

In the early and mid 1990s The Results Center produced 126 case studies of the most successful energy efficiency and renewable energy programs in the United States and around the world. 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.

#88 EXECUTIVE SUMMARY

BRITISH COLUMBIA HYDRO, PROCESS IMPROVEMENTS

The Process Improvements program offered by B.C. Hydro Power Smart is administered by Willis Energy Services Limited. It is an excellent model of a program designed to promote and financially support innovation in the pursuit of energy efficiency for large industrial customers. The program has proven that sophisticated retrofits in the industrial sector can be catalyzed and bought at a low cost from a utility perspective.

Process Improvements is based on the engineering expertise of its administrator whose staff provide a wealth of experience related to the program's prime target: the pulp and paper industry. Staff including B.C. Hydro staff, identify opportunities for energy and dollar savings in industries, some of which require utility incentives to shorten customer payback periods. In other cases, this engineering support has resulted in retrofits where customers are not eligible for program incentives yet elect to pursue retrofits on their own due to exceptionally short payback periods of the measures identified. Thus the program effectively pushes the marketplace with incentives, and pulls the marketplace by working with customers to help them identify cost effective retrofit opportunities.

Process Improvements has evolved in a number of ways: Incentive levels have been downwardly adjusted and select technologies have been moved out of the program to B.C. Hydro's more prescriptive programs. In terms of financing, smaller retrofits are generally based upon a set formula while the incentives for larger projects are negotiated on a case-by-case basis, underscoring the basic objective of engaging energy efficiency retrofits at the least cost while remaining sensitive to the needs and financial resources of customers.

To date marketing the program has been focused on B.C. Hydro's 590 largest industrial customers with peak demands of greater than 1 MW. In fact special emphasis has been placed upon the approximately 85 very large "transmission voltage" customers who account for over 90% of the energy sales to the large customer group. The program has served as a powerful customer service for these important customers, helping them retrofit their facilities with gear reducers, synchronous belts, efficient refrigeration equipment, and other retrofit projects such as large mechanical debarkers used in the pulp and paper industries, turbo generators, compressed air equipment, and pulpers. By working closely with these customers, Process Improvements has engaged process changes in industries that will not only save money and reduce power consumption, but which will also support the economic viability of the province of British Columbia.

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BRITISH COLUMBIA HYDRO Process Improvements

Sector: Industrial

Measures: Gear reducers, synchronous belts, refrigeration, and "other" customized site-specific efficiency improvements, mostly related to the pulp and paper industry

Mechanism: Customer-generated ideas fall into two categories: negotiated incentive approach for large customers, a standard rebate formula for small customers

History: Process Improvements began in 1990 and continues today

1993 PROGRAM DATA

Energy savings: 1.8 GWh
Lifecycle energy savings: 36.0 GWh
Peak capacity savings: 4.8 MW
Cost: \$900,000

CUMULATIVE DATA (1991 - 1993)

Energy savings: 26.3 GWh
Lifecycle energy savings: 525 GWh
Peak capacity savings: 4.8 MW
Cost: \$2,171,000

CONVENTIONS

For the entire 1994 profile series all dollar values have been adjusted to 1990 U.S. dollar levels unless otherwise specified. Inflation and exchange rates were derived from the U.S. Department of Labor's Consumer Price Index and the U.S. Federal Reserve's foreign exchange rates.

The Results Center uses three conventions for presenting program savings. Annual savings refer to the annualized value of increments of energy and capacity installed in a given year, or what might be best described as the first full-year effect of the measures installed in a given year. Cumulative savings represent the savings in a given year for all measures installed to date. Lifecycle savings are calculated by multiplying the annual savings by the assumed average measure lifetime. Caution: cumulative and lifecycle savings are theoretical values that usually represent only the technical measure lifetimes and are not adjusted for attrition unless specifically stated.