



Jasper Energy Efficiency Program

Local Action is Cheaper than New Generation or Transmission

In the early 1990s, the Canadian Rockies town of Jasper, cut residential peak electricity demand by more than 20%. Alberta Power, the local utility, aggressively promoted energy efficiency under the hypothesis (which proved true) that efficiency would be cheaper than constructing new electricity generation or transmission. The Jasper Energy Efficiency Program (JEEP) utility reached out to the town through many channels and actively sought local feedback and guidance in running the program. JEEP focused on installing such measures as compact fluorescent lighting and hot water tank conversions, not comprehensive home energy improvements. In essence, the program was a turn-key operation delivered in a home visit that minimized transaction costs for the homeowner. About 70% of Jasper households were reached through the program.

Background

The Jasper Energy Efficiency Program (JEEP) was a program administered by regional utility Alberta Power in the town of Jasper, Canada (population 4,500) from 1991 to 1994. The goal was to reduce peak electricity demand in Jasper through energy efficiency to avoid either building an additional local generating unit or a transmission line to connect Jasper to the provincial grid. The goal of the program was to achieve a permanent 2 MW reduction in peak demand, with 0.5 MW coming from the residential sector (1,296 households) and the rest from the commercial sector (The Results Center 1996)¹.

Program Implementation

JEEP staff first went door to door and surveyed residential energy use to determine which measures would be most effective. Of the 911 surveys distributed, 488 residents filled them out and mailed them back. Among other survey questions, staff asked whether residents were using compact fluorescent light bulbs, whether they had electric water heaters, and whether they had electric heat. Based on what the survey revealed about how residents were using energy, a contractor evaluated the potential savings from installing different energy-saving products.

The residential component of the program did not involve full weatherization projects. Instead, the main measures promoted by the program were compact fluorescent lighting, power-saver cords², indoor/outdoor lighting timers, and hot-water tank conversions to natural gas. “JEEP Team” members – local residents hired by the program – underwent a week-long training program that included overviews of the products they were promoting, as well as communications. The residential upgrades were done from the September 1992 to February

¹ Unless otherwise noted, the data in this case study is taken from the Results Center case study.

² Power saver cords activate block heaters in vehicles when the outdoor temperature falls below 19F; without these cords, block heaters tend to be left on permanently consuming electricity regardless of the temperature.



1993. During these months, residents could request a home visit from JEEP. Two JEEP Team members would come to their house to explain, recommend, and sell the energy efficiency measures. Homeowners could buy CFLs, power-saver cords, and timers at a discount. There was also a \$400 incentive to convert electric water heaters to natural gas; Alberta Power hired a contractor to change out the hot-water system, at a net cost to residents of \$300 (Tools of Change 2004). JEEP used follow-up phone surveys and site visits to determine the extent to which energy efficiency equipment was actually being used.

Alberta Power set up a Public Information Committee consisting of local residents and representatives from Alberta Power, local schools, the hospital, environmental groups and businesses. The committee advised the program on all project components, including marketing and outreach (Hewitt, 2005). The JEEP program required 6.5 full-time staff on the residential program and 3.5 on the commercial program. This included a project coordinator based in Jasper, part-time administrative help, four JEEP Team members, a quality control supervisor for the commercial program, a part-time project manager and a part-time communications specialist.

Driving Demand

Alberta Power promoted JEEP intensively. Three hundred residents also attended the initial kick-off ceremony. JEEP staff cultivated a relationship with the local newspaper, which ended up printing JEEP's newsletters, in return for advertising support. The newsletter, Alberta Power Smart Report, reported the progress of JEEP, explained how to participate, and profiled satisfied customers. The advertising campaign also included newspaper ads, bill stuffers, and brochures. A fluorescent lamp sign in the middle of town tracked the kW of power saved.

JEEP staff and volunteers used personal marketing techniques that included door-to-door outreach (for the initial residential energy survey) and peer validation (by advertising of homeowners who had participated).

Results

JEEP exceeded its peak demand reduction target by avoiding 2.1 MW of new capacity. The residential segment of the program was roughly on target, achieving a reduction of 0.49 MW or 22%. Total energy savings were estimated at 6,321 MWh per year, and savings from the residential program were estimated at 890 MWh. The program had a goal of 75% penetration in the residential program, but the program ended after reaching 70% (891 households visited in less than 6 months). The program could have reached more households, but it already had met program goals.

The power savings were tracked based on data collected by the JEEP Teams. JEEP Teams reported the installed in a home, wattages, and occupant usage patterns. These data were entered into a statistical software package developed by Alberta Power (Hewitt, 2005). Measuring savings from billing data was challenging because meters were read every other



month and bills for the off-months were based on estimates using the previous year's consumption. Also, 30% of residents were on a billing scheme whereby winter and summer bills were equalized, so they didn't necessarily see an immediate post-upgrade reduction in their bills. Thus, the peak demand reduction of 2.1 MW was calculated based on engineering estimates. However, the accuracy of this calculation was verified when measured peak demand in 1994 was 10.8MW, 2.2MW lower than the previous utility estimate.

Participants reported high levels of satisfaction with the program. A phone survey that reached 358 participants found that 96% rated JEEP Team performance (in terms of product knowledge, ability to answer efficiency questions, and overall friendliness) as "very satisfactory." In contrast, 80% of respondents read the program literature but 70% did not find it very informative. This highlights the importance of personal communication and well-trained assessors to deliver program information.

JEEP ended up being cheaper on a per kW basis than either of the other options that the utility was considering (installing a new generator or new transmission capacity). The average cost of JEEP for residential and commercial was \$519/kW, whereas a new peak-generating unit would have cost \$978/kW. The residential segment cost \$257,600 (including \$78,899 in incentives), implying a cost per participating home of \$290 (not adjusted for inflation). Alberta Power paid up to 80% of the cost of the residential measures.

Lessons Learned

Much like the BPA programs, JEEP offered significant financial incentives to attract customers. With 80% rebates, the program was very affordable for residents. Yet JEEP also took several other steps in addition to the financial incentives in order to attract participants. The program was designed as turn-key operation for residents, with very little administrative hassle required (homeowners simply called to request a visit from a JEEP Team). As noted, the program hired and trained local residents to discuss and sell energy-efficiency goods and services. Involvement of the community – local hirings, intense local media interest, local advice from the Public Information – was important to build trust and credibility.