



### **Utility Energy Efficiency Programs in Colorado: A Success Story**

#### **History**

- House Bill 1037, passed by the Colorado legislature in 2007, directed the Public Utilities Commission (PUC) to establish energy savings goals for investor-owned electric and gas utilities. The bill also directed the PUC to provide utilities with the opportunity to earn a profit from implementing cost-effective energy efficiency programs for their customers.
- The PUC established energy savings goals and performance-based incentives for Colorado's investor-owned utilities: Xcel Energy in 2008, and Black Hills Energy in 2009. Xcel Energy serves about 1.2 million customers and Black Hills about 100,000 customers. The PUC also established rules for natural gas utility energy efficiency programs.
- These actions led to greatly expanded utility energy efficiency and other demand-side management (DSM) programs implemented by Xcel and Black Hills. The programs help households and businesses reduce their energy use and utility bills through education about energy savings opportunities; rebates on energy-efficient products and equipment; technical assistance; and free installation of efficiency measures in low-income households.
- In 2011, the Colorado PUC increased the energy savings goals for Xcel Energy by about 30% for the period 2012-2020. The PUC also modified the shareholder incentive that Xcel Energy can earn based on the performance of its energy efficiency programs.
- There are no energy efficiency program requirements for municipal utilities or rural electric cooperatives in Colorado, which are self-governed and not subject to PUC regulation. A few municipal utilities and rural cooperatives (notably Fort Collins Utilities, Colorado Springs Utilities and Holy Cross Energy) have established comprehensive energy efficiency programs on their own, but most offer limited or in some case no efficiency programs.

#### **Impacts of Efficiency Programs**

- The table below shows the key performance indicators for the energy efficiency and other DSM programs implemented by Xcel Energy and Black Hills Energy during 2009-2013. In total, the two utilities spent \$332 million on energy efficiency and load management programs, while households and businesses will save about \$950 million net as a result of this investment.
- In response to Xcel's and Black Hills's energy efficiency programs, households and businesses reduced their electricity use in 2013 by more than 1.6 billion kWh per year, equivalent to the electricity use of 210,000 typical households in Colorado. Xcel Energy exceeded the energy savings goals set by the PUC every year during 2009-2013 and at the same time underspent its approved energy efficiency budget in all years except 2012.

- The electric efficiency programs of Xcel Energy and Black Hills Energy have been very cost effective, with an overall benefit-to-cost ratio of more than two-to-one. Customers will save nearly \$3 on their utility bills for every \$1 invested by the utilities in energy efficiency programs. Xcel Energy now spends about three percent of its electric revenues on energy efficiency programs for its customers.
- In addition to recovering program costs, Xcel Energy was awarded \$68 million in incentives based on the level of energy savings achieved and the cost effectiveness of its energy efficiency programs in 2009-2012. This means that about 91% of the net benefits of energy-saving programs were retained by customers with about 9% awarded to the utility.
- Jobs are created through the production, sales and installation of energy-efficient products and services. Companies that are members of the Energy Efficiency Business Coalition of Colorado employ more than 1,000 workers in the state. Jobs are also gained when households and businesses use utility bill savings to buy other goods and services in the local economy. Thus, utility energy efficiency programs increase employment in Colorado.
- Xcel Energy and Black Hills Energy avoided 1.1 million tons of carbon dioxide emissions as of 2013 due to energy efficiency programs implemented during 2009-2013, assuming that half of the energy savings reduces operation of coal-fired power plants and half reduces operation of gas-fired power plants. The reduction in emissions is equivalent to taking 215,000 cars off the road.
- Saving electricity also reduces water consumption in power generation. Xcel Energy and Black Hills Energy reduced water consumption by approximately 650 million gallons as of 2013 due to energy efficiency programs implemented during 2009-2013, equivalent to the water use of 5,000 typical households in the metro Denver area.

### **Impacts of Electric Utility Energy Efficiency (DSM) Programs, 2009-2013\***

Utility	2009	2010	2011	2012	2013	Total
Xcel – DSM spending (M \$)	43.9	54.7	63.8	79.4	75.3	317.1
Black Hills – DSM spending (M \$)	1.4	2.5	3.2	3.5	4.5	15.1
Xcel – Electricity Savings (GWh/yr)	220	252	312	401	384	1,569
Black Hills – Electricity Savings (GWh/yr)	5	17	19	20	21	82
Xcel– Net Economic Benefits (M \$)	206	210	178	170	160	924
Black Hills – Net Economic Benefits (M \$)	2	4	5	7	10	28
Xcel– Benefit-Cost Ratio	4.1	3.3	2.8	2.4	1.7	--
Black Hills – Benefit-Cost Ratio	2.3	1.6	1.8	1.8	2.3	--

\*Utility data are from annual Demand-Side Management reports submitted by the utilities to the Colorado Public Utilities Commission. Electricity savings are at the generator level.

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