Responding to the Natural Gas Crisis:
America's Best Natural Gas Energy Efficiency Programs

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GLOSSARY OF TERMS AND ABBREVIATIONS

Natural Gas and Energy Units and Abbreviations

cubic foot (cf)—basic unit of natural gas delivery = ~1,030 Btu
Mcf = thousand cubic feet
ccf = hundred cubic feet
MMBtu = million British thermal units
therm = 100,000 Btu
Decatherm = 10 therms = 1 MMBtu
billion cubic feet (Bcf) = ~ trillion Btu
trillion cubic feet (Tcf) = ~Quad
MBH = million Btu/hour

EXECUTIVE SUMMARY

The year 2003 marked a dramatic turn-around in the situation regarding the U.S. natural gas market. After many years of very low prices, there has been roughly a doubling of gas prices in the wholesale market. According to industry experts, the United States faces a prolonged period of dramatically elevated prices and potential supply problems. The circumstances are severe enough that even Federal Reserve Chairman Alan Greenspan has testified before Congress on the very real threat this situation poses to the health of the U.S. economy.

In the face of these developments, there has been considerable re-awakened interest in the subject of natural gas energy efficiency programs. At the federal level, even the Secretary of Energy has noted that there must be an emphasis on conservation and energy efficiency. At the state level, many regulatory commissions and utilities are re-examining opportunities for natural gas efficiency programs after having let such efforts fade during the lengthy period of low gas prices during the 1990s.

In response to these developments, ACEEE launched an expedited project to identify and profile exemplary existing natural gas energy efficiency programs. The objective was to provide policymakers, regulators, and utilities that were interested in initiating or expanding natural gas efficiency efforts with practical models of proven successful gas efficiency programs.

After an extensive nationwide search, ACEEE selected a total of 29 programs to profile as representative of outstanding natural gas efficiency programs. We also selected 5 "special case studies" as noteworthy examples of comprehensive program portfolios and/or multi-utility collaboratives. Programs exist for all types of customers and for all principal natural gas end-use technologies, providing a variety of products and services to help customers increase their energy efficiency.

While we found many good models of natural gas efficiency programs worthy of emulation by others, we also found that such programs tend to be concentrated in a relatively few number of states. This means that there is a lot of room for expansion of such efforts.

We recommend offering natural gas energy efficiency programs to customers in areas not presently served or underserved by such programs. Improved efficiency is a concrete step customers can take to offset price increases, but decades of experience suggest that they won't necessarily take such a step without the presence of energy efficiency programs.

We urge policymakers and regulators to take the initiative to facilitate natural gas energy efficiency programs. Utilities can also take action themselves to provide energy efficiency programs, but they typically need support from their regulators to make such programs feasible and effective. Therefore, in addition to profiling specific programs, this report also provides information about policy and regulatory mechanisms that leading states use to encourage and require utility natural gas energy efficiency programs.

BACKGROUND

Context for this Project

Over the past two years, natural gas prices in the United States have increased dramatically, and industry experts warn that the problem may persist for quite some time. A recent report to Energy Secretary Spencer Abraham prepared by the National Petroleum Council (NPC 2003) observes that "there has been a fundamental shift in the natural gas supply-demand balance that has resulted in higher prices and volatility in recent years" (p. 16), and concludes that natural gas prices could average between $5 and $7 per 1,000 cubic feet for years to come without significant advances in energy efficiency. (That would be about double the cost of natural gas from only a couple years ago.)

In the face of these dramatic developments, interest in natural gas energy efficiency has been growing rapidly. Utilities and states that had allowed energy efficiency efforts to languish during the extended period of low natural gas prices during the 1990s are showing renewed interest in energy efficiency. In response to these developments, ACEEE launched this expedited project to identify and profile exemplary natural gas energy efficiency programs. The goal is to provide practical and successful program models to emulate, for those states/utilities that wish to initiate or expand their natural gas energy efficiency efforts.

The Importance of Demand

The situation with respect to natural gas today is a textbook case of fundamental economics. Demand for natural gas has risen steadily, driven by large increases in its use for electric power generation and residential heating. Over 60 million American households now use natural gas to heat their homes, up from 48 million in 1987. In the electric power sector, 90% of all new power plants constructed in recent years use natural gas, largely because of its clean-burning characteristics and the perceived generally ample domestic supplies historically—a situation now apparently changing.

While demand has increased steadily, supply has not kept up an equivalent growth rate. According to the National Petroleum Council report, production from traditional U.S. and Canadian sources has reached a plateau. Production volume from North American gas fields is declining at an annual rate of more than 25%. This means that companies need to increase their drilling activity just to try to find sufficient new supplies to maintain steady volumes of production.

Despite increased exploration activity, North American supplies of natural gas have not kept pace with increased demand. The result is a tightening market—constrained supplies and higher prices. One concrete sign of this market imbalance occurred in the spring of 2003 when the amount of natural gas in storage dropped to its lowest level since the federal government began tracking these data in 1976. New technologies and infrastructure—such as to accommodate liquefied natural gas—offer some promise to ease supply problems, but this type of development is years away from practice. Even development of a natural gas pipeline from Alaska to the lower 48 states would only offer modest relief from the constrained supply outlook—and again, such a development would be years away even if the decision is made to proceed with this project as a result of pending federal energy policy legislation in Congress.

Prices already have responded to supply constraints. In September 2003, the spot price for natural gas was over $4.50 per 1,000 cubic feet—which was about 50% higher than a year earlier. Consumer prices for natural gas rose sharply during the winter of 2002–03—in some cases almost doubling. Many residential consumers have not become aware of the increases in natural gas prices that began in the fall of 2002 because they are on fixed-cost annual contracts. Residential retail prices for 2003–04 are projected to be $2 per thousand cubic feet (Mcf) higher than for 2002–03, with the higher prices projected to persist for at least the next four years. These residential consumers will begin to experience the price increases this fall with a national average 36% increase in natural gas bills.

The National Petroleum Council's report echoes this price outlook, concluding that natural gas prices could be $5–7 per 1000 cubic feet for years to come without significant policy actions. The report also predicts that U.S. demand is likely to reach over 30 trillion cubic feet per year by 2025, a significant increase from today's demand of about 23 trillion cubic feet per year. (It is noteworthy that these scenarios presume no significant advances in energy efficiency.)

Clearly, the outlook for consumers and the overall economy is not bright. There are few options to switch to less expensive fuels in most applications where natural gas is used as a fuel. Homeowners can't readily switch their furnaces to use other fuels. And electric power generators based on natural gas also aren't readily and economically switched to other fuels, even if such a switch would be possible.

In a response to the National Petroleum Council's report, Energy Secretary Spencer Abraham observed, "What this report makes unmistakably clear is that major challenges face us with respect to natural gas. Increasing demand for natural gas, coupled with decreasing domestic supply, will mean price volatility and a potentially serious drag on the nation's economy" (Reuters 2003). Federal Reserve Board Chairman Alan Greenspan echoed these concerns in testimony to Congress in the summer of 2003.

What can be done to brighten this outlook for consumers? The answer lies with this textbook case of market economics—reduce demand through energy efficiency and conservation. As the National Petroleum Council concludes in its report, in the very near term, reducing demand is the primary means to keep the market in balance because of the lead times required to bring new supply to market (NPC 2003).

Energy Secretary Spencer Abraham concurs. In a letter to Senate Minority Leader Tom Daschle (Abraham 2003), the Secretary stated, "Over the next 12 to 18 months, there are only limited opportunities to increase supply… therefore, the emphasis must be on conservation, energy efficiency and fuel switching."

Recent research by ACEEE and the Environmental and Energy Analysis, Inc. (Elliott et al. 2003) clearly shows the benefits of an increased emphasis on energy efficiency and conservation to reduce demand, along with parallel efforts to increase use of renewable energy. Results of this analysis are that modestly reducing both natural gas and electricity consumption along with accelerating installation of renewable energy generation can dramatically affect natural gas prices and availability. Such actions could stabilize natural gas prices and save gas and electricity consumers billions of dollars. The researchers analyzed the potential impacts of aggressive but

readily achievable energy efficiency programs and renewable energy resources in the lower 48 states.

That research by ACEEE and EEA suggests that nationwide efforts in just 12 months could reduce natural gas consumption by 1.9% from the base case and could reduce electricity consumption by 2.2%. Such reductions could in turn lead to a 20% reduction in wholesale natural gas prices. In the longer term, the researchers project that America can reduce electricity consumption by 3.2% and natural gas consumption by 4.1%, and increase renewable generation from 2.3 to 6.3% of national generation by 2008, which would lower wholesale natural gas prices by 22%. National retail savings to residential, commercial, and industrial consumers would exceed $75 billion for the five-year period of 2004–2008. The researchers also examined state and regional impacts. They found that reducing energy consumption and increasing renewable energy generation in just one state or region can result in dramatic wholesale price reductions on the order of 5 to 7% in the region (Elliott et al. 2003).

Using Energy Efficiency and Conservation To Combat the Crisis

Energy efficiency is clearly a concrete step that can be taken immediately to combat the problems looming with the price and supplies of natural gas for the winter of 2003-04. Energy efficiency can also play a key role in a broader overall strategy to address our nation's future natural gas needs. Other elements in such a strategy will include greater use of renewable energy generation and more efficient power generation.

The ACEEE and EEA research also notes that no single policy strategy will achieve the results outlined in their analysis. Rather, they conclude that a portfolio of strategies is most likely to achieve quick and sustained saving from energy efficiency and renewable energy resources. These strategies include:

- Creating energy efficiency performance targets for utilities and/or expanding public benefits funds
- Expanding federal funding for energy efficiency and renewable energy programs at DOE and EPA
- Expanding, updating, and making more stringent appliance efficiency standards
- Expanding and making more stringent energy efficiency provisions in building codes
- Increasing support for clean and efficient distributed generation
- Adopting renewable energy portfolio standards
- Raising public awareness through a state and national campaigns

An important component of the above portfolio of strategies is an increased level of activity for individual utility and related state programs that promote natural gas end-use efficiency. If energy efficiency is to be part of the solution to the looming natural gas crisis, regulators, policy makers, utility managers, and related energy professionals need to be able to build on past success with such programs. Identifying and profiling examples of highly successful programs as a means to document this past success and encourage greater level of program activity is the genesis and overall objective of this report.

RESEARCH OBJECTIVES AND METHODOLOGY

ACEEE conducted a nationwide search and review of utility sector natural gas energy efficiency programs and associated regulatory and policy mechanisms. This research project had two primary objectives:

1. Provide a catalog and detailed description of the best programs available for saving natural gas through energy efficiency improvements.
2. Provide a review and summary of specific policy and regulatory mechanisms currently being used by state policymakers and regulators to encourage and support efforts by natural gas utilities to provide energy efficiency services to their customers.

This report presents the findings of this project to identify and document "best practices" for the design and implementation of natural gas efficiency programs. The intent of this report is to provide regulators, policy makers, and program administrators with a guidebook of practical, state-of-the-art information about energy efficiency programs that can be used effectively to yield critical natural gas savings in an expedited time frame. Applying the lessons learned from over two decades of experience with natural gas efficiency programs can play a key role in developing and implementing new and revised programs to address the looming crisis with natural gas prices and supplies.

We used the following data collection methods:

- A screening survey of all 50 states
- Interviews with national experts
- A public solicitation of program nominations
- Review of appropriate policy and program documentation
- Interviews with representatives of programs selected for the "best practices" catalog and from states with noteworthy policy/regulatory mechanisms for supporting natural gas efficiency programs

We summarize the objectives and tasks performed for each of these data collection methods below.

1. *Screening survey of all 50 states:* We conducted an initial state screening survey to determine which states have utility-related (including public benefit fund supported) natural gas energy efficiency programs, and to identify appropriate contact persons for obtaining additional information. We pursued follow-up contacts as necessary to get initial descriptive information about programs and regulatory or policy mechanisms in place to support these programs.
2. *Interviews with national experts:* We contacted various national experts and industry observers who are familiar with utility-related energy efficiency activities around the country, and interviewed them regarding their suggestions for exemplary natural gas energy efficiency programs and noteworthy policy/regulatory mechanisms for facilitating such programs.
3. *Public solicitation of program nominations:* ACEEE broadly solicited nominations for exemplary natural gas programs, including placing a notice on our Web site and e-

mailing a notice to our large e-mail list of government and industry contacts in the utility sector.

4. *Review of appropriate policy and program documentation:* We obtained and reviewed appropriate documents and materials describing promising natural gas energy efficiency programs and noteworthy policy/regulatory mechanisms, including evaluation reports. This material helped inform the selection of programs and policy mechanisms to be featured in the final report.
5. *Interviews with representatives of selected programs and state policy/regulatory institutions:* For the programs and policies that we selected for inclusion in the report, we conducted interviews and other data collection to acquire the more detailed information necessary for the profiles that we present in this report (individual program profiles are given in Appendix B).

RESEARCH RESULTS

50-State Screening Survey

At the outset of this research project, ACEEE conducted a natural gas energy efficiency screening survey with each of the 50 states and the District of Columbia. The screening survey was designed to both determine which states currently operate utility-funded natural gas energy efficiency programs and, for the states that do have programs, obtain contacts in each state familiar with those programs.

Approach

A list of initial survey contacts was identified based on state regulatory commission staff that ACEEE had worked with previously on other research projects. In cases where such individuals were not available, additional contact names were obtained from the National Association of Regulatory Utility Commissioners (NARUC) membership directory. When neither of these efforts resulted in a successful contact, we called the main commission telephone number and asked to be referred to someone familiar with utility natural gas energy efficiency programs in the state. Eventually, all 50 states and the District of Columbia were successfully surveyed through this combined methodology.

Respondents were asked if the natural gas utilities in their states were currently funding energy efficiency programs. If the respondent answered affirmatively, he/she was asked how the programs are funded and who administers them, and also for the name of a contact in the state that is familiar with program details. If the respondent stated that the natural gas utilities in his/her state were not currently offering energy efficiency programs, he/she was asked if there has been any discussion at the commission about starting programs in response to recent increases in natural gas costs.

Screening Survey Results

A summary of the responses is presented in Table 1. The survey found that less than half of the states have utility ratepayer-funded energy efficiency programs for natural gas. Out of the 51

Table 1: Natural Gas Screening Survey

State	Does State Have NG EE Programs?	Who Administers	Is Commission Discussing Starting Programs?
Alabama	No		No
Alaska	No		
Arizona	Yes	Utilities/Energy Office	
Arkansas	No		No
California	Yes	Utilities/3rd parties	
Colorado	No		No
Connecticut	No		No
Delaware	No		No
District of Columbia	No	7	No
Florida	Yes	Utilities	
Georgia	No		No
Hawaii[1]	N/A		
Idaho	Yes	Utilities	
Illinois	Yes	State	
Indiana[2]	No		
Iowa	Yes	Utilities	
Kansas	No		No
Kentucky	No		No
Louisiana	No		
Maine	No		Yes
Maryland	Yes	Utilities	
Massachusetts	Yes	Utilities, contractors	
Michigan	No		No
Minnesota	Yes	Utilities	
Mississippi	No		No
Missouri	No		Yes
Montana	Yes	Utilities	
Nebraska	No		No
Nevada	Yes	Utilities	
New Hampshire	Yes	Utilities	
New Jersey	Yes	Utilities	
New Mexico	No		No
New York[3]	Yes	State (NYSERDA)	
North Carolina	Yes		
North Dakota	No		No
Ohio	No		No
Oklahoma	No		No
Oregon	Yes	Utilities and also the Energy Trust of Oregon	
Pennsylvania	Yes	Utilities/nonprofits	
Rhode Island	No		No
South Carolina	Yes	Utilities	
South Dakota	No		No
Tennessee	No		No

State	Does State Have NG EE Programs?	Who Administers	Is Commission Discussing Starting Programs?
Texas	No		No
Utah	No		Yes
Vermont	Yes	Utilities	
Virginia	No		Yes
Washington	Yes	Utilities	
West Virginia	Yes	Utilities	
Wisconsin	Yes	State	
Wyoming	No		No
N/A	1		
No	28		21
Yes	22		4
Total	51		25

[1] Hawaii does not use natural gas.
[2] Small utility settlement pending.
[3] NYSERDA has some fuel-neutral programs that save natural gas.

respondents to the survey, 22 confirmed that they currently have utility-funded natural gas efficiency programs in their states.[1] In 19 of those 22 states, the utility companies have the primary role in administering the natural gas efficiency programs. In the remaining three states (Illinois, New York,[2] and Wisconsin), the programs are funded through utility rates but are administered by a state agency.

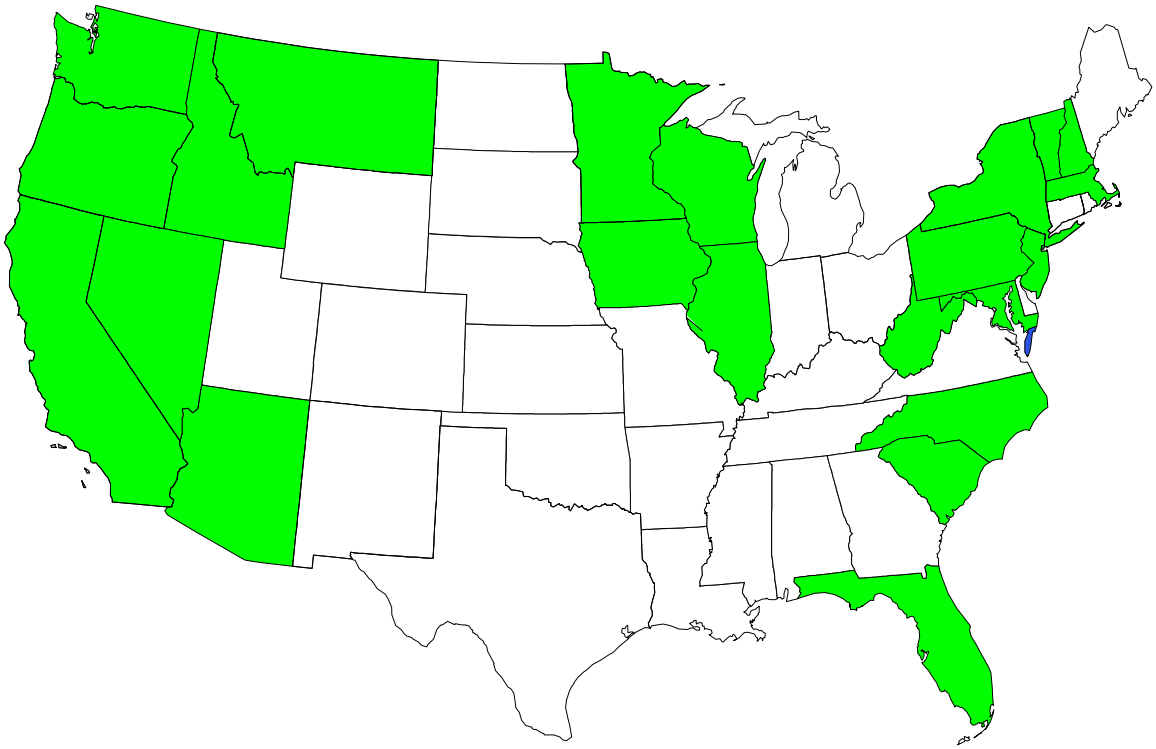
Twenty-eight, or 55%, of the respondents stated that they do not currently have utility-funded natural gas programs in their states. Twenty-four of those states responded to the question regarding whether their state was discussing starting utility-funded natural gas energy efficiency programs in response to increasing natural gas costs. Four of those 24 (17%) respondents answered that this issue is currently under discussion in their states.

In addition to providing a brief overview of utility natural gas energy efficiency activity around the nation, this survey helped the project to identify states and individuals to contact in order to seek to locate exemplary natural gas energy efficiency programs to profile in this report.

To provide a more visual illustration of the geographic distribution of states involved in natural gas efficiency, Figure 1 presents a map where those states with active utility-related natural gas energy efficiency programs are shaded.

[1] Admittedly, a number of those states have fairly modest natural gas energy efficiency efforts. States with some of the most significant programs include California, Massachusetts, Minnesota, New Jersey, Oregon, Vermont, Washington, and Wisconsin.
[2] Technically, NYSERDA in New York operates electric energy efficiency programs. However, its energy efficiency programs are operated in a fuel-neutral manner, and as a result, some programs have significant natural gas savings as well.

Figure 1: States with Natural Gas Utility-Funded Energy Efficiency Programs



Legislative and Regulatory Mechanisms

Past research has abundantly demonstrated that some type of legislative and/or regulatory requirement and funding mechanism is an essential ingredient for any significant utility energy efficiency program effort to occur (e.g., see Cowart 2001; Kushler & Suozzo 1999; and Kushler & Witte 2001). In order to help facilitate further natural gas energy efficiency program efforts in the United States, this project sought to identify and describe the legislative/regulatory foundations underlying exemplary energy efficiency programs that are being successfully delivered in the field today.

Approach

There were two primary sources used to identify the examples of legislative/regulatory frameworks for natural gas energy efficiency that we present in this report. First, in our interviews with national experts, we asked for their suggestions regarding noteworthy state legislative/regulatory policies we should examine. Second, in doing the research to identify the exemplary energy efficiency programs that we profile in this report, it was possible to identify a group of what might be considered "leading states" in the area of utility-sector natural gas energy efficiency programs. (These states include California, Massachusetts, Minnesota, New Jersey, Oregon, Vermont, Washington, and Wisconsin.) We decided to present summary information about the legislative/regulatory foundation for natural gas energy efficiency in each of those states.

We then used interviews and written surveys with appropriate contacts (e.g., state regulatory staff, utility personnel, etc.) to obtain the descriptive information regarding the legislative/regulatory framework behind their natural gas energy efficiency programs.

Results

Table 2 presents summary data for eight states and one Canadian province regarding their legislative and regulatory framework for utility natural gas programs. These nine jurisdictions were chosen because they were the leading areas identified in this study in terms of utility natural gas energy efficiency efforts.

Information is provided in the table regarding four categories of legislative/regulatory structure:

1. whether there is a legal requirement in the state to provide natural gas energy efficiency programs;
2. whether there is an approved program cost-recovery mechanism in place;
3. whether there is a mechanism for the utility to earn shareholder incentives for good performance with its natural gas energy efficiency program; and
4. whether there is a mechanism in place for utilities to recover "lost revenues" resulting from their natural gas energy efficiency programs.

The results presented in Table 2 reveal some significant patterns among these leading jurisdictions for natural gas energy efficiency. First, seven of the nine jurisdictions have some type of legal requirement for utility funding of natural gas energy efficiency programs, and the other two have strong regulatory encouragement for such programs. All nine jurisdictions have some type of explicit mechanism in place to assure cost-recovery for natural gas energy efficiency program expenditures.

These two key features (i.e., a legislative/regulatory requirement for funding and a mechanism for cost-recovery) have been characterized elsewhere (e.g., Kushler & Witte 2001) as crucial threshold conditions for significant utility energy efficiency efforts to occur, and the results of this study would seem to bear that out.

Beyond those minimum conditions, the observations regarding other regulatory mechanisms are somewhat mixed. Three of the nine jurisdictions have some type of utility shareholder incentive mechanism and two of those also have a lost revenue recovery mechanism (plus one other jurisdiction has a decoupling mechanism). While we received some good anecdotal feedback about the usefulness and desirability of those mechanisms, their presence in only a minority of these leading jurisdictions suggests that they are enhancements rather than minimum threshold conditions for achieving successful natural gas energy efficiency programs. (Nonetheless, we do support the use of some incentive mechanism beyond simple cost-recovery as a way to help encourage maximum effectiveness on the part of the program administrator.)

In addition to this "at a glance" summary, further details about the legislative/regulatory framework for natural gas energy efficiency programs in each of these nine jurisdictions are provided in Appendix A.

Table 2: Summary of Legislative and Regulatory Mechanisms

State	Legal Requirement	Cost-Recovery	Shareholder Incentives	Lost-Revenue Recovery	Other Mechanisms
CA	Yes (required by statute)	Yes (gas public purpose surcharge)	No	No	Also a system benefit charge for low-income energy efficiency programs
MA	No (encouraged by regulators)	Yes ("conservation charges" approved in company-specific regulatory cases)	Yes (some gas utilities do have incentive mechanisms)	Yes (most utilities have some recovery mechanism)	Statute requires statewide energy audit program. Funded by small customer charge, administered by state.
MN	Yes (required by statute)	Yes (gas utilities required to spend 0.5% of revenues)	Yes (Commission approved mechanism)	No (used to, was replaced by incentive mechanism)	No
NJ	Yes (required by statute)	Yes ("societal benefits charge" on customer bills)	No (used to; no current mechanism)	No (no current authorization, issue is under review)	No
Ontario, Canada	Yes (Ontario Energy Board order)	Yes (included in rates, also has a "DSM Variance Account" to reconcile over- and under-spending on EE by utility)	Yes (one major utility has a shared savings mechanism (SSM) with + and – incentives)	Yes (a lost revenue adjustment mechanism)	No
OR	Yes (for residential gas space heat customers; for others, EE efforts are encouraged by PUC)	Yes (thru balancing accounts, but largest gas utility has a surcharge for EE with funds transferred to a state agency)	No	Yes (although now N/A for the largest gas utility, which has decoupling)	Utilities required by Statute to provide free energy audits and loans/rebates for residential gas space heat customers.
WA	No (encouraged by regulators)	Yes (covered in utility-specific regulatory orders)	No	No	Commission requires "least cost planning," comparing energy efficiency to gas purchasing options.

State	Legal Requirement	Cost-Recovery	Shareholder Incentives	Lost-Revenue Recovery	Other Mechanisms
VT	Yes (required by statue and regulatory orders)	Yes (included in rates and reviewed in rate cases)	No	Yes (net lost revenues are eligible for recovery in rates cases)	The electricity energy "efficiency utility" in VT operates programs that also produce gas savings.
WI	Yes (required by statute)	Yes (certain funding amounts must by transferred by utilities to the state public benefits EE program)	N/A (programs are administered by a state agency)	No	Statute allows utility to spend more on EE, beyond the minimum it must send to the state, if it wishes.

Exemplary Natural Gas Efficiency Programs

One of the main objectives of this project was to identify and profile examples of outstanding natural gas efficiency programs—those in place that are highly successful in improving the energy efficiency of customer end-uses. Such examples demonstrate the real benefits of energy efficiency for customers and natural gas companies, as well as related manufacturers, suppliers, and contractors of energy-efficient products and services. These examples also offer models of the best practices in place today for programs serving natural gas customers. For areas not served by such programs, these models are worthy of emulation and could facilitate rapid and successful development of similar programs in such areas. In this way, successful program designs and results can be replicated, assuring that greater numbers of natural gas customers have access to programs and services that can help them reduce their natural gas costs through improved energy efficiency.

In this section we discuss our efforts to identify and profile exemplary natural gas programs. We also discuss our observations and analysis of the set of programs that we selected.

Approach

In the late summer and early fall of 2003, ACEEE issued a widespread "call for nominations" for exemplary natural gas efficiency programs via a number of channels, including:

- program contacts from our prior best practices project (completed early in 2003, this project included some programs that provided both electricity and natural gas efficiency, although most programs were electricity-only—see York & Kushler 2003);
- contacts with other organizations involved with energy efficiency programs and issues, for example, the Consortium for Energy Efficiency's Natural Gas Committee;
- contacts from participants in ACEEE events, such as the National Conference on Energy Efficiency As a Resource that was held in June 2003;
- contacts with energy efficiency program experts; and

- contacts made with regulatory staff as part of our survey work to identify states where natural gas efficiency programs are offered.

Compared to ACEEE's prior best practices study, this process was more focused on a specific pragmatic objective—identifying a set of programs that would serve as excellent models for other states and utilities to emulate if they were interested in initiating or expanding their natural gas efficiency efforts. Our mission was therefore somewhat narrower than in the previous project. In addition, the starting set of program possibilities is much smaller for natural gas programs as compared to programs that target electric end-use efficiency; there simply are fewer programs that address natural gas efficiency.

We sought programs specifically that address the primary consumer end-uses of natural gas: (1) space and water heating for buildings (residential and commercial); and (2) process heating for industry. We also sought programs illustrative of different types of organizations that fund, administer, and implement such programs (e.g., investor-owned utilities, municipal utilities, and state agencies involved in administering public benefits energy efficiency programs). We looked both for long-established and relatively new programs. We also looked for variety in the approaches and services offered to yield improved efficiency of natural gas end-uses.

After we had identified a set of candidate programs, which came via both external nominations and internal recommendations, we acquired basic information on each program. We asked for the following information to be included with program nominations:

- program name
- organization (administrator and/or implementor)
- contact person (program manager) name, phone number, and email address
- program synopsis/summary: customers served, services provided, history
- program results (participants, market share, energy impacts, etc.)
- reasons why program is exemplary

We supplemented this self-reported information with other independent sources, such as evaluation reports or surveys with recognized experts familiar with best practices.

ACEEE staff made the final selections of programs to feature in this report. We considered a number of criteria for our selections, namely:

- *Positive energy savings impact:* Demonstrated ability of the program to deliver substantial immediate or near-term therm savings from energy efficiency. Programs could be noteworthy due to overall total magnitude of impact (i.e., very large programs) or in terms of amount of impact per dollar spent (i.e., very cost-effective programs).
- *Replicability:* Programs that are well documented and have characteristics amenable to easily replicating the program design in other settings.
- *Evaluation results:* Programs that have used good quality *ex post facto* evaluation/verification methodologies to document savings impact and/or market effects achieved by the program received more favorable consideration than those for which good quality evaluation results were not available.

- *Qualitative assessment:* Achievements of the program in terms of noteworthy program implementation performance, customer participation, participant satisfaction, stakeholder support, etc. also were factors considered.

Results: Programs Selected

We selected a total of 29 programs to profile as representative of outstanding natural gas efficiency programs. We also selected 5 "special case studies" as noteworthy examples of comprehensive program portfolios and multi-party collaboratives. Together these 34 profiles paint a comprehensive picture of the types of programs available to provide to natural gas customers, from low-income single-family households to large industrial facilities. Table 3 provides a categorized list of the full set of programs selected in this project. Appendix B contains summary profiles of each program selected, including basic descriptions, backgrounds, results, lessons learned, and contact information.

Program Characteristics and Common Traits

Targeted End-Uses and Technologies

Residential. For residential customers, programs target the two primary natural gas end-uses: space and water heating. Technologies and measures for improving space heating efficiency include weatherization (reducing heat losses through the building envelope by reducing air infiltration and increasing insulation levels), installation of energy-efficient windows, duct sealing/insulating, high-efficiency furnaces and boilers, and improved controls, such as with set-back thermostats.

Measures to reduce natural gas use for water heating can either address hot water supply or domestic uses of hot water. Measures that can improve the efficiency of hot water supply include installation of energy-efficient water heaters, adding insulation to existing water heaters that are under-insulated, adding insulation to hot water supply pipes, and reducing set-points of water heaters. Measures to reduce demand for domestic hot water include resource-efficient clothes washers, energy-efficient dishwashers, faucet aerators, and low-flow showerheads.

Commercial/industrial. C/I efficiency measures offered by programs also target space heating and water heating, but also address process energy use, which can be the dominant end-use of energy for many C/I customers. For space heating, the primary technologies targeted are more efficient boilers and HVAC equipment, including control systems. In new construction, programs may target more efficient building envelopes and related means to reduce space heating demand.

Improving energy efficiency for process energy use also may involve improved efficiency of boilers and control equipment. Measures might also be promoted to reduce energy losses associated with end-uses, such as for gas-saving commercial kitchen exhaust hoods.

Table 3: Exemplary Natural Gas Energy Efficiency Programs

Program Name	Organization(s)	State or Province	End-Use Technologies	Services
Residential Retrofit				
HomeBase Retrofit Program	Vermont Gas Systems, Inc.	VT	Furnaces, boilers, water heaters	Technical services, financial incentives
Residential Weatherization Program	KeySpan Energy Delivery	MA, NH	Space heating	Weatherization
Home Performance with ENERGY STAR®	New York State Energy Research and Development Authority	NY	Whole house weatherization	Technical services, incentives and financing
Residential Audit				
Residential Home Performance Audit Program	CenterPoint Energy Minnegasco	MN	Space heating	Advanced energy audit, including infrared scan, combustion safety test and blower door testing
Residential Space Heating Equipment				
Joint Gas & Electric High Efficiency Furnace Rebate Program	GasNetworks®	MA	Space heating	Coordinated marketing and financial incentives for new product purchases
High Efficiency Furnace Program	NW Natural	OR	Space heating	Marketing, financial incentives
High Efficiency Furnace Programs	Gaz Métro	Quebec	Space heating	Marketing and incentives for replacement sales
HomeBase Equipment Replacement Program	Vermont Gas Systems, Inc	VT	Furnaces, boilers, water heaters	Financial incentives
Residential Windows				
ENERGY STAR® Residential Windows Program	Northwest Energy Efficiency Alliance	OR, WA, ID, MT	Space heating	Market transformation: marketing and working with manufacturers
Residential New Construction				
ENERGY STAR® Homes	Joint Management Committee (Massachusetts)	MA	Space and water heating	Marketing assistance, financial incentives, technical services
New Jersey ENERGY STAR® Homes	New Jersey Clean Energy Program	NJ	Space and water heating	Marketing assistance, financial incentives, technical services
Vermont ENERGY STAR® Homes	Efficiency Vermont and Vermont Gas Systems, Inc.	VT	Space and water heating	Marketing assistance, financial incentives, technical services

Program Name	Organization(s)	State or Province	End-Use Technologies	Services
Residential Low-Income Single Family				
Low-Income Gas Program	NSTAR Gas Company	MA	Space and water heating	Weatherization, heating system check, safety inspection
Non-Profit Affordable Housing Project	CenterPoint Energy Minnegasco, Habitat for Humanity, Project for Pride in Living, and the Greater Metropolitan Housing Corporation	MN	Space and water heating	Financial incentives for efficient mechanical equipment; training and education
Low-Income Usage Reduction Program (LIURP)	National Fuel	PA	Space and water heating	Heating system safety check, energy audit, education, weatherization, post-inspection
New Jersey Comfort Partners Program	New Jersey Clean Energy Program	NJ	Space and water heating	Weatherization, education, direct installation, safety test
Residential Multifamily				
Multifamily Low-Income Program	Efficiency Vermont, Vermont Gas Systems, Inc. and the Burlington Electric Department	VT	Fuel-blind, space and water heating	Technical assistance, financial incentives
Apartment and Condo Efficiency Services	Focus on Energy	WI	Space and water heating	Technical assistance, financial incentives
Residential Appliances				
ENERGY STAR® Products	Wisconsin Energy Conservation Corporation	WI	Residential appliances (water heating)	Marketing and incentives for new sales
Commercial/Industrial Technical Assistance and Demonstration				
New York Energy $mart^{SM} FlexTech Program	New York State Energy Research and Development Authority	NY	All NG and electricity end-uses	Technical assistance

Program Name	Organization(s)	State or Province	End-Use Technologies	Services
Multifamily and C&I Building Practices and Technology Demonstration Program	KeySpan Energy Delivery	MA	All NG end-uses	Financial incentives; technical assistance for technology demonstration
Commercial/Industrial Building and Equipment Retrofit				
WorkPlace Equipment Replacement Program and WorkPlace Retrofit Program	Vermont Gas Systems, Inc	VT	Space, water, process heating, HVAC	Technical assistance, financial incentives
Flexible Gas-Efficiency Portfolio Standard	Avista Utilities	WA	All NG end-uses	Financial incentives
Boiler Efficiency	Xcel Energy	MN	Boilers and boiler systems	Financial incentives
Custom Process Rebate	CenterPoint Energy Minnegasco	MN	Process equipment	Financial incentives
Commercial/Industrial New Construction				
New Jersey SmartStart Buildings®	New Jersey Clean Energy Program	NJ	All NG and electric end-uses	Financial incentives
Energy Design Assistance	Xcel Energy, the Weidt Group, Herzog/Wheeler & Associates	MN	All NG and electric end-uses	Technical assistance
WorkPlace New Construction Program	Vermont Gas Systems, Inc	VT	All NG end-uses	Technical assistance and financial incentives
Commercial/Industrial Small Business				
2002 Express Efficiency	Pacific Gas and Electric Company	CA	All NG and electric end-uses	Financial incentives
Special Case Studies: Comprehensive Portfolios and Collaboratives				
Large Utility Effort through Multiple Local Distribution Companies: *Comprehensive Program Portfolio*	KeySpan Energy Delivery New England	MA, NH	All NG end-uses	Technical assistance, financial incentives
Single Investor-Owned Utility: *Comprehensive Program Portfolio*	Vermont Gas Systems, Inc	VT	All NG end-uses	Technical assistance, financial incentives

Program Name	Organization(s)	State or Province	End-Use Technologies	Services
Municipal Utilities Collaborative Program: *Conserve & Save*	The Triad: Austin Utilities, Owatonna Public Utilities and Rochester Public Utilities	MN	All NG end-uses	Financial incentives for new product purchases
Multi-party collaborative: *Massachusetts Low Income Energy Affordability Network*	Massachusetts Department of Housing and Community Development in collaboration with KeySpan Energy Delivery New England	MA	Residential space and water heating	Full package of low-income services--including Wx
Regional Multi-Utility Collaborative: *Comprehensive Program Portfolio*	GasNetworks®	MA, NH	All NG end-uses	Technical assistance, financial incentives

Program Types

Residential. To address space heating, programs generally take one of three approaches: (1) services to reduce heat losses through the building envelope; (2) marketing and incentives to promote the purchase and installation of more efficient heating supply, delivery. and control systems; and (3) marketing, incentives, and training to increase the number of new homes constructed that are more energy efficient than "standard" construction. Home weatherization programs clearly fall into the first category, and such programs exist both for low-income households and as fee-based services within the markets for home heating products and services. Our profiles include examples of each of these types of programs.

Marketing and incentive programs for energy-efficient heating technologies are also common program approaches. We found numerous programs that provide direct financial incentives (rebates) to encourage customers to purchase energy-efficient furnaces and boilers. While clearly these incentives are important to program success, effective marketing is also key to program success to increase demand for these products and services. We also found training programs for both sales and technical staff often associated with these programs. Sales staff need to understand the benefits of the energy-efficient technologies and technical staff (such as equipment contractors) need training to be able to install and set-up the equipment properly so that the intended performance is achieved.

Residential new construction programs are the third broad category of programs offered to consumers. Such programs address "whole house" energy efficiency—building envelope, space heating systems, water heating, appliances, and lighting. Use of "ENERGY STAR®" for branding homes that meet the program's standards is a common feature of new homes programs.

Commercial/industrial. C/I programs parallel those for residential programs to a large degree. There are programs to (1) improve/upgrade efficiency of space and water heating systems and (2) improve whole building efficiency for new construction. Additionally, there are C/I programs that address process heating efficiency.

C/I programs typically blend technical assistance with financial incentives. They also often include training, which may be for building owners and operators, as well as equipment suppliers and contractors.

Company/Organization Types

As documented in other research, the landscape of organizations offering energy efficiency programs has undergone extensive change in many states and regions. This transformation continues. The organizations involved with the set of programs that we selected offer a snapshot of the growing diversity of organizations involved with natural gas efficiency programs. These include "traditional" investor-owned utilities, municipal utilities, large integrated energy companies with multiple local distribution companies, government agencies, nonprofit organizations, multi-party collaboratives, energy efficiency "utilities," and private contractors.

Approaches and Services Provided

We found that integrated packages of services are common among leading natural gas efficiency programs. This is true across program types, from those serving low-income residential households to those serving large industrial customers. The integrated package of services may include marketing and consumer education, technical assistance (audits, economic/technical analysis of efficiency options, design recommendations, etc.), financial incentives (principally rebates or financing), and follow-up quality assurance and verification of results. The best programs tend to have a single point of contact with customers, who in turn may access other program services and expertise as needed. But the customer may only work with a single person or small, well-coordinated team to access the full range of products and services available, rather than having to contact one person for one service and another for a different service.

Integration of services within a single program is common, but we also noted that this is a trait of entire portfolios of programs offered by single organization. Again, the emphasis is on having a single point of contact for program services from the customer's perspective.

Most residential programs tend towards a prescriptive approach to services, including financial incentive amounts, but programs that offer some degree of technical assistance may provide some flexibility for adapting to unique circumstances. For marketing and incentive programs, such as promotion of energy-efficient furnaces, generally the programs are entirely prescriptive; to get financial incentives, customers must purchase one of a set of qualified units.

C/I programs typically are more flexible and customized, particularly as a function of the size of the customer's demand. Small C/I programs tend to be more prescriptive, like residential programs, while programs targeting larger C/I customers tend to offer more custom options (such as incentives paid on the basis of an established $/therm savings). Flexible, customized

approaches are especially important for larger customers, who tend to have more unique needs than smaller customers.

Financial incentives are a common feature to affect customer purchase decisions for both residential and commercial/industrial customers. High-efficiency technologies for natural gas applications—furnaces, boilers, process equipment, controls, etc.—generally still carry a price premium over other technologies. While customers may recognize the long-term value of investing in the more efficient technologies, program experience is that financial incentives—principally rebates, although some below-market financing is also used—are still necessary to get customers to purchase these technologies. This seems to be true across customer types, from the homeowner replacing a furnace to the industrial facility manager replacing a boiler. As the markets for such technologies develop and mature, incentive levels may be reduced or even eliminated entirely. The efficiency of qualifying technologies and units also may be periodically ratcheted upward as "standard" equipment itself becomes more efficient, which may occur through adoption of standards or market forces.

Another common feature among leading programs is the prevalence of strategic partnerships and collaborations, which can improve program effectiveness and leverage resources. The most successful programs effectively work with key market actors—such as distributors, local suppliers/retailers, contractors, manufacturers, and allied organizations, such as government agencies, nonprofit service organizations, and trade groups.

Related to strategic partnerships and collaborations are training and education as part of the program services. Many of the programs selected in this study offer training and education for suppliers, retailers, and contractors—even for programs primarily offering financial incentives as their key service.

Evaluation

Evaluation is a critical element of successful programs. The programs selected and profiled in this study often represent several years of program evolution. The programs have used evaluations to assess performance and make improvements based on the feedback and analysis provided by such evaluations. Exemplary programs use evaluation strategically to support program goals and explicitly include evaluation plans within broader program plans. Early in a program's life, the emphasis may be on process evaluation—assessing the quality of services and customer response to them, while later in the program's life, the focus may shift to impact evaluation—measuring total energy savings and other indicators of program performance, such as market share.

Lessons Learned

Our review and analysis of programs selected and profiled in this study revealed a number of general lessons learned, including:

- Some newly created programs, as well as existing programs that were significantly "made-over," have achieved rapid success in the market.

- Some organizations have achieved success with a single program, while other organizations have achieved success with a comprehensive portfolio of programs and services. In the latter case, there likely are significant cross-over benefits from individual programs within the portfolio as customers have a greater number of options to meet their specific needs.
- A factor in the success of long-standing programs is that they have had time to develop, mature, and earn consumer confidence.
- Incentive levels need to be periodically evaluated—both from the perspective of changing avoided costs, but also relative to market conditions (including penetration rates and measure costs).
- The best programs work as a catalyst within the target markets by working with existing market participants to make them successful according to their own specific objectives.
- Regulatory support is a crucial factor in the success of natural gas energy efficiency programs, but is not the only motivation for regulated companies to offer programs. In many of the programs we profile, the companies also see value in helping their customers better manage costs and receive other benefits from energy-efficient technologies. In some cases, the companies themselves sought regulatory support of their programs in order to make them viable. To the extent that policy/regulatory interests and utility self-interest can be aligned, energy efficiency programs have a better chance of flourishing.

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CONCLUSIONS

Our research for this study shows that there clearly are a number of excellent programs being provided to natural gas customers to reduce their use of natural gas through efficiency improvements. Programs exist for all types of customers and for all principal natural gas end-use technologies. Some organizations offer comprehensive portfolios of services, while others may offer a single-focused program.

While we found many good models of natural gas efficiency programs worthy of emulation by others, we also found that such programs tend to be concentrated in a relatively few number of states. Natural gas customers in most states, unfortunately, do not have access to such programs, thereby limiting their ability to reduce their energy costs through improved efficiency. This lack of energy efficiency programs also seriously hinders the ability of states and utilities to respond to the problem of higher natural gas market prices. As just presented in a new ACEEE study (Elliott et al. 2003), aggressive but readily achievable reductions in natural gas use can produce significant reductions in the market cost of natural gas (on the order of 10 to 20%), thereby benefiting all customers and the economy as a whole.

The fact that natural gas efficiency programs tend to be concentrated in a relatively few states and regions means that there is a lot of room for expansion of such efforts, especially in light of impending natural gas price increases and possible supply constraints. Customers not currently served by programs will be looking for ways to reduce their energy costs as prices rise. The types of programs we profile in this study clearly offer tremendous opportunities for assisting customers in lowering their energy costs through efficiency improvements. Such programs demonstrate the real benefits of energy efficiency for individual customers, their utilities, and society as a whole.

RECOMMENDATIONS

Natural gas customers are facing rapidly rising costs. This has significant adverse effects on individual customers as well as the broader economy. We recommend creating and offering energy efficiency programs to customers in areas not presently served by such programs, and expanding such efforts in areas where only limited programs currently exist. Improved energy efficiency is a concrete step that customers can take to offset price increases, but decades of experience with natural gas customers suggests that they won't necessarily take such a step without facilitation via energy efficiency programs. Moreover, the natural gas price problem creates serious societal costs as well, which strengthens the rationale for affirmative government policies to help address this problem through energy efficiency.

Energy companies can take the initiative themselves to offer their customers programs, but they also need support from their regulators to make such programs a reality. Regulatory support may come from a variety of mechanisms, which include program cost-recovery through rates, financial incentives for meeting established performance targets, and perhaps some type of "lost revenue" recovery or decoupling of profits from sales volume.

Government agencies at the state or local level also can support, create, and implement programs to serve natural gas customers independently from utilities and other energy providers. We encourage states to consider enactment of public benefits programs to serve all energy customers, or to expand existing programs to include natural gas customers if they are not already included.

There is little time to spare to create and expand programs to serve customers presently not served by efficiency programs. Generally, financial incentive programs can be created and implemented rather quickly, while programs offering technical assistance and related services take more time to develop and implement. Energy companies and regulators should examine existing programs to look for opportunities to expand services and increase the reach and impacts of such programs.

The challenging natural gas market situation—higher prices and constrained supplies—is not likely to go away for years, if ever. Utility companies, governments, and related organizations should view natural gas efficiency programs as both a near-term and long-term element in an overall strategy of helping natural gas customers manage their energy costs, as well as helping our economy deal with higher market energy prices. Some actions can be taken now to address very near-term conditions, while other actions can be taken over the next few years to begin laying the foundation for long-term beneficial effects. This report presents many examples of successful energy efficiency programs that could be applied to each of those time frames.

REFERENCES

Abraham, Spencer. 2003. Letter to Senate Minority Leader Tom Daschle. June 6.

Cowart, Richard. 2001. *Efficient Reliability: The Critical Role of Demand-Side Resources in Power Systems and Markets*. Montpelier, Vt.: Regulatory Assistance Project.

Elliott, R.N., A.M. Shipley, S. Nadel, E. Brown, K. Petak, and J. Bluestein. 2003. *Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Kushler, Martin and M. Suozzo. 1999. *Regulating Electric Distribution Utilities as if Energy Efficiency Mattered.* Washington, D.C.: American Council for an Energy-Efficient Economy.

Kushler, Martin and P. Witte. 2001. *Can We Just "Rely on the Market" to Provide Energy Efficiency? An Examination of the Role of Private Market Actors in an Era of Electric Utility Restructuring.* Washington, D.C.: American Council for an Energy-Efficient Economy.

[NPC] National Petroleum Council. 2003. *Balancing Natural Gas Policy: Fueling the Demands of a Growing Economy*. Washington, D.C.: National Petroleum Council.

Reuters. 2003. *U.S. Report Seeks More Natural Gas Drilling on Government Land.* Reuters News Service, September 26.

York, Dan and M. Kushler. 2003. *America's Best: Profiles of America's Leading Energy Efficiency Programs.* Washington, D.C.: American Council for an Energy-Efficient Economy.

APPENDIX A: SUMMARIES OF STATE POLICY AND REGULATORY MECHANISMS

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: California

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—natural gas utility energy efficiency programs are required by statute in California. California Assembly Bill 1002 passed in 2000 established a gas public purpose surcharge to be administered by the CPUC.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—California Assembly Bill 1002 passed in 2000 established a gas public purpose surcharge to be administered by the California Public Utilities Commission in conjunction with existing energy efficiency programs. As of 2002, there is a separate line item per-therm surcharge on customer bills.

The public purpose gas surcharge is collected by the investor-owned utilities from each customer class under the direction of the California Public Utilities Commission. These revenues provide a secure stream of funding for natural gas energy efficiency programs.

Revenue collection is set on a forecast basis including forecast energy efficiency. Any actual collections over or under forecast are adjusted in the Biennial Cost Allocation Proceeding (BCAP).

Total funding for natural gas energy efficiency programs is approximately $45 million per year.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

No.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

No.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

There is also a separate public benefits funding mechanism in California that provides revenues for low-income energy efficiency programs.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

Cost-recovery to date has been satisfactory. No modifications have been made since implementation of AB 1002 by the California Public Utilities Commission.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Massachusetts

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

There is no statutory requirement, but the Massachusetts Department of Telecommunications and Energy (DTE) has required that gas companies implement energy efficiency programs in a series of company-specific decisions.

Unlike on the electric side, there is no statutorily set annual energy efficiency budget. Typically, efficiency plans and budgets are enacted through a company-specific, pre-approval process, usually resulting in a consensus settlement with regulators and other interested non-utility parties, including low-income customer representatives.

(See also response to #5 below regarding the Commonwealth RCS program.)

For key Massachusetts regulators see http://www.state.ma.us/dte (DTE) and http://www.state.ma.us/doer (Division of Energy Resources—DOER).

Another excellent resource is the GasNetworks website: www.gasnetworks.com. GasNetworks is an association of LDCs and interested participants, including regulators, that helps coordinate energy efficiency efforts and promotes energy-efficient technologies and best practices on a regional basis.

A number of the policies and philosophies underlying the DTE's support for energy efficiency are found in the generic D.P.U. 86-36 docket. Other important early orders include, The Berkshire Gas Company, D.P.U. 91-154 (October 6, 1992), Fall River Gas Company, D.P.U. 91-212 (1995), Boston Gas Company, D.P.U. 90-320, pp. 102–104 (1992), Commonwealth Gas Company, D.P.U. 91-60 (Phase II), pp. 68–71 (1992); Colonial Gas Company, D.P.U. 91-150, p. 67 (1992) and Boston Gas Company, D.T.E. 95-50, pages 174–192 (Phase I) (November 29, 1996).

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—program costs are typically recovered through a "conservation charge" (CC) mechanism and are based on a per-therm basis. Each company generally negotiates cost-recovery in its own settlement agreement, but all or nearly all Massachusetts LDCs use the CC mechanism. CC provisions are typically included as a component of an LDC's cost of gas adjustment rate schedule.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

Yes—some companies have incentive mechanisms included in their individual settlement agreements. Incentives are generally determined in accordance with the provisions of the DTE Incentive Guidelines established in docket D.T.E. 98-100.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

Yes—most companies have mechanisms in place for recovery of "lost revenues" from natural gas energy efficiency programs included in their individual settlement agreements. Recovery of lost margins is generally capped in accordance with the "Rolling Period Method" adopted in Colonial Gas Company, D.T.E. 97-112 (1999), which limits recovery of lost revenues to a period based on the average length of time between each of a company's last four rate cases.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

The state has a mandated Residential Conservation Service (RCS) audit program, originally enacted after the energy crisis of the late 1970s. This program is described in MG.L. c. 164, App. 2-1 et seq., 220 CMR 7.00 et seq., and 225 CMR 4.00 et seq. LDCs generally seek to coordinate their pre-approved energy efficiency programs that provide for the installation of major measures with the RCS program, which is separately funded through a (typically small) monthly surcharge on customer bills. The DOER actively manages the RCS program.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The overall cost-recovery/incentive system has generally worked well thus far. Individual companies typically negotiate cost-recovery mechanisms based on the individual company's circumstance. Recovery of lost revenues is a critical element for most LDCs, enabling such companies to address, at least partially, the sales reducing elements of environmentally beneficial energy efficiency programs.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Minnesota

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—Minnesota Statute 216B.241 requires investor-owned natural gas utilities to spend 0.5% of its gross operating revenues from service provided in the state on energy conservation improvements.

http://www.revisor.leg.state.mn.us/stats/216B/241.html

Minnesota's "Conservation Improvement Program (CIP) was enacted by the legislature in 1982, and has been providing for significant electric and natural gas conservation programs for over two decades.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—Minnesota Statute 216B.241, Subdivision 2b allows a utility to recover expenses resulting from a conservation improvement program required by the Department of Commerce. These expenses are typically recovered through a tracker mechanism where the Minnesota Public Utilities Commission approves the tracker balance on an annual basis. The tracker mechanism is trued up in a general rate case.

http://www.revisor.leg.state.mn.us/stats/216B/241.html

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

Yes—in December 1999, the Minnesota Public Utilities Commission approved a Joint Proposal for a Shared-Savings DSM Financial Incentive Plan that allows a utility to qualify for a financial incentive if the program significantly exceeds the statutory spending requirements and energy savings goals in a cost-effective manner.

Minnesota Public Utilities Commission Docket No. E,G999/CI-98-1759

http://search.state.mn.us/puc/query.html

Minnesota Statute 216B.16, subdivision 6(c) provides statutory criteria for determining if an incentive plan constitutes good public policy.

http://www.revisor.leg.state.mn.us/stats/216B/16.html

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

No—from 1992 through 1998, Minnesota allowed the full recovery of lost margins associated with energy savings resulting from the implementation of a conservation improvement program. In 1999, the Shared-Savings DSM Financial Incentive Plan replaced that mechanism.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

None.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The major gas utilities in Minnesota report that cost-recovery and recovery of requested lost margins and financial incentives has generally worked very well. CenterPoint Energy Minnegasco, the largest natural gas utility in the state, reports that all requested lost margins and financial incentives have been approved by the Minnesota Public Utilities Commission, and Xcel Energy reports that any cost-recovery denials have been minimal.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State*:* New Jersey

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—the 1999 Electric Discount and Energy Competition Act, N.J.S.A. 48:3-49 et seq. provided for a non-bypassable Societal Benefits Charge, a fee assessed by the energy utilities at the point of use for both natural gas and electricity. The Act established this funding for a minimum of eight years. Every four years though a proceeding and public hearing, the Board of Public Utilities is to establish the four-year funding levels for the program.

The first proceeding was initiated in February 1999 and resulted in an order in March 2001. The BPU set the funding for the first three years, determined the programs to be funded and the funding allocation among utilities, and set the initial program administration. The Order is dated March 9, 2001 and the docket is EX99050347. The BPU's website is www.bpu.state.nj.us. The information is provided under the Office of Clean Energy portion of the site.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—recovery is through the aforementioned SBC.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

Not currently—there used to be, however, the mechanism is for standard offer programs that no longer are accepting new projects. Under EDECA and the March 9, 2001 Order there is no such mechanism.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

Not currently—there is technically a mechanism available, but collection of lost revenue is dependent upon the BPU's acceptance of energy savings protocols that were filed in July of 2001. Approval of those protocols is still pending.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

None.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The utilities have petitioned the BPU to include performance incentives as a legitimate cost of the Clean Energy Programs. However, thus far there has not been any support for this concept. Further, because the energy savings protocols have not been finalized and approved by the Board, there has been no lost revenue booked. The issue of lost revenues will be reviewed again in the next Comprehensive Resource Analysis proceeding that will look at the next four years of the Clean Energy Program. This will be conducted in 2004. With administration of the energy efficiency programs moving to the BPU, the concept of performance incentives appears to be a dead issue.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Canadian Province of Ontario

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—extensive rules governing gas DSM in Ontario were laid out in an Ontario Energy Board order (EBO-169) in 1993.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—both Ontario utilities receive cost-recovery for DSM expenditures through annual rate cases. There has been a reliable mechanism for cost-recovery since the gas DSM programs were initiated in 1994.

In addition, one of the two major gas utilities in Ontario (Enbridge Gas Distribution, or EGD) has a DSM Variance Account. This allows the company to spend above its budget by up to 20%. It also ensures that any spending under budget that was rolled into rates can be recaptured for ratepayers.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

Only EGD has a shareholder incentive mechanism. The sole metric of performance is the present value of net economic benefits to ratepayers calculated using the total resource cost test. EGD's actual performance each year is compared to a target set for that year. After an audit of its savings claims, EGD's shareholders are awarded incentives equal to a percentage of all net benefits above the target.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

Both Ontario utilities receive compensation for lost revenues through a Lost Revenue Adjustment Mechanism (LRAM).

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

None.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The EGD incentive mechanism has been in place since 1999. Initially, the shareholder incentive limit was equal to 35% of all net benefits above the target. There was also a symmetrical penalty of 35% of all net benefits below the target.

Subsequently, the maximum value was reduced to 20%. It is believed that this was a result of two things: (1) ECG had earned substantial incentives for bringing in savings substantially above the target and some consumer groups (including industrial customers) were complaining; and (2) avoided costs went up, meaning that net benefits were higher even for the same level of incremental savings above the target.

Also, earlier this year there was a contentious case in which EGD was filing a claim for about $8 million (it was initially much higher, but brought down in settlement negotiations with several parties) in shareholder incentives for performance in 2000 and 2001. At the heart of the dispute was whether actual savings should be computed based on best available information and evaluation after the fact and still compared to a target that was built up using older assumptions. In particular, should custom commercial and industrial project savings be calculated using (1) a newly found 49% free rider rate for actuals and compared to a forecast based on a 10% free rider rate, or (2) the newly found 49% free rider rate for actuals with the target retroactively adjusted downward using the same 49% rate, or (3) both actuals and target calculated using the old 10% free rider rate?

One big problem contributing to this dispute was that key elements of the "rules" had not been clearly defined and spelled out, with all parties at least having a common understanding of what they were. Of course another factor was that some parties were concerned about the size of the incentive payments being claimed. In the end, the settlement agreement that EGD negotiated with the Green Energy Coalition and other parties was upheld by the OEB.

There is a fairly widespread consensus that the shareholder incentive mechanism has definitely motivated EGD to increase its energy efficiency efforts over the years it has been in effect.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Oregon

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—there is a state requirement for gas utilities to provide residential weatherization services to customers with natural gas space heat (ORS 469.631-645). The law requires utilities to provide free energy audits and options of 6.5% financing or 25% rebates on the installation of cost-effective weatherization measures.

Oregon regulators do have certain expectations for gas utility DSM programs, including energy efficiency and energy audits. The Oregon PUC conducts annual reviews of utility DSM programs each spring. Effective October 1, 2003, the state's largest natural gas utility (NW Natural) transferred its responsibility for energy efficiency and energy audits to the Energy Trust of Oregon (ETO), and will collect a specific tariff from customers to support those activities and transfer those revenues to the ETO. (Historically [1995-2003], energy efficiency activities were driven by Integrated Resource Planning and funded though a balancing account mechanism approved by the Oregon Public Utility Commission.)

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—the Oregon Public Utility Commission approved a balancing account mechanism to recover DSM program expense in 1993. Later, the commission approved a similar accounting mechanism to recover excessive costs of its weatherization program (beyond those funded in rates) when external factors like high commodity costs drove program participation above normal levels. For NW Natural, energy efficiency and low-income weatherization expenses will now be covered through a specific tariff (set at 1.25% of residential and commercial customers' monthly bill for energy efficiency programs and 0.25% for weatherization), with the revenues transferred to the Energy Trust of Oregon for implementation of non-low-income programs.

Oregon PUC Order No. 02-634, Sept. 12, 2002

The two smaller gas utilities in the state, Avista and Cascade Natural, continue to recover their energy efficiency program costs through deferred balancing accounts.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

No.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

There has been a mechanism in place as a part of the cost-recovery process that allows the recovery of lost revenues for the gas utilities. The mechanism no longer applies to NW Natural since it adopted a form of revenue decoupling ("Distribution Margin Normalization") as a part of the approved settlement agreement that transferred its energy efficiency responsibilities to the Energy Trust of Oregon. [order cited above]

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

The utilities are allowed to recover their energy efficiency expenditures over a shorter period than the lives of the measures, which had been the earlier approach to cost-recovery.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

Oregon's historical cost-recovery mechanism has worked well for all three natural gas utilities.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Vermont

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—Vermont has comprehensive legislation requiring utility least cost planning and energy efficiency programs [30 V.S.A. § 202a, 209, 218 etc.]. The specific requirements for Vermont Gas Systems (the only natural gas utility in Vermont) were established through Public Service Board order 5270-VGS-2, 10/23/92, which essentially approved the program design submitted by VGS (which had been developed through a collaborative process). 5270-VGS-2 also refers to exhibits and other orders in hearings for both Vermont Gas and Vermont's electric utilities that, together with 5270, form the basis for all of the mechanisms discussed below.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—DSM expenses are deferred between rate proceedings and then the deferred amounts are reviewed and, assuming they were appropriately incurred, approved for recovery in the context of the utility's rate cases.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

No.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

Yes—lost revenues are calculated for the period of time between rate cases. Essentially, lost revenue equals the retail rate less the avoided gas cost for gas that would have been sold absent efficiency programs. Lost revenues are reviewed and approved in the course of rate proceedings, amortized over three years, and collected in rates.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

Vermont also has a special support mechanism for low-income weatherization known as the Vermont Weatherization Trust Fund. It is funded through a ½% gross receipts tax on energy (electricity, gas, oil, propane, etc.) and is used to supplement the federal Weatherization Program funding. Most of the money goes to the Weatherization network, but utilities can file for recovery of low-income program expenses. The natural gas utility in Vermont (VGS) has used

this mechanism to help cover some of its costs related to low-income energy efficiency programs.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

Lost revenue calculations have been modified to exclude certain measures, but otherwise the process has remained essentially unchanged. In general, the process is regarded as being fair and balanced, although the review requires a significant amount of time and effort for both regulators and the utility during the rate proceeding.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Washington

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

There is no formal legislative requirement. However, state regulators (the Washington Utilities and Transportation Commission) do have rules requiring least-cost planning for both electric and gas utilities, and they do encourage all utilities to provide energy efficiency programs.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—cost-recovery mechanisms have been designed on a utility-by-utility basis in WUTC regulatory proceedings. Two natural gas utilities (Cascade Natural Gas and Northwest Natural Gas) recover prior-year actual costs through annual purchase gas adjustment (PGA) filings. The other two natural gas utilities (Avista and Puget Sound Energy) recover expenditures through separate surcharges to rates (e.g., conservation riders).

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

No.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

No.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

Commission regulations require "least-cost planning" for all utilities. These plans are required to incorporate an assessment of technically feasible improvements in the efficient use of gas and compare them to gas-purchasing options in order to develop a least-cost plan for meeting future demand. WAC 480-90-238

http://search.leg.wa.gov/wslwac/WAC%20480%20%20TITLE/WAC%20480%20-%2090%20%20CHAPTER/WAC%20480%20-%2090%20-238.htm

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The cost-recovery mechanisms have been very effective. The companies are able to recover their expenditures in a timely manner, which has allowed them flexibility to respond to changing market conditions with less regulatory risk than waiting for a rate case. The WUTC reports that the companies have successfully recovered all of their incurred program costs in recent years.

SURVEY OF STATE NATURAL GAS ENERGY EFFICIENCY POLICIES

State: Wisconsin

Overall policy and regulatory requirements

1. Is there a requirement for utility natural gas energy efficiency programs?

Yes—Wisconsin natural gas utilities have operated energy efficiency programs for many years. Legislation passed in 1999 (1999 Wisconsin Act 9) transferred responsibility for energy efficiency programs from the utilities (gas and electric) to the Wisconsin Department of Administration (DOA). After a three-year phase-in period, utilities (gas and electric) now transfer over all of the "Public Benefits" revenues they collect for energy efficiency to the DOA (see comments on customer service programs retained by utilities). The Public Service Commission of Wisconsin (PSCW), as prescribed in Act 9, determined the revenue amount to transfer based on 1998 utility program expenses. In addition, utilities collect a public benefits charge from all electric customers and also transfer these revenues to the DOA. Although those additional funds are collected only from electric customers, they also may be spent on gas energy efficiency programs for eligible customers. The DOA now administers energy efficiency programs statewide under its "Focus on Energy" program. The DOA offers a wide variety of programs, and does have both electricity and natural gas savings targets.

There is a component of the statutes—S.196.374(3)—that would allow utilities to spend additional funds on energy efficiency beyond what they are required to transfer over to the DOA, if their request for additional funding is approved by the PSCW. A few utilities offer some small "customer service" programs that include efficiency features. Also, one utility (Alliant Energy) has been allowed to maintain a large customer "shared savings" DSM program that includes natural gas measures.

Regulatory mechanisms for natural gas program costs and performance

2. Is there a mechanism in place for providing cost-recovery of program costs?

Yes—the statewide public benefits energy efficiency funding mechanism described above provides for an assured stream of revenues to support energy efficiency programs. In addition, utilities have the option of seeking approval to spend additional funds themselves on energy efficiency programs. Utilities recover their costs through the traditional ratemaking process, and are allowed to escrow these expenses, just as they did in the past. Use of a forward-looking test year allows utilities to forecast public benefits expenses and incorporate those costs into rates.

3. Is there a mechanism in place for utility shareholder incentives for natural gas efficiency program performance?

No—under the current framework, this would be inappropriate, since the energy efficiency programs are administered by the state. Previously, the PSCW had experimented with

shareholder incentives (increased allowable return on equity), but there was no consensus that such a mechanism was necessary.

4. Is there a mechanism in place for recovery of "lost revenues" from natural gas energy efficiency programs?

No—as described above, the combination of escrow accounting and forward-looking test years has tended to mitigate concerns utilities and the PSCW had about lost revenues. Wisconsin utilities were allowed to amortize DSM expenses in the past, but all costs are now expensed and trued up during each rate case.

5. If there are other regulatory mechanisms in place that help encourage utilities to provide natural gas efficiency programs, please briefly describe such mechanisms below.

The previously cited legislation (1999 Wisconsin Act 9) also established public benefit funding support for low-income programs, including weatherization services. Utilities also transfer funds for that program to the state DOA.

Experience to date

6. Please provide a brief summary of how the overall cost-recovery/incentive system has worked so far. Include a description of any modifications that have been made to the approach, and why.

The revenue collection method passed in 1999 Wisconsin Act 9 is a mechanism that should provide a solid foundation for support of energy efficiency programs in Wisconsin, but in practice has been subject to a number of practical challenges. Some utilities have balked at transferring all of the revenues they collect for energy efficiency over to the state. More importantly, in the last legislative session the legislature and governor took a significant portion of the forthcoming energy efficiency revenues (ranging from about a third to a half of the total funding) to help balance the state budget. At this point, there is some uncertainty about how best to protect the long-term funding of energy efficiency programs in Wisconsin and institutionalize those programs as a valuable planning resource.

Appendix B: Exemplary Natural Gas Energy Efficiency Programs

Program Name	Organization(s)
Residential Retrofit	
HomeBase Retrofit Program	Vermont Gas Systems, Inc.
Residential Weatherization Program	KeySpan Energy Delivery
Home Performance with ENERGY STAR®	New York State Energy Research and Development Authority
Residential Audit	
Residential Home Performance Audit Program	CenterPoint Energy Minnegasco
Residential Space Heating Equipment	
Joint Gas & Electric High Efficiency Furnace Rebate Program	GasNetworks®
High Efficiency Furnace Program	NW Natural
High Efficiency Furnace Programs	Gaz Métro
HomeBase Equipment Replacement Program	Vermont Gas Systems, Inc
Residential Windows	
ENERGY STAR® Residential Windows Program	Northwest Energy Efficiency Alliance
Residential New Construction	
ENERGY STAR® Homes	Joint Management Committee (Massachusetts)
New Jersey ENERGY STAR® Homes	New Jersey Clean Energy Program
Vermont ENERGY STAR® Homes	Efficiency Vermont and Vermont Gas Systems, Inc.
Residential Low-Income Single Family	
Low-Income Gas Program	NSTAR Gas Company
Non-Profit Affordable Housing Project	CenterPoint Energy Minnegasco, Habitat for Humanity, Project for Pride in Living, and the Greater Metropolitan Housing Corporation
Low-Income Usage Reduction Program (LIURP)	National Fuel
New Jersey Comfort Partners Program	New Jersey Clean Energy Program
Residential Multifamily	
Multifamily Low-Income Program	Efficiency Vermont, Vermont Gas Systems, Inc. and the Burlington Electric Department
Apartment and Condo Efficiency Services	Focus on Energy
Residential Appliances	
ENERGY STAR® Products	Wisconsin Energy Conservation Corporation

Exemplary Natural Gas Energy Efficiency Programs

Program Name	Organization(s)
Commercial/Industrial Technical Assistance and Demonstration	
New York Energy $mart[SM] FlexTech Program	New York State Energy Research and Development Authority
Multifamily and C&I Building Practices and Technology Demonstration Program	KeySpan Energy Delivery
Commercial/Industrial Building and Equipment Retrofit	
WorkPlace Equipment Replacement Program and WorkPlace Retrofit Program	Vermont Gas Systems, Inc
Flexible Gas-Efficiency Portfolio Standard	Avista Utilities
Boiler Efficiency	Xcel Energy
Custom Process Rebate	CenterPoint Energy Minnegasco
Commercial/Industrial New Construction	
New Jersey SmartStart Buildings®	New Jersey Clean Energy Program
Energy Design Assistance	Xcel Energy, the Weidt Group, Herzog/Wheeler & Associates
WorkPlace New Construction Program	Vermont Gas Systems, Inc
Commercial/Industrial Small Business	
2002 Express Efficiency	Pacific Gas and Electric Company
Special Case Studies: Comprehensive Portfolios and Collaboratives	
Large Utility Effort through Multiple Local Distribution Companies: *Comprehensive Program Portfolio*	KeySpan Energy Delivery New England
Single Investor-Owned Utility: *Comprehensive Program Portfolio*	Vermont Gas Systems, Inc
Municipal Utilities Collaborative Program: *Conserve & Save*	The Triad: Austin Utilities, Owatonna Public Utilities and Rochester Public Utilities
Multi-party collaborative: *Massachusetts Low Income Energy Affordability Network*	Massachusetts Department of Housing and Community Development in collaboration with KeySpan Energy Delivery New England
Regional Multi-Utility Collaborative: *Comprehensive Program Portfolio*	GasNetworks®