

Update on Utility Energy Efficiency Programs in the Southwest

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ABSTRACT

Funding for electric utility demand-side management (DSM) programs in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming (the states covered by SWEEP) is expected to reach \$171 million in 2008, up from just \$29 million in 2002. Five major utilities in the region reduced electricity use by 748 GWh per year and cut peak demand by 195 MW from DSM programs implemented in 2007, nearly three times the level of energy savings achieved by these utilities in 2004-2005. This paper reports on the growth in funding, level of energy savings being achieved, and key elements of electric utility-sponsored DSM programs in the southwest region. It describes the policies stimulating expansion of DSM programs including financial incentives for utility shareholders. The paper also discusses innovative DSM programs underway in the region and the influence of climate change policies on utility DSM programs.

Introduction

The Southwest was badly lagging the rest of the nation with respect to funding for and savings from ratepayer-funded demand-side management (DSM) programs in the 1990s and early part of this decade. This situation has changed for a number of reasons. First, the region is experiencing high population and power demand growth. Excess generating capacity no longer exists in the region, forcing utilities to propose building new power plants. These power plants, especially coal-fired plants, are controversial and costly. Second, fuel costs are rising which is putting upward pressure on electricity prices and stimulating greater interest in efficiency and conservation. And third, concern about global climate change is prompting greater interest in energy efficiency policies and programs.

Because of these factors, policymakers and utilities are increasingly viewing DSM and greater energy efficiency as a legitimate and high priority utility resource—one that reduces the need for costly and polluting new power plants, improves utility load factor, and helps consumers manage and reduce their rising energy bills. The status of DSM programs and key policies influencing these programs in each state is discussed below.

Status of Utility Energy Efficiency Programs in the Southwest

Table 1 estimates the budget for electric utility-sponsored energy efficiency and load management programs in each southwest state during 2002-2008. Total DSM funding more than quadrupled from about \$29 million in 2002 to \$129 million in 2007. The latter value is equivalent to about 0.7 percent of electric utility revenues in the six-state region. In 2008, DSM funding should reach at least \$170 million (about 0.9% of revenues) due the growth expected throughout the region. Total funding for electric utility DSM programs (mainly energy efficiency programs) grew by more than 30% in both 2007 and 2008.

Table 1. Electric Utility Spending on DSM Programs in the Southwest, 2002-08

| State | DSM program budget (million \$ per year) | | | | | |
|---------------|---|-----------|-----------|-----------|------------|----------------|
| | 2002 | 2004 | 2005 | 2006 | 2007 | 2008 (est.) |
| AZ | 4 | 4 | 10 | 19 | 32 | 42 |
| CO | 11 | 21 | 24 | 18 | 25 | 32 |
| NV | 3 | 11 | 14 | 30 | 38 | 54 |
| NM | 1 | 1 | 1 | 1 | 4 | 9 |
| UT | 9 | 16 | 20 | 25 | 30 | 33 |
| WY | ~0 | ~0 | ~0 | ~0 | ~0 | 1 |
| Region | 29 | 54 | 70 | 93 | 129 | 171 |

Source: Southwest Energy Efficiency Project.

Table 2 shows DSM funding per capita in the six states as of 2007. Funding per capita varies a great deal from under \$2.00 per capita in New Mexico and Wyoming to nearly \$15.00 per capita in Nevada. On average, \$6.70 was spent on electric utility DSM programs per capita in 2007. Note that these values include rural areas where very little or no DSM is occurring. Table 2 also shows that the national average was \$8.90 per capita in 2007 based on data collected and published by the Consortium for Energy Efficiency (CEE 2007). Thus, the southwest region as a whole is still lagging in terms of DSM funding per capita although two of the southwest states (Utah and Nevada) are now well above the national average. DSM spending per capita throughout the region should approach the national average in 2008.

Table 2. Per Capita Spending on DSM Programs in the Southwest, 2007

| State | DSM Spending (million \$) | Population (million) | Spending per capita (\$) |
|---------------|--|---------------------------------|---|
| AZ | 32 | 6.34 | 5.05 |
| CO | 25 | 4.86 | 5.14 |
| NV | 38 | 2.56 | 14.84 |
| NM | 4 | 2.32 | 1.72 |
| UT | 30 | 2.64 | 11.36 |
| WY | ~0 | 0.52 | ~0 |
| Region | 129 | 19.24 | 6.70 |
| U.S. | 2,723 (1) | 305.5 | 8.90 |

Notes: (1) CEE 2007.

Systematic data on energy savings and peak demand reduction are more limited than data on DSM program spending. However, Table 3 shows the savings being achieved by some of the leading utilities in the region during 2006-2008. In conjunction with growing funding, first-year energy savings for the five utilities combined is expected to increase from 484 GWh in 2006 to 800 GWh in 2008, a 29% average annual growth rate. For comparison, these utilities combined saved only 250 GWh per year from their DSM programs as of 2004-05 (Geller 2006).

Considering the entire 2006-2008 program period, these five utilities are projecting they will achieve 5.4 GWh of first-year energy savings and 1.7 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 in all four states is 2.3. This means that the DSM programs are reducing peak demand more than electricity consumption in percentage terms, thereby helping the utilities improve their load factor. In considering the values in Table 3, it should be noted that the utilities use different methodologies for estimating energy savings. However, all of the utilities adjust savings in some fashion to account for free ridership.

Table 3. Energy Savings and Peak Demand Reduction of Leading Utility DSM Programs in the Southwest

| Utility | 2006 | | 2007 | | 2008 (est.) | |
|------------------|------------------------------------|----------------------------|------------------------------------|----------------------------|------------------------------------|----------------------------|
| | 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) |
| AZ - APS | 104 | 17 | 274 | 43 | 269 | 43 |
| CO - Xcel Energy | 43 | 27 | 119 | 47 | 110 | 42 |
| NV - NPC | 146 | 54 | 155 | 54 | 183 | 54 |
| NV - SPPC | 70 | 14 | 51 | 10 | 77 | 10 |
| UT - PacifiCorp | 121 | 35 | 149 | 41 | 161 | 42 |
| All | 484 | 147 | 748 | 195 | 800 | 191 |

Source: Southwest Energy Efficiency Project based on utility data.

Arizona

Arizona Public Service Co. (APS) is the large investor-owned utility in Arizona; Tucson Electric Power (TEP) is a medium-sized investor-owned utility, and the Salt River Project (SRP) is a large non-regulated and customer-owned utility. Utilities in Arizona implemented very modest DSM programs during the 1990s and the first half of this decade. 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 changed in 2005 when the Arizona Corporation Commission (ACC) approved a settlement agreement in a rate case filed by Arizona Public Service Co. (APS). The agreement included minimum spending of \$48 million on energy efficiency programs during 2005-07. APS then developed and received approval to implement ten specific DSM programs. Residential programs include incentives for high efficiency appliances, lighting, and HVAC equipment; training and incentives for ENERGY STAR new homes; and support for low-income weatherization. Non-residential programs include prescriptive and custom incentives for larger businesses; a "one stop" audit, incentive, and installation program for smaller businesses; and

design assistance and incentives for new construction. APS's lighting program involving in-store discounts for CFLs has been particularly successful with about 4.5 million lamps, 3.8 per household on average, disseminated by the end of 2007 (Wontor 2007). APS won ENERGY STAR partner of the year and Exemplary Program awards from ACEEE for its CFL effort.

Due in part to delays in program approval, APS actually spent only \$33 million of its \$48 million requirement on efficiency programs in 2005-2007. But APS is continuing to ramp up its programs and expects to spend \$25 million (about 1% of revenues) and achieve first year energy savings of 269 GWh per year and 43 MW of peak demand reduction in 2008. Furthermore, APS included an expanded energy efficiency option in its recent long-term resource alternatives report (APS 2008). This option calls for ramping up DSM funding to about \$75 million per year by 2013 in order to reduce projected electricity use in 2020 by about 5%. APS estimates that expanded DSM would be very cost effective for consumers.

The 2005 APS settlement agreement included an incentive for APS shareholders. The incentive was set at 10% of DSM program net economic benefits, capped at 10% of total DSM expenditures. This incentive has helped to build support for DSM within APS, but it is not considered large enough to offset the utility's net lost revenues (margins) when it reduces electricity use through DSM programs (Wontor 2007). APS proposed modifying this incentive mechanism in a new rate case filed in 2008, in particular requesting recovery of net lost revenues (margins) as well as removal of the cap on the incentive.

DSM program funding by other electric utilities in Arizona is still relatively limited. SRP provides incentives for energy-efficient products and new homes, and is also implementing a residential pre-pay metering program. SRP is expected to announce additional DSM programs including comprehensive programs for commercial and industrial customers in the near future. Following intervention by SWEEP in a rate case, TEP agreed to spend \$58 million (about 1.5% of revenues) on DSM programs during 2008-2012. Specific programs were proposed by the utility but were not yet approved by the ACC as of May 2008.

Colorado

Xcel Energy (operating as Public Service Company of Colorado) is the main investor-owned electric utility in Colorado, supplying about 55% of the electricity consumed in the state. In its 2004 Least-Cost Plan, 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 800 GWh per year 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 peak demand reduction and add energy savings goals. The Colorado PUC approved the agreement, which also allowed Xcel to proceed with construction of a new baseload coal-fired power plant.

The political environment in Colorado has gotten much friendlier to energy efficiency in recent years. Important legislation to advance utility energy efficiency programs was enacted in 2007, culminating years of work by SWEEP.¹ The legislation clarifies that energy efficiency programs do not have to pass the onerous rate impact test, allows utilities to implement efficiency programs without competitive bidding, directs the PUC to establish energy savings

¹ This legislation, House Bill 07-1037, is available at http://www.leg.state.co.us/CLICS/CLICS2007A/csl.nsf/fsbillcont3/5EA2048E8A50B21287257251007B8474?Open&file=1037_enr.pdf

goals for gas and electric utilities, and directs the PUC to give investor-owned utilities a financial incentive for implementing cost-effective efficiency programs.

This new policy motivated Xcel Energy to propose greatly expanding its DSM programs in a filing made in October, 2007. The utility proposed increasing its DSM budget to \$60-65 million per year (3% of 2006 revenues) by 2010, saving close to 700 MW of peak demand and 2,350 GWh per year of electricity from DSM programs implemented during 2009-2020, and establishing a performance-based incentive of up to 20% of the net economic benefits provided by DSM programs (Xcel Energy 2007). Xcel estimates that this expanded DSM effort would provide \$1.3 billion in net economic benefits for customers and businesses. This proposal was under review by the Colorado PUC as of May 2008, with SWEEP and other interveners recommending even higher energy savings goals.

In the meantime, Xcel implemented five residential and ten non-residential DSM programs in 2007, spending \$17.8 million and achieving about 42 MW of peak demand reduction as well as 127 GWh of first year of energy savings (Xcel Energy 2008).² Home lighting (in-store discounts for CFLs), C&I lighting rebates, and C&I motors and motor systems rebates provided nearly 80% of the overall energy savings.

Some of Colorado's municipal utilities and rural electric cooperatives are implementing DSM programs as well. In 2003, the Fort Collins municipal utility adopted a goal of reducing electricity use per capita 10% and peak demand per capita 15% by 2012, with 2002 values used as baselines. The utility is spending about 2% of its revenues on a broad set of DSM programs in order to achieve this goal. As of 2006, electricity use per capita was about 3% lower but per capita peak demand was 4% higher than in 2002 (City of Ft. Collins Utilities 2007). The Colorado Springs municipal utility spends about 1% of its revenues on DSM programs as does a few rural electric cooperatives. Legislation was introduced in 2008 that required all municipal utilities and rural electric co-ops in Colorado serving at least 5,000 customers to devote at least 2% of their revenues to energy efficiency programs by 2010. The legislation covered 30 utilities serving about 900,000 customers in total. But the legislation failed to pass due to strong opposition from the associations representing rural co-ops and municipal utilities.

Nevada

Nevada Power Company and Sierra Pacific Power Company are the two investor-owned utilities in Nevada, supplying about 88% of electricity consumed in the state. Both are owned by Sierra Pacific Resources. The utilities restarted DSM programs in 2001 and expanded them in 2003. In 2004, the Nevada PUC approved a new policy that allows the utilities 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 expenditures. DSM expenditures are rate based in Nevada. This gave the utilities a financial incentive to invest in DSM programs.

In 2005, legislation was enacted that added energy savings from DSM programs to the state's Renewable Portfolio Standard.³ 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

² These energy savings values are at the generator as reported by Xcel Energy. Savings at the point of end use are about 7% lower.

³ 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>.

equal to 9% of electricity supply in 2007-08 and increases to 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.

In response to these two policies, the utilities doubled their budget for DSM programs in 2006 (see Table 1) and plan to spend \$54 million, about 1.7% of projected sales revenue, on DSM programs in 2008. As shown in Table 2, the level of funding for DSM programs in Nevada is now well above the national average. The utilities are implementing a wide range of residential and non-residential programs including in-store discounts for CFLs, rebates on high efficiency air conditioners, an air conditioner tune-up program, refrigerator recycling, rebates on all types of C&I efficiency measures, and incentives for new homes that exceed ENERGY STAR requirements. It is estimated that 2008 programs will result in 260 GWh per year of electricity savings, equivalent to 0.9% of retail electricity sales by the two utilities combined as of 2006.

New Mexico

Until recently, utilities in New Mexico were implementing very limited DSM programs. The Efficient Use of Energy Act, enacted in 2005, directs utilities to implement cost-effective DSM programs, indicates use of the Total Resource Cost (TRC) test for evaluating DSM program cost effectiveness, establishes a convenient cost recovery mechanism for gas and electric utility DSM programs, and directs the state utility commission (the PRC) to establish rules for integrated resource planning. Following publication of the regulations for implementing this law, both gas and electric utilities began developing DSM programs.

Public Service Company of New Mexico (PNM), the main investor-owned utility in the state, received approval from the PRC to implement nine DSM programs in August, 2007. The annual budget for the programs is \$7.5 million, about 1.2% of PNM's 2006 revenues. The programs include incentives for CFLs, refrigerator recycling, ENERGY STAR new homes, commercial lighting measures, load management, and evaporative cooling. PNM estimates the programs will save about 27 GWh per year, equivalent to about 0.3% of retail electricity sales as of 2006. The programs have a heavy emphasis on peak demand reduction with goals of cutting peak demand by 9.2 MW and having 55 MW participating in dispatchable load control by the end of the third year (Ortiz 2007).

On the policy front, Governor Bill Richardson adopted ambitious statewide energy efficiency goals in November, 2007. The goals commit New Mexico to reducing overall energy use per capita 10% by 2012 and 20% by 2020. Following adoption of these goals, the Governor's office, energy efficiency advocates, utilities and the PRC negotiated consensus amendments to the 2005 Efficient Use of Energy Act. The amendments require investor-owned utilities to reduce electricity use 5% by 2014 and 10% by 2020, as a result of DSM programs implemented starting in 2007.⁴ The amendments also direct the PRC to provide utilities with a positive financial incentive for implementing cost-effective DSM programs, not just removal of disincentives as was stated in the original Act. The amendments were enacted in February 2008 and take effect in July.

⁴ See House Bill 305, Amendments to the Efficient Use of Energy Act. http://www.swenergy.org/news/2008-02-NM_Bill.pdf

Utah

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 as the primary test for determining if DSM programs are cost effective. PacifiCorp, the main electric utility operating in the state through its Rocky Mountain Power (RMP) subsidiary, has steadily increased its DSM programs over the past seven years. As of 2008, the utility is planning to spend \$33 million (2.7% of 2006 revenues) on DSM programs and achieve first year savings of 161 GWh (0.75% of retail electricity sales as of 2006). PacifiCorp's DSM programs in Utah include incentives for high efficiency air conditioning, ENERGY STAR and beyond ENERGY STAR new homes, refrigerator recycling, AC load control, incentives for all types of efficiency measures adopted by businesses, and industrial self-direction option.

PacifiCorp obtains DSM cost recovery through a tariff rider that allows contemporaneous cost recovery for approved DSM programs. This policy, sought by PacifiCorp, was approved by the Utah PUC in 2003. The utility receives cost recovery only; there is no profit margin or financial incentive for utility shareholders. Nonetheless, PacifiCorp has greatly expanded its DSM programs in Utah in recent years. The utility indicated it has done so in order to postpone or avoid very costly investments in electricity generation, given that Utah is a high growth state (Bumgarner 2007).

It is also worth noting the Utah Governor Jon Huntsman adopted an ambitious statewide energy efficiency goal in 2006. The goal calls for increasing energy efficiency statewide 20% by 2015. SWEEP and the organization Utah Clean Energy prepared a strategy for achieving the goals, including expanded utility DSM programs, in 2007 (Geller et al. 2007).

Wyoming

Wyoming has not enacted any legislation related to utility DSM programs. PacificCorp is the largest investor-owned utility in Wyoming and is responsible for about 55 percent of retail electricity sales in the state. As part of a settlement agreement in the sale of PacifiCorp to MidAmerican Energy Holdings, PacifiCorp agreed to conduct a DSM market potential study and file an application "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."

In January 2008, PacifiCorp proposed six DSM programs with an estimated total budget of \$34 million during 2009-2013 (1.7% of 2006 revenues on average). The programs are modeled on the utility's successful DSM programs in Utah and include incentives for a wide range of residential efficiency measures, refrigerator recycling, incentives for all types of efficiency measures adopted by businesses, and an industrial self-direction option. Even though electricity prices and avoided costs are very low in Wyoming, PacifiCorp estimates the programs will have an overall benefit-cost ratio using the Total Resource Cost test of 1.7 to 1.9 (Hedman 2007). The Wyoming PUC is expected to rule on PacifiCorp's proposal by mid-year.

Policy Context

The growth in DSM activity in the southwest states has been heavily influenced by policies enacted in recent years. Table 4 summarizes the key policies affecting DSM efforts in

each of the states. In short, there are many more “yes” entries in the chart today compared to five years ago. The states that have adopted most of these policies (i.e., Nevada, Colorado and Utah) have higher and growing levels of DSM program spending. In viewing the entries, it should be noted that utility bill surcharges (tariff riders), rather than public benefits funds, are the main mechanism for DSM program funding in the southwest states.

Table 4. Key Policies Influencing Electric Utility DSM Programs

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

Notes: (1) Integrated resource planning workshops and scenario analysis are underway.

(2) Adopted via legislation or proposed by the main utility(s), but not yet implemented.

(3) In place for Arizona Public Service Company only.

Global climate change and state policy to address climate change is having some influence on utility DSM prospects in the Southwest. Arizona, New Mexico, and Colorado have adopted state climate plans that include greenhouse gas emissions reduction goals, and Utah is expected to adopt emissions reduction goals and a climate plan in the near future. All of the climate plans assume a big expansion of utility DSM efforts. For example, the Arizona plan assumes utilities achieve five percent electricity savings by 2010 and 15 percent by 2020, for example (ACCAG 2006). Likewise, the Colorado Climate Action Plan assumes all utilities in the state are achieving 1% electricity savings (1% of their retail sales) per year starting in 2010.

But the reality is that climate change concerns and climate plans have had modest impact on utility DSM programs “on the ground” so far. Individual DSM programs must still pass cost effectiveness tests and be approved by state utility commissions in all southwest states. In some cases (e.g., in Arizona and New Mexico), utility commissioners are elected and are not necessarily bought into the climate plans and goals developed Governors and/or other state agencies. On the other hand, Xcel Energy has proposed greatly expanding its DSM programs in Colorado in part to reduce carbon dioxide emissions and help achieve Governor Ritter’s Climate Action Plan goals (Xcel Energy 2007).

Revenue decoupling and/or shareholder incentives can be important policies for overcoming financial disincentives to utility investment in end-use energy efficiency (NAPEE 2007). Revenue decoupling has not yet been adopted for any electric utility in the Southwest.

The lack of decoupling for electric utilities has not inhibited the growth of utility energy efficiency programs in the region. Nor has it inhibited utilities from supporting the adoption of state-of-the-art building energy codes, funding training related to energy code compliance, or promoting construction of ENERGY STAR new homes. On the other hand, decoupling has been adopted for some gas utilities in the region. Questar Gas Company in Utah implemented a robust and effective set of gas DSM programs following the adoption of gas sales-revenue decoupling on a pilot basis in 2006 (Dent 2008).

Positive shareholder incentives are in effect for the investor-owned electric utilities in Nevada as well for Arizona Public Service Company. Shareholder incentives were under development for electric utilities in both Colorado and New Mexico as of May 2008 in response to legislation passed in those states. These incentives are an important factor influencing the willingness of utilities to ramp up their DSM programs.

Resource planning requirements and procedures are also having an influence on utility DSM efforts. Investor-owned utilities in Colorado, Nevada, New Mexico and Utah develop long-term integrated resource plans. These planning requirements, and the fact that demand-side resources compare very favorably to supply-side resources of all types, have contributed to the expansion of DSM goals and commitments. As noted in a recent review, many western utilities have significantly expanded their energy efficiency plans in the past two years alone (Hopper et al. 2008). For example, PacifiCorp is now planning to acquire 2,000 GWh per year of electricity savings from DSM programs throughout its system by 2016 (PacifiCorp 2007).

Promoting Innovative Technologies

For the most part, DSM programs in the Southwest are promoting “tried and true” energy efficiency measures; e.g., CFLs, ENERGY STAR products, refrigerator pick-up and recycling, air conditioner cycling controls, and well-established commercial lighting, HVAC and motors measures. But there is some promotion of, and growing interest in, innovative and emerging technologies within DSM programs in the Southwest.

Most southwest utilities are experiencing peak demand increasing faster than average demand, i.e., a declining load factor, and are therefore keenly interested in reducing peak demand. Utilities in Colorado, New Mexico and Utah are promoting evaporative cooling in their DSM programs and in some cases modern high performance evaporative cooling systems. These systems can cut electricity use for cooling by 50-90%. Nevada Power Company has had considerable success promoting and providing incentives for a high efficiency residential air conditioning system with a water-cooled condenser (NPC 2007). In addition, some utilities in the region are implementing AC tune-up programs for existing homes.

The market share for ENERGY STAR new homes is already very high in Nevada and Arizona, and is increasing in Utah. Consequently some southwest utilities are providing incentives for new homes that exceed the ENERGY STAR requirements and are training builders on how to achieve high levels of energy efficiency. Nevada Power Company, for example, is providing incentives for new homes that are at least 15% more efficient than homes meeting the minimum ENERGY STAR requirements (NPC 2007).

Other innovative DSM technologies that are being promoted by utilities in the Southwest include pay-as-you-go meters and in-home displays. SRP in Arizona has implemented pay-as-you-go meters and in-home energy displays in over 50,000 homes on a voluntary basis. The utility estimates that these households realize 10-15% energy savings on average when this bill

payment and customer feedback system is utilized (Pruitt 2005). NPC and SPPC are testing a wide variety of home energy display devices as part of their 2008 DSM programs (NPC 2007).

Conclusion

Electric utility DSM programs, primarily energy efficiency programs, are growing rapidly in the Southwest. The total budget for these programs increased from about \$29 million in 2002 to \$129 million in 2007, a compound growth rate of 35% per year. DSM program funding is expected to increase to around \$171 million in 2008. DSM spending per capita is well above the national average in Nevada and Utah, but is still below the national average for the region as a whole.

The energy savings and peak demand reduction from DSM programs in the Southwest is increasing along with program budgets. Some investor-owned utilities in the region, in particular the main utilities in Nevada, Utah and Colorado, are achieving (or planning to achieve) first year energy savings in the range of 0.75% to 1.0% of their total retail energy sales. But other utilities including those in Arizona and New Mexico are falling short of this benchmark.

The growth of DSM programs in the Southwest is underpinned by policies including integrated resource planning requirements, use of the Total Resource Cost or Societal Cost test to determine cost effectiveness, and attractive DSM cost recovery mechanisms. In addition, utility shareholders have a financial incentive for implementing DSM programs in Nevada and in Arizona (APS only). Incentive mechanisms are called for in recently enacted legislation in Colorado and New Mexico, but are not yet in place there. Sales-revenue decoupling has not been adopted for any electric utility in the Southwest, but this has not been an obstacle to significant growth in utility DSM programs.

Projected load growth is still relatively high in most southwest states—around 4% per year in Arizona and 2 to 3% per year in Utah and Nevada. At the same time, southwest states have adopted or are in the process of adopting greenhouse gas emissions reduction goals and climate change action plans. These goals and action plans do not appear to be a major factor influencing utility DSM efforts so far. However, climate change concerns and emissions reduction goals are likely to grow in importance in the future. In addition, the cost of constructing and fueling new generating facilities is rising rapidly. In light of these key drivers, utility energy efficiency programs will continue to expand in the Southwest.

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