

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.

#37 EXECUTIVE SUMMARY

BONNEVILLE POWER ADMINISTRATION (BPA), ENERGY SMART DESIGN

Bonneville Power Administration's Energy Smart Design (ESD) provides design assistance and incentives for installation of energy efficiency measures in new and existing commercial buildings. Perhaps the most exciting aspect of ESD is its dynamic evolution from a somewhat limited program to a comprehensive system for promoting and garnering energy savings. This profile aims to capture the progress made by BPA in adapting program parameters to maximize the effectiveness of ESD.

ESD began in 1988 strictly as a design assistance program. BPA's evaluations identified the need to incorporate financial incentives into the program to increase the uptake of measures identified through design assistance. Therefore, an Optional Services (OS) component was added in 1990 to provide rebates. In October, 1992, a second evolution of the program took place and what BPA calls the "Long Term ESD" program began.

ESD's mechanism for customer participation is simple. A scoping meeting is held to review the project and explore design alternatives. The utility team and client agree on a list of measures to be examined to determine their effectiveness. Measures are analyzed using modelling, or less complex procedures such as manual calculations, or selection from a rebate list or a prescriptive path manual. Note that the client is not required to accept any of the recommended measures.

The range of conservation measures analyzed for any ESD project is a function of the building type and size. It is common to examine alternate HVAC systems, more efficient lighting, the use of more efficient glazings, as well as building shell thermal improvements. In some cases, such as restaurants and laundries, less common measures such as heat recovery systems are analyzed. Eligibility for rebates under OS is determined and the client may proceed with installation of recommended energy conservation measures and receive incentives.

Savings attributable to ESD were quite small in the first years of the program but with the implementation of OS, savings increased significantly. After just two quarters of the fiscal year 1991-92, estimated annual savings nearly doubled to 22.4 GWh. Through March 31, 1992, projects completed under ESD accumulated 37.6 GWh in annual energy savings and 4.29 aMW in annual demand savings.[R#18]

BPA has spent a total of \$5.6 million on ESD since the program's inception. Even though OS was not implemented until 1991, the total expenditures on OS incentives, at \$2.6 million, has already exceeded BPA expenditures on design assistance services, at \$2.4 million. At a 5% discount rate, the cost of saved energy for ESD in the first half of the 1991-92 fiscal year was a very respectable 1.36 C/kWh.

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BONNEVILLE POWER ADMINISTRATION Energy Smart Design

Sector: Commercial

Measures: Energy efficient design assistance, incentives.

Mechanism: Free energy and economic analysis and retrofit recommendations. Cash incentives for installation through Optional Services component.

History: Started in late 1988.

1992 Program Data

Energy savings: 22.4 GWh
Lifecycle energy savings: 335.6 GWh
Capacity savings: 2.55 aMW
Cost: \$2,348,300

Cumulative Data (1987-1992)

Energy savings: 56 GWh
Lifecycle energy savings: 565 GWh
Capacity savings: 4.29 aMW
Cost: \$5,602,600

CONVENTIONS

For the entire 1992 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. Dept of Labor's Consumer Price Index and the International Monetary Fund's International Financial Statistics Yearbook: 1991.

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.