Testimony of

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On Behalf of the
American Gas Association

U.S. Senate Committee on Energy and Natural Resources

Hearing on
Energy Efficiency Resource Standard

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Executive Summary

- Natural gas is America's clean, secure, efficient, and abundant fossil fuel
- Residential natural gas consumers, who use the fuel for essential human needs, have a 30-year record of reducing consumption and greenhouse gas emissions
- History demonstrates that programmatic measures, such as appliance efficiency standards and building codes and standards, will lead to more certain emissions reductions than a cap-and-trade system
- Natural gas, because it has the smallest carbon footprint of any fossil fuel is part of the energy efficiency and climate change solution
- EERS seeks to reach a laudable goal, but the mechanism is less than perfect
- Utilities do not control their customers' consumption
- EERS does not take into account economic growth
- EERS does not take into account carbon-driven fuel switching
- The mechanism of EERS is potentially troublesome

Introduction

Thank you for the opportunity to testify before the committee. My name is Thomas E. Skains, and I am the Chairman, Chief Executive Officer, and President of Piedmont Natural Gas Company, located in Charlotte, North Carolina. Piedmont provides natural gas service to more than 1 million residential, commercial, industrial, and power generation customers as well as municipalities in North Carolina, South Carolina, and Tennessee.

I am testifying today on behalf of the American Gas Association (AGA), which represents 202 local energy utility companies that deliver natural gas to more than 65 million homes, small businesses, and industries throughout the United States. AGA member companies deliver gas to approximately 170 million Americans in all fifty states. Natural gas meets one-fourth of the United States' energy needs. I am the 2009 Chairman of AGA.

I am pleased to provide the views of AGA on the Energy Efficiency Resource Standard (EERS) concept. This concept is included in S. 548 offered by Senator Schumer, H.R. 889 offered by Chairman Markey, and the March 30, 2009 House Energy and Commerce Committee discussion draft offered by Chairmen Waxman and Markey.

In order for the committee to understand our views on the EERS we would like to provide a bit of background about natural gas, energy efficiency, and climate change. These provide the predicate for our views on EERS at the moment. It appears that the

EERS concept may yet be in its infancy, and AGA's views will undoubtedly change as the concept matures. Moreover, the EERS concept seems to be interwoven with the issue of carbon-regulation policy.

Natural Gas is America's Clean, Secure, Efficient, and Abundant Fossil Fuel

Natural gas is America's cleanest and most secure fossil fuel. Natural gas is essentially methane, a naturally-occurring substance that contains only one carbon atom. When burned, natural gas is the most environmentally-friendly fossil fuel because it produces low levels of unwanted byproducts (SO_x, particulate matter, and NO_x) and less carbon dioxide ($CO_{2)}$ than other fuels. Upon combustion natural gas produces 43% less CO_2 than coal and 28% less than fuel oil. Moreover, almost all of the natural gas that is consumed in America is produced in North America, either in the United States or Canada, with the vast majority of that being produced in the United States. Only a small portion—1 to 2%— is imported from abroad as liquefied natural gas.

Natural gas is also the most efficient of the fossil fuels. Approximately 90% of the energy value of natural gas is delivered to consumers. In contrast less than 30% of the primary energy involved in producing electricity reaches the consumer. Additionally, natural gas is an abundant fuel. Recent prodigious discoveries of shale gas have significantly added to this abundant resource base. Changes in economics and technology will continue to increase our resource base estimates in the future, as they have consistently done in the past.

Natural gas is used to meet essential human needs for small-volume customers. The majority of the homes in this country use natural gas, and in this sector 98% of all gas is used for space heating, water heating and cooking, while the remaining 2% is used for clothes drying and other purposes. This fuel is, therefore, used for essential human needs rather than for luxuries. Natural gas is, therefore, an essential fuel for America.

There are two important facts about natural gas that are either little known or often overlooked:

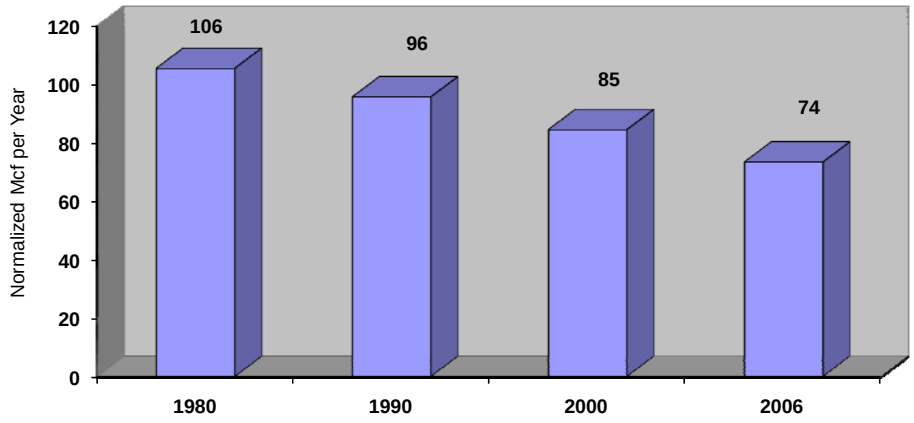
- **America's residential natural gas customers have led the nation in reducing their consumption of natural gas over the last 30 years and can continue, with appropriate policies, to reduce consumption further. It takes less natural gas to serve 65 million homes today than it took to serve 38 million homes in 1970.**

- **Natural gas is not part of the climate change problem; rather, it is part of the climate change solution because it offers an immediate answer with existing technology and has the smallest carbon footprint of all fossil fuels.**

Residential Gas Consumers Have an Unrivaled Record in Reducing Consumption Levels and Greenhouse Gas Emissions

Residential natural gas customers have consistently reduced their per-household consumption of this fuel—and the carbon emissions resulting from its use—for more than 30 years. On a national basis, residential customers have reduced their average natural gas consumption by approximately 30% since 1980. The success of residential and commercial natural gas consumers is illustrated by the fact that they have reduced their per-household consumption so dramatically that there has been virtually no growth in sectoral emissions in nearly four decades despite an increase in natural gas households of over 70%. Stated another way, total annual residential natural gas consumption is lower today than it was in the 1970s, despite the fact that the number of natural gas households has increased more than 70% from 38 million to 65 million. Consumption of natural gas in the residential sector, on a national average basis, is shown in the following graph:

NATURAL GAS USE PER RESIDENTIAL CUSTOMER IS DECLINING



Both research and anecdotal evidence make clear that there are proven drivers for reducing natural gas consumption and the carbon emissions associated with natural gas consumption—increased appliance efficiency and increased building efficiency, supplemented by a variety of education and incentive programs. AGA believes that pursuing appliance efficiency and building efficiency policies is the preferable, indeed optimal, means to achieve further reductions in consumption in this sector. We believe that this sector can continue its admirable record of reducing consumption by continuing an intensive focus upon energy efficiency and building codes and standards measures, which for three decades have led to dramatically reduced natural gas consumption (and emissions).

Unlike electricity, where there are a number of options for reducing consumption in the relatively near term, almost all natural gas in the home is consumed by furnaces, water heaters, and stoves—durable appliances with relatively long lives. While "dialing down" is certainly an option, it has its limits, and consumers have already dialed down dramatically with the natural gas price increases of this decade.

AGA and its members believe, of course, that both natural gas utilities and their customers should contribute to improving the nation's energy efficiency in order to meet the nation's goals of optimizing our resources, maximizing our energy independence, and reducing carbon emissions.. Our collective experience with energy efficiency, however, informs our view that natural gas residential and commercial customers can improve their performance through an array of programmatic measures.

The reductions in consumption per household experienced over the past three decades are largely attributable to tighter homes and more efficient natural gas appliances. These factors will undoubtedly provide the foundation for continued future reductions in consumption. Moreover, natural gas utilities are aggressively promoting decoupled rate structures that allow them to promote conservation and efficiency consistent with shareholder interests. Nearly 40% of all residential natural gas customers are served by gas utilities that have decoupled rates or that are engaged in state proceedings that are presently considering decoupled rates. Rate decoupling is important to energy efficiency because it breaks the link between utility revenue recovery and customers' energy consumption.

Using Natural Gas in Homes and Businesses is Part of the Energy Efficiency and Climate Change Solution

Many misguidedly believe that because natural gas is a fossil fuel it is one of the causes of greenhouse gas emissions and, as result, a contributing factor to climate change. In fact, however, natural gas is part of the climate change solution. As mentioned previously, natural gas is a fuel that emits low levels of traditional pollutants such as NO_x and SO_x. With regard to greenhouse gas emissions, natural gas, because it has only one carbon atom, emits less carbon when consumed than any other fossil fuel. As a result, natural gas has the potential to be a vehicle to move the nation toward its greenhouse gas reduction goals. For the same reasons, natural gas is an essential element in the push for optimizing our natural resources and increasing our energy efficiency.

There are significant differences in efficiency between natural gas and electricity. Approximately 90 percent of the energy value in natural gas is delivered to the home. With electricity less than 30 percent of the primary energy value reaches the customer. The largest difference in efficiency for electricity is lost as waste heat at the generating station, as well as line losses in transmission and distribution. These radically different efficiencies produce the significant differences in both efficiency and carbon emissions between electric and natural gas appliances.

The full potential for natural gas efficiencies is demonstrated most dramatically by the carbon footprint of the natural gas water heater. The average natural gas water heater emits approximately 1.7 tons of CO_2 per year. In contrast, the average electric water

heater results in more than twice as much—3.8 tons per year. The difference between the two could not be more dramatic, and it becomes a multiple of three when the comparison is made between a high-efficiency natural gas water heater and a high-efficiency electric water heater. These numbers are based on national averages, and, as a result, actual differences will vary from area to area.

The same differences in efficiency and emissions follow when comparing an all-electric home with a natural gas home. A typical all-electric home on average produces 10.8 tons of CO_2 per year, while an all-natural-gas home produces 7.2 tons of CO_2 per year. Again, these numbers reflect national averages, and actual experience will necessarily differ, but the order of magnitude of difference remains.

The plain consequence is that the nation can improve its overall energy efficiency as well as reduce its carbon footprint by opting for appliances that use natural gas in direct applications (*i.e.*, where the natural gas is used to heat air, water, or food). There is the opportunity, on a national basis, to improve efficiency dramatically and reduce carbon emissions by millions upon millions of tons if we utilize more natural gas directly in homes and businesses as the fuel for the future.

Converting small-volume customers to high-efficiency natural gas applications is one of the best ways available today to leap forward in efficiency and reduce greenhouse gas emissions. As the example above demonstrates, converting electric resistance water heaters to natural gas can increase efficiency and reduce greenhouse gas emissions by one-half to two-thirds. Doing so would have the benefit of reducing overall energy consumption, costs, and the need to construct new electricity generating plants—a critical problem in a carbon-constrained environment— and electric transmission lines.

The Energy Efficiency Resource Standard Provision Seeks to Reach a Laudable Goal but by a Very Imperfect Route

These two critical facts—the record of increasing efficiency and the inherent efficiency of natural gas—provide the prism through we must necessarily view a proposal such as EERS.

AGA and its member companies are committed to continuing to press for energy efficiency, in order to save our customers money, to maximize the utility of our natural resources, and to reduce the carbon emissions of our nation. As noted above, there is a growing, and accelerating, trend toward decoupled natural gas utility rates. Such approaches, by breaking the link between customer energy consumption and utility revenues, help utilities become full partners in the quest for energy efficiency. Moreover, most natural gas utilities today participate in, or even operate, energy efficiency programs. On a national scale they collectively deployed $500 million in 2007 for this purpose—an amount that we expect to double in the next several years.

Furthermore, as discussed above, natural gas residential and commercial customers have led the way in efficiency and carbon-reduction over the last thirty years. These customers have reduced their annual consumption by 1% or more annually from 1980 to

2000 and about 2% annually since 2000. AGA member companies will continue to work with their customers to ensure a continuation of this trend, although it will become increasingly difficult to do so as the least costly measures have, in many cases, already been taken. We believe that the goals of a program such as EERS would be best met through universally applied building codes and appliance standards, supplemented by a variety of education and incentive programs.

In contrast to the preferred programmatic approach discussed, the EERS proposals would establish an "energy efficiency resource standard" for both electric utilities and natural gas utilities. As it would apply to natural gas utilities, the EERS would, in the most basic terms, require the customers of a natural gas utility to reduce their consumption of natural gas by 10% between 2012 and 2020 or the utility will be required to pay a penalty (of either $5 or $10 per MMBtu) for each MMBtu by which they fall short of the target.

While the energy efficiency goal is laudable, the construct of the proposed EERS is fraught with problems. Unfortunately the conversation on this topic has, to this point, largely occurred among proponents of the idea. A serious and thorough vetting of such a dramatic proposal will be necessary by all parties interested in advancing energy efficiency. Such a program can only be workable, if at all, with significant input from the natural gas utilities involved. If adequate federal and state funding is available, local gas utilities are positioned to work with the states and their customers to develop and implement effective energy saving programs. However, for this approach to be successful, utilities must be allowed to earn a return for their contributions, not merely be subject to penalties.

AGA suggests that the proposed means (as outlined in the current EERS proposals) to the desired end is a minefield for both utilities and their customers. While we will not enumerate all the difficulties, we will outline below a few that should suffice to illustrate that this concept still needs further in-depth analysis before becoming a policy pillar that can be relied upon in the quest to increase energy efficiency and reduce carbon emissions. Additionally, the discussion above should make clear that, from 30 years of experience, we have a wealth of knowledge as to the programmatic measures that can be employed to reach the desired end of increased energy efficiency.

Utilities Can Influence, But Do Not Control, the Consumption Levels of Their Customers

The fundamental scheme of the EERS is that customers must reduce their consumption, and natural gas utilities must pay the penalty if they do not. Without question there are many actions that natural gas utilities can take—and do take—to encourage energy efficiency. But they cannot adjust customers' thermostats, close open windows, or unilaterally install additional insulation or new appliances in their homes. While utilities can influence the conduct of their customers through education and publicity campaigns, appliance rebate and weatherization programs, incentives for efficient appliances, and the like (all of which is subject to approval or oversight by the state public utility commissions having jurisdiction over the utilities), they cannot control the actions of their customers, which is what is ultimately measured by the EERS

mechanism. AGA believes that sound policy argues instead for a program that provides carrots, not sticks, for the entities whose behavior is to be influenced. If the goal is to reduce energy consumption, the policy mechanisms to be employed should focus on the efficiency drivers that have proven successful in the past and are likely to be so in the future. This lack of control is further exacerbated in the industrial market, where most customers are sophisticated energy consumers who do not purchase their gas supplies from the utility and are thus transport-only customers.

The EERS Fails to Account for the Needs of Economic Growth and Development

One of our national goals is certainly to facilitate a growing and vibrant economy and the jobs that necessarily follow from that. A growing economy requires that America's energy industries expand to meet the needs of that growing economy—both businesses and citizens. Moreover, as a matter of national policy we should be seeking to attract new industry to the United States, both for the jobs it provides as well as the stimulative effect on the economy as a whole. The concept of the EERS, as well as the construct used for it here, runs contrary to these overarching national goals. Energy efficiency standards should ensure that each consumer uses energy wisely but should not restrict economic development and growth in our country. Any EERS should accommodate energy demand by new homes, businesses and manufacturers.

As drafted, the EERS provision calls for a 10% decrease in consumption by natural gas utility customers by the year 2020 that is above business as usual and that has a causal relationship to the utility's actions. The reduction is to be achieved by all customers taken as a group (although excluding electric generation customers). In a number of areas of the United States, population is growing and the economy has been expanding over the last decade or so. As now framed the EERS provision would appear to place these utilities in a very difficult position in terms of achieving the goal of the 10% reduction.

AGA recognizes that the EERS mechanism attempts to utilize some sort of comparative mechanism, analyzing a base case against actual experience. This is troublesome in its own right, but even if it were to be employed, the practical difficulty is that a utility will be faced with ensuring the accuracy of its base case as to projected customer growth or face else an *ex post facto* penalty. This hardly seems fair, and it does not appear to be a wise grounding for what will ultimately be an important efficiency policy.

The EERS Fails to Account for Carbon-Driven Fuel Switching

Some proposals, such as that by Chairmen Waxman and Markey in the House, would overlay EERS on a cap-and-trade scheme. This is something of a two-fisted approach with a definite potential for conflict and unintended consequences. AGA urges the Congress to give careful thought to whether an EERS together with a cap-and-trade scheme will result in conflicting goals.

One particular instance greatly concerns AGA. If we assume that the nation adopts a cap-and-trade (or some other) carbon regulation system in the near future, the result,

when implemented, will be to place a price on carbon. When carbon markets are functioning efficiently, at least in the relatively near term, residential customers will begin to recognize that by shifting their water heating, space heating, and cooking to natural gas (where such service is available) they will save money and reduce CO_2 emissions. This will result from the fact that natural gas will have a lower carbon output and price than electricity in most areas. Moreover, we expect that states, for a variety of reasons (state carbon footprint, the job development aspects of reasonable energy prices, and the need to minimize new, expensive electric capacity), will encourage customers to migrate toward direct natural gas appliances. In any event, for whatever reason undertaken, we believe that these trends are likely and that the result will be a good one: lower overall energy consumption, energy costs, and carbon emissions for the United States.

Under the EERS, however, the natural gas utility would pay the financial penalty because its customers will have increased their usage of natural gas instead of reducing it, all in order to achieve greater overall energy efficiency, lower energy bills, and reduced carbon emissions. This hardly seems like the outcome we should be seeking to achieve. It is, moreover, plausible—indeed likely—that where the goals of a cap-and-trade system and EERS overlap they will produce conflicting results. Given the complexity of the two regulatory schemes, we do not think that this is the only scenario in which the two systems may collide.

The Mechanics of the EERS are Problematic

The EERS seems to be grounded, to one extent or another, in a concept of energy savings that are the "result" of, or "caused" by, specific actions of one kind or another. This approach is problematic in that it is unduly vague and susceptible to widely differing interpretation and application. For example, assume a home owner reduces consumption of natural gas. Was this caused by a utility program for weatherization or the fact that children grew up and left home for school? These types of imponderables are numerous within the scheme of these provisions. It must be understood and appreciated that natural gas utilities have limited knowledge about what goes on "behind the meter" – we do not have the ability or the right to obtain perfect information inside the home or business.

Some of the EERS constructs involve a comparison between a "business-as-usual" projection and measures implemented after the bill becomes law that "cause" natural gas savings. Projecting a "business-as-usual" scenario into the future (especially if a new scheme of carbon regulation has been implemented) could be dicey to say the least. Will DOE issue regulations providing detailed guidance as to how this should be done? How will projections of economic growth and development be factored into this "business-as-usual" scenario? How will natural gas utilities predict the degree of fuel switching to natural gas resulting from pricing the externality of carbon? What will be the factors to determine whether "savings" resulted from utility actions?

At its core, these aspects of this proposed mechanism are troublesome and, frankly, strike fear in the hearts of AGA member companies when the risk of error, misjudgment, or interpretation is a penalty (or stick) of a per-MMBtu penalty. In the end, predictions can only be correct as a matter of accident. Given this truism, it is fundamentally unfair to

have the Damocles sword of this penalty provision hanging overhead, perhaps with the penalty determination ultimately made, long after the fact, by an individual in the depths of a federal agency. Again, we think sounder policy is to identify the goal and provide incentives to reach it rather than *ex post facto* penalties for failing to achieve it.

For years after 2020 DOE may set future years standards that turn on "cost-effective energy efficiency potential." Yet "cost-effective" is defined so broadly as to be nearly meaningless.

We could go on in enumerating concerns with the EERS methodology employed in the bills that we have reviewed. The examples given above, however, amply demonstrate that this is a thicket into which we should not wander. As AGA has stated in many forums, if the ultimate goal is to increase energy efficiency and achieve greenhouse gas reductions—and surely it is—then we have an ample record on how to reach that end.

The goals of the EERS provisions are laudable ones; with the correct complementary market incentive policies, they are in all likelihood achievable without the need to resort to punitive penalties. AGA commits to work with Congress to develop a suite of policies that can achieve this result.

AGA and its members appreciate the opportunity to present their views on these important subjects. We look forward to working with the committee and its staff to be a constructive voice in this important national conversation.