

Catching Up: Progress with Utility Energy Efficiency Programs in the Southwest

Howard Geller, Southwest Energy Efficiency Project (SWEET)

ABSTRACT

The southwest states have been lagging the rest of the nation in funding for and savings from utility energy efficiency programs. This is unfortunate because it is the fastest growing region in the country and there are vast opportunities for cost-effective energy efficiency improvements. But the situation is starting to change. Funding for electricity utility demand-side management programs in the Southwest increased from about \$20 million in 2001 to \$69 million in 2005. In 2006, DSM program funding in the region is expected to reach \$110 million.

This paper reports on the growth in funding for and energy savings from electric utility-sponsored DSM programs in the states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. It addresses the key policies and actions motivating the growth in spending and savings (or lack thereof) in each state. These policies include Integrated Resource Planning, financial incentives for utility shareholders, and use of the Total Resource or Societal Cost test for evaluating DSM program cost effectiveness. The paper also discusses the role that key individuals and organizations play in supporting or inhibiting utility efficiency programs.

Introduction

The Southwest is the fastest growing portion of the country and has very large potential for cost-effective energy efficiency improvements (SWEET 2002). But the region has been lagging the rest of the nation with respect to funding for and savings from ratepayer-funded demand-side management (DSM) programs. However, this situation is starting to change. Funding for electric utility DSM programs in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming combined (the states covered by SWEET) is expected to exceed \$110 million in 2006, up from just \$20 million in 2001.

There are a number of reasons why DSM program funding is on the rise in the Southwest. First, excess generating capacity no longer exists in the region, as it did in much of the 1980s and 1990s. This is leading utilities in the region to propose new power plants, and leading some policymakers and regulators to consider and seek lower cost and/or less polluting alternatives to such plants. Second, air conditioning use is rising and utility load factors (the ratio of average electric power demand to peak demand) are declining. Third, natural gas has been the preferred fuel for new power plants in recent years, and the price of natural gas has risen substantially. This means the avoided costs from DSM programs are relatively high.

Because of these factors and other reasons explained below, policymakers and utilities are increasingly viewing DSM and greater energy efficiency as a legitimate utility resource—one that reduces the need for costly and polluting new power plants, improves utility load factors, and helps consumers manage and reduce their rising energy bills. The status of and budget for DSM programs is explained below state-by-state.

Status of Energy Efficiency Programs in the Southwest

Table 1 estimates the budget for electric utility-sponsored DSM programs in each southwest state during 2001-2006.¹ Total DSM funding more than tripled from about \$20 million in 2001 to \$69 million in 2005. The latter value is equivalent to about 0.5 percent of electric utility revenues in the six-state region. This is approximately equal to the percentage of electric utility revenues dedicated to DSM programs nationwide as of 2003 (York and Kushler 2005). In 2006, DSM funding in the Southwest should reach at least \$110 million (about 0.7% of revenues) due mainly to DSM program growth expected in Arizona and Nevada.

Table 1. Electric Utility Spending on DSM Programs in the Southwest, 2001-06

State	DSM program budget (million \$ per year)					
	2001	2002	2003	2004	2005	2006 (est.)
AZ	8	4	4	4	9	34
CO	3	11	13	21	24	22
NV	2	3	11	11	14	26 (1)
NM	2	2	2	2	2	3
UT	5	9	12	16	20	25
WY	~0	~0	~0	~0	~0	~0
Region	20	29	42	54	69	110 (1)

Notes: (1) Does not include an additional \$3.7 million proposed by Nevada Power Company and Sierra Pacific Power Company in March, 2006.

Systematic data on energy savings and peak demand reduction are more limited than data on DSM program spending. However, Table 2 shows the savings results for the three leading DSM programs during 2003-2005.² In conjunction with growing funding, first-year energy savings for the three utilities combined rose from 175 GWh/yr in 2003 to 260 GWh/yr in 2005, a 22% annual growth rate. Likewise peak demand reduction grew from 77 MW in 2003 to 116 MW in 2005, a 23% annual growth rate. DSM program funding for the three utilities increased from about \$35 million in 2003 to \$54 million in 2005, a 24% annual growth rate.

Considering the entire 2003-2005 program period, these utilities achieved 5.0 GWh/yr of first-year energy savings and 2.2 MW of summer peak demand reduction per million dollars of DSM program expenditures, on average. In addition, the ratio of peak-to-average demand reduction for the three-year period in all three states was 3.8. This means the utility DSM programs were reducing peak demand more than electricity consumption in percentage terms, thereby helping the utilities improve their load factor. In considering the values in Table 2, it should be noted that the utilities use different methodologies for estimating energy savings. In

¹ The DSM budgets shown in Table 1 include both energy efficiency and load management programs.

² Programs for Nevada Power Company and Sierra Pacific Power Company are combined since the programs are managed jointly and the utilities are jointly owned by one holding company.

particular Xcel Energy and PacifiCorp adjust savings to account for an estimate of free-riders, while the Nevada utilities report gross energy savings.

Table 2. Energy Savings and Peak Demand Reduction of Leading Utility DSM Programs in the Southwest

Utility	2003		2004		2005	
	First-year Energy Savings (GWh/yr)	Peak Demand Reduction (MW)	First-year Energy Savings (GWh/yr)	Peak Demand Reduction (MW)	First-year Energy Savings (GWh/yr)	Peak Demand Reduction (MW)
CO – Xcel Energy	29	26	59	42	54	40
NV – NPC/SPPC	35	16	78	21	93	33
UT - PacifiCorp	111	35	102	40	113	43
All	175	77	239	103	260	116

Arizona

Utilities in Arizona reported spending \$6.4 million on DSM programs in 1999 (EIA 2001). Utility restructuring policies and rules were developed in Arizona during 1996-2000. During this period, the Arizona Corporation Commission (ACC) instructed utilities to include a Systems Benefit Charge (SBC) in their restructuring plans.

In May 2000, the ACC adopted an Environmental Portfolio Standard (EPS) that requires utilities to derive at least 1.1 percent of their electric power from new solar and other renewable energy sources by 2007.³ To support this renewable energy mandate, utilities were allowed to transfer SBC funds, with the exception of low-income assistance programs, to the EPS budget. The upshot is that while utilities in Arizona were supporting renewable energy sources, they were carrying out very modest DSM programs as of 2002-05. Much of what was spent went to promotion and financial assistance for energy-efficient new home construction, some of which was tied to home builders using electric water and space heating (heat pumps).

This situation is changing due in large part to advocacy by SWEEP and Arizona's consumer advocate (RUCO). Both organizations intervened in a rate case initiated by Arizona Public Service Co. (APS) in 2004 and advocated much greater funding for energy efficiency programs. A settlement agreement approved by the Arizona Corporation Commission (ACC) in March 2005 includes at least \$16 million in annual energy efficiency program funding, and minimum spending of \$48 million over a three-year period (2005-07). Following approval of the settlement, APS developed and proposed ten specific DSM programs for both their residential and non-residential customers. One of the programs (residential lighting) was approved by the ACC and began in late 2005,⁴ and six non-residential programs were approved in February 2006. The remaining residential and revised low income programs were reviewed and approved by the ACC in April 2006.

The APS settlement agreement includes a preliminary budget allocation by program area along with an incentive mechanism for APS shareholders based on DSM program performance,

³ Currently the Arizona Corporation Commission has a rulemaking process underway for a Renewable Energy Standard, which is a significant expansion of the EPS.

⁴ APS was already operating existing programs for low income weatherization and residential new construction.

capped at 10% of total DSM expenditures. The \$16 million budget is a floor on energy efficiency program spending. The budget could rise if additional cost-effective electricity savings opportunities are identified and approved by the Commission. In addition, a DSM collaborative has been set up to advise APS on program design, implementation, and evaluation.

DSM program funding by other electric utilities in Arizona (most notably the Salt River Project and Tucson Electric Power Co.) is also likely to rise in 2006. SRP has significantly increased its DSM efforts in retail products and promotion, in its new homes program, and in its residential pre-pay metering program. Also, SRP is in the process of developing and launching additional or expanded DSM programs. TEP has agreed in principal to restore SBC-based energy efficiency program funding to previous levels; i.e., to stop shifting DSM funding to renewables programs once the new Renewable Energy Standard is implemented.

Colorado

Colorado has not approved electric utility restructuring legislation and has no SBC in place. Legislation adopted in 2001 instructs the Public Utilities Commission (PUC) to “give the fullest possible consideration to the cost-effective implementation of new clean energy and energy-efficient technologies in its consideration of generation acquisitions for electric utilities, bearing in mind the beneficial contributions such technologies make to Colorado’s energy security, economic prosperity, environmental protection, and insulation from fuel price increases.”⁵

In July 2000, the PUC accepted a settlement proposed by Xcel Energy (formerly known as Public Service of Colorado) and other parties regarding DSM programs as part of an Integrated Resource Planning proceeding. Xcel Energy is by far the largest utility in Colorado and is responsible for about 60 percent of the power sold in the state. The settlement called for Xcel to spend up to \$75 million (2001 dollars) over five years on energy efficiency and load management programs, with a goal of reducing summer peak load in 2005 by at least 124 MW.

As it implemented this agreement, Xcel’s DSM program budget grew from about \$2 million in 2001 to about \$21 million in 2005. The utility is able to recover DSM expenditures through a DSM cost adjustment mechanism that appears on customers’ utility bills. The programs the company implemented include:

- incentives for consumers who purchase high efficiency air conditioning systems or evaporative coolers,
- air conditioner cycling load control program for households and small businesses,
- incentives for commercial and industrial energy efficiency projects that are selected through a bidding process,
- design assistance and incentives to increase the energy efficiency of new commercial buildings, and
- retro-commissioning assistance to increase the efficiency of existing commercial buildings.

A third party evaluation concluded that Xcel reduced summer peak demand by 126.8 MW through the expenditure of about \$64 million on DSM programs during 2001-2005 (Barkett

⁵ SB 01-144, effective Aug. 8, 2001.

et al. 2006). The evaluation found that the overall benefit-cost ratio for 2001-2005 DSM programs was 1.89.⁶ In addition, there was a high level of customer satisfaction with the programs.

In its 2004 Least-Cost Plan submitted to the Colorado PUC, Xcel Energy proposed discontinuing company-sponsored DSM programs. But following negotiations with interveners including SWEEP, Xcel agreed to a new eight-year DSM effort with the goals of saving 800GWh/yr of electricity and 320 MW of peak demand from programs implemented during 2006-2013, spending up to \$196 million (2005 dollars) to do so. Relative to its previous DSM commitment, Xcel agreed to increase the annual peak demand reduction and also add energy savings goals. The Colorado PUC approved the agreement, which also allows Xcel to proceed with construction of a new 750 MW coal-fired power plant, in December 2004.

Following PUC approval of this agreement, Xcel designed new, more consumer-friendly DSM programs; e.g., substituting specified rebates for what previously was a non-residential bidding program. The company launched seven new prescriptive and custom rebate programs for non-residential customers in early 2006. The upshot is that financial incentives are available for virtually any energy efficiency or peak load reduction measure implemented by Xcel's commercial and industrial customers.⁷ Five new or modified residential programs are expected to be launched by mid-2006.

Some of Colorado's municipal utilities and rural electric cooperatives are implementing DSM programs as well. The Fort Collins municipal utility adopted a new energy policy in 2003 that includes strong energy efficiency goals, namely to reduce electricity use per capita 10% and peak demand per capita 15% by 2012 (City of Ft. Collins 2003). The utility implemented residential high efficiency air conditioning, lighting, refrigerator recycling, and commercial energy efficiency programs as of 2005. The Colorado Springs municipal utility developed a new energy resource strategy in 2004 that is leading to the expansion of energy efficiency and DSM programs. In addition, Holy Cross Energy, a cooperative based in Glenwood Springs, expanded its DSM budget and programs in 2004-05.

Nevada

The investor-owned utilities in Nevada phased out DSM programs in the mid-1990s as they prepared for deregulation and restructuring. In July 1997, Nevada adopted utility restructuring legislation. But in 2001, in the midst of the western electricity crisis, the legislation was repealed. Nevada Power Co. and Sierra Pacific Power Co. (which merged in 1999) were back to being vertically integrated, regulated utilities. As such the companies are required to submit Integrated Resource Plans (IRPs) every three years, a policy adopted in Nevada in 1983. DSM programs were restarted in 2001, but with a budget of only about \$2 million that year. Most of this funding was for education and promotion activities.

As part of a 2001 IRP proceeding, a collaborative process was established for developing and analyzing a wider range of DSM program options. Based on the work of the collaborative, the utilities proposed expanding their DSM programs starting in 2003. After further discussions, an agreement concerning the budget and focus of new programs was reached by all parties to the

⁶ This benefit-cost ratio is based on the Total Resource Cost perspective, which accounts for all costs (utility and participant) associated with the implementation of energy efficiency measures along with the economic benefits to the utility.

⁷ Incentives are not available for measures with less than a one-year simple payback period.

IRP proceeding. The agreement called for \$11.2 million per year in utility-funded DSM programs with an emphasis on peak load reduction but also significant energy savings. The Nevada PUC approved this proposal, and the new programs were launched in March 2003. These programs included:

- promotion of ENERGY STAR® appliances and lighting products,
- incentives for high efficiency air conditioning systems, air conditioner tune-ups, and duct sealing,
- a recycling program for older refrigerators,
- incentives for all types of efficiency measures implemented by businesses,
- consumer education efforts, and
- technical and financial assistance to enhance low-income home weatherization.

The first year of program implementation was relatively successful. The utilities estimate saving 35 GWh/yr of electricity and reducing peak demand by 16 MW, exceeding initial projections (Balzar, Geller and Wellinghoff 2004). In 2005, the utilities added commercial new construction and a schools program, and expanded funding for high efficiency air conditioning incentives in southern Nevada. The Nevada PUC also approved a new policy concerning DSM cost recovery in mid-2004. The utilities are allowed to earn their approved rate of return plus 5% (e.g., a 15% return if the approved rate is 10%) on the equity portion of their DSM program funding. This gives the utilities much greater financial incentive to expand their DSM programs and introduce new programs.

In June 2005, legislation enacted in Nevada added energy savings from DSM programs to the state's Renewable Portfolio Standard.⁸ This innovative policy allows energy savings from utility DSM programs and/or efficiency measures the utilities contract with to supply up to 25% of the requirements under the re-named clean energy portfolio standard. The clean energy standard is equal to 6% of electricity supply in 2005-06 and increases to 9% in 2007-08, 12% in 2009-2010, 15% in 2011-2012, 18% in 2013-14, and 20% in 2015 and thereafter. At least half of the energy savings credits must come from electricity savings in the residential sector.

Within months of passage, the utilities proposed a large expansion of DSM programs for 2006 (see Table 1). Most of the increase supports adoption of high efficiency air conditioning systems in new homes during the transition to the new federal efficiency standards for central air conditioners. In addition to the funding level shown in Table 1, the Nevada utilities proposed adding another \$3.7 million to 2006 DSM programs in March 2006. If this funding is approved, the Nevada utilities estimate they will save 153 GWh/yr and reduce peak demand by 63 MW from 2006 DSM programs alone (Holmes 2006). However, these are gross energy savings, meaning they are not adjusted to take into account estimates of free riders or spillover effect. The DSM collaborative is continuing to meet and influence the design of DSM policies and programs in Nevada.

New Mexico

Utilities in New Mexico reported spending about \$1.5 million on energy efficiency programs in 1998 and 1999 (EIA 2001). In April 1999, New Mexico adopted utility restructuring

⁸ See Assembly Bill 3, adopted by the Nevada legislature on June 7, 2005.
<http://www.swenergy.org/legislative/2005/nevada/AB%203%20Special%20Session%20Bill.pdf>

legislation. This law created a small SBC of 0.3 mills/kWh to fund energy efficiency, low-income assistance, renewable energy, and consumer education programs. The SBC, which totals about \$6 million statewide, was scheduled to begin in 2002. But the restructuring legislation was repealed by the legislature in the wake of the western electricity crisis.

Utilities in New Mexico are operating relatively limited electricity DSM programs. Public Service Co. of New Mexico (PNM), the largest utility in the state, only provides information on energy savings options through bill inserts and the Internet. Xcel Energy, which bought Southwestern Public Service Co. (the second largest utility), provides financial incentives for a wide range of efficiency measures implemented by its commercial and industrial customers. The utility is examining what programs might be cost-effective for residential customers.

In September 2004, Governor Bill Richardson convened a Utility Energy Efficiency Task Force. The Task Force reached consensus on a proposal that was adopted in the 2005 legislative session and signed into law by Gov. Richardson. The new policy establishes a convenient cost recovery mechanism for gas and electric utility DSM programs, indicates use of the Total Resource Cost (TRC) test for evaluating DSM program cost effectiveness, directs utilities to implement cost-effective DSM programs, and directs the state utility commission (the PRC) to establish rules for integrated resource planning. The PRC was still working on the regulations for implementing the energy efficiency law as of March 2006.

In the mean time, PNM developed a limited set of gas DSM programs that was approved by the PRC and launched in February 2006. In addition, PNM has agreed to evaluate electricity DSM potential and develop comprehensive electricity efficiency programs during 2006. It is anticipated that these programs will be approved by the PRC and launched in 2007. DSM program analysis and design in New Mexico is occurring in collaboration with stakeholders including SWEEP and other members of the Coalition for Clean and Affordable Energy.

Utah

Utah has not approved electric utility restructuring legislation and has no SBC. The Utah Public Service Commission adopted IRP requirements and rules in 1992. These rules require biennial resource plans and state that the Total Resource Cost test be used to determine if DSM programs are economically justified. In May 2000, the state utility commission established an SBC Task Force that was charged with evaluating the cost-effective energy efficiency potential in Utah, the success of previous utility efficiency programs, and the desirability of an SBC mechanism. The Task Force's study concluded that there is substantial cost-effective energy savings as well as cogeneration potential in the state (Nichols and von Hippel 2001).

PacifiCorp, the main electric utility operating in the state through its Utah Power subsidiary, spent only about \$2 million per year on energy efficiency programs during the late 1990s. But due to the efficiency potential study and consideration of DSM programs in a rate case filed by the utility in 2001, PacifiCorp launched an expanded set of energy efficiency programs in mid-2001, including:

- a residential compact fluorescent lamp distribution program,
- prescriptive rebates for a wide range of energy-efficient lighting, HVAC, and other efficiency measures implemented by commercial and industrial customers, and
- incentive payments per unit of energy and peak demand saved for customized efficiency projects implemented by larger commercial and industrial customers.

In 2003, PacifiCorp launched three new programs—incentives on high efficiency residential air conditioners and evaporative coolers, an air conditioner cycling load control program, and second refrigerator pick-up and recycling program. These programs resulted from a collaborative DSM program development and analysis effort that PacifiCorp, SWEEP, PUC staff, and other organizations undertook in 2002. In early 2005, PacifiCorp launched residential new construction, commercial lighting load control, commercial retro-commissioning, and low-income home retrofit programs, all developed in response to a DSM program RFP.

The total budget for PacifiCorp's DSM programs grew from about \$5 million in 2001 to about \$20 million in 2005. PacifiCorp's DSM programs are having a significant impact. Programs implemented during 2003-2005 are projected to save about 325 GWh/yr of electricity and cut peak demand by about 118 MW (Bumgarner 2006). The programs are very cost effective with an average levelized cost of saved energy of about \$0.02/kWh according to the utility's 2003 Integrated Resource Plan (PacifiCorp 2003).

PacifiCorp is now receiving DSM cost recovery through a tariff rider that allows the utility to charge customers for the estimated cost of PUC-approved DSM programs the year in which they are run. This policy was developed through a negotiation process among interested parties and was approved by the Utah PUC in 2003. The utility receives cost recovery only; there is no profit margin or financial incentive mechanism for utility shareholders. Nonetheless, PacifiCorp is steadily expanding its DSM programs in Utah and further growth is expected in 2006 and 2007.

In conjunction with developing the tariff rider for cost recovery, an industrial self-direction option was developed by interested parties and subsequently approved by the PUC. This policy allows larger industries to avoid paying the majority (but not all) of the DSM tariff rider if a company is investing in energy efficiency projects on its own without technical or financial support from PacifiCorp. This in effect is an alternative DSM option for large industries. Thirty-two projects were completed or approved under this option as of late 2005. It is estimated that these projects would receive about \$3.1 million in bill credits and provide 20.3 GWh/yr of electricity savings (Gibbs 2005).

Wyoming

Wyoming has not approved electric utility restructuring legislation and has no SBC or general policy on utility energy efficiency programs. PacificCorp is the largest investor-owned utility in Wyoming and is responsible for about 60 percent of retail electricity sales. Although PacifiCorp has well-funded DSM programs in Utah, it is conducting very limited efficiency programs in Wyoming. These programs include free energy audits for businesses, low-interest loans for retrofit projects, and a contribution to the state's low-income weatherization program. The utility's total DSM budget in Wyoming is only about \$150,000 per year.

As part of a settlement agreement in the pending sale of PacifiCorp to MidAmerican Energy Holdings Company, PacifiCorp has agreed to conduct a DSM market potential study in Wyoming in consultation with a DSM advisory group. PacifiCorp has also agreed to file an application by the end of 2006 "to implement prudent and cost-effective DSM programs in Wyoming that can be shown to be in the public interest and to propose in the application an appropriate cost recovery mechanism." The utility is considering replicating a number of its successful DSM programs from Utah in Wyoming.

Policy Context

Table 3 summarizes the key policies affecting DSM activity in each of the states. The states that have adopted most of these policies (i.e., Nevada and Utah) have higher and growing levels of DSM program spending. Conversely, the states that have not yet adopted or implemented these policies have minimal DSM program spending.

Table 3. Key Electric Utility DSM Program Policies by State

Policy	AZ	CO	NM	NV	UT	WY
Integrated Resource Planning	No (1)	Yes	Yes (2)	Yes	Yes	No
Use of Total Resource Cost or Societal test as sole/primary cost effectiveness test	Yes	No	Yes (2)	Yes	Yes	No
Public benefits charge supporting energy efficiency programs	Yes	Partial	No	No	No	No
DSM cost recovery mechanism	Yes	Yes	Yes (2)	Yes	Yes	No
Financial incentive for utilities	Partial (3)	No	Yes (2)	Yes	No	No
Collaboration in DSM program design/analysis	Partial (3)	No	Yes (2)	Yes	Yes	No
Industrial self-direction option	Partial (3)	No	Yes (2)	No	Yes	No

Notes: (1) Integrated resource planning was suspended in Arizona during the period of restructuring, but IRP workshops are underway currently at the Commission.

(2) These policies in New Mexico were included in the 2005 Energy Efficiency Act but have not yet been implemented in the case of electricity DSM programs.

(3) The DSM policy approved for Arizona Public Service Company and other parties includes a cost recovery mechanism, a performance-based financial incentive for the utility, a collaborative working group to assist with DSM program design and review, and a self-direction option for large industries. The financial incentive and industrial self-direction option have not yet been implemented.

The details of the policies matter a great deal. Colorado has integrated resource planning requirements (now called least-cost resource planning), but the PUC has adopted minimization of electricity rates as the goal of resource planning. Consequently, resource planning may hinder rather than help expand the magnitude and scope of energy efficiency efforts in the state.⁹ Also, it is apparent from the table that adoption of “public benefits” charges is not common in the region. However, this has not proven to be a major obstacle to expanding DSM program funding.

The degree of regulatory oversight is another policy-related issue that varies throughout the region. In Arizona, New Mexico, Nevada, and Utah, investor-owned utilities must submit proposed DSM programs to the state PUC for approval. This has resulted in some delays to DSM program approval and implementation. Once programs are approved, utilities in New Mexico

⁹ As noted above, energy efficiency advocates were able to circumvent this policy by indicating use of the TRC test for determining DSM program cost effectiveness in the settlement agreements approved by the PUC in 2000 and 2004.

will have to conduct independent program evaluation annually and submit the results to the PUC for review. Utilities in other states are able to conduct in-depth third party evaluations during or after the conclusion of multi-year programs.

In Colorado, investor-owned utilities (in particular Xcel Energy) do not need PUC approval in order to initiate or modify DSM programs. However, the utility is responsible for implementing cost-effective programs, meeting approved energy savings goals, and completing acceptable post-program evaluation. In general some degree of DSM program monitoring and oversight by the state regulatory agency is desirable. But it is not clear if very extensive evaluation and PUC oversight, as is being contemplated in New Mexico, is beneficial.

The Human Dimension

Public policy (good, bad, or absent) is influencing the scale and nature of utility energy efficiency efforts, but individuals play a critical role in the adoption and implementation of these policies. There are “champions” for expanded energy efficiency efforts in Arizona, Nevada, and Utah, either in the state energy office, the public utility commission, or in the consumer advocate’s office. Also, there have been very supportive individuals in key positions within PacifiCorp, Xcel Energy, and the AZ and NV utilities. These individuals are committed to implementing effective DSM programs, along with a supportive policy framework.

On the other hand, certain individuals in Colorado and New Mexico, either specific members of the state PUC, utility commission staff, and/or consumer advocate’s office, have been hostile to the notion of implementing ratepayer-funded utility energy efficiency programs. In general, it is a struggle to achieve broad support for comprehensive and effective utility DSM programs in conservative Southwest states, although more so in some states than others.

Public interest groups are influencing utility energy efficiency efforts in the Southwest. In recent years, SWEEP has been the principal public interest organization advocating the expansion of utility energy efficiency programs, promoting and advancing a supportive policy framework, and contributing to DSM program design. In 2005, SWEEP proposed a goal of expanding electric utility DSM program funding in the region to \$200 million per year by 2010. Prior to the founding of SWEEP in September 2001, Western Resource Advocates (WRA, previously known as the Land and Water Fund of the Rockies) served as the primary advocacy group for DSM efforts in the Southwest and Rocky Mountain states. SWEEP and WRA have advanced the energy efficiency cause through intervention in rate, resource planning, and merger cases, as well as through legislative efforts.

The human dimension also manifests itself in the capability of various utilities to design, implement, and evaluate DSM programs. Some utilities such as PacifiCorp and Xcel Energy have experienced DSM program designers and managers as a result of their historical commitment to DSM in their home states. Consequently, these utilities were able to design and implement effective DSM programs in Colorado and Utah relatively quickly. Other utilities in the region such as Public Service of New Mexico today and the Nevada utilities circa 2001 have (or had) very limited DSM expertise. This leads to slower initiation and scale up of DSM programs, and/or more reliance on outside consultants. However, in all cases ramping up DSM program funding from a minimal level (under \$3 million per year) to a more substantial level (\$20 million or more per year) has taken a number of years.

Conclusion

Electric utility DSM programs are on the rise in the Southwest. The total budget for these programs increased from about \$20 million in 2001 to \$69 million in 2005, a compound growth rate of 37% per year. Given recent policies and decisions in Arizona and Nevada, DSM program funding is expected to increase to around \$110 million in 2006. If this funding level is achieved, DSM program funding as of 2006 will equal about 0.7% of total electric utility revenues for the region as a whole. In conjunction with growth in funding, the energy savings and peak demand reduction resulting from DSM programs are rising.

The growth of DSM programs is underpinned by factors including the disappearance of excess generating capacity, declining utility load factors, and rising natural gas prices. But supportive policies are also spurring the development and implementation of DSM and energy efficiency programs. These policies include integrated resource planning requirements, use of the Total Resource Cost or Societal Cost test to determine the economic feasibility of DSM programs, and convenient DSM cost recovery mechanisms. Utility shareholders have a financial incentive for implementing DSM programs in one state (Nevada). Incentive mechanisms (or removal of financial disincentives) are called for but not yet implemented in Arizona and New Mexico.

While public policies are important, so is the existence of “champions” in state government, the utilities, and in public interest groups. These individuals are a major force behind the adoption of favorable public policies as well as expansion of DSM program budgets. But along with champions, there are opponents to ratepayer-funded energy efficiency programs in the southwest states. In some cases these individuals are in key positions such as serving on state utility commissions. SWEEP and other advocacy groups have played a key role in overcoming their opposition and in establishing a more supportive policy framework.

DSM has become a significant energy resource in the region. The \$110 million expected to be spent on these programs in 2006 alone should reduce peak demand by about 240 MW and cut electricity use by about 540 GWh/yr, given typical levels of energy savings per unit of DSM program spending in the region. If DSM program funding continues to grow and reaches the target of \$200 million per year in the region by 2010, DSM programs implemented during 2001-2010 could reduce summer peak demand in 2010 by around 2,200 MW and lower electricity consumption that year by about 5,000 GWh/yr. The latter value is equivalent to the electricity consumption of about 490,000 households in the region, on average.

While the Southwest states are making considerable progress in expanding DSM programs, much more can and should be done. The 0.7 percent of utility revenues expected to be spent on DSM programs in the Southwest in 2006 is well below what is justified given the cost-effective energy savings potential (SWEEP 2002). It is also well below the level of DSM spending by leading utilities including PacifiCorp in Utah.¹⁰ Program funding and scope should continue to expand in order to derive the maximum economic and environmental benefit from this attractive energy resource.

¹⁰ Leading electric utilities in the country spend 2-3% of their revenues on DSM programs and are saving 0.7-1.0% of electricity sales each year as a result of these programs (Kushler, York and Witte 2004; WGA 2006).

References

- Balzar, R., H. Geller, and J. Wellenhoff. 2004. "The Rebirth of Utility DSM Programs in Nevada." *Proceedings of the 2004 ACEEE Summer Study on Energy Efficiency in Buildings*. Vol. 5, pp. 13-20, Washington, DC: American Council for an Energy-Efficient Economy.
- Barkett, B., F. Keneipp, M. Keneipp, and M. Thornsjo. 2006. *Colorado Demand-Side Management Programs Impact, Cost Effectiveness, Process and Customer Satisfaction Evaluation*. Boulder, CO: Summit Blue Consulting, LLC. March 15.
- Bumgarner, J. 2006. Personal communication with Jeff Bumgarner, Director of Energy Services, PacifiCorp, Portland, OR. Feb. 23.
- City of Fort Collins. 2003. *Electric Energy Supply Policy*. Fort Collins, Colorado. March 25. Available at www.swenergy.org/news/Fort_Collins_Electric_Energy_Supply_Policy.pdf.
- EIA. 2001. *Electric Utility Demand Side Management 1999*. Washington, DC: U.S. Department of Energy, Energy Information Administration.
- Holmes, L. 2006. Personal communication with Larry Holmes, Nevada Power Company; Las Vegas, NV, Feb. 28.
- Kushler, M., D. York, and P. Witte. 2004. *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*. Washington, DC: American Council for an Energy-Efficient Economy. April.
- Nichols, D. and D. von Hippel. 2001. *An Economic Analysis of Achievable New Demand-Side Management Opportunities in Utah*. Boston, MA: Tellus Institute. March.
- PacifiCorp. 2003. *Integrated Resource Plan 2003*. Portland, OR: PacifiCorp.
- SWEEP. 2002. *The New Mother Lode: The Potential for More Efficient Electricity Use in the Southwest*. Boulder, CO: Southwest Energy Efficiency Project. Nov.
- WGA. 2006. *Energy Efficiency Task Force Report*. Clean and Diversified Energy Initiative. Denver, CO: Western Governors' Association.
- Xcel Energy 2004. *Response to Issues Raised During the April 26, 2004 DSM Roundtable Discussion*. Memo from Grey Staples, Xcel Energy, Minneapolis, MN, Aug. 25.
- York, D. and M. Kushler. 2005. *ACEEE's 3rd National Scorecard on Utility and Public Benefits Energy Efficiency Programs: A National Review and Update of State-Level Activity*. Washington, DC: American Council for an Energy-Efficient Economy. Oct.