Before the
Tennessee Regulatory Authority

Docket No. 11-_____

Petition of Piedmont Natural Gas Company, Inc. for an Adjustment to its Rates, Approval of Changes to Its Rate Design, Amortization of Certain Deferred Assets, Approval of New Depreciation Rates, Approval of Revised Tariffs and Service Regulations, and Approval of a New Energy Efficiency Program and GTI Funding.

Testimony and Exhibits
of
Daniel P. Yardley

On Behalf Of
Piedmont Natural Gas Company, Inc.

Piedmont Natural Gas

September 2, 2011

BEFORE THE
TENNESSEE REGULATORY AUTHORITY

PREPARED DIRECT TESTIMONY OF DANIEL P. YARDLEY

PIEDMONT NATURAL GAS COMPANY, INC.

Q. Please state your name, affiliation and business address.

A. My name is Daniel P. Yardley. I am Principal, Yardley Associates and my business address is 2409 Providence Hills Drive, Matthews, North Carolina 28105.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Piedmont Natural Gas Company, Inc. ("Piedmont" or the "Company").

Q. Please provide a brief outline of your professional and educational background.

A. I have been employed as a consultant to the natural gas industry for the past 20 years. During this period, I have directed or participated in numerous consulting assignments on behalf of local distribution companies ("LDCs"). A number of these assignments involved the development of gas distribution company cost allocation, pricing, service unbundling, revenue decoupling and other tariff analyses. In addition to this work, I have performed interstate pipeline cost of service and rate design analyses, gas supply planning analyses, and financial evaluation analyses. I received a Bachelor of Science Degree in Electrical Engineering from the Massachusetts Institute of Technology in 1988.

Q. Have you previously testified before the Tennessee Regulatory Authority and other regulatory bodies concerning rate and regulatory matters?

A. Yes. I have testified in over 25 proceedings before public utility commissions in various states and before the Federal Energy Regulatory Commission. The subject matters addressed in my testimony in these proceedings include cost of service, cost allocation, cost recovery and rate design, revenue decoupling and capacity planning. A summary of my previous expert testimony is provided as Attachment A.

Q. What is the purpose of your direct testimony?

A. I have been asked by Piedmont to evaluate the manner in which it recovers its base distribution revenue requirements from customers and to propose changes that are consistent with the nature of the services it provides as well as important policy objectives. In this regard, my testimony addresses three topics. First, I will explain significant industry developments that are guiding important changes in the way regulatory agencies and LDCs are approaching rate design matters. Second, I will support the derivation of specific rates and charges for distribution service that fairly apportion the Company's revenue requirement among customer classes and among various rate elements within each class. The new prices are based on appropriate rate design considerations including the results of an allocated cost of service study ("ACOSS") performed in a consistent manner with other elements of the Company's filing. Third, I will derive prices for a new service offering to meet the requirements of Natural Gas Vehicles ("NGVs") and NGV fueling stations.

Q. Please summarize your findings.

A. The five principal conclusions of my testimony are as follows:

(1) **The natural gas industry is progressing through a period of changing industry fundamentals and realignment of public policy objectives:** The environmental benefits of burning natural gas relative to other fossil fuels has led to dramatic increases in natural gas fired electric generation. While this contributed to dramatic changes in market prices for a period of time, recent

advancements in extraction techniques have significantly increased the availability of supplies. Public policy initiatives continue to promote greater efficiency as a way to mitigate potential climate change concerns. These initiatives along with customer efforts to manage energy costs are contributing to declining use-per-customer in traditional residential and commercial markets.

(2) **Piedmont's existing rate structure provides incentives to increase throughput:** The vast majority of the Company's distribution costs are fixed, while a substantial portion of the Company's margin recoveries are through variable charges based on customer volumes or usage. The linkage between margin recovery and customer usage creates incentives for Piedmont to grow throughput as a means of improving the opportunity to earn its authorized rate of return.

(3) **Reducing the link between throughput and base revenue recoveries is necessary to begin aligning the Company's rate structure with National and State public policy goals:** Public Utility Commissions across the United States are placing increasing emphasis on the role that utilities provide in promoting the most efficient use of natural gas and electricity by consumers. The result has been a broad reevaluation of rate design in order to remove the existing throughput incentive that is at odds with efficiency goals. Recent legislation in the State of Tennessee also establishes public policy that encourages the Tennessee Regulatory Authority (the "Authority") to adopt rate design approaches that align utility financial interests with those of their customers.

(4) **Existing monthly fixed customer charges for the majority of Piedmont's customers are substantially below cost-based levels:** The customer charges for residential customers are approximately 32% of corresponding customer-related costs. Similarly, customer charges for the majority of general service customers are approximately 40% of customer-related costs. The below-cost customer charges result in intra-class subsidies as substantial customer-related costs are recovered through delivery charges applicable to customer throughput. This shifts a disproportionate share of customer-related costs to larger customers within a class.

(5) **Piedmont's rate design proposals achieve important benefits while maintaining acceptable bill impacts:** The increased monthly fixed customer charges resulting under Piedmont's proposed rate design are necessary to reduce the link between customer throughput and base revenue recovery and promote fairness. Bill impacts for all customers under the proposed rates are maintained at reasonable levels by limiting the overall rate change to each class.

Q. Are you sponsoring any exhibits that accompany your prepared direct testimony?

A. Yes. I am sponsoring the following ten exhibits, which will be explained later in my testimony:

Exhibit DPY-1:	Joint Statements of the American Gas Association and the Natural Resources Defense Council
Exhibit DPY-2:	National Action Plan for Energy Efficiency - Executive Summary Documents
Exhibit DPY-3:	National Association of Regulatory Utility Commissioners Resolutions on Energy Efficiency and Rate Design
Exhibit DPY-4	Earned Rate of Return by Customer Class
Exhibit DPY-5:	Allocated Cost of Service Study
Exhibit DPY-6:	Comparison of Monthly Customer Charges and Costs
Exhibit DPY-7:	Residential Bill Impacts Associated with Proposed Rate Changes
Exhibit DPY-8:	Summary of Existing and Proposed Rates and Revenues
Exhibit DPY-9:	Comparison of Class-Specific Rates of Return at Present and Proposed Rates.
Exhibit DPY-10:	Derivation of Proposed NGV Service Delivery Charge

RATE DESIGN POLICY BACKGROUND

Q. What critical energy issues are facing policy makers today?

A. Heightened environmental concerns and the potential for increased climate risks attributed to various human activities, including energy consumption, are leading to a broad reevaluation of potential means to reduce carbon emissions. A common concern being weighed by policy makers is that the economic consequences of alternative consumption decisions are not fully reflected in prices paid by consumers.

Policy makers are increasingly focused on promoting greater energy efficiency and use of renewable alternatives as the primary facets of new energy policy initiatives. These actions are intended to achieve a number of important benefits including the

potential to reduce emissions and long-run energy costs for consumers. However, there are significant technological, market and regulatory challenges to achieving the full potential that policy makers and their constituents are calling for. Among these are the need to commercialize new technologies for to consumers and to provide better information regarding energy consumption choices that they make. Many of these challenges are receiving significant focus throughout the U.S., particularly at the state level.

Q. Has Tennessee taken any steps to respond to these challenges?

A. Yes. A State task force on energy policy developed recommendations on matters related to energy efficiency and related matters that eventually contributed to various Tennessee Legislative Acts adopted into law. These included the Clean Energy Future Act of 2009[1] that amended various sections of the Tennessee Code Annotated to promote beneficial changes in energy use.

The Legislature also passed legislation that established a ratemaking policy that seeks to align utility incentives with helping customers use energy more efficiently. The following policy statement clearly identifies the relationship between a utility's financial incentives and those of its customers:

> The general assembly declares that the policy of this state is that the Tennessee regulatory authority will seek to implement, in appropriate proceedings for each electric and gas utility, with respect to which the authority has rate making authority, a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provides timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings, in a way that sustains or enhances utility customers' incentives to use energy more efficiently. *Public Chapter 531 (2009), codified at Tennessee Code Annotated §65-4-126.*

[1] *Public Chapter 529 (2009).*

This legislation was signed into law in June 2009 and brings the importance of rate design to the forefront of Tennessee's energy policy. Specifically, that alignment of utility and customer incentives is essential to achieving more efficient use of energy and realizing the associated benefits for citizens of Tennessee.

Q. How does rate design impact the success of energy efficiency initiatives?

A. From a public policy perspective, rate design is a critically important tool for achieving specific energy policy goals that influence the quality of life for Tennessee's citizens and the State's competitive position. Policy goals affected by rate design include end-use fuel mix, energy efficiency and the resulting environmental and cost impacts of energy consumption. Therefore, the form of a utility's rate structure is an important building block that can contribute to achieving important goals that are presently at the forefront of Tennessee's energy policy agenda.

The nexus between rate design and energy policy objectives is receiving increased attention throughout the U.S. as a result of the prevalence of usage-based rate designs. Usage-based rate designs recover a substantial portion of LDC fixed-cost revenue requirements through variable charges applied to the amount of natural gas consumed by customers. The inherent operating incentives under this form of rate structure are for the LDC to add new customers and to promote increased consumption by its existing customers.

While growing natural gas loads through the addition of new customers is consistent with public policy favoring the direct and most efficient use of clean-burning natural gas, the incentive to increase consumption by current customers is at odds with other public policy goals that favor energy conservation and reductions in customer energy bills. LDCs such as Piedmont are promoting increased energy efficiency to their

customers; however, LDCs also have fiduciary responsibilities to shareholders, regulators and customers alike that prevent them from fully embracing the energy efficiency imperative while they continue to operate under a usage-based rate design. Clearly, the existing rate design outcome is at odds with the objective of reducing consumption under longstanding rate design approaches. Recognition of this substantial concern associated with traditional usage-based rate design is leading to the adoption of innovative rate designs that sever the link between customer consumption and utility revenues.

Q. Do Piedmont's rates reflect a traditional throughput-based rate design?

A. Yes. The Company's rate structure for the vast majority of customers follows the traditional model. While the rates for all customers include a combination of fixed monthly charges and usage-based or variable charges, typically, well over half of base distribution revenues are derived from the variable charge components and are directly linked to customer usage patterns. Base distribution revenues, sometimes referred to as margin revenues, are revenues received through base rates that recover a utility's cost of service, excluding purchased gas or other tracked costs. Under current rates, base revenues from variable charges accounted for nearly 70% of the Company's total base revenue recoveries. This indicates a significant dichotomy between the manner in which Piedmont incurs costs and how costs are recovered from customers.

Q. Were circumstances any different when these types of rate designs were first implemented?

A. While energy efficiency has always been an important element of regulated energy delivery services, the public policy objectives were different in years past, particularly in the natural gas distribution sector. The traditional approach to rate design found in many jurisdictions today reflects historical industry drivers and market

conditions. The U.S. natural gas delivery system underwent a period of broad expansion that lasted for decades following World War II. This expansion, enabled by advances in metallurgical technologies and welding techniques, brought the benefits of reliable, affordable and clean-burning natural gas to millions of households and businesses throughout the U.S., including Tennessee. Public policy promoted the expansion of natural gas infrastructure and additional penetration of natural gas into more homes and for additional end-uses. This public policy was reflected in throughput-based rate designs as expanding systems and growing loads allowed an LDC's fixed costs to be spread over greater levels of billing units, lowering average costs to consumers.

The historical period up to and including the 1990s was also characterized by relatively low and stable natural gas commodity prices, which in turn contributed to reasonably stable customer consumption patterns. Although many existing appliances were replaced with more efficient ones, customers continued to add burner-tips over this timeframe as natural gas market share grew in many end-uses, including water heating and space eating.

Traditional usage-based rate designs were appropriate under the circumstances in which they were developed. However, the present imperative to promote increased energy efficiency in order to lower customer bills and reduce carbon emissions calls for a reordering of priorities. One of the outcomes of this process must be the supplanting of traditional rate designs with new approaches that remove the financial incentive for LDCs to promote increased consumption.

Q. Why do you believe that the approach to rate design is so important to achieving public policy objectives that seek to promote increased energy efficiency and reduced greenhouse gas emissions?

A. The utility plays a critically important role in reaching technically achievable reductions in energy consumption. This occurs both with respect to resource planning activities as well as the ability to influence consumer behavior. Yet, the existing rate design approach, which unequivocally incentivizes utility behavior, links its ability to recover authorized revenues to customer sales or throughput. Specifically, eliminating or materially reducing the existing throughput incentive is necessary to unlock the potential for utilities to play a significant role in advancing Tennessee's energy policy and to promote more robust energy efficiency and conservation programs.

Q. What level of interest is there in reexamining traditional approaches to rate design?

A. Rate design is receiving increasing focus and attention for the reasons I noted. A number of agencies, industry and environmental associations, and ad hoc groups, recognize the growing need to move away from traditional throughput-based rate designs and are calling for changes to gas utility rate structures.

The American Gas Association ("AGA") and the Natural Resources Defense Council ("NRDC") issued a joint statement in July 2004 on energy efficiency issues. The joint statement concluded:

> When customers use less natural gas, utility profitability almost always suffers, because recovery of fixed costs is reduced in proportion to the reduction in sales. Thus, conservation may prevent the utility from recovering its authorized fixed costs and earning its state-allowed rate of return. In this important respect, traditional utility rate practices fail to align the interests of utility shareholders with those of utility customers and society as a whole. This need not be the case. Public utility commissions should consider utility rate proposals and other innovative programs that reward utilities for encouraging conservation and managing customer bills to avoid certain negative impacts associated with colder-than-normal weather. There are a number of ways to do this, and NRDC and AGA join in supporting mechanisms that use modest automatic rate true-ups to ensure that a utility's opportunity to recover authorized fixed costs is not held hostage to fluctuations in retail gas sales.

The AGA and NRDC issued a second joint statement in May 2008 further emphasizing these recommendations based on experience gained since the first statement was issued. In May 2008, the AGA and NRDC recommended the following:

> Today, AGA and the NRDC again urge state public utility commissions and officials responsible for publicly-owned natural gas distribution systems to actively support natural gas utilities' energy efficiency proposals that use automatic rate true-ups to ensure a utility's opportunity to recover its authorized fixed costs. We also urge state public utility commissions that have adopted such programs on a trial basis to make longer term commitments.

The full text of the 2004 and 2008 joint AGA/NRDC statements are provided as Exhibit DPY-1.

Q. Please explain how the Public Utility Regulatory Policies Act ("PURPA") amendments address these matters.

A. In conjunction with the adoption of the Energy Independence Security Act of 2007, the United States Congress amended PURPA by requiring state regulatory commissions to consider additional PURPA standards. One of these standards applied to the impact of rate design impacts on natural gas utilities, which is as follows:

> RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY INVESTMENTS –
>
> (A) IN GENERAL- The rates allowed to be charged by a natural gas utility shall align utility incentives with the deployment of cost-effective energy efficiency.
>
> (B) POLICY OPTIONS- In complying with subparagraph (A), each State regulatory authority and each nonregulated utility shall consider—
>
> (i) separating fixed-cost revenue recovery from the volume of transportation or sales service provided to the customer;
>
> (ii) providing to utilities incentives for the successful management of energy efficiency programs, such as allowing utilities to retain a portion of the cost-reducing benefits accruing from the programs;

(iii) promoting the impact on adoption of energy efficiency as 1 of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives; and

(iv) adopting rate designs that encourage energy efficiency for each customer class.

In TRA Docket No. 09-00065, the Authority determined that it would consider implementation of this PURPA standard in utility-specific proceedings.

Q. Please describe any other important developments with respect to evaluation of rate design approaches.

A. Perhaps the most significant and influential activities are associated with the National Action Plan for Energy Efficiency (the "National Action Plan"), an initiative facilitated by the Department of Energy and the Environmental Protection Agency. This effort is of particular importance given the broad array of industry participants that endorsed its recommendations.

The National Action Plan is advancing public policy for two important reasons. The first is that broad input was sought in formulating a comprehensive strategy. The second is that the report's findings were structured to be actionable by stakeholders who are in a position to influence the direction of investment and participation in energy efficiency in order to meet the challenges at hand. The initial report released in July 2006 has been followed up with a series of regional implementation meetings and further studies of critical issues.

One of the five principal recommendations advocated by the National Action Plan is the adoption of policies that modify rate design in a manner that aligns utility incentives with the adoption of energy efficiency measures. The July 2006 plan included the following recommendation:

> Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments. Successful energy efficiency programs would be promoted by aligning utility incentives in a manner that encourages the delivery of energy efficiency as part of a balanced portfolio of supply, demand, and transmission investments. Historically, regulatory policies governing utilities have more commonly compensated utilities for building infrastructure (e.g., power plants, transmission lines, pipelines) and selling energy, while discouraging energy efficiency, even when the energy-saving measures might cost less. Within the existing regulatory processes, utilities, regulators, and stakeholders have a number of opportunities to create the incentives for energy efficiency investments by utilities and customers.

The executive summary of the National Action Plan is attached as Exhibit DPY-2. In addition, a follow-up report issued the following year entitled *Aligning Utility Incentives with Energy Efficiency Investment* further examined the rate and recovery issues associated with energy efficiency including comprehensive changes to utility rate design.

Recently, the National Action Plan stakeholder process also developed a vision statement that establishes the goal of achieving all cost-effective energy efficiency by the year 2025. The vision statement is supported by ten specific implementation goals for states, utilities and other stakeholders to consider adopting. Among the implementation goals are the following:

> Goal Two: Developing Processes to Align Utility and Other Program Administrator Incentives Such That Efficiency and Supply Resources Are on a Level Playing Field
>
> Applicable agencies are encouraged to:
>
> - Explore establishing revenue mechanisms to promote utility and other program administrator indifference to supplying energy savings, as compared to energy generation options.
> - Consider how to remove utility and other program administrator disincentives to energy efficiency, such as by removing the utility throughput disincentive and exploring other ratemaking ideas.

- Ensure timely cost recovery in place for parties that administer energy efficiency programs.

The executive summary of the vision statement of the National Action Plan is also provided in Exhibit DPY-2.

Q. What has been the response of regulators to these recommendations?

A. The National Association of Regulatory Utility Commissioners ("NARUC") also places significant importance on addressing the challenges of increasing energy efficiency and reducing greenhouse gas emissions. Over the years, NARUC has sought to promote increased understanding and emphasis on these important policy matters among its constituents.

NARUC closely followed each of the significant initiatives described in my testimony that addressed the need to reexamine rate design. Through resolutions adopted in 2004, 2005, 2006 and 2008, NARUC specifically endorsed and recommended that individual commissions consider the rate design recommendations set forth in the AGA/NRDC joint statements and the National Action Plan. These resolutions are provided as Exhibit DPY-3.

Further, NARUC published the *Natural Gas Toolkit* in September 2008 as a resource to state commissions for considering alternative responses to the high and volatile level of wholesale natural gas prices. Among the options discussed in the report are potential changes to rate design that align the LDC's economic incentives with customers.

Regulators in many individual jurisdictions have approved various types of rate design changes that address the shortcomings associated with traditional rate designs that recover the majority of LDC fixed costs through variable charges. The changes include

fixed cost rate design approaches as well as revenue decoupling mechanisms. While the approaches arrived at in these other cases reflect circumstances specific to the corresponding LDCs, the level of activity further demonstrates the nationwide attention that rate design is receiving.

Q. Has the Authority addressed these matters in prior cases involving gas distribution rate design?

A. Yes. Recently, the Authority has adopted rate design modifications that result in a reduction in the throughput incentive associated with traditional rate designs. These include the adoption of increased monthly fixed customer charges and a margin decoupling mechanisms for Chattanooga Gas Company in TRA Docket No. 09-00183.

The Authority also addressed Piedmont's proposed margin decoupling proposal in TRA Docket No. 09-00104. In that docket, the Authority considered a specific proposal to implement a margin decoupling rider to Piedmont's rates. While the Authority did not approve the Company's proposal, it deferred issues related to rate design and implementation of PURPA energy efficiency standards for Piedmont to the current base rate case.

PIEDMONT DISTRIBUTION RATE DESIGN

Q. Please describe the specific rate design goals for Piedmont that guided the development of the rate design you are recommending.

A. The rate design approach I am recommending seeks to achieve the following four goals:

(1) Fairness – Fairness is accomplished through pricing services based on the underlying cost. Fairness is important in many respects including between the Company and its customers, across the classes served by Piedmont, and among customers taking service under a common rate schedule.

(2) **Revenue Stability** – Revenue stability means that Piedmont's base rate revenues are more predictable in view of future uncertainties. As customer use patterns have become less certain, improved revenue stability through rate design takes on greater importance as a way of mitigating the increased risks to customers and the Company associated with such unpredictable consumption patterns.

(3) **Rate Moderation** – Moderation ensures that customers are not exposed to dramatic price changes that could result in undesirable impacts including cost increases or economic decisions by existing customers to cease taking gas service from Piedmont.

(4) **Simplicity** – Simplicity means a rate structure that is easy for customers to understand and straightforward to administer.

Q. What is the most important modification you are proposing to Piedmont's rates in this proceeding?

A. The primary rate design change I am proposing is to realign rates within each class to recover a greater proportion of fixed revenue requirements through fixed charges. As such, I am placing the greatest emphasis on addressing intra-class rate design inequities that are revealed by the ACOSS. Specifically, I propose material increases in the monthly fixed customer charges for residential and all general service customers. The associated reductions in per therm delivery charges ensure that overall bill impacts to individual customers remain within a reasonable range given the base revenue increase the Company is supporting. I also propose increased demand charges for larger commercial and industrial customers. These changes support each of the rate design goals outlined above.

Q. Has Piedmont proposed a revenue decoupling mechanism in the past?

A. Yes. Piedmont proposed to implement revenue decoupling in TRA Docket No. 09-00104. The Company's request was made outside of a base rate case and was denied by the Authority. The Authority's decision deferred consideration of rate design changes, as required by the new PURPA standards described earlier, to a general rate case proceeding.

Subsequently, the Authority approved a revenue decoupling mechanism for Chattanooga Gas Company ("CGC") in Docket No. 09-00183. The revenue decoupling mechanism approved by the Authority reflected changes to important parameters of the mechanism proposed by CGC, including restricting the classes covered by revenue decoupling and instituting a recovery cap equal to two percent of margins.

Q. Is revenue decoupling an element of the Company's proposal in this proceeding?

A. No. While the Company continues to believe that appropriately designed revenue decoupling mechanisms offer significant benefits for customers, Piedmont is not proposing to implement such a mechanism in the current case. The Company's rate design proposals in this proceeding focus on aligning the underlying rate design with the costs of providing service.

Q. Please describe the Company's existing rate schedules.

A. Piedmont's existing rate schedules are segregated by sector, nature of service (firm or interruptible) and by customer size. Firm service is provided under two residential rate schedules with distinct eligibility criteria based on each customer's summer usage. Standard Residential Service applies to all customers whose summer base load use in July and August is less than 15 therms. Value Residential Service applies to all remaining residential customers and provides a lower recovery rate for

upstream fixed interstate pipeline costs. The margin rates associated with the distinct residential services are identical. As I explain later in my testimony, Piedmont is proposing to eliminate the distinction between standard and value service in this proceeding and serve all residential customers under a single rate schedule.

Piedmont offers six firm tariff services to commercial and industrial customers. Small general service customers; i.e., customers whose average use is less than 200 therms per day, take service under either the Small General Service Standard or Small General Service Value service classifications. General service customers that utilize on average between 200 and 500 therms per day take service under either the Medium General Service Standard or Medium General Service Value service classifications. As is the case with the Company's residential services, Piedmont is proposing to eliminate the distinctions between the standard and value designations in the general service rate schedules. Customers that are larger than 500 therms per day are served under the Large General Service rate schedule. Lastly, all firm general service customers that purchase their gas supply service from a third party supplier receive distribution service from the Company under the Firm Transportation rate schedule.

Interruptible service is provided to sales customers under the Interruptible Sales Service rate schedule and to distribution-only customers under the Interruptible Transportation Service rate schedule. Lastly, the Company provides firm service to other LDCs via its Resale Service rate schedule.

Q. What rates and charges are incorporated into the residential, small general service and medium general service rate schedules?

A. The existing rate design for these customers is similar and includes two types of base rate charges that are intended to recover Piedmont's non-gas revenue requirements

or cost of service. The residential base rates consist of seasonally-differentiated monthly customer and commodity delivery charges. The winter period currently encompasses the five months November through March, and the summer period runs from April through October. The fixed monthly residential customer charge is $13.00 in the winter and $10.00 in the summer. The variable delivery charge is $0.3200 per therm in the winter and $0.2700 per therm in the summer. Fixed customer charges are applied per customer per month and commodity delivery charges are applied to each customer's monthly therm usage. Under this rate structure, all residential customers pay a minimum monthly amount to Piedmont equal to the fixed customer charge, regardless of their monthly usage. The rate design also results in customers paying higher amounts as their consumption increases due to the per-therm commodity delivery charge. The delivery charge is considered a variable charge because all of the associated revenues are linked to customer usage or throughput.

The existing rate design for small general service customers is similar to that for residential customers. The fixed monthly customer charge for small general service customers is $29.00 throughout the year, and the commodity delivery charge is $0.3540 per therm during the winter and $0.3030 per therm during the summer. Medium general service customers pay a fixed monthly customer charge of $75.00 per month throughout the year and the same delivery charges as do small general service customers.

Q. Is the form of rate design similar for Piedmont's remaining rate schedules?

A. Yes, however, the rate structures for larger commercial and industrial customers taking service under Piedmont's Large General Service and Firm Transportation Service rate schedules employ a fixed monthly demand charge in addition to monthly customer

and delivery charges. The demand charge is an important means of recovering fixed peak-related costs from customers in an equitable manner.

The margin rates for the large general service and firm transportation rate schedules are the same and reflect fixed monthly customer charges of $300.00 and fixed monthly demand charges of $8.00 per peak Dt per month. In addition, these rate schedules employ four declining block delivery charges ranging from $0.09742 per therm for the first 15,000 therms during the month to $0.02764 per therm for all monthly consumption exceeding 90,000 therms.

The margin rates applicable to Firm Resale service include a fixed monthly demand charge of $8.00 per month and a flat delivery charge or $0.0900 per therm.

Q. Are there separate charges for gas supply?

A. Yes. Sales customers that purchase their gas supply from Piedmont pay a Purchased Gas Adjustment ("PGA") rate for gas supply. The PGA rate recovers the costs of purchased gas supply and upstream pipeline capacity and storage resources necessary to ensure firm delivery to customers throughout the year, and is adjusted periodically to track changes in the delivered cost of these items. The PGA rates include separate fixed and variable components. The fixed component varies by rate schedule and is lower for value service customers than for standard service customers. The variable component is uniform across all sales service rate schedules.

Many larger general service customers are transportation-only customers, and pay Piedmont to deliver gas supply that they have purchased from various third party suppliers that may offer competitive pricing or other terms. The gas supply price for a firm transportation customer is negotiated in a competitive marketplace between the

customer and their supplier. Gas supply charges represent more than half of the total natural gas bill for the vast majority of Piedmont customers.

Q. Please describe the rates billed to interruptible customers.

A. The interruptible margin rates are the same as the Large General Service and Firm Transportation rates except that there is no demand charge applicable to the interruptible service customers. The interruptible rates, which include a customer charge and declining block delivery charges, are the same for interruptible sales and transportation customers.

Q. Did you perform a traditional ACOSS to support your rate design recommendations?

A. Yes. I believe that an ACOSS provides an important means of assessing the reasonableness of existing prices, and to guide the development of price changes. In particular, the ACOSS that I performed for Piedmont examines all of the Company's common costs reflected in its base rate petition, and through appropriate cost assignments and allocations, establishes measures of investments, expenses and income by customer class. The ACOSS is an important tool because many of the Company's costs are common and are incurred to serve many classes of customers collectively.

The ACOSS calculates the total investment and operating costs incurred to serve each customer class, thereby establishing class-specific total revenue requirements. The class-specific revenue requirements are compared to class revenues in order to establish class income and class rate of return on investment. The class-specific rates of return are used to guide the apportionment of the revenue requirements among all of Piedmont's customer classes in conjunction with the development of proposed rates. The ACOSS also determines the classification of costs among demand, customer and commodity

components. The classification of costs within a rate classification is used to guide the development of the form of billing rates for that class. Although the ACOSS is not the only factor relied upon to design rates, it is an invaluable guide to ensuring that the process is fair and reasonable.

Q. Please summarize the results of the ACOSS and how these results guided the development of the proposed base rates for Piedmont.

A. The primary results from the ACOSS are the rate of return by class, which guides the allocation of the Company's revenue requirement among classes and the unit customer and demand-related costs, which guide the intra-class rate design. The results of the ACOSS indicate that the rate of return for the Residential Service and Resale Service classes are less than the system-average rate of return at present rates. The rate of return for all general service classes is above the system-average, to varying degrees, indicating that these other classes are subsidizing the prices for residential and resale customers. A summary of the rate of return by class and the required increase in rates to yield the overall rate of return of 8.53% is provided as Exhibit DPY-4.

With respect to unit costs, the ACOSS indicates that the system-wide average customer cost is $38 per month, and the cost generally varies with the size of the customer. Monthly customer costs represent the proportion of revenue requirements that are classified as fixed and related to providing customers with access to and active status on Piedmont's system. For example, customer-related costs include the costs of meters and billing. The lowest average customer cost of $35 per month is indicated for the residential class and the highest is $264 per month for the Large General Service class. The significant variance between monthly customer-related costs and fixed customer charges is taken into consideration when designing the intra-class rate design.

A full description of the Piedmont ACOSS as well as the input data and detailed results are presented in Exhibit DPY-5.

Q. What steps did you employ to establish the specific base rates you are proposing?

A. First, I determined the class-by-class revenue requirements, which reflect the results of the ACOSS and other rate design principles. Next, I evaluated the existing level of customer charges and proposed increases, where appropriate, to recover a greater proportion of customer-related costs through monthly fixed customer charges. Lastly, I established the appropriate rate structure and rate levels to recover the remaining portion of class revenue requirements.

Q. Why is the Company proposing to eliminate the standard and value distinctions in the residential and commercial classes?

A. The standard and value pricing options relate to the Company's recovery of fixed PGA costs. Specifically, customers with a flatter load profile, i.e. value customers, pay a lower per-unit PGA rate than standard customers, whose load profiles exhibit stronger winter peak consumption. The pricing differential appropriately reflected the lower unit costs of serving high load factor customers associated with upstream interstate pipeline and storage resources.

While the economic rationale for the pricing differential still holds true, the Company is proposing to eliminate the distinction in this proceeding. This change will eliminate a source of customer confusion and ensure that the Company's rate structure with respect to PGA costs is not interpreted to promote additional consumption by customers.

Q. How did you develop the class-by-class revenue requirements?

A. The revenue requirements by customer class are based upon the rates of return under the present rates as well as the required increase by class to achieve the overall rate of return of 8.53%. On average, this translates into a revenue increase of 8.9%. The class-by-class revenue requirements allocate a portion of the net revenue increase to all rate classes, but in varying amounts. In particular, I am proposing to allocate a higher proportion of the revenue increase to the Residential and Resale rate classes. While these two rate classes are the only ones that require any increase to yield the overall rate of return, I am proposing to allocate a portion of the overall increase to the general service rate classes also as a means of moderating the increase to residential customers.

This approach yields a revenue requirement increase of $10.9 million, to the Residential rate class. The resulting increase is well below the level required to achieve uniform rates of return among all customer classes, which achieves rate moderation objectives. Disparate rates of return continue to exist at proposed rates because I am not proposing to lower the overall revenue requirements allocated to general service customers.

Q. Have you prepared a comparison of existing monthly customer charges and monthly customer costs from the ACOSS?

A. Yes. Exhibit DPY-6 shows the difference between existing monthly customer charges and monthly customer costs for all customers as determined in the ACOSS. This exhibit shows that current monthly fixed customer charges are far below cost-based levels. As a result of the discrepancies between current monthly fixed customer charges and the associated customer-related costs of serving customers, a substantial increase in monthly fixed customer charges is necessary to align Piedmont's prices with the cost of providing service.

Q. Why is the level of the monthly fixed customer charge important?

A. The level of the monthly fixed customer charge is important for a variety of reasons that relate to the Company's rate design goals I described earlier. First, the monthly fixed customer charge provides customers with an important price signal concerning the impact of connecting to Piedmont's distribution system. Second, recovering customer-related costs through monthly fixed customer charges contributes to intra-class fairness. To the extent that a portion of customer-related costs are recovered through volumetric charges, intra-class subsidies are created as larger customers pay a disproportionate share of customer-related costs. Third, the fixed monthly customer charge provides revenue stability as fixed costs that are incurred to serve customers are recovered through a fixed charge.

Q. What monthly fixed customer charge do you propose for the residential class?

A. I am proposing a 70% increase to monthly fixed residential customer charges in order to move toward levels that are fair and reasonable. Specifically, I am proposing to increase the monthly customer charge during the winter from $13.00 to $22.00 and the monthly customer charge during the summer from $10.00 to $17.00. It is desirable to recover a greater proportion of the residential revenue requirements through the fixed monthly customer charge, so that individual rate elements move closer to cost-based levels. Even with these increases, the proposed residential customer charges remain below cost-based levels. As a result, approximately 45% of the residential base revenue requirements continue to be recovered through variable charges that are dependent on customer throughput.

Q. How did you derive the variable delivery charges applicable to residential customers?

A. The remaining revenue requirements allocated to the residential class are recovered through the variable delivery charges. I am proposing to maintain the existing differential between winter and summer delivery charges of $0.05 per therm. The proposed delivery charges are approximately $0.05 per therm below the current levels and $0.15 below the level that would be required in the absence of the changes to the monthly fixed customer charges that are proposed.

Q. Have you examined the bill impacts for residential customers associated with the new rates you propose?

A. Yes. Exhibit DPY-7 presents bill impacts at various consumption levels for current value and standard service customers. The bill impacts across all residential consumption strata are reasonable and support the appropriateness of the rate design changes I propose. The proposed recovery of the revenue increase from all customers provides the foundation for the important rate design changes I am proposing to the Residential and other rate classes. While rate alignment is not fully achieved, significant progress toward that objective is accomplished in the absence of implementing revenue decoupling at the present time.

Q. Please describe your proposed changes to the fixed monthly customer charges for non-residential classes.

A. I propose increases to the fixed monthly customer charges for all non-residential classes so individual rate elements move closer to cost-based levels. The proposed fixed monthly customer charge for the Small General Service class is $40.00, which represents a 38% increase over the current customer charge. The proposed fixed monthly customer charge for the Medium General Service class is $125.00, a 67% increase over the current charge. I am proposing a larger increase to the customer charge for Medium General

Service customers than Small General Service customers due to the greater difference between the current price and the cost-based level for Medium General Service customers. Lastly, I am proposing to increase the existing fixed monthly customer charge for large general service and firm transportation customers to $450.00, a 50% increase over the current level.

Q. Please explain the next step in the process for designing non-residential rates.

A. Once the monthly fixed customer charges are established, the next step in the rate design process is to design the remaining rate elements for each class to recover the total target revenue requirements less the revenues recovered through the customer charge. For the Small and Medium General Service classes, I developed new delivery charges to recover the target revenue requirements while maintaining the current winter-summer differential of $0.05 per therm.

For Large General Service and firm transportation customers, I first established a demand charge of $10.00 per Dt per month and then developed new delivery rates. The proposed delivery rates for these classes maintain the existing declining block rate structure and are comparable to existing rates given the increases to the monthly customer and demand charges. Lastly, corresponding increases to the fixed monthly customer charges and the delivery charges are proposed for interruptible sales and transportation service customers.

Q. Have you prepared a summary of the proposed rate changes?

A. Yes. The existing and proposed rates for each class are compared in Exhibit DPY-8. The last column in this exhibit provides the percentage increases in revenues by class. In addition, Exhibit DPY-8 also provides a proof of revenues demonstrating that

the proposed charges yield the requested revenue requirements based on the Company's forecasts of sales and customers.

Q. Does Exhibit DPY-8 reflect the Company's proposal to extend the winter period for two additional months including October and April?

A. Yes. The expansion of the winter period to include these two additional months is important to achieving the rate design goals I described previously. Customer consumption patterns during these two vary considerably from year-to-year, which is not consistent with the summer period designation that presently is applied to October and April. Incorporating these months into the winter period enhances revenue stability in two important respects. First, the weather impacts on base revenue recoveries that occur during October and April, both positive and negative, will be addressed through the Company's weather normalization adjustment mechanism. Second, the higher fixed monthly customer charges are applied to two additional months of the year helping to mitigate the level of fixed costs that must be recovered through variable charges. Exhibit DPY-8 appropriately incorporates this tariff change in the overall design of Piedmont's base rates.

Q. Are your proposed rates consistent with the results of the ACOSS?

A. Yes. The proposed rates result in rates of return that are closer to the system-average rate of return than would be the case if the requested increase had been spread equally to all classes. The resulting changes in rates of return based on the proposed rate design are provided in Exhibit DPY-9. The unitized rates of return are also presented in this exhibit. The prices for the residential customer class continue to be subsidized by remaining classes, but to a lesser degree than under the existing rate design.

Q. Please comment on the impact of the proposed rate changes on Piedmont's recovery of its overall costs of providing service to customers.

A. The majority of Piedmont's revenue requirements are associated with ensuring ongoing reliability of service and safety to customers and the communities the Company serves. These costs are all fixed in nature and do not increase or decrease with the level of natural gas consumed by customers. The rate design changes that I propose will realign the recovery of reliability and safety expenses with the manner in which these costs are incurred. Even so, a substantial portion of Piedmont's revenue requirements continue to be recovered through variable charges that are dependent on customer throughput. As a result, Piedmont's proposed rates are designed to recover costs of providing service that exceed 100% of Piedmont's return and associated income taxes. Therefore, although the rate design proposed in this proceeding reflects higher monthly fixed charges, it provides no guaranteed recovery of profit for Piedmont.

NATURAL GAS VEHICLE SERVICE

Q. Please provide an overview of the potential market for NGV service that the Company anticipates serving.

A. NGVs offer a cost-effective alternative to gasoline and diesel vehicles. Reduced emissions provide environmental benefits that could enhance the attainment of vehicle emissions reduction goals. Vehicle manufacturers continue to develop and market vehicles that rely on compressed natural gas ("CNG") for engine fuel. Passenger vehicles as well as light and heavy duty trucks that operate on CNG are available for purchase. Although the initial costs of NGVs are higher than for traditional vehicles, the operating costs are typically lower and the United States Government offers federal tax incentives to promote their purchase by consumers and businesses. The Company expects that the

majority of CNG NGVs in its service area will be fleet vehicles over the next several years. Typically, fleet vehicles are refueled at a common location or locations.

Q. How is the NGV market different than the Company's traditional residential and small commercial markets?

A. A significant proportion of the Company's existing load is for heating in homes and small businesses. This heating load varies with outdoor temperatures and occurs primarily during the peak winter months. NGV loads will be essentially flat across months as the majority of transportation requirements do not vary significantly during the year. The Company anticipates that commercial NGV fleets will indicate higher use on weekdays than weekend days.

Q. Please describe the rate structure that you are recommending for Piedmont's NGV Service.

A. I am proposing to derive initial prices for this new service offering based upon corresponding charges for Small General Service customers. Specifically, the proposed fixed monthly customer charge will be $40. A load factor adjustment is applied to the Small General Service delivery charge in order to achieve an appropriate delivery charge for NGV service. The resulting charge is $0.2311 per therm. These charges will be reviewed in the next rate case based on an ACOSS to the extent that customers are taking service under the new rate schedule at that time.

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.

ATTACHMENT A

Attachment A

Prior Testimony of
Daniel P. Yardley

Jurisdiction	Sponsor	Year	Topics	Docket
Florida	Peoples Gas System	2008	Cost Allocation and Rate Design	Docket No. 080318-GU
Federal Energy Regulatory Commission	Northern Distributor Group	1992	Cost of Service and Cost Allocation	RP92-1
	Northern Distributor Group	1995	Cost of Service and Rate Design	RP95-185
	Atlanta Gas Light, et al.	2001	Storage Cost Allocation	RP01-245
	Bay State Gas and Northern Utilities	2002	Rate Design	RP02-13
New Hampshire	Northern Utilities	2005	Jurisdictional Gas Cost Allocation	DG05-080
Massachusetts	Bay State Gas	1998	Capacity Assignment	D.T.E. 98-32
	Bay State Gas	2001	Contract Approval	D.T.E. 00-99
	Bay State Gas	2006	Declining Use Rate Adjustment	D.T.E. 06-77
	Bay State Gas	2007	Declining Use Rate Adjustment	D.P.U. 07-89
	Bay State Gas	2009	Revenue Decoupling	D.P.U. 09-30
New Jersey	New Jersey Natural Gas	1999	Rate Unbundling	Docket No. GO99030123
	Elizabethtown Gas, *et al.*	1999	Customer Account Services	Docket No. EX99090676
	Elizabethtown Gas	2002	Cost Allocation and Rate Design	Docket No. GR02040245
	South Jersey Gas Company	2003	Cost Allocation and Rate Design	Docket No. GR03080683
	South Jersey Gas Company	2004	Capacity Charge	Docket No. GR04060400
	New Jersey Natural Gas	2005	Revenue Decoupling	Docket No. GR0512020
	South Jersey Gas Company	2005	Revenue Decoupling	Docket No. GR0512019
	South Jersey Gas Company	2007	Annual Decoupling Adjustment	Docket No. GR07060354
	New Jersey Natural Gas	2007	Cost Allocation and Rate Design	Docket No. GR07110889
	South Jersey Gas Company	2008	Annual Decoupling Adjustment	Docket No. GR08050367
	Elizabethtown Gas	2009	Revenue Decoupling, Cost Allocation and Rate Design	Docket No. GR09030195

Attachment A

Prior Testimony of
Daniel P. Yardley

Jurisdiction	Sponsor	Year	Topics	Docket
New Jersey cont.	South Jersey Gas Company	2009	Annual Decoupling Adjustment	Docket No. GR09060340
	South Jersey Gas Company	2009	Cost Allocation and Rate Design	Docket No. GR10010035
	New Jersey Natural Gas	2010	Energy Efficiency Cost Recovery	Docket No. GR10030225
	South Jersey Gas Company	2011	Annual Decoupling Adjustment	Docket No. GR11060337
	New Jersey Natural Gas	2011	Energy Efficiency Cost Recovery	Docket No. GR11070425
Rhode Island	Providence Gas Company	1996	Cost Allocation and Rate Design	Docket No. 2076
Tennessee	Chattanooga Gas Company	2009	Revenue Decoupling, Cost Allocation and Rate Design	Docket No. 09-00183
Wisconsin	Wisconsin Power and Light	2001	Cost Allocation and Rate Design	Docket No. 6680-UR-111

EXHIBIT__(DPY-1)

Joint Statement of the American Gas Association and the Natural Resources Defense Council

Submitted to the National Association of Regulatory Utility Commissioners
July 2004

The American Gas Association (AGA) and the Natural Resources Defense Council (NRDC) recognize the many benefits of using clean-burning natural gas efficiently to provide high quality energy services in all sectors of the economy. This statement identifies ways to promote both economic and environmental progress by removing barriers to natural gas distribution companies' investments in urgently needed and cost-effective resources and infrastructure.

NRDC and AGA agree on the importance of state Public Utility Commissions' consideration of innovative programs that encourage increased total energy efficiency and conservation in ways that will align the interests of state regulators, natural gas utility company customers, utility shareholders, and other stakeholders. Cost-effective opportunities abound to improve the efficiency of buildings and equipment in ways that promote the interests of both individual customers and entire utility systems, while improving environmental quality. For example, when energy supply and delivery systems are under stress, even relatively modest reductions in use can yield significant additional cost savings for all customers by relieving strong upward pressures on short-term prices.

NRDC and AGA also encourage state Commissions to support gas distribution company efforts to manage volatility in energy prices and reduce volatility risks for customers.

The Energy Efficiency Problem: Regulated Natural Gas Utilities are Penalized for Aggressively Promoting Energy Efficiency

Local natural gas distribution companies (gas utilities) have very high fixed costs. These fixed costs include the costs of maintaining system safety and reliability throughout the year, staffing customer service telephone lines 24 hours a day and doing what it takes each day of the year to ensure the safe and reliable delivery of natural gas to homes, schools, hospitals, retailers, factories and other customers.

Natural gas utilities typically purchase natural gas on behalf of their customers, and pass through the cost without markup. This means that natural gas utilities do not

profit from their acquisitions of natural gas to serve customer needs. The profit (authorized level of rate of return) comes from the rates utilities charge for transporting the natural gas to customers' homes and businesses.

The vast majority of the non-commodity costs of running a gas distribution utility are fixed and do not vary significantly from month to month. However, traditional utility rates do not reflect this reality. Traditional utility rates are designed to capture most of approved revenue requirements for fixed costs through volumetric retail sales of natural gas, so that a utility can recover these costs fully only if its customers consume a certain minimum amount of natural gas (these amounts are normally calculated in rate cases and generally are based on what customers consumed in the past). Thus, many states' rate structures offer – quite unintentionally – a significant financial disincentive for natural gas utilities to aggressively encourage their customers to use less natural gas, such as by providing financial incentives and education to promote energy-efficiency and conservation techniques.

When customers use less natural gas, utility profitability almost always suffers, because recovery of fixed costs is reduced in proportion to the reduction in sales. Thus, conservation may prevent the utility from recovering its authorized fixed costs and earning its state-allowed rate of return. In this important respect, traditional utility rate practices fail to align the interests of utility shareholders with those of utility customers and society as a whole. This need not be the case. Public utility commissions should consider utility rate proposals and other innovative programs that reward utilities for encouraging conservation and managing customer bills to avoid certain negative impacts associated with colder-than-normal weather. There are a number of ways to do this, and NRDC and AGA join in supporting mechanisms that use modest automatic rate true-ups to ensure that a utility's opportunity to recover authorized fixed costs is not held hostage to fluctuations in retail gas sales.[1] We also support performance-based incentives designed to allow utilities to share in independently verified savings associated with cost-effective energy efficiency programs.

Many states' rate structures also place utilities at risk for variations in customer usage based on variations in weather from a normal pattern. This variation can be both positive and negative. Utilities' allowed rate of return is premised on the

[1]For example, in 2003 the Oregon Public Utility Commission approved a "conservation tariff" for Northwest Natural Gas Company (NW Natural) "to break the link between an energy utility's sales and its profitability, so that the utility can assist its customers with energy efficiency without conflict." The conservation tariff seeks to do that by using modest periodic rate adjustments to "decouple" recovery of the utility's authorized fixed costs from unexpected fluctuations in retail sales. *See* Oregon PUC Order No. 02-634, *Stipulation Adopting Northwest Natural Gas Company Application for Public Purpose Funding and Distribution Margin Normalization* (Sept. 12, 2003). In California, PG&E and other gas utilities have a long tradition of investment in energy efficiency services, including those targeting low-income households, and the PUC is now considering further expansion of these investments along with the creation of performance-based incentives tied to verified net savings. California also pioneered the use of modest periodic true-ups in rates to break the linkage between utilities' financial health and their retail gas sales, and has now restored this policy in the aftermath of an ill-fated industry restructuring experiment. Thus, in March 2004, Southwest Gas Company received an order that authorizes it to establish a margin tracker that will balance actual margin revenues to authorized levels.

expectation that weather will be normal, on average, and that customer use of gas will maintain a predictable pattern going forward. Proposals by utilities to decouple revenues from both conservation-induced usage changes and variations in weather from normal have sometimes been characterized as attempts to reduce utilities' risk of earning their authorized return. The result of these rate reforms, in this regulatory view, should be a lowered authorized return. But reducing authorized returns would penalize utilities for socially beneficial advocacy and action, including efforts to create mechanisms that minimize the volatility of customer bills.

Our shared objective is to give utilities real incentives to encourage conservation and energy efficiency. With properly designed programs, the benefits could be significant and widespread:

- Customers could save money by using less natural gas;
- Reduced overall use will help push down short-term prices at times when markets are under stress, reducing costs for all customers (whether or not they participate in the utility programs);
- Utilities would recover their costs and have a fair opportunity to earn their allowed return;
- State policies to encourage economic development could be enhanced by increased energy efficiency and lower business energy costs;
- State PUCs would be able to support larger state policy objectives as well as programs that reflect the public's desire to use energy efficiently and wisely.

In today's climate of rapidly changing natural gas prices, such reforms make good sense for consumers, shareholders, state governments, and the environment.

Natural Gas Consumers, Price Volatility and Resource Portfolio Management. Another area of concern shared by NRDC and AGA is the impact of natural gas price volatility on natural gas consumers, which can be exacerbated by limited diversification of utilities' resource portfolios. Today many of the nation's natural gas utilities find themselves relying on short-term markets for most of their gas needs, with either the encouragement or the acquiescence of their regulators. During much of the 1990's this approach was typically advantageous to consumers, as the market price of natural gas was generally low and did not fluctuate dramatically. As wholesale natural gas prices have risen since 2000 and become more volatile, however, many utilities and commissions are reconsidering this emphasis on short-term market purchases.

While purchasing practices based on short-term supply contracts may offer consumers relatively low-cost natural gas, those consumers are also exposed to more volatile prices and natural gas bills that may rise and fall unpredictably. Public Utility Commissions should favorably consider gas distribution company proposals to manage volatility, such as through hedging, fixed-price contracts of various durations, energy-efficiency improvements in customers' buildings and equipment, and other measures designed to provide greater certainty about both supply

adequacy and price stability. Achieving these goals will sometimes require paying a premium over prevailing spot market prices. Like diversified investment portfolios that are designed to mitigate risk, prudent hedging plans should be encouraged as a way to help stabilize gas prices and ensure long-term access to affordable natural gas services.

This Joint Statement also has been reviewed and endorsed by:

Alliance to Save Energy

American Council for an Energy-Efficient Economy

Second Joint Statement of the American Gas Association and the Natural Resources Defense Council

May 2008

As the United States confronts the dual challenges of ensuring that Americans have access to affordable, environmentally clean and reliable energy services, while addressing global climate change, the American Gas Association (AGA) and the Natural Resources Defense Council (NRDC) have been working together to accelerate progress toward a clean, energy efficient future. In 2004, AGA and the NRDC issued a joint statement that identified significant regulatory barriers to achieving energy efficiency. AGA and the NRDC encouraged state public utility commissions to consider innovative proposals to promote energy efficiency and conservation in a manner that would benefit both customers and shareholders. The National Association of Regulatory Utility Commissioners encouraged state officials to consider the joint AGA-NRDC recommendations,[1] and the states' initial response has been encouraging.

Today, AGA and the NRDC issue a second joint statement recommending the next steps toward win-win solutions for American consumers and the natural gas utilities that serve them. As we did in 2004, AGA and the NRDC urge state public utility commissions and officials responsible for publicly-owned natural gas distribution systems to consider proposals for implementing cost-effective programs that will increase energy efficiency and reduce the nation's carbon footprint while also balancing shareholder interests.

1. **Removing Disincentives for Utilities to Promote Energy Efficiency and Reduce Greenhouse Gas Emissions, and Uniting to Achieve Increased Savings Through Programs and Standards.**

It is now almost universally recognized that energy efficiency is a large, underutilized, resource that needs to be expanded significantly to reduce consumer costs, improve energy security and reduce greenhouse gas emissions.[2] Numerous studies and extensive experience in many states and countries have shown that improving energy efficiency can be critical to meeting these goals cost-effectively.[3] Consumer surveys

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[1] *Resolution on Gas and Electric Energy Efficiency*, sponsored by the NARUC Natural Gas Task Force, Committee on Gas, Committee on Consumer Affairs, Committee on Electricity, and Committee on Energy Resources and the Environment. Adopted by the NARUC Board of Directors, July 14, 2004.

[2] *See, e.g., National Action Plan for Energy Efficiency Vision for 2025: Developing a Framework for Change* (November 2007). http://www.epa.gov/cleanenergy/documents/vision.pdf.

[3] *See, e.g., Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets in the Pacific West*, William Prindle, R. Neal Elliott, Ph.D., P.E., Anna Monis Shipley, American Council for an Energy-Efficient Economy, Report Number E062 (January 2006).

show strong support for coordinated government and utility efforts to increase conservation and energy efficiency.[4]
Yet there are a number of barriers blocking the path forward to increased energy efficiency. One significant barrier has been regulatory policies that unintentionally but effectively discourage gas distribution companies from promoting energy efficiency improvements. AGA and the NRDC pointed this out in our July 2004 joint statement:

> When customers use less natural gas, utility profitability almost always suffers, because recovery of fixed costs is reduced in proportion to the reduction of sales. Thus, conservation may prevent the utility from recovering its authorized fixed costs and earning its state-allowed rate of return. In this important aspect, traditional rate practices fail to align the interests of utility shareholders with those of utility customers and society as a whole. This need not be the case.[5]

Since the joint statement was issued in 2004, a significant number of gas distribution utilities have been given permission to adopt ratemaking mechanisms that better align the interests of utility shareholders, their customers and society as a whole. Today 26 natural gas distribution utilities in 13 states have implemented revenue decoupling programs that serve 20 million residential customers. The National Action Plan for Energy Efficiency, which was developed by more than 50 diverse stakeholder groups, included as one of its five recommendations the need to "[m]odify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments."[6] Additionally, Congress passed the Energy Independence and Security Act of 2007, directing each state regulatory authority to consider "separating fixed-cost revenue recovery from the volume of transportation or sales service provided to the customer."[7] Today, AGA and the NRDC again urge state public utility commissions and officials responsible for publicly-owned natural gas distribution systems to actively support natural gas utilities' energy efficiency proposals that use automatic rate true-ups to ensure a utility's opportunity to recover its authorized fixed costs. We also urge state public utility commissions that have adopted such programs on a trial basis to make longer term commitments. Finally, we will assign high priority to mutual advocacy for improved energy efficiency standards at both state and federal levels, and we will seek urgently needed extensions for federal tax incentives for energy efficiency in buildings and equipment. We will work to ensure that these standards and incentives are designed in ways that avoid inappropriately influencing customers' fuel choices, from both economic and environmental perspectives.

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[4] *See, e.g.,* M. Kubik, *Consumer Views on Transportation and Energy* (Third Edition), National Renewable Energy Laboratory Technical Report, NREL/TP-620-39047 (Jan. 2006), http://www.osti.gov/bridge.

[5] Joint Statement of the American Gas Association and the Natural Resources Defense Council (July 2004) at 2.

[6] *National Action Plan for Energy Efficiency – A Plan Developed by More Than 50 Leading Organizations in Pursuit of Energy Savings and Environmental Benefits Through Electric and Natural Gas Energy Efficiency* (July 2006) at 2, 7, 8, and 1-10. See also *Aligning Utility Incentives with Investment in Energy Efficiency – A Resource of the National Action Plan for Energy Efficiency* (Nov. 2007) http://www.epa.gov/cleanenergy/documents/incentives.pdf.

[7] *See* Sec. 532(b)(6), *Energy Independence and Security Act of 2007*, P.L. 110-140, Dec. 19, 2007 (In general, "[t]he rates allowed to be charged by a natural gas utility shall align utility incentives with the deployment of cost-effective energy efficiency." "[E]ach State regulatory authority and each non-regulated utility shall consider- (i) separating fixed cost revenue recovery from the volume of transportation or sales service provided to the customer; (ii) providing to utilities incentives for the successful management of energy efficiency programs, such as allowing utilities to retain a portion of the cost-reducing benefits accruing from the programs;").

2. Developing Performance-Based Incentives for Utilities to Promote Energy Efficiency and Reduced Greenhouse Gas Emissions

Simply removing utility disincentives to promote energy efficiency may be adequate if the goal is to achieve relatively modest increases in efficiency. But neutrality is no substitute for committed action. If energy efficiency achievements are to reach the level required by the various climate change bills currently being considered by Congress and under review or adoption in states across the country, then utility commissions need to consider linking such achievements to earnings opportunities for the utilities involved.[8] We agree that such opportunities would yield significant increases in energy efficiency and reductions in customer energy consumption. Despite decades of programs designed to promote energy efficiency, it is widely recognized that these programs remain critically underutilized in the nation's energy portfolio.[9] Without carefully considered incentive programs, it seems unlikely that dramatically improved results will occur in the future.

The National Action Plan for Energy Efficiency discusses three different types of utility performance incentive mechanisms: 1) performance target savings, 2) shared savings incentives, and 3) rate of return incentives.[10] Performance target and shared savings mechanisms have been adopted in a number of states, and while differing in structure and operation, typically seek to allow utilities operating at or above a prescribed minimum performance level to capture some portion of net benefits delivered (usually based on energy savings performance).[11] Rate of return incentives might offer a utility an increased return for energy efficiency investments and/or an even higher return on total equity investment for superior performance.[12] While each option has its advantages and disadvantages, we unite in supporting approaches that link energy-efficiency incentives to independently verified net benefits that utilities deliver to customers through either successful administration of cost-effective efficiency programs and other authorized efficiency programs that serve low-income constituencies, or contributions to enactment of cost-effective efficiency standards and tax incentives.[13] AGA and the NRDC encourage state commissions and officials responsible for publicly-owned natural gas distribution systems to adopt energy efficiency incentive

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[8] Congress recently encouraged state commissions and unregulated utilities to consider such utility energy efficiency earnings opportunities. *See* Sec. 532(b)(6)(B)(ii), *Energy Independence and Security Act of 2007*, P.L. 110-140, Dec. 19, 2007 ("[E]ach State regulatory authority and each nonregulated utility shall consider- (ii) providing to utilities incentives for the successful management of energy efficiency programs, such as allowing utilities to retain a portion of the cost-reducing benefits accruing from the programs;").

[9] *See, e.g., Aligning Utility Incentives with Investment in Energy Efficiency* at ES-1. For years, groups such as the American Council for an Energy Efficient Economy (ACEEE) have produced numerous studies detailing the dramatic results possible if various energy efficiency measures were adopted. *See, e.g., Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest,* Martin Kushler, Dan York, and Patti Witte (Jan. 2005, ACEEE Report No. U051) (projecting annual Midwest customer cost savings of $2 billion on their natural gas bills by 2010); *Potential for Energy Efficiency and Renewable Energy to Meet Florida's Growing Energy Demands*, R. Neal Elliott, Maggie Eldridge, Anna M. Shipley, John "Skip" Laitner, Steven Nadel, Philip Fairey, Robin Vieira, Jeff Sonne, Alison Silverstein, Bruce Hedman and Ken Darrow (June 2007, ACEEE Report No. E072); *Impacts of Energy Efficiency and Renewable Energy on Natural Gas Markets in the Pacific West*, William Prindle, R. Neal Elliott, Anna Monis Shipley (Jan. 2006, ACEEE Report No. E062) (projecting reduced natural gas bills and reduced natural gas consumption if energy efficiency measures were adopted).

[10] *Aligning Utility Incentives with Investment in Energy Efficiency: A Resource of the National Action Plan for Energy Efficiency* (Nov. 2007) at 6-1 (chapter on performance incentives).

[11] *Id.* at 6-3 and 6-4.

[12] *Id.* at 6-11.

[13] Energy efficient incentives do not include rate design mechanisms, such as margin decoupling, which merely reduce utility disincentives. We also agree that consumer education and marketing expenditures are important to the success of many of the energy efficiency programs that this statement references and supports.

mechanisms for natural gas utilities that will reduce consumer costs, reduce greenhouse emissions and align with shareholders' interests.

3. Recognizing the Potential Contributions of Efficient Natural Gas Use in Promoting Reduced Greenhouse Gas Emissions

Among fossil fuels, natural gas applications lead the way in reducing greenhouse gas emissions.[14] Average residential and commercial natural gas consumption is much lower today than in the 1970s, due to improved energy efficiency and conservation. The 64 million households served by natural gas today heat their homes and their water, feed their families and dry their clothing using 1/3 less energy than they did in 1980.

Our paramount joint objective is developing ways to help America extract more economic benefits from the most efficient use of natural gas.[15] There should be continued focus on the environmental benefits of more efficient direct use of natural gas in homes and businesses, which can and should be an important strategy to lower U.S. greenhouse gas emissions.

AGA and the NRDC pledge to continue their efforts to find more ways to use natural gas efficiently, thereby assisting consumers and speeding the transition to a lower carbon future.

This Joint Statement also has been reviewed and endorsed by:

Alliance to Save Energy

ALLIANCE TO
SAVE ENERGY
Creating an Energy-Efficient World

American Council for an Energy Efficient Economy

ACEEE

[14] When burned in power plants of equivalent thermal efficiency, natural gas emits 45 percent less CO_2 than coal and 30 percent less CO_2 than oil on an energy equivalent basis. This advantage can be further increased by integrating combined heat and power applications with end use efficiency improvements.

[15] Along with natural gas, some natural gas utilities have supplemented their supply needs with renewable sources of supply such as biogas, which can help reduce greenhouse gas emissions.

EXHIBIT__(DPY-2)

National Action Plan for Energy Efficiency

A PLAN DEVELOPED BY MORE THAN 50 LEADING ORGANIZATIONS IN PURSUIT OF ENERGY SAVINGS AND ENVIRONMENTAL BENEFITS THROUGH ELECTRIC AND NATURAL GAS ENERGY EFFICIENCY

JULY 2006

The goal is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations.

Improving energy efficiency in our homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the country—is one of the most constructive, cost-effective ways to address the challenges of high energy prices, energy security and independence, air pollution, and global climate change.

The U.S. Department of Energy and U.S. Environmental Protection Agency facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency.

Executive Summary

This National Action Plan for Energy Efficiency (Action Plan) presents policy recommendations for creating a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations. Such a commitment could save Americans many billions of dollars on energy bills over the next 10 to 15 years, contribute to energy security, and improve our environment. The Action Plan was developed by more than 50 leading organizations representing key stakeholder perspectives. These organizations pledge to take specific actions to make the Action Plan a reality.

A National Action Plan for Energy Efficiency

We currently face a set of serious challenges with regard to the U.S. energy system. Energy demand continues to grow despite historically high energy prices and mounting concerns over energy security and independence as well as air pollution and global climate change. The decisions we make now regarding our energy supply and demand can either help us deal with these challenges more effectively or complicate our ability to secure a more stable, economical energy future.

Improving the energy efficiency[1] of our homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the country—is one of the most constructive, cost-effective ways to address these challenges.[2] Increased investment in energy efficiency in our homes, buildings, and industries can lower energy bills, reduce demand for fossil fuels, help stabilize energy prices, enhance electric and natural gas system reliability, and help reduce air pollutants and greenhouse gases.

Despite these benefits and the success of energy efficiency programs in some regions of the country, energy efficiency remains critically underutilized in the nation's energy portfolio.[3] Now we simultaneously face the challenges of high prices, the need for large investments in new energy infrastructure, environmental concerns, and security issues. It is time to take advantage of more than two decades of experience with successful energy efficiency programs, broaden and expand these efforts, and capture the savings that energy efficiency offers. Much more can be achieved in concert with ongoing efforts to advance building codes and appliance standards, provide tax incentives for efficient products and buildings, and promote savings opportunities through programs such as ENERGY STAR®. Efficiency of new buildings and those already in place are both important. Many homeowners, businesses, and others in buildings and facilities already standing today—which will represent the vast majority of the nation's buildings and facilities for years to come—can realize significant savings from proven energy efficiency programs.

Bringing more energy efficiency into the nation's energy mix to slow demand growth in a wise, cost-effective manner—one that balances energy efficiency with new generation and supply options—will take concerted efforts by all energy market participants: customers, utilities, regulators, states, consumer advocates, energy service companies (ESCOs), and others. It will require education on the opportunities, review of existing policies, identification of barriers and their solutions, assessment of new technologies, and modification and adoption of policies, as appropriate. Utilities,[4] regulators, and partner organizations need to improve customer access to energy efficiency programs to help them control their own energy costs, provide the funding necessary to

deliver these programs, and examine policies governing energy companies to ensure that these policies facilitate—not impede—cost-effective programs for energy efficiency. Historically, the regulatory structure has rewarded utilities for building infrastructure (e.g., power plants, transmission lines, pipelines) and selling energy, while discouraging energy efficiency, even when the energy-saving measures cost less than constructing new infrastructure.[5] And, it has been difficult to establish the funding necessary to capture the potential benefits that cost-effective energy efficiency offers.

This National Action Plan for Energy Efficiency is a call to action to bring diverse stakeholders together at the national, regional, state, or utility level, as appropriate, and foster the discussions, decision-making, and commitments necessary to take investment in energy efficiency to a new level. The overall goal is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations.

The Action Plan was developed by a Leadership Group composed of more than 50 leading organizations representing diverse stakeholder perspectives. Based upon the policies, practices, and efforts of many organizations across the country, the Leadership Group offers five recommendations as ways to overcome many of the barriers that have limited greater investment in programs to deliver energy efficiency to customers of electric and gas utilities (Figure ES-1). These recommendations may be pursued through a number of different options, depending upon state and utility circumstances.

As part of the Action Plan, leading organizations are committing to aggressively pursue energy efficiency opportunities in their organizations and assist others who want to increase the use of energy efficiency in their regions. Because greater investment in energy efficiency cannot happen based on the work of one individual or organization alone, the Action Plan is a commitment to bring the appropriate stakeholders together—including utilities, state policy-makers, consumers, consumer advocates, businesses, ESCOs, and others—to be part of a collaborative effort to take energy efficiency to a new level. As energy experts, utilities may be in a unique position to play a leading role.

The reasons behind the National Action Plan for Energy Efficiency, the process for developing the Action Plan, and the final recommendations are summarized in greater detail as follows.

Figure ES-1. National Action Plan for Energy Efficiency Recommendations

- **Recognize energy efficiency as a high-priority energy resource.**
- **Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource.**
- **Broadly communicate the benefits of and opportunities for energy efficiency.**
- **Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective.**
- **Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.**

The United States Faces Large and Complex Energy Challenges

Our expanding economy, growing population, and rising standard of living all depend on energy services. Current projections anticipate U.S. energy demands to increase by more than one-third by 2030, with electricity demand alone rising by more than 40 percent (EIA, 2006). At work and at home, we continue to rely on more and more energy-consuming devices. At the same time, the country has entered a period of higher energy costs and limited supplies of natural gas, heating oil, and other fuels. These issues present many challenges:

Growing energy demand stresses current systems, drives up energy costs, and requires new investments. Events such as the Northeast electricity blackout of August 2003 and Hurricanes Katrina and Rita in 2005 increased focus on energy reliability and its economic and human impacts. Transmission and pipeline systems are becoming overburdened in places. Overburdened systems limit the availability of low-cost electricity and fossil fuels, raise energy prices in or near congested areas, and potentially compromise energy system reliability. High fuel prices also contribute to higher electricity prices. In addition, our demand for natural gas to heat our homes, for industrial and business use, and for power generation is straining the available gas supply in North America and putting upward pressure on natural gas prices. Addressing these issues will require billions of dollars in investments in energy efficiency, new power plants, gas rigs, transmission lines, pipelines, and other infrastructure, notwithstanding the difficulty of building new energy infrastructure in dense urban and suburban areas. In the absence of investments in new or expanded capacity, existing facilities are being stretched to the point where system reliability is steadily eroding, and the ability to import lower cost energy into high-growth load areas is inhibited, potentially limiting economic expansion.

High fuel prices increase financial burdens on households and businesses and slow our economy. Many household budgets are being strained by higher energy costs, leaving less money available for other household purchases and needs. This burden is particularly harmful for low-income households. Higher energy bills for industry can reduce the nation's economic competitiveness and place U.S. jobs at risk.

Growing energy demand challenges attainment of clean air and other public health and environmental goals. Energy demand continues to grow at the same time that national and state regulations are being implemented to limit the emission of air pollutants, such as sulfur dioxide (SO_2), nitrogen oxides (NO_x), and mercury, to protect public health and the environment. In addition, emissions of greenhouse gases continue to increase.

Uncertainties in future prices and regulations raise questions about new investments. New infrastructure is being planned in the face of uncertainties about future energy prices. For example, high natural gas prices and uncertainty about greenhouse gas and other environmental regulations, impede investment decisions on new energy supply options.

Our energy system is vulnerable to disruptions in energy supply and delivery. Natural disasters such as the hurricanes of 2005 exposed the vulnerability of the U.S. energy system to major disruptions, which have significant impacts on energy prices and service reliability. In response, national security concerns suggest that we should use fossil fuel energy more efficiently, increase supply diversity, and decrease the vulnerability of domestic infrastructure to natural disasters.

Energy Efficiency Can Be a Beneficial Resource in Our Energy Systems

Greater investment in energy efficiency can help us tackle these challenges. Energy efficiency is already a key component in the nation's energy resource mix in many parts of the country. Utilities, states, and others across the United States have decades of experience in delivering energy efficiency to their customers. These programs can provide valuable models, upon which more states,

Benefits of Energy Efficiency

Lower energy bills, greater customer control, and greater customer satisfaction. Well-designed energy efficiency programs can provide opportunities for customers of all types to adopt energy savings measures that can improve their comfort and level of service, while reducing their energy bills.[6] These programs can help customers make sound energy use decisions, increase control over their energy bills, and empower them to manage their energy usage. Customers are experiencing savings of 5, 10, 20, or 30 percent, depending upon the customer, program, and average bill. Offering these programs can also lead to greater customer satisfaction with the service provider.

Lower cost than supplying new generation only from new power plants. In some states, well-designed energy efficiency programs are saving energy at an average cost of about one-half of the typical cost of new power sources and about one-third of the cost of natural gas supply (EIA, 2006).[7] When integrated into a long-term energy resource plan, energy efficiency programs could help defer investments in new plants and lower the total cost of delivering electricity.

Modular and quick to deploy. Energy efficiency programs can be ramped up over a period of one to three years to deliver sizable savings. These programs can also be targeted to congested areas with high prices to bring relief where it might be difficult to deliver new supply in the near term.

Significant energy savings. Well-designed energy efficiency programs are delivering annual energy savings on the order of 1 percent of electricity and natural gas sales.[8] These programs are helping to offset 20 to 50 percent of expected growth in energy demand in some areas without compromising the end users' activities and economic well-being (Nadel et al., 2004; EIA, 2006).

Environmental benefits. While reducing customers' energy bills, cost-effective energy efficiency offers environmental benefits related to reduced demand such as lower air pollution, reduced greenhouse gas emissions, lower water use, and less environmental damage from fossil fuel extraction. Energy efficiency can be an attractive option for utilities in advance of requirements to reduce greenhouse gas emissions.

Economic development. Greater investment in energy efficiency helps build jobs and improve state economies. Energy efficiency users often redirect their bill savings toward other activities that increase local and national employment, with a higher employment impact than if the money had been spent to purchase energy (Kushler et al., 2005; NYSERDA, 2004). Many energy efficiency programs create construction and installation jobs, with multiplier impacts on employment and local economies. Local investments in energy efficiency can offset imports from out-of-state, improving the state balance of trade. Lastly, energy efficiency investments usually create long-lasting infrastructure changes to building, equipment and appliance stocks, creating long-term property improvements that deliver long-term economic value (Innovest, 2002).

Energy security. Energy efficiency reduces the level of U.S. per capita energy consumption, thus decreasing the vulnerability of the economy and individual consumers to energy price disruptions from natural disasters and attacks on domestic and international energy supplies and infrastructure. In addition, energy efficiency can be used to reduce the overall system peak demand or the peak demand in targeted load areas with limited generating or transport capability. Reducing peak demand improves system reliability and reduces the potential for unplanned brown-outs or black-outs, which can have large adverse economic consequences.

utilities, and other organizations can build. Experience shows that energy efficiency programs can lower customer energy bills; cost less than, and help defer, new energy infrastructure; provide energy savings to consumers; improve the environment; and spur local economic development (see box on Benefits of Energy Efficiency). Significant opportunities for energy efficiency are likely to continue to be available at low costs in the future. State and regional studies have found that adoption of economically attractive, but as yet untapped, energy efficiency could yield more than 20 percent savings in total electricity demand nationwide by 2025. Depending on the underlying load growth, these savings could help cut load growth by half or more compared to current forecasts (Nadel et al., 2004; SWEEP, 2002; NEEP, 2005; NWPCC, 2005; WGA, 2006). Similarly, savings from direct use of natural gas could provide a 50 percent or greater reduction in natural gas demand growth (Nadel et al., 2004).

Capturing this energy efficiency resource would offer substantial economic and environmental benefits across the country. Widespread application of energy efficiency programs that already exist in some regions could deliver a large part of these potential savings.[9] Extrapolating the results from existing programs to the entire country would yield annual energy bill savings of nearly $20 billion, with net societal benefits of more than $250 billion over the next 10 to 15 years. This scenario could defer the need for 20,000 megawatts (MW), or 40 new 500-MW power plants, as well as reduce U.S. emissions from energy production and use by more than 200 million tons of carbon dioxide (CO_2), 50,000 tons of SO_2, and 40,000 tons of NO_x annually.[10] These significant economic and environmental benefits can be achieved relatively quickly because energy efficiency programs can be developed and implemented within several years.

Additional policies and programs are required to help capture these potential benefits and address our substantial underinvestment in energy efficiency as a nation. An important indicator of this underinvestment is that the level of funding across the country for organized efficiency programs is currently less than $2 billion per year while it would require about 4 times today's funding levels to achieve the economic and environment benefits presented above.[11, 12]

The current underinvestment in energy efficiency is due to a number of well-recognized barriers, including some of the regulatory policies that govern electric and natural gas utilities. These barriers include:

- *Market barriers,* such as the well-known "split-incentive" barrier, which limits home builders' and commercial developers' motivation to invest in energy efficiency for new buildings because they do not pay the energy bill; and the transaction cost barrier, which chronically affects individual consumer and small business decision-making.

- *Customer barriers,* such as lack of information on energy saving opportunities, lack of awareness of how energy efficiency programs make investments easier, and lack of funding to invest in energy efficiency.

- *Public policy barriers,* which can present prohibitive disincentives for utility support and investment in energy efficiency in many cases.

- *Utility, state, and regional planning barriers,* which do not allow energy efficiency to compete with supply-side resources in energy planning.

- *Energy efficiency program barriers,* which limit investment due to lack of knowledge about the most effective and cost-effective energy efficiency program portfolios, programs for overcoming common marketplace barriers to energy efficiency, or available technologies.

While a number of energy efficiency policies and programs contribute to addressing these barriers, such as building codes, appliance standards, and state government leadership programs, organized energy efficiency programs

provide an important opportunity to deliver greater energy efficiency in the homes, buildings, and facilities that already exist today and that will consume the majority of the energy used in these sectors for years to come.

The Leadership Group and National Action Plan for Energy Efficiency

Recognizing that energy efficiency remains a critically underutilized resource in the nation's energy portfolio, more than 50 leading electric and gas utilities, state utility commissioners, state air and energy agencies, energy service providers, energy consumers, and energy efficiency and consumer advocates have formed a Leadership Group, together with the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA), to address the issue. The goal of this group is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations. The Leadership Group recognizes that utilities and regulators play critical roles in bringing energy efficiency programs to their communities and that success requires the joint efforts of customers, utilities, regulators, states, and other partner organizations.

Under co-chairs Diane Munns (Member of the Iowa Utilities Board and President of the National Association of Regulatory Utility Commissioners) and Jim Rogers (President and Chief Executive Officer of Duke Energy), the Leadership Group members (see Table ES-1) have developed the National Action Plan for Energy Efficiency Report, which:

- Identifies key barriers limiting greater investment in energy efficiency.
- Reviews sound business practices for removing these barriers and improving the acceptance and use of energy efficiency relative to energy supply options.
- Outlines recommendations and options for overcoming these barriers.

The members of the Leadership Group have agreed to pursue these recommendations and consider these options through their own actions, where appropriate, and to support energy efficiency initiatives by other industry members and stakeholders.

Recommendations

The National Action Plan for Energy Efficiency is a call to action to utilities, state utility regulators, consumer advocates, consumers, businesses, other state officials, and other stakeholders to create an aggressive, sustainable national commitment to energy efficiency.[1] The Action Plan offers the following recommendations as ways to overcome barriers that have limited greater investment in energy efficiency for customers of electric and gas utilities in many parts of the country. The following recommendations are based on the policies, practices, and efforts of leading organizations across the country. For each recommendation, a number of options are available to be pursued based on regional, state, and utility circumstances (see also Figure ES-2).

Recognize energy efficiency as a high-priority energy resource. Energy efficiency has not been consistently viewed as a meaningful or dependable resource compared to new supply options, regardless of its demonstrated contributions to meeting load growth.[13] Recognizing energy efficiency as a high-priority energy resource is an important step in efforts to capture the benefits it offers and lower the overall cost of energy services to customers. Based on jurisdictional objectives, energy efficiency can be incorporated into resource plans to account for the long-term benefits from energy savings, capacity savings, potential reductions of air pollutants and greenhouse gases, as well as other benefits. The explicit integration of energy efficiency resources into the formalized resource planning processes that exist at regional, state, and utility levels can help establish the rationale for energy efficiency funding levels and for properly valuing and balancing the benefits. In some jurisdictions, these existing planning processes might need to be adapted or even created to meaningfully

incorporate energy efficiency resources into resource planning. Some states have recognized energy efficiency as the resource of first priority due to its broad benefits.

Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource. Energy efficiency programs are most successful and provide the greatest benefits to stakeholders when appropriate policies are established and maintained over the long-term. Confidence in long-term stability of the program will help maintain energy efficiency as a dependable resource compared to supply-side resources, deferring or even avoiding the need for other infrastructure investments, and maintain customer awareness and support. Some steps might include assessing the long-term potential for cost-effective energy efficiency within a region (i.e., the energy efficiency that can be delivered cost-effectively through proven programs for each customer class within a planning horizon); examining the role for cutting-edge initiatives and technologies; establishing the cost of supply-side options versus energy efficiency; establishing robust measurement and verification (M&V) procedures; and providing for routine updates to information on energy efficiency potential and key costs.

Broadly communicate the benefits of and opportunities for energy efficiency. Experience shows that energy efficiency programs help customers save money and contribute to lower cost energy systems. But these benefits are not fully documented nor recognized by customers, utilities, regulators, or policy-makers. More effort is needed to establish the business case for energy efficiency for all decision-makers and to show how a well-designed approach to energy efficiency can benefit customers, utilities, and society by (1) reducing customers' bills over time, (2) fostering financially healthy utilities (e.g., return on equity, earnings per share, and debt coverage ratios unaffected), and (3) contributing to positive societal net benefits overall. Effort is also necessary to educate key stakeholders that although energy efficiency can be an important low-cost resource to integrate into the energy mix, it does require funding just as a new power plant requires funding. Further, education is necessary on the impact that energy efficiency programs can have in concert with other energy efficiency policies such as building codes, appliance standards, and tax incentives.

Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective. Energy efficiency programs require consistent and long-term funding to effectively compete with energy supply options. Efforts are necessary to establish this consistent long-term funding. A variety of mechanisms have been, and can be, used based on state, utility, and other stakeholder interests. It is important to ensure that the efficiency programs' providers have sufficient long-term funding to recover program costs and implement the energy efficiency measures that have been demonstrated to be available and cost effective. A number of states are now linking program funding to the achievement of energy savings.

Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments. Successful energy efficiency programs would be promoted by aligning utility incentives in a manner that encourages the delivery of energy efficiency as part of a balanced portfolio of supply, demand, and transmission investments. Historically, regulatory policies governing utilities have more commonly compensated utilities for building infrastructure (e.g., power plants, transmission lines, pipelines) and selling energy, while discouraging energy efficiency, even when the energy-saving measures might cost less. Within the existing regulatory processes, utilities, regulators, and stakeholders have a number of opportunities to create the incentives for energy efficiency investments by utilities and customers. A variety of mechanisms have already been used. For example, parties can decide to provide incentives for energy efficiency similar to utility incentives for new infrastructure investments, provide rewards for prudent management of energy efficiency programs, and incorporate energy efficiency as an important area of consideration within rate design. Rate design offers

Figure ES-2. National Action Plan for Energy Efficiency Recommendations & Options

Recognize energy efficiency as a high priority energy resource.

Options to consider:

- Establishing policies to establish energy efficiency as a priority resource.
- Integrating energy efficiency into utility, state, and regional resource planning activities.
- Quantifying and establishing the value of energy efficiency, considering energy savings, capacity savings, and environmental benefits, as appropriate.

Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource.

Options to consider:

- Establishing appropriate cost-effectiveness tests for a portfolio of programs to reflect the long-term benefits of energy efficiency.
- Establishing the potential for long-term, cost-effective energy efficiency savings by customer class through proven programs, innovative initiatives, and cutting-edge technologies.
- Establishing funding requirements for delivering long-term, cost-effective energy efficiency.
- Developing long-term energy saving goals as part of energy planning processes.
- Developing robust measurement and verification (M&V) procedures.
- Designating which organization(s) is responsible for administering the energy efficiency programs.
- Providing for frequent updates to energy resource plans to accommodate new information and technology.

Broadly communicate the benefits of and opportunities for energy efficiency.

Options to consider:

- Establishing and educating stakeholders on the business case for energy efficiency at the state, utility, and other appropriate level addressing relevant customer, utility, and societal perspectives.
- Communicating the role of energy efficiency in lowering customer energy bills and system costs and risks over time.
- Communicating the role of building codes, appliance standards, and tax and other incentives.

Provide sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective.

Options to consider:

- Deciding on and committing to a consistent way for program administrators to recover energy efficiency costs in a timely manner.
- Establishing funding mechanisms for energy efficiency from among the available options such as revenue requirement or resource procurement funding, system benefits charges, rate-basing, shared-savings, incentive mechanisms, etc.
- Establishing funding for multi-year periods.

Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.

Options to consider:

- Addressing the typical utility throughput incentive and removing other regulatory and management disincentives to energy efficiency.
- Providing utility incentives for the successful management of energy efficiency programs.
- Including the impact on adoption of energy efficiency as one of the goals of retail rate design, recognizing that it must be balanced with other objectives.
- Eliminating rate designs that discourage energy efficiency by not increasing costs as customers consume more electricity or natural gas.
- Adopting rate designs that encourage energy efficiency by considering the unique characteristics of each customer class and including partnering tariffs with other mechanisms that encourage energy efficiency, such as benefit sharing programs and on-bill financing.

opportunities to encourage customers to invest in efficiency where they find it to be cost effective and participate in new programs that provide innovative technologies (e.g., smart meters) to help customers control their energy costs.

National Action Plan for Energy Efficiency: Next Steps

In summer 2006, members of the Leadership Group of the National Action Plan on Energy Efficiency are announcing a number of specific activities and initiatives to formalize and reinforce their commitments to energy efficiency as a resource. To assist the Leadership Group and others in making and fulfilling their commitments, a number of tools and resources have been developed:

National Action Plan for Energy Efficiency Report. This report details the key barriers to energy efficiency in resource planning, utility incentive mechanisms, rate design, and the design and implementation of energy efficiency programs. It also reviews and presents a variety of policy and program solutions that have been used to overcome these barriers as well as the pros and cons for many of these approaches.

Energy Efficiency Benefits Calculator. This calculator can be used to help educate stakeholders on the broad benefits of energy efficiency. It provides a simplified framework to demonstrate the business case for energy efficiency from the perspective of the consumer, the utility, and society. It has been used to explore the benefits of energy efficiency program investments under a range of utility structures, policy mechanisms, and energy growth scenarios. The calculator can be adapted and applied to other scenarios.

Experts and Resource Materials on Energy Efficiency. A number of educational presentations on the potential for energy efficiency and various policies available for pursuing the recommendations of the Action Plan will be developed. In addition, lists of policy and program experts in energy efficiency and the various policies available for pursuing the recommendations of the Action Plan will be developed. These lists will be drawn from utilities, state utility regulators, state energy offices, third-party energy efficiency program administrators, consumer advocacy organizations, ESCOs, and others. These resources will be available in fall 2006.

DOE and EPA are continuing to facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency. During winter 2006–2007, the Leadership Group plans to report on its progress and identify next steps for the Action Plan.

Table ES-1. Members of the National Action Plan for Energy Efficiency

Co-Chairs

Diane Munns	Member President	Iowa Utilities Board National Association of Regulatory Utility Commissioners
Jim Rogers	President and Chief Executive Officer	Duke Energy

Leadership Group

Barry Abramson	Senior Vice President	Servidyne Systems, LLC
Angela S. Beehler	Director of Energy Regulation	Wal-Mart Stores, Inc.
Bruce Braine	Vice President, Strategic Policy Analysis	American Electric Power
Jeff Burks	Director of Environmental Sustainability	PNM Resources
Kateri Callahan	President	Alliance to Save Energy
Glenn Cannon	General Manager	Waverly Light and Power
Jorge Carrasco	Superintendent	Seattle City Light
Lonnie Carter	President and Chief Executive Officer	Santee Cooper
Mark Case	Vice President for Business Performance	Baltimore Gas and Electric
Gary Connett	Manager of Resource Planning and Member Services	Great River Energy
Larry Downes	Chairman and Chief Executive Officer	New Jersey Natural Gas (New Jersey Resources Corporation)
Roger Duncan	Deputy General Manager, Distributed Energy Services	Austin Energy
Angelo Esposito	Senior Vice President, Energy Services and Technology	New York Power Authority
William Flynn	Chairman	New York State Public Service Commission
Jeanne Fox	President	New Jersey Board of Public Utilities
Anne George	Commissioner	Connecticut Department of Public Utility Control
Dian Grueneich	Commissioner	California Public Utilities Commission
Blair Hamilton	Policy Director	Vermont Energy Investment Corporation
Leonard Haynes	Executive Vice President, Supply Technologies, Renewables, and Demand Side Planning	Southern Company
Mary Healey	Consumer Counsel for the State of Connecticut	Connecticut Consumer Counsel
Helen Howes	Vice President, Environment, Health and Safety	Exelon
Chris James	Air Director	Connecticut Department of Environmental Protection
Ruth Kinzey	Director of Corporate Communications	Food Lion
Peter Lendrum	Vice President, Sales and Marketing	Entergy Corporation
Rick Leuthauser	Manager of Energy Efficiency	MidAmerican Energy Company
Mark McGahey	Manager	Tristate Generation and Transmission Association, Inc.
Janine Migden-Ostrander	Consumers' Counsel	Office of the Ohio Consumers' Counsel
Richard Morgan	Commissioner	District of Columbia Public Service Commission
Brock Nicholson	Deputy Director, Division of Air Quality	North Carolina Air Office
Pat Oshie	Commissioner	Washington Utilities and Transportation Commission
Douglas Petitt	Vice President, Government Affairs	Vectren Corporation

Bill Prindle	Deputy Director	American Council for an Energy-Efficient Economy
Phyllis Reha	Commissioner	Minnesota Public Utilities Commission
Roland Risser	Director, Customer Energy Efficiency	Pacific Gas and Electric
Gene Rodrigues	Director, Energy Efficiency	Southern California Edison
Art Rosenfeld	Commissioner	California Energy Commission
Jan Schori	General Manager	Sacramento Municipal Utility District
Larry Shirley	Division Director	North Carolina Energy Office
Michael Shore	Senior Air Policy Analyst	Environmental Defense
Gordon Slack	Energy Business Director	The Dow Chemical Company
Deb Sundin	Director, Business Product Marketing	Xcel Energy
Dub Taylor	Director	Texas State Energy Conservation Office
Paul von Paumgartten	Director, Energy and Environmental Affairs	Johnson Controls
Brenna Walraven	Executive Director, National Property Management	USAA Realty Company
Devra Wang	Director, California Energy Program	Natural Resources Defense Council
Steve Ward	Public Advocate	State of Maine
Mike Weedall	Vice President, Energy Efficiency	Bonneville Power Administration
Tom Welch	Vice President, External Affairs	PJM Interconnection
Jim West	Manager of *energy right* & Green Power Switch	Tennessee Valley Authority
Henry Yoshimura	Manager, Demand Response	ISO New England Inc.

Observers

James W. (Jay) Brew	Counsel	Steel Manufacturers Association
Roger Cooper	Executive Vice President, Policy and Planning	American Gas Association
Dan Delurey	Executive Director	Demand Response Coordinating Committee
Roger Fragua	Deputy Director	Council of Energy Resource Tribes
Jeff Genzer	General Counsel	National Association of State Energy Officials
Donald Gilligan	President	National Association of Energy Service Companies
Chuck Gray	Executive Director	National Association of Regulatory Utility Commissioners
John Holt	Senior Manager of Generation and Fuel	National Rural Electric Cooperative Association
Joseph Mattingly	Vice President, Secretary and General Counsel	Gas Appliance Manufacturers Association
Kenneth Mentzer	President and Chief Executive Officer	North American Insulation Manufacturers Association
Christina Mudd	Executive Director	National Council on Electricity Policy
Ellen Petrill	Director, Public/Private Partnerships	Electric Power Research Institute
Alan Richardson	President and Chief Executive Officer	American Public Power Association
Steve Rosenstock	Manager, Energy Solutions	Edison Electric Institute
Diane Shea	Executive Director	National Association of State Energy Officials
Rick Tempchin	Director, Retail Distribution Policy	Edison Electric Institute
Mark Wolfe	Executive Director	Energy Programs Consortium

Notes

1 Energy efficiency refers to using less energy to provide the same or improved level of service to the energy consumer in an economically efficient way. The term energy efficiency as used here includes using less energy at any time, including at times of peak demand through demand response and peak shaving efforts.

2 Addressing transportation-related energy use is also an important challenge as energy demand in this sector continues to increase and oil prices hit historical highs. However, transportation issues are outside the scope of this effort, which is focused only on electricity and natural gas systems.

3 This effort is focused on energy efficiency for regulated energy forms. Energy efficiency for unregulated energy forms, such as fuel oil for example, is closely related in terms of actions in buildings, but is quite different in terms of how policy can promote investments.

4 A utility is broadly defined as an organization that delivers electric and gas utility services to end users, including, but not limited to, investor-owned, publicly-owned, cooperatively-owned, and third-party energy efficiency utilities.

5 Many energy efficiency programs have an average life cycle cost of $0.03/kilowatt-hour (kWh) saved, which is 50 to 75 percent of the typical cost of new power sources (ACEEE, 2004; EIA, 2006). The cost of energy efficiency programs varies by program and can include higher cost programs and options with lower costs to a utility such as modifying rate designs.

6 See Chapter 6: Energy Efficiency Program Best Practices for more information on leading programs.

7 Data refer to EIA 2006 new power costs and gas prices in 2015 compared to electric and gas program costs based on leading energy efficiency programs, many of which are discussed in Chapter 6: Energy Efficiency Program Best Practices.

8 Based on leading energy efficiency programs, many of which are discussed in Chapter 6: Energy Efficiency Program Best Practices.

9 These estimates are based on assumptions of average program spending levels by utilities or other program administrators, with conservatively high numbers for the cost of energy efficiency programs. See highlights of some of these programs in Chapter 6: Energy Efficiency Program Best Practices, Tables 6-1 and 6-2.

10 These economic and environmental savings estimates are extrapolations of the results from regional program to a national scope. Actual savings at the regional level vary based on a number of factors. For these estimates, avoided capacity value is based on peak load reductions de-rated for reductions that do not result in savings of capital investments. Emissions savings are based on a marginal on-peak generation fuel of natural gas and marginal off-peak fuel of coal; with the on-peak period capacity requirement double that of the annual average. These assumptions vary by region based upon situation-specific variables. Reductions in capped emissions might reduce the cost of compliance.

11 This estimate of the funding required assumes 2 percent of revenues across electric utilities and 0.5 percent across gas utilities. The estimate also assumes that energy efficiency is delivered at a total cost (utility and participant) of $0.04 per kWh and $3 per million British thermal units (MMBtu), which are higher than the costs of many of today's programs.

12 This estimate is provided as an indicator of underinvestment and is not intended to establish a national funding target. Appropriate funding levels for programs should be established at the regional, state, or utility level. In addition, energy efficiency investments by customers, businesses, industry, and government also contribute to the larger economic and environment benefits of energy efficiency.

13 One example of energy efficiency's ability to meet load growth is the Northwest Power Planning Council's Fifth Power Plan which uses energy conservation and efficiency to meet a targeted 700 MW of forecasted capacity between 2005 and 2009 (NWPCC, 2005).

National Action Plan for Energy Efficiency

Vision for 2025:

A Framework for Change

EXECUTIVE SUMMARY

NOVEMBER 2008

Letter from the Co-Chairs of the National Action Plan for Energy Efficiency

November 2008

To all,

As you know, the National Action Plan for Energy Efficiency is playing a vital role in advancing the dialogue and the pursuit of energy efficiency in our homes, buildings, and industries —an important energy resource for the country.

With the commitment and leadership from more than 60 diverse organizations nationwide we have made great progress in a short time. We have:

- Developed five broad and meaningful recommendations for pursuing cost-effective energy efficiency.
- Brought together more than 100 organizations from 50 states around this common goal to take energy efficiency to the next level.

However, there is much more to do. We remain substantially underinvested in efficiency at a time when using energy wisely can help address rising energy costs, rising emissions of greenhouse gases, and our dependence on foreign fuel supplies.

We need a concerted, sustained effort to overcome what are truly surmountable hurdles to making energy efficiency a larger part of our supply picture. To continue our progress we need to move from our initial Action Plan to implementation. We need a vision for where we want to be and a path for getting there.

Commensurate with that goal, we are pleased to offer this updated 2025 Vision for the National Action Plan. As we released it last year, the Vision outlines what our long-term goals should be if we are to truly achieve all cost-effective energy efficiency. With recent refinements to our approach for measuring progress under the ten key implementation goals, we believe the Vision now provides a complete framework for changing our course on energy efficiency.

This Vision represents the thinking of many leading organizations nationwide. Importantly, we believe that this Vision is a living document that looks out to long-term needs and will be modified to reflect new information and changing conditions.

We thank the Leadership Group for its contribution to this document. It is a pleasure to work with this committed group to advance energy efficiency to address the critical energy and environmental issues facing the country.

Sincerely,

Marsha H. Smith
President, National Association of
Regulatory Utility Commissioners
Commissioner, Idaho Public Utilities Commission

James E. Rogers
President, Chairman, and CEO
Duke Energy

Executive Summary

This Vision for the National Action Plan for Energy Efficiency establishes a goal of achieving all cost-effective energy efficiency by 2025; presents ten implementation goals for states, utilities, and other stakeholders to consider to achieve this goal; describes what 2025 might look like if the goal is achieved; and provides a means for measuring progress. It is a framework for implementing the five policy recommendations of the Action Plan, announced in July 2006, which can be modified and improved over time.

Background

Through the Leadership Group of the National Action Plan for Energy Efficiency (Action Plan), more than 60 diverse leading organizations recognized the importance of bringing greater emphasis to the role that cost-effective energy efficiency[1] can and should play in supplying our future energy needs. Improving the energy efficiency of homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the United States—is one of the most constructive, cost-effective ways to address the challenges of high energy prices, energy security and independence, air pollution, and global climate change in the near future. Energy efficiency can play a significant role in meeting our energy requirements, and it is a critical component of the overall modernization of utility energy systems worthy of the 21st century.

Despite the value that cost-effective energy efficiency offers, it is not achieving its full potential for a number of reasons. In July 2006, the Action Plan presented five key policy recommendations (see Figure ES-1) for fully developing the cost-effective energy efficiency resources in this country, building upon experiences in particular states and regions. It was a call to action to take investment in energy efficiency to the next level. As of November 2008, more than 120 organizations have endorsed these recommendations and/or made commitments to take energy efficiency to the next level within their spheres of influence.

As a next step, the Action Plan co-chairs challenged the Leadership Group to define a vision that would detail the steps necessary to fully implement the Action Plan. The Vision presented in this document is the response to that challenge. It includes establishment of a long-term aspirational goal and ten key implementation goals. It also describes what 2025 could look like if the

Figure ES-1. National Action Plan for Energy Efficiency Recommendations

- **Recognize energy efficiency as a high-priority energy resource.**
- **Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource.**
- **Broadly communicate the benefits of and opportunities for energy efficiency.**
- **Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective.**
- **Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.**

long-term goal were achieved and provides a means for measuring progress over time. The Vision is provided as a framework to guide the changing policies toward energy efficiency for natural gas and electricity; it can be modified and improved over time.

Achieve All Cost-Effective Energy Efficiency

The long-term aspirational goal for the Action Plan is to achieve all cost-effective energy efficiency by the year 2025. Based on studies, the efficiency resource available may be able to meet 50 percent or more of the expected load growth over this time frame, similar to meeting 20 percent of electricity consumption and 10 percent of natural gas consumption.[2] The benefits from achieving this magnitude of energy efficiency nationally can be estimated to be more than $100 billion in lower energy bills in 2025 than would otherwise occur, over $500 billion in net savings, and substantial reductions in greenhouse gas emissions.

Importantly, the energy efficiency resource's role in meeting load and load growth may vary across the country due to regional differences in growth patterns, costs of energy, and other factors. Furthermore, the long-term goal is not a statement about the need for new power supply additions in the future, as new plants may be a critical component of the desired modernization of the energy supply and delivery system. However, the greater the energy efficiency savings, the greater the likelihood that efficiency gains can help replace older, less efficient power supply options, resulting in substantial environmental benefits.

Ten Implementation Goals

Over two decades of program experience support the implementation of a number of policies to enhance the likelihood that the long-term goal will be achieved. Energy efficiency needs to be valued similarly to supply options. Utilities and investors need to be financially interested in saving energy. State activity is key in this transformation of natural gas and electricity supply and delivery, including updating and enforcing codes and standards to ensure that savings are captured as new buildings and products enter the system. Customers must also have the proper incentives to make investments in cost-effective energy efficiency. With such policies in place, cost-effective energy efficiency can be a key component of the modernization of the energy supply and delivery system and help to transform how customers receive and value energy services.

These policies are included in the following ten implementation goals. These goals provide a framework for implementing the recommendations of the Action Plan (see Figure ES-1) by outlining the key steps state decision-makers should consider to help achieve the 2025 Vision. The time line for achieving these implementation goals is by 2015 to 2020, so that the necessary policy foundation is in place to help ensure success of the 2025 Vision.

Goal One: Establishing Cost-Effective Energy Efficiency as a High-Priority Resource

Utilities[3] and applicable agencies are encouraged to:

- Create a process, such as a state or regional collaborative, to explore the energy efficiency potential in the state and commit to its full development.
- Regularly identify cost-effective achievable energy efficiency potential in conjunction with ratemaking bodies.
- Set energy savings goals or targets consistent with the cost-effective potential.
- Integrate energy efficiency into energy resource plans at the utility, state, and regional levels, and include provisions for regular updates.

Goal Two: Developing Processes to Align Utility and Other Program Administrator Incentives Such That Efficiency and Supply Resources Are on a Level Playing Field

Applicable agencies are encouraged to:

- Explore establishing revenue mechanisms to promote utility and other program administrator indifference

to supplying energy savings, as compared to energy generation options.

- Consider how to remove utility and other program administrator disincentives to energy efficiency, such as by removing the utility throughput disincentive and exploring other ratemaking ideas.
- Ensure timely cost recovery in place for parties that administer energy efficiency programs.

Goal Three: Establishing Cost-Effectiveness Tests

Applicable agencies along with key stakeholders are encouraged to:

- Establish a process to examine how to define cost-effective energy efficiency practices that capture the long-term resource value of energy efficiency.
- Incorporate cost-effectiveness tests into ratemaking procedures going forward.

Goal Four: Establishing Evaluation, Measurement, and Verification Mechanisms

Ratemaking bodies are encouraged to:

- Work with stakeholders to adopt effective, transparent practices for the evaluation, measurement, and verification (EM&V) of energy efficiency savings.

Program administrators are encouraged to:

- Conduct EM&V consistent with these practices.

Goal Five: Establishing Effective Energy Efficiency Delivery Mechanisms

Applicable agencies are encouraged to:

- Clearly establish who will administer energy efficiency programs.
- Review programs, funding, customer coverage, and goals for efficiency programs; ensure proper administration and cost recovery of programs, as well as ensuring that goals are met.
- Establish goals and funding on a multi-year basis to be measured by evaluation of programs established.
- Create strong public education programs for energy efficiency.
- Ensure that the program administrator shares best practice information regionally and nationally.

Goal Six: Developing State Policies to Ensure Robust Energy Efficiency Practices

Applicable agencies are encouraged to:

- Have a mechanism to review and update building codes.
- Establish enforcement and monitoring mechanisms of energy codes.
- Adopt and implement state-level appliance standards for those appliances not addressed by the federal government.
- Develop and implement lead-by-example energy efficiency programs at the state and local levels.

Goal Seven: Aligning Customer Pricing and Incentives to Encourage Investment in Energy Efficiency

Utilities and ratemaking bodies are encouraged to:

- Examine, propose, and modify rates considering impact on customer incentives to pursue energy efficiency.
- Create mechanisms to reduce customer disincentives for energy efficiency (e.g., financing mechanisms).

Goal Eight: Establishing State of the Art Billing Systems

Utilities are encouraged to:

- Work with customers to develop methods of supplying consistent energy use and cost information across states, service territories, and the nation.

Goal Nine: Implementing State of the Art Efficiency Information Sharing and Delivery Systems

Utilities and other program administrators are encouraged to:

- In conjunction with their regulatory bodies, explore the development and implementation of state of the art energy delivery information, including smart grid infrastructures, data analysis, two-way communication programs, etc.
- Explore methods of integrating advanced technologies to help curb demand peaks and monitor efficiency upgrades to prevent equipment degradation, etc.
- Coordinate demand response and energy efficiency programs to maximize value to customers.
- Support development of an energy efficiency services and program delivery channel (e.g., quality trained technicians), with specific attention to residential programs.

Goal Ten: Implementing Advanced Technologies

Applicable agencies and utilities are encouraged to:

- Review policies to ensure that barriers to advanced technologies, such as combined heat and power (CHP), are removed; ensure inclusion into the broader resource plans.
- Work collectively to review advanced technologies and determine rapid integration timelines.

Measuring Progress

Measurement of the progress toward full implementation of these ten goals by 2015 to 2020 is an important part of the Vision. Progress will be measured and reported on every few years. As of December 31, 2007, based on information collected from across the country (see Table ES-1), there is a strong basis of experience with these energy efficiency policies upon which to draw and to expand. For example, more than a dozen states have:

- Established a policy to recognize energy efficiency as a high-priority resource.
- Identified the cost-effective, achievable potential for energy efficiency over the long term, and established energy savings goals or targets consistent with this potential.
- Established cost-effectiveness tests for energy efficiency consistent with the long-term benefits of energy efficiency.
- Established energy efficiency programs for their various types of customers.

There is also more progress to make. For example, several states have also implemented the following policy steps to advance energy efficiency:

- Integrated energy efficiency savings goals or expected energy savings targets into state energy resource plans, with provisions for regular updates.
- Provided for stable (multi-year) funding for energy efficiency programs, consistent with energy efficiency goals.

These policies go hand in hand with significant investment in energy efficiency, as well as capturing the energy savings and environmental benefits from these programs. As of 2008, the most recent national benefits data show that:

- Cumulative electricity savings total 63 billion kilowatt-hours (kWh) (about 2 percent of retail sales) as of 2006, including incremental electricity savings of over 8 billion kWh in 2006 alone. These cumulative savings have avoided the need for 16 gigawatts of new capacity, equivalent to 32 new 500-megawatt power plants.[4]
- Cumulative natural gas savings total 135 million therms (0.1 percent of retail sales) as of 2006.[5]

Table ES-1. Progress in Meeting Implementation Goals

	Implementation Goal and Key Steps	States Having Adopted Policy Step as of December 31, 2007			
		Electricity Services		Natural Gas Services	
		Completely	Partially	Completely	Partially
Goal One: Establishing Cost-Effective Energy Efficiency as a High-Priority Resource					
1	Process in place, such as a state and/or regional collaborative, to pursue energy efficiency as a high-priority resource.	14	0	14	0
2	Policy established to recognize energy efficiency as high-priority resource.	21	22	8	8
3	Potential identified for cost-effective, achievable energy efficiency over the long term.	25	1	13	0
4	Energy efficiency savings goals or expected energy savings targets established consistent with cost-effective potential.	15	3	5	2
5	Energy efficiency savings goals and targets integrated into state energy resource plan, with provisions for regular updates.	0	16	0	1
6	Energy efficiency savings goals and targets integrated into a regional energy resource plan.**	TBD	TBD	TBD	TBD
Goal Two: Developing Processes to Align Utility and Other Program Administrator Incentives Such That Efficiency and Supply Resources Are on a Level Playing Field					
7	Utility and other program administrator disincentives are removed.	17	8	18	5
8	Utility and other program administrator incentives for energy efficiency savings reviewed and established as necessary.	10	5	5	2
9	Timely cost recovery in place.**	TBD	TBD	TBD	TBD
Goal Three: Establishing Cost-Effectiveness Tests					
10	Cost-effectiveness tests adopted which reflect the long-term resource value of energy efficiency.	29	2	9	0
Goal Four: Establishing Evaluation, Measurement, and Verification Mechanisms					
11	Robust, transparent EM&V procedures established.	14	6	5	2
Goal Five: Establishing Effective Energy Efficiency Delivery Mechanisms					
12	Administrator(s) for energy efficiency programs clearly established.	24	2	13	1
13	Stable (multi-year) and sufficient funding in place consistent with energy efficiency goals.	4	9	2	4
14	Programs established to deliver energy efficiency to key customer classes and meet energy efficiency goals and targets.	24	2	7	0
15	Strong public education programs on energy efficiency in place.	18	5	13	6
16	Energy efficiency program administrator engaged in developing and sharing program best practices at the regional and/or national level.	30	0	18	0

Table ES-1. Progress in Meeting Implementation Goals (continued)

	Implementation Goal and Key Steps	States Having Adopted Policy Step as of December 31, 2007			
		Electricity Services		Natural Gas Services	
		Completely	Partially	Completely	Partially
Goal Six: Developing State Policies to Ensure Robust Energy Efficiency Practices					
17	State policies require routine review and updating of building codes.	28	13	28	13
18	Building codes effectively enforced.**	TBD	TBD	TBD	TBD
19	State appliance standards in place.	11	0	11	0
20	Strong state and local government lead-by example programs in place.	13	24	13	24
Goal Seven: Aligning Customer Pricing and Incentives to Encourage Investment in Energy Efficiency					
21	Rates examined and modified considering impact on customer incentives to pursue energy efficiency.	7	5	2	0
22	Mechanisms in place to reduce consumer disincentives for energy efficiency (e.g., including financing mechanisms).	4	1	0	0
Goal Eight: Establishing State of the Art Billing Systems					
23	Consistent information to customers on energy use, costs of energy use, and options for reducing costs.**	TBD	TBD	TBD	TBD
Goal Nine: Implementing State of the Art Efficiency Information Sharing and Delivery Systems					
24	Investments in advanced metering, smart grid infrastructure, data analysis, and two-way communication to enhance energy efficiency.	5	29	***	***
25	Coordinated energy efficiency and demand response programs established by customer class to target energy efficiency for enhanced value to customers.**	TBD	TBD	***	***
26	Residential programs established to use trained and certified professionals as part of energy efficiency program delivery.	9	0	9	0
Goal Ten: Implementing Advanced Technologies					
27	Policies in place to remove barriers to combined heat and power.	11	24	***	***
28	Timelines developed for the integration of advanced technologies.**	TBD	TBD	TBD	TBD

* See Appendix D of the full *Vision for 2025* report for additional information on how these numbers have been determined.

** See Appendix D of the full *Vision for 2025* report for discussion of why progress on this policy step is not currently measured.

*** Steps 24, 25, and 27 do not apply to natural gas.

TBD = To be determined

Table ES-2. Current Benefits from and Funding for State- and Utility-Administered Energy Efficiency Programs*

Annual Benefits and Funding	Energy Savings		Avoided CO_2 Emissions (million tons)	Efficiency Funding	
	Energy Use (kWh or therms)	Peak Capacity (GW)		2006 Spending ($ billion)	2007 Budgets ($ billion)
Electricity					
Incremental	8 billion	1.3	5.8	$1.60 (0.5% of utility revenues)	$1.88
Cumulative	63 billion (2% of retail sales)	16.0	46.1		
Natural Gas					
Incremental	N/A	—	N/A	$0.29 (0.3% of utility revenues)	$0.28
Cumulative	135 million (0.1% of retail sales)	—	0.8		

Sources: ACEEE (Eldridge et al., 2008), CEE (Nevius et al., 2008), eGRID2007 Version 1.0 (EPA, 2008), EIA energy sales and savings data (EIA, 2007, 2008a, 2008b, 2008c), and American Gas Association statistics (AGA, 2008).

*For information on how these numbers were derived, see Chapter 2 of the full Vision for 2025 report.

N/A = Not available

- Greenhouse gas emissions are being reduced by nearly 50 million metric tons annually, equivalent to emissions from 9 million vehicles per year.[6]
- Approximately $2 billion (approximately 0.5 percent of utility revenues) is being invested annually in state- and utility-administered energy efficiency programs.[7]
- State energy savings goals and utility energy savings targets are in place to encourage cumulative savings exceeding 200 billion kWh in the year 2025, in addition to current energy savings.[8]

Additional details on the estimates for current investments and benefits are provided in Table ES-2. Improving the available data will be an ongoing effort as the Action Plan continues to measure progress toward all cost-effective energy efficiency.

The Energy System in 2025

An energy system in 2025 that would evolve with the suite of energy efficiency policies in place as outlined above and that captures all cost-effective energy efficiency will be different from the one we have today. Some of the key differences based on the effects that some of these policy changes are having in parts of the country, as well as expectations of some of the advantages that new technology and system modernization can bring, are highlighted below from the perspectives of the energy customer and society.

- **Customers** across the residential, commercial, and industrial sectors would have ready, uniform access to comprehensive energy efficiency services across the country. These services would bring a range of efficiency improvements to homes, buildings, and

Table ES-3. Changes to Watch in Evolving Technology, Policy, and Program Practices for Energy Efficiency

Policy Area	Changes to Watch
Evaluation, measurement, and verification	• Development of national standards • Requirements for independent verification • Growing role for smart grid technologies in EM&V • Requirements for state and regional carbon programs
Demand response, advanced metering, and smart grids	• New technologies, such as advanced meters and smart appliances/ controls • Data collection networks and data analysis to enhance energy efficiency • New customer interfaces • Increased interoperability
Regional resource planning	• Regional value of energy efficiency identified
Building energy efficiency expertise/workforce	• Development and use of energy efficiency curriculum for various segments of the workforce • Development and broad use of training and certification programs
Integration of R&D, building codes, appliance standards, and market transformation efforts	• Regional and national coordination across these efforts

Sources: PJM, 2007; CEC and CPUC, 2005; Business Roundtable, 2007; Elliott et al., 2007; Roseman and Hochstetter, 2007; Schiller Consulting, 2007; Western Governors' Association, 2006.

facilities and reduce customers' bills below what they would have been without these programs. Customers would also have clear information on the cost of energy and increased awareness of their total energy use. In addition, new efficient appliances and other equipment will help to control the peak demand of utility systems and give large customers greater flexibility in how they manage and control their own operations to reduce energy use, reduce costs, and increase their own competitive positions. New homes and buildings would meet up-to-date energy codes.

- **Society** would benefit from significantly modernized energy supply, transmission, and distribution systems and, with increased investment in cost-effective energy efficiency, would benefit from lower overall cost of energy supply, increased fuel diversity, and lower emissions of air pollutants and greenhouse gases. The low-income populations would benefit, in particular, from the lower energy bills resulting from a commitment to deliver energy efficiency to these customer classes. Society may also see economic benefits from the greater employment necessary to build an industry capable of delivering energy efficiency services at this broad scale, from a robust business in energy efficiency products and services, and from using more capital locally.

There are a number of challenges to achieving this Vision, including the necessary evolution of technology, policy, and program practices. Table ES-3 highlights some of these evolving areas, including evaluation approaches for efficiency resources, customer involvement through demand response programs and smart grid technology, regional resource planning, workforce building, and integration across energy efficiency efforts.

Related State, Regional, and National Policies

Other energy and environmental policy decisions at the state, regional, and national levels can affect energy efficiency. Ideally, these policies will be designed and implemented in a manner that helps remove barriers to energy efficiency and helps capture energy efficiency resources for a lower-cost energy system than otherwise would be necessary. Integrating energy efficiency considerations into related policy areas, as appropriate, will be critical to achieving this Vision. Such related policy areas are those designed to:

- Limit emissions of greenhouse gases.
- Encourage the use of clean, efficient distributed generation.
- Promote clean energy supply, such as renewable energy.
- Promote load reductions at critical peak times through demand response.
- Modernize and maintain the nation's electric transmission and distribution system, including "smart grid" and advanced meter infrastructure.
- Maintain a sufficient reserve margin for reliable electricity supply.

Next Steps

This Vision is offered as a framework to assist change in energy efficiency and related policies and programs at the state level across the country, toward the goal of achieving all cost-effective energy efficiency in 2025. It presents a snapshot of where the country is as of December 31, 2007 based on the collection and organization of available information on the existing policy and program options. The decision of whether to adopt a policy or program and particular design details at the state level are, of course, to be determined through state processes that address state goals, objectives, and circumstances. The Action Plan Leadership Group and other public and private sources provide a wealth of tools and assistance to parties taking action to advance the Vision, as summarized in Table ES-4.

The Vision will be updated as new information becomes available and improved as information changes. Information on measuring progress at the state level will be updated on a regular basis at the Action Plan Web site, www.epa.gov/eeactionplan. People are encouraged to provide additional information and their comments for how to refine this Vision to the Action Plan Leadership Group. Please send feedback to the Action Plan sponsors via Larry Mansueti, U.S. Department of Energy (lawrence.mansueti@hq.doe.gov, 202-586-2588) and Stacy Angel, U.S. Environmental Protection Agency (angel.stacy@epa.gov, 202-343-9606).

EXHIBIT__(DPY-3)

Resolution on Gas and Electric Energy Efficiency

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC), at its July 2003 Summer Meetings, adopted a *Resolution on State Commission Responses to the Natural Gas Supply Situation* that encouraged State and Federal regulatory commissions to review and reconsider the level of support and incentives for existing gas and electric utility programs designed to promote and aggressively implement cost-effective conservation, energy efficiency, weatherization, and demand response in both gas and electricity markets; *and*

WHEREAS, The National Petroleum Council (NPC), in its September 25, 2003 report on *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy*, found that greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating price levels and reducing volatility and recommended all sectors of the economy work toward improving demand flexibility and efficiency; *and*

WHEREAS, The NPC, in its report, identified key elements of the effort to maintain and continue improvements in the efficient use of electricity and natural gas, including (but not limited to):

(i) enhanced and expanded public education programs for energy conservation, efficiency, and weatherization,

(ii) DOE identification of best practices utilized by States for low-income weatherization programs and to encourage nation-wide adoption of these practices,

(iii) a review and upgrade of the energy efficiency standards for buildings and appliances (to reflect current technology and relevant life-cycle cost analyses) to ensure these standards remain valid under potentially higher energy prices

(iv) promote the use of high-efficiency consumer products including advanced building materials, Energy Star appliances, energy "smart" metering and information control devices

(v) on-peak electricity conservation to minimize the use of gas-fired electric generating plants,

(vi) the use of combined-cycle gas-fired electric generating units instead of less-efficient gas-fired boilers, and

(vii) clear natural gas and power price signals; and

(viii) remove regulatory and rate structure incentives to inefficient use of natural gas and electricity; and

WHEREAS, The NARUC, at its November 2003 annual convention, adopted a *Resolution Adopting Natural Gas Information "Toolkit"* which encouraged the NARUC Natural Gas Task Force, to review (among other things) the findings and recommendations in the NPC report that have regulatory implications for State commissions for improving and promoting energy efficiency and conservation initiatives, including consumer outreach and education, review of regulatory throughput incentives*; and*

WHEREAS, The American Council for an Energy-Efficient Economy ("ACEEE"), in its December 2003 report on *Responding to the Natural Gas Crisis: America's Best Natural Gas Energy Efficiency Programs*, (i) identified States and utilities with programs that many would consider best practice or model programs for all types of natural gas customers and all principal natural gas end-use technologies, and (ii) found that these programs are concentrated in relatively few States and regions and could be expanded in other parts of the country to great benefit; *and*

WHEREAS, the Natural Resources Defense Council (NRDC), the American Gas Association (AGA) and the ACEEE have recently adopted a Joint Statement noting that traditional rate structures often act as disincentives for natural gas utilities to aggressively encourage their customers to use less gas. Therefore, the NRDC, AGA, and the ACEEE have urged public utility commissions to align the interests of consumers, utility shareholders, and society as a whole by encouraging conservation. Among the mechanisms supported by these groups are the use of automatic rate true-ups to ensure that a utility's opportunity to recover authorized fixed costs is not held hostage to fluctuations in retail gas sales; *now therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC), convened in its 2004 Summer Meetings in Salt Lake City, Utah, encourages State commissions and other policy makers to support the expansion of natural gas energy efficiency programs and electric energy efficiency programs, including those designed to promote consumer education, weatherization, and the use of high-efficiency appliances, where economic, and to address regulatory incentives to address inefficient use of gas and electricity; *and be it further*

RESOLVED, That the Board of Directors of the NARUC, encourages State and Federal policy makers to: (i) review and upgrade the energy efficiency standards for buildings and appliances, where economic, to ensure these standards remain valid under potentially higher energy prices, and (ii) promote the use of high-efficiency consumer products, where economic, including advanced building materials, Energy Star appliances, and energy "smart" metering and information control devices; *and be it further*

RESOLVED, That Board of Directors of NARUC encourages State Commissions to review and consider the recommendations contained in the enclosed *Joint Statement of the American Gas Association, the Natural Resources Defense Council, and the American Council for an Energy-Efficient Economy; and be it further*

RESOLVED, That the Board of Directors of the NARUC recognizes that the best approach towards promoting gas energy efficiency programs and electric energy efficiency programs for any single utility, State or region may likely depend on local issues, preferences and conditions.

Sponsored by the NARUC Natural Gas Task Force, Committee on Gas, Committee on Consumer Affairs, Committee on Electricity, and Committee on Energy Resources and the Environment
Adopted by the NARUC Board of Directors July 14, 2004

Resolution on Energy Efficiency and Innovative Rate Design

WHEREAS, The National Association of Regulatory Utility Commissioners (NARUC), at its July 2003 Summer Meetings, adopted a *Resolution on State Commission Responses to the Natural Gas Supply Situation* that encouraged State and Federal regulatory commissions to review the incentives for existing gas and electric utility programs designed to promote and aggressively implement cost-effective conservation, energy efficiency, weatherization, and demand response; *and*

WHEREAS, The NARUC at its November 2003 annual convention, adopted a *Resolution Adopting Natural Gas Information "Toolkit,"* which encouraged the NARUC Natural Gas Task Force to review the findings and recommendations of the September 23, 2003 report by the National Petroleum Council on *Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy* and its recommendations for improving and promoting energy efficiency and conservation initiatives; *and*

WHEREAS, The NARUC at its 2004 Summer Meetings, adopted a *Resolution on Gas and Electric Energy Efficiency* encouraging State commissions and other policy makers to support expansion of energy efficiency programs, including consumer education, weatherization, and energy efficiency and to address regulatory incentives to inefficient use of gas and electricity; *and*

WHEREAS, These NARUC initiatives were prompted by the substantial increases in the price of natural gas in wholesale markets during the 2000-2003 period when compared to the more moderate prices that prevailed throughout the 1990s; *and*

WHEREAS, The wholesale natural gas prices of the last five years largely reflect the fact that the demand by consumers for natural gas has been growing steadily while, for a variety of reasons, the supply of natural gas has had difficulty keeping pace, leading to a situation where natural gas demand and supply are narrowly in balance and where even modest increases in demand produce sharp increases in price; *and*

WHEREAS, Hurricanes Katrina and Rita, in addition to damaging the States of Alabama, Mississippi, Louisiana, and Texas, significantly damaged the nation's onshore and offshore energy infrastructure, resulting in significant interruption in the production and delivery of both oil and natural gas in the Gulf Coast area; *and*

WHEREAS, The confluence of a tight balance of natural gas supply and demand and these natural disasters has driven natural gas prices in wholesale markets to unprecedented levels; *and*

WHEREAS, The present high and unprecedented level of natural gas prices are imposing significant burdens on the nation's natural gas consumers, whether residential, commercial, or industrial, and will likely be injurious to the nation's economy as a whole; *and*

WHEREAS, The recently enacted Energy Policy Act of 2005 contains a number of provisions aimed at encouraging further natural gas production in order to bring down prices for consumers,

but these actions, together with any further action on energy issues by Congress, are unlikely to bring forth additional supplies of natural gas in the short term; *and*

WHEREAS, Energy conservation and energy efficiency are, in the short term, the actions most likely to reduce upward pressure on natural gas prices and to assist in bringing energy prices down, to the benefit of all natural gas consumers; *and*

WHEREAS, Innovative rate designs including "energy efficient tariffs" and "decoupling tariffs" (such as those employed by Northwest Natural Gas in Oregon, Baltimore Gas & Electric and Washington Gas in Maryland, Southwest Gas in California, and Piedmont Natural Gas in North Carolina), "fixed-variable" rates (such as that employed by Northern States Power in North Dakota, and Atlanta Gas Light in Georgia), other options (such as that approved in Oklahoma for Oklahoma Natural Gas), and other innovative proposals and programs may assist, especially in the short term, in promoting energy efficiency and energy conservation and slowing the rate of demand growth of natural gas; *and*

WHEREAS, Current forms of rate design may tend to create a misalignment between the interests of natural gas utilities and their customers; *now therefore be it*

RESOLVED, That the National Association of Regulatory Utility Commissioners (NARUC), convened in its November 2005 Annual Convention in Indian Wells, California, encourages State commissions and other policy makers to review the rate designs they have previously approved to determine whether they should be reconsidered in order to implement innovative rate designs that will encourage energy conservation and energy efficiency that will assist in moderating natural gas demand and reducing upward pressure on natural gas prices; *and be it further*

RESOLVED, That NARUC recognizes that the best approach toward promoting energy efficiency programs for any utility, State, or region may likely depend on local issues, preferences, and conditions.

Sponsored by the Committee on Gas
Recommended by the NARUC Board of Directors November 15, 2005
Adopted by the NARUC November 16, 2005

Resolution Supporting the National Action Plan on Energy Efficiency

WHEREAS, The United States is in an increasing energy cost environment, both for the cost of energy commodities and new energy infrastructure, such that there is uniform recognition at every level of government and industry that concerted efforts and attention must be focused on ways to conserve energy and utilize it more efficiently in order to reduce the corresponding costs to both consumers and our economy; *and*

WHEREAS, The Department of Energy (DOE), the Environmental Protection Agency (EPA), and other government and non-profit agencies are working with a number of public and private entities in numerous States to identify, implement and improve public policy and planning efforts related to the achievement of energy efficiency objectives; *and*

WHEREAS, The Board of Directors of the National Association of Regulatory Utility Commissioners adopted a "Resolution on Gas and Electric Energy Efficiency" at its July 2004 meeting that encouraged State policy makers to: (1) support the expansion of energy efficiency programs; (2) review and upgrade energy efficiency standards for buildings and appliances and promote the use of high-efficiency consumer products, including smart metering and information control devices; and (3) recognize that the best approach for promoting such programs may depend on local issues, preferences, and conditions; *and*

WHEREAS, The National Action Plan on Energy Efficiency was released on July 31, 2006, recommending key action items for public policymakers and private industry to consider in each region, with the goal of saving consumers billions of dollars in energy costs over the next 15 years; *and*

WHEREAS, The following five recommendation areas comprise the key elements of the 2006 National Action Plan on Energy Efficiency: (1) Recognize energy efficiency as a high priority energy resource; (2) Make a strong, long-term commitment to cost-effective energy efficiency as a resource; (3) Broadly communicate the benefits of and opportunities for energy efficiency; (4) Promote sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective; and (5) Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments; *now therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners (NARUC), convened in its 2006 Summer Meeting in San Francisco, California, reaffirms its support for the Association's July 2004 "Resolution on Gas and Electric Energy Efficiency"; *and be it further*

RESOLVED, That the Board of Directors commends the commitments made on July 31, 2006 at the opening session of these meetings by a number of State commissions and other stakeholders to take specific actions to move their States aggressively toward increased energy efficiency; *and be it further*

RESOLVED, That the Board of Directors endorses the principal objectives and recommendations of the National Action Plan on Energy Efficiency, and commends to its member commissions a State-specific, and where appropriate, regional review of the elements and potential applicability of the energy efficiency policy recommendations outlined in the Plan, in an effort to identify potential improvements in energy efficiency policy nationwide.

Sponsored by the Executive Committee and the Committees on Consumer Affairs, Electricity, Energy Resources and the Environment, and Gas
Adopted by the NARUC Board of Directors August 2, 2006

Resolution Supporting the National Action Plan for Energy Efficiency VISION FOR 2025: Developing a Framework for Change

WHEREAS, The National Action Plan for Energy Efficiency (Action Plan) was released on July 31, 2006, recommending key action items for public policymakers and private industry to consider in each region, with the goal of saving consumers billions of dollars in energy costs over the next 15 years; *and*

WHEREAS, The Action Plan presented the following five key policy recommendations for fully developing the cost-effective energy resources in this country: (1) Recognize energy efficiency as a high priority energy resource; (2) Make a strong, long-term commitment to cost-effective energy efficiency as a resource; (3) Broadly communicate the benefits of and opportunities for energy efficiency; (4) Provide sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective; and (5) Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments; *and*

WHEREAS, On August 2, 2006, the Board of Directors of the National Association of Regulatory Utility Commissioners adopted a "*Resolution Supporting the National Action Plan on Energy Efficiency*" that endorsed the principal objectives and recommendations of the Action Plan; commended to member commissions a State-specific and regional review of its recommendations to identify potential improvements in energy efficiency policy; and encouraged State commissions and other stakeholders to take specific actions to move their States aggressively toward increased energy efficiency; *and*

WHEREAS, The aspirational goal for the Action Plan is to achieve all cost-effective energy efficiency by 2025; *and*

WHEREAS, The National Action Plan for Energy Efficiency eadership Group identifies 10 implementation goals necessary to meet the objective of achieving all cost-effective energy efficiency in its *Vision for 2025*: *Developing a Framework for Change*; *and*

WHEREAS, The 10 implementation goals are as follows:

1. Establishing Cost-Effective Energy Efficiency as a igh-Priority Resource;
2. Developing Processes to Align Utilities ncentives E ually for Efficiency and Supply Resources;
3. Establishing Cost-Effectiveness Tests;
4. Establishing Evaluation, Measurement and erification Measures;
5. Establishing Effective Energy Efficiency Delivery Mechanisms;
6. Developing State Policies to Ensure Robust Energy Efficiency Practices;
. Aligning Customer Pricing and ncentives to Encourage nvestment in Energy Efficiency;
. Establishing State-of-the-Art Billing Systems;
. mplementing State-of-the-Art Efficiency nformation Sharing and Delivery Systems; and
10. mplementing Advanced Technologies; *and*

WHEREAS, NARUC's support for the *Vision for 2025: Developing a Framework for Change* recognizes the key role to be played by State commissions in achieving the full potential of energy efficiency; *now, therefore, be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened in its 200 inter Meetings in ashington, D.C., endorses the principal objectives and recommendations expressed by the National Action Plan for Energy Efficiency eadership Group in its *Vision for 2025*: *Developing a Framework for Change*; *and be it further*

RESOLVED, That the Board of Directors commends to its member commissions the guidance provided by the *Vision for 2025: Developing a Framework for Change* to advance State-specific policies and frameworks enabling the ac uisition of all cost effective energy efficiency by 2025.

Sponsored by the Committee on Energy Resources and the Environment
Adopted by the Board of Directors February 20, 2008

Resolution on Second Joint Statement of the American Gas Association and the Natural Resources Defense Council in Support of Measures to Promote Increased Energy Efficiency and Reduction in Greenhouse Gas Emissions

WHEREAS, On August 2, 2006, the National Association of Regulatory Utility Commissioners (NARUC) adopted a resolution, *Resolution Supporting the National Action Plan on Energy Efficiency*, sponsored by the Executive Committee and the Committees on Consumer Affairs, Electricity, Energy Resources and the Environment, and Gas, "endorsing the principal objectives and recommendations of the National Action Plan on Energy Efficiency and commend ing to its member commissions a State-specific, and where appropriate, regional review of the elements and potential applicability of the energy efficiency policy recommendations outlined in the Plan, in an effort to identify potential improvements in energy efficiency policy nationwide"; *and*

WHEREAS, n adopting this resolution, NARUC commended the commitments made on July 31, 2006, by a number of State commissions and other stakeholders to take specific actions to move their States aggressively toward increased energy efficiency; *and*

WHEREAS, This Resolution also recognized the five recommendations comprising the key elements of the 2006 National Action Plan on Energy Efficiency including recommendation number five to " m odify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments"; *and*

WHEREAS, On July 14, 2004, NARUC adopted a *Resolution on Gas and Electric Energy Efficiency* sponsored by the NARUC Natural Gas Task Force, Committee on Gas, Committee on Consumer Affairs, Committee on Electricity, and Committee on Energy Resources and the Environment, which "encourages State Commissions to review and consider the recommendations contained in the enclosed *Joint Statement of the American Gas Association, the Natural Resources Defense Council, and the American Council for an Energy Efficient Economy*;" *and*

WHEREAS, n May 200 , the American Gas Association (AGA) and the Natural Resources Defense Council (NRDC) issued a *Second Joint Statement*, which has been reviewed and endorsed by the Alliance to Save Energy and the American Council for Energy Efficient Economy; *and*

WHEREAS, The *Second Joint Statement*[1] supports three common objectives: 1) removing disincentives for utilities to promote energy efficiency and reduce greenhouse gas emissions, and uniting to achieve increased savings through programs and standards; 2) developing performance-based incentives for utilities to promote energy efficiency and reduced greenhouse gas emissions; and 3) recognizing the potential contributions of efficient natural gas use in promoting reduced greenhouse gas emissions; *and*

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[1] http: www.aga.org NR rdonlyres CC D 622- E61-4 F4- 154-BC46302E41DD 0 0 05NRDCAGA2.pdf

WHEREAS, These objectives are consistent with those laid out in the 2006 National Action Plan for Energy Efficiency, objectives recognized in previous NARUC resolutions, and actions taken by a number of State Commissions seeking to remove utility disincentives to promote energy efficiency and to develop mechanisms that link energy efficiency incentives to independently verified net benefits that utilities deliver to customers through either successful administration of cost-effective efficiency programs and other authorized efficiency programs that serve low-income constituencies, particularly in the green-collar job creation opportunities in manufacturing, installation, and weatherization, or contributions to enactment of cost-effective efficiency standards and tax incentives; *now, therefore, be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 200 Summer Meetings in Portland, Oregon, encourages commissions to consider the principles and recommendations set out in the *Second Joint Statement of the American Gas Association and the Natural Resources Defense Council* and encourages State Commissions and other policymakers to review and give strong consideration to favorably approving gas distribution proposals consistent with these principles and recommendations.

Sponsored by the Committees on Gas and Energy Resources and the Environment
Adopted by the Board of Directors July 23, 2008

EXHIBIT__(DPY-4)

Piedmont Natural Gas Company, Inc.

Earned Rates of Return by Class
and Required Increase to Yield
Overall Rate of Return

Customer Class	Existing Revenues	Earned ROR at Present Rates	Required Increase for Equalized ROR
Residential Service	$ 54,662,150	0.84%	$ 23,862,778
Small General Service	$ 23,081,066	15.50%	$ (3,268,619)
Medium General Service	$ 5,602,239	30.57%	$ (2,548,883)
FT / Large General Service	$ 4,378,109	23.45%	$ (1,585,931)
Resale Service	$ 28,481	-7.31%	$ 119,389
TOTAL COMPANY	$ 87,752,045	5.55%	$ 16,578,734

EXHIBIT__(DPY-5)

PIEDMONT NATURAL GAS COMPANY, INC.
ALLOCATED COST OF SERVICE STUDY

I. PURPOSE AND GUIDING PRINCIPLES

Piedmont Natural Gas Company, Inc. ("Piedmont" or the **"Company")** is proposing to change existing rates in connection with a proposed increase in base rate revenue requirements. An allocated cost of service study ("ACOSS") assesses the reasonableness of existing prices, and guides the development of price changes. In particular, the ACOSS examines all of a **utility's** common costs, and through appropriate cost assignments and allocations, establishes measures of investments, expenses and income by customer class. An ACOSS is necessary to determine the cost responsibility for each customer class because many of the **Company's** costs are common and are incurred to serve many classes of customers collectively.

The ACOSS calculates the total investment and operating costs incurred to serve each customer class, establishing class-specific total revenue requirements. The class-specific revenue requirements are compared to class revenues in order to establish class income and rate of return on investment. The class-specific rates of return are used to guide the apportionment of the base rate increase among all of **Piedmont's** customer classes in conjunction with the development of proposed rates. The ACOSS also determines the classification of costs among demand, customer and commodity components. The classification of costs within a rate classification is used to guide the development of the form of billing rates for that class. Although the ACOSS is not the only factor relied upon to design rates, it is an invaluable guide to ensuring that the process is fair and reasonable.

The primary principle that guides the ACOSS process is that of cost causation. Each step in the development of the ACOSS is consistent with the factors that drive or contribute to the incurrence of costs on the

Piedmont system. For example, the principle of cost causation requires that the costs incurred by the Company for meter reading be apportioned to classes on the basis of the number of meter readings in each class.

II. Specification of Piedmont ACOSS

A. Overview

The ACOSS follows a three-part process, which consists of the functionalization, classification and allocation of **Piedmont's** total cost of service. First, cost functionalization involves the segregation of costs into categories based on the function that each cost is incurred to provide. In the ACOSS, the functions are production, transmission, storage and distribution – the direct functions associated with costs incurred by the Company. Second, cost classification further separates costs according to the primary cost causative forces exhibited on **Piedmont's** system. The cost classifications used in the ACOSS relate to fixed costs required to serve peak requirements (demand-related), fixed costs associated with providing customers with access to and active status on the system (customer-related), and variable costs associated with system throughput (commodity-related). Finally, cost allocation takes each classification of cost for each function and apportions that cost to each of the **Company's** customer classes. Cost allocation utilizes a variety of factors to apportion the various types of costs among classes in a manner that is consistent with principles of cost responsibility.

B. Customer Classes

The ACOSS groups Piedmont customers into five groups based on rate schedules set forth in **Piedmont's** gas tariff. The ACOSS groups and associated rate schedules are: Residential, Small General Service, Medium General Service, Large General Service / Firm Transportation Service, and Resale Service. Rate Schedules that are grouped together within the ACOSS, *e.g.*, Large General Service and Firm Transportation, reflect common base rates even though other terms and conditions of service vary including differences between sales and transportation services.

C. Data Sources

The primary data sources fall in two general categories: data related to the establishment of the total cost of service, and data used as the basis for allocating the total cost of service among customer classes. The total cost of service or revenue requirement data utilized in the ACOSS are

taken from schedules supporting **Piedmont's** base rate application in this proceeding. The **Company's** forecasts of sales, customers and revenues by class supporting the application as adjusted for pro forma changes are used as allocation bases for several categories of costs. The remaining allocation data are derived from special studies of facility investments. All of the data utilized in the ACOSS correspond to a common time period of March 2012 through February 2013. This is the Attrition Period, which is the period for which rates are to be determined.

D. Cost Functionalization

The functionalization of costs refers to the segregation of costs among the primary functions provided by gas utilities to their retail customers. The chart of accounts prescribed by the Tennessee Regulatory Authority separates the majority of costs into the following four functions:

- *Production:* The production function includes costs associated with the upstream commodity gas supply, interstate pipeline transportation capacity necessary to deliver the supply to **Piedmont's** system, and upstream storage facilities. Additionally, the costs of any production facilities and the administrative costs associated with procuring natural gas and transportation are categorized as production-related.

- *Storage:* The storage function includes costs associated with on-system facilities that are able to receive injected supplies or delivered liquid natural gas for later withdrawals.

- *Transmission:* The transmission function includes costs associated with large diameter, high pressure facilities that deliver gas to smaller distribution facilities. Transmission facilities include transmission mains and compressors.

- *Distribution:* The distribution function includes costs associated with delivering supplies within areas that are close in proximity to gas loads, such as distribution mains. The costs associated with connecting customers to the distribution system are also considered distribution-related, which include costs associated with services, meters and regulators.

The majority of **Piedmont's** non-gas supply costs are associated with the distribution function. Costs that do not directly fall into one of these primary functions, such as administrative and general expenses, are functionalized on the same basis as other related costs.

E. Cost Classification

Classification is the apportionment of costs among demand, customer and commodity categories. Each of **Piedmont's** rate base and expense accounts is classified consistent with the manner in which the associated costs are incurred. Costs that are associated with serving peak requirements on the system are classified as demand-related, e.g., costs associated with transmission accounts. Costs that are associated with providing customers access to and active status on the distribution system are classified as customer-related. Customer-related costs are incurred regardless of the amount of gas a customer consumes in any given period and include the costs of services, meters and regulators, and meter reading and billing expenses. Costs that are associated with the quantity of gas purchased or transported are classified as commodity-related. Examples of commodity-related costs are purchased gas costs. Demand and customer-related costs are considered fixed, while commodity-related costs are variable. Some categories of costs vary with more than one of the classifications described previously.

Lastly, some categories of costs are appropriately classified based on how other related costs are classified. For example, distribution operations supervision and engineering expenses are classified based on the classification of all other distribution operations accounts.

The classification of distribution mains reflects the distinct cost causative factors that drive the **Company's** investments in these facilities. The first factor is the coincident peak demand on the system. Distribution mains are designed to deliver the maximum quantities that are required during a peak period from **Piedmont's** pipeline interconnects to the interconnection with each individual customer service. The second factor is the number of customers on the system. Distribution mains are also designed to deliver supplies in reasonable proximity to customers in order to minimize the length of pipe used to serve all customers in an overall efficient fashion.

The breakdown of distribution mains investment costs between the demand and customer-related components is determined through a minimum-size study. The premise underlying this study is that the size of distribution main installed in a given location is most affected by the peak load that will be served by the main, and that the length of distribution main is most affected by the number of customers that are served. The validity of this premise is supported by the system design criteria

taken into consideration by the **Company's** distribution engineering staff.

The minimum size study evaluates the cost of replacing the existing distribution mains of the system under two different sets of assumptions. The first determines the cost of replacing existing distribution mains with the same type, diameter and lengths of pipe as is currently installed. The second determines the replacement cost assuming that the entire system is replaced with two-inch diameter plastic pipe, which is the smallest, least-expensive size and type of pipe presently being installed. The customer component of distribution mains is equal to the ratio of the replacement cost using the smallest size pipe to the replacement cost using the installed sizes of pipe. Based on the results of this study, 71% of **Piedmont's** distribution mains investment is classified as customer-related.

F. Cost Allocation

Cost allocation is the apportionment of individual elements of the **Company's** classified cost of service among rate classes based on each **class'** responsibility for the cost being incurred. Cost allocation follows cost causation principles and requires the development of numerous allocation factors that reflect the different types of costs included in **Piedmont's** overall revenue requirements. Considerable effort is required to yield the set of allocation factors underlying the ACOSS.

The ACOSS follows system-design criteria in order to allocate costs on the basis of cost causation. The demand allocator used in the ACOSS is the coincident design day demand factor. Under this method, the allocation of demand costs reflects the manner in which the Company designs, plans and constructs its system to satisfy firm demands. Off-peak loads do not increase the **Company's** demand-related investments, and therefore, are not factored into the demand allocator in a system-design ACOSS.

The other allocation factors used in the ACOSS may be grouped into three categories as follows: (i) class summary statistics reflected in the base rate filing, such as the number of customers and sales by class; (ii) special studies that examine the costs associated with a specific type of investment or expense; and (iii) internal allocation factors, which are composite factors determined on the basis of how related cost items are allocated. All of the various factors must be developed assuming a consistent time period for the ACOSS to be accurate.

Three special studies were performed related to significant capital investment and operations and maintenance **("O&M")**

expense accounts. The studies are as follows:

- *Meter Investment Study:* The meter investment study establishes the aggregate investment in meters and associated regulators based on the type and replacement cost of various meters installed to serve each class.

- *Service Investment Study:* **Piedmont's** investment in distribution services is the largest investment on its books after the **Company's** investment in mains. The service investment study establishes the aggregate investment in services based on the type and length of services installed to serve each class as well as the associated replacement costs.

- *Labor Expense Study:* A study of the Company's payroll expense examines components of the Company's payroll costs. The labor study is used as the basis for allocating costs that vary with direct payroll costs, such as pensions and benefits costs.

Together, these special studies are utilized to allocate a substantial portion of the **Company's** total revenue requirements to customer classes.

Gas costs represent a significant proportion of the Company's overall O&M expense. Gas costs are recovered through the Company's Purchased Gas Adjustment clause and are excluded from the ACOSS, which focuses on base rate revenue requirements.

III. Results

Detailed ACOSS results are provided in Exhibit DPY-5, pages eight through thirteen. Pages eight and nine provide an income statement by class at existing and proposed rates, respectively. Pages ten, eleven and twelve contain summaries of allocated rate base, O&M expense and total revenue requirements by classification and rate class. Lastly, page thirteen provides a detailed analysis of the components of monthly customer-related costs.

The ACOSS demonstrates that the rates of return for the Residential and Resale classes are far below the system-average rate of return of 5.55% at present rates. The Residential class is by far **Piedmont's** largest class. The rate of return for the the small, medium and large general service classes are well above the system-average, indicating that these classes are subsidizing the prices for **Piedmont's** Residential and Resale customers.

Page eight of Exhibit DPY-5 also provides the required revenue change (increase or decrease) for each of the classes that is necessary to yield the

proposed overall rate of return on allocated rate base of 8.53%. The increase to the residential class necessary to achieve parity in terms of rate of return exceeds the total revenue request sought by Piedmont in this proceeding.

Monthly customer costs are derived from the costs that are classified as customer-related and the apportionment of these costs to **Piedmont's** various customer classes. The system-wide average monthly customer cost is $38, and the cost generally varies with the size of the customer. The lowest average customer cost of $35 per month is associated with serving the Residential class.

The results of the ACOSS clearly indicate that class-differentiated base rate revenue increases are appropriate given the wide disparity in rates of return by customer class. In addition, the monthly customer-related costs should be taken into consideration in the development of proposed modifications to existing customer charges.

Piedmont Natural Gas Company, Inc.
Income and Rate of Return at Present Rates

	Total System	Residential Service	Small Gen. Service	Medium Gen. Service	FT / Large Gen. Service	Resale Service
REVENUES						
Margin Revenues	$ 87,752,045	$ 54,662,150	$ 23,081,066	$ 5,602,239	$ 4,378,109	$ 28,481
PGA Revenues	6,566,688	4,816,279	1,255,200	245,694	236,476	13,038
Miscellaneous Revenues	-	-	-	-	-	-
Total	**$ 94,318,733**	**$ 59,478,430**	**$ 24,336,266**	**$ 5,847,933**	**$ 4,614,585**	**$ 41,519**
OPERATING EXPENSES						
Operations and Maintenance	$ 43,043,960	$33,744,150	$7,332,334	$999,828	$919,131	$48,518
Depreciation and Amortization	19,664,702	14,368,350	4,393,266	478,017	403,081	21,987
Deferred Income Taxes	-	-	-	-	-	-
Taxes Other Than Income Taxes	8,785,431	6,405,635	1,812,004	302,762	253,751	11,280
Total	**$ 71,494,093**	**$ 54,518,135**	**$ 13,537,604**	**$ 1,780,606**	**$ 1,575,964**	**$ 81,785**
OPERATING INCOME BEFORE TAXES	**$ 22,824,640**	**$ 4,960,295**	**$ 10,798,663**	**$ 4,067,327**	**$ 3,038,622**	**$ (40,266)**
INCOME TAXES						
Federal Income Taxes	$ 5,324,206	$ 3,904,992	$ 1,017,704	$ 199,207	$ 191,733	$ 10,571
State Income Taxes	1,117,062	819,299	213,523	41,795	40,227	2,218
Total	**$ 6,441,268**	**$ 4,724,291**	**$ 1,231,227**	**$ 241,002**	**$ 231,960**	**$ 12,789**
RATEMAKING ADJUSTMENTS	**$ 2,494,524**	**$1,840,561**	**$461,395**	**$45,810**	**$52,874**	**$3,884**
NET INCOME	**$ 18,787,896**	**$ 2,076,565**	**$ 10,028,831**	**$ 3,872,135**	**$ 2,859,536**	**$ (49,171)**
RATE BASE	**$ 338,574,703**	**$248,324,631**	**$64,717,413**	**$12,667,858**	**$12,192,583**	**$672,218**
RATE OF RETURN AT PRESENT RATES	**5.55%**	**0.84%**	**15.58%**	**30.57%**	**23.45%**	**-7.31%**
UNITIZED	**1.00**	**0.15**	**2.79**	**5.51**	**4.23**	**(1.32)**
PROPOSED REVENUE INCREASE						
Return	$ 10,090,947					
Margin Factor	1.643					
Total Revenue Increase	**$ 16,578,738**					
REVENUE REQUIREMENT INCREASE						
Incremental Income Tax Revenue Req.	$ 6,487,791	$ 4,758,413	$ 1,240,119	$ 242,742	$ 233,635	$ 12,881
Incremental Margin Rev. Requirement	10,090,943	19,104,365	(4,508,739)	(2,791,626)	(1,819,566)	106,508
Total Incremental Rev. Requirement for Equalized Rate of Return	**$ 16,578,734**	**$ 23,862,778**	**$ (3,268,619)**	**$ (2,548,883)**	**$ (1,585,931)**	**$ 119,389**

Piedmont Natural Gas Company, Inc.
Income and Rate of Return at Proposed Rates

	Total System	Residential Service	Small Gen. Service	Medium Gen. Service	FT / Large Gen. Service	Resale Service
REVENUES						
Margin Revenues	$ 104,072,737	$ 65,593,954	$ 26,839,640	$ 6,514,320	$ 5,090,645	$ 34,178
PGA Revenues	6,958,169	5,103,408	1,330,031	260,342	250,574	13,815
Miscellaneous Revenues	-	-	-	-	-	-
Total	**$ 111,030,906**	**$ 70,697,362**	**$ 28,169,671**	**$ 6,774,662**	**$ 5,341,219**	**$ 47,993**
OPERATING EXPENSES						
Operations and Maintenance	$ 43,099,449	$33,778,337	$7,347,161	$1,003,781	$921,625	$48,545
Depreciation and Amortization	19,664,702	14,368,350	4,393,266	478,017	403,081	21,987
Deferred Income Taxes	-	-	-	-	-	-
Taxes Other Than Income Taxes	8,785,431	6,405,635	1,812,004	302,762	253,751	11,280
Total	**$ 71,549,582**	**$ 54,552,322**	**$ 13,552,431**	**$ 1,784,559**	**$ 1,578,458**	**$ 81,812**
OPERATING INCOME BEFORE TAXES	**$ 39,481,324**	**$ 16,145,039**	**$ 14,617,239**	**$ 4,990,102**	**$ 3,762,761**	**$ (33,819)**
INCOME TAXES						
Federal Income Taxes	$ 10,757,792	$ 7,890,208	$ 2,056,316	$ 402,506	$ 387,404	$ 21,359
State Income Taxes	2,249,753	1,650,062	430,033	84,175	81,017	4,467
Total	**$ 13,007,545**	**$ 9,540,269**	**$ 2,486,348**	**$ 486,681**	**$ 468,421**	**$ 25,826**
RATEMAKING ADJUSTMENTS	**$ 2,404,524**	**$1,840,561**	**$461,395**	**$45,810**	**$52,874**	**$3,884**
NET INCOME	**$ 28,878,303**	**$ 8,445,331**	**$ 12,592,286**	**$ 4,549,232**	**$ 3,347,214**	**$ (55,760)**
RATE BASE	**$ 338,574,703**	**$248,324,631**	**$64,717,413**	**$12,667,858**	**$12,192,583**	**$672,218**
RATE OF RETURN AT PROPOSED RAT	**8.53%**	**3.40%**	**19.46%**	**35.91%**	**27.45%**	**-8.29%**
UNITIZED	**1.00**	**0.40**	**2.28**	**4.21**	**3.22**	**(0.97)**

Piedmont Natural Gas Company, Inc.
Rate Base

		Total System	Residential Service	Small Gen. Service	Medium Gen. Service	FT / Large Gen. Service	Resale Service
I. PLANT IN SERVICE							
	Demand	$ 197,205,230	$ 120,789,066	$ 45,473,834	$13,685,776	$16,270,623	$985,931
	Customer	516,090,106	409,606,727	99,267,081	5,355,056	1,813,507	47,734
	Commodity	557,644	306,853	142,100	42,779	65,626	286
		$ 713,852,980	$530,702,646	$144,883,015	$19,083,612	$18,149,756	$1,033,950
II. ACCUMULATED RESERVE FOR DEPRECIATION							
	Demand	$ 52,193,650	$ 31,969,223	$ 12,036,207	$3,622,350	$4,305,038	$260,831
	Customer	284,260,808	218,358,190	61,892,373	3,066,491	923,989	19,766
	Commodity	239,353	131,708	60,992	18,362	28,168	123
		$ 336,693,811	$250,459,121	$73,989,572	$6,707,202	$5,257,195	$280,720
III. NET PLANT IN SERVICE							
	Demand	$ 145,011,581	$ 88,819,843	$ 33,437,627	$10,063,427	$11,965,585	$725,099
	Customer	231,829,298	191,248,537	37,374,709	2,288,566	889,518	27,968
	Commodity	318,291	175,145	81,108	24,417	37,458	163
		$ 377,159,169	$280,243,525	$70,893,443	$12,376,410	$12,892,561	$753,231
IV. RATE BASE ADDITIONS							
	Demand	$ 29,494,536	$ 18,378,331	$ 7,451,538	$2,194,145	$1,413,839	$56,684
	Customer	30,720,805	23,170,345	6,419,996	734,159	390,817	5,489
	Commodity	11,792	7,265	3,151	840	530	6
		$ 60,227,134	$41,555,941	$13,874,685	$2,929,143	$1,805,186	$62,179
V. RATE BASE DEDUCTIONS							
	Demand	$ (27,318,508)	$ (16,732,706)	$ (6,299,414)	($1,895,868)	($2,253,942)	($136,579)
	Customer	(71,493,092)	(56,742,129)	(13,751,301)	(741,827)	(251,222)	(6,613)
	Commodity	-	-	-	-	-	-
		$ (98,811,600)	($73,474,835)	($20,050,715)	($2,637,694)	($2,505,164)	($143,192)
VI. TOTAL RATE BASE							
	Demand	$ 147,187,609	$ 90,465,468	$ 34,589,751	$10,361,704	$11,125,482	$645,204
	Customer	191,057,011	157,676,753	30,043,403	2,280,897	1,029,113	26,845
	Commodity	330,084	182,411	84,259	25,257	37,988	169
		$ 338,574,703	$248,324,631	$64,717,413	$12,667,858	$12,192,583	$672,218

Piedmont Natural Gas Company, Inc.
O&M Expense

	Total System	Residential Service	Small Gen. Service	Medium Gen. Service	FT / Large Gen. Service	Resale Service
I. STORAGE EXPENSE						
Demand	$ 949,909	$ 581,812	$ 219,018	$ 65,917	$ 78,409	$ 4,752
Customer	-	-	-	-	-	-
Commodity	-	-	-	-	-	-
	$ 949,909	$581,812	$219,018	$65,917	$78,409	$4,752
II. TRANSMISSION EXPENSE						
Demand	$ 558,983	$ 342,373	$ 128,883	$ 38,790	$ 46,140	$ 2,797
Customer	-	-	-	-	-	-
Commodity	-	-	-	-	-	-
	$ 558,983	$342,373	$128,883	$38,790	$46,140	$2,797
III. DISTRIBUTION EXPENSE						
Demand	$ 2,333,952	$ 1,429,529	$ 538,133	$161,960	$192,653	$11,676
Customer	10,836,638	8,742,397	1,904,348	133,932	54,183	1,776
Commodity	-	-	-	-	-	-
	$ 13,170,590	$10,171,926	$2,442,482	$295,893	$246,836	$13,453
IV. CUSTOMER ACCOUNTS EXPENSE						
Demand	$ 160,252	$ 98,734	$ 42,821	$ 11,416	$ 7,204	$ 77
Customer	3,102,818	2,731,531	337,815	21,807	11,514	152
Commodity	359	221	96	26	16	0
	$ 3,263,430	$2,830,487	$380,732	$33,248	$18,734	$229
V. CUSTOMER SERVICE AND SALES EXPENSE						
Demand	$ -	$ -	$ -	$ -	$ -	$ -
Customer	1,710,931	1,538,684	166,808	4,131	1,278	31
Commodity	-	-	-	-	-	-
	$ 1,710,931	$ 1,538,684	$ 166,808	$ 4,131	$ 1,278	$ 31
VI. ADMINISTRATIVE AND GENERAL EXPENSE						
Demand	$ 5,051,232	$ 3,096,262	$ 1,169,677	$351,660	$409,065	$24,569
Customer	18,019,709	15,010,584	2,744,102	185,406	77,096	2,520
Commodity	173,259	95,343	44,151	13,291	20,385	89
	$ 23,244,200	$18,202,189	$3,957,931	$550,356	$506,546	$27,178
VII. TOTAL O&M EXPENSE						
Demand	$ **9,054,984**	$ 5,549,111	$ 2,098,685	$ 629,788	$ 733,525	$ 43,874
Customer	**33,670,096**	28,023,197	5,153,074	345,275	144,071	4,479
Commodity	**374,370**	206,029	95,403	28,717	44,029	192
	$ **43,099,449**	$ 33,778,337	$ 7,347,161	$ 1,003,781	$ 921,625	$ 48,545

Piedmont Natural Gas Company, Inc.
Total Revenue Requirements

		Total System	Residential Service	Small Gen. Service	Medium Gen. Service	FT / Large Gen. Service	Resale Service
I. O&M EXPENSE							
	Demand	$ 9,054,984	$ 5,549,111	$ 2,098,685	$ 629,788	$ 733,525	$ 43,874
	Customer	33,670,096	28,023,197	5,153,074	345,275	144,071	4,479
	Commodity	374,370	206,029	95,403	28,717	44,029	192
		$ 43,099,449	$ 33,778,337	$ 7,347,161	$ 1,003,781	$ 921,625	$ 48,545
II. DEPRECIATION							
	Demand	$ 4,069,750	$ 2,492,800	$ 938,575	$ 282,464	$ 335,582	$ 20,329
	Customer	15,568,527	11,861,009	3,447,958	193,526	64,389	1,644
	Commodity	26,425	14,541	6,734	2,027	3,110	14
		$ 19,664,702	$ 14,368,350	$ 4,393,266	$ 478,017	$ 403,081	$ 21,987
III. TAXES OTHER THAN INCOME							
	Demand	$ 2,685,714	$ 1,648,200	$ 644,337	$ 187,972	$ 194,897	$ 10,308
	Customer	6,085,000	4,749,241	1,163,899	113,669	57,227	964
	Commodity	14,718	8,194	3,768	1,121	1,627	7
		$ 8,785,431	$6,405,635	$1,812,004	$302,762	$253,751	$11,280
IV. RATEMAKING ADJUSTMENTS							
	Demand	$ (599,485)	$ (366,540)	$ (131,668)	$ (41,274)	$ (56,196)	$ (3,808)
	Customer	(1,805,441)	(1,474,269)	(329,835)	(4,564)	3,305	(77)
	Commodity	402	248	107	29	18	0
		$ (2,404,524)	($1,840,561)	($461,395)	($45,810)	($52,874)	($3,884)
V. RETURN							
	Demand	$ 12,554,415	$ 7,716,281	$ 2,950,344	$ 883,805	$ 948,952	$ 55,033
	Customer	16,296,270	13,449,090	2,562,562	194,550	87,778	2,290
	Commodity	28,155	15,559	7,187	2,154	3,240	14
		$ 28,878,839	$21,180,930	$5,520,093	$1,080,509	$1,039,970	$57,337
VI. INCOME TAXES							
	Demand	$ 5,654,733	$ 3,475,551	$ 1,328,888	$ 398,082	$ 427,425	$ 24,788
	Customer	7,340,131	6,057,710	1,154,224	87,629	39,537	1,031
	Commodity	12,681	7,008	3,237	970	1,459	6
		$ 13,007,545	$9,540,269	$2,486,348	$486,681	$468,421	$25,826
VII. TOTAL REVENUE REQUIREMENTS							
	Demand	$ 33,420,110	$ 20,515,404	$ 7,829,160	$ 2,340,836	$ 2,584,185	$ 150,524
	Customer	77,154,582	62,665,977	13,151,880	930,085	396,308	10,332
	Commodity	456,751	251,579	116,436	35,019	53,483	234
		$ 111,031,442	$83,432,960	$21,097,477	$3,305,939	$3,033,976	$161,090

Piedmont Natural Gas Company, Inc.
Monthly Customer Cost Detail

		Total System		Residential Service		Small Gen. Service		Medium Gen. Service		FT / Large Gen. Service		Resale Service
I. AVERAGE CUSTOMER COSTS												
Customer-Related Revenue Req.	$	77,154,582	$	62,665,977	$	13,151,880	$	930,085	$	396,308	$	10,332
Average Customers		167,341		150,494		16,315		404		125		3
Average Monthly Customer Cost	$	**38.42**	$	**34.70**	$	**67.18**	$	**191.85**	$	**264.21**	$	**287.00**
II. MONTHLY CUSTOMER COST DETAIL												
O&M Expense												
Mains and Services Expense	$	2.22	$	2.03	$	3.81	$	5.78	$	4.81	$	2.85
Meter & Regulator Expense		1.11		0.81		3.27		16.85		25.20		38.65
Meter Reading Expense		0.09		0.09		0.09		0.09		0.09		0.09
Customer Records and Collections		0.88		0.88		0.88		0.88		0.88		0.88
Uncollectible Accounts		0.10		0.07		0.28		3.06		6.23		2.78
All Other O&M		12.37		11.64		17.98		44.56		58.83		79.17
Total O&M	$	16.77	$	15.52	$	26.32	$	71.22	$	96.05	$	124.42
Depreciation												
Mains	$	1.54	$	1.54	$	1.54	$	1.54	$	1.54	$	1.54
Services		4.69		3.67		13.31		28.64		27.56		23.86
Meters and Meter Installations		0.23		0.17		0.69		3.53		5.28		8.10
Regulators		0.07		0.05		0.21		1.06		1.59		2.43
All Other Depreciation		1.22		1.14		1.87		5.15		6.96		9.74
Total Depreciation	$	7.75	$	6.57	$	17.61	$	39.92	$	42.93	$	45.67
Taxes Other Than Income Taxes	$	3.03	$	2.63	$	5.94	$	23.45	$	38.15	$	26.79
Deferred Income Taxes	$	-	$	-	$	-	$	-	$	-	$	-
Ratemaking Adjustments	$	(0.90)	$	(0.82)	$	(1.68)	$	(0.94)	$	2.20	$	(2.13)
Rate Base-Related (Return and Income Taxes)												
Mains	$	8.03	$	8.03	$	8.03	$	8.03	$	8.03	$	8.03
Services		3.56		2.74		10.19		29.06		34.50		42.12
Meters and Meter Installations		0.69		0.50		2.03		10.45		15.63		23.97
Regulators		0.22		0.16		0.65		3.34		5.00		7.67
All Other Rate Base-Related		(0.72)		(0.63)		(1.91)		7.32		21.71		10.46
Total Rate Base-Related	$	11.77	$	10.80	$	18.98	$	58.21	$	84.88	$	92.25
Total Average Monthly Customer Cost	$	**38.42**	$	**34.70**	$	**67.18**	$	**191.85**	$	**264.21**	$	**287.00**

EXHIBIT__(DPY-6)

Piedmont Natural Gas Company, Inc.

Comparison of Monthly Customer-Related Costs
and Monthly Fixed Customer Charges

Customer Class	Existing Customer Charge	Customer Costs	Difference	Proposed Charge	Increase
Residential Service					
Winter	$ 13.00			$ 22.00	$ 9.00
Summer	$ 10.00			$ 17.00	$ 7.00
Average	$ 11.25	$ 34.70	$ 23.45	$ 19.92	
Small General Commercial	$ 29.00	$ 67.18	$ 38.18	$ 40.00	$ 11.00
Medium General Service	$ 75.00	$ 191.85	$ 116.85	$ 125.00	$ 50.00
FT / Large General Service	$ 300.00	$ 264.21	$ (35.79)	$ 450.00	$ 150.00
Resale Service	$ -	$ 287.00	$ 287.00	$ -	$ -

EXHIBIT__(DPY-7)

Piedmont Natural Gas Company, Inc.
Residential Customer Bill Impacts

Residential Value - Winter

Therms	Bill at Present Rates	Bill at Proposed Rates	Increase	Percentage Increase
-	$ 13.00	$ 22.00	$ 9.00	69.2%
25	$ 33.35	$ 41.55	$ 8.20	24.6%
50	$ 53.71	$ 61.10	$ 7.40	13.8%
75	$ 74.06	$ 80.65	$ 6.60	8.9%
100	$ 94.41	$ 100.20	$ 5.79	6.1%
125	$ 114.76	$ 119.76	$ 4.99	4.4%
150	$ 135.12	$ 139.31	$ 4.19	3.1%
200	$ 175.82	$ 178.41	$ 2.59	1.5%
250	$ 216.53	$ 217.51	$ 0.99	0.5%
300	$ 257.23	$ 256.61	$ (0.62)	-0.2%
350	$ 297.94	$ 295.71	$ (2.22)	-0.7%
400	$ 338.64	$ 334.82	$ (3.82)	-1.1%

Residential Value - Summer

Therms	Bill at Present Rates	Bill at Proposed Rates	Increase	Percentage Increase
-	$ 10.00	$ 17.00	$ 7.00	70.0%
25	$ 29.10	$ 35.30	$ 6.20	21.3%
50	$ 48.21	$ 53.60	$ 5.40	11.2%
75	$ 67.31	$ 71.90	$ 4.60	6.8%
100	$ 86.41	$ 90.20	$ 3.79	4.4%
125	$ 105.51	$ 108.51	$ 2.99	2.8%
150	$ 124.62	$ 126.81	$ 2.19	1.8%
200	$ 162.82	$ 163.41	$ 0.59	0.4%
250	$ 201.03	$ 200.01	$ (1.01)	-0.5%
300	$ 239.23	$ 236.61	$ (2.62)	-1.1%
350	$ 277.44	$ 273.21	$ (4.22)	-1.5%
400	$ 315.64	$ 309.82	$ (5.82)	-1.8%

Piedmont Natural Gas Company, Inc.
Residential Customer Bill Impacts

Residential Standard - Winter

Therms	Bill at Present Rates	Bill at Proposed Rates	Increase	Percentage Increase
-	$ 13.00	$ 22.00	$ 9.00	69.2%
25	$ 34.10	$ 41.55	$ 7.45	21.9%
50	$ 55.20	$ 61.10	$ 5.91	10.7%
75	$ 76.29	$ 80.65	$ 4.36	5.7%
100	$ 97.39	$ 100.20	$ 2.81	2.9%
125	$ 118.49	$ 119.76	$ 1.27	1.1%
150	$ 139.59	$ 139.31	$ (0.28)	-0.2%
200	$ 181.78	$ 178.41	$ (3.37)	-1.9%
250	$ 223.98	$ 217.51	$ (6.47)	-2.9%
300	$ 266.17	$ 256.61	$ (9.56)	-3.6%
350	$ 308.37	$ 295.71	$ (12.65)	-4.1%
400	$ 350.56	$ 334.82	$ (15.74)	-4.5%

Residential Standard - Summer

Therms	Bill at Present Rates	Bill at Proposed Rates	Increase	Percentage Increase
-	$ 10.00	$ 17.00	$ 7.00	70.0%
25	$ 29.85	$ 35.30	$ 5.45	18.3%
50	$ 49.70	$ 53.60	$ 3.91	7.9%
75	$ 69.54	$ 71.90	$ 2.36	3.4%
100	$ 89.39	$ 90.20	$ 0.81	0.9%
125	$ 109.24	$ 108.51	$ (0.73)	-0.7%
150	$ 129.09	$ 126.81	$ (2.28)	-1.8%
200	$ 168.78	$ 163.41	$ (5.37)	-3.2%
250	$ 208.48	$ 200.01	$ (8.47)	-4.1%
300	$ 248.17	$ 236.61	$ (11.56)	-4.7%
350	$ 287.87	$ 273.21	$ (14.65)	-5.1%
400	$ 327.56	$ 309.82	$ (17.74)	-5.4%

EXHIBIT__(DPY-8)

Piedmont Natural Gas Inc.
Tennessee
Attrition Period 12 M.E. 2/28/13
Base and Total Revenues at Present and Proposed Rates

Component	Amount	Units	Present Rates Rate	Present Rates Revenue	Proposed Rates Rate	Proposed Rates Revenue	Increase
			Residential Value		**Residential**		
Residential Value							
Customer Charge - Winter (Nov. - Mar.)	250,063	Bills	$ 13.00	$ 3,250,819	$ 22.00	$ 5,501,386	
Customer Charge - Winter (Apr. & Oct.)	98,842	Bills	10.00	988,420	22.00	2,174,524	
Customer Charge - Summer	246,658	Bills	10.00	2,466,580	17.00	4,193,186	
Delivery Charge - Winter (Nov. - Mar.)	37,534,699	Therms	0.3200	12,011,104	0.2714	10,186,917	
Delivery Charge - Winter (Apr. & Oct.)	6,092,427	Therms	0.2700	1,644,955	0.2714	1,653,485	
Delivery Charge - Summer	5,698,140	Therms	0.2700	1,538,498	0.2214	1,261,568	
Total Base Revenues				**$ 21,900,376**		**$ 24,971,066**	
		Other Revenues		**$ 24,371,613**		**$ 25,187,765**	
		Total Class Revenues		**$ 46,271,989**		**$ 50,158,831**	**8.4%**
			Residential Standard		**Residential**		
Residential Standard							
Customer Charge - Winter (Nov. - Mar.)	508,203	Bills	$ 13.00	$ 6,606,639	$ 22.00	$ 11,180,466	
Customer Charge - Winter (Apr. & Oct.)	200,876	Bills	10.00	2,008,760	22.00	4,419,272	
Customer Charge - Summer	501,282	Bills	10.00	5,012,820	17.00	8,521,794	
Delivery Charge - Winter (Nov. - Mar.)	51,051,680	Therms	0.3200	16,336,538	0.2714	13,855,426	
Delivery Charge - Winter (Apr. & Oct.)	7,047,497	Therms	0.2700	1,902,824	0.2714	1,912,691	
Delivery Charge - Summer	3,311,828	Therms	0.2700	894,194	0.2214	733,239	
Total Base Revenues				**$ 32,761,774**		**$ 40,622,887**	
		Other Revenues		**$ 32,175,067**		**$ 31,358,915**	
		Total Class Revenues		**$ 64,936,841**		**$ 71,981,802**	**10.8%**
			Small GS - Value		**Small GS**		
Small General Service Value							
Customer Charge	47,942	Bills	$ 29.00	$ 1,390,318	$ 40.00	$ 1,917,680	
Delivery Charge - Winter (Nov. - Mar.)	13,386,349	Therms	0.3540	4,738,768	0.3787	5,069,410	
Delivery Charge - Winter (Apr. & Oct.)	3,593,716	Therms	0.3030	1,088,896	0.3787	1,360,940	
Delivery Charge - Summer	7,131,078	Therms	0.3030	2,160,717	0.3277	2,336,854	
Total Base Revenues				**$ 9,378,698**		**$ 10,684,885**	
		Other Revenues		**$ 11,877,043**		**$ 12,287,311**	
		Total Class Revenues		**$ 21,255,741**		**$ 22,972,196**	**8.1%**

Piedmont Natural Gas Inc.
Tennessee
Attrition Period 12 M.E. 2/28/13
Base and Total Revenues at Present and Proposed Rates

Component	Amount	Units	Present Rates Rate	Present Rates Revenue	Proposed Rates Rate	Proposed Rates Revenue	Increase
			Small GS - Standard		**Small GS**		
Small General Service Standard							
Customer Charge	147,840	Bills	$ 29.00	$ 4,287,360	$ 40.00	$ 5,913,600	
Delivery Charge - Winter (Nov. - Mar.)	23,185,783	Therms	0.3540	8,207,767	0.3787	8,780,456	
Delivery Charge - Winter (Apr. & Oct.)	3,040,122	Therms	0.3030	921,157	0.3787	1,151,294	
Delivery Charge - Summer	944,171	Therms	0.3030	286,084	0.3277	309,405	
Total Base Revenues				**$ 13,702,368**		**$ 16,154,755**	
		Other Revenues		**$ 14,256,410**		**$ 13,846,142**	
		Total Class Revenues		**$ 27,958,778**		**$ 30,000,897**	**7.3%**
			Medium GS - Value		**Medium GS**		
Medium General Service Value							
Customer Charge	1,686	Bills	$ 75.00	$ 126,450	$ 125.00	$ 210,750	
Delivery Charge - Winter (Nov. - Mar.)	4,113,921	Therms	0.3540	1,456,328	0.3908	1,607,720	
Delivery Charge - Winter (Apr. & Oct.)	1,043,026	Therms	0.3030	316,037	0.3908	407,615	
Delivery Charge - Summer	1,977,594	Therms	0.3030	599,211	0.3398	671,986	
Total Base Revenues				**$ 2,498,026**		**$ 2,898,071**	
		Other Revenues		**$ 3,504,553**		**$ 3,515,680**	
		Total Class Revenues		**$ 6,002,579**		**$ 6,413,751**	**6.8%**
			Medium GS - Standard		**Medium GS**		
Medium General Service Standard							
Customer Charge	3,156	Bills	$ 75.00	$ 236,700	$ 125.00	$ 394,500	
Delivery Charge - Winter (Nov. - Mar.)	6,891,269	Therms	0.3540	2,439,509	0.3908	2,693,108	
Delivery Charge - Winter (Apr. & Oct.)	954,022	Therms	0.3030	289,069	0.3908	372,832	
Delivery Charge - Summer	458,531	Therms	0.3030	138,935	0.3398	155,809	
Total Base Revenues				**$ 3,104,213**		**$ 3,616,249**	
		Other Revenues		**$ 4,102,918**		**$ 4,091,791**	
		Total Class Revenues		**$ 7,207,131**		**$ 7,708,039**	**7.0%**

Piedmont Natural Gas Inc.
Tennessee
Attrition Period 12 M.E. 2/28/13
Base and Total Revenues at Present and Proposed Rates

Component	Amount	Units	Present Rates Rate	Present Rates Revenue	Proposed Rates Rate	Proposed Rates Revenue	Increase
			Large General Service		Large General Service		
Large General Service							
Customer Charge	475	Bills	$ 300.00	$ 142,500	$ 450.00	$ 213,750	
Demand Charge	61,947	Dts	$ 8.0000	495,577	10.0000	619,471	
Delivery Charges							
0 - 1,500 Dt	3,735,950	Therms	0.09742	363,956	0.09948	371,652	
Next 2,500 Dt	1,367,610	Therms	0.08953	122,442	0.09159	125,259	
Next 5,000 Dt	430,040	Therms	0.06450	27,738	0.06656	28,623	
Over 9,000 Dt	94,880	Therms	0.02764	2,622	0.02970	2,818	
Total Base Revenues				**$ 1,154,835**		**$ 1,361,574**	
		Other Revenues		**$ 3,005,383**		**$ 3,005,383**	
		Total Class Revenues		**$ 4,160,218**		**$ 4,366,957**	**5.0%**
			Firm Transportation		Firm Transportation		
Firm Transportation							
Customer Charge	1,021	Bills	$ 300.00	$ 306,300	$ 450.00	$ 459,450	
Demand Charge	157,725	Dts	$ 8.0000	1,261,798	10.0000	1,577,247	
Delivery Charges							
0 - 1,500 Dt	10,801,640	Therms	0.09742	1,052,296	0.09948	1,074,547	
Next 2,500 Dt	5,483,970	Therms	0.08953	490,980	0.09159	502,277	
Next 5,000 Dt	1,707,380	Therms	0.06450	110,126	0.06656	113,643	
Over 9,000 Dt	64,210	Therms	0.02764	1,775	0.02970	1,907	
Total Base Revenues				**$ 3,223,274**		**$ 3,729,071**	
		Other Revenues		**$ 816,209**		**$ 816,209**	
		Total Class Revenues		**$ 4,039,483**		**$ 4,545,280**	**12.5%**
			Resale Service		Resale Service		
Resale Service							
Customer Charge	36	Bills	$ -	$ -	$ -	$ -	
Demand Charge	2,400	Dts	8.0000	19,200	10.0000	24,000	
Delivery Charge	103,120	Therms	0.0900	9,281	0.0987	10,178	
Total Base Revenues				**$ 28,481**		**$ 34,178**	
		Other Revenues		**$ 61,063**		**$ 61,063**	
		Total Class Revenues		**$ 89,544**		**$ 95,241**	**6.4%**
SUBTOTAL FIRM REVENUES				***$ 181,922,304***		***$ 198,242,996***	***9.0%***

Piedmont Natural Gas Inc.
Tennessee
Attrition Period 12 M.E. 2/28/13
Base and Total Revenues at Present and Proposed Rates

Component	Amount	Units	Present Rates Rate	Present Rates Revenue	Proposed Rates Rate	Proposed Rates Revenue	Increase
			Interruptible Service		**Interruptible Service**		
Interruptible Service							
Customer Charge	656	Bills	$ 300.00	$ 196,800	$ 450.00	$ 295,200	
Delivery Charges							
0 - 1,500 Dt	8,656,810	Therms	0.09742	843,346	0.09948	861,179	
Next 2,500 Dt	9,708,390	Therms	0.08953	869,192	0.09159	889,191	
Next 5,000 Dt	10,863,420	Therms	0.06450	700,691	0.06656	723,069	
Over 9,000 Dt	48,008,430	Therms	0.02764	1,326,953	0.02970	1,425,850	
Total Base Revenues				**$ 3,936,982**		**$ 4,194,491**	
		Other Revenues		**$ 63,957**		**$ 63,957**	
		Total Class Revenues		**$ 4,000,939**		**$ 4,258,448**	**6.4%**
TOTAL SYSTEM REVENUES				***$ 185,923,243***		***$ 202,501,443***	***8.9%***
Other Revenues							
Special Contracts				**$ 624,617**		**$ 624,617**	
Other Special Contract Revenues				**118,205**		**118,205**	
Total Other Revenues				**$ 742,822**		**$ 742,822**	
TOTAL SYSTEM INCLUDING OTHER REVENUES				***$ 186,666,065***		***$ 203,244,265***	***8.9%***

INCREASE	**16,578,200**
TARGET INCREASE	**16,578,738**
Difference	**($538)**

EXHIBIT__(DPY-9)

Piedmont Natural Gas Company, Inc.

Comparison of Class-Specific Rates of Return
at Present and Proposed Rates

Customer Class	Earned ROR at Present Rates	Unitized	Earned ROR at Proposed Rates	Unitized
Residential Service	0.84%	0.15	3.40%	0.40
Small General Service	15.50%	2.79	19.46%	2.28
Medium General Service	30.57%	5.51	35.91%	4.21
FT / Large General Service	23.45%	4.23	27.45%	3.22
Resale Service	-7.31%	(1.32)	-8.29%	(0.97)
TOTAL COMPANY	5.55%	1.00	8.53%	1.00

EXHIBIT__(DPY-10)

Piedmont Natural Gas Company, Inc.

Natural Gas Vehicle Service
Customer and Delivery Charges

Component	Amount	
Small Geneal Service Monthly Customer Charge	$40	
NGV Service Proposed Monthly Customer Charge		$40
Small General Service Winter Delivery Rate	$0.3787	
Small General Service Monthly Load Factor		
Average Monthly Use	427,000 Dth	
Peak Monthly Use	933,000 Dth	
Monthly Load Factor	46%	
Projected NGV Monthly Load Factor	75%	
Load Factor Adjustment	0.61	
NGV Service Proposed Delivery Charge		$0.2311