Carrots for Utilities:
Providing Financial Returns for Utility Investments in Energy Efficiency

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EXECUTIVE SUMMARY

This report examines state efforts and experiences with financial incentives for encouraging investor-owned utilities (IOUs) to provide effective energy efficiency programs for their customers. Two fundamental impediments to improving efficiency in the IOU sector include the existence of:

1) *A disincentive to using energy efficiency programs to reduce customer energy consumption because utility revenues will also be reduced.*

2) *A lack of incentive to spend money on programs to improve customer energy efficiency as compared to making investments in new utility facilities and equipment.*

Different policy mechanisms address different aspects of the specific problems noted above and it is critically important that these measures be considered together as part of an overarching approach to correct longstanding barriers inhibiting utility investments in customer energy efficiency. This report focuses on one such mechanism, shareholder incentives. It reviews and describes a variety of state shareholder incentive mechanisms that have been established. This information provides an overview of the approaches that have been employed and can be used to illuminate industry trends and practices. Using these results, and feedback from industry experts, a number of conclusions have been drawn detailing what approaches have been successful and unsuccessful to date in providing positive financial incentives for energy efficiency achievements by investor-owned utilities. These results can be used to help guide the development and adoption of future mechanisms as well as to modify and improve existing mechanisms in order to maximize the effectiveness of the policy and remove a fundamental regulatory barrier to utility efforts to improve customer energy efficiency.

Initial research resulted in the identification of 18 states that have had a shareholder incentive mechanism available to investor-owned utilities for at least a full year. Our goal was to focus on states for which there was likely to be historical and current information available regarding the outcomes of the incentive in practice. We collected detailed data on each state, relying heavily on extensive document reviews as well as interviews with key representatives such as staff at state regulatory commissions, staff at participating utilities, and independent third parties such as environmental and ratepayer advocates. We compiled individual state summaries of the incentive mechanisms, which are included in the appendix. For discussion purposes, incentive mechanisms were divided into three broad categories:

- Shared benefit —incentive is based on a share of the benefits from approved efficiency programs (12 states)[1]

- Performance targets —incentive is based on achievement of fixed energy savings targets or performance goals (5 states)

- Rate of return —an increased rate of return is earned according to program spending or savings (2 states)

The information collected has been used to draw conclusions regarding common practices and approaches across states. These conclusions are included in the Results and Discussion sections of this report.

Some key findings from this study include the following. First, in terms of policy design, states have shown a strong preference for mechanisms that award an incentive based on cost-effective achievement of energy savings targets, rather than other metrics such as program spending levels. Second, the record indicates that when these targets have been established, utilities have tended, thus far, to consistently meet or exceed them. Finally, there is wide agreement across the industry experts that we interviewed

[1] The incentive mechanism in Washington incorporates elements of both a shared benefit and a performance target approach and has been counted under both above.

that shareholder incentives influence utility decision-making, and this report will describe some of the industry stakeholder observations in that regard.

In what should be thought of as exploratory research, this study also attempted to examine certain quantitative indicators that might plausibly be affected by a utility incentive policy. Efficiency spending by utilities is increasing nationally and it is significantly higher in states that have adopted policy mechanisms to align incentives to promote efficiency. Our research indicates what appears to be a strong correlation between higher spending by utilities and the presence of a shareholder incentive. We have also found that many states have had immediate and substantial increases in efficiency investment following adoption of an incentive. In states where a shareholder incentive mechanism has been implemented, the per capita utility investment in efficiency is higher and increases faster as compared with states that have adopted other policy mechanisms to properly align incentives, but have not included a shareholder incentive mechanism.

The design of this observational study, and the limitations on the data available, make it impossible to draw any conclusions regarding causality. However, it is interesting to observe that enactment of shareholder incentives is at least associated with significant increases in energy efficiency program spending.

Additional factors identified as contributing to a successful policy include:

- Savings goals should be set to encourage innovation and motivate utilities to exceed them. Savings goals and incentive caps that are too easily met invalidate the rationale for an incentive.

- Regulatory certainty aides in utility "buy-in." For example, clarity regarding the methodologies used for making measurement and verification calculations at the start of the incentive cycle is important.

There was repeated emphasis on the need to for a larger framework of established policies supporting and encouraging efficiency. Shareholder incentives in the context of a larger framework, such as legislation or a state efficiency standard, can reduce controversy, help parties to reach consensus, solidify regulatory authority, and provide regulatory certainty. Fractured treatment of efficiency makes it difficult for regulators to see what the true impacts of policies are, reducing confidence and the ability to adjust mechanisms appropriately. States that can see where and why the spending and savings are occurring have greater support from regulators and stakeholders. Transparency is also improved when states address the multiple barriers to efficiency comprehensively as opposed to piecemeal.

While there are many reported successes resulting from shareholder incentive mechanisms, challenges remain. A primary obstacle is segmented or fractured policy approaches that do not properly align incentives. For example, states that implement a shareholder incentive mechanism without also allowing for timely recovery of program costs may invalidate the effectiveness of the incentive. Proper alignment of policies to remove barriers to efficiency is particularly crucial with regard to the direct relationship between sales and profits that encourages the utility to increase throughput instead of reducing demand by its customers.

INTRODUCTION

Energy efficiency's importance as a utility resource has never been greater. Improving energy efficiency in our homes, businesses, and industries reduces energy costs, creates jobs, and improves the environment.

Energy efficiency programs offered by utilities and related organizations are seeking unprecedented savings driven by both economic and environmental concerns. More than 35 states have established policies intended to require and facilitate the use of energy efficiency programs for utility customers. (Molina et al. 2010). Federal energy and economic policies also have been enacted to encourage states towards this same objective. For example, the $787 billion economic stimulus (American Recovery and Reinvestment Act) passed by the United States Congress requires that states receiving energy efficiency grants have in place regulatory mechanisms to ensure that "utility financial incentives are aligned with helping their customers use energy more efficiently." (ARRA 2009).

This report examines state efforts and experiences with financial incentives for encouraging IOUs to improve energy efficiency through reduction of customer energy demand. It provides a framework for understanding the recent developments and experiences in this area, and is intended as a resource that policymakers can use to consider options and avoid pitfalls.

It should be noted that providing financial incentives for successful energy efficiency programs is only one policy option for aligning utility financial incentives with improved customer energy efficiency. As described below, there are multiple barriers to improved customer energy efficiency in the traditional utility framework and this report addresses only one part of a potential solution to the overall problem. Nevertheless, experience suggests that it is a critically important part if utilities are to be truly motivated to support aggressive and effective energy efficiency programs for their customers.

BACKGROUND

Obstacles to Improving Energy Efficiency for Utility Customers

The majority of electricity and natural gas customers in the United States are served by investor-owned utilities (IOUs), which are private companies owned by shareholders. IOUs have a fiduciary obligation to try to earn a profitable return on shareholder investments. IOUs are subject to regulation of their rates and other aspects of their business operations and investments because of the monopoly status granted them as a "public" utility. Regulation is required to protect the public interest with companies granted exclusive rights to serve customers in designated service territories within states. Under traditional cost-of-service rate regulation, regulators determine the revenues IOUs should be authorized to recover (including costs and profits), and then set the utility's rates based on forecasted sales levels. IOUs then earn profits by selling enough product and managing costs to generate shareholder returns. Generally, increasing the amount of electricity sold ("throughput") increases revenues to shareholders. Consumers that reduce energy consumption by improving efficiency reduce the amount of electricity sold. The direct relationship between electricity sales and revenues in the traditional IOU regulatory model creates a fundamental challenge to securing utility cooperation and support for improving customer energy efficiency. Further, in contrast to the earnings opportunity regulators provide utilities if they invest capital in new supply facilities and equipment, there is little or no financial incentive for utilities to spend money on programs that reduce customer demand for electricity ("demand-side management" programs). This is, in part, because the traditional utility model permits utilities to earn a rate of return on investments of capital, but not for expenses, such as the cost of efficiency programs. For purposes of this discussion, these impediments to improving efficiency in the IOU sector are framed as two separate problems:

> *1) There is a disincentive to using energy efficiency programs to reduce customer energy consumption because utility revenues will also be reduced.*
> *2) There is a lack of incentive to spend money on programs to improve customer energy efficiency as compared to making investments in new utility facilities and equipment.*

No single mechanism can adequately remove the existing biases against utility investments in energy efficiency. Rather, different mechanisms address the specific different problems noted above. It is critically important that these measures be considered together as part of an overarching approach to correct longstanding barriers inhibiting investments in efficiency. While this report focuses on a single type of mechanism—shareholder incentives, it is intended to complement a forthcoming ACEEE white paper on lost revenue recovery and a planned report on decoupling being prepared by the Regulatory Assistance Project.[2]

Benefits of Energy Efficiency as a Resource

"Energy efficiency" is a means of using less energy to provide the same (or greater) level of energy services, such as lighting, cooling, heating, and entertainment. It is the cheapest, fastest, and cleanest method of meeting energy demand. Energy efficiency technologies, policies, programs, and behavior are a means of promoting economic prosperity, energy security, and environmental protection. The cost of saving energy through utility energy efficiency programs is much lower (1/3 or less) than any generation resource, whether from conventional fossil fuels or renewable energy sources (Friedrich et al. 2009).

Energy Efficiency Promotes Economic Prosperity

- *Energy efficiency saves Americans money by lowering their energy bills. Consumers using less energy pay for less energy.*
- *Investments in energy efficiency improvements, technologies, and processes generate jobs. This is because energy efficiency projects are generally more labor intensive per dollar invested than investments in the energy sector (*Laitner et al. 2010).
- *Energy efficiency stabilizes, and in some cases may lower, energy prices by reducing demand for fossil fuels such as coal and natural gas (*Prindle, Elliott, and Shipley 2006).
- *Consumers typically foot the bill for construction of expensive new power plants and infrastructure. Deployment of energy efficiency mechanisms reduces the need for these expenditures, freeing consumers to spend the money elsewhere.*
- *Increases in energy efficiency reduce the amount of fuel used per unit of economic output, softening the blow of a price spike by reducing the impact of energy prices on the economy as a whole.*

Energy Efficiency Prevents and Reduces Environmental Pollution

- *Efficient use of energy results in preservation of limited and valuable natural resources such as coal, oil, and natural gas.*
- *Energy efficiency reduces demand for electricity from fossil fuel burning power plants that produce air pollution contributing to acid rain, smog, global warming, and mercury poisoning.*
- *Energy efficiency improves the health of Americans by reducing air pollutants such as nitrogen oxides (NO_X), sulfur dioxide (SO_2), carbon dioxide (CO_2), particulate matter, and mercury.*

Energy Efficiency Strengthens National Security

- *Energy efficiency reduces the need to import oil and consequently vulnerability to oil shortages and price shocks in other parts of the world.*

[2] The Regulatory Assistance Project (RAP) will soon be publishing a guide explaining the mechanics of revenue regulation, decoupling, and the relevant policy issues. It is scheduled to be published in February and will be available on RAP's Web site: http://www.raponline.org.

- *Energy efficiency decreases demand on all components of the energy supply system (power lines, transformers, pipelines, pumping stations, power plants, etc.), reducing the risk of failure of any one segment.*

Addressing Utility Economic Concerns Regarding Customer Energy Efficiency Programs

In the typical IOU system, the drive to earn profits and satisfy shareholders is a powerful incentive for increasing electricity or natural gas sales. The disincentive to pursue energy efficiency created by the direct relationship between profits and sales can be removed through the implementation of policy mechanisms such as “decoupling” and “lost revenue recovery.” Once the throughput disincentive is effectively removed, lost sales from improved customer energy efficiency will not cause IOUs to lose their ability to recover their fixed costs and authorized rate of return. However, this arguably leaves an IOU agnostic or neutral to energy efficiency as a resource option; while it no longer will lose revenues from improved customer energy efficiency, it also will not earn a positive return on utility expenditures for helping their customers become more energy efficient. There needs to be a positive financial incentive in place to reward utility success at acquiring “energy efficiency resources” through programs to improve customer energy efficiency, just as traditional rate regulation provides a positive rate of return for investments in new generation resources and other system assets. In order to align the IOU system so that energy efficiency is considered alongside other investment options, it must also be made profitable. Shareholder incentive mechanisms for energy efficiency accomplish this. Effective shareholder incentives put energy efficiency and supply-side investments (typically generation, transmission, and distribution---those capital investments that constitute a utility's "rate base") on a comparable financial footing, enabling shareholders to earn a positive financial return from their efforts to improve customer energy efficiency—not just their supply-side investments.

In an effort to align incentives to remove the existing bias against efficiency, and appropriately recognize the benefits of energy efficiency, several policy mechanisms have emerged. The following section discusses some of these mechanisms, including “decoupling,” “lost revenue adjustment,” and “shareholder incentives.”

Decoupling—This rate adjustment mechanism separates ("decouples") a utility’s revenues from the amount of electricity or gas it sells. Under traditional regulation, recovery of fixed costs is based on projected energy sales. If such sales are higher than projected, the utility will collect greater revenues, effectively increasing utility profits. If such sales are lower (such as would be achieved through successful customer energy efficiency programs), the utility will under-collect revenues, thereby threatening their ability to cover their fixed costs and decreasing profits. A decoupling mechanism addresses this problem by adjusting the amount of revenues IOUs collect based on sales, to ensure that the utility does not recover less than the fixed costs authorized by the regulator. With decoupling, revenues are “trued-up” to actual sales on a periodic basis. In a decoupled system, IOUs are not financially harmed if their sales decline because of efficiency improvements, nor are they rewarded if sales increase.

Lost Revenue Adjustment—This mechanism does not completely sever the link between revenue and sales. Instead, a lost revenue adjustment mechanism permits an IOU to recover revenues that were reduced as a result of a successful energy efficiency program. Allowing lost revenue to be recovered through a rate adjustment removes the utility disincentive to invest in efficiency. A lost revenue adjustment mechanism can have several disadvantages compared to decoupling. First, estimating savings from energy efficiency measures can be expensive and complex. These challenges can lead to contentiousness between IOUs attempting to maximize shareholder returns and regulators. In addition, while the disincentive to invest in energy efficiency is removed through this type of mechanism, utilities that increase sales can still increase returns.

Shareholder Incentives—While decoupling and lost revenue adjustment mechanisms mitigate or remove the disincentive to promote customer energy efficiency, they do not necessarily provide parity for efficiency expenditures as compared to other investment options. Typically, utilities are allowed to earn profits on investments in new supply through rates recovered over time. This creates an incentive for utilities to invest in capital projects. In order to also make energy efficiency programs an attractive option

for utility management, policymakers have adopted mechanisms that allow utilities to earn a profit from their energy efficiency program activities. These mechanisms are referred to herein as "shareholder incentives." A variety of approaches for structuring shareholder incentives has been developed. For analytical purposes, the shareholder incentive mechanisms used by states have been divided into three general categories as follows:

- *Shared Benefits*—Shared benefits mechanisms allow utilities to earn some portion of the benefits of a successful energy efficiency program with the ratepayers. For example, a utility may earn a share of the positive difference in efficiency program spending and the value (benefits) of energy savings achieved as a result the program.

- *Performance Targets*—Performance target incentives reward utilities for meeting energy savings goals and other targets. For example, a utility may earn a percentage of efficiency program costs for achieving pre-established energy savings goals.

- *Rate of Return*—Rate of return incentives allow utilities to earn a rate of return based on efficiency spending or savings. For example, a utility may earn a rate of return for efficiency investments equal to the rate it earns for new supply capacity investments.

The remainder of this report focuses on examples of actual shareholder incentive mechanisms implemented in a number of states around the nation.

PURPOSE OF THIS STUDY

Utilities that acquire energy efficiency resources are meeting energy demand of customers at a lower cost to ratepayers and the environment than if they invest in new generating plants or other sources of supply. For that reason, a number of states have chosen to put in place policy mechanisms that provide a financial incentive for utilities to pursue customer energy efficiency. States have attempted to accomplish this goal via a variety of shareholder incentive mechanisms. While the basic objective is the same, no standard model has emerged.

The purpose of this study is to review and describe a variety of state shareholder incentive mechanisms that has been established. This information will provide an overview of the approaches that have been employed and can be used to illuminate industry trends and practices. Using these results, and feedback from industry experts, a number of conclusions can be drawn detailing what approaches have been successful and unsuccessful in providing positive financial incentives for energy efficiency investments by investor-owned utilities. These results can be used to help guide the development and adoption of future mechanisms as well as to modify and improve existing mechanisms in order to maximize the effectiveness of the policy and remove a fundamental regulatory barrier to utility investments in energy efficiency.

Shareholder incentives are only part of the picture of removing financial barriers for increased utility investments in energy efficiency. Shareholder incentive mechanisms can help to level the playing field between investments in efficiency and new capital, but they do little or nothing to address the income that is lost when a utility sells less electricity as a result of improving customer efficiency. Mechanisms such as decoupling and lost revenue recovery have been employed to address these monetary losses. Further, utilities incur costs to administer and provide energy efficiency programs to their customers. Such costs of energy efficiency programs need to be addressed through cost recovery mechanisms.

METHODOLOGY

This project employed a wide variety of data collection methodologies including direct surveys, review of relevant legislation and regulatory rulemakings, review of recent industry literature, and review of the American Council for an Energy-Efficient Economy’s extensive files and databases on utility-sector energy efficiency policies and programs.

Initial research resulted in the identification of states that have had a shareholder incentive mechanism available to IOUs for at least a full year. Our goal was to focus on states for which there was likely to be historical and current information available regarding the outcomes of the incentive in practice. We identified 18 states that met this criterion.

After identifying the select group of states, we collected detailed data on each state, relying heavily on extensive document reviews at this stage of our research. The core objective was to identify the type and structure of the incentive in the state as well as basic information regarding the history of the incentive and data such as program spending, energy savings, and incentives earned.[3]

Following this initial research, we conducted interviews with key representatives such as staff at state regulatory commissions, staff at participating utilities, and independent third parties such as environmental and ratepayer advocates.

Using the above research, we compiled individual state summaries of the incentive mechanisms, which are included in the appendix. The information collected has been used to draw conclusions regarding common practices and approaches across states. These conclusions are included in the Results and Discussion sections of this report.

RESULTS

A variety of approaches for implementing a shareholder incentive have emerged nationally, but incentive mechanisms can generally be classified as one of three broad categories. The mechanisms in the 18 states with shareholder incentives selected for inclusion in this report ("Profiled States") fall into the following broad categories:

Shared benefit—incentive is based on a share of the benefits from approved efficiency programs (12 states*)

Performance targets—incentive is based on achievement of fixed energy savings targets or performance goals (5 states*)

Rate of return—an increased rate of return is earned according to program spending or savings (2 states)

*The incentive mechanism in Washington incorporates elements of both a shared benefit and a performance target approach and has been counted under both above.

Figure 1 on the next page shows the 18 Profiled States by program type.

Separating the cause and effect of a single policy mechanism in the context of a complex, real-world system is extremely difficult. Data such as incentives earned and energy saved is often not available.[4] These factors make comparisons across programs challenging. However, a number of trends are apparent and are summarized in the remainder of this section.

[3] As we completed this initial data collection process, it became evident that there was much less policy and program activity, and much less data available, regarding natural gas utility energy efficiency spending and savings. As a result, we necessarily focused our second stage data collection and analysis primarily on electric utility energy efficiency policies and programs.

[4] Energy savings data was not consistently available and when it was available, comparisons across states were challenging due to differences in reporting. For these reasons this report does not address energy savings.

Figure 1: Profiled States by Program Type

The national landscape with regard to efficiency is rapidly changing and increasingly utilities across the nation are investing in improved efficiency. Figure 2 compares the national annual utility spending on efficiency on a per capita basis for the years 2006–2009, and shows that average spending per person has steadily increased in recent years, more than doubling in a four-year period.

As previously mentioned, there are a variety of policy mechanisms available for properly aligning utility incentives to encourage efficiency. Figure 3 compares the states that have implemented some form of mechanism to align utility incentives with states that have no incentive mechanisms in place.[5] The results are listed on a per capita basis for the years 2006–2009. Figure 3 demonstrates that in states that have attempted to properly align incentives to encourage efficiency, utilities are spending significantly more per person to achieve efficiency improvements. Spending in states that have not attempted to align these incentives has remained relatively flat between 2006 and 2008. In spite of a recent jump in spending in 2009, utilities in these states continue to spend less than half of what is spent in states that have mechanisms in place to align incentives.

It is clear that efficiency spending by utilities is increasing nationally and it is significantly higher in states that have adopted policy mechanisms to align incentives to promote efficiency. Identifying what, if any, impact shareholder incentives have had as compared to other incentive mechanisms is more challenging. Figure 4 shows per capita spending in four different groups of states:

[5] These two groups of states can be identified using Molina et al. 2010, Table 2: "Summary of State Scoring on Utility and Public Benefits Programs and Policies."

Figure 2: National Utility Efficiency Spending per Person[6]

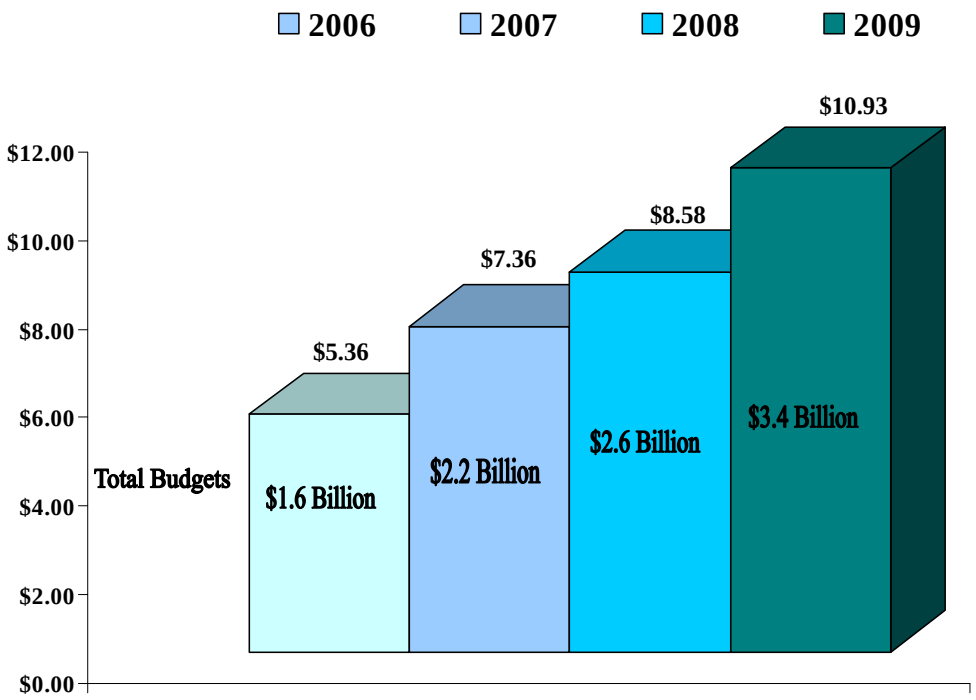
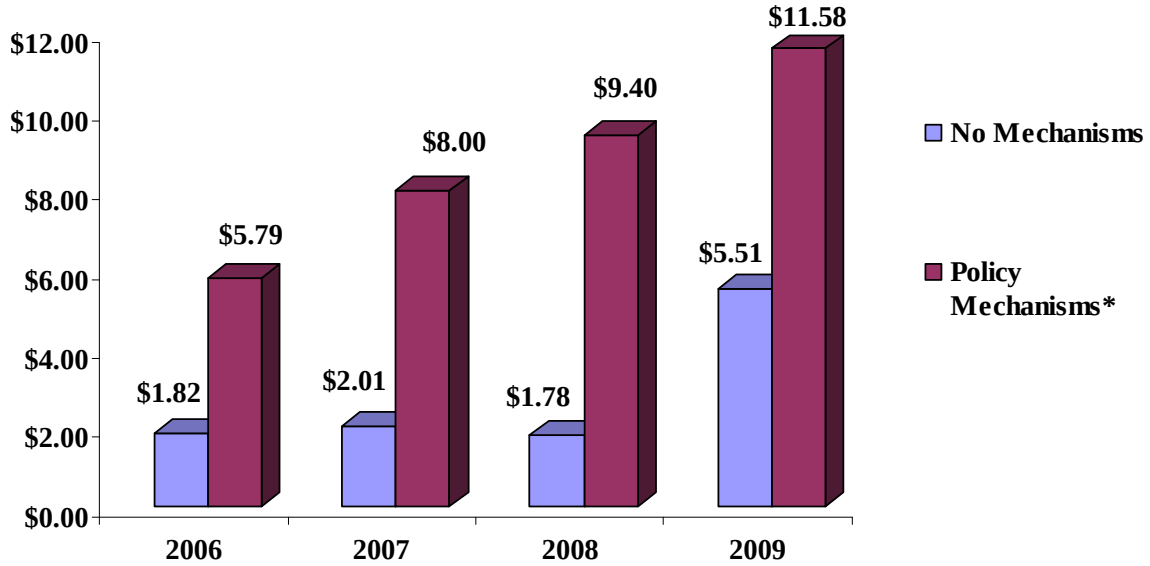


Figure 3: Utility Efficiency Spending per Person: States with Policy Mechanisms vs. No Mechanisms



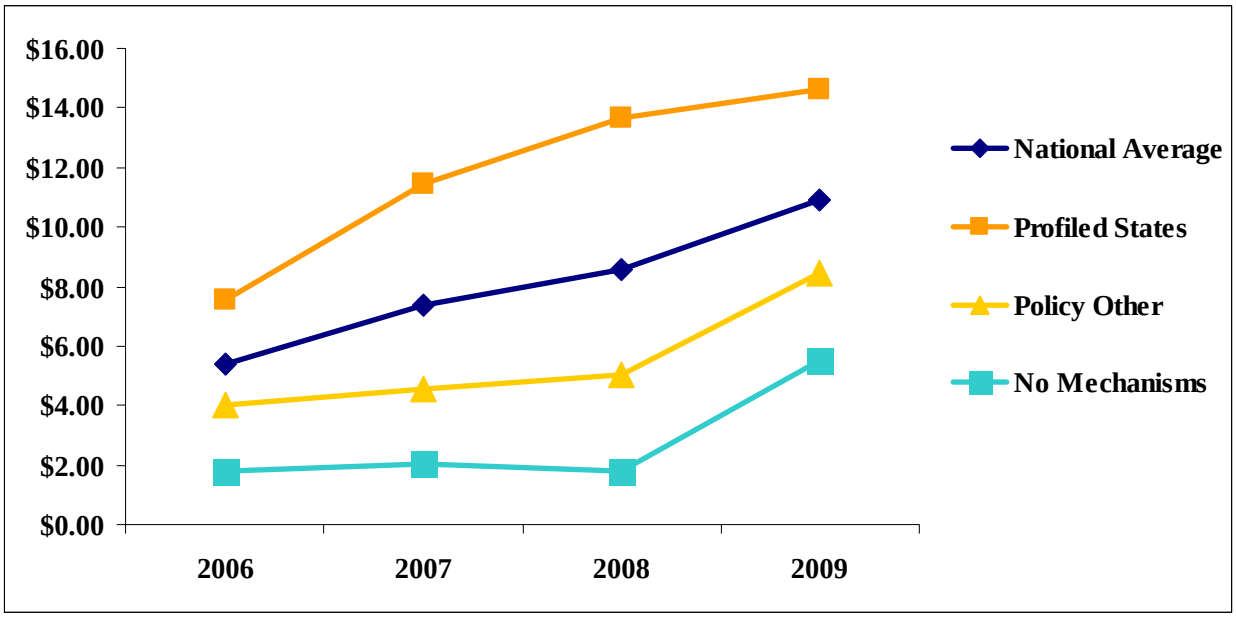
*Includes both "Profiled" and "Policies Other" (see description below)

[6] Efficiency spending numbers throughout the remainder of this section are taken from a combination of data available through the Energy Information Administration's Form 816, supplemented by ACEEE research.

- *National Average:* All 50 states + the District of Columbia
- *Profiled States:* 18 states identified as currently having shareholder incentive mechanisms for IOUs active prior to 2009. Many of these states have additional mechanisms in place to align incentives such as decoupling or lost revenue recovery mechanisms.
- *Policies Other*: These are the states that have made some effort to align utility incentives to encourage efficiency, but EXCLUDES the Profiled States. This group roughly approximates states that have only adopted decoupling and/or lost revenue recovery mechanisms for either gas or electric utilities.
- *No Mechanisms:* These are the states that have been identified as having adopted no mechanisms for properly aligning incentives to encourage efficiency.

Figure 4 shows that in the years between 2006 and 2008 the rate of increased spending in Profiled States outpaced all other groups. Between 2008 and 2009 the rate of spending spiked sharply in both states that have not adopted an incentive mechanism and those that have adopted some mechanism, but not a shareholder incentive.[7] While per capita spending has increased for all groups, the chart demonstrates that spending remains significantly higher in Profiled States.

Figure 4: Utility Efficiency Spending per Person: National vs. States Grouped by Policy Mechanism



It is difficult, if not impossible, to attribute dollar amounts of utility spending to a specific policy mechanism and this report does not attempt to draw such conclusions. Figures 5 through 7 provide a high-level comparison of utility spending on efficiency in Profiled States. Figure 5 compares per capita spending in Profiled States with all other states. It is essentially a look at spending in states with an active shareholder incentive prior to 2009 compared to the states that didn't have such a policy in place.

[7] There are a range of explanations for why spending by utilities in these two groups has increased so significantly during the 2008–2009 time period. A number of those states have recently adopted statewide goals setting minimum efficiency savings targets. For example, increased spending in Pennsylvania, which passed an energy efficiency resource standard at the end of 2008, accounts for almost 80% of the increased spending in "No Mechanism" states between 2008 and 2009. The recent implementation of these types of policies is a likely explanation for the dramatic spending increases in "Policy Other" states as well; however, a full analysis examining this more recent trend is beyond the scope of this report.

Figure 5: Efficiency Spending by Utilities per Person: Profiled vs. All Other States

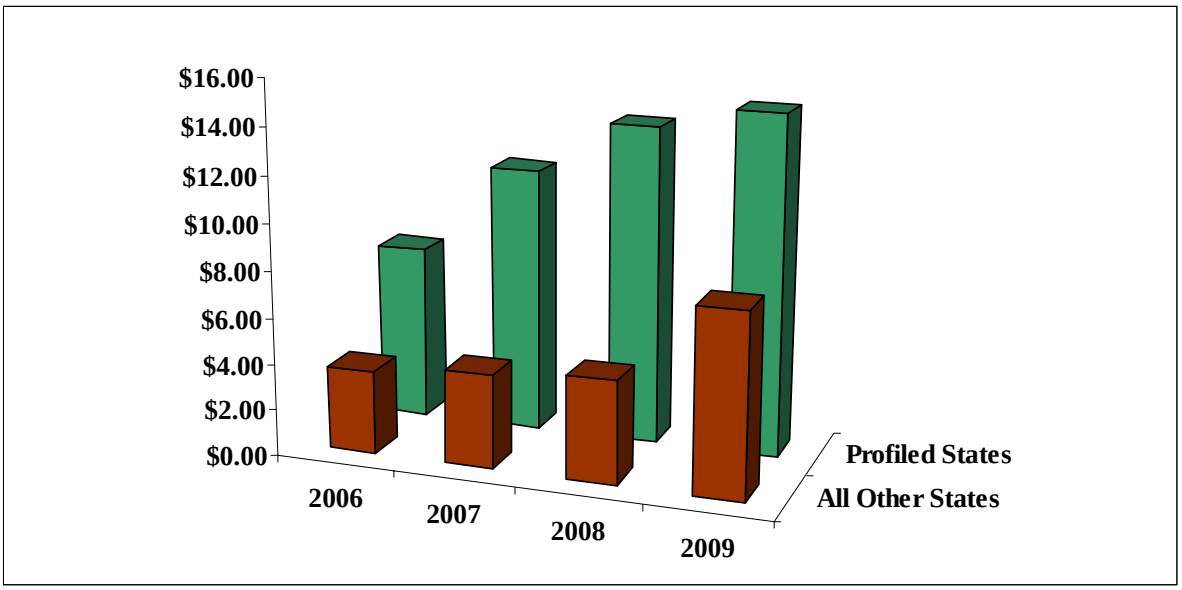
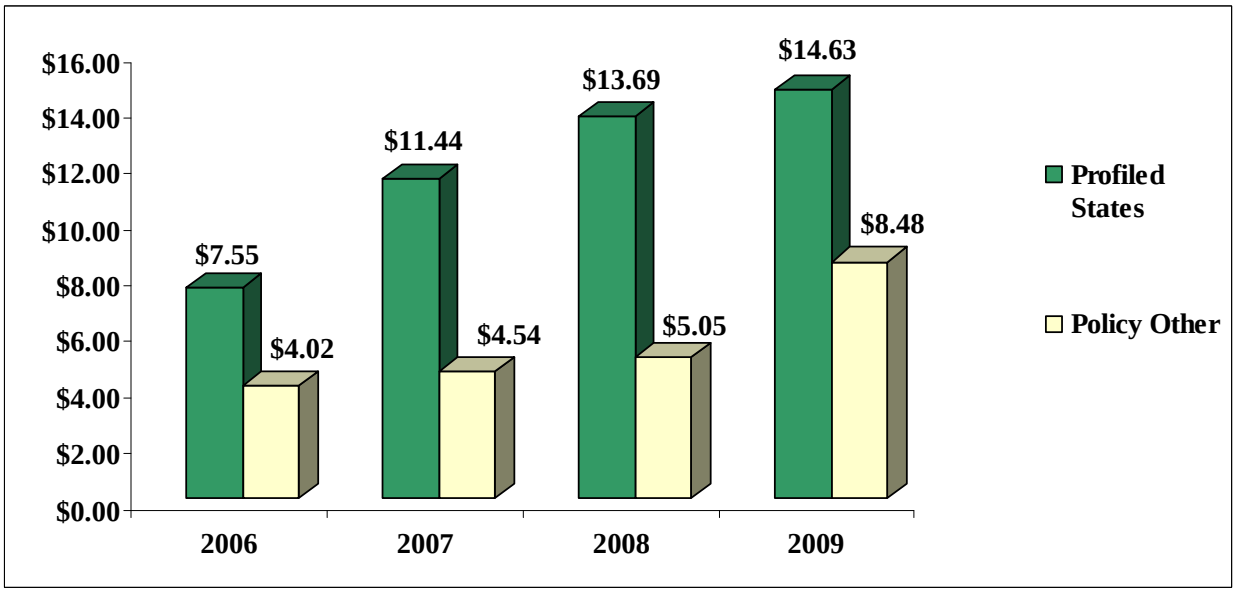


Figure 6 compares Profiled States with states that have adopted some form of policy mechanism to align utility incentives to encourage efficiency, but not a shareholder incentive. This figure shows that among states that have made efforts to properly align efficiency incentives, those with shareholder incentive mechanisms have substantially higher per capita utility spending.

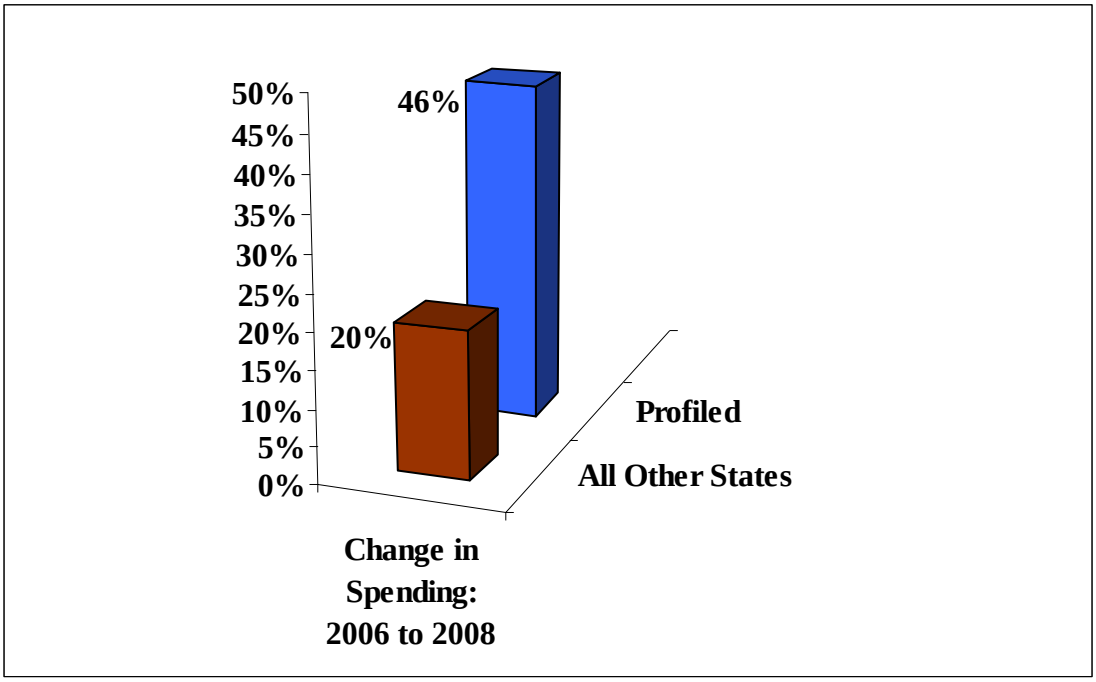
Figure 6: Utility Efficiency Spending per Person: Profiled States vs. States with Other Policies



In a significant number of Profiled States the shareholder incentive was either implemented or revised during the 2006 to 2008 time frame.[8] Figure 7 compares changes in efficiency spending during the 2006 to 2008 time period, which reveals that spending increases in Profiled States increased at more than double the rate of all other states.

[8] The current versions of the shareholder incentive mechanism in Connecticut, Kentucky, and Wisconsin were adopted prior to 2005.

Figure 7: Percentage Increase in Efficiency Spending from 2006 to 2008



These charts indicate what appears to be a strong correlation between higher spending by utilities and the presence of a shareholder incentive. The intent of establishing shareholder incentives is to encourage and reward utilities for successful customer energy efficiency programs. Our analysis of spending indicates that enactment of shareholder incentives is associated with significant increases in energy efficiency program spending. We have also found that many states have had immediate and substantial increases in efficiency investment following adoption of an incentive.

In spite of the challenges of aggregating the impacts of a shareholder incentive mechanism, there are a number of additional trends and patterns that emerged from the survey of Profiled States. Several are listed below.

- When incentives are available, the experience thus far is that utilities have almost always earned them. Further, when the available incentive falls within a range most utilities have earned at the high end of the range. Occasionally a 1-2 year implementation period is needed before earning incentives while efficiency programs are ramped up, but once programs are well-established, utilities have consistently earned close to the maximum incentive available.

- The average incentive earned is 10-11% of program spending.

- Most states have a cap on the incentive. The cap is most frequently based on a percentage of program spending and ranges from 5% to 20% of program spending with an average of 12% to 13%. Alternatively, states cap the incentive as a percentage of program net benefits, a percentage of savings goals, or at a fixed dollar amount.

- Most states with incentives also permit some form of renumeration to utilities from sales that are lost due to decreased demand resulting from efficiency improvements. Both decoupling and lost revenue recovery mechanisms are common; however, a number of states employ these mechanisms on a pilot basis and not uniformly across utilities or sectors (gas and electric).

- The authority to impose penalties for a utility's failure to meet energy savings or spending goals is more frequent in the Western United States. Penalties are included in the mechanisms for

California, Idaho, and Washington. In our research we found no instances where penalties were imposed.[9]

General trends can be further divided according to type of program.

Shared benefit—States using a shared benefit approach often set the amount of the available incentive as a share of net benefits. Net benefit calculations vary somewhat but are generally based on the difference between the value of energy savings and costs. The value of energy savings are often based on the avoided costs from reduced demand for electricity. Additional variables considered included program-specific valuations, weighted valuations, and cost effectiveness. In addition, some states include separate calculation methodologies permitting earnings for programs where savings measurement is particularly challenging (such as education and outreach). Of the states that have a shared benefits mechanism in place, the average maximum incentive that may be earned is approximately 11% of net benefits. Incentive payments in shared benefit states averaged approximately 14% of program spending. The fact that incentives are a higher share of program spending than net benefits implies that the average benefit cost ratio of these mechanisms is greater than 2:1.

Performance target—The incentives available via performance target mechanisms are generally based on a percentage of program costs with the percentage varying depending on how targets are met or exceeded. Many of the performance target mechanisms are tiered and different earnings potentials are available as a function of the percentage of targets reached. Maximum available incentives range from 4.4% to 12% of program costs. On average, utilities earned incentives that were roughly equivalent to 6% of program spending.

Rate of return—Only two states surveyed use a rate of return approach (Nevada and Wisconsin). In both cases utilities earn an incentive based on efficiency investments. In Nevada, the rate of return is based on a utility's debt to equity ratio and capitalized costs. In Wisconsin, utilities earn the same rate for efficiency investments as they do for new capital investments. Neither program has a minimum savings threshold tying the incentive to efficiency achievements though the Nevada program requires spending to be cost effective.

Table 1 lists some of the basic elements of the shareholder incentive mechanisms in the 18 Profiled States.

[9] Some states (such as Illinois, Ohio, and Pennsylvania) have adopted mechanisms where only penalties for missing savings goals are imposed. Those approaches are not addressed here.

Table 1: Overview of Shareholder Performance Incentives in Profiled States[10]

States	Type[11]	Award	Threshold/ Trigger	Cap	Penalty
Arizona	SB	10% of net benefits	No. Minimum spending requirement	10% of program costs	No
California	SB	9-12% of net benefits	85% of savings goal	$150 million per year (reward)/$150 per year (penalty)	Yes
Colorado	SB[12]	0.2-12% of net benefits	81% of savings goal	20% of program costs	No
Connecticut	PT	1-8% of program costs	70% of energy efficiency goals	8% of program costs	No
Georgia	SB	15% of net benefits	50% projected participation	None	No
Hawaii	SB	1-5% of net benefits	100% of savings goals	5% of net benefits; $4 million	No
Idaho	SB	1-10% of net benefits	7-11.7% of new homes in program	10% of program benefits	Yes
Kentucky	SB	10% of net benefits	100% of savings goals	10% of program costs	No
Massachusetts	PT	3.75-5.5% of program costs	75% of savings goals	5.5% of program costs	No
Minnesota	SB	Based on spending	90% of savings goals	150% of savings goals/30% of budget	No
Nevada	ROR	5% of DSM equity	No	5% of program costs	No
New Hampshire	PT	8-12% of program costs	65% of planned savings and 1:1 cost effectiveness	12% of program costs	No
Ohio	SB	50-75% of net value of avoided costs	65% of savings goals	15% of program costs	No
Oklahoma	SB	15% of program costs or 25% of net savings	No	Fixed; $2.7 million in 2010	No
Rhode Island	PT	4.4% of program costs	60% of savings goal	125% for savings metric; $150,000 for performance metric	No
Texas	SB	1% of net benefits- up to cap	102% of savings goals	20% of program costs	No
Washington	PT/SB	5–100% of net benefits	100% of savings goal	150% of savings goal	Yes
Wisconsin	ROR	Same as other investments	No	No	No

[10] This table is based on the state summaries in the appendix and represents a snapshot of programs in these states. It is not a complete summary of all mechanisms at all utilities in these states.
[11] "Type" of mechanisms includes shared benefit (SB), performance target (PT), and rate of return (ROR)
[12] Colorado also has a fixed payment that is made for achievement of 80% of savings goals (PI). 20% cap applies to combined total payment.

DISCUSSION

The following discussion draws heavily upon interviews with industry experts. In order to encourage interviewees to express their personal opinions, no statements or conclusions are attributed to specific participants. A list of interviewees is included at the end of this report.

Are Shareholder Incentives Working?

Attributing actual energy savings to a specific policy is very difficult to do and even harder to compare across states. Energy savings and use are dependant on a range of variables such as demand from consumers, which fluctuates with changes, literally, in the weather. Changes in economic conditions, environmental regulations, generation capacity, and fuel prices can all play a role in how much energy is used in a given area from one year to the next. These factors make it difficult to attribute energy savings directly to any specific mechanism. Despite these difficulties in isolating the specific impacts of shareholder incentives, most respondents felt that these mechanisms had influenced utility behavior in their states. Respondents indicated that the ability to assign a dollar value to efficiency investments significantly contributed to "buy-in" by corporate management. A majority of respondents felt that incentives leveled the playing field between efficiency investments and investment in new energy supply capacity. This was described by some as "legitimizing" efficiency as an investment option. Several utilities indicated that the incentive influenced planning at the utility, allowing treatment of efficiency as a long-term investment strategy.

In many cases respondents indicated that the shareholder incentive mechanisms motivated utilities to maximize the net benefits created from efficiency spending, i.e., to achieve the most cost-effective energy savings available. Many states have attempted to ensure that incentive mechanisms encourage actual and cost-effective energy savings by tying incentive earnings to energy savings. However, there were reports of efficiency spending that did not achieve effective savings, particularly when incentives were based on spending instead of energy savings. In one example where utilities could recover efficiency program costs, but did not have a mechanism in place to address lost revenues, a respondent suggested that a utility was intentionally investing in ineffective programs so that it could recover an incentive based on efficiency spending without reducing sales.

The above example demonstrates the importance of addressing the barriers to efficiency comprehensively. States almost universally recognize the importance of allowing utilities to recover costs for their investments; however, there is no consensus on the treatment of lost sales incurred by effectively implementing efficiency. While a majority of states with significant efficiency programs include some mechanism for accounting for lost sales, several states do not. Fractured treatment of efficiency makes it difficult for regulators to see what the true impacts of policies are, reducing confidence in the effectiveness of the mechanism as well as regulators' ability to make adjustments to the mechanism.

In addition to fully aligning efficiency incentives, several respondents indicated that a larger framework of established policies supporting and encouraging efficiency is correlated with more successful shareholder incentive mechanisms. These respondents indicated that shareholder incentives in the context of a larger framework, such as legislation or a state efficiency standard, can reduce controversy, help parties to reach consensus, solidify regulatory authority, and provide regulatory certainty.

States that can see where and why the spending and savings are occurring have greater support from regulators and stakeholders. One respondent described a report released that demonstrated the cost effectiveness of the programs under consideration, which effectively provided comfort for concerned stakeholders. Transparency is also improved when states address the multiple barriers to efficiency comprehensively as opposed to piecemeal. For example, in states where multiple ongoing rate cases addressed different aspects of efficiency barriers it was difficult to understand the full impacts of policies. In addition, when incentives are based purely on spending requirements with no requirement for achieving savings, there was a general discomfort among regulators as to whether utility motivations were properly aligned with policy goals.

How Should an Incentive Mechanism Be Structured?

As previously mentioned, states have indicated a strong preference for the shared benefits approach, evidenced by the fact that this approach is by far the most commonly used shareholder incentive mechanism. Performance target mechanisms are popular in the Northeast while rate of return mechanisms are rare.

There is no standardized approach for calculating incentives, although there are general trends. There is a strong preference across respondents for mechanisms that tie the incentive to the effectiveness of efficiency spending. Effectiveness of efficiency spending is incorporated into the incentive calculation in a number of ways. For example, a benefit-cost test such as the Total Resource Cost test (or a Utility Cost Test or a Societal Cost Test) is frequently used. A benefit-cost test measures the net costs of an efficiency program as a resource option and compares them to the utility system "benefits" in terms of costs that are avoided. These avoided costs may include avoided supply costs, or reduction in transmission, distribution, generation, and capacity costs. A positive outcome of the benefit-cost calculation yields a dollar valuation of the net benefits of an efficiency program. These net benefits are then used to calculate an incentive payment. Incorporating such a test motivates utilities to invest in efficiency programs that result in the greatest overall benefits so that they can maximize incentive earnings. Conversely respondents indicated that when incentives are based on spending alone it's difficult to ensure that energy savings are being achieved.

Almost all states set a cap on incentive earnings. The cap is most often based on a percentage of program spending and this approach was frequently supported by respondents. Caps generally ranged from 5% to 20% of efficiency program spending. The average cap on incentives was approximately 12-13% of total program spending. Some caps were also based on a percentage of savings targets, program benefits, or as a fixed number. Caps are often triggered as utilities routinely earned the maximum (or close to the maximum) available incentive payment.

States struggle with setting appropriate energy savings goals. Goals are informed by studies and/or past experience and in some cases savings goals are based on projected energy savings potential, but these estimates vary widely within states. In many cases there was little or no information regarding the basis for the targets. Some respondents indicated that for mechanisms where performance metrics are used, a portion of the incentive should be tied to several different metrics to encourage a variety of efficiency investments. Respondents also recommended that savings goals be set to encourage innovation and motivate utilities to exceed them. Respondents consistently felt that savings goals and incentive caps that are too easily met invalidate the effectiveness of an incentive. Despite this concern, minimum savings thresholds rarely prevented utilities from earning an incentive. In fact, with rare exception utilities routinely earn incentives when available. Most states employ a minimum threshold of energy savings to trigger an incentive. The minimum threshold of savings required to trigger an incentive payment ranged from 60% to 102% of savings targets with an average of 81%. These thresholds are not necessarily indicative of how arduous savings goals might be. For example, in Texas where the minimum threshold for earning an incentive requires achieving 102% of the savings target, the minimum threshold is consistently exceeded. Meanwhile, in California, where the minimum threshold is 85% of savings goals, there is controversy at times regarding whether this threshold has been met. This discrepancy is also due in part to the fact that there are wide variations across states in terms of how net energy savings from energy efficiency programs are measured.

Measurement and Verification of Energy Savings Is a Significant Challenge

Measurement and verification (M&V) of energy savings can be controversial. States use a variety of M&V methods such as deemed savings, independent third party verifiers, evaluation protocols, and a true-up at the end of the incentive cycle where actual experience is incorporated. Some respondents claimed that clarity regarding the methodologies used for making M&V calculations at the start of the incentive cycle is key. While an evolution of approaches over time has served some states well, changing approaches during an incentive cycle has caused significant problems in states. It was also suggested that

establishing a dispute resolution method at the outset can reduce controversy when M&V conflicts do arise.

Attitudes Are Important

Respondents generally reported that the success of a shareholder incentive mechanism was, in part, attributable to larger overarching policy goals of the state. In particular, several respondents indicated that legislation establishing efficiency as a priority helped to reduce controversy and align utilities and regulators regarding the importance of improving efficiency savings. Several respondents indicated that an established policy supporting efficiency from an authoritative body aided significantly in aligning the views of all parties involved. Several respondents indicated that leadership from the state governor and legislature made a significant difference in resolving controversy. Several respondents indicated that adoption of a law setting efficiency goals or savings targets reduces the likelihood of opposition by stakeholders and clarifies the authority and priorities of commissions.

In states where there is substantial agreement that the mechanism had been successful, a fully collaborative process where all stakeholders were involved in reaching a collective approach was often very important. Success was hindered in some states where regulators and utilities do not have a cooperative relationship. Some regulators viewed utility input and activity with strong suspicion. Multiple respondents indicated that significant increases in utility investment in efficiency following adoption of an incentive were viewed with suspicion. While the reason for such suspicion varied, it was repeatedly stated that significant shifts in spending behavior caused concern among some policymakers that the shareholder incentive was too generous. Several respondents stressed the importance of achieving comfort among commission staff that the goals are not too easily achieved. Successful collaboration among commission staff, utilities, and stakeholders was emphasized as key to reaching successful targets and program “buy in” by all parties.

Plugging in to Utilities: A Business Model Framework

A goal of shareholder incentives is to affect utility decision-making. It is no surprise to find that incentives that were frequently described as achieving this goal also addressed a number of issues that utilities typically face. For example, respondents frequently indicated that communicating about and valuing energy efficiency pose internal challenges for utilities. Several utility representatives indicated that the ability to place a baseline dollar value on efficiency investments made the option more appealing to senior management and engaged them in efficiency planning and decision-making in a more significant way. One respondent described the mechanism as making efficiency “matter” to senior management; another described it as “legitimizing” efficiency as an investment option for corporate decision-makers.

Regulatory certainty also aided in utility “buy-in.” For example, many states have struggled with developing reliable approaches for measurement and verification of energy savings achieved as a result of efficiency programs. In a couple of states, including California, the assumptions used for measuring energy savings were revised after an incentive cycle had begun. Utilities made investment decisions based on assumptions that were changed after the money was spent and before the incentive was earned. Respondents emphasized the importance of establishing these metrics up front and recommended the inclusion of a quick and inexpensive dispute resolution mechanism for any problems that may arise. Similarly, utilities struggle with accounting for costs and benefits associated with efficiency programs. Both commission staff and utility representatives indicated that a cooperative working relationship between regulators and utilities aided in overcoming these obstacles.

In addition, the timeliness of program cost recovery was emphasized by several respondents. For example, ratemaking cases are often time consuming and can last a year or more. Incentive program cycles ranged from a year to several years. There is often a disconnection between reimbursement for program spending, accounting for lost sales and award of an incentive. This creates accounting challenges for utilities, which are required to document and justify the flow of spending and revenues in a coherent way to management and regulators. For example, one respondent indicated that a significant delay in program cost recovery can invalidate the appeal of any incentive that might have been earned.

CONCLUSION

This report examines state efforts and experiences with shareholder incentive mechanisms for utilities. A goal of shareholder incentives is to affect utility decision-making and reward utilities for successful customer energy efficiency programs. Our research suggests that these policies are working.

Shareholder Incentives Influence Utility Behavior and Are Correlated with Higher per Person Investment in Efficiency Programs by Utilities

Utility industry regulators, staff, and stakeholders consistently indicated that shareholder incentives mechanisms implemented in the 18 Profiled States had influenced utility behavior. A majority of respondents felt that incentives leveled the playing field between efficiency investments and investment in new energy supply capacity. Respondents indicated that the ability to assign a dollar value to efficiency investments significantly contributed to "buy-in" by corporate management, making efficiency more appealing as an investment option and engaging senior management in efficiency planning and decision-making in a more significant way. Several utilities indicated that the incentive influenced planning at the utility, allowing treatment of efficiency as a long-term investment strategy.

In addition to the feedback of industry experts, we found a correlation between states that have implemented shareholder incentive mechanisms and increased spending on efficiency as compared to states that have not implemented such policies. In states that have attempted to properly align incentives to encourage efficiency, utilities are spending significantly more per person to achieve efficiency improvements as compared to states with no such policies in place. However, our research indicates that even when compared to states that have attempted to align incentives to encourage efficiency through such mechanisms as decoupling or lost revenue recovery, per capita spending is notably higher in states that have adopted a shareholder incentive mechanism. We also found that many states have had immediate and substantial increases in efficiency investments following adoption of an incentive. While it is of course not possible to establish causality in this type of observational study, and many other factors (including legislative and regulatory directives) influence energy efficiency spending levels, it is noteworthy that enactment of shareholder incentives is associated with significant increases in energy efficiency program spending. It would at least appear that having a shareholder incentive mechanism in place is a useful component in achieving a larger energy efficiency effort.

Lessons from Successful Shareholder Incentive Policies

Several common elements of successful shareholder incentive mechanisms have been identified. There was repeated emphasis on the need to for a larger framework of established policies supporting and encouraging efficiency. Shareholder incentives in the context of a larger framework, such as legislation or a state efficiency standard, can reduce controversy, help parties to reach consensus, solidify regulatory authority, and provide regulatory certainty. Fractured treatment of efficiency makes it difficult for regulators to see what the true impacts of policies are, reducing confidence and the ability to adjust mechanisms appropriately. States that can see where and why the spending and savings are occurring have greater support from regulators and stakeholders. Transparency is also improved when states address the multiple barriers to efficiency comprehensively as opposed to piecemeal. Additional factors identified as contributing to a successful policy include:

- Linking the incentive to utility achievements. States have most often used a shared benefits approach, though performance target mechanisms are popular in the Northeast.

- There is a strong preference for mechanisms that tie the incentive to the effectiveness of efficiency spending, rather than the amount of spending.

- There should be a cap on the incentive. Most often the cap is based on a percentage of program spending and ranges from 5% to 20% of program spending with an average of 12% to 13%.

- Savings goals should be set to encourage innovation and motivate utilities to exceed them. Savings goals and incentive caps that are too easily met invalidate the rationale for an incentive.

- Regulatory certainty aides in utility "buy-in." For example, clarity regarding the methodologies used for making M&V calculations at the start of the incentive cycle is important.

- Timeliness of program cost recovery is also important. A delay in cost recovery can invalidate the effectiveness of an incentive from the utility perspective.

BIBLIOGRAPHY

[ARRA] American Recovery and Reinvestment Act of 2009. 2009. Public Law 111-5. Section 410. http://www.gpo.gov/fdsys/pkg/PLAW-111publ5/content-detail.html.

Friedrich, Katherine, Maggie Eldridge, Dan York, Patti Witte, and Marty Kushler. 2009. *Saving Energy Cost-Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Institute for Electric Efficiency. 2010. *State Energy Efficiency Regulatory Frameworks.* Washington, D.C.: Institute for Electric Efficiency.

Kushler, Martin, Dan York, and Patti Witte. 2006. *Aligning Utility Interests with Energy Efficiency Objectives: A Review of Recent Efforts at Decoupling and Performance Initiatives.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Laitner, John A. "Skip," Rachel Gold, Steven Nadel, Therese Langer, R. Neal Elliott, and Daniel Trombley. 2010. *The American Power Act and Enhanced Energy Efficiency Provisions: Impacts on the U.S. Economy.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Maggie Molina, Max Neubauer, Michael Sciortino, Seth Nowak, Shruti Vaidyanathan, Nate Kaufman, and Anna Chittum. 2010. *The 2010 State Energy Efficiency Scorecard.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Prindle, William, R. Neal Elliott, and Anna Shipley. 2006. *Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets in the Pacific West.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Shirley, Wayne. 2008. "Overview of Utility Incentives." Presentation to the Kansas Corporation Commission Energy Efficiency Incentives Workshop. Montpelier, Vt.: Regulatory Assistance Project.

Shirley, Wayne, Jim Lazar, and Frederick Weston. 2008. *Revenue Decoupling Standards and Criteria: A Report to the Minnesota Public Utilities Commission.* Montpelier, Vt.: Regulatory Assistance Project.

Wilson, John D., Tom Franks, and J. Richard Hornby. 2010. "Seeking Consistency in Performance Incentives for Utility Energy Efficiency Programs." In *Proceedings of the ACEEE 2010 Summer Study in Buildings.* Washington, D.C.: American Council for an Energy-Efficient Economy.

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The state-specific information contained in this appendix is not intended to be a comprehensive summary, but is instead a snapshot of the approach in a given state. For example, in some states incentive mechanisms are approved on a case-by-case basis. We did not attempt to summarize programs for every utility in a profiled state.

ARIZONA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award (million $)	Program Total Cost (million $)	Energy Saved (MWh)	Award as % of Cost
Shared benefit	Electric—APS	Incentive available based on net economic benefits from efficiency programs	Incentive capped at 10% of DSM expenditures (including incentive payments)	10% of net benefits resulting from a mandatory efficiency spending requirement	No	2005–2006: 2.56 2007: 0.77 2008: 2.42 2009: 2.56 2010 (projected):7.0	2005–2006: 13.74 2007: 19.5 2008: 24.17 2009: 25.56 2010 (projected): 49.9	2005–2006: 310,766 2007: NA 2008: 254,702 2009: 208,917 2010 (projected): 320,000	2005–2006: 19% 2007: 4% 2008: 10% 2009: 10% 2010 (projected): 14.0%

NARRATIVE SUMMARY

In 2005, the Arizona Corporation Commission approved a spending requirement of $48 million for energy efficiency programs during 2005-07.[13] Included was a $10 million (annual average) base rate allowance, plus at least another $6 million annually on approved eligible demand-side management (DSM) mechanisms. These additional amounts were to be recovered through a DSM adjustment mechanism. A performance incentive in the form of a shared benefits incentive equal to 10% of net economic benefits achieved was included. The incentive was capped at 10% of DSM expenditures.

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.[14] APS's DSM efforts from January 2005 to December 2009 have resulted in a net lifetime savings of 2,084,062 MWh of electricity.

Results of APS Shareholder Incentive[15]

	DSM Program Expenses (including incentive)	Incentive	Net Annual MWh Savings (no free riders)
2005–2006	$13,738,079	$2,556,353	310,766 (2005–2007)
2007	$19,499,283	$767,384	NA
2008	$24,169,069	$2,416,907	254,702
2009	$25,562,141	$2,556,215	208,917

[13] Arizona Corporation Commission Decision No. 69663. http://images.edocket.azcc.gov/docketpdf/0000074350.pdf

[14] *Update on Utility Energy Efficiency Programs in the Southwest.* Howard Geller and Jeff Schlegel, Southwest Energy Efficiency Project (SWEEP). August 17, 2008. http://www.aceee.org/proceedings-paper/ss08/panel05/paper12.

[15] Compiled from annual and bi-annual DSM reports filed by APS with the Arizona Corporation Commission.

This incentive has helped to build support for DSM within APS, but has not been considered large enough to offset the utility's net lost revenues (margins) when it reduces electricity use through DSM programs.[16]

APS proposed modifying the existing 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. The existing program was modified to be a tiered performance incentive as a percentage of net benefits and capped at a tiered percentage of program costs. [17]

Revised Earnings Metric

Savings Relative to Efficiency Goals	Performance Incentive (% of net benefits)	Maximum Performance Incentive (as % of program costs)
Less than 85%	0%	0%
85%-95%	6%	12%
96%-105%	7%	14%
106%-115%	8%	16%
116%-125%	9%	18%
Above 125%	10%	20%

[16] Arizona Corporation Commission Decision No. 71448. December 2009. http://images.edocket.azcc.gov/docketpdf/0000107462.pdf
[17] Id.

CALIFORNIA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award (million $)	DSM Total Cost (million $)	Energy Saved (annual)	Award as % of Cost
Shared benefit—Risk/ Reward Incentive Mechanism	Electric and gas — all California investor-owned utilities*	Incremental reward/ penalty	Floor: 85% of savings goal Ceiling: Reward—$150 million per year; $450 million over three years Penalty—$450 million over three years	>100% of goals: 12% of net benefits 85–100% of goals: 9%	Yes, for achieving less than 65% of savings targets, and cost-effectiveness guarantee	2008 (first progress payment): 82.2 2009 (second progress payment): 61.5 2010 (final installment): TBD	2006–2008: 1,929	2006–2008 (reported using ex-ante values): 9,999 GWh 140 MMTh 2006–2008 (CPUC staff estimate based on evaluation reports): 4,097 GWh, 44 MMTh CPUC has not adopted final savings	2006–2008: TBD. Based on received payments: 7.5%

*Pacific Gas and Electric, San Diego Gas and Electric, Southern California Edison, and Southern California Gas (together "California utilities")

NARRATIVE SUMMARY

In 2007, the California Public Utilities Commission (CPUC) adopted a shareholder incentive for achievement of savings goals and net benefits in a three-year program cycle. The first cycle lasted from 2006–2008. Savings goals were established for kilowatt-hours, kilowatts, and therms and are based on overall portfolio performance, rather than individual measures or programs. To be eligible for a reward, utilities must achieve an average of at least 85% of each applicable savings goal. Incentives and penalties depend on the savings achieved as follows:

Shareholder Incentive Earnings Matrix[18]

Average of Savings Goals Achieved	Penalty or Reward Earnings Rate
>100%	12% of net benefits
85-100%	9% of net benefits
65-85%	Deadband
<65%	Greater of per unit charge for shortfall or ratepayer pay back of negative net benefits.

[18] California Public Utilities Commission. Order Instituting Rulemaking to Examine the Commission's Energy Efficiency Risk/Reward Mechanism. R.09-01-019. Filed September 28, 2010.

An incentive reward is based on the earnings rate multiplied by the net benefits of the mechanism. There is a statewide cap on reward payments of $450 million over each three-year program cycle ($150 million per year), which represents less than 1% of consumers' total annual costs for electricity and natural gas in the state.

Negative net benefits or a failure to achieve at least 65% of savings goals trigger performance penalties. The penalty is the greater of negative net benefits or the sum or per-unit penalty rates for every kWh, kW and therm below the minimum savings goals at 5¢/kWh, $25/kW and 45¢/therm. Total penalties are capped statewide at $450 million over the three-year period.

Rewards or penalties are paid in three installments for each three-year program cycle. Two interim reward claims or penalty assessments are made based on estimated performance and net benefits. The third payment—a "true-up claim"—is made after the program cycle is complete and savings and net benefits have been independently verified.

Savings goals were set at levels higher than had ever been achieved. The penalty threshold (65% of savings goals) is higher than actual efficiency achieved in any of the years between 1995 and 2003.[19] CPUC staff estimates that the 2006–2008 phase of the program produced savings equal to approximately 1.3% of electricity and 0.2% of natural gas sold over the same time period; however, the CPUC has not yet adopted final savings estimates for that program cycle.[20]

To date, the CPUC has awarded $143.7 million in earnings (for all four utilities over all three years). In January 2009, the CPUC instituted a rulemaking to examine and reform the mechanism.[21] Although 30% of each interim reward payment is withheld to cover potential errors in estimated earnings calculations and independent measurement and evaluation studies managed by CPUC staff are used to verify savings, there has been significant debate surrounding program results. Large differences between the energy saving estimates used when the CPUC approved the efficiency programs and the energy saving estimates reported by the CPUC staff, and as-yet unresolved debates over the accuracy of the CPUC staff's estimates (in particular, highly subjective estimates of free-ridership) have created program delays.

Estimates of Savings Using Ex-Ante Values and CPUC Staff's Proposed Ex-Post Values as a Percentage of Savings Goals 2006–2008[22]

	kWh	kW	Therms
Estimated Savings Using Ex-Ante Values	151%	122%	117%
Savings Estimated by CPUC Staff's Evaluations	72%	64%	66%

[19] NRDC blog: http://switchboard.nrdc.org/blogs/dwang/incentives_for_california_util.htm and research by the Regulatory Assistance Project.
[20] California Public Utilities Commission. Draft 2006–2008 Energy Efficiency Evaluation Report. April 2010. http://www.edcentralserver.com/ERT/2006-2008%20Draft%20EE%20Evaluation%20Executive%20Summary,%20Report%20and%20Appendices.zip
[21] California Public Utilities Commission. Rulemaking 09-01-019. http://docs.cpuc.ca.gov/EFILE/PD/124076.htm
[22] CPUC Draft 2006–2008….

CPUC Calculation of Final Payment Results[23]

	Earnings Rate	Final True-up	Utility Reported
PGE	0%	-$97.9 million	$105.1 million
SCE	9%	$25.9 million	$104.8 million
SDG&E	9%	$2.6 million	$28.1 million
SCG	9%	$.8 million	$12.7 million
TOTAL		-$68.6 million	$250.7 million

In late September the CPUC issued two alternative proposals for resolving the doubt surrounding the appropriate incentive to be paid to utilities, but in either case the total rewards awarded will amount to 1-2% of utilities profits during the 2006–2008 period.[24] The inquiry is ongoing. In spite of the controversy associated with the mechanism California utilities proposed doubling their efficiency program budgets during the 2009–2011 cycle. [25]

[23] CPUC 2006–2008 Energy Division Scenario Analysis Report. July 2010. ftp://ftp.cpuc.ca.gov/gopher-data/energy%20efficiency/Final%20Energy%20Division%20Scenario%20Analysis%20Report_070910.pdf

[24] Id.

[25] http://switchboard.nrdc.org/blogs/dwang/cpuc_shows_progress_making_eff.html

COLORADO

Policy	Scope	Description	Target, Floor, or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award (million $)	Program Total Cost (million $)	Energy Saved	Award as % of Cost
Shared benefit with flat performance target component	Electric and gas—All investor owned utilities	Incentive award may be earned based on achievement of savings targets as well as an upfront bonus.	Electric award capped at 20% of annual DSM costs and 10-12% of net economic benefits (NEB) Gas award capped at lower of 25% of costs or 20% of net benefits	Electric: each percent above 80% of savings target award increases by 0.2% of NEB. At 130% above savings goal award increases by 0.1% of NEB.	No	PSCo 2008: NA 2009: 9.65 2010: NA	PSCo 2008: NA 2009: 55.45 2010 76.04	PSCo 2008: 151,789 MWh 2009: 219,611 MWh 308,761 Dth 2010: 237,475 MWh 402,808 Dth)	PSCo 2009: 17.4%

NARRATIVE SUMMARY

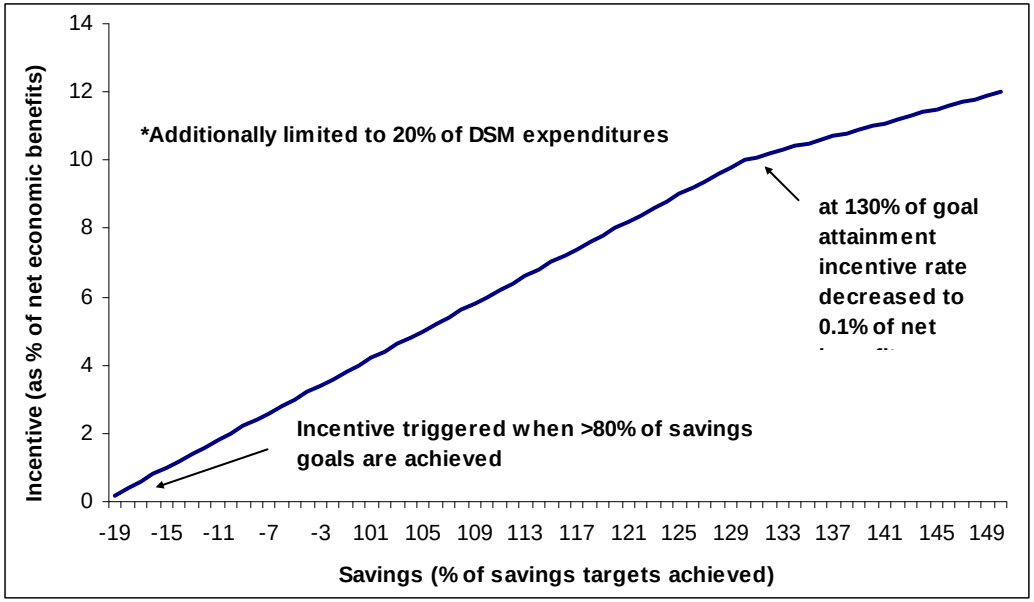
Prior to 2007 Colorado did not have a consistent plan or set of incentives for DSM. However, as part of a 2004 settlement agreement ("2004 Agreement"), Public Service Colorado (PSCo) committed to obtain 320 MW and 800 GWh of cost-effective efficiency for $196 million between 2006 and 2013.[26] In 2007 the Colorado legislature passed House Bill 07-1037, which mandated DSM savings for both gas and electric investor-owned utilities. In 2008 Colorado adopted rules for gas DSM. Electric DSM is being done through adjudicated dockets. As a result, PSCo's 2003 agreement was superseded by approval of the 2009/10 Demand Side Management (DSM) Plan, which was approved in 2008.[27] The Commission approved a three-part incentive package that included a $2 million "disincentive offset" for each year that they implement an approved DSM plan, a performance incentive and cost recovery via a rider on a prospective basis. A similar three-part package was approved for Black Hills. In each case the performance incentives are available for achieving efficiency targets. For each 1% of the goal that is reached beyond 80%, PSCo earns an additional 0.2% of net economic benefits up to 10%. Utilities earn 0.1% of net economic benefits up to 12% for goal attainment between 130% and 150%. The incentive (including the disincentive offset) is capped at 20% of PSCo's annual DSM expenditures.

[26] Public Utilities Commission of the State of Colorado. Order Granting Application in Part. Decision No. C05-0049, Docket Nos. 04A-214E, 04A-215E, 04A-216E.
[27] Public Utilities Commission of the State of Colorado. Order Granting Application in Part. Decision No. C08-0560. Docket No. 07A-420E. Adopted May 23, 2008. https://doraimage.state.co.us/LibertyIMS::/sid3Lw6SbHBdak22P4X/Cmd%3D%24%243B0FhhKKzpkzHVdJYk%3BGZC4pI%3D%23vpc%3BA7J%3DIAPhV%3BSlsD_O%3DWv_%3BcsrvA%3DbZj9T-l1XbdTnlpMZ55YghFP7

Energy savings goals are based on a percent of 2006 sales. In 2009 the goal was 0.53% and in 2010 the goal is 0.76%. Starting in 2009 the sharing portion of the incentive is triggered at achievement of 100% of the savings goals (rather than 80%). A 20% cap applies to combined total incentive payments.

Black Hills has adopted the same mechanism with an incentive bonus set at $150,000 per year for the three years of approved programs. For natural gas utilities, the incentive bonus is capped at the lower of 25% of the expenditures or 20% of the net economic benefits of the DSM programs. Incentive payments are based on an "Energy Factor" multiplied by the "Savings Factor." The Energy Factor increases by 0.5% for each percentage of achieved savings exceeding 80% of the approved savings target. The Savings Factor is the actual savings achieved divided by the approved savings target (per $1 million expended). There are no penalties, but a portion of costs representing programs where costs exceed benefits lose the presumption of prudence and are subject to review.[28]

Rate of Incentive Earned by Level of Savings Goal Achieved



[28] Docket No. 07R-371G established natural gas utility performance incentives (See Decision No. C08-0248-E, Colorado Public Utilities Commission, March 2008)

PSCo (Xcel) Electric and Gas DSM Savings and Costs[29]

	Net Energy Savings (kWh)				***Natural Gas Savings (therms)***			
	Savings (kWh)	**Award**	**Percent of Goal**	**Program Costs**	**Savings[30]**	**Award**	**Percent of Goal**	**Program Costs**
2008	151,789,252	NA	NA	NA	272,250 therms	NA	NA	NA
2009	219,611,146	$8,772,884 million ($3.2 from PT)	125%	$43,864,419	308,761 Dtherms	$872,754	97%	$11,587,286
2010	237,474,961	NA	Projected at 100-115%	$59,520,000	402,808 Dtherms	NA	Projected at 90–100%	$16,516,364

[29] 2009 Colorado DSM Annual Status Report. http://www.xcelenergy.com/Colorado/Company/About_Energy_and_Rates/DemandSideManagement/Pages/Colorado.aspx
[30] There seemed to be an inconsistency in reporting of natural gas savings in therms as compared to decatherms. These numbers may be in error.

CONNECTICUT

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award (million $)[31]	Program Total Cost	Energy Saved (MWh)	Award as % of Cost
Performance target: "performance management fees"	Electric and natural gas	Utilities earn a percentage of program costs based on savings targets achieved	Floor: 70% of energy efficiency goals Ceiling: 8% of program costs	1% incentive if 70% of goal achieved; 5% if 100% achieved; 8% if 130% achieved	None	Electric 2008: 4.21 2009 (planned): 3.37	Electric 2008: 108.1 2009 (planned): 71.4	Electric 2008: 368,000 2009 (planned): NA	Electric 2008: 3.9% 2009 (planned): 4.7%

NARRATIVE SUMMARY

Connecticut has had some type of utility performance incentive for DSM since 1988. The incentive, referred to as a "management fee," can be from 1% to 8% of program costs before taxes. The threshold for earning the minimum incentive (1%) is achievement of 70% of the energy savings goal. At achievement of 100% of the goal, the incentive would be 5% of program costs. At achievement of 130% of goal, it would be 8% of program costs. The performance management fee is in addition to administrative cost recovery for the utilities, which they are guaranteed to receive. Program costs are recovered through rates. The Connecticut Department of Public Utility Control (DPUC) requires annual hearings for utilities, where the past year's results for energy savings are reviewed and a performance incentive is determined.

The DPUC requires annual hearings for utilities, where the past year's results for energy savings are reviewed and a performance incentive is determined.

In 2006 UI spent 2.3% of annual electric revenues on energy efficiency programs. In 2008 UI claimed earnings of $1,439,734 versus a budgeted incentive of $633,636. UI had overspent its budget by $27 million (>50%). DPUC granted an adjusted performance management fee of $933,131.[32]

Connecticut Light & Power Shareholder Incentive Earnings

	2005	2006	2007	2008	2009 Budgeted	2010 Budgeted
Incentive Earned	$3,866,548	$4,056,741	$4,788,385	$3,903,735	$3,469,137	$4,599,552

[31] *An Investment in Connecticut Energy Efficiency. Report of the Energy Conservation Management Board: Year 2008 Programs and Operations.* March 1, 2009. http://www.ctsavesenergy.org/files/2008%20ECMB%20Annual%20Legislative%20Report.pdf

[32] Connecticut Department of Public Utility Control. Docket 09-10-03, Table D.

GEORGIA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award	Program Total Cost[33]	Energy Saved	Award as % of Cost
Shared benefit—Power Credit Single Family	Georgia Power Company	Incentive payment up to 15% of net benefits of savings	Floor: 50% program participation required Ceiling: None	If participation goals are met utility earns 15% of net benefits from energy savings	No	NA	2001–2008: $15,790,322 2009: $2,066,765	2001–2008: 95,052 kW annually 2009: 97,986 kW annually	NA

NARRATIVE SUMMARY

A utility may recover costs and an additional sum for approved programs to encourage development of demand-side and energy efficiency resources.[34] The Power Credit Single Family Program (PCSF) was the first demand response program certified as a DSM resource. PCSF permits Georgia Power (GP) to earn full cost recovery as well as an additional sum of 15% of the net benefits resulting from the program.[35] The incentive requires program participation of at least 50% of projected levels; however, there is no cap on the incentive payment. Program spending is subject to a prudence review.

The mechanism was revised in 2010 such that GP receives 10% of actual net benefits of electricity savings (as determined by the Program Administrator test) if they achieve annual incremental kWh savings of more than 50% of projections for a portfolio (residential or commercial) of programs.[36] If programs achieve less than 50% of projected kWh savings, the additional sum is 0.5% of net benefits for demand response measures and 3% of net benefits for energy efficiency measures. There is no cap on the incentive payments; however, if the incentive sum exceeds program costs, the portion of the total that exceeds the program cost is limited to 5% of actual net benefits. GP will not receive an incentive payment in 2011 and will receive half the additional sum in 2012. The 2010 revision also significantly increased spending.

[33] *Georgia Power Company Energy Efficiency Programs April 2009 Report.* Filed with Georgia Public Service Commission on April 30, 2009.
[34] O.C.G.A. § 46-3A-9. http://www.lexis-nexis.com/hottopics/gacode/
[35] *Stipulation In Re George Power Application for Approval of 2007 Integrated Resource Plan.* July 12, 2007. Docket 24504. Document 103961. http://www.psc.state.ga.us/facts/docftp.asp?txtdocname=103961
[36] *Final Order on Georgia Power's Application for Approval of its 2010 Integrated Resource Plan.* July 6, 2010 Docket 31082. Document 129661.

Georgia Power Proposed Annual Program Budget

Year	Proposed Budget
2011	$13.7 million
2012	$21.2 million
2013	$27.8 million

The PCSF was a single program that established the model for how the shared benefit mechanism would operate in Georgia. According to GP the Power Credit program was designed so that all the net benefits of the program were given back to customers as incentives making the net benefit for the program (and therefore the incentive) zero.

In 2010 a number of additional program proposals were certified as DSM resources and GP will be eligible to receive an incentive under the revised mechanism in 2012. Concerns have been expressed regarding the amount of incentive that will be recovered by GP. GP is authorized to receive, in addition to full cost recovery, incentive payments that will be greater than the total budget for energy efficiency in some years. Further, lost revenue recovery is addressed via separate ratemaking, making it difficult to track how energy efficiency is being treated as a whole.

HAWAII

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award	Program Total Cost	Energy Saved (MWh) [37]	Award as % of Cost
Shared benefit	Electric—Hawaiian Electric Company (HECO)	Net system benefit payment up to 5% if four efficiency goals are met	Incentives capped at $4 million (before taxes)	1% of the net system benefits if goals met. Incremental increase in benefit up to 5% if goals exceeded by 10% or more	No	2005: $2,225,394 2006: $629,111 2007: $4,000,000 2008: $4,000,000	2005–2008: NA 2009: $18.4 million	2005: 38,551 2006: 42,256 2007: 54,419 2008: NA 2009: 39,438 (annualized net)	NA

NARRATIVE SUMMARY

The PUC discontinued HECO's shareholder incentives in 2006. However, in 2007 it established energy efficiency goals for HECO and approved its proposed demand-side management shared benefit incentive program until transition to a third-party energy efficiency administrator was completed in 2009.[38] Under the shared benefit program HECO was required to meet or exceed four established megawatt-hour and megawatt energy efficiency goals for each of the commercial/industrial and the residential sectors to be eligible for the incentive as follows:

HECO's Energy Efficiency Goals for Years 2007 and 2008[39]

	2007 Gross Energy Savings (MWh)	2007 Gross Demand Savings (MW)	2008 Gross Energy Savings (MWh)	2008 Gross Demand Savings (MW)
Commercial and Industrial	91,549	13.04	137,324	19.56
Residential	50,553	13.34	66,917	18.07

The incentive was calculated based on a percentage share of net benefits attributable to demand-side management programs (less program costs). If all goals were met, the utility received 1% of the net system benefits. The incentive increased incrementally to a maximum of 5% of the

[37] *DSM Programs Impact Evaluation Report* (HECO, HELCO, MECO). Docket No. 2007-0341. Filed February 27, 2009.
[38] *Hawaii Public Utilities Commission Decision and Order No. 23258.* Docket No. 05-0069. February 13, 2007. http://dms.puc.hawaii.gov/dms/OpenDocServlet?RT=&document_id=91+3+ICM4+LSDB15+PC_DocketReport59+26+A1001001A09F22B65812J0600718+A09F22B65812J060071+14+1960.
[39] Id.

net system benefits if actual performance exceeded the goals by 10% or more. Incentives were limited to no more than the utility earnings opportunities foregone by implementing DSM programs in lieu of supply-side rate based investments and were capped at $4 million before taxes (lowered to $2 million for 2009). No penalties were applied if goals were not met.

Upon a determination that HECO was eligible for a DSM utility incentive, the percentage by which HECO's actual performance met or exceeded each of its energy efficiency goals was calculated. The benefit was then calculated by averaging HECO's performance in the four goal categories to find the "Averaged Actual Performance Above Goals." This number was used to calculate the incentive according to the following schedule[40]:

Shareholder Incentive Matrix

Averaged Actual Performance Above Goals	Meets goals	Exceeds goals by 2.5%	Exceeds goals by 5.0%	Exceeds goals by 7.5%	Exceeds goals by 10.0% (or more)
DSM Utility Incentive (% of Net System Benefits)	1%	2%	3%	4%	5%

If HECO failed to meet one or more of its four Energy Efficiency goals, it was not eligible to receive an incentive. The PUC opted to exclude penalties stating that "[N]egative incentives would have the same effect as an under-recovery of costs."[41]

The Gas Company (TGC) and Kauai Island Utility Cooperative (KIUC) are excluded from DSM utility incentives.[42]

Incentive Earned Per Year

Year	**2005**	**2006**	**2007**	**2008**
Incentive	$2,225,394	$629,111	$4,000,000	$4,000,000

In July 2009 HECO transferred administration of its energy efficiency programs to a third-party "Public Benefits Fee" administrator. The governor's office claimed: "Moving energy efficiency programs to an independent third party will remove the perceived conflict between the electric utilities' desire to sell more electricity to increase profitability and the desire to implement energy efficiency programs that will decrease electricity sales."[43]

[40] Id.
[41] Hawaii Public Utilities….
[42] Id.
[43] Securing a Clean Energy Future for Hawai`i. Website of Governor Linda Lingle. April 2009 newsfile. http://hawaii.gov/gov/news/files/2009/april/puc

IDAHO

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award	Program Total Cost	Energy Saved (MWh)	Award as % of Cost
Performance Target—Idaho Power Pilot	Electric—Idaho Power	Awards incentive payment if energy savings targets are exceeded	Floor: 7% of market share participating in program Ceiling: 10% of program net benefits	Incentive is a percentage of program benefits equal to percentage by which target was exceeded	Penalty triggered if 5% market share not met	None	2007: NA 2008: $475k 2009: $290k	2007: 630 2008: 360 2009: NA	NA

NARRATIVE SUMMARY

Under a pilot program lasting from 2007–2009, Idaho Power (IP) provided a payment of $750 (later reduced to $400) to the builder of each home built to ENERGY STAR standard or higher.[44] The Energy Division of the Idaho Department of Water Resources certified that homes were built to the standard and conducted a quality assurance process. The Northwest Energy Efficiency Alliance provided the builder outreach and training components of the program. IP also conducted a marketing component of the program. IP received an incentive payment if the market share of homes constructed under the ENERGY STAR Homes Northwest program exceeded:

- 7% of the total number of homes for which construction permits are issued in IP service area in 2007;
- 9.8% of newly permitted homes in 2008; and
- 11.7% of newly permitted homes in 2009.

If IP exceeded each target, it was to receive an incentive payment equal to the percentage by which the target was exceeded. For example, if IP was able to achieve 105% of the 7% target percentage in 2007, it would receive a payment equal to 5% of the total program net benefits. The incentive program was capped at 10% of program net benefits.

Penalties would have been levied if IP failed to reach the market share of 4.9% in any year (preliminarily estimated as achieved in 2006 and later determined to be 5.0%). Anything in between 5.0% and the annual target was a deadband for which there was no incentive or penalty.

[44] *Performance-Based Demand-Side Management Incentive Pilot 2007 Performance Update.* Filed with the Idaho Public Utilities Commission March 14, 2008. http://www.puc.idaho.gov/internet/cases/elec/IPC/IPCE0632/company/20080317PB%20DSM%202007%20UPDATE.PDF

Each year the program saw diminished returns. This downward trend also exists in the program's energy impacts and expenditures. In 2006 the program saved 912 MWh and 878 kW of peak demand; compare with 2007's 630 MWh and 606 kW and 2008's 360 MWh and approximately 510 kW. Last year, total program costs fell from $475,000 to $290,000. The results are as follows:

Results of Idaho Power Pilot

	Goal (percentage of market share)	Actual Achieved (percentage of market share)	MWh Saved	Program Costs
2007	7%	5.0%	630	NA
2008	9.8%	6.2%	360	$475,000
2009	11.8%	NA	NA	$290,000

In 2009, it was ordered that Idaho Power neither earn an incentive nor incur a penalty for the ENERGY STAR related program and that the pilot program be discontinued retroactively as of January 1, 2009.[45]

IP has expressed an intention to explore the development of an incentive mechanism that can be applied to its entire portfolio of DSM and energy efficiency programs.

[45] See Idaho Pubic Utilities Commission Case No. IPC-E-09-04. Order No. 30777. Service Date April 10, 2010. http://www.puc.idaho.gov/internet/cases/elec/IPC/IPCE0904/ordnotc/20090410NOTICE_OF_APPLICATION_ORDER_NO_30777.PDF

KENTUCKY

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award[46]	Program Total Cost	Energy Saved (MWh)	Award as % of Cost
Shared benefit	Electric—Duke Energy and Kentucky Power (AEP)	Financial reward for DSM programs exceeding savings goals.	Floor: savings goal Ceiling: 10% of program costs	10% of positive difference between savings from new DSM and program costs	No	AEP 2007: $88,722 2008: $112,062 2009: $181,331 2010: $288,287	AEP 2007: $829,542 2008: $787,923 2009: $942,697 2010: $1,571,345	AEP 2007: 4,727 2008: 5,064 2009: 5,782 2010: 7,802	AEP 2007: 9.4% 2008: 7.0% 2009: 5.2% 2010: 5.5%
Shared benefit—Compre-hensive Cost Recovery Mechanism	Louisville Gas and Electric Company (LG&E)	Incentive payment of 15% of expected net resource savings	Floor: benefits > costs Ceiling: 5% of program costs	15% of net resource savings	No	NA	NA	NA	NA

NARRATIVE SUMMARY

State law allows shareholder incentives through the DSM statute, which authorizes the Kentucky Public Service Commission (KPSC) to approve incentives designed to provide financial rewards to utilities for implementing cost-effective demand-side management programs.[47] Incentive mechanisms are approved on a case-by-case basis. Duke Energy and Kentucky Power (AEP) have a shared benefit mechanism in place where they receive an incentive for exceeding efficiency goals.

[46] *Joint Applicants Status Report*. August 16, 2010. Kentucky Public Service Commission Case No. 2010-00333
[47] Kentucky Revised Statute 278.285(1)(c). http://www.lrc.ky.gov/KRS/278-00/285.PDF

Duke Energy and Kentucky Power (AEP)
The incentive is 10% of net savings after costs of measures, incentives to customers, marketing, impact evaluation, and administration of the program. Savings are estimated by multiplying the number of participants for each measure times a utility cost test value and then subtracting the program costs.

Kentucky Power[48]

	Savings (kWh)	Incentive	Program Costs	Incentive as Percent of Program Costs
2007	4,726,817	$88,722	$829,542	9.4%
2008	5,064,309	$112,062	$787,923	7.0%
2009	5,781,620	$181,331	$942,697	5.2%
2010	7,802,199	$288,287	$1,571,345	5.5%

Louisville Gas and Electric Company (LG&E)[49]
KPSC has approved a mechanism that permits LG&E to increase rates based on a number of factors related to its DSM program including cost recovery, revenue from lost sales, and an incentive. The incentive is 15% of the net resource savings expected from the approved programs expected to be installed during the next 12-month period. The incentive is capped at 5% of program expenditures.

Net resource savings = program benefits—utility program and participant costs.

Program benefits are calculated based on the present value of LG&E's avoided costs over the expected program life and includes capacity and energy savings.

In spite of having been in place for decades, some observers expressed disappointment that the Kentucky mechanism has not been more widely used. Stakeholders speculated that this may be in part because large industrial customers were carved out, preventing any utility-assisted demand-side management programs in the sector. There was some agreement among observers that the mechanism has failed to motivate utilities to develop energy efficiency; however, there was not agreement as to why.

[48] *Kentucky Power Company Demand Side Management Status Report.* August 16, 2010. Case No. 2010-00333
[49] *Aligning Utility Incentives with Investment in Energy Efficiency.* November 2007. National Action Plan for Energy Efficiency Leadership Group. http://www.epa.gov/cleanenergy/documents/suca/incentives.pdf.

MASSACHUSETTS

Policy	Scope	Description	Ceiling for Earning Incentives (million $)	Incentive Structure	Penalties	Actual Award (million $)	DSM Total Cost (million $)	Energy Saved (GWh annual)	Award as % of Cost
Multi-factor performance targets (savings, value and performance)	Electric—(NSTAR and National Grid)	An incentive up to 5.5% of demand-side management program costs is available in 3 categories for meeting performance thresholds	2006: 5.56 2007: 5.36 2008: 5.63	Incentive varies with achievement of performance thresholds of 75%, 100% and 110%	Potentially—absent reasonable compliance with Energy Efficiency Plan penalty may be imposed	2006: 5.51 2007: 5.24 2008: 5.29	2006: 101.2 2007: 97.5 2008: 102.4	2006 (NSTAR only): 162 2007: 682 2008: 532	2006: 5.44% 2007: 5.39% 2008: 5.16%

NARRATIVE SUMMARY

In 2007, the Massachusetts Department of Public Utilities (DPU) approved Energy Efficiency Plans for calendar year 2006 for National Grid and NSTAR Electric.[50] These plans included a shareholder incentive mechanism which provided an opportunity for the companies to earn 5% (after taxes) of energy efficiency program costs as an incentive for meeting established program goals. The metrics for determining an incentive award varied on a program-by-program basis but were generally based on three performance categories including savings, value and performance metrics.[51] Within each customer sector specific weights were allocated to each category, which were agreed upon through a settlement process.

- *Savings:* The savings component provided an incentive for achieving portfolio-level lifetime energy (MWh) savings, demand (kW) savings, and non-electric benefits goals.
- *Value:* The value component provided an incentive for achieving cost effective program implementation.
- *Performance:* Performance metrics in 2006 included, but were not limited to, documenting and implementing best practices protocols for residential programs; supporting efforts to improve auditor and contractor training in the low-income sector programs; and benchmarking building energy use.

The incentive was calculated separately for each of the above categories and could be earned for performance that met targets set at "threshold," "design," or "exemplary." Five percent of the "actual annual expenses" is first allocated to each customer sector by percentage of spending within that sector, then that amount is allocated within each sector to each component (savings, value, and performance metrics) based on the specific weights noted above. Actual annual expenses included all costs associated with program implementation including marketing, administration, and evaluation. The threshold level incentive is 75% of that amount while the exemplary level incentive is 110% of that amount.

[50] Orders of the Massachusetts Department of Public Utilities D.T.E./D.P.U. 06-45 May 8, 2007. http://www.env.state.ma.us/dpu/docs/electric/06-45/5807dpuorder.pdf and D.T.E/D.P.U. 06-34. May 8, 2007. http://www.env.state.ma.us/dpu/docs/electric/06-34/5807dpuorder.pdf

[51] NSTAR Electric Company, *2006 Energy Efficiency Annual Report.* http://www.env.state.ma.us/dpu/docs/electric/07-67/73108nst06arp.pdf

This policy is applicable to both gas and electric utilities in the state; however, the gas performance incentive model focused only on participants or savings goals (depending on the company).

National Grid (electric)

Potential National Grid Incentive (after tax)

	Threshold	Design	Exemplary
Performance Range	75%	100%	110%
2006	$1,971,328	$2,628,437	$2,891,281
2007	$1,945,063	$2,593,417	$2,852,759
2008	$2,043,901	$2,725,201	$2,997,721

Summary of National Grid Incentive Earned by Category (after tax) [52]

Incentive Component	Savings	Value	Performance	Total
2006	$1,229,375	$892,446	$722,715	$2,844,536
2007	$1,285,274	$953,360	$518,804	$2,757,438
2008[53]	$1,184,906	$866,570	$612,955	$2,664,432

NSTAR (electric)

Potential NSTAR Incentive (after tax)

	Threshold	Design	Exemplary
Performance Range	75%	100%	110%
2006	$1,821,380	$2,428,506	$2,671,357
2007	$1,709,810	$2,279,747	$2,507,722
2008	$1,794,970	$2,393,293	$2,632,622

Summary of NSTAR Incentive Earned by Category (after tax) [54]

Incentive Component	Savings	Value	Performance	Total
2006	$1,151,055	$866,654	$641,767	$2,659,476
2007	$1,154,260	$903,726	$427,361	$2,485,347
2008	$1,220,334	$928,068	$476,957	$2,625,359

[52] National Grid Energy Efficiency Annual Report Appendix 5 (revised). http://www.env.state.ma.us/dpu/docs/electric/07-68/82407rvapp.pdf; National Grid 2007 Energy Efficiency Annual Report. http://www.env.state.ma.us/dpu/docs/electric/08-44/82908ngeearme.pdf; National Grid 2008 Energy Efficiency Annual Report. http://www.env.state.ma.us/dpu/docs/electric/09-63/8709ngrptp1.pdf

[53] Order of the Massachusetts Department of Public Utilities. D.P.U. 09-63. May 26, 2010. http://www.env.state.ma.us/dpu/docs/electric/09-63/52610dpuord.pdf

[54] Id.; NSTAR 2007 Energy Efficiency Annual Report. http://www.env.state.ma.us/dpu/docs/electric/08-46/82908nsteernr.pdf; NSTAR 2008 Energy Efficiency Annual Report http://www.env.state.ma.us/dpu/docs/electric/09-64/61509nsteer.pdf; NSTAR 2009 Electric Energy Efficiency Plan. http://www.env.state.ma.us/dpu/docs/electric/08-117/52909dpuord.pdf

In earlier years, the available incentive was based on the pre-approved 3-Month Treasury rate. Due to volatility in markets the incentive was changed to a fixed 5%. In addition, earlier versions of the incentive mechanism set the "exemplary" performance threshold at 125% of design level, which was later changed to 110%.[55]

The Green Communities Act was passed in 2008 and requires gas and electric companies (the G&E Co.'s) to develop three-year plans that provide incentives to distribution companies based on their success in meeting or exceeding the goals in the plans. In their three-year plan, the G&E Co.'s jointly proposed annual statewide performance incentive mechanisms.[56] The proposed mechanism allowed the G&E Co.'s to earn incentive payments for meeting or exceeding the goals of their respective energy efficiency plans. The plans included: (1) a statewide incentive pool; (2) an allocation of the statewide incentive pool to three components (i.e., savings component, value component, and performance metrics); (3) statewide payout rates for the savings and value components; (4) an allocation of the statewide incentive pool to the individual G&E Co.'s; and (5) incentive thresholds and caps. The DPU approved the approach, but the G&E Co.'s were required to revise their initial performance metrics based on the following concerns:

- Distinct and clear roles—performance incentives should be available only for activities where the distribution company plays a distinct and clear role in bringing about the desired outcome.
- Clearly defined goals and activities—performance incentives should be based on clearly-defined goals and activities that can be sufficiently monitored, quantified, and verified after the fact.
- Consistency with state energy goals—performance incentives should be designed in such a way as to encourage energy efficiency program designs that will best achieve the Commonwealth's energy goals, particularly with regard to the goals stated in the Green Communities Act—baseline information identifying the status quo is essential.

[55] Order D.T.E./D.P.U. 06-45 May 8, 2007.
[56] Order of the Massachusetts Department of Public Utilities. D.P.U. 09-116-B. August 10, 2010. http://www.env.state.ma.us/dpu/docs/electric/09-116/81010dpuord.pdf.

MINNESOTA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award[57] (million $)	DSM Total Cost (million $)	Energy Saved (MWh)	Award as % of Cost
Shared benefit	Electric and gas	Incentive paid as a percentage of net benefits from energy savings	Floor: 90% of savings target Ceiling: 150% of savings goals or 30% of budget	Spending requirement and cost effectiveness used to calculate energy savings	No	2005: 12.1 2006: 10.6 2007: 6.2	2005: 49.06 2006: 49.12 2007: 54.13	2005: 284,389 2006: 270,091 2007: 276,258	2005: 24.66% 2006: 21.58% 2007: 11.45%

NARRATIVE SUMMARY

Until 2010, Minnesota's Conservation Improvement Program was based on a statutory spending requirement. The statutory spending requirement was 1% for electric utilities and 0.5% for gas utilities. In the 1990s, utilities were allowed to recover cumulative lost margins.[58] Lost margin recovery came under heightened criticism; however, when the recovery began to approach and surpass the utilities' annual conservation expenditures. In 1999 the Minnesota Public Utilities Commission replaced lost-margin recovery with an incentive mechanism that allowed utilities to earn a shared benefit incentive in addition to cost recovery. Under the "shared-savings" plan utilities were rewarded with a specific percentage of net benefits created by their investments in energy conservation.[59] The percentage of net benefits awarded increased as the percentage of energy savings goal achieved increased. The incentive was triggered when the utility achieved 91% of its approved energy savings goal and was capped at the lower of 30% of the energy conservation budget or actual expenditures.

Minnesota's Next Generation Energy Act replaced the statutory spending requirement with an annual energy savings goal of 1.5% of retail sales, beginning in 2010.[60] The Public Utilities Commission modified the shared savings incentive, which increases as the percentage of savings of retail sales increases. Further, there is no longer a cap on the amount of incentive that may be earned. The incentive is set such that at savings of 1.5% of retail sales, electric utilities will earn an incentive of $0.09 per kWh saved while gas utilities will earn between $4.50 and $6.50 per thousand

[57] Comments of the Minnesota Office of Energy Security. Docket Nos. E015/M-10-266. August 13, 2010 and feedback from Christopher Davis of the Minnesota Office of Energy Security.
[58] Docket No. E,G-999/CI-98-1759 (In the Matter of Requests to Continue Demand-Side Management Financial Incentives Beyond 1998), Order Approving Demand Side Management Financial Incentive Plans (April 7, 2000).
[59] Proposed Performance Incentives for Energy Conservation Update. Docket CI-08-133. Document ID 20105-50667-03. May 20, 2010. https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={C6013F5C-2CF9-4086-BA23-A12B944B203C}&documentTitle=20105-50667-03
[60] Minn. Stat.§ 216B.241, subd. l(c) and Docket No. E,G-999/CI-08-133: Order Establishing Utility Performance Incentives for Energy Conservation (January 27, 2010).

cubic feet saved. The percentage of net benefits to be awarded to each utility at different energy savings levels will be set at the beginning of each year.

NEVADA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award	DSM Total Cost (million $)	Energy Saved (MWh) [61]	Award as % of Cost
Rate of return	Electric—Nevada Power and Sierra Pacific Power (together "NV Energy")	Increased rates for efficiency investments in addition to cost recovery	Ceiling: 5% additional rate of return	The utility's authorized return on equity (ROE) plus 5% is applied to the rate-based DSM costs.	No	Folded into rate	2005: 13.8 2006: 25.0 2007: 27.3 2008: 53.3 2009: 57.50	2005: 98,000 2006: 216,000 2007: 254,000 2008: 411,000 2009: 438,000	NA

NARRATIVE SUMMARY

In addition to recovering program costs as rate-based investment, utilities were able to recover a bonus rate of return on those costs. Revised regulations adopted in 2004 allowed utilities to earn up to an extra 5% rate of return on equity for approved demand-side management costs.[62] The appropriate rate was determined in general rate cases by applying the extra 5% rate of return on equity (e.g., a 15% return if the approved base rate is 10%).[63] All prudently incurred costs associated with energy efficiency programs were treated as investment including labor, overhead, materials, incentives paid to customers, advertising and program monitoring and evaluation.[64] The incentive amount for DSM was automatic as long as utilities followed approved plans.

Since 2005, development and administration of energy efficiency programs by Nevada's regulated electric utilities has taken place within the context of an integrated resource planning process combined with an energy resource portfolio standard. Utilities may fulfill up to 25% of their portfolio requirements with energy efficiency.[65] DSM spending by Nevada utilities has increased steadily and is well above the national average. Following implementation of the RPS in 2005 utilities doubled their budgets for DSM programs in 2006. Electricity savings increased dramatically during that same time period from 98 GWh per year in 2005 to 216 GWh in 2006.

[61] Data provided by Steve Wiel of the Southwest Energy Efficiency Project (SWEEP). September 27, 2010.
[62] Update on Utility Energy Efficiency Programs in the Southwest. Howard Geller and Jeff Schlegel, Southwest Energy Efficiency Project (SWEEP). August 17, 2008. http://www.aceee.org/proceedings-paper/ss08/panel05/paper12.
[63] See Docket No. 02-5030. http://pucweb1.state.nv.us/pucn/DktInfo.aspx?Util=All.
[64] Nevada Administrative Code 704.9523. http://www.leg.state.nv.us/nac/NAC-704.html#NAC704Sec9523.
[65] Update on…

Energy Efficiency Budget by Year* (including incentives) (million $)

	Nevada Power	Sierra	Total
2008	$45.62	$9.94	$55.56
2009	$48.26	$10.26	$58.52
2010	$62.96	$9.24	$72.20

*This table lists budgets, not actual spending.

The rapid rise in utility energy efficiency program spending coupled with the economic downturn raised concerns with respect to the structure of the mechanism and its effect on the utilities' investment incentives.[66] Commission staff and the Attorney General's Bureau of Consumer Protection had argued for a long time that the cost recovery mechanism, with the addition of the 5% rate of return bonus, provided no incentive for effective program performance and in fact, simply encouraged additional spending with no consideration for the implementation outcome. Staff also had been recommending that incentives should be tied to program performance and program net benefits should be shared with ratepayers. NV Energy had originally endorsed the existing mechanism claiming that the incentive scheme with the bonus rate of return recognized the increased risks associated with DSM investments compared to the supply-side investments, and that it approximately offset the lost revenues from DSM. The economic downturn changed the situation.

As energy savings increased and the economic downturn hit, NV Energy became increasingly concerned about short-term revenue loss. NV Energy requested a provision that was inserted into legislation in 2009 that directed the PUC to allow them to recover net lost revenues in addition to program cost recovery. In July 2010 the Commission adopted a lost revenue recovery mechanism providing for annual recovery of both the utility's efficiency program expenses and its fixed cost revenues lost from the reduced sales caused by the efficiency programs.[67] The rate-basing and 5% additional rate of return incentive were eliminated, and instead a party may file a request for an incentive on a program-by-program basis. Nevada Power Company's 2010–2012 integrated resource plan includes a budget of nearly $210,000,000 for DSM programs, which represents a spending increase of 79% over the 2007–2009 budget. Responding to a petition from the Southwest Energy Efficiency Project, the Commission has engaged Lawrence Berkeley National Laboratory (LBNL) to undertake a study to assess the potential to add sharing of net benefits to the lost revenue recovery to find an incentive regulatory structure that makes DSM at least as profitable for shareholders as supply side investments and still flows most of the benefits to ratepayers.

[66] *Aligning Utility Incentives with Investment in Energy Efficiency.* November 2007. National Action Plan for Energy Efficiency Leadership Group. http://www.epa.gov/cleanenergy/documents/suca/incentives.pdf.

[67] *Nevada Adopts Lost Revenue Recovery for DSM Programs; Drops Equity Adder.* Southwest Energy Efficiency Project. http://www.swenergy.org/news/news/default.aspx?Year=2010#299.

NEW HAMPSHIRE

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award	DSM Total Cost (million $)	Energy Saved (therms)	Award as % of Cost
Performance targets	Electric and natural gas	Incentives for 8–12% of total program budgets for meeting cost-effectiveness and energy savings goals	Ceiling: 12% of budget Floor: 65% of planned energy savings	Incentive based on actual versus planned energy savings	No	National Grid 2006-07: $154,821 2007-08: $193,452 2008-09: $306,290 Rest of CY 09: $291,015	National Grid 2006-07: 1.83 2007-08: 1.63 2008-09: 2.65 Rest of CY 09: 2.82	National Grid 2006-07: 12.9 million 2007-08: 23.5 million 2008-09: 15.8 million Rest of CY 09: 20.6 million	National Grid 2006-07: 8.46% 2007-08: 11.87% 2008-09: 11.56% Rest of CY 09: 10.32

NARRATIVE SUMMARY

Utilities can earn performance incentives for 8–12% of total efficiency program budgets for meeting established cost-effectiveness and energy savings goals.[68] Separate target incentives are set for residential and commercial/industrial sectors. Incentives are based on the projected versus actual performance of programs measured in terms of their cost-effectiveness and energy savings.

Energy savings: A minimum performance threshold is set at 65% for planned savings and the incentive is calculated as follows:

(Actual Energy Savings / Planned Energy Savings) x 4% of Planned Energy Efficiency Budget = Cost Effectiveness Incentive

Cost effectiveness: A minimum performance threshold of 1:1 for planned and actual cost effectiveness is required. The cost effectiveness incentive calculation is based on the following formula:

(Actual Cost Effectiveness / Planned Cost Effectiveness) x 4% of Planned Energy Efficiency Budget = Cost Effectiveness Incentive

Superior performance could be rewarded by up to 12% of the planned sector budgets.

[68] See New Hampshire Public Utilities Commission Order Numbers 25,062 (January 5, 2010), 24,995 (July 31, 2009), 24,719 (December 22, 2006), 24,203 (September 5, 2003) and 23,574 (November 1, 2000). http://www.puc.nh.gov/Regulatory/docketbk.htm.

Results of National Grid Gas Energy Efficiency Programs Shareholder Incentive 2006–2009 (includes KeySpan)

Program Year	Budget	Lifetime Savings (Therms)	Incentive	Award as a Percent of Budget
2006–2007 (5/1/06/–4/30/07)	$1,829,896	12,943,340	$154,821	8.5%
2007–2008 (5/1/07–4/30/08)	$1,627,500	23,448,400	$193,452	11.9%
2008–2009 (5/1/08–4/30/09)	$2,651,791	15,817,180	$306,290	11.6%
Rest of CY 09 (5/1/09–12/31/09)	$2,815,786	20,598,440	$291,015	10.3%
Planned CY 2010	$4,986,416	16,981,180	$398,913	8%
Proposed CY 2011	$6,265,446	18,278,860	$501,236	8%
Proposed CY 2012	$6,857,101	20,469,340	$548,568	8%

In 2010 the Commission suspended the lifetime benefits and associated performance incentive formulae and capped the shareholder incentive at 8% due to concerns that payments under the incentive would reduce the money available for other efficiency programs. A settlement agreement was approved in 2010 requiring a review of performance incentives as well as program effectiveness, both of which will be address in the 2011 proceeding.

OHIO

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award	DSM Total Cost	Energy Saved	Award as % of Cost
Shared benefit and a percent of program costs	Electric—Duke	Incentive available based on program costs if exceeding state EERS	Ceiling: 15% of program costs if exceeding 25% of state EERS	50% of net present value of avoided costs and 75% of net present value for avoided costs of demand response	No	NA	NA	NA	NA

NARRATIVE SUMMARY

As of the summer of 2007, Ohio had implemented cost recovery, lost revenue recovery, and a shared benefit mechanism. As part of a 2008 settlement, Duke Energy proposed replacing these mechanisms with the Save-A-Watt program (SAW), which took effect in 2009.[69] The SAW program awards Duke 50% of net present value of avoided costs of energy and capacity over the life of the measure for conservation measures and 75% of avoided costs of capacity for demand response. From this, Duke pays all program costs (administration, incentives, marketing, M&V, etc.). In addition Duke receives lost revenues for three years following program implementation. Duke hires an independent M&V evaluator (costs capped at 5% of program costs) to verify energy savings. There is an earnings cap and a true-up period in the fourth year of the rider based on actual kW and kWh savings less actual program costs (after taxes).

Duke receives an incentive for exceeding the Ohio Energy Efficiency Resource Standard ("EERS"). Duke is entitled to a return on investment on its program costs up to the following caps:[70]

% EERS Requirement Achieved	>125%	116-125%	111-115%	101-110%	< or = 100%
Cap on Rate of Return	15%	13%	11%	6%	0%

Significant controversy has surrounded the SAW program. The lost revenue recovery portion of the program is currently being challenged by the Ohio Consumer's Counsel. The PUC has yet to rule. Measuring savings from the program is challenging. Duke reports that it has met and exceeded savings goals; however, observers note that the programs used to achieve these goals were in place prior to the SAW program. Furthermore, all utilities in Ohio have indicated the ability to meet a 22% savings goal by 2025 except Duke. Subsequent to the adoption of the SAW program Duke issues a technical study concluding that there isn't enough cost effective efficiency available to meet the 2025 goals. Duke has applied to adopt the program in Indiana and Kentucky and reapplied in North Carolina and South Carolina after initial rejections.[71]

[69] *Ohio Public Utilities Commission. Docket 08-920-EL-SSO.* December 17, 2008. http://dis.puc.state.oh.us/ViewImage.aspx?CMID=A1001001A08L17B13819A52921
[70] Testimony of Theodore E. Schultz on Behalf of Duke Energy Ohio before the Public Utilities Commission of Ohio. Case No. 08-920. Received July 31, 2008. http://dis.puc.state.oh.us/TiffToPDf/A1001001A08G31B73838A58061.pdf
[71] *Duke Energy's 'Save-a-Watt' Cuts Power Use, Raises Customer Ire.* Bloomberg. April 23, 2009. http://www.bloomberg.com/apps/news?pid=newsarchive&sid=agSBdoQT1S6s

OKLAHOMA

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award (million $)[72]	DSM Total Cost (million $)	Energy Saved	Award as % of Cost*
Shared benefit	Electric—PSO and OG&E	25% of net savings for measures with benefits greater than costs; 15% for others	OG&E Cap 2008–2009: None 2010: $2.7 million	Incentive collected in addition to cost and lost revenue recovery	None	OG&E 2008–2009: 1.27 2010: 2.7*	OG&E 2008–2009: 4.68 2010: 14.90[73]	OG&E 2008–2009: 45,997 MWh 2010: NA	OG&E 2008–2009: 27.2% 2010: 18.1%

NARRATIVE SUMMARY

Both Public Service Oklahoma (PSO) and Oklahoma Gas and Electric Company (OG&E) currently have shared benefit incentive plans that are paid in addition to 100% program cost recovery and lost revenue recovery mechanisms. The Quick Start Demand Program (QSDP) shared benefit mechanism was in effect for 2008 and 2009. PSO was permitted to collect returns of 25% of net savings for programs for which savings could be estimated and 15% of the costs for other programs such as education.[74] The OG&E mechanism permitted an incentive equal to 25% of net savings applied to programs with benefits that exceeded costs and 15% of costs applied to programs where costs exceeded measurable monetary benefits (such as education).[75] The incentive is projected annually and collected throughout the year. A "true-up" factor reflecting the difference between actual and projected savings for the previous year is added to this calculation.

OG&E Budget and Incentive

	Program Costs	Incentive
2008–2009	$4,679,714	$1,272941
2010	$14,901,538	Capped at $2,700,000

In 2010 the mechanism transitioned to a comprehensive three-year program. The shared percentage was lowered to 15% of net savings and the total program incentive was capped.[76] Further, OG&E is not entitled to an incentive for its education program. The incentive for measures with benefits that are greater than total resource cost receive 15% of net benefits. Measures for which the costs outweigh the benefits are awarded an incentive at 15% of total program costs.

[72] Oklahoma Gas and Electric Company Quick Start Program Final Report. March 1, 2010.
[73] 2010 spending and budget data is forecasted, not actual.
[74] Oklahoma Corporation Commission (OCC) Cause No. PUD 200700449, ID No. 3710105. April 8, 2008. http://imaging.occeweb.com/AP/CaseFiles/OCC3710105.PDF.
[75] OCC Cause No. PUD 200800059, Order No. 556179. May 30, 2008. http://imaging.occeweb.com/AP/CaseFiles/OCC3738047.PDF
[76] OCC Cause No. PUD 200900200, Order No. 573419. January 21, 2010. http://imaging.occeweb.com/AP/Orders/02FB7659.pdf

RHODE ISLAND

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award	DSM Total Cost (million $)	Energy Saved (MWh)	Award as % of Cost
Performance target	Electric and Gas: Narragansett Electric Co.	Incentive triggered if kWh savings targets and performance metrics are met	Floor: 60% of savings goals Cap: 125% of target savings	4.4% of spending budget available	No	2005: 795,648 2006: 760,623 2009: $1,036,000 2010: $1,503,000	2005: 17.61 2006: 16.51	2005: 66,093 2006: 70,650	2005: 4.5% 2006: 4.6%

NARRATIVE SUMMARY

Rhode Island has had a shareholder incentive for electric and gas since 2005 and 2007, respectively.[77] The Narragansett Electric Company, d/b/a National Grid (NG) can earn incentives for both electric (kWh) and gas (MMBtu) savings. There is a target base incentive rate of 4.4% for both electric and gas in 2010 applied to the eligible spending budget for 2010. The threshold performance level for savings by sectors is set at 60% of the annual energy savings goals for the sector. NG must attain at least this threshold level of savings in the sector before it can earn an incentive related to achieved energy savings in the sector. Savings goals will be adjusted to reflect actual spending if different from projected spending.

Electric
For electric programs, the shareholder incentive mechanism includes two components: (1) kWh savings targets by sector and (2) performance-based metrics. NG has the ability to earn an incentive for each kWh saved, once threshold savings for the sector are achieved. Threshold savings are 60% of target savings. The cap for the target incentive amount of energy savings is 125% of savings goals. There are five performance-based metrics for 2010 including one that relates to the Non-Low Income Residential sector, three that relate to the Commercial and Industrial sector, and one integrated metric. NG can earn $30,000 for each performance metric it successfully achieves in 2010 with an opportunity to earn a portion of the incentive for partially achieving goals for four of the metrics. The total potential incentive for performance metrics is capped at $150,000.

Approved 2009 Company Incentive: $1,036,000
Approved 2010 Company Incentive: $1,503,000

[77] Rhode Island Public Utility Commission Report and Order. Docket No. 3635. February 17, 2005. http://www.ripuc.org/eventsactions/docket/3635page.html and Docket No. 3790. July 23, 2007.

Incentive by Year[78]

Year	Spending Budget	Target Incentive	Target Incentive for Performance Metrics	Target Incentive Annual kWh Savings	Annual kWh Savings Goal	Threshold kWh Savings	Actual kWh Saved	Total Earned Savings Incentive	Total Earned Performance Metric
2005	$17,606,570	$774,689	$75,000	$699,689	53,751,216	35,287,018	66,093,090	$725,648	$70,000
2006	$16,514,253	$726,627	$80,000	$646,627	62,426,650	38,079,516	70,650,230	$727,223	$33,400
2010 (projected)	$33,852,267	$1,489,500	$150,000	$1,339,500	89,637,313	53,782,388	NA	NA	NA

Gas

For gas programs, the incentive is based on MMBtu savings. The gas savings target is based on a set of assumptions of savings per measure and other impact factors in each program, as well as the proposed budget. The company must attain at least this threshold level of savings in the sector before it can earn an incentive related to achieved energy savings in the sector. The company will have the ability to earn an incentive for each MMBTU saved, once threshold savings for the sector are achieved. The cap for the target incentive amount of energy savings is 125%.

Approved 2009 Company Incentive: $267,000
Approved 2010 Company Incentive: $214,000

2010 Shareholder Incentive Budget (gas)

Budget	Target Incentive	Annual Savings Goal (MMBtu)	Threshold Savings (MMBtu) (60% minimum)
4,892,837	215,300	121,147	72,688

In 2011 incentives will continue to be indexed to program spending, but performance metrics are likely to be excluded. There is an ongoing effort by some stakeholders to change the incentive so that it ties directly to program savings goals (as in Massachusetts).

[78] Revised 2005 Year-End Report. (Docket 3635); 2006 Year-End Report (Docket 3701); Energy Efficiency Program Plan for 2010: Settlement of the Parties. November 2, 2009 (and related filings). http://www.ripuc.org/eventsactions/docket.html.

TEXAS

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award	DSM Total Cost	Energy Saved	Award as % of Cost
Shared benefit	Electric—all 9 investor owned utilities*	Share of net benefits awarded for exceeding savings goals	Floor: 102% of demand reduction goal Ceiling: 20% of utility's program costs	Incremental increase in incentive according to increased performance	No	2009: 10% of net benefits	2009: $106 million	2009: 559.8 GWh	20% of utility's program costs is routinely earned

* American Electric Power (AEP)–Southwestern Electric Power Company, AEP–Texas Central Company, AEP–Texas North Company, CenterPoint Energy Houston Electric LLC, El Paso Electric Company, Entergy Texas, Inc., Texas-New Mexico Power Company, Oncor and Xcel Energy Company

NARRATIVE SUMMARY

A utility that exceeds its demand reduction goal, determined by the Public Utilities Commission of Texas (PUCT), at a cost that does not exceed the limit receives a performance bonus based on a share of net benefits.[79] Net benefits shall be calculated as the sum of total avoided cost associated with the eligible programs administered by the utility minus the sum of all program costs. A utility that exceeds 100% of its demand reduction goal (DRG) shall receive a bonus equal to 1% of the net benefits for every 2% that the demand reduction goal has been exceeded, with a maximum of a 20% of the utility's program costs. A utility that meets at least 120% of its demand reduction goal with at least 10% of its savings achieved through Hard-to-Reach programs shall receive an additional bonus equal to 10% of the bonus.

Utility Performance and Corresponding Incentive*

Utility Performance (% by which demand reduction goal is exceeded)	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%	20% or greater + 10% savings through Hard-to-Reach programs**
Incentive Award (as a % of net benefits)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	10% or greater + additional 10% of award

*Incentive award is capped at 20% of the utility's program costs.
**Hard-to-Reach programs benefit customers with an annual household income at or below 200% of the federal poverty guidelines

[79] PUCT Substantial Rule Section 25.181. http://www.puc.state.tx.us/rules/subrules/electric/25.181/25.181ei.cfm

Basic Incentive Calculation

Incentive Award = The lesser of:
% by which utility exceeds performance goals * (total avoided costs – program costs)
or
20% of utility's program cost

The performance bonus is based on the utility's energy efficiency achievements for the previous calendar year.

Texas has nine investor-owned utilities that have exceeded their annual demand reduction goals for seven straight years (as of 2009).[80] In 2009 the utilities achieved 559.8 gigawatt hours (GWh) of energy reduction and 240 megawatts (MW) of peak demand reduction, which was 82% above their annual goal of 132 MW. Combined, the IOUs spent approximately $106 million on energy efficiency programs (including administrative expenses) in 2009.

There is largely agreement that the incentive encouraged utilities to invest in energy efficiency and the mechanism has been very cost effective. Texas uses a "deemed savings" approach to verify energy savings achieved. This continues to be a contentious issue. In addition, the amounts by which utilities have consistently exceeded savings goals have raised concerns that the goals are too modest. Further, the differences in customer base between rural and more urban utility service areas create different challenges for which a single, uniform approach has not been ideal. This is viewed by some as unfairly burdensome to smaller, more rural utilities. It's unclear what roll the utilities play, if any, in influencing savings goals. There are differences of opinion as to the general position of utilities as to whether the savings goals should be increased or rolled back. This difference in views was not resolved according to the small/rural vs. larger/metropolitan service area division.

[80] Energy Efficiency Accomplishments of Texas Investor Owned Utilities Calendar Year 2009. Frontier Associates LLC. http://www.texasefficiency.com/report.html.

WASHINGTON

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/Award (million $)[81]	DSM Total Cost (million $)	Energy Saved (MWh)	Award as % of Cost
Shared benefit + Performance target component	Electric—Puget Sound Energy	Incentive awarded for exceeding annual savings targets	Floor: 100% of savings goals (278,000 MWh) Ceiling: 150% of savings goals (416,722 MWh)	Incremental incentives for savings	Yes—incremental penalties accrue if savings target not met	2007: 3.45 2008: 4.34 2009: 4.39	2007: 36.0 2008: 52.1 2009: 66.9	2007: 222,310 2008: 273,483 2009: 278,000	2007: 9.6% 2008: 8.3% 2009: 6.6%

NARRATIVE SUMMARY

Puget Sound Energy's conservation program operated under a pilot efficiency incentive mechanism from 2007 till 2009. The pilot expired and Puget Sound Energy has not requested a continuation of the program. Under the pilot, energy savings targets were set annually and an incentive is available for exceeding the targets.[82] Penalties are triggered if targets are not met. Incentives are awarded according to energy saved in comparison to a baseline as well as on a shared benefit basis. Both are calculated according to the following formulas:

MWh Incentive

(MWh baseline target * $10) + (MWh savings in addition to baseline target * $20)

The 2009 baseline target was 278,000 MWh.

MWh Penalty

(27,800 * MWh penalty for band)[T] + [(Threshold of MWh savings achieved – Actual savings achieved) * $80]

[T] MWh penalty bands are ten percentage points (100-90%, 90-80%, 80-70%) The calculation is made for each range below 90%. i.e. if 73% of baseline target achieved then MWh penalty = [(27,800 * $75) + (27,800 * $80)] + [(222,400 – Actual MWh savings achieved) * $80]

[81] Independent Third-Party Evaluation of PSE's Electric Conservation Incentive Mechanisms. Blue Ridge Consulting Services, Inc. September 7, 2010.
[82] Puget Sound Energy Electric Tariff G: Schedule 121 (2009). http://www.pse.com/SiteCollectionDocuments/rates/elec_sch_121.pdf

Shared Savings Incentive

[(MWh baseline target * Net shared incentive) * 5%] + [(Incremental savings * Net shared incentive)^{T} * Shared savings incentive rate] +

(Actual savings achieved—Threshold of MWh savings achieved) * $20]

Net shared incentive ($/MWh) = Avoided cost – Total resource cost

Avoided Cost is a cost effectiveness standard for entire electric program portfolio. Currently $108/MWh

Total Resource Cost is company's actual program results. Currently $63/MWh

Incentive and Penalty Bands

Range of Energy Savings as a % of Baseline Target	Incentive or Penalty	Incentive or Penalty Amount ($/MWh)	Threshold of MWh Savings Achieved	Shared Savings Incentive Rate
140-150%	I	$20	416,722	100%
130% up to 140%	I	$20	388,922	80%
120% up to 130%	I	$20	361,122	40%
110% up to 120%	I	$20	333,322	20%
100% up to 110%	I	$20	305,522	10%
100%	I	$10	278,000	5%
90% up to 100%	None	None	NA	0%
80% up to 90%	P	$75	250,000	0%
70% up to 80%	P	$80	222,400	0%
60% up to 70%	P	$85	194,600	0%
50% up to 60%	P	$90	166,800	0%
Less than 50%	P	$95	139,000	0%

In order to qualify for an incentive, at least 75% of projected savings must be achieved in each of the residential and commercial/industrial sectors. Programs must also be cost effective and the weighted average measure of life for the portfolio must be at least 9 years. 75% of the incentive is collected in the year after program implementation. The remaining 25% will be collected the following year. The Commission may consider mitigating factors in the assessment of a penalty including significant local economic recession or a major natural disaster.

Washington's Utilities and Transportation Commission recently conducted an inquiry on energy efficiency incentives and disincentive-removal mechanisms. The Commission issued a policy statement discussing partial decoupling, full decoupling, and incentives under the state's conservation portfolio standard.[83]

[83] "Regulators Weigh Utilities' Efficiency Targets in Washington State. The Energy Activist. Vol. 12, No.1 Summer 2010. http://www.nwenergy.org/uncategorized/regulators-weigh-utilities%e2%80%99-efficiency-targets-in-washington-state/ See also WUTC Docket U-100522.

WISCONSIN

Policy	Scope	Description	Target, Floor or Ceiling for Earning Incentives	Incentive Structure	Penalties	Actual Earnings/ Award	DSM Total Cost	Energy Saved	Award as % of Cost
Rate of return	Electric and gas—Wisconsin Power & Light	The same rate of return is earned on efficiency investments as for capital projects	None	A return on all related investments regardless of the amount of savings achieved	No	NA	NA	NA	NA

NARRATIVE SUMMARY

Since the late 1980's, Wisconsin Power & Light (WPL) has received the same rate of return on investments in approved energy efficiency measures as it does for capital investments. WPL receives a return on efficiency investments regardless of the amount of energy savings achieved. WPL operates only a single program under the mechanism, a low interest loan program provided to commercial and industrial customers. Because WPL is guaranteed a return on every dollar invested through this program, some stakeholders estimate the mechanism has led to significant investments in energy efficiency by WPL.

As of 2007, utilities are required to contribute 1.2% of operating revenues to statewide energy efficiency programs. Since 2000 this money has funded a statewide program providing very similar services to customers as the WPL loan program. Initially there was little coordination between these programs, which led to competition. A partnership between the program administrators of the statewide energy efficiency programs and the utility resolved the issue.

Utilities may propose incentives as part of their rate cases, but there have been no proposals from other utilities under the most recent version of performance incentives.