

## Western Area Power Administration

### Solar DSM Program

Western Area Power Administration (Western) is a federal power marketing agency that was created in 1977 and is responsible for marketing energy to 615 wholesale power customers. These wholesale customers provide retail energy service to millions of customers in the central and western states, an area covering 1.3 million square miles. Western markets power from 50 power plants and sells 15% of the nation's hydroelectric generation.

The Hoover Power Plant Act of 1984, which has been superseded by the 1992 Energy Policy Act, required that all of Western's customers develop conservation and renewable energy programs (C&RE) as a prerequisite for purchasing Western's low-cost, "preference" power. Western estimates that over 3,000 customer C&RE activities are currently under way as a result of this contract requirement. Western assists in customer C&RE programs by providing peer matches, workshops, informational services, customer visits, technology transfer, and equipment loans.

Nearly 50 rural electric cooperatives (RECs) in Western's service area are now investigating the use of photovoltaic (PV) power as both a cost cutting and new service option. To date, 14 rural electric cooperatives in Western's service area have pilot PV programs which account for approximately 80 PV installations. These small utilities recognize that PV power can greatly reduce the cost of service to small outlying or difficult to serve loads. Often, a PV powered system is the least expensive solution for the load requirement due to either the cost of extending the utility line to the site, or the recurrent cost of repairing existing power lines which are damaged by storms. Examples of these loads include water pumps, communications, cathodic protection, battery charging, off grid residential (often summer cabins), sign and security lighting.

Western's involvement with PV applications began in 1989 with a request for technical assistance from K.C. Electric in Hugo, Colorado. K.C. Electric got the notion for remote PV applications in 1989 after a series of winter storms in which the utility lost close to 1,000 power poles. The resulting K.C. Electric program has served as a model for others looking to evaluate and implement PV programs. K.C. Electric identified 511 utility-powered stock well or fence charger services, and 90 miles of distribution line that included approximately 65 well services. Since these 511 services totaled more than a half a million dollars in plant investments (3% of total coop plant investment), and annual revenues of only \$78,000 (0.3% of annual revenues), remote PV applications seemed to be a logical solution to the problems confronting K.C. Electric.

This profile introduces the concept of solar demand-side management, explores various opportunities for its application, and also presents the case study of K.C. Electric and its photovoltaic installations. This profile presents the important interface between renewable energy and DSM.

### WESTERN AREA POWER ADMINISTRATION Solar DSM Program

**Sector:** *Agricultural*

**Measures:** *Photovoltaic systems for small, remote loads.*

**Mechanism:** *Information provided and portable demonstration systems installed for participants who ultimately purchase their own systems.*

**History:** *Pilot program began in 1989 at K.C. Electric Cooperative in eastern Colorado, various pilot programs running presently.*

**Participation:** *14 rural electric cooperatives currently have solar DSM programs.*

**Installations:** *80 P.V. systems*

**Funding:** *Program supported by Western Area Power Administration and installations paid for by individual ranchers.*

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](mailto:TFlanigan@EcoMotion.us)

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