

## STATE ENERGY EFFICIENCY AND RENEWABLE ENERGY PROGRAMS

Department of Environmental Quality  
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The state has a number of programs directly promoting and funding investments in energy efficiency and renewable energy. In addition to providing general energy information to the public, the state has:

- State Buildings Energy Conservation Program
- State Government Energy Monitoring
- Rebuild America Grant
- Energy Efficiency Through Building Commissioning Practices
- State Energy Education Programs
- Alternative Energy Loan Program
- Low-Income Weatherization Program

Most of these programs are run by the Department of Environmental Quality (DEQ). These programs mostly emphasize improved energy efficiency in state and local public buildings. The major exception is the Low-Income Weatherization Program, which is administered by the Department of Public Health and Social Services, and run by local low-income agencies.

The state mandates certain energy efficiency work through building codes and through establishment of the Uniform System Benefits Program. (The latter is covered in a separate paper.)

The state also offers various tax incentives for energy efficiency and renewable energy, but these historically have not generated much investment and aren't covered in this paper. The new or expanded incentives established by the 2001 Legislature might change this picture.

Finally, DEQ recently launched a new website, [EnergizeMontana.com](http://EnergizeMontana.com), that could become a major vehicle for providing energy information to Montanans.

### State Buildings Energy Conservation Program

In 1989 the Montana Legislature established the State Buildings Energy Conservation Program (SBECP). This program sells general obligation bonds to pay for energy efficiency improvements in state-owned buildings, then uses the energy cost savings from those improvements to cover the debt service on the bonds. The program has \$3 million in bonding authority for this biennium.

The Program reduces operating costs in state buildings by increasing their energy efficiency. The projects are engineered so that they save more money than they cost, even in the term while the bonds are being paid off. At the end of each fiscal year, any savings in excess of debt service and program costs are swept to the Long Range Building Program. After the bonds are retired, the state continues to realize savings for the remaining useful life of the improvements.

Since the program began, gross savings have totaled nearly \$3.9 million. Current savings are about \$900,000 per year. The net savings to the state to date is greater than \$1,000,000, all deposited in the Long-Range Buildings Program. Forty-five projects have been completed, and another 14 in stages ranging from study to construction.

The SBCEP will retire its first bond within the next year. The projects that this bond funded are still functioning, with another 5 to 10 years of service life available.

The SBCEP is administered by DEQ. Savings are collected through the biennial budget process, coordinated by the Office of Budget and Program Planning.

### **State Government Energy Monitoring**

DEQ is working with the Office of Budget and Planning, the Department of Administration Divisions of General Services, Purchasing and Procurement, and Information Services; the University of Montana's Department of Facility Services, and the Montana Power Company to pilot a demonstration of the effective use of energy monitoring software to track energy consumption in state-owned buildings. This project will 1) enable agencies to track all aspects of utility consumption, with a primary focus on electricity and natural gas services, 2) to implement energy management software on two campus complexes and 3) to track energy consumption and identify abnormally high use that would indicate potential energy savings.

The ability to easily track consumption will identify large energy users that can be addressed through the State Buildings Energy Conservation Program, alert maintenance staff to developing problems in existing energy management controls, and allow accounting staff to monitor billing accuracy. Through this pilot project, DEQ is preparing a database that will contain consumption and cost history of state buildings. The next phases in following years will develop and demonstrate other aspects of monitoring. A recommendation for a statewide system, based on this pilot project, will be given to the 2003 Legislature.

When fully implemented, this program will allow agencies to track compliance with the Governor's March, 2001 executive order directing state agencies to reduce

electrical energy use by 10% and the Legislature's requirement to report on agency energy use and energy management practices for the next legislature in 2003.

### **Rebuild America Grant**

In 2001, DEQ received a two-year, \$150,000 grant from the United States Department of Energy's special project funds to unite Montana's efforts in the areas of public buildings, schools and local governments into a cohesive, comprehensive public buildings energy initiative under the national Rebuild America umbrella. This project will provide DEQ the resources both to expand its state buildings energy conservation bond program and also to fortify its more modest efforts in schools and local government buildings.

DEQ will use the Rebuild partnership in a three-pronged initiative:

- Expand and support the State Buildings Energy Conservation bond program,
- Expand work with Montana schools, in the areas of both retrofit financing and energy curriculum, and
- Develop mechanisms to bring energy conservation into work currently being done with local government facilities and community-wide infrastructure planning.

### **Energy Efficiency Through Building Commissioning Practices**

DEQ has joined with the Oregon Office of Energy in a regional project funded through the Northwest Energy Efficiency Alliance. The goal is to make commissioning standard practice in public buildings in the Pacific Northwest states of Idaho, Montana, Oregon, and Washington.

Commissioning (and recommissioning) buildings is the process of formally evaluating the mechanical and energy management systems of a building to determine how, and how well, they are working, and to then bring them back to maximum efficiency.

DEQ would administer the state project, identify potential buildings, procure services of contractors to perform the recommissioning services, determine the energy savings resulting from such an activity, and also identify other benefits of the recommissioning process.

The Alliance is a nonprofit consortium of electrical energy suppliers, governments, public-interest groups and private sector parties who have pooled resources to promote energy-efficient technologies and practices in the Northwest.

## **State Energy Education Programs**

DEQ continues to offer builder training sessions on energy efficient construction practices. Interest in the training sessions has decreased since utilities stopped offering incentive payments for marketing programs such as Super Good Cents in the late 1990's. Rather than offer all-day training sessions, DEQ now holds evening workshops on specific topics of interest to contractors, such as air-sealing, duct sealing and combustion safety. Some of the programs were done in conjunction with Montana Building Industry Association (MBIA) monthly meetings. Building more energy efficient homes could receive a boost in the years ahead due to the recent increase in the Montana conservation tax credit to \$500 from \$150. Increasing energy costs are also making consumers more interested in higher efficiency heating equipment and going above the code minimum insulation levels.

Consumer training sessions are focused on how consumers can improve the energy efficiency of new or existing homes. The workshops begin with a short summary of how energy is used in the home. Each of the major components of home energy consumption; space heating, water heating, appliances and lighting are covered. During the workshop homeowners learn how to check for proper insulation levels in their homes and determine what cost-effective weatherization options make the most sense. The workshops are held about once a month.

## **Alternative Energy Loan Program**

The Alternative Energy Revolving Loan Program was established by the 2001 Legislature through SB 506. The program will be administered by DEQ. The program will provide low interest loans for alternative energy systems for individuals or small businesses. Loans can be for up to \$10,000 and 5 year term. Alternative energy systems means the generation system or equipment used to convert energy sources into usable forms using fuel cells that do not require hydrocarbon fuel, geothermal systems, low emission wood or biomass stoves, wind machines, photovoltaics, small hydropower plants under 1 megawatt, and other recognized nonfossil forms of energy generation. Draft rules for public comment will be published in early 2002. Loans will be available when rules are finalized. Funding of this program will be from air quality penalties collected by DEQ. The average amount collected recently has been \$145,000 a year.

## **Low-Income Weatherization Program**

The Low-Income Weatherization Program provides cost effective energy conservation measures to low-income households. This year the program will serve 1,759 homes. Three hundred eighteen of those homes are occupied by senior citizens, disabled individuals occupy 339 of them and children occupy 795 of them.

Specific conservation measures are applied to dwellings if the value of projected energy cost savings exceed all costs associated with their installation. Measures are subjected to a cost test to ensure \$1.80 worth of energy savings for every dollar expended purchasing and installing them. Measures most commonly performed include heating system tune-ups, air infiltration reduction and attic, wall and floor insulation. A recent analysis performed by Oak Ridge National Laboratory indicated the program reduced natural gas heating costs by 25 percent and electric heating costs by 42 percent.

The program is operated statewide by ten private nonprofit Human Resource Development Councils and two tribal governments. The Department of Public Health and Human Services has 1.25 full time equivalent employees to administer the program. The state's primary function is to ensure compliance with federal law and uniform cost effective service throughout Montana. The Program is currently funded by the U.S. Department of Energy and Health and Human Services, Bonneville Power Administration and the Montana Power Company. It has received significant money from the Universal System Benefits Program.

## **Building Codes in Montana**

Montana building codes for both residential and commercial buildings have sections specifying levels of energy efficiency. The residential code is the 1993 CABO Model Energy Code. For commercial buildings, ASHRAE Standard 90.1 – 1989 Version applies.

The current residential code in Montana is 30% less stringent than the Model Conservation Standard recommended by the Northwest Power Planning Council. Montana has not updated to the most recent version of the Model Energy Code. DEQ conversations with the Building Codes Bureau indicate that Montana is unlikely to push for any change to more recent versions of the Model Energy Code.

The commercial code adopted in Montana is not the most current version of ASHRAE Standard 90.1. The most recent version of this code, Version 1999, is just now

beginning to be adopted by many states. Montana is unlikely to adopt this newer code version anytime soon.

A study of code compliance conducted by the Northwest Energy Efficiency Alliance in 1999 found that 86% of residential buildings were in compliance with the code in Montana. Homes found out of compliance with the code were generally constructed in areas outside of building code jurisdictions and did not receive building inspections (except for an electrical inspection by the state). Builders in these areas self-certify that compliance with the residential energy code has been followed.

Compliance with the commercial energy code is generally good across Montana. Many commercial buildings are built to higher insulation levels than required under ASHRAE Standard 90.1. One area of under-compliance with smaller commercial buildings is in following the lighting standards.

### **Universal System Benefits Program**

The Universal System Benefits Program (USBP) was established as part of the utility restructuring law passed in 1997 (69.8.101 et seq. MCA). The USBP was to ensure that efforts promoting efficiency and renewable energy and programs for low-income customers would continue during the transition period, which currently runs to December 31, 2005. The USBP applies to all utilities, public and private, distributing electricity in Montana; however, a few utilities with only a handful of customers in Montana are exempted. In 2000, the USBP obligated utilities to spend a total of \$13,607,559 on energy efficiency, renewable energy and low-income assistance. This program is discussed at further length in a separate paper.