ESPANOLA POWER SAVERS

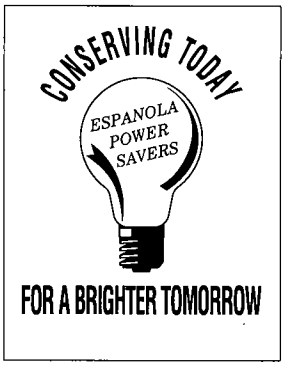
Key Project Element: Marketing / Communications

The marketing/communications function supports the two primary goals of the project:
1. To achieve a minimum of 80 per cent participation rate in the energy retrofit component of the project;
2. To achieve a community "culture shift" to wise electricity use over the long term.

This type of extensive community mobilization requires significantly more than a traditional marketing program. To attain maximum community participation and support, the marketing/communications function must have grass roots community credibility and support. In many ways, the model for success is much closer to community campaigning than traditional marketing.

The Espanola project was designed to be a working partnership. The success of this project rests on the participation of the entire community. This partnership was formalized through an agreement which outlines the responsibilities between the three principal parties: Ontario Hydro, Espanola Hydro and the Town of Espanola.

Ontario Hydro is encouraging full community involvement in the project to help achieve a maximum participation rate among the town's 6,000 residents. A comprehensive public involvement plan is being implemented for the project, and involves community education and awareness in the wise use of electricity.



COMMUNITY ADVISORY COMMITTEE

A cornerstone of the marketing/communications function involves the formation of a Community Advisory Committee, consisting of over 30 representatives from organizations within the town. The committee has two primary functions: to provide advice and guidance on ways to promote the wise use of electricity; and provide the project direct community feedback on existing and potential project-related issues. Activities now underway within the town are varied, and include a curriculum-based energy conservation school program, newsletters, seminars/service club presentations, and an energy conservation week.

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The marketing/communications concept is based on the premise that demand management requires a change in the way decisions are made which affect energy use, and a change in the factors that are considered in those decisions. Such a fundamental value shift will not occur in one visit to the customer.

A key to the community-based concept is community involvement from beginning to end, leaving the skills and knowledge with the local community to continue to champion the effort following the project's completion.

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Key Project Element: Energy Audit/Inspection

A building energy audit is required for every residential and commercial building participating in the Espanola project. Building audit categories include:

a. Residential all-electric house audits (full audit)
b. Residential non all-electric house audits (service measures audit/inspection)
c. Residential non-electric house audits (service measures audit/inspection)
d. Commercial all-electric building audits (full audit)
e. Commercial non-electrically-heated building audits (partial audit).

ENERGY AUDIT

A full audit is designed to identify the most complete set of energy conservation upgrades that will result in the greatest electricity energy and demand savings. These audits involve a full inspection of the building shell, space use, and building systems.

Through the service measure audit/inspection, applicable service measures are identified, recorded and inspected. These audits do not involve evaluation of the building shell for insulation or air sealing measures. Proper screening and then inspection of service measures are completed in one visit.

The partial audit for commercial non-electrically-heated buildings does not include audit of the thermal envelope.

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FOR A BRIGHTER TOMORROW

Audits are conducted using a two-person audit team, consisting of a qualified building auditor and a general contractor representative. The auditor is responsible for the following:

• Introducing the Espanola project goals and potential benefits to each house or building owner. In many cases, the auditor will be the first person that the owner meets after expressing interest in the project. The auditor will be equipped with project literature for the owners.

• Observing measurements taken with the contractor for those conservation measures recommended through the audit. The measurements taken will be used for contract pricing and energy savings estimation, and must be checked for accuracy.

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• Testing indoor air quality with respect to radon, and checking for proper ventilation to meet Ontario Building Code requirements.

• Conducting checks for moisture problems.

• Presenting the audit findings to the owner. The presentation will include a review of the recommended conservation measures and the estimated energy savings. The owner must sign and acknowledge receipt of the measures list, and an Application form for participating in the program. (Note, that the retrofit contractor will negotiate the work contract and financing arrangements with the owner).

INSPECTION

Inspection is undertaken after the contractor has completed installation of the conservation measures. Inspection consists of the following:

• Checking that each measure is complete and executed to the terms of the contract with the owner, and supporting specifications.

• Checking that the cost of each measure is consistent with quoted unit cost figures and that any additional costs for extras and contingencies are reasonable. Checking the area to which the measure was applied is the correct location and size.

• Checking that the customer is satisfied with the work and the conduct of the contractor(s).

The auditor completes a final inspection form.

Warnock Hersey Professional Services are providing audit and inspection services for the project.

ESPANOLA POWER SAVERS

Key Project Element:
Contractors

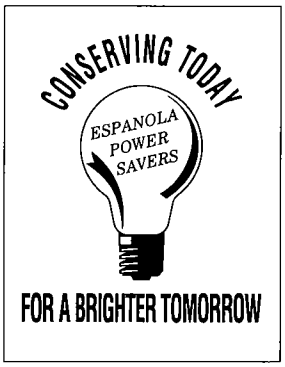
A key partner in the Espanola project is the general contractor.

Ontario Hydro selected the general contractor for the Espanola project through a province-wide bidding process. Acme Building and Construction of Sudbury is the general contractor and is approved to install energy conservation measures for the Espanola project.

All energy retrofit work and installation of the recommended conservation measures are carried out by the general contractor. The general contractor will sub-contract to local and regional contactors and suppliers, as required.

The general contractor firm together with its salespeople and installers are playing a key role in achieving the desired participation in the project. The presentation of the project work, the skills of the salespeople, the quality of installations and customer service are all essential to achieving high participation.

After the energy audit is completed, the general contractor is responsible for ensuring all work is completed. This includes selling the conservation measures and retrofit "package" to the customer, measuring windows and doors, coordinating and scheduling sub-trades, and generally ensuring installations meet project specifications.



A primary concern to Ontario Hydro is the quality of products and workmanship. The general contractor must exceed normal performance standards to ensure customer satisfaction and long-term energy savings.

All sub-contractors and installers are trained through the National Energy Conservation Association. A training centre is located on the project site.

ESPANOLA POWER SAVERS

Key Project Element:
Metering/Monitoring

Metering of electricity consumption and other related factors is being carried out in Espanola, and in a "control" community of similar demographics.

Remote interrogation metering (RIM) equipment is installed in 60 residential and 30 commercial buildings in Espanola. In the control community a RIM system is installed in 20 residential and 15 commercial buildings.

The metered buildings have been randomly selected, although with certain quotas to reflect the demographic distribution of the two towns.

In residential buildings, meters will record the total electricity load, heating load, water heater load, temperature and humidity, on a time differentiated basis. In a few homes specific appliances are also being metered.

In the commercial sites total electrical load and various other sub-loads, such as refrigeration and air conditioning, are being monitored, depending on individual wiring layouts. Within commercial buildings temperature and humidity will not be recorded.

ESPANOLA POWER SAVERS

Key Project Element:
Evaluations/Research

The Espanola project will provide valuable research for assessing both technical and human factors in energy conservation.

A cross-section of Espanola homes and businesses are being metered. Automatic reports of total electricity load, electric heating, water heating, major appliance use, temperature and humidity are being produced for analysis to confirm achieved energy savings.

To aid in the research and evaluation of changes in behaviour towards electricity use, two benchmark surveys were conducted in the spring of 1991; one in Espanola and one in a "control" community of similar demographics. The surveys asked residential and commercial customers about their energy consumption attitudes and behaviour.

Additional surveys will be conducted mid-way through the project and after its completion to follow up on changes in attitudes and behaviour, and to assess satisfaction with the project.

The efforts in Espanola are on the leading edge of demand management projects in North America. Tools being developed through the project will have direct application in current and future demand management programs. There are numerous spin-offs which can be utilized long before the project's final results are in, including: computer software programs for general contractors and project administration; conservation measures, materials and installation specifications; delivery procedures.

The evaluation plan for the Espanola Power Savers Project has a broad-reaching mandate, to provide in-depth evaluation of the project process and impact. It will assess the efficiency and effectiveness of project design and implementation, customer, community and environmental impact, load impact and cost effectiveness.

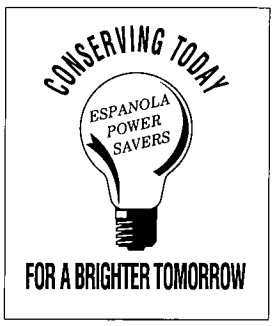
The information will be used to assess to what extent this type of project can be transferred to other communities, and will help to identify the key elements for success.

ESPANOLA POWER SAVERS

Key Project Element:
Information Systems

A new computer software program has been designed by Deloitte & Touche Management Consultants, to provide automated support to the Espanola project.

Called the Community-Based Conservation System (CBCS), it helps to administer the project in essentially three ways. First, it allows data entry of customer and vendor information, work orders, and supplemental data. Second, through standard reports and ad hoc reporting capabilities, it assists project management by monitoring the status of work performed for the customer, and it allows for scheduling audits. Third, it helps to trace and evaluate the costs, energy savings, and other aspects of the project.



The customer and program-oriented design of the CBCS has many benefits. A dedicated program activity file exists which stores summarized information from several data files. The activity file also provides an indication of the status of customer work.

The system's reporting capabilities allow project management to monitor the operations of the project, trace the costs associated, and analyze the project's effectiveness. In addition to the standard reports provided with the CBCS, ad hoc reports may also be created.

The work order system allows for entry of actual costs of customer audit, treatment, and inspection activities. This allows project management to analyze costs and benefits of conservation measures on a customer-by-customer or program-by-program basis.

ESPANOLA POWER SAVERS

Key Project Element:
Project Management

The Project Management function calls for the dual responsibilities of managing operating control and directing research efforts. Project management has four key objectives to meet: assessing the marketing strategy, project cost effectiveness, transferability to other communities, and collection of research data.

Project management in operations must be a catalyst to the Project Advisory Committee,and provide broad guidelines for the management and delivery of other key elements. This is required while ensuring project cost effectiveness and meeting Ontario Hydro standards.

Research efforts are directed to achieve four objectives:
1) to determine the effects of retrofit measures on energy savings and cost effectiveness;
2) evaluate indoor air quality;
3) track customer attitudinal changes; and
4) determine effectiveness of marketing strategy.

ESPANOLA POWER SAVERS

Key Project Element: Conservation Measures

The Espanola project objective is to obtain the maximum energy savings from the town's approximately 2,300 homes and businesses. Thus a comprehensive approach has been adopted for defining the scope of energy conservation measures included in this community-based conservation project.

In total, financial incentives for over 50 energy conservation measures are being offered through the project. These measures range from energy efficient lighting to upgraded insulation, windows and doors. On average, up to 80 per cent of the cost of purchasing and installing these energy saving measures is being covered by Ontario Hydro.

The installation of energy conservation measures is a business proposition. Ontario Hydro is willing to invest in energy savings, and is prepared to pay up to the avoided cost of building and generating electricity.

Following is a summary of the project's energy conservation measures :

WATER HEATER TUNE-UP

Water heater blanket
Hot water pipe insulation
Energy efficient showerheads
Water aerators
Water heater thermostat reset

CAR HEATERS

Block heater timers

BUILDING ENVELOPE

Air-sealing measures

INSULATION

R20/R30/R40/R50 blown cellulose insulation – attic
4" blown cellulose insulation – wall cavity
R20/R30 blown cellulose insulation – floor/roof
R20 spray polyurethane insulation – roof
R20 spray polyurethane insulation exposed wall cavity
R20 spray polyurethane insulation – basement/crawlspace

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R20 batt insulation with framing
to basement wall
R10 rigid insulation with vinyl siding/drywall
R10 rigid insulation in basement/crawlspace
10 rigid insulation to exposed floors

DOORS AND WINDOWS

Low-e windows
Insulated steel doors

EFFICIENT HEATING SYSTEMS

Dual fuel heat pump
Air source heat pump
Horizontal/vertical ground source heat pump

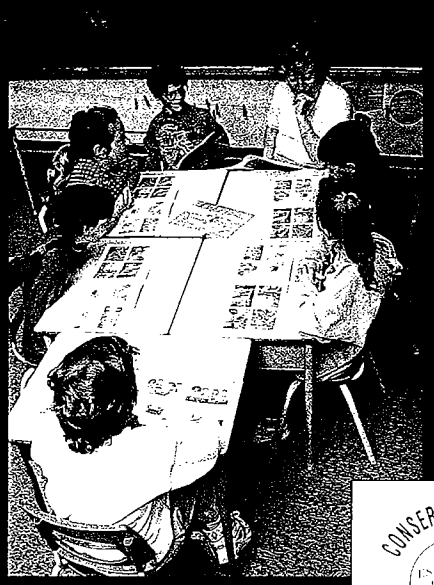
LIGHTING

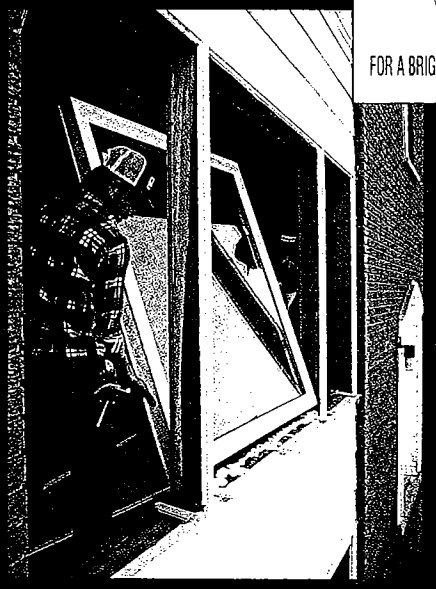
Compact fluorescent lightbulbs
Reduced-wattage incandescent lightbulbs
Energy efficient fluorescent lamps
PAR halogen lamps

Printed on recycled paper

ESPANOLA POWER SAVERS

The story of an energy-saving community





CONSERVING TODAY

ESPANOLA POWER SAVERS

FOR A BRIGHTER TOMORROW

ESPANOLA – A COMMUNITY STORY

It was a typical morning for Ken Buck of Espanola. Rising early, he prepared a light breakfast, slipping a single slice of bread in his toaster.

All was as usual. Except this particular morning, Buck noted something he had not considered before: every element of his four-slice toaster came on to toast one slice of bread.

What a waste of energy, he concluded.

Buck was right. Energy was being wasted. Yet more important than his conclusion was what it signified: a new way of thinking about how electricity is used.

At Ontario Hydro, we're encouraging such thinking. By noting how electricity is wasted, we can take action to ensure that it's saved.

Ken Buck's community – Espanola – is taking action. His neighbours and friends within this small, northern Ontario town are testing their own potential for saving electricity.

Their success is of keen interest to us – and important to every customer we serve. Why? Because Espanola will determine the outcome of the most ambitious energy efficiency project ever carried out by a utility.

HOW AMBITIOUS?

Ontario Hydro is investing more than $10 million to make Espanola the most energy efficient town in Canada.

In partnership with Espanola Hydro and the Town of Espanola itself, we are conducting an intensive, full-scale, conservation pilot project. We not only want to learn what energy savings are possible, we want to know what influences people to conserve. Aside from its broad scope, our project has some key characteristics. For a start, it's based in the community. And driven by the needs and wants of local citizens. The measures involved emphasize quality products supported by quality workmanship. And we're pursuing a "whole house" approach – rather than piece-meal retrofits.

AS FOR THE BENEFITS...

The more electricity Ontario saves, the less need there is for new generating stations. This means less impact on the environment. And it also helps to ensure the lowest long term cost for Ontario's electricity system in future.

Through conservation, customers gain greater control over their own energy bills. And local utilities gain increased management over their maintenance and capital costs.

The people of Espanola have completed the first 12 months of the two-year Espanola Power Savers Project. They have a lot to share about their energy efficiency progress to date.

THIS IS THE STORY OF THEIR COMMUNITY

It tells why they were chosen. How they chose to become involved. Who is participating. And what every Ontario Hydro customer can learn from their experience.

Vicky Sharpe
Manager, Program Testing and Analysis
and Espanola Power Savers Project Manager

COMMUNITY-BASED CONSERVATION

Ontario Hydro is not the first utility to explore community-based conservation. There have been similar projects in the United States, most notably in Hood River, Oregon and Osage, Iowa. But nothing has been attempted on the same scale as Espanola.

The Espanola Power Savers Project is unique for several reasons: the extent of conservation measures offered, the comprehensiveness of the community approach, and the level of financial incentives.

Why is our project so in-depth? How does it fit with our energy plans for Ontario? And what exactly is community-based conservation?

For a start, Ontario Hydro has one of the most ambitious energy efficiency plans in North America. Increased energy efficiency is our leading option for meeting Ontario future energy needs. Our most recent targets call for electricity savings of 5,200 megawatts by the year 2000.

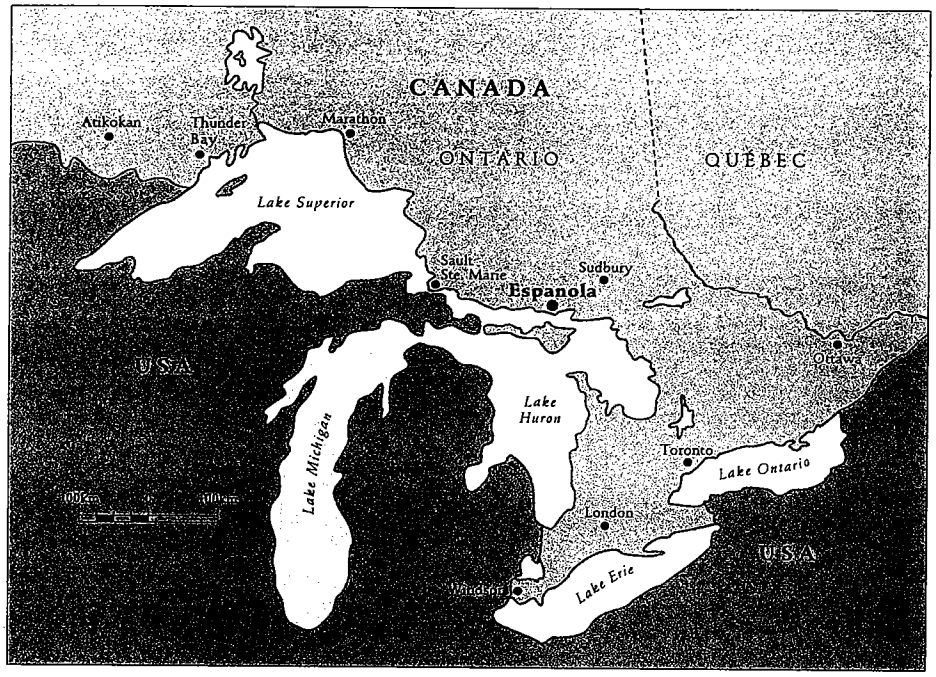
No utility has yet attempted to meet as challenging a conservation goal in such a tight time frame. Yet we are confident this target can be met – provided we have the partnership and commitment of all Ontario.

To achieve these savings, we are investing $6 billion to better "manage" Ontario's power demand during the decade of the nineties.

We currently offer more than 30 demand management programs, targeted to residential, agricultural, commercial, and industrial sectors in Ontario. Many of these programs play a part in the Espanola Power Savers Project.

But Espanola is singular. Here's why: In essence, Espanola represents the "high water mark" of our energy efficiency efforts to date.

In this pilot project, we are testing leading edge conservation ideas and products, while our customers implement them. The information we gain from this partnership will be invaluable.



It will be used to further assess the viability of our conservation and energy efficiency targets. And to determine how our programs can be improved and broadened. In fact, about one-third of the project cost is being spent on such research.

A Unique Approach

The Espanola project differs from other Ontario Hydro programs because of its intensified approach to energy efficiency. We want to accelerate people's participation in saving electricity.

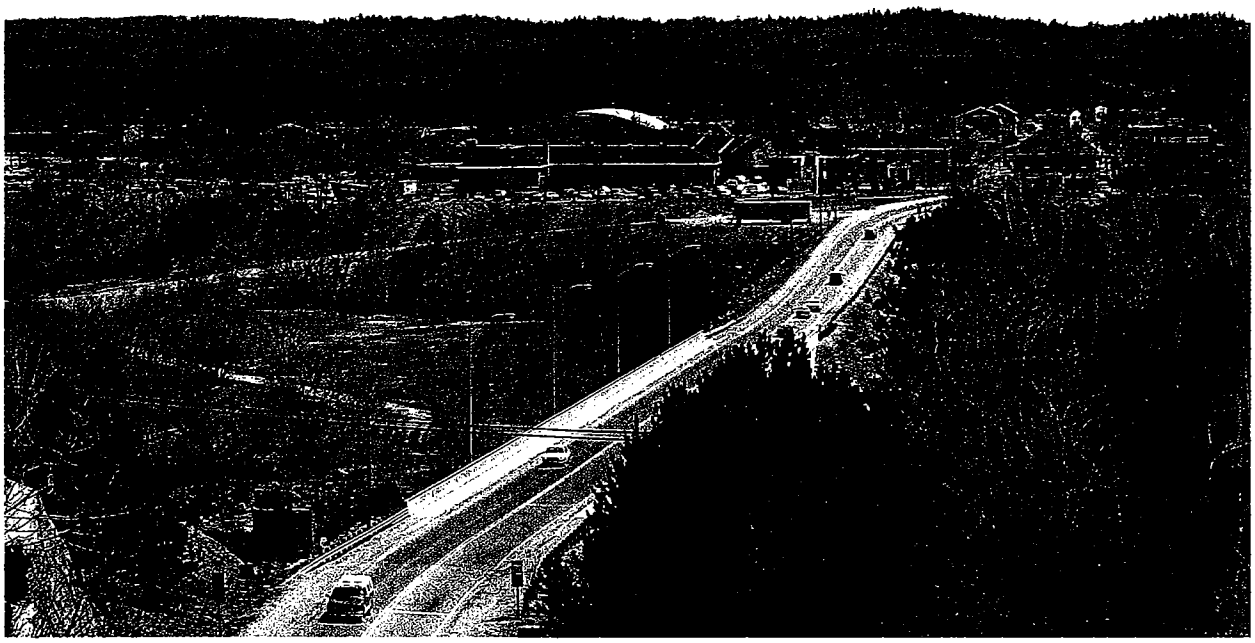
This approach is a departure from what's known as a "free choice" approach. "Free choice" basically involves offering customers as much energy efficiency information as they want – with customers then choosing how to apply that information in their energy use.

The Espanola project is also different in its economic approach. It is not limited to the use of financial incentives, which many of our other energy efficiency programs offer.

Espanola is different – because the project's success depends upon our influencing the whole community to change the way they use energy.

By changing some of the energy products people use, we hope to change people's behaviour in how they use electricity. By increasing the availability of conservation information and measures, we hope to increase our customers' conviction that electricity can be saved. This two-pronged approach to energy efficiency sets the Espanola project apart.

As for Espanola itself, the town benefits from its involvement because the money invested by Ontario Hydro and the community is spent in



The town of Espanola.

the community. Another benefit is that a lot of the conservation measures are undertaken by local contractors.

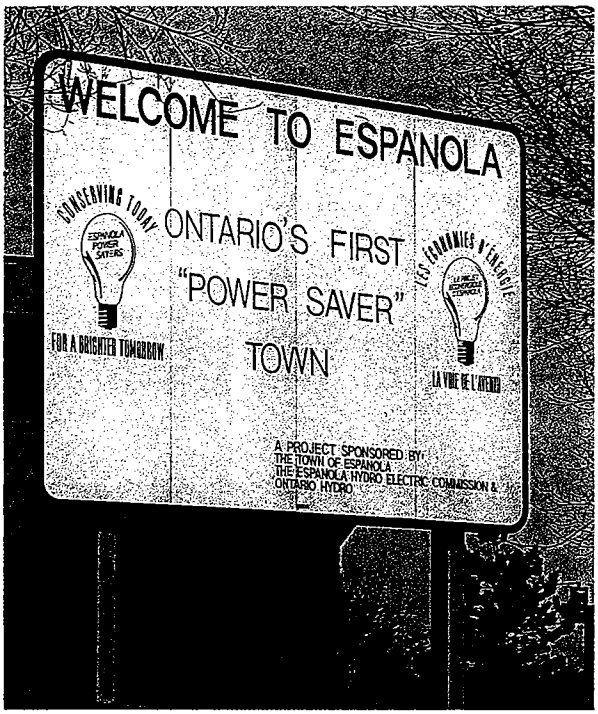
Ontario Hydro's role is to act as a catalyst and facilitate energy decisions. This is in keeping with key features of our community-based conservation strategy. These features include:

- the targeting of a specific geographic area for maximum saturation;
- the use of a community network to promote and champion the effort;
- incentive levels which induce maximum participation;
- high levels of personal contact to ensure effective, fast-tracked results;
- a "whole building" approach to prevent fragmented decision-making; and
- the use of trained contractors to install high quality materials and products to Ontario Hydro specifications.

Taken together, these features increase the likelihood of a long-term "value shift" toward how electricity is used.

Features Of Community-Based Conservation

- targeted to specific geographic area
- uses community network
- Ontario Hydro as a catalyst
- facilitates customers' energy decisions
- incentive levels which induce maximum participation



This value or culture shift is an essential principle of the project. Only by changing attitudes – by making people more aware of energy waste and the ways to practise wise energy use – will we be able to sustain energy savings over the long term.

Espanola was chosen as our location for community-based conservation because it met the criteria devised to test the community-based approach.

We wanted to work with a northern town that was relatively isolated from southern urban markets, but had a stable economy. We further wanted a town that had a mix of fuel sources, including a high degree of electric heating in its homes and businesses.

ESPANOLA MAYOR – RON HAGAN

Espanola Mayor Ron Hagan believes that the Power Savers Project is providing important benefits to his town.

"We're very happy to be involved as a partner with Ontario Hydro in this pilot project. It's been the talk of the community for the last year. There's been almost full participation... everybody has really gotten on the bandwagon".

Mayor Hagan describes the value of the project as being two-fold: a spruced-up town and energy savings.

"It's been a boon to the community. As you go about town you can see the cosmetic changes to the homes; the modernization of many.

"We're also pleased with the energy we're going to save in the long run. It's going to be beneficial not only to the homeowners, but also to the town and taxpayers in general – because most of our town buildings are also part of the project."

Mayor Hagan also views Espanola as being a leader in conservation. "We look forward to being an example for other communities."

We also wanted to work with a population base of about 5,000 people, in a community that had shown interest in energy efficiency. For example, Espanola was one of the first municipalities in Ontario to convert to energy efficient streetlighting.

Finally, we wanted a town in which electricity was retailed to the community through a municipal electric utility. This was important for two reasons: to ensure the project was truly community-based, and to have the project continue beyond the two-year demonstration phase. We wanted a strong partnership with the local utility to strengthen, in turn, our partnership with the community.

Out of the 40 towns assessed, Espanola had the best combination of characteristics.

In essence, the Espanola Power Savers Project is not unlike a simple business proposition. The benefits of conservation are promoted to the community through an extensive awareness-building campaign. Espanola participants then agree to install conservation measures in their homes and businesses with financial assistance from Ontario Hydro.

Key Project Elements

- marketing/communications
- conservation measures
- audit/inspection
- contractors
- metering/monitoring
- evaluations
- information systems
- project management

The amount of incentive depends upon the specific measure and the electricity savings it yields. These electricity savings then accrue to Ontario Hydro which, in turn, does not have to generate that amount of power. In effect, the people of Espanola are "generating" their own electricity through conservation.

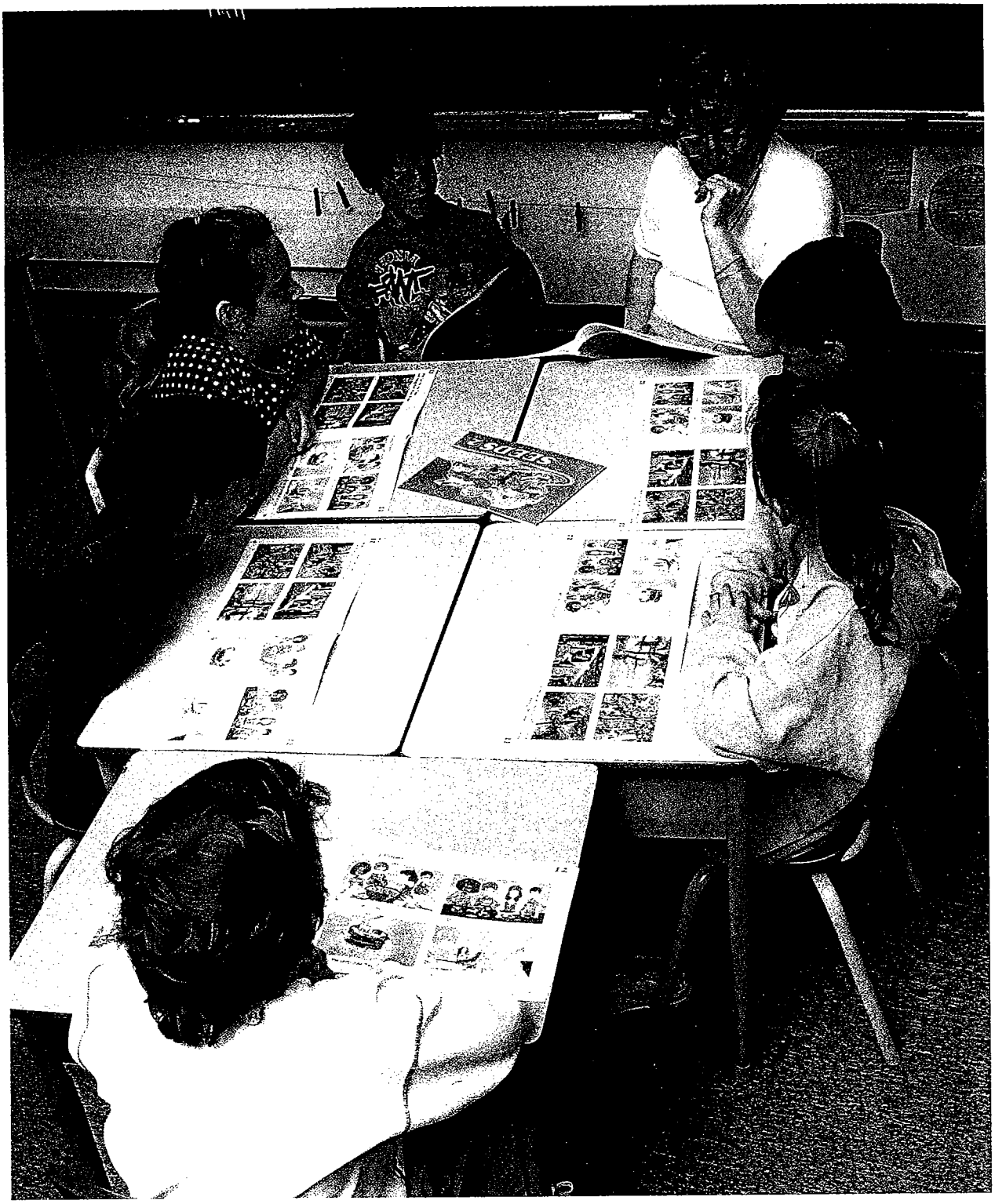
Original estimates for the project predicted energy savings of 2,000 kilowatts based on 80 per cent participation. Now, one year later, we are optimistic that the people of Espanola will exceed this target for participation.

The Process Behind The Project

How do you convince a town of 6,000 people, with 2,300 homes and businesses, to save electricity?

You rely upon the energy, commitment, and enthusiasm of the community itself.

We first announced our Espanola Power Savers Project in January, 1991. After extensive meetings, research, planning, training, assessment, review, and consultation, the project was officially launched five months later. The opening event was a Saturday, June 1st picnic – attended by almost 1,000 townspeople.



A curriculum-based energy conservation program is underway at local schools.

Right from the start, community involvement has driven this project. A community advisory committee was formed in the early spring of 1991 to work directly with the handful of Ontario Hydro employees responsible for project co-ordination.

Membership on the committee includes local club chairpersons, school trustees, teachers, store owners, contractors, news media people, as well as town councillors, the mayor, and local utility representatives. It is their work and support which has helped to define the project's success to date.

The committee's efforts have encompassed a broad spectrum of initiatives – from arranging a logo contest which attracted more than 50 entries, to planning the opening ceremonies of the project launch, and guiding the promotional and communications activities inherent in Espanola Power Savers.

The project's logo; a result of a community logo contest.

Other events have focused on education and awareness. For example, committee members suggested working with local schools to implement conservation programs in classrooms. With help from the School Boards, Espanola Hydro and the Espanola Lions Club this project is underway. In addition the local library has set up a Conservation Corner, featuring brochures and other information.

ESPANOLA HYDRO GENERAL MANAGER – DOUG BOIS

Doug Bois, General Manager of Espanola Hydro, believes energy conservation is the way of the future.

"Utilities down the road aren't going to have any choice about offering energy efficiency services as part of their operations. They're going to have to do it for their customers. It makes sense environmentally."

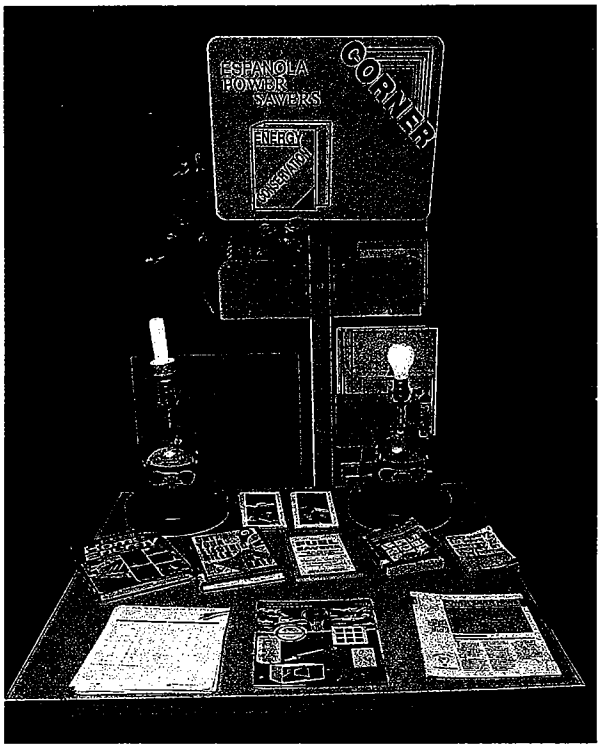
Doug admits that the potential loss of revenue utilities may face from energy conservation can cause some anxiety. "You may end up losing some money, but it's balanced by better service to customers. Also, with load reduction, we can cut our capital costs – and still add more homes to our present electricity system."

Doug sums up the reaction of his customers to the Espanola Power Savers Project as "terrific". But he also notes that their willingness to save energy over the long term will determine the project's success.

"This type of cultural shift toward energy use won't be overnight. And it won't be easy," he concedes."People aren't used to conserving like this. That's why our tracking of electricity consumption and education about wise energy use must be on-going."

The committee has helped organize open house/information nights, service club presentations, an energy saving tip contest, an energy conservation week, and newsletters to update residents on the latest developments.

Equally important has been the committee's work to ensure that the project runs smoothly.



Following Advisory Committee suggestions, Conservation Corner was set up at the Espanola library.

The project depends upon committee members for advice and feedback. It needs their help so Espanola businesses and residents receive the right information, at the right time, in order to participate. It also is guided by committee ideas on how to promote the wise use of energy in the town over the long term.

ADVISORY COMMITTEE CHAIR – ARLENE ODERKIRK

Arlene Oderkirk believes it's time to get involved in energy conservation.

The Chair of the Espanola Power Savers Project Advisory Committee, who is also a Grade 2 teacher, decided to participate – in part – because of her daughter.

"My daughter is into conservation, and I thought it was time to do my part as well. When the request went out (to the United Church Women) for committee volunteers, I decided to get involved rather than pass it on to someone else."

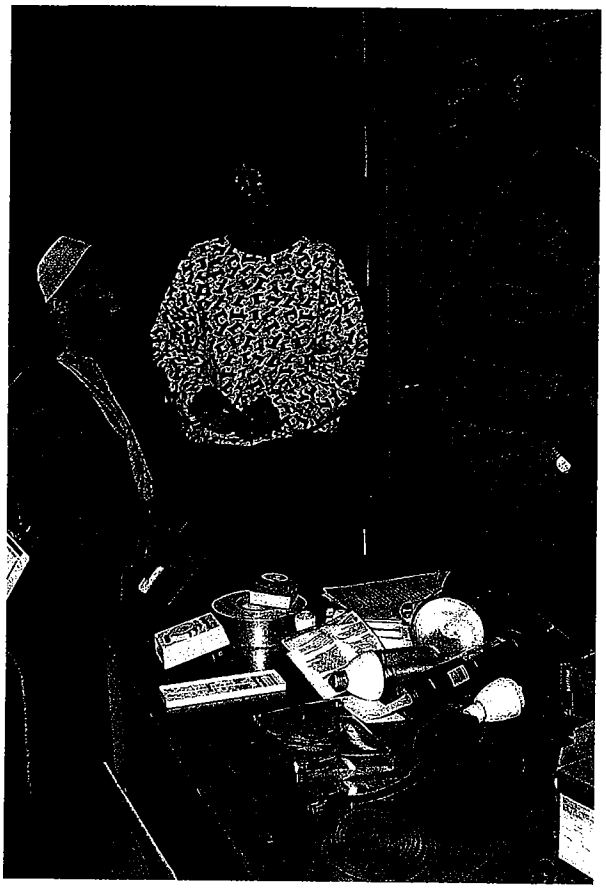
Arlene describes herself as "optimistic" that Espanola residents and businesses will change their views about energy use over the long term.

"I think we can achieve a culture shift, especially if we work through our youth. Children are much more aware of environmental problems. In elementary and high schools, kids have a real commitment toward conservation, unlike adults who may feel that enough is already being done.

"The real challenge we have ahead of us is to sustain the momentum of the project."

One of the key concerns for this project has been quality. We want to confirm that the products used and installed for each conservation measure provide the maximum amount of energy savings. We also want to ensure that these savings can be relied upon over the long term.

The majority of conservation services are being carried out by a general contractor, who – in turn – subcontracts to local and regional contractors and suppliers. In this way, we are "leveraging out" the project to further increase community involvement.



Discussing home energy saving options with Espanola residents.

This is important for two reasons. One is economic. There are obvious benefits to the regional economy in using people from the surrounding communities. Such leveraging also gives a boost to private sector companies marketing conservation products and services. In addition, contractors benefit from developing new or expanded skills, and from the high profile the project provides.

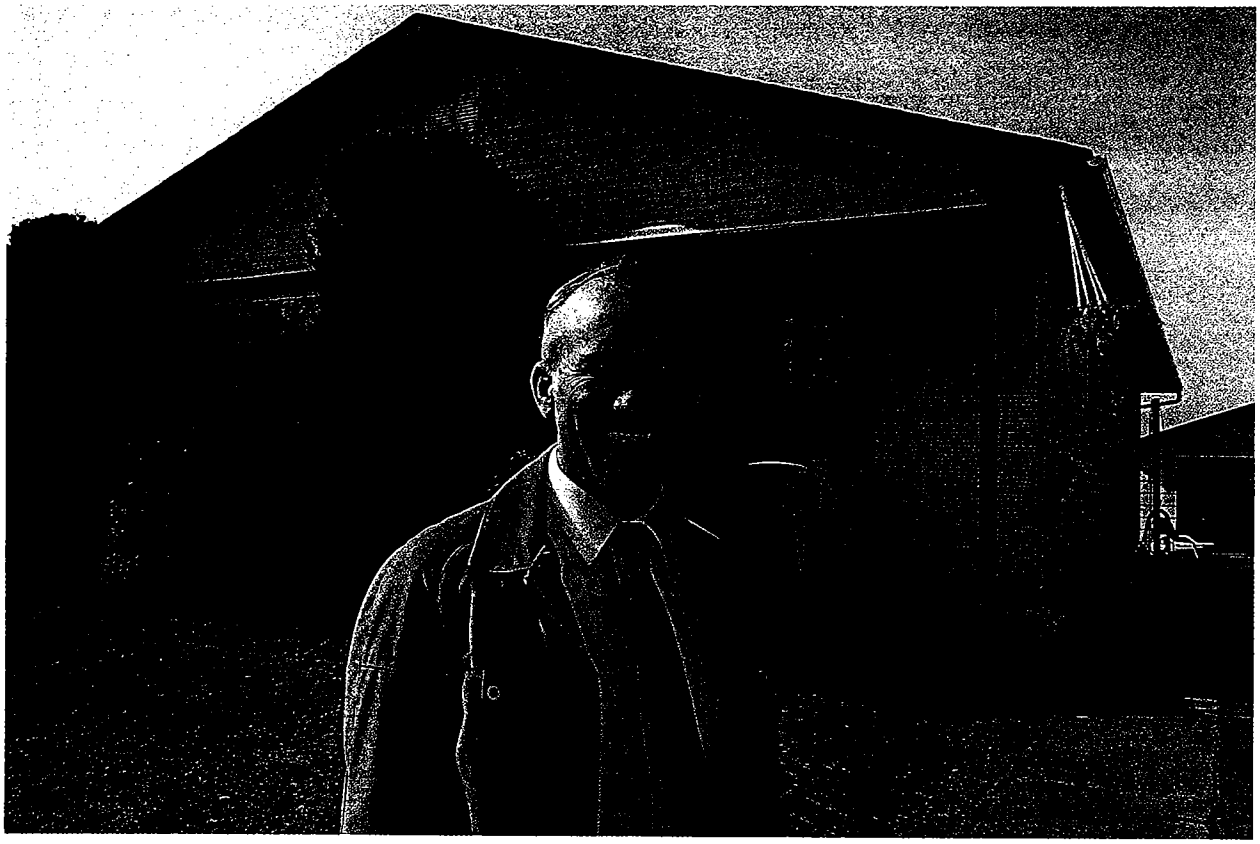
The second reason for "keeping it local" is that the customer benefits. Customers feel more comfortable dealing with contractors they know and have worked with in the past.

Using a province-wide bidding system, we first selected the general contractor, Acme Building and Construction Limited of Sudbury.

Acme then evaluated all local suppliers, sub-trades, and installers. Where the local person's qualifications were at least equal with a competitor, they received the bid. The result has been about a 50/50 split between local and regional contractors.

Training became an essential element of the Espanola project.

Training for new home construction is not adequate for energy retrofit trades. With the development of new conservation technology, and the increasing need for a more complete understanding of building science, specific training is required – and ongoing training, desired.



Espanola homeowner in front of recently retrofited home.

To meet these needs, the project team drew upon the skills and knowledge of the people at Cambrian College in Espanola, and the National Energy Conservation Association (NECA). Working together, we developed a training program for all participating contractors.

The end result is that the general contractor is responsible for ensuring that all measures are installed according to Espanola Power Savers/NECA specifications. NECA-trained tradespeople carry out all the work.

Another key participant in the project has been Espanola Hydro.

Hydro commission members were instrumental in ensuring the project got off the ground and received community support. But their backing will be even more important in future to secure energy savings beyond the two-year demonstration phase.

Espanola Hydro's commitment is all the more noteworthy because conservation – at first glance – can present local utilities with revenue concerns. With less electricity being used by customers, expected revenue may decline.

Yet the issue of energy efficiency is far broader than any balance sheet. Most local utilities recognize that energy conservation advice and

An optical fibre scope is used during the audit to check condition of insulation.

technology represent a service that many customers are demanding. In showing people how to better control their electricity costs, utilities can better satisfy customers.

The local utility gains greater control as well. With customers cutting back on power consumption, the utility saves on maintenance and capital projects. In the long term, the utility may be able to avoid building a costly new sub-station or installing new transformers.

Utility support. Specific training for contractors. Local and regional trades involvement. Community Advisory Committee commitment. These represent key factors in our community-based conservation approach. Once each was in place, we were ready to get the job done.

Conservation For Our Customers

Energy conservation once meant "doing without." Today, people are beginning to view it as "doing more with." After all, saving electricity not only makes environmental sense, it provides increased value for one's electricity dollar.

Yet this alone is not enough. Energy efficiency must be readily available and convenient to the customer. It must focus on the customer's needs – reflecting personal lifestyle decisions, as well as meeting critical business demands.

We designed the Espanola project to be as simple and convenient as possible for our customers. It emphasized a "one-stop shopping" approach for energy conservation services, built around four key steps:

- a comprehensive "house as a system" energy audit;
- the approval of suggested conservation measures by the home or business owner;
- the installation of the measures by certified contractors;
- inspection of the work to ensure quality control.

HERE'S HOW THE STEPS WORK AS AN INTEGRATED STRATEGY:

A qualified energy auditor and a representative from the general contractor visits each home or business in Espanola. The energy auditor's job is to identify all possible measures for energy savings within the building, using the "house as a system" approach. The contractor then takes all required measurements, and provides a quotation for the entire package.

they are being suggested by an independent third party – the energy auditor, not the contractor. However, once agreement is reached, the general contractor is responsible for any and all actions resulting from the contract. NECA-trained trades then perform the work – which is inspected upon completion. All work is covered by the Homeowners Warranty for Energy Renovations, as set out by the Energy Conservation Contractors Warranty Corporation.

Owner of Espanola's Pinewood Motor Inn took advantage of 2,580 sq. foot basement insulation retrofit.

The customer makes his or her decision regarding the recommended measures, and an agreement is signed between the general contractor and the homeowner. There is no pressure to accept the recommendations because

In total, Ontario Hydro is offering financial incentives for more than 50 energy conservation measures. On average, we pay up to 80 per cent of the product and installation costs.

Most of the more comprehensive energy retrofit work is being done on all-electric homes and businesses, as these have the greatest potential for electricity savings. However, everyone in town is eligible for some energy efficient measures – regardless of their heating option. For example, the lower cost measures we offer free to everyone include energy efficient lightbulbs, hot water heater tune-ups, and car block heater timers.

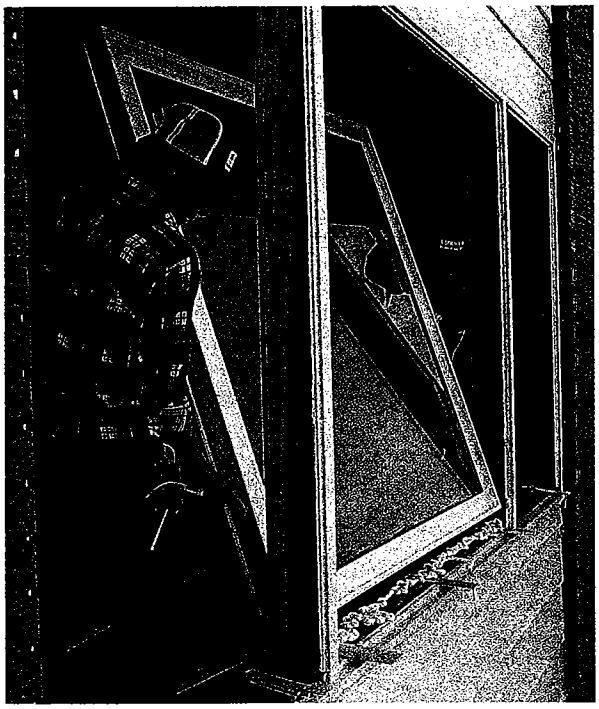
All-electric homes qualify for additional, higher-cost and more sophisticated measures, and usually require some contribution from the customer.

These include high levels of thermal insulation in attics, walls, and basements, air leakage control through air sealing (and inspection with a blower door test), window and door upgrades, indoor air quality improvements through mechanical ventilation, and energy efficient heating systems.

To date, the success of this approach has been reflected by the level of participation. Following a residential home audit, most people agree to all of the recommendations made by the auditor.

While the measures installed vary depending on the house involved, there appears to be consensus on the benefits of energy efficiency. Those who have participated view the rewards as two-fold: energy savings and added-value for their home investment.

The enthusiasm shown makes us optimistic that we will be successful in obtaining a long-term value shift in people's energy use. Once the conservation measures have been installed in their homes, many people then begin to ask what else they can do – personally – to save electricity. This commitment in the residential sector shows signs of being duplicated in the commercial sector. Ninety-nine per cent of Espanola businesses have chosen to participate in an energy audit.



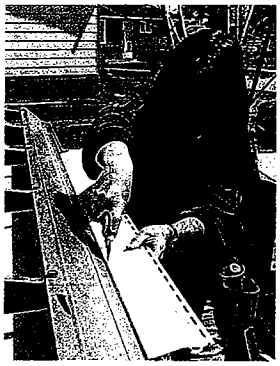
Installing new low-e argon-filled windows.

Progress And Future Potential

We believe our investment in the Espanola Power Savers Project will pay dividends for the town – and for all our customers. The lessons we learn from Espanola today will translate into better energy service for Ontario tomorrow.

To date, the results of the project have been very encouraging.

Overall participation in the project energy audits – both for commercial and residential buildings – ranks at 95 per cent. One year into the project, customers have agreed to installation of 90 per cent of the conservation measures recommended through the audits.



Preparing vinyl cladding for installation over home insulation.

Installing energy efficient doors.

This commitment is expected to result in electricity savings of about 2,500 kilowatts. These savings result from an initial energy efficient investment of $2.4 million by customers, and $4.9 million from Ontario Hydro.

While the estimated savings must be evaluated over a full heating season, and verified through actual customer billing analysis, it's clear from customer participation and commitment that the project is succeeding in helping Espanola become more energy efficient.

In comparison, other utilities which have pursued community-based conservation programs have not achieved such high levels of customer commitment and installation of conservation measures.

Of course, the real test for Ontario Hydro will be how well these savings are sustained. We need that long-term value shift if Ontario is to meet its ambitious conservation goal. Ontario Hydro cannot change peoples' attitudes unilaterally. But by comprehensively demonstrating the benefits of conserving in one town, we hope to promote greater interest and willingness on the part of people across Ontario to conserve.

There is also the issue of future savings from similar Power Saver projects. A preliminary study has shown that if the Espanola concept were applied to all small communities in Ontario, potential energy savings would be about 900 megawatts over 10 years.

To put this into perspective, that's the capacity of one of the nuclear reactors at Ontario Hydro's new Darlington generating station. Put another way, it represents the total electricity used by the city of Hamilton. To save – rather than build – that capacity is the wisest energy choice Ontarians can make.

These important elements of the Espanola project explain why such intensive research is being undertaken. We are analyzing both the technical and human factors involved in energy conservation.

CONSERVATION MEASURES

WATER HEATER TUNE-UP

- water heater blanket
- hot water pipe insulation
- energy efficient showerheads
- water aeators
- water heater thermostat reset

CAR HEATERS

- block heater timers

BUILDING ENVELOPE

- air-sealing measures

INSULATION

- R20/R30/R40/R50 blown cellulose insulation – attic
- 4" blown cellulose insulation – wall cavity
- R20/R30 blown cellulose insulation – floor/roof
- R20 spray polyurethane insulation – roof
- R20 spray polyurethane insulation exposed wall cavity
- R20 spray polyurethane insulation – basement/crawlspace
- R20 batt insulation with framing to basement wall
- R10 rigid insulation with vinyl siding/drywall
- R10 rigid insulation in basement/crawlspace
- R10 rigid insulation to exposed floors

DOORS AND WINDOWS

- low-e windows
- insulated steel doors

EFFICIENT HEATING SYSTEMS

- dual fuel heat pump
- air source heat pump
- horizontal/vertical ground source heat pump

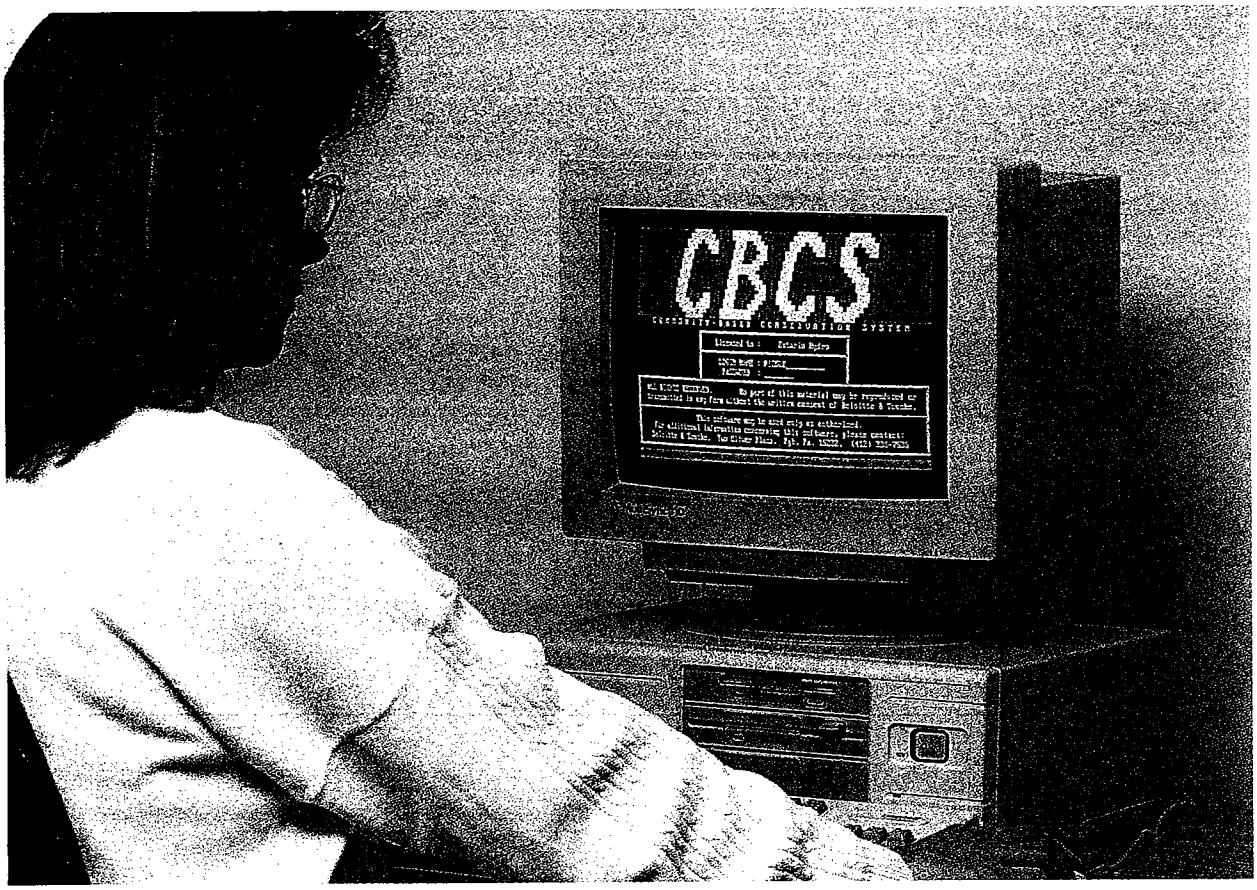
LIGHTING

- compact fluoresent light bulbs
- reduced-wattage incandescent lightbulbs
- energy efficient fluorescent lamps
- par halogen lamps

For example, tools developed for the Espanola project are being directly applied to our current conservation and energy efficiency programs, and assessed for future ones.

Computer software programs, conservation measures and products, material and installation specifications, and delivery procedures – all of these are spin-off benefits that we're using now, even before the project's final results are in.

As for the human factor... we are currently "sub-metering" a cross-section of Espanola customers. Automatic reports of temperature, humidity, and major appliance energy use are being produced for analysis. These not only help us confirm expected energy savings, but they teach us more about customer patterns in energy use.



Community-based conservation software system helps in project administration.

This research will have major implications for the way we involve the people of Ontario in energy conservation in the future. It will tell us how our customers choose to conserve, as well as what measures bring the greatest rewards.

We'll also learn more about community influence – and how savings can be integrated across sectors, throughout homes, and within specific geographic locations. We'll see what customers are willing to do right now for greater energy efficiency in future.

Finally, we'll be able to measure the general effectiveness of community-based conservation. This is important because the next steps involved in influencing customers to conserve demand more restrictive approaches. These can include energy efficient standards or direct load control. Instead... we believe that through partnership, through commitment, through enthusiasm and motivation, we can work together to demonstrate energy efficiency. And together, we can reap the benefits conservation delivers.

People like Ken Buck – and the entire community of Espanola – are showing us how.

For More Information

If you would like more information about the Espanola Power Savers Project, please call or write:

Vicky Sharpe
Manager, Program Testing and Analysis
and Espanola Power Savers Project Manager
Ontario Hydro
777 Bay Street
Toronto, Ontario M5G 1X6
Telephone (416) 592-5545
or
Peter D'Angelo
Project Leader
Espanola Power Savers Project
329 Second Avenue
P.O. Box 1490
Espanola, Ontario P0P 1C0
Telephone (705) 869-2170