50% of the installed cost subject to cost-effectiveness constraints. An "Upgrade" measure is defined as replacing a piece of equipment that is essential to the current operation with an energy efficient piece of equipment instead of that of standard efficiency. The incentive for an "Upgrade" is intended to pay up to 100%, but not less than 50%, of the incremental cost subject to cost-effectiveness constraints.

Reimbursement for Focused Study: The customer will be reimbursed for their portion of the study costs (normally 50%) when the customer installs energy efficiency measures (EEMs) which were listed in the final report and which provide at least 50% of the total estimated lifetime kWh savings. The value of the EEMs must exceed the customer's cost of the study. If the value is less than the cost of the study, the customer will be reimbursed up to the value of the installed measures.

New Program
Issues:

CL&P continues to evaluate emerging technologies for possible inclusion in the Customer Services Program. The PRIME Program is planning a focused effort with the manufacturing clusters supported by the DECD. For 2003-04, the Company will dedicate a significant share of the budget for a new lighting and HVAC retrofit component of the program for the 100-350 kW customers in SWCT. For this retrofit initiative, the Company will include a financing program for zero interest loans.

C&I Express Services

Objective: The major goal is to effect energy efficiency by being involved in the initial equipment purchase decisions in order to identify and support the implementation of selected cost effective measures.

Target Market: All C&I customers

Program Description: Lighting Rebate: For customers whose demand is up to 350 kW.

Motor Rebate: For new or replacement 3-phase motors from 1-200 horsepower.

HVAC Program: For new or replacement rooftop, split systems, terminal A/C units and heat pumps with up to 30 tons of cooling capacity.

Contractors, distributors, and trade allies, as well as CL&P, will deliver this program. Installation has traditionally been by the customer, but the Company may institute a direct-install component for small customers.

Marketing Strategy: This program will be marketed both to trade allies and to customers in a mass marketing approach where trade allies are encouraged to “upsell” energy efficient measures to customers.

For trade allies the Company will step up personal contacts, presentations at meetings, and booths at trade shows. The Company will also utilize additional print ads in trade ally publications. The Company will obtain mailing lists of professionals and send direct mail pieces to them. The motors and HVAC components are promoted through NEEP initiatives.

For customers, the Company will tie this marketing effort with cooperative advertising with trade allies and link to general advertising and advertising with NEEP

Incentive Strategy: Incentives are prescriptive and are intended to pay for up to 100% of the incremental cost of installing an energy efficient piece of equipment versus that of standard efficiency subject to cost-effectiveness constraints.

C&I Operation & Maintenance

- Objective:** To improve the operating efficiency of C&I customer equipment to bring about energy savings.
- Target Market:** All C&I customers
- Program Description:** Incentives for energy saving operation and maintenance (O&M) practices. Examples of some of the technologies covered by O&M services include compressed air system leak repairs, addition or correction of control components for efficient operation, and the cleaning of HVAC condenser/evaporator coils. CL&P provides O&M evaluation and recommendations. Implementation is performed by customer.
- Marketing Strategy:** Training seminars, mailings, and direct contact by Account Executives.
- Incentive Strategy:** Incentives are intended to pay 50% of the customer's cost in installing conservation measures that meet specific program objectives.

State Buildings

Objective: Improve the energy efficiency in state owned facilities.

Target Market: State owned and leased facilities

Program Description: Technical and financial assistance to identify and implement cost effective energy efficiency measures. CL&P administers the program under the oversight of the Department of Public Works (DPW). Independent contractors provide quality assurance reviews.

The State Buildings Program was initiated as a result of Public Act 90-221 requiring the state's electric utilities to initiate conservation investments in state buildings in order to yield electric savings of \$4 million.

Since its inception in 1990, the State Buildings Program has installed significant amounts of energy efficiency lighting and HVAC measures resulting in large savings to the State of Connecticut. Given the comprehensiveness of CL&P's efforts, much of the available cost-effective potential for energy efficiency measures has been achieved. Therefore, CL&P is expanding its efforts to devote more resources to O&M procedures and other strategies to maximize the benefits achieved from the different measures.

Program bond funding by the state ended on December 31, 1999. CL&P will continue the program at 100 percent funding where it is cost-effective to do so. If it is not cost-effective at 100 percent funding, the Company will allow the state to contribute a portion of the total installed cost, up to 50 percent of the installed cost.

Marketing Strategy: Target state buildings as identified by the Connecticut Department of Public Works.

Incentive Strategy: Incentives are intended to pay up to 100%, but not less than 50%, of the installed cost within cost-effectiveness constraints. If a project is not cost-effective at 100% funding, the Company will allow the project to go forward if the State Agency contributes a share of the costs. The State Agency's share, however, will be no more than 50% of the cost of the project.

Municipal

Objective: To provide benefits of increased energy efficiency to cities and towns in Connecticut which result in benefits to taxpayers.

Target Market: For 2003, the Company plans to continue to market its municipal program to all Urban Act municipalities, including the Distressed Cities.

Program Description: Municipalities use substantial amounts of electricity to light streets and provide power to schools, public safety entities, office buildings, wastewater treatment plants and other public facilities. With these energy needs in mind, turn-key technical and financial assistance are offered to municipalities with thoughtful and well-designed plans for energy efficient retrofit improvements to their existing buildings.

CL&P pays 100 percent of the costs associated with implementing selected, relevant energy-efficiency measures within cost-effectiveness constraints. If a project is not cost-effective at 100 percent funding, the Company allows the project to go forward if the municipality agrees to contribute the remaining balance of the project. The municipality's share, however, can be no more than 50 percent of the cost of the project.

Marketing Strategy: The process of successfully marketing a utility program to municipalities requires a dramatically different approach from that of a marketing effort aimed towards businesses or residential programs. Such an effort needs to utilize relationships and regular communications between program administrators and municipal general government personnel as well as technical professional experts.

Meaningful energy efficiency improvement projects at the municipal level are often put on hold indefinitely, or are abandoned altogether, because of the high market barriers (costs) often associated with those improvements. The Company intends to overcome these concerns and objections through an aggressive, forward-thinking outreach effort utilizing field (customer account) personnel and managerial-level direction to identify municipalities with priority projects.

Selection for participation in the program will hinge upon several criteria, including the following:

1. In order to participate in the program the municipality must sign a memorandum of understanding which broadly summarizes their responsibilities for involvement.
2. The municipality must then work with the Company to specify particular measures to be installed and funding responsibilities.

3. The municipality must have designated a single point-of-contact for the Company on all matters involving the project who is well-acquainted with the project and who is readily accessible to Company staff for communications and liaison activities.
4. The project application must be specified in adequate detail to determine the cost-effectiveness of the program measures.

Participation in this program will not preclude a municipality from applying for incremental financing incentives offered through any of the Company's other energy efficiency DSM programs such as the New Construction and Major Renovation Program, Express Service, etc.

In addition, the Company plans to work with the Rebuild America program to assess possibilities for coordination.

Incentive Strategy:

Incentives are intended to pay up to 100%, but not less than 50%, of the installed cost within cost-effectiveness constraints. If a project is not cost-effective at 100% funding, the Company will allow the project to go forward if the municipality contributes a share of the costs. The municipality's share, however, will be no more than 50% of the cost of the project.

New Program
Issues:

In 2003, CL&P will continue to work with Urban Act Towns to identify and implement projects with 100% C&LM funding. The Company plans to design a reduced incentive structure program for implementation in 2004. The new program will be offered to all CL&P municipalities and marketing will begin in 2003 to coincide with the budget process of municipalities.

Small Industrial Conservation Loan

- Objective: To provide financing for customers who would otherwise find it difficult to fund C&LM measures.
- Target Market: Smaller industrial customers, defined as less than 100 employees in CL&P's service territory within SIC 2000 – 3999.
- Program Description: Interest-free loan up to a maximum of \$100,000 per customer for energy efficient equipment replacements only. Application requirements are made through Account Representatives. Loan implementation is done by customers and a third party financial institution. CL&P provides program support and quality assurance.
- This program will continue to be funded by a past conservation fund contribution which buys down the interest to zero percent.
- Marketing Strategy: Encourage a higher market penetration of energy-efficient equipment by providing financing which supplements other program incentives for smaller industrial customers.

Connecticut Hospitals Association (CHA) Loan

Objective: To provide financing to hospitals which would otherwise find it difficult to fund C&LM measures.

Target Market: The 31 acute care hospitals in Connecticut

Program Description: No-interest loans for energy-efficiency projects. CL&P provides financial assistance through a \$4 million fund previously contributed by the C&LM fund. CL&P provides the evaluation of energy efficiency opportunities, options and recommendations; all projects are implemented and controlled by each hospital. Independent contractors provide quality assurance.

Eligible energy efficiency projects will not include any load management projects which specifically limit use of HVAC equipment that might place elderly or vulnerable patients at risk should curtailment of HVAC operation occur.

Marketing Strategy: Work with CHA to provide technical and financial assistance to encourage retrofit of existing equipment with more electric energy-efficient equipment.

CHAPTER FOUR: UI-SPECIFIC PROGRAMS

Energy Opportunities

- Objective:** The objective of the Energy Opportunities (EO) program is to improve the energy efficiency of an existing facility. These opportunities are captured by 1) exchanging functioning but inefficient equipment within the commercial or industrial environment with higher efficiency equipment; 2) improving a facility's building shell or facility's performance; 3) improving energy use or management practices; and 4) inducing efficiency where it was not previously present.
- Target Market:** All commercial, industrial, and institutional customers with a peak demand of 100 kW or greater planning projects to retrofit their facilities with UI approved energy efficiency measures comprise the target market. The program also targets customer segments with unique characteristics and needs, such as municipalities, federal and state buildings, small businesses, and economic development prospects.
- Program Description:** EO offers a comprehensive and highly flexible menu of energy consulting services to existing commercial and industrial customers in order to assist them in retrofitting their facilities with cost effective C&LM measures and technologies. The services provided by Energy Opportunities are varied and specifically designed to meet the needs of the individual customer. They include energy audits, single measure analyses, walk-through audits, energy and end-use analysis, product reviews, review of proposals submitted by contractors or vendors, cash incentives, project financing, and co-funded energy studies for advanced technologies.
- Marketing Strategy:** UI's Energy Engineers, Marketing Representatives, and Account Managers market Energy Opportunities directly to customers through face to face meetings. UI personnel use a variety of tools such as comprehensive information packets, case studies, direct mail, seminars, and trade shows to deliver the message. The marketing program is integrated with Federal, State and Regional initiatives. Active participation and involvement in the vendor community influences the building trade organizations, vendors, contractors, and energy services companies to become an extension of UI staff by delivering qualified leads for this program. In addition, UI will be integrating the program with its web-site, making { [HYPERLINK "http://www.uinet.com"](http://www.uinet.com) } an increasingly important marketing tool.
- Incentive Strategy:** Qualifying projects or Energy Conservation Measures (ECMs) can earn incentives of 30% of the project costs up to a maximum of \$.10 / kWh saved. The actual dollar amounts vary and are based on the simple payback and kWh savings. Incentive caps will be employed to make more

program dollars accessible to more customers. This incentive structure may be supplemented by integrating specific demand strategies into the EO portfolio.

New Program
Issues:

Energy Opportunities will focus on reducing demand where possible throughout UI's territory. Since UI's seventeen communities are located within SWCT, special considerations are being explored for six critical towns: Bridgeport; Easton; Fairfield; Shelton; Stratford; and Trumbull. In addition, special considerations for peak demand reduction and renewable technologies are being developed. Some of the technologies being considered for integration are fluorescent lighting with dimmable ballasts, building management systems capable of specific load management, thermal storage and solar applications.

CHAPTER FIVE: LOAD MANAGEMENT

ISO-NE Program Support

Objective: Support customers interested in participating in the ISO-NE Load Response Program with financial and technical assistance.

Target Market: Commercial and industrial customers capable of enrolling 100 kW of curtailable load, either at a single site or through aggregation of multiple facilities. 50% of this program will be targeted to SWCT, and emphasis will be placed on the preferred towns in the Norwalk Stamford sub-area.

Services Offered: To assist customers in installing the ISO-required internet-based communications system, the Companies will provide engineering and Information Technology (IT) support necessary for data recorder installations. The Companies will offer a one-time set-up incentive of \$400 - \$1,000 to cover costs for data, phone, or metering connections. Since customer communications connections for the ISO-required data recorder continue to be a barrier for program participation, CL&P will offer full turn-key installation support for SWCT customers, up to \$5,000 per site.

A technical help desk will be provided by CL&P to assist customers in using the internet-based software system. UI's Account Managers provide this service to customers.

Under a current Department of Environmental Protection (DEP) Permit, some SWCT customers may be able to run their emergency generators to reduce load off of the grid under Class 1 conditions. The Companies will provide engineering and financial support to customers interested pursuing compliance requirements.

Marketing: The program will be communicated directly through face to face sales contacts and through participation in C&I Load Management Services or other C&LM program participation.

CL&P Load Management Programs

C&I Load Management Services

- Objective:** Help customers understand how much demand (kW) they use at different times of the day. Provide the customer insight on potential load reduction opportunities and to develop a facility-specific strategy to enable customer participation in the ISO-NE Load Response program.
- Target Market:** Commercial and industrial customers who are interested in managing their demand costs and customers who can shift or reduce at least 100 kW of load. 50% of this program will be targeted to SWCT, and emphasis will be placed on the preferred towns in the Norwalk Stamford sub area.
- Program Description:** Comprehensive services include on-site assessments and enhanced metering services. In addition, the Company will provide incentives to purchase load management related equipment.
- CL&P will provide a ‘demand audit’ to identify what equipment is operating at specific times of the day. Information will be gathered using traditional sources such as nameplate data and unit equipment quantities. Direct measurement or short term monitoring of equipment loads and electrical circuits may also be conducted. To customize a load management and load curtailment strategy, CL&P will work closely with the customer to identify potential changes in scheduling or maintenance practices, and to identify non-critical loads.
- CL&P will also provide incentives and interest free loans to purchase load management related equipment, such as process control technologies, and dimming lighting systems.
- Marketing:** This program will be communicated through direct mail invitation to seminars, trade associations such as the Southern Area Commerce and Industry Association and in face-to-face meetings with customers.
- Incentive Strategy:** Incentives for qualifying equipment will be based on 100% of the incremental cost for SWCT customers and up to 50% for customers outside of SWCT.

CL&P Power Factor Program

- Objective:** By improving power factor at individual customer's facilities, the existing electrical system can be better utilized, due to the increase of kW of real load carrying capability.
- Target Market:** This program will be targeted exclusively towards C&I customers in the 52 SWCT towns, and emphasis will be placed on the preferred towns in the Norwalk Stamford sub area.
- Program Description:** The Company believes that there is considerable potential for freeing up the load carrying capacity on the electrical system by having customers improve their poor power factor conditions. Improving power factor results in more capacity to do useful work for the same kVA supplied all the way from the generator. The Company will provide incentives to defray the costs associated with the installation of capacitors on the customer side of the meter.
- Marketing:** The Company has metered data that indicates the amount of real load (kW), apparent load (kVA) and the resulting power factors for large C&I customers, and thus, can target ideal candidates for the program. Individual contacts will be made by Account Executives to promote the program. Through competitive bidding, the Company will select one or more expert firms to do an on site analysis of the amount of kVARs needed, harmonic levels and the need for filtering and switching the installation. Customers will be able to take this information and seek competitive bids for equipment installation.
- Incentive Structure:** Estimates of equipment and installation costs have been obtained from several equipment suppliers. A range of values has been developed which cover common installation scenarios. Additional incentives are offered for switching, filtering and extraordinary retrofit conditions. Based on this matrix of values, power factor correction equipment incentives will be offered on a prescriptive \$/kVAR basis.

Residential and C&I Load Management Infrastructure Development

Objective:	The objective of Load Management infrastructure projects is to implement alternative peak load management initiatives with SWCT customers unable or unwilling to participate in the traditional ISO-NE Load Response Programs in order to establish penetration into new market segments.
Target Market:	Residential and C&I customers, including low income housing. This program will be targeted on SWCT, and emphasis will be placed on the preferred towns in the Norwalk Stamford sub-area.
Program Description:	CL&P will provide incentives for cost effective SWCT projects which provide peak load kW (or kW and kWh) reductions in Residential or Commercial and Industrial applications. Load Management measures to support this market include thermostat programs, remote load control and curtailment of customer loads (e.g., HVAC, lighting, water heating, vending machines, etc.) load aggregation projects. CL&P will build on experience gained from RD&D projects performed by vendors offering similar services. Lessons learned from C&LM “Smart Thermostat” pilot programs and RD&D Load Management projects will be utilized to ensure successful and cost effective implementation.
Marketing	These programs will be marketed by emphasizing a combination of energy and demand savings to customers. In addition cross-selling via the SmartLiving catalog, ENERGY STAR home program, education/awareness program and other programs is planned.
Incentive Structure	CL&P will provide up to 100% of the incremental equipment cost of the measure considering the benefit from kW as well as kWh. Other customer incentives may also be used to encourage customer participation if necessary.

Residential Time-of-Day Rate Initiative

- Objective:** CL&P proposes a time-of-day (TOD) rate initiative focused on residential customers. The essential elements of this program are: 1) education and promotion of residential TOD rates, 2) acquisition and evaluation of residential customer load use profiles through load research metering, and 3) evaluation of residential TOD rate programs in other states and development of a recommendation for potential modifications to the Company's Rate 7. The Company will make customers aware of TOD rate options currently available (Rate 7) and will also test sample customer response to time-differentiated pricing through questionnaires and surveys. Though launched Statewide, this program focuses on customers in SWCT.
- Target Market:** CL&P residential customers.
- Program Description:** The Company proposes to develop and disseminate a public awareness campaign which educates the public about the time-differentiated price of generating and delivering electricity and encourages residential customers to take service on its residential TOD rate.
- The Company will deploy additional load research meters in SWCT to supplement load research analysis planned for the entire CL&P service territory. A randomly selected, stratified sample of the five principal strata of residential customers will be drawn for these studies. Data collected from the samples will be analyzed by stratum and location to provide updated load profiles and load blocks by time of day and season. This will allow for new data to be introduced in deliberations as to appropriate rate structures under Rate 7.
- Finally, the Company will solicit bids from expert firms to provide current estimates of residential price response based on a review of current published literature on the subject.
- Marketing:** The important educational component will include an educational pamphlet suitable as a bill insert or handout at group meetings. The pamphlet will explain why the cost of producing and delivering electricity increases dramatically when the demand exceeds normal supply. A separate piece will be developed for introduction in the k-12 school program to begin to instill an understanding of the problem in young students.

UI Load Management

- Objective:** The objective of the Load Management Program is to reduce peak electric demand. This objective is achieved by offering customer incentives for load management technologies through existing market channels and by introducing new programs or pilots targeting specific large kW end use equipment. In addition, UI will continue to participate in ISO-NE's Load Response Program (LRP).
- Target Market:** The target markets for load management initiatives include residential, commercial and industrial customers. Specific programs will be targeted to certain groups. The ISO-NE LRP will continue to be marketed to commercial and industrial customers with the capability of curtailing 100kW of load.
- Program Description:** The key feature of UI's Load Management initiatives will be in the delivery of kW reduction through the use of existing C&LM distribution channels. This approach will allow us to maximize the value of each individual contact with the customer. This approach will be utilized in the C&I and Residential market segments. They include:
1. Providing incentives for installation of kW reducing technologies in our C&I programs.
 - Qualifying technologies may include building automation technology, dimmable ballasts, thermal storage systems or other tools that could be installed that would shift load to off-peak hours.
 2. Participation in ISO-NE's Load Response Program
 - Modified program based on changes planned for Standard Market Design ("SMD").
 3. Provide a package of Residential Approaches.
 - Comprehensive HVAC Program for C&I and Residential.
 - Residential RFP with a focus on kW reduction.
 - Appliance Turn-In Programs and Timer Promotions.
 4. Residential Time of Use Program
 - Promote the combined value of time of use rates and Pool and other appliance timers.
 - Educate consumers about the potential benefits of changing consumption patterns, and allow them to develop an appreciation for the costs of on-peak power.

CHAPTER SIX: RESEARCH, DEVELOPMENT AND DEMONSTRATION

Sustainable progress in C&LM in Connecticut will continue with the vigorous support of Research, Development and Demonstration (“RD&D”) efforts to develop new technologies and related efforts to facilitate the movement of state-of-the-art technologies into Connecticut markets through field testing, evaluation, information dissemination, and innovative strategies to promote private sector involvement. The RD&D component of CL&P’s C&LM programs is strategically linked to each of the other program components, which focus on broader-scale initiatives using commercially available technologies and systems. As new technologies become available, they will be incorporated into the other C&LM programs. Both CL&P and UI are participating in the one common RD&D program. Based upon the Department’s directive in Docket No. 99-09-30 and input from the ECMB and the Policy Working Group (“PWG”) of the RD&D program, the Company has added an emphasis on environmentally clean distributed resources. CL&P will collaborate with the Connecticut Clean Energy Fund to leverage resources and co-fund environmentally clean distributed resources projects.

The RD&D program provides an opportunity for the Companies to effectively support the development of C&LM technologies that can provide broad benefits to Connecticut’s electric customers, but would not otherwise be undertaken adequately by private market participants because of long, uncertain, or diffuse economic returns. Public benefits of the RD&D program will include enhanced environmental quality, reduced energy consumption, improved system reliability, and sustainable reductions in energy costs to ratepayers across all customer classes. In addition, the program advances economic development in Connecticut, by directly supporting and encouraging the growth of research activities within the state and through public-private partnership demonstration programs which can enhance the energy efficiency, productivity and competitiveness of commercial and industrial facilities in the state.

In consideration of the capacity problems in SWCT, the RD&D program will expedite low risk demonstration projects and implement larger scale demonstrations of project technologies in SWCT. There will be a focus on residential, small C&I and low-income sectors. Candidate technologies include the heat pump water heater project, the cold climate heat pump project, and the direct exchange heat pump project. These demonstrations will be focused on projects with a high probability of success in the near term but because energy efficiency saving results from the RD&D project are not completed the extended demonstrations will be considered part of RD&D rather than transitioning into the programs.

Funding will be provided for new energy efficiency projects and distribute resources, continuing phases of RD&D projects funded in previous years, a fuel cell demonstration project in SWCT to be funded jointly with the Clean Energy Fund and a fuel cell technology advancement for demonstration in SWCT. The ECMB has approved budgeting for the fuel cell demonstration project and the multi year fuel cell technology advancement project being performed by GenCell (formerly Allen Engineering).

In summary the RD&D program plans of funding the following projects in support of the capacity constraints in SWCT:

- Extended demonstration of energy efficiency projects in SWCT such as the heat pump water heater project, the cold climate heat pump project, and the direct exchange heat pump project.
- Fuel cell demonstration project to be funded jointly with the Clean Energy Fund.
- Fuel cell technology advancement performed by GenCell (formerly Allen Engineering)

In 2003 RD&D intends to equally split the non-administrative portion of the fund between Distributed Resource and Energy Efficiency (or non-Distributed Resource) projects. Distributed Resource projects are those that will advance the state of the art in small scale, customer owned, high efficiency or renewable generation. This will often be done in collaboration with the Connecticut Clean Energy Fund. Energy Efficiency projects are those that advance or promote efficiency in the end uses of electrical energy.

Some of the administrative portion of the RD&D fund will be used to secure the services of outside consultants. These consultants will provide access to knowledge and experience on an as needed basis that will allow the RD&D fund to invest in the most attractive projects.

CHAPTER SEVEN: ACTIVITIES IN SOUTHWESTERN CONNECTICUT

Beginning for the summer of 2002, the Companies took specific actions in C&LM to support potential electricity shortages in Southwestern Connecticut (“SWCT”). The Department addressed these issues in Docket Nos. 02-01-22 and 02-04-12. In this Plan, the Companies propose to continue many of the activities begun in 2002, as well as add additional efforts to utilize C&LM funds to support that critical area. These activities will target all 52 towns of SWCT, especially the 16 priority towns designated by ISO-NE. Since UI’s territory is entirely within the larger 52 town designation, UI will be referring to SWCT as the 6 priority towns in the following section.

At this time, CL&P estimates approximately 37% of its revenues come from the 52 towns of SWCT and more than 53% of the total program is budgeted for that area. UI’s entire service territory is within SWCT. UI estimates approximately 41% of its revenues come from the 6 priority towns of SWCT and approximately 53 % of the total program is budgeted for that area. CL&P plans to expend approximately \$35 million in 2003 on SWCT with a result of approximately 42 MW in demand reduction by year-end. (Table E provides these numbers and can be found in the back of Chapter One.)

Over the past year the Department has directed UI to implement three new programs for 2003, and the ECMB has requested one additional new program. The total current budget allocation for these new programs is \$2,428,000. The new programs are as follows:

Requester	Program	Budget
DPUC	Residential HVAC	\$493,000
	Time of Use (Rate RT)	\$268,000
	Load Reduction kW Incentives	\$1,500,000
ECMB	O&M Services	\$167,000
	Total	\$2,428,000

Because UI’s budget is already fully subscribed with programs, it would be necessary to undertake dramatic cuts in many successful existing programs in order to accommodate these new initiatives. As the Department has recognized in the SWCT docket and in UI’s recent rate proceeding, Docket No. 01-10-10, all of the municipalities in UI’s service territory are located in Southwest Connecticut. Therefore all the Company’s C&LM programs will work to mitigate the constraints in SWCT.

UI proposes a portfolio of C&LM programs. The portfolio includes, but is not limited to, direct incentives. As the Department is aware, the Department’s decision directed UI to increase its C&LM budget by \$2 million annually, through the monthly transfer of \$166,667 of revenues to C&LM use. UI does not object to the transfer of these funds, but suggests that the Department consider in this docket a minor modification to the use designated in the rate proceeding decision. Order No. 6 of the rate decision provided that these revenues would be used solely for direct incentives to customers. Because direct incentives to customers is just one of many tools to implement effective C&LM programs and influence the buying habits of consumers, UI asks the Department to consider expanding the potential use of the incremental \$2 million in C&LM funds. For example, the Energy Star Appliance program effectively employs cooperative advertising with retail partners and distributors, which encourages retailers to advertise energy efficient products and sell more products with the Energy Star label. This is not a direct

incentive to consumers, but it has the same effect—getting more efficient equipment into the marketplace. Other programs, including the eeSmarts education program, are not driven by any direct customer incentives at all. Many other effective tools are available, and UI seeks the ability to allocate the additional funds in ways that will be most effective.

Therefore UI asks that the Department consider in this docket whether it would better serve Southwest Connecticut to include the incremental \$2 million as part of the overall funds available for C&LM programs, subject to approval by the Department. Because UI's service territory is within Southwest Connecticut, there is no dilution of the benefit to Southwest Connecticut. Moreover, this approach would allow the ECMB and the Department additional flexibility in determining the best use of these incremental funds each year. Finally, including the incremental \$2 million within the overall available C&LM funds would reduce the administrative costs associated with creating and maintaining a special reserve account as had been initially contemplated in the rate decision.

In this docket the Department will have the opportunity to scrutinize the Company's programs and budgets for 2003, including the new programs developed for SWCT. The approval process assures that the programs supported by the incremental \$2 million of Company revenues are effectively designed, funded and administered. Because UI reports on the use of all C&LM funds, the Department has full audit tracking of the incremental \$2 million. UI therefore respectfully requests that the Department determine that it is appropriate for the Company to include the incremental \$2 million in revenues to the overall C&LM program budgets, in accordance with the established guidelines for approved, cost-effective C&LM activities. If the Department grants this request, the Department may determine that it is necessary to reopen Docket No. 01-10-10 for the limited purpose of modifying Order No. 6 to accord with the determination in this docket.

RESIDENTIAL PROGRAMS

- The Residential Heating and Cooling program will have a strong emphasis in SWCT and special components focused solely on systems in homes of SWCT in 2003 and 2004. ***Approximately 75% of the CL&P budget and approximately 66% of the UI budget for this program will be allocated to SWCT.*** The Companies view this umbrella program as one of the most effective means in the residential area to impact capacity deficiency constraints in SWCT in 2003. Plans include offering higher rebates for high EER central air conditioning units as well the piloting of a host of new measures associated with heating and cooling systems. Examples of these new measures include the promotion of newly developed diagnostic tools that can provide HVAC contractors with information to optimize the performance and efficiency of an HVAC system. Plans also include investigating the merits of duct sealing, fans with ECM motors, etc. In addition, the Companies also believe industry training is paramount to establishing lasting change in the HVAC market and is committed to providing it.
- The Companies view the ENERGY STAR Homes program as a primary vehicle to provide lasting demand relief for SWCT, and they ***expect that approximately 34% of the CL&P budget and 50% of the UI budget will go to SWCT.*** CL&P will dedicate additional sales personnel to this area. These sales personnel have extensive experience working with SWCT residential customers and will benefit from experience in selling the ENERGY STAR Homes concept to builders, developers, and real estate agents. Special emphasis will be placed on incorporating measures and training from the Residential Heating and Cooling program.
- The Community Based Program is aimed at increasing awareness of and interest in energy efficiency by having a marketing umbrella for all of the Company's programs, with a special emphasis on residential and small business programs. ***CL&P expects 100% of the budget to be allocated to SWCT. UI has selected one of the priority towns to be the next focused community and expects that approximately 80% of its budget to be spent on SWCT.*** UI plans to reserve 20% of this program budget for use in the previous town.
- The Refrigerator Early Retirement program will emphasize SWCT in 2003 and 2004. This program will increase energy efficiency in homes by increasing the penetration of ENERGY STAR refrigerators. ***CL&P and UI expect that approximately 90% of this program's budget to be allocated to SWCT in 2003.***
- CL&P's SmartLiving Center plans exhibits in SWCT and will be integrated for CL&P with the Community Based Program to be focused on SWCT. This will allow an added focus in the area for 2003-2004 to stimulate awareness about energy efficiency. ***CL&P expects that approximately 25% of the SmartLiving Center budget will be utilized in SWCT. Since UI's Center is in the larger SWCT designation and is only one town away from the priority towns, UI is not planning to shift the activities of the Center to SWCT.***

- A large share of both the Retail Lighting and the ENERGY STAR Appliance programs will be focused on SWCT. The Companies plan to use SWCT as the primary area for promotions in these programs, and they will be promoted through the Community Based Program. Thus, it is expected that approximately 40% of the CL&P Retail Lighting budget and 75% of the CL&P ENERGY STAR Appliance budget will go for SWCT. Approximately 59% of the UI budget (for both programs) will go to SWCT.
- CL&P mails SmartLiving Catalogs to all customers in the state and expects about 20% of sales to come from SWCT. Also, the Company expects about 30% of WRAP and eesmarts to be in SWCT, and about 10% of the Loan Program.

C&I PROGRAMS

- The Small Business Energy Advantage (“SBEA”) program will have a strong focus in SWCT. ***In 2003, CL&P and UI expect that approximately 75% of the program budget will be utilized for SWCT*** with the majority of the SBEA preferred contractors focused in SWCT. For CL&P, a HVAC retrofit pilot program for small C&I customers will be implemented as part of this program. UI will target opportunities for customers over 100 kW in their Energy Opportunities program.
- The C&I RFP program will have special bid rounds specifically for SWCT. This program will offer five bidding rounds in 2003. Three of the five rounds will be dedicated to SWCT, i.e., only proposals for projects in the towns that make up SWCT will be accepted. In these three rounds, special consideration will also be given to proposals for projects in the towns designated by ISO-NE as preferred municipalities. The remaining two bidding rounds will accept proposals for projects in SWCT and the rest of CL&P's service territory. The incentive dollars allocated to each SWCT bidding round will be greater than the incentive dollars allocated to each of the "all CL&P" bidding rounds. ***These steps will result in a minimum of approximately 60% of the total 2003 RFP program budget dedicated to SWCT. Since proposals for projects in SWCT will have the opportunity to compete in all five of the program's bidding rounds, the potential exists for this percentage to be greater than 60%.***
- In 2003 CL&P will pay particular attention to customers in the SWCT area for opportunities to save kW demand and kWh in the Custom Services program. This program for existing commercial and industrial customers will take a look at virtually any opportunity to reduce electric energy consumption and demand. The CL&P account executives and regional C&LM administrators will continue to have a focus in this area. Within the SWCT area, CL&P will evaluate the benefits and costs of achieving additional kW demand savings (above and beyond the normal program achievements) from retrofitting certain measures. For 2003-2004 CL&P will also dedicate a significant share of the budget for a new lighting and HVAC retrofit component of the program for 100-350 kW customers in SWCT. For this retrofit initiative, the Company will include a financing program for zero interest loans. ***It is estimated that approximately 50% of the Custom Program budget will go to SWCT in 2003.***

- In 2003, UI will focus on reductions in kW demand as well as kWh in the Energy Opportunities Program. This program for existing C&I customers is an excellent tool to achieve retrofit reductions in energy and demand for virtually any end use technology. The UI team of engineers and account executives will focus on all C&I customers over 100 kW. Existing customer relationships will allow an effective mix of conservation projects to benefit the customers as well as the region. ***It is estimated that approximately 66% of the program budget will go to SWCT in 2003.***
- ***The New Construction Program is expected to expend roughly 37% of its budget in SWCT based on projects that are in progress.*** New Construction is viewed as a "lost opportunity program" so the Companies try to capture every project possible and believe funding is at an appropriate level for next year.
- In the 2002 O&M RFP program, two initiatives were targeted in SWCT to assist customers in improving management processes for energy and assist in energy usage evaluation. As part of the Companies' efforts in that area, this focus will continue in 2003. One additional initiative being funded in 2003 will also place an emphasis on opportunities in SWCT. ***Approximately 63% of the CL&P budget will go to SWCT in the O&M RFP program.***

LOAD MANAGEMENT

The CL&P Load Management Program consists of four areas of focus.

Focus Area	Scope
• ISO-NE Program Support	Statewide with 50% in SWCT
• Time-of-Use Rate Initiative	Statewide with 50% in SWCT
• C&I Load Management Services	Statewide with 50% in SWCT
• Power Factor Program	100% SWCT
• Residential and Small C&I Infrastructure Development	100% SWCT

The Load Management programs will emphasize SWCT by allocating approximately 88% of program budget to SWCT towns.

To maximize program enrollment, the target market for the SWCT focused programs including the Residential and Small C&I Infrastructure will be across the entire SWCT territory. Additional emphasis will be placed on the 10 towns in the CL&P Norwalk-Stamford sub-area. Infrastructure programs include the load aggregation projects initiated in the Load Management and the RD&D program and other similar approaches.

CL&P proposes a time-of-use rate initiative focused on residential customers. The essential elements of this program are: 1) education and promotion of residential time of use rates, 2) acquisition and evaluation of residential customer load use profiles through load research metering, and 3) evaluation of residential time of use rate programs in other states. The Company will make customers aware of time-of-use rate options currently available (Rate 7) and will also test sample customer response to time-differentiated pricing through questionnaires and

surveys. Though launched Statewide, this program is designed to assess the capacity problem in SWCT.

CL&P is targeting a total of 20 MW in SWCT and 20 MW in the remainder of CL&P territory. This includes not only load enrolled in the ISO-NE LRP, but available capacity from power factor improvements, infrastructure demand reductions and other load reductions attributed to the Load Management efforts. The Company believes there is reasonable probability of having 75% of the 20 MW (15 MW) available by June 1, 2003. Flexibility is designed into the program to shift as much as 20% of the budget between the focus areas depending on market response and cost effectiveness of the measures opportunities identified by our facility assessments.

The UI Load Management activities will be divided into two categories. First, the company will once again provide program support for the ISO-NE and be the facilitator for those customers who wish to enroll in the ISO Load Response program. UI is not planning to focus enrollments in the ISO program to its six preferred towns since UI's territory is completely within the larger designation and all enrollments will provide substantial value.

Second, UI will target technologies that enhance the benefits of kWh reductions with the added value of demand reductions (kW) in the traditional conservation program portfolio. This approach will utilize the existing program delivery mechanisms and deliver energy savings and demand reductions to customers in a seamless fashion.

RESEARCH DEVELOPMENT AND DEMONSTRATION

RD&D plans on allocating approximately 50% of its budget to SWCT projects. In consideration of the capacity problems in SWCT, the RD&D program will expedite low risk demonstration projects and implement larger scale demonstrations of project technologies in SWCT. There will be a focus on residential, small C&I and low-income sectors. Candidate technologies include the heat pump water heater project, the cold climate heat pump project, and the direct exchange heat pump project. These demonstrations will be focused on projects with a high probability of success in the near term but because energy efficiency saving results from the RD&D project are not completed the extended demonstrations will be considered part of RD&D rather than transitioning into the programs.

Funding will be provided for new energy efficiency projects and distribute resources, continuing phases of RD&D projects funded in previous years, a fuel cell demonstration project in SWCT to be funded jointly with the Clean Energy Fund and a fuel cell technology advancement for demonstration in SWCT. The ECMB has approved budgeting for the fuel cell demonstration project and the multi year fuel cell technology advancement project being performed by GenCell (formerly Allen Engineering).

In summary the RD&D program plans funding the following projects in support of the capacity constraints in SWCT:

- Extended demonstration of energy efficiency projects in SWCT such as the heat pump water heater project, the cold climate heat pump project, and the direct exchange heat pump project.
- Fuel cell demonstration project to be funded jointly with the Clean Energy Fund.
- Fuel Cell technology advancement performed by GenCell (formerly Allen Engineering)

CHAPTER EIGHT: COST-BENEFIT ANALYSIS

Introduction

With the support of the Department and the ECMB, the Companies have developed common cost effectiveness testing methodologies for the 2003-2004 Plan. For this Plan the Companies have used the same cost effectiveness screening tool and similar assumptions for key variables, including: discount rate; inflation rate; avoided cost of energy; avoided cost of generating capacity; avoided cost of transmission capacity; avoided cost of distribution capacity; and avoided cost of fossil fuels. These changes will allow the Department, the ECMB and others to compare the benefit cost ratios (BCRs) of both Companies on an “apples to apples” basis. The major issues surrounding the changes are summarized below. The Companies explored many options for these inputs prior to accepting the ones discussed below.

Both Companies continued to use the same conservation program screening tool

For the 2003 and 2004 filing, UI and CL&P both used the same tool for cost-effectiveness evaluation of programs. The philosophy upon which the tool is based is: the present value of the future avoided cost of not having to generate, transmit and distribute kWh from generating plants to customers can be divided by all costs necessary in implementation of conservation programs to yield a BCR.

While both UI and CL&P have used this tool previously, the Companies had used a variety of different inputs. This made comparisons of UI and CL&P program BCRs difficult. In this filing, the Companies used the same screening tool and, when possible, the same inputs and assumptions, which facilitate comparison.

Both Companies used the same version of cost effectiveness tests

Several different versions of cost effectiveness tests have been developed in the industry during past years. The Electric System Test, The Total Resource Test and the Societal Test are the three major types of tests used most commonly to measure the cost effectiveness of C&LM programs.

The Electric System Test compares the present value of future program electric system savings to present conservation fund expenditures. The Total Resource Test compares the present value of future electric system and other customer savings to the total of the conservation expenditures and customer costs necessary to implement the programs. While certain programs may have low BCRs when assessed by the Electric System Test, the Total Resource Test provides a more comprehensive measure of program effectiveness, since such programs may often have some value that is not recognized in the Electric System Test. The Societal Test is similar to the Total Resource Test, but includes estimates for environmental, economic and low income benefits which can be controversial and difficult to estimate.

For analysis of the 2003 and 2004 programs, UI and CL&P both used the same two tests: the Electric System Test and the Total Resource Test.

Both Companies used the same discount rate

The discount rate is the interest rate used to discount the value of future savings in a standard, present worth economic analysis. A higher rate discounts the present value of future savings more deeply than a lower rate. Thus higher rates result in lower BCRs and lower rates result in higher BCRs. For 2003-2004, UI and CL&P used the same discount rate for both tests, which was the Prime Rate, the rate that banks charge their best customers. A rolling, five-year average from the Federal Reserve website was used ({ HYPERLINK "http://www.federal" }reserve.gov), which was the rate of 8.2 percent.

Both Companies used the same inflation rate

The inflation rate is used to adjust the discount rate in future years. The Bureau of Labor Statistics website ({ HYPERLINK "ftp://ftp.bls.gov/pub/special" }) was used as the source for this value. A rolling, five year average of the Bureau's consumer price index for all items in U.S. cities was used. The inflation rate used was 2.45 percent.

Both Companies used the same avoided cost of energy and will monitor the level for possible future changes

At the time of the stranded cost dockets, the avoided cost of electric energy projected in those proceedings was the best estimate available at that time. Since then, wholesale spot markets have matured and three years of hourly ISO-NE spot market prices are now available.

Since historical market data is now available, the Companies used this data for the avoided cost of energy in this filing. Four different average avoided energy costs were used, corresponding to four ISO-NE defined periods: Summer Peak and Summer Off-peak, and Winter Peak and Winter Off-peak. Approximate average historical values for these four periods are \$50/MWh, \$30/MWh, \$44/MWh and \$38/MWh respectively. In future years more historical data will be available and five years of data will be used.

Both Companies used the same avoided cost of generating capacity

Average ISO-NE spot market electric prices do not adequately reflect the cost of building new generating capacity. The Companies in this plan are using the methodology of calculating capacity savings in \$/kW instead of \$/kWh since calculations on a \$/kWh basis do not adequately recognize that demand reductions which occur in programs during peak demand have a relatively high value when compared to spreading the avoided capacity value over all hours of the year by using \$/kWh.

Wide variation in capacity cost estimates has made establishment of the appropriate value for capacity a challenge. The Companies have extensively reviewed the available options and have agreed to use the following approach.

ISO-NE levies a charge against load serving entities that fail to contract for adequate capacity to meet contract commitments. This is called an installed capacity deficiency charge (ICAP) which currently is \$58.44/kWyear. The Companies are in agreement that the ICAP deficiency charge as

established by ISO-NE is the appropriate long term value to use. Thus, the current value of \$58.44 will be used until such time as the ISO-NE deficiency charge is updated.

To allocate the capacity between summer and winter, UI and CL&P have developed the following approach by using the TMOR (thirty minute operating reserve) as reported in ISO-NE historical, ancillary market data. This is the value that the ISO-NE pays Class 1 Load Response Program participants when they are called to reduce load during peak demand periods.

An average value was calculated for the four summer month period and the five winter month period for the last three years, and a summer to winter ratio was created. (Five years of rolling data will be used in future years when it becomes available.) The summer to winter ratio is 11.36/1 which results in 8.8% of the capacity value being applied to winter and the remaining 91.2% being applied to the summer period. The resulting avoided generating capacity values will be approximately \$54 for summer and \$5 for winter.

The Companies used Company-specific avoided cost of transmission capacity

As a consequence of FERC's open access to transmission policies, each transmission owner has published transmission tariffs that are posted on the ISO-NE website. The Companies calculate the tariffs using FERC approved methods, and the tariffs are updated annually. The transmission tariffs represent the average costs born by the companies in constructing and maintaining their transmission systems.

The published transmission tariffs are unique to each Company because the cost of constructing and maintaining transmission systems is very much dependent on their location within the state. For example, the cost of building an underground line through a dense urban area may be higher than the cost of building the same line through a rural area. The Companies used their published transmission tariffs to value the savings resulting from the avoided cost of transmission. UI's transmission tariff is relatively high at \$33.48/kW while CL&P's is low at approximately \$22.72/kW, but this reflects the differences in their territories.

The Companies used Company-specific avoided cost of distribution capacity

Conservation programs over time also lessen the need for distribution system expansion and upgrades. This results from a reduction in the demand growth rate. Thus there is a value for the avoided cost of distribution resulting from conservation measures and programs. The Companies have estimated their avoided costs for distribution on a \$/kW basis using Company financial data as presented in the annual FERC Form 1 filings.

A rolling average of five years of data was used to smooth out costs that may vary from year to year. The average cost to carry the investment in the distribution system, the annual O&M costs associated with the demand placed on the system, and the property taxes are totaled and divided by the historic system peak in kW. This gives the average value for the avoided cost of distribution in \$/kW. The basic philosophy supporting this method is similar to that used by FERC in determining transmission tariffs. UI's avoided cost of distribution capacity is \$61.96 while CL&P uses \$60.03.

The Companies used the same avoided fossil fuel costs

Certain programs, such as the ENERGY STAR Homes Program, derive much of their savings from reductions in the use of fossil fuels such as natural gas and No. 2 heating oil. Avoided costs must be determined for these fuels in order to predict annual savings in dollars. Historic fossil fuel costs are available from the Energy Information Administration website (www.eia.doc.gov). Rolling five-year averages were used for the cost of gas and oil in order to smooth out annual price spikes. For oil the level of \$9.02/MMBTU was used. For gas the level of \$11.41/MMBTU was used.

The Companies used the same avoided costs for emissions from fossil power plants

Conservation measures avoid the burning of fossil fuels and hence the emission of various pollutants. As a result, BCR calculations should recognize avoided costs of emissions. Active markets exist for SO₂ and NO_x emissions, and avoided emission quantities of these pollutants resulting from conservation programs can be projected from the “2000 NEPOOL Marginal Emission Rate Analysis,” currently in draft stage from ISO-NE. The Companies used: (1) trading values available on the EPA website for SO₂ (<http://www.epa.gov/airmarkets/trading/so2market/index.html>) and (2) values for NO_x obtained from the NatSource and Cantor Fitzgerald websites (www.natsource.com and www.emissionstrading.com). SO₂ has traded at approximately \$150/ Ton and NO_x at \$800/Ton. NO_x may trade in the \$2,000 to \$4,000/Ton range in the near future because of tightening regulations beginning in 2003.

There is no real market in the U. S. at this time for trading of CO₂. Small quantities of CO₂ have been traded in some countries, but these trades involved offset projects such as planting trees and capturing landfill gas for power generation. Capture and sequestration of CO₂ from large sources such as power plants at this time is expected to cost from \$26 to \$49/Ton depending on the type of power plant, when the technology becomes commercial. This is based upon “The Cost of Carbon Capture” by Jeremy David Howard Herzog at the Massachusetts Institute of Technology under DOE award DE-FG02-99ER62748. Until more concrete market data are available, the Companies will use a value of \$10 /Ton for CO₂ which reflects the small number of trades already completed on a worldwide basis.

CHAPTER NINE: PROGRAM EVALUATION

The Companies have a long history of providing quality C&LM programs to the energy consumers of Connecticut. An integral part of creating, delivering and maintaining quality programs is the process of performing independent evaluations of those programs and the markets they serve. Over the past twelve years, the Companies have performed more than 180 evaluations.

There are several major purposes of evaluations. First, through careful market evaluation, the Companies can understand the most effective way to influence the key players in any market. Evaluations are also used to determine the efficacy of the programs, provide for improved program delivery and increase customer satisfaction. Lastly, the evaluation process is also a critical tool to measure energy savings as well as other key attributes of each program to allow careful management of consumer funds.

Several types of evaluations are conducted to monitor program performance, including impact, process and baseline evaluations, as well as market assessments. Impact evaluations verify the magnitude of energy savings and determine if efficiency measures were properly installed. Process evaluations verify the effectiveness of program delivery. Baseline evaluations and market assessments survey overall market conditions related to efficiency products and services, including current standard practices, average efficiency of equipment, consumer purchasing practices and identification of market barriers. Each of these evaluations provides the Companies with critical information that is then used in the program planning process.

During the evaluation planning process, the Companies consider many factors, including, but not limited to: the maturity level of the program, the stability of results, market conditions, recent or planned program changes and the cost and energy savings associated with the program. The Companies also work in a broad regional manner when planning evaluation activities for the upcoming program year. Through a collaboration of the two Companies with regional agencies and utilities with similar interests, it is possible to take full advantage of opportunities to gather information in the most cost effective manner. Occasionally, opportunities to participate in evaluation studies are unforeseen and therefore are not included in the planning process. If an unplanned opportunity proves to be in the best interest of the Connecticut customers, the utilities will commit resources to those efforts, as well.

The Companies currently plan to conduct initiatives in the following areas in the coming years:

Joint CL&P/UI Evaluations

Residential Lighting Impact Study Residential lighting programs have been in place at both CL&P and UI for several years. This ongoing program evaluation will give the Companies a better understanding of the effectiveness of the technology, the market for the technologies, and the overall program impact of the program. The results of the study will be used by the Companies to plan program improvements in the coming years.

Small Business Energy Advantage Impact Evaluation This program serves the smaller C&I customer base and has been in place for several years. The objective of the program is to provide cost-effective, turn-key conservation services to small businesses through the availability

of project financing. While this program has been very successful, an examination of the program to identify process improvements in the program delivery could provide even greater value to our customers, as well as demonstrate how modest investments in energy efficiency yield positive results in terms of lifetime operating costs.

Occupancy Sensor Baseline Study CL&P and UI promote and utilize occupancy sensor technology to deliver savings to their municipal, small business and commercial customers. The greatest usage of this technology is in school buildings. This study will provide an accurate baseline of lighting usage in all room types in schools prior to sensor installation. The results will be used to determine measurable savings post-installation, accurately predict the benefit to cost ratio of occupancy sensors and to identify where sensors should be placed to enhance their savings potential.

Residential Cooling Baseline Study There are several new cooling initiatives being planned for the next cooling season that will take a comprehensive view of the energy savings potential for residential HVAC system owners. This ongoing evaluation work is essential for the Companies to develop a deeper understanding of the residential cooling market. The Companies will use the results of this study to improve the design of residential cooling programs in Connecticut. In 2003, a second baseline study will be conducted focusing on SWCT towns.

Residential Cooling Impact Study When the Companies have gained some experience with the revised residential cooling programs, there will be an opportunity to examine the results of the programs and to make improvements. This evaluation will allow the Companies to gain a better understanding of the impacts that the residential cooling programs had on the market and will identify what program aspects should be retained and what changes should be made to improve program delivery.

eesmarts Study The eesmarts program is a newly developed program to provide an energy curriculum to the primary and secondary level schools in Connecticut. This program would benefit from a better understanding of the program effectiveness in the lower grades so that, as the curriculum is developed in the secondary grades, improvements to the program delivery can be incorporated into the design.

Low Income Study Low Income programs have provided energy efficiency measures to the economically disadvantaged section of the customer base for many years. The evaluation efforts in this program will focus on how the measures are delivered to the customer and key areas for improvements.

CL&P Evaluations

Express Program Impact Evaluation The Express Services program targets medium sized C&I customers who plan to upgrade existing lighting, motors, and HVAC equipment. Customers may enroll in the Motor Up Program which promotes premium efficiency motors, Cool Choice for high efficiency HVAC units and a lighting rebate program. The focus of the impact evaluation will be to determine energy savings and seasonal coincident/non-coincident demand impacts; the study shall also examine what measures and equipment are being successfully installed and determine the influence of the incentive levels and structure on the

measure installations. The Company will also obtain information to benefit future program implementation and design including methodology improvements, customer satisfaction levels and update incentive levels.

Prime Program Impact Evaluation The Prime Program specifically targets the industrial manufacturing sector. Using Lean Manufacturing principles and practices, Prime enables manufacturers to substantially reduce their electrical energy consumption and dramatically increase productivity by reducing lead time and overhead costs. This in turn increases profitability and promotes economic growth for Connecticut. The focus of the upcoming impact evaluation will be to determine program savings and to quantify the program's contributions to the manufacturing business sector.

UI Evaluations

Energy Opportunities Evaluation The Energy Opportunities program is one of the primary conservation programs in the C&I area, and is an established program at UI. Although this program and the market that it serves are well understood, there may exist opportunities to improve program delivery and effectiveness through program changes. This program evaluation will also provide updated estimates of energy savings estimates and customer end uses of energy.

Regional Evaluation Studies

The Companies are also considering participating in several regional evaluation studies recently proposed by Northeast Energy Efficiency Partnerships, Inc. (NEEP). Historically, NEEP's involvement has included assisting the utilities in planning, coordinating, managing and fund raising. These studies are currently in their developmental stages with scope of work and project costs not yet thoroughly defined. The Companies will evaluate the costs and benefits to Connecticut consumers prior to becoming involved.

Retail Lighting & Appliance Study The Companies have been in the practice of counting lighting and appliance rebate coupons as a means of determining the effect that their programs have had on the retail marketplace. The Companies are reviewing the possibility of taking part in a regional collaboration that would allow direct measurement of the numbers of types and quantities of ENERGY STAR products sold in a cost effective manner. A process has already been developed for the West Coast and a similar one could be used in the Northeast. Once a measurement process was put in place, the Companies could directly measure the customer's response to promotional campaigns without the expense and burden of coupon counting. This study would also expand market share tracking systems databases by including regional and national products information.

Summary of Regional Impacts and Results This study will use existing information sources to develop a summary of the status, costs, benefits and market effects of individual regional market transformation initiatives for Premium Motors, Unitary HVAC, Residential Lighting & Appliances, Residential HVAC, Transformers and Building Operation and Maintenance.

High-Efficiency Commercial Unitary HVAC Study The Companies are specifically interested in identifying market transformation factors to assist in their program design efforts.

CHAPTER TEN: PERFORMANCE-BASED INCENTIVE

The Companies have demonstrated their ability to effectively carry out their role as premier providers of conservation services to their customers. The Companies' record of performance under the current incentive plan is a powerful example of the success achieved when the Department aligns the interests of customers and shareholders. Meaningful performance-based financial incentives are a catalyst that can guide a company to achieve superior results.

The evolving focus of the programs includes a greater emphasis on kW reductions which warrants a change in the energy savings metric. Currently, kWh is the primary measurement of program performance. In an effort to better reflect the changing nature and focus of the conservation program mix and offerings, the Companies recommend a common measure of performance for programs with varying levels of kW and kWh benefits. The Companies propose a 2003-2004 performance goal that places adequate emphasis on both kWh and kW savings. This must be done in a manner that allows maximizing energy savings without having to sacrifice one to achieve the other. This approach provides the ability to respond to market demands and focus on consumer benefits without being restricted by rigid and/or misaligned goals. This proposal is reflected in the individual program goals presented in CLP/UI Exhibit 7.