

THE TECHNICAL AND PROMOTIONAL INTERFACE  
IN MARKETING ENERGY EFFICIENCY:  
"SPRINGFIELD SELLS HEAT PUMPS"

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ABSTRACT

Two components are vital to a successful energy efficiency program. First, the technologies must be sound and carefully applied. Secondly, the program must be sold. Often, it seems that programs fail in one area, while being strong in the other, or that the technical and promotional components are somehow mismatched. The experience of Springfield City Water, Light and Power (CWLP), a municipal utility serving the Illinois state capital, demonstrates how technical and promotional components can be developed to reinforce one another to create a remarkable success. CWLP reported a 400% increase in the number of heat pump rebates provided during the first year after the existing cooling and heat pump efficiency rebate program was expanded to provide this concentrated heat pump marketing effort. The success is attributed to the interface between technical and promotional approaches within all program components, including:

1. In-house (utility) awareness and support
2. Image-building advertising
  - a. non-technical approach
  - b. presence in many media
3. Involvement with dealers/installers
  - a. carrot (co-op advertising, educational dinner meetings, etc.)
  - b. stick (required inspections of dealer installations)
4. Involvement with consumers
  - a. computerized home heat pump survey
  - b. literature, displays, etc.
5. Financial incentives
  - a. rebates to builders/dealers
  - b. rebates to consumers
6. Program evaluation format

Given CWLP's relatively stable business outlook, modest size and conservative political environment, this effort may be viewed as a highly practical "first step" toward more comprehensive (and possibly more visionary) energy efficiency programming.

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INTRODUCTION

Springfield, Illinois had some early success in developing a community awareness for energy efficiency. During the late 1970's several citizens groups formed to promote energy conservation and renewable energy development. A Citizens Energy Plan, published in 1982,<sup>2</sup> presented an impressive list of locally appropriate energy strategies. Also, City Water Light and Power, the municipal electric utility, had initiated a loose collection of energy conservation programs including energy audits, consumer workshops and rebates on energy efficient air conditioners and home insulation. However, none of these efforts were able to create measurable, sustained movement toward an energy efficiency (so-called "energy services," or "demand-side") approach to utility operation. The problem was that, despite personal support from a progressive Public Utilities Commissioner, energy efficiency (generally promoted as energy conservation) seemed to be at odds with the utility's primary goal -- to sell electricity.

CWLP did not "benefit" by the opportunity to solve any immediate supply crises through demand-side planning. Energy efficiency approaches could pay off for CWLP only over the long term. The city-owned utility has a net generation capacity of 420 MW, and a summer peak which has virtually levelled off at about 338 MW. CWLP has had a rather stable rate outlook, thanks to a 25-year supply contract for low-cost coal. In fact, CWLP reduced it's rates in the spring of 1986 by about 10%; retail customers now pay 4 to 5 cents per kWh. Looking ahead, however, one or more of the utility's smaller generators will need to be replaced within the next 10-15 years. A nuclear facility, operated by Illinois Power Company, will begin seriously competing for CWLP's excess power sales within the same time frame. Also, CWLP has a low load factor (about 50%) and a winter-summer peak demand differential of about 70 MW.

For utility staff who recognized the long term potential for energy efficiency, the challenge<sup>3</sup> was to convince skeptical CWLP policymakers to change a relatively trouble-free status quo. As a first step toward this goal, CWLP's Energy Conservation staff identified four component barriers to change:

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<sup>2</sup>Citizens Energy Plan, Springfield Energy Project, Springfield, IL, 1982

1. Because of the relative stability of the utility operation, and the availability of capacity for at least the near term future, there was a general consensus that energy conservation programs worked at cross-purposes to the rest of the utility. The Public Utilities Commissioner (CEO) held a personal philosophy favoring energy efficiency, but this was not translated into any cohesive utility policy.
2. This lack of utility-wide backing had a self-perpetuating effect. Energy efficiency program efforts would have to be coordinated with financial backing, engineering and rate design support before they could deliver significant results.
3. Existing "energy conservation programs," such as the energy audits and the 10% rebate on home insulation, were admittedly lacking in strong technical and economic rationale. These programs had been planned in response to public interest in energy conservation, with relatively little consideration for their potential impact on the utility load curve or revenues. They also served electric and natural gas heated homes equally. Because of the overwhelming prevalence of gas heat in Springfield, these CWLP programs assisted the gas competitor's heating customers at electric (CWLP) heating customers' expense. Existing programs served at best in a very limited way to contribute to the overall electric utility system.
4. Although energy conservation programs had relatively little impact on utility operation, they were promotionally successful. To avoid customer relations problems, these programs would have to be changed or eliminated carefully, without decreasing the perceived level of customer service.

The CWLP heat pump program addressed each of these barriers to initiate change within the utility. It was a program with the right combination of technical and promotional appeals to move the utility toward gradual adoption of a demand-side management approach. For other utilities, different programs -- for example a load control program, distribution system efficiency program, economic development incentive program, etc. -- might serve the same purpose. This paper will attempt to draw some useful generalizations from the CWLP experience.

#### INITIATING THE HEAT PUMP PROGRAM

As with any case study, the CWLP Heat Pump Program is best understood by studying work samples -- research documents, advertising clips and so on, which are available from the author. The process of program development will be highlighted here. One will especially note the interplay between technical and promotional interests at every turn in the process, from the research phase, through development of marketing strategies and re-tooling program elements during implementation, to program evaluation. This integrated approach created a balanced program, addressing each of the barriers cited above, within extremely reasonable budget and time frame.

## 1. TECHNIQUE: Trading Places

Marketing and technical staff worked together from the earliest phases of project research. The CWLP Energy Services staff included three technical and two marketing oriented professionals. Although the process was always dynamic, the marketing-oriented staff actually took the lead in designing the first-cut technical research agenda. Later, the technical staff played a major role in directing the marketing plan. This is a practical method for achieving a balanced program with limited time and budget.

For example, an early marketing idea was to promote dual fuel systems, since many Springfield residents had old coal-converted gravity furnaces which ran dependably, but very inefficiently. The technical staff reported back that this was not such a good idea after all, since duct work generally would have to be redone at great expense, and because many dealers were not anxious to warranty any part of a retrofit job. The "add-on" heat pump might be viable in some circumstances, but not for a major first-year marketing thrust.

The technical staff spotted an alternative in the central air conditioner replacement market. A review of central air conditioner rebate records confirmed that more than one-third of customers who purchased new energy efficient central air conditioners also purchased replacement gas furnaces at the same time. The technical staff's suggestion thus contributed to solving another marketing problem, too -- suggesting an opportunity to transfer customer interest away from the air conditioner rebate program while still offering a very appealing alternative in heat pump rebates. The 1986 campaign seems to be quite effective in this; CWLP staff reports that central air conditioner rebates have fallen off, as heat pumps begin to replace old central air systems. This cooperative research and planning is easiest to achieve in a smaller utility, such as CWLP, but the small team model can be applied to some degree in any organization.

## 2. TECHNIQUE: Creative Tension

The questions repeated throughout the research and planning phase were "Will it work?" and "Does it matter?". The Energy Services Staff called this "creative tension." For example, a Home Heat Pump Survey was selected as a marketing tool to give the customer a fairly specific idea of whether the heat pump would be a good option. The Home Heat Pump Survey also worked internally to pave the way for future energy efficiency programs. It would suggest measures to make the home more thermally efficient (and thus more economical to heat with a heat pump), thus building a foundation for future utility-based energy efficiency efforts. The problem was to develop a survey which would provide accurate information quickly that could be easily understood and that would directly lead to increased heat pump sales. A wide variety of computerized load calculation programs were reviewed, but the marketing staff rejected most as too difficult to use or to understand. The technical staff argued that simple analysis, such as ones used by some other utilities, were too inaccurate or could not be adapted to compare different types of heat pumps and existing systems. By way of compromise, the technical staff reworked another utility's program, adding refinements.

As a result, the Home Heat Pump Survey has replaced the RCS Home Energy Audit as the most popular CWLP Energy Services Office technical assistance program. One full-time person recently has been added to the Office staff to meet the demand for Home Heat Pump Surveys. Sufficient data has not been gathered yet to say that the Heat Pump Survey is the most successful marketing tool for the CWLP Heat Pump Program, but anecdotal evidence seems to confirm this. This "creative tension" approach also created some incho exchanges over advertising strategies and participating dealer guidelines, with similarly successful results.

### 3. TECHNIQUE: Benefit from Case Studies

The case-study approach to research can save time, trouble and money. The CWLP program was built largely on the experiences of other utilities. The American Public Power Association Energy Services Exchange<sup>3</sup> provided names of utility managers who had effective heat pump programs. Phone interviews with ten or more of these led to site visits at Santee Cooper, in South Carolina and the Tennessee Valley Authority in Chatanooga, Tennessee. This was another way of asking "Will it work?" and "Does it matter?"

Although the site visit seems to be a natural approach for technical staff (for example, to gain hands-on experience with various types of equipment), the site visit can help managers and promotional staff as well, to gain an appreciation for technical considerations they might otherwise overlook. For example, prior to the site visits, this author, a manager, was not convinced that performance checks on dealer installations were necessary at all; experience in the field completely turned that attitude around. As a result, spot performance checks are now a useful component of the CWLP program, encouraging better work by participating dealers, creating more satisfied heat pump customers and increasing positive word-of-mouth advertising.

### 4. TECHNIQUE: Demystify Research

Particularly with the volumes of research now available in both the technical and promotional areas of heat pump program development (not to speak of the broader theoretical area of demand-side planning) one eventually has to give up on research and implement. CWLP's primary heat pump research product<sup>4</sup> may seem somewhat unsophisticated, relying as much on informal surveys of heat pump manufacturers, local installers and CWLP customers as on research citations and computer-generated simulations. However, this format is the result of conscious management direction. The research agenda was planned within parameters of budget, time constraints and general promotional plans. As program manager, the author sought a brief research document, incorporating the technical staff's best judgement to answer specific questions for the Springfield market. The resulting document is easily accessible, almost as a handbook for policymakers, media relations staff and promotional copywriters.

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<sup>3</sup>The Energy Services Exchange is a clearinghouse promoting sharing of information among public utility professionals.

<sup>4</sup>Croteau, B. and Kunka, J., "Technical and Economic Review of Heat Pump Systems," City Water Light and Power, 1985

For any utility demand-side program, developing such a brief can be an excellent means of focusing technical research efforts and establishing a bridge between technical and marketing staff.

#### 5. TECHNIQUE: Plan To Evaluate

A final note on planning relates to the development of an evaluation tool at the outset of the program. A previous attempt to evaluate CWLP's Air Conditioner Rebate Program two years after program implementation had failed and taught the CWLP staff a basic lesson: that a simple evaluation tool used now is worth more than a full-blown survey project later.

Applications for customer and dealer rebates were designed to provide technical and marketing information which could be filed on the office personal computer, as the heat pump program developed. As indicated in the evaluation project,<sup>5</sup> this tool involved a rather simple spreadsheet (Lotus, 1-2-3) design to provide a readout on types of systems installed, load impacts and estimated incentive cost recovery. Here is another opportunity for technical and marketing interface, as the application was designed to provide basic marketing information (on demographics and consumer attitudes) which could be coded into the Lotus program as well. Accomplishing this demanded that the entire staff refine information needs to a minimum. This is undoubtedly appreciated by the consumer, too.

The system seems to be working well, but unfortunately the results of this program approach are inconclusive. CWLP staff vacancies have created unforeseen problems in keeping up-to-date survey information logged in.

#### IMPLEMENTING THE PROGRAM

The implementation technique energy efficiency staff fall back on most often is insulation -- personal insulation. They insulate themselves with technical data to support pre-conceived notions, and they insulate themselves from the customer to eliminate possibly conflicting experience. However, to implement a demand-side program, both promotional and technical staff must interact with the customer. The customer is the only person who can make or break a program. Staffs of utilities (or of other institutions) will argue that they do not have the time or manpower to meet customers directly, and to some degree this is true. At CWLP, direct customer interaction concentrated on customers who represented the most kilowatts -- such as builders, developers, commercial customers. Some "quality time" (such as providing the Home Heat Pump Surveys, or attending home shows) was reserved for interactions with residential customers, but other liaisons, such as dealers, installers and utility customer service representatives were also cultivated for this task. The key to CWLP's success in heat pump program implementation was to find the appropriate role for each staff person, and to focus his or her contribution on priority ("most bang for the buck; most toot for the time") activities.

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<sup>5</sup>Lowry, P. and Robertson, C., "Analysis of Cooling and Heat Pump Rebate Program," City Water Light and Power, 1985

## 1. First Year Marketing: Establish Identity

The marketing campaign approach chosen to initiate the CWLP Heat Pump Program seemed to ignore a recommendation suggested by most national heat pump market research. According to studies by Synergic Resources Corporation, Lincoln Electric Systems, Tennessee Valley Authority and others, customers say they prefer heat pump advertising which is highly informational or testimonial. CWLP decided instead to use a simple, mood-setting approach. The rationale for this was based on several considerations, not entirely at odds with conventional marketing wisdom.

According to the Synergic Resources study<sup>6</sup>, more than half of surveyed consumers reported they had no knowledge of heat pumps. This was easily verified through local experience. Further, studies for Ontario Hydro<sup>7</sup> on consumer attitudes about energy revealed some positive connotations for electric heat in general (comfort, safety, etc.) when compared to gas heat. CWLP decided to simply identify the heat pump (new concept) with those positive attitudes already prevalent regarding electric heat. Ads would use a "Carefree Comfort" theme, featuring visuals of children playing in a yard where the heat pump was visible. This approach defined the heat pump simply as "the one system you need for both heating and cooling" (The All-Season Alternative). In some ads, customers were informed about the rebates and referred to the free Home Heat Pump Survey and a list of participating dealers.

The appropriate roles determined for the promotional elements of the campaign were:

- a) Emphasize name recognition ("Heat Pump")
- b) Differentiate CWLP from the competition. (The gas company's ads were busy and fact-filled.)
- c) In general advertising, establish a lasting impression. (In Springfield, only 5% of the population is active in the heating/cooling market at any one time, so the lasting impression was critical.)
- d) Establish a link to more detailed technical and economic information. The confident style of CWLP's heat pump ads sought to assure customers that reliability and affordability posed no problems which might warrant a lengthy unsolicited defense. Instead CWLP advertised technical services (the Home Heat Pump Survey, Participating Dealer Program, etc.) which would provide customized answers to any questions the consumer might have.

## 2. Fully Employ Technical Staff

The appropriate roles for the technical staff thus dove-tailed with the promotional campaign:

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<sup>6</sup>Davis, T. and Hoeh, L., "Assessing Customer Acceptance of Heat Pump Marketing Strategies," in Electric Utility Market Research Symposium, EPRI, 1985

<sup>7</sup>Market Research Survey provided by McOstrick, W., Toronto, Canada; Ontario Hydro; 1984

- a) The personalized Home Heat Pump Survey became a key marketing element. This approach encouraged consumers to speak directly with technical staff rather than relying on "average" savings and performance data for an "average" home. This increased program credibility, because most people realize their home is not the "average" home presented in fact-filled utility advertising.
- b) Further, the technical staff became program ambassadors. This required some training and encouragement, since technical staff was not used to marketing oriented presentations. Judging from phone calls and letters of appreciation, as well as from heat pump sales figures, public response has been very positive.
- c) To some degree, technical and promotional staff had to agree to present a limited message, in keeping with the advertising theme. Technically interesting subthemes (such as performance information on different types of heat pumps including dual-fuel or ground-loop systems) were held in the background for use in later campaigns. This is not to imply that information was withheld in any way; a clear set of priorities simply had to be maintained. A full time technical project to support the marketing campaign was to trouble-shoot older, poorly installed heat pump systems and to work with dealers to improve word-of-mouth advertising.

### 3. Work in the Market Place

A third party became extremely important in program implementation -- the local heating and cooling dealers. Dealers work with customers. Dealers create good or bad word-of-mouth advertising. Dealers cooperate in the administrative aspects of a program by filling out forms and placing co-op advertising, or they may create tremendous administrative headaches. Working with such outside business people is unavoidable in any demand-side effort, and especially in heat pump marketing. The role of the dealer can compliment and enhance both technical and promotional program efforts within certain constraints.

- a) Dealers are in their own line of business, and will align themselves with a utility only if it is in their best interest to do so.
- b) Dealers are non-bureaucratic and generally very busy. Consideration for their schedules (e.g., no lunch meetings, short simple forms, etc.) will be appreciated.
- c) Utilities have a lot to offer dealers and must be confident of their own positions, especially in the area of quality control. Reasonable demands about dealer training, system sizing, installation standards, etc. should be made.

Seventeen dealers out of approximately thirty initially signed on to participate in the CWLP Heat Pump Program. Some dealers have been extremely



helpful in working with customers; regular informal visits with CWLP technical staff have been mutually beneficial. A few dealers have created problems using a bait-and-switch technique, to sell gas systems to customers who called initially because of cooperative advertising for heat pumps. Fortunately CWLP's Participating Dealer Program had established guidelines from the outset to eliminate those dealers from eligibility for program benefits. With the elimination of two or three uncooperative dealers, cooperative dealers -- as well as the utility and the customer -- will benefit.

### MID-COURSE CORRECTIONS

The coordinated involvement of all Energy Services Office staff in CWLP Heat Pump Program development allowed for program changes and fine-tuning within a very short time frame. This paid off especially during the first year, because public response to a program can never be perfectly predicted. For example:

1. The local developers were more interested than expected, resulting in heat pump installations in more than 90% of new apartments. This audience became the focus of early efforts to build a track record of success.
2. Early promise in the commercial sector turned out to be less rewarding. Contractors have claimed the cost of metering is prohibitive, without the offer of additional rate incentives. CWLP rate staff is working to address this problem.
3. Target marketing in the residential sector is effective, but it is more time-consuming than expected to develop this market. As previously noted, dealer support has not been as strong as hoped. The problem centers on dealers' fears that heat pumps may not be as trouble-free as gas systems. CWLP marketing response has been to build credibility with the public through the Heat Pump Survey and to develop testimonials while keeping dealers informed of the technical data supporting those testimonials. More efforts of the technical staff have been directed toward trouble-shooting, performance testing and dealer training.

### RESULTS

There is no question that the CWLP Heat Pump Program has been a success. The rebates provide one measure. During the first nine months of program operation, 260 heat pump rebates were provided, and in the period of March-April (admittedly prime time for new construction), applications were filed for more than 200 more. This represents a 400% increase over the number of heat pump rebates provided during the previous year, when heat pumps received rebates under the Energy Efficient Air Conditioner Program. This figure far exceeded staff expectations.

From another perspective, the CWLP Heat Pump Program succeeded in achieving a broader goal -- to initiate demand-side planning within CWLP. Several signs of progress toward this end may be noted, including:

1. Recognition by the CWLP engineering department that heat pump and air conditioner rebate programs have had a positive effect on utility load factor and summer-winter peak differential.
2. Approval of a new staff position for an Energy Planner, specifically to review demand-side options.
3. Approval, without question, of the Energy Services Office budget for FY 87, including a doubling of rebates funds and an increase in other program line items.
4. Application to the American Public Power Association's DEED Program (a program to demonstrate energy efficient developments). The Engineering, Rates and Energy Services Offices have been directed to work together in developing proposals to maximize energy efficiency in what is already a "pretty good" utility.

### CONCLUSION

CWLP's experience developing this heat pump marketing effort offers obvious lessons for other utilities also engaged in marketing heat pumps. From a broader perspective, the CWLP approach also may be viewed as an overture to demand-side utility programming. Whatever program a utility might choose as a first serious demand-side effort, the program would seem more likely to succeed, and lead to greater efforts, if it meets the same criteria as the CWLP Heat Pump Program:

- a) It should be compatible with overall utility goals. Heat pumps for example, could boost CWLP's off-season power sales while helping to control summer demand growth.
- b) It should be technically sound and clearly marketable. Careful planning ensured that CWLP would promote heat pumps only for those customers who would actually benefit through decreased cost or increased comfort.
- c) It should be attractive to one or more visible (preferably powerful) constituencies, such as builders, developers, etc. which can help ensure continued funding.
- d) It should be integrated from the outset with other supporting energy efficiency strategies, which might be spun off or expanded as initial project successes build credibility for energy efficiency strategies in general. Relatively unspectacular utility energy efficiency programs should not be disregarded; they may be the first footing in a "conservation power plant."

This paper concentrated on the second of these characteristics, the interface between technical and marketing (e.g. promotional) elements; demonstrating the need for involvement of both technical and marketing staff in all phases of program development. Innovative program design would draw each

type of staff out of their speciality on occasion, encouraging dialog and constantly weighing the merits of each technical and marketing refinement against the goal of creating the best practical program approach.

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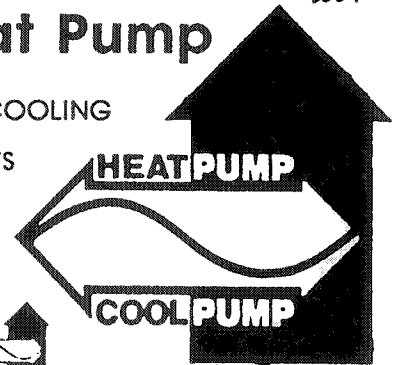
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ADDRESS:                SPRINGFIELD, ILL  
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PREPARED BY:         CWLP ENERGY ANALYST

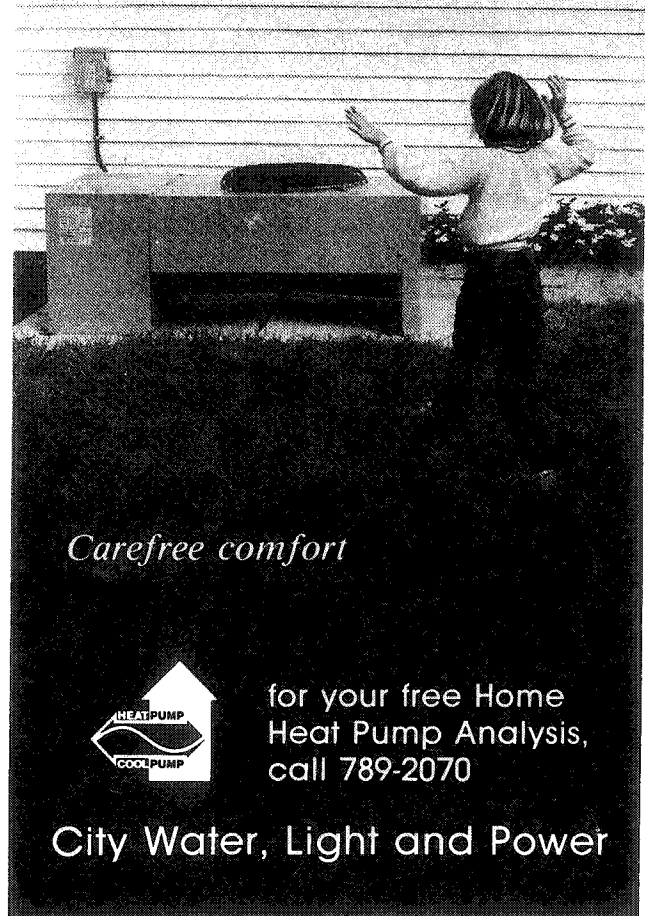
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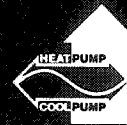
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HEAT CONTENT OF FUEL	3413	100000
COST OF FUEL	\$0.0501	\$0.5250
HEATING DEGREE DAYS	5600	5600
DESIGN TEMP DIFFERENCE	85	85
HOURS	18	18
CD	0.80	0.80

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