

Beyond Traditional Approaches to Marketing Energy Conservation: The Espanola Experience

Vicky J. Sharpe and David R. Watts
Ontario Hydro

Ontario Hydro, in partnership with the Town of Espanola (a northern Ontario community of 6,000 residents) is conducting a full-scale pilot project designed to evaluate the potential for mass participation in a community-based energy conservation project. The total cost of the project is estimated to be greater than 10 million dollars.

The goal of the Espanola "Power Savers" Project is to obtain the most comprehensive energy conservation coverage of any community in Canada. It will achieve this goal in two ways. First, by completing an energy retrofit of every building in the town over an 18 month period. Secondly, by attempting to achieve a "culture shift" to wise electricity use to sustain those energy savings over the long term.

This paper will highlight some of the key non-traditional marketing/communication activities being implemented in Espanola, and discuss their strengths and weaknesses in supporting project goals. The paper will conclude by discussing the interim results of the project in terms of community participation, market penetration and demand savings.

Introduction

For the rest of this decade, Ontario Hydro's primary tool for meeting Ontario's electricity needs will be through demand-side management (DSM). We will be spending 6 billion dollars to reduce demand by over 5,000 megawatts. This is nearly 16% of our peak capacity by the year 2000 and as such puts Ontario Hydro at the forefront of DSM targets in North America.

To help achieve this target, Ontario Hydro has developed a broad menu of conservation programs supported by our municipal utilities. However, there is a need to explore alternative approaches to DSM to meet our ambitious goals.

The Espanola Community-Based Energy Conservation Project (Espanola Power Savers) is Ontario Hydro's first pilot project to demonstrate the community-based conservation concept as a comprehensive, efficient, and effective fast track delivery mechanism for DSM. The pilot provides high levels of personal contact and high incentive levels, primarily in the residential and commercial sectors. Engineering estimates indicate that the project will reduce the peak demand by more than 2 megawatts over 2 years (20 percent of the town's current peak demand).

Project Design

A community based conservation marketing strategy has five key features: the project is targeted to a specific geographic area; it uses the community network to champion the conservation effort; the utility acts as a project manager and catalyst; incentive levels are high; and the customer's decision making is facilitated.

From Figure 1, it can be seen that the community based approach is several steps up the spectrum of DSM marketing in terms of the level of utility influence exerted on customers' energy decision making processes. It is more invasive than broad based, information programs, but in a positive sense because of direct customer contact and high level of interaction in the community. It does not remove choice, which occurs at the top end of the spectrum, where the energy decision is entirely in the hands of the utility in a blackout situation.

The energy retrofit component of the project is positioned as a business proposition. Ontario Hydro is willing to "buy back" electrical energy from customers and offers incentives up to the lesser of 100% of the installed cost or the full avoided cost of the measure. Incentives are available for over 50 measures, ranging from energy efficient lighting to insulation for the entire thermal

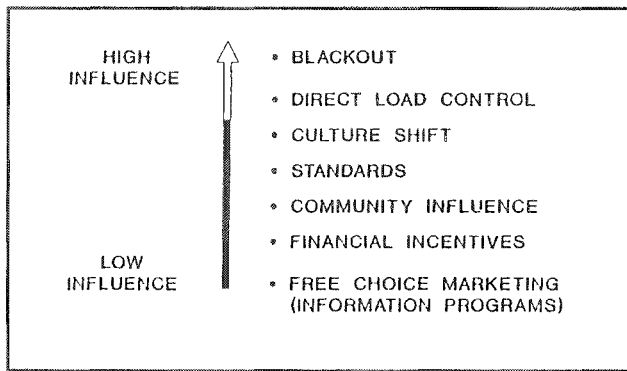


Figure 1. Level of Utility Influence on Customer's Energy Decisions

envelope, windows, doors, plus water and spacing heating efficiency options. On average, up to 80% of the costs for installing measures is covered by Ontario Hydro, with customers contributing the remaining funds.

To maximize participation, the project offers residents energy saving choices based on a "whole building" approach so that their decision making is not fragmented. The program design facilitates the installation of measures by providing the services of a general contractor with whom all the costs for materials and work have been negotiated, the sub-trades employed to install the measures have been trained to meet project standards, and the materials/products have been specified to ensure high levels of energy efficiency.

For the home/business owner, the project involves four steps:

- A visit by a qualified energy auditor/contractor team to recommend energy efficient measures to be installed;
- Approval of work by the home/business owner by signing an agreement with the general contractor;
- Installation of energy efficient measures by qualified contractors; and
- Inspection of all major work to ensure energy savings and customer satisfaction.

The product being sold to the customer is a total energy conservation service, which has been packaged as a convenient "one stop shopping" approach.

The culture shift component of the concept is based on the premise that demand-side management requires a change in the way decisions are made which affect energy use. A

key to the whole concept is community involvement from beginning to end, and leaving the knowledge and skills with the community to continue to champion energy efficiency after the project is completed. This type of community mobilization requires significantly more than a traditional marketing program. It is this aspect of the project that will be addressed in this paper.

Marketing/Communications Methodology

A comprehensive marketing/communications plan was designed to complement the retrofit component to help achieve maximum participation. The plan was developed as follows:

- (1) Define Marketing/Communications Objectives
- (2) Conduct Community Assessment
- (3) Establish Community Advisory Committee
- (4) Develop Menu of Strategies/Techniques
- (5) Implement
- (6) Monitor/Modify

Marketing/Communications Objectives

The objectives were developed internally and reviewed by the community advisory committee. They are to:

- Increase awareness, acceptance, and support of the project to achieve an 80% participation level;
- Assist the community in making a culture shift to wise electricity use for long term energy savings;
- Provide opportunities for community representatives to guide the design and delivery of the project;
- Establish an approach that has potential for application on a provincial basis;
- Work closely with project partners (i.e. Corporation of The Town of Espanola Hydro);
- Strive to meet resource requirements from within the community to enhance local awareness and benefit;
- Instill a sense of pride and accomplishment in project participants.

Community Assessment

A community assessment was needed to obtain a comprehensive understanding of the environment in which the program was to be launched.

In addition to collecting and analyzing traditional demographic data, the assessment attempted to discover the formal and informal networks/power structure within the community. Key variables included: local socio-economic characteristics, community beliefs and attitudes, government structures, employment base, community facilities and services, retail/business, community groups and organizations, local media, and significant local issues.

Espanola was selected for demographic, budgetary and community spirit reasons from a list of 99 northern Ontario communities. Civic pride and an interest in conservation were illustrated by the fact that Espanola was one of the first municipalities to sign up for Ontario Hydro's energy efficient street lighting program.

To provide a baseline for research and evaluation purposes, a customer attitude survey was conducted in Espanola prior to project commencement and in a similar reference community where no specialized conservation activities were to occur. Additionally, to help link behavioural with attitudinal changes and to quantify load impacts, some buildings in both residential and commercial sectors in the test and control communities are being sub-metered.

Establishment of a Community Advisory Committee

A cornerstone of the marketing/communications strategy involved the formation of a Community Advisory Committee that reflected the informal power structure of the community.

Invitations were sent to 30 groups and organizations within the town (e.g., Students Council, Chamber of Commerce, Senior Citizens, Lions Club, etc.) and all 30 accepted. It was organized prior to the formal public launch of the project, and after the initial attitudinal survey.

The committee has two primary functions: to provide the project with (i) advice and guidance on ways to promote the wise use of electricity, and (ii) direct community feedback on existing and potential project design and delivery issues.

It was recognized that to attain maximum community participation, the project must have grass-roots community-based credibility and support. In many ways, the model for project success is much closer to community campaigning than traditional marketing. Also, in a break with standard approaches, the participants were self-nominated, with there being no limits on numbers. All 30 representatives continue to participate.

A number of insights into the advisory committee's operation have been gained. It is important to clearly define their role from the outset to manage their expectations. At the committee's first meeting, a draft terms of reference was discussed and adopted.

Care must be taken not to exclude representation from groups. Be inclusive rather than exclusive. Experience has shown that through attrition, only a core group of individuals will likely remain. To mobilize work, sub-committees were formed. One group organized project participation in an Energy Conservation Week, another set up an Energy Conservation Corner in the local library, another organized a launch of the conservation theme at the schools. This range of activities shows how energy has become incorporated into community activities and mind set.

Also, committee members serve as an important communication link back to the constituencies they represent. They assist in "opening doors" for project activities, such as scheduling presentations on the project to service clubs, or increasing the comfort level of senior citizens having their apartments audited.

The committee has helped by clarifying community expectations. For example, advertising should be sensitive to the community context. Expensive advertising materials would not normally provide a "good fit" in small communities that rely heavily on the local newspaper and "word of mouth" to spread the news. As with all services purchased for the project, "keep it local" should be the watchword.

The down side to this non-traditional approach has been that if committee members are not sufficiently aware of explanations of issues, then "home cooked" answers have led to misinformation and confusion. They become widely recognized as spokespersons and hence sounding boards for good ideas, but also complaints. Information travels fast in small communities and because bad news travels twice as fast as good news, as we have learnt, there has to be a timely response to gossip that can rapidly build negativity among residents. Saturation marketing is

particularly vulnerable to community mood swings based on misinformation. Likewise, our real mistakes are made in the public arena and are open for scrutiny.

Menu of Marketing/Communication Techniques

The techniques can be divided into two categories: those that promote participation in the energy retrofit program; and those that help promote the culture shift, or behavioural change, to wise electricity use.

While these two categories are not mutually exclusive, both components are explicitly addressed in the marketing/communications plan. Rather than proscribe a set procedure, many techniques were developed and utilized according to the changing needs of the community and/or project team. The following are a description of some of these activities, plus a discussion of their strengths and weaknesses.

Partnership Theme. Unlike the more traditional broad based DSM programs, the Espanola project is designed to be a working partnership between Espanola Hydro, the Town of Espanola and Ontario Hydro. This approach was formalized through a legal agreement which outlined each party's responsibilities. For example, the marketing and promotion of the project are joint undertakings. The local utility was shown our estimate of the load savings impact on their revenues, and they agreed to absorb that loss as part of their contribution to the project.

Although the partnership theme has proven to be successful to date, it is acknowledged that it takes time to build trust and to develop strong working relationships. Furthermore, the partner that is contributing the funding and project organization will be the "senior" partner, and is ultimately seen to be responsible for the project.

Partnership with customers is more difficult. Open lines of communication have meant residents are sufficiently well educated to hold lengthy discussions on issues and they expect the team to be readily available. On the positive side, this has meant acceptance of project delivery changes. On the debit side, the field office is open for long hours restricting time for more technical work, resulting in increased staffing of the research team to compensate.

Project Logo/Slogan Selection. Unlike traditional marketing plans where a project identity is designed by graphic artists in head office, the Espanola logo was

designed, selected, and produced locally. At the Advisory Committee's first meeting they decided they needed a way to identify the project. By the next morning the local radio station announced a logo contest and within two weeks 58 logos had been submitted.



Figure 2. Project Logo

The logo has been placed on all print communications, including stationary, uniforms, and giveaways. One disadvantage of using contests to do work is that project management must live with the results. It's all part of the process of "letting go" of control and in turn developing true partnerships.

Customer Information Kit. Because the project aims to provide a conservation service, the typical, technology specific information pieces would not suffice, so a kit was developed.

The retrofit component included a project overview, explained the customer participation process, outlined available conservation measures and incentive levels. The customer education component provided a series of pamphlets on how to use electricity wisely (e.g., How to Manage Your Electricity Bill, Choosing and Using Energy Efficient Appliances, Humidity and Fresh Air in the Home, Energy Saving Tips, etc.)

Highlighting the non-energy attributes of the measures is important. For example, low E windows also improve

comfort and aesthetic value of the home, and screen out ultra violet rays. However, care should be taken not to overshadow the energy saving goal.

Provision of this level of information is a prerequisite for this type of marketing/communications strategy and does not have any down sides, except perhaps the amount of preparatory work and care in explaining complex technical ideas/concepts in laymens' terms.

Project Newsletter. Espanola "Power Savers" News has been an important tool for keeping the community informed of the results and progress of the project, and has been particularly helpful in addressing periodic issues.

Through the newsletter, the project was positioned as a business proposition for Ontario Hydro and as a research project. This has allowed us to deal with funding issues and gain acceptance for changes in project design. For example, the rationale behind the sliding scale of customer contributions for low E windows was tackled in the newsletter. Also included was the message that customers were to pay for "barrier work", which is non energy saving work required before the measure can be installed, such as moving pipes out from basement walls prior to insulation, moving things out of the way of workers, etc.

With the whole house approach, indoor air quality (IAQ) standards and control techniques were planned. Based on earlier studies, we had envisioned few homes would have difficulties, however, we discovered many homes with moisture problems. The issue of IAQ, the need for ventilation and a 100% customer payment for the ventilation systems was covered in the newsletter. Because there is no energy saved on ventilation systems, there is no incentive provided. This reduced the amount of time for auditors to educate customers individually, but under a traditional approach may have been considered too risky to raise the issue at all.

Local Media. The radio station has run several interviews to raise awareness of promotional events and on technical topics, enabling the team to respond to issues immediately. The Town's newspaper as an objective reporter of events has also contributed to awareness and understanding. It ran an article on the audit process and interviewed home owners which favourably impressed the community. This is a much closer involvement with media than is normally considered appropriate, however, the positives are obvious and the down side of operating at a distance are not appropriate for this type of project.

Curriculum-Based Energy Conservation Education Program. Ontario Hydro, in partnership with the Espanola School Board, Espanola Lions Club, and Espanola Hydro shared in the \$4,240 cost of the education program which is currently reaching 53 classrooms from grades one through six. A highschool program is also underway.

The materials being used in the elementary schools are an Energy Literacy Series developed by the Society of Environment and Energy Development Studies (SEEDS). The program is designed to help students develop an awareness of all forms of energy and their relationship to the environment. The materials consist of a teacher's guide which contains lesson plans and activity sheets, 30 re-usable student booklets, cassette tapes and filmstrips.

The value of the SEEDS program to the project is three-fold. First, the program teaches children about energy conservation in ways that are practical and understandable so that they can continue to champion the energy conservation effort after the project is completed. Second, motivated children can have a positive influence upon the adults in their lives. Third, by implementing the program as a partnership with shared funding, the program will continue after project completion because local people have a tangible stake in the outcome. The school's program reinforces the community wide "cultural shift" program.

Results

How have these non-traditional marketing/communications approaches impacted the success of the project? The data presented in the following tables indicate the level of customer participation in retrofit activities and results from 8 months work.

Table 1 shows progress on the level III engineering audit work and customer acceptance of the project through their participation in the audit process. In the residential and multi-residential (commercial) categories, the majority of the audit work has been completed.

Utilities measure participation in many ways, the result in Table 1 is a soft measurement, but still indicates an impressive 90% average participation level. It should be noted that to participate, these customers nominated themselves by signing up at local events (e.g., the Sportsmen Show) or by dropping by the field office. Audits of commercial buildings are nearing completion with results anticipated to at least match the residential sector.

Table 1. Progress on the Number of Residential and Commercial Audits Performed in Espanola as of May 15, 1992

<u>Building Type</u>	<u>Number of Buildings*</u>		<u>Percentage Completed</u>
	<u>Completed</u>	<u>Total</u>	
All-Electric Residential	716	718	99%
Non All-Electric Residential**	868	1,003	89%
Total Residential	1,584	1,721	92%
All-Electric Commercial	73	89	82%
Non All-Electric Commercial	103	148	70%
Total Commercial	176	237	74%
Grand Total	1,760	1,958	90%

* The number of buildings is an approximation.

** Category includes homes with gas space heating with electric or gas water heating.

The results in Table 2 indicate, by groups of related measures, the technical/economic potential of the work required to be done (auditor recommended measures) versus the customer acceptance of those recommendations. The total system net savings are based on engineering

estimates, which have been derated by 26% to account for savings losses through: mechanical ventilation (3%), supplementary heating/wood burning stoves issue (15%), and cumulative effects of combined thermal envelope measures installed (8%).

Table 2. Customer Acceptance Levels of Conservation Measures Specified, With Associated kW/kW.h Savings Period Ending May 15, 1992

<u>Measures</u>	<u>Kilowatts (kW)</u>			<u>Kilowatt Hours (kW.h)</u>		
	<u>Recommended kW Savings</u>	<u>Accepted kW Savings</u>	<u>% of kW Savings</u>	<u>Recommended kW.h Savings</u>	<u>Accepted kW.h Savings</u>	<u>% of Accepted kW.h Savings</u>
Insulation	1,705	1,433	84	5,284,733	4,436,492	84
Windows and Doors	1,144	1,023	89	1,433,182	1,322,592	92
Block Heater Timers	138	136	99	920,370	906,571	99
Commercial Lighting	462	461	100	2,381,064	2,376,686	100
Heating & Ventilation	144	118	82	393,100	324,040	82
Water Heaters	75	74	99	1,332,952	1,313,677	99
Residential Lighting	59	58	99	365,622	360,162	99
Air Sealing	7	7	100	13,822	13,822	100
Total System Net*	3,734	3,310	89	12,124,845	11,054,492	91
Total Derated**	2,763	2,450	89	8,972,386	8,180,324	91

* The total system net is based on the estimated kW and kW.h savings assigned to each measure.

** The derated total was achieved by derating the measures by 26%.

The accepted measures and percentage uptake, shown in Table 2, are a more definitive way of expressing customer participation. Again, the levels are impressive, especially over such a short duration. This compares well to the Hood River project where an 82% participation level was achieved, but using a softer definition that a customer has participated if they accept only one of the measures recommended (Hirst, 1987).

In a recent study of USA utilities, it was stated that participation rates of between 7% and 20% could be expected for the residential sector and that even if the utility picks up 100% of the measure cost (zero payback period), some customers will not participate (Chamberlin and Faruqi, 1991). This data comes from a sample which covers the majority of the residential sector, so with the lowest participation level being 84% and the highest 100%, the Espanola Power Savers Project is clearly breaking new ground. Considering that the insulation category (84% value) involves basement insulation where customers may have to undo their decorated basements, at their own cost, to install the measure, the high participation level is even more encouraging. Basically, it is an indicator of culture shift because the customer is prepared to undergo short term inconvenience for longer term benefits.

From a utility perspective of effort versus return, it is interesting to note that although the thermal envelope upgrades are difficult to implement (1,433 kW represents about 3 million square feet of insulation) they do provide durable savings not affected by customer behaviour which

are strongly cost effective. Windows and doors have similar installation characteristics (1,023 kW represents 1.5 million square foot windows and 695 doors), but are less cost-effective and durable. However, all these compare well to residential lighting which is marginally cost effective and requires considerable effort (58 kW required over 35,000 light bulbs - reduced wattage incandescents and compact fluorescents, etc.).

Table 3 shows another means of demonstrating customer commitment - the financial contributions made to date. Not surprisingly, most of the savings and hence most of the work is being done in the all-electric category. Also, the commercial sector work is in its early stages and should show increased investment by project end. On average, Ontario Hydro is contributing 70% of the total installed cost of the measures with customers making up the difference.

There is over \$4M of work which has been completed or is in progress, some of it over the winter months, during a recession in a town of 2300 buildings. Customers putting their money on the line is also demonstrated in their general willingness to pay for the ventilation systems (costs not shown in the tables) which average \$1,200 per home.

Conclusions

The results show unprecedented levels of customer participation. Customer acceptance of the conservation ethic

*Table 3. Conservation Measures Issued as of May 15, 1992 - Financial Contributions From Ontario Hydro and Customers**

<u>Type of Building</u>	<u>Ontario Hydro Contribution</u>	<u>Customer Contribution</u>	<u>Total</u>
All Electric Residential	2,536,736	1,460,757	3,997,493
Non All-Electric Residential	157,348	11,006	168,354
Total Residential	2,694,084	1,471,763	4,165,847
All Electric Commercial	106,716	59,469	166,185
Non-Electric Commercial	1,061	74	1,135
Total Commercial	107,777	59,543	167,320
Grand Total	2,801,861	1,531,306	4,333,167

* Based on about 1,300 Job Sites where work has been approved by the customer and installation work is going on.

in Espanola is beyond the level observed in more standard DSM programs. The success to date is attributed to the non-traditional project design of which the marketing/communications component plays a vital part.

Acknowledgements

A thank you to the project team members, our partners and the residents of Espanola for their enthusiastic support of this work.

References

Chamberlin, J. H. and Faruqui, A. 1991. Demand Side Management: The Next Generation. (submitted to Forum for Applied Research)

Hirst, E. 1987. Cooperation and Community Conservation, Final Report, Hood River Conservation Project.