

Bonneville Power Administration

WaterWise Program

Bonneville Power Administration's WaterWise program is an agricultural initiative that has evolved into a comprehensive effort that results in the triple benefits of energy and water savings and often increased crop yields thanks to the precision application of water. WaterWise dates back to 1979 when BPA first addressed irrigated agriculture's energy use by developing a pilot program that focused on pump testing and evaluating farmers' irrigation systems. A few years later BPA instituted the program on a regional basis and added incentives to the program for equipment retrofits. Then in 1991 these early programs were dramatically ramped up to create WaterWise, a program that addresses the needs of farms of varying sizes. In its current form, WaterWise is implemented by 39 retail utilities within BPA's service territory.

A focus on saving water may sound ironic to those unfamiliar with BPA's service territory since the Northwest is well known for its high levels of precipitation. East of the Cascade Mountains that bisect the states of Washington and Oregon, however, the climate is dramatically different and quite arid. There farmers depend on irrigation. Large irrigators and irrigation districts draw water directly from the Snake and Columbia Rivers using extensive pumping and piping systems to ultimately feed massive sprinklers. Huge water lines, as big as 72 inches in diameter, provide sustenance to crops such as peas, wheat, corn, alfalfa, onions, and potatoes. Small farms tend to pump groundwater. In each case, WaterWise provides technical, financial, and informational services.

The WaterWise Program consists of three main features: System Testing and Design Work for new and expanding systems, a wide array of Hardware Retrofits, and a new concentration on Irrigation Management. This last feature reflects the sophistication of the program. Through its retail utilities and consultants, BPA stays in close communication with participating farms through a number of channels. The program provides announcements through local media. Staff at retail utilities also maintain direct contact with farmers, and directly-linked computer connections are used to link program consultants with large farms to provide farmers with detailed information on weather patterns and evapotranspiration rates so that the farmers can optimize crop watering.

In the program's decade-long history BPA has invested nearly \$25 million in improving the efficiency of irrigated agricultural systems in its service territory and has saved 11 aMW to date. Currently WaterWise is operating with an annual budget of \$2 million resulting in annual energy savings of 2 aMW.

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BONNEVILLE POWER ADMINISTRATION WaterWise Program

Sector: Agricultural

Measures: Low pressure, mainline, and pump modification equipment

Mechanics: BPA funded irrigation system testing, design assistance, and hardware incentives, coupled with focus on irrigation management techniques

History: Pilot in 1979, Irrigated Agriculture Retrofit in 1982, revised to WaterWise program in 1991

1993 PROGRAM DATA

Energy savings:	14.9 GWh
Lifecycle energy savings:	223 GWh
Annual capacity savings:	1.6 aMW
Cost:	\$2.2 million

CUMULATIVE DATA (1983-1993)

Energy savings:	506.3 GWh
Lifecycle energy savings:	1,419 GWh
Capacity Savings:	11.0 aMW
Cost:	\$24.5 million

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