

BC Hydro, Power Smart

High Efficiency Motors Program

Each year over 300,000 horsepower (HP) of 3-phase integral electric motors are purchased by British Columbia Hydro (BCH) customers, including standard and high-efficiency motors. The goal of the High-Efficiency Motors Program has been to transform the market in the province and to make sure that most if not all of these motor sales are high-efficiency motors. Given the low electricity costs in British Columbia, many B.C. Hydro customers have opted to pay the low initial costs of standard efficiency motors despite the lifecycle benefits of high-efficiency motors. Overcoming this barrier, has been the essence of the High-Efficiency Motors Program.

B.C. Hydro launched the Energy-Efficient Motors Program in 1988 and in 1989 it became a full-scale Power Smart initiative with rebates for participating customers. In 1990, a vendor incentive was added to further encourage stocking and sales of high-efficiency motors. In 1990, a Buy-Back option was added to accelerate the change out of the installed stock of standard motors. For participants in the program incentives are offered in the form of rebates of \$293 (\$350 Canadian) per kW saved. Another \$59/kW (\$70 Canadian) is offered to distributors under the vendor incentive.

One of the difficulties of implementing a motors program is that motors are sold in three ways, through direct sales, whereby the motor manufacturers' representatives contact and sell large orders to industries directly; through Original Equipment Manufacturers (OEMs) which embed motors in equipment; and by local distributors, or what are commonly called vendors in this profile. B.C. Hydro has been successful at implementing change in all three areas, with particular success in swaying the incorporation of high-efficiency motors in OEM equipment, a most difficult challenge. Six of the ten major motor vendors in the province sell motors to OEMs and these large vendors suggest that 18% of their sales volume is to OEMs, and 63% of that is high-efficiency motors.

The total costs for the program over the 3.25 years in study are \$4,080,800. As of December 1991 the program resulted in total annual savings of 47.0 GWh. Note that the program's annual savings have been increasing from 11 GWh in 1989 to 15 GWh in 1990 to 21 GWh in 1991. In terms of peak capacity BCH estimates that the program's net savings are 6.6 MW. But perhaps more important than the overall savings and costs, is the basic fact that the High-Efficiency Motors Program has effectively transformed the motors market in British Columbia. As this profile documents, the province has experienced a dramatic turnaround in the percentage of high-efficiency motors sold in a mere four years. This has clearly been a function of increased awareness and properly calculated incentives strategically placed for maximum effectiveness.

[Print Executive Summary](#)

[Download Entire 20 Page Profile](#)

The Results Center Profiles: www.ecomotion.us/results

BC HYDRO, POWER SMART High-Efficiency Motors Program

Sector: Industrial

Measures: High-efficiency motors, efficient gear speed reducers, synchronous belts.

Mechanism: Participant and vendor rebates.

History: Started in 1988, became a Power Smart Program in 1989.

1991 Program Data

Energy savings: 21 GWh

Lifecycle energy savings: 418.3 GWh

Peak capacity savings: 3.30 MW

Cost: \$1,817,700

Cumulative Data (1988 - 1991)

Energy savings: 47 GWh

Lifecycle energy savings: 949 GWh

Peak capacity savings: 7.49 MW

Cost: \$4,080,800

The Results Center produced 126 profiles of the most successful energy efficiency and renewable energy programs in the United States and around the world in the early and mid 1990s. With the support of the John D. and Catherine T. MacArthur Foundation, Ted Flanigan directed a research team at Colorado-based IRT Environment to produce and distribute these exceptional examples. Thanks to strong demand for solid case studies, The Results Center was supported by dozens of major utilities and energy associations worldwide. Today, The Results Center is managed again by Ted Flanigan, now at California-based EcoMotion Incorporated, a firm focused on strategic consulting, information dissemination, program design, outreach services, and aggressive implementation. To nominate highly successful programs, contact: The Results Center, c/o EcoMotion, 15375 Barranca Parkway, F-104, Irvine, CA 92618, (949) 450-7155, or TFlanigan@EcoMotion.us