

**PEOPLES GAS SYSTEM  
BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION**

**Docket No. 080318-GU**

**In Re: Petition for rate increase  
by Peoples Gas System**

**Submitted for Filing:  
August 11, 2008**

**DIRECT TESTIMONY  
AND EXHIBITS OF:**

**WILLIAM N. CANTRELL  
On Behalf of Peoples Gas System**

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1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is William N. Cantrell and my business address is 702 N.  
3 Franklin Street, Tampa, Florida 33602.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am the President of Peoples Gas System ("Peoples" or the "Company")  
6 and have served in that position since 1997.

7 **Q. PLEASE PROVIDE A BRIEF OUTLINE OF YOUR**  
8 **EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.**

9 A. After growing up in Tampa, Florida and attending H.B. Plant High  
10 School, I attended the Georgia Institute of Technology, graduating in 1974  
11 with a Bachelor of Science degree in Electrical Engineering. In 2005, I  
12 was honored as a Distinguished Engineer Alumnus from Georgia Tech. I  
13 attended evening classes at the University of Tampa and graduated Magna  
14 Cum Laude in 1979 with a Masters Degree in Business Administration. I  
15 am a long time trustee of the University of Tampa. I began my  
16 professional career in June 1974 with Florida Power Corporation and  
17 began working for Tampa Electric in June 1975. I worked in various  
18 departments, including Power Plant Engineering, Environmental Planning,  
19 Generation Planning, Fuels and Production. In 1997, I became the  
20 President of Peoples Gas System. Currently, I am a board member of the  
21 Florida Natural Gas Association and the Southern Gas Association  
22 ("SGA") of which I will become chairman in 2009, and am a trustee of the  
23 American Gas Foundation ("AGF").

24 **Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?**

25 A. As President, I am responsible for establishing the goals and objectives of

1 the Company. These include ensuring the safety, training, and overall  
2 welfare of our workforce, providing excellent service to our customers and  
3 the communities we serve, expanding our infrastructure to the tens of  
4 thousands of Floridians who desire natural gas for comfort, value and  
5 environmental responsibility, and delivering a reasonable return to  
6 shareholders who have invested in our company.

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8 A. I will provide an overview of how Peoples operates its distribution system  
9 to provide high quality service to our customers. I will describe the  
10 important benefits that natural gas provides to Florida and how Peoples  
11 can support energy policy in the state. I will also explain why Peoples is  
12 seeking increases in its base rates at this time. In doing so, I will describe  
13 some of the more significant factors that have contributed to the  
14 Company's decision to seek rate relief, as well as some of the actions the  
15 Company has taken to avoid having to do so until the filing of this case. I  
16 will also identify the other witnesses who will provide direct testimony in  
17 support of the Company's case and will give a brief summary of the  
18 subject matter on which they will testify.

19 **Q. HAVE YOU PREPARED OR CAUSED TO BE PREPARED ANY**  
20 **EXHIBITS TO BE INTRODUCED IN THIS PROCEEDING?**

21 A. Yes. I am sponsoring, and prepared or caused to be prepared Exhibits  
22 \_\_\_\_ (WNC-1) through \_\_\_\_ (WNC-3), to which I will refer later in my  
23 testimony.

24 **Q. PLEASE PROVIDE SOME BACKGROUND INFORMATION ON**  
25 **PEOPLES, INCLUDING ITS ORGANIZATIONAL STRUCTURE,**

1           **AND THE TERRITORY AND CUSTOMERS IT SERVES.**

2    A.    Peoples Gas System is a subsidiary of TECO Energy, Inc. (“TECO  
3           Energy”), and currently operates the largest natural gas distribution system  
4           in the State of Florida. Peoples became part of TECO Energy in June  
5           1997. At that time, Peoples served about 200,000 customers in 19  
6           counties. As of the end of December 2007, the Company provided natural  
7           gas service to over 334,000 customers in 37 counties. Of this total,  
8           approximately 305,000 were classified as residential customers and 29,000  
9           were classified as commercial or industrial customers. During the year  
10          ended December 31, 2007, Peoples sold 70,086,000 therms to its  
11          residential customers, and transported or sold 1,332,458,000 therms to its  
12          commercial and industrial customers, for a total of 1,402,544,000 therms.  
13          A “therm” is a unit of heat equal to 100,000 British Thermal Units or  
14          BTUs.

15                 Peoples has been a leader in safety, winning awards from the  
16                 American Gas Association (“AGA”) for several years. As described later,  
17                 Peoples has strived for and been successful at continuously improving  
18                 customer service.

19                 The distribution systems through which Peoples delivers gas to its  
20                 customers are located in 14 separate geographical areas (divisions) within  
21                 Florida, and these areas are combined into three “regions” that serve well  
22                 over 100 franchised areas, as well as adjacent non-franchised areas. The  
23                 regions are currently structured as follows:

24                         the **South Region**, consisting of the Daytona Beach, Eustis,  
25                         Orlando, Palm Beach, Southwest Florida and Dade-Broward

1 divisions;  
2 the **West Region**, consisting of the Tampa, St. Petersburg,  
3 Lakeland, Avon Park and Sarasota divisions; and  
4 the **North Region**, consisting of the Jacksonville, Panama City and  
5 Ocala divisions.

6 Each region is administered by a General Manager who is  
7 responsible for all operations and maintenance within the region. These  
8 General Managers report to the Vice-President, Operations. Peoples'  
9 corporate headquarters, located in Tampa, includes corporate offices and  
10 staff, as well as support services for the regions. A map showing  
11 generally the areas within which Peoples currently distributes gas is  
12 attached to my testimony as Exhibit \_\_\_\_(WNC-1).

13 **Q. HOW DOES PEOPLES OBTAIN THE NATURAL GAS IT**  
14 **DELIVERS TO ITS CUSTOMERS?**

15 A. The natural gas Peoples delivers to customers through its distribution  
16 system is received directly through three interstate pipelines, each  
17 regulated by the Federal Energy Regulatory Commission, or "FERC."  
18 Natural gas is delivered through Florida Gas Transmission Company  
19 ("FGT"), through Southern Natural Gas Company ("Southern") in  
20 Peoples' Jacksonville division, and through Gulfstream Natural Gas  
21 System ("Gulfstream") in Peoples' Lakeland, Tampa, Sarasota, Avon Park  
22 and Orlando divisions. Receiving gas supply through multiple interstate  
23 pipelines gives Peoples valuable flexibility and reliability in providing and  
24 maintaining service to its customers. The map attached to my testimony  
25 as Exhibit \_\_\_\_(WNC-2) visually depicts the locations of the three

1 interstate pipelines.

2 **Q. IN GENERAL, HOW DOES PEOPLES DETERMINE ITS**  
3 **SOURCES OF NATURAL GAS SUPPLY?**

4 A. Peoples uses a competitive bidding process to obtain a portfolio of  
5 supplies from numerous third-party suppliers that reflects balance among  
6 cost, reliability and operational flexibility in order to meet its obligation as  
7 a public utility to provide safe, adequate and efficient service to the  
8 general public.

9 **Q. IS PEOPLES ABLE TO PURCHASE ALL ITS SUPPLIES FOR A**  
10 **LONG TERM AT A LOW FIXED PRICE TO STABILIZE THE**  
11 **COST OF GAS IT DELIVERS TO ITS SALES CUSTOMERS?**

12 A. It could, but it wouldn't be prudent to do so. Peoples' system supply  
13 requirements vary significantly not just from year to year, but month to  
14 month and day to day. Demand for gas often varies dramatically within a  
15 month. Even though Peoples, as required by the Commission's rules,  
16 made transportation service available to all non-residential customers in  
17 2000, customers continue to transfer from sales service to transportation  
18 service under the Company's Natural Choice program, and each transfer  
19 requires the Company to reassess its system supply requirements (*i.e.*, the  
20 requirements of the Company's sales customers).

21 Consumption of gas by Peoples' transportation customers varies  
22 significantly from day to day. Because Peoples receives significant  
23 portions of the total transportation volumes at a uniform daily delivery  
24 rate, Peoples must often increase or decrease quantities purchased for its  
25 system supply by significant increments to balance daily receipts and

1 deliveries of gas. Peoples must buy some of its total system requirements  
2 under “swing” contract arrangements, and uses swing gas, peaking gas,  
3 pipeline balancing volumes and pipeline no-notice service to meet extreme  
4 variations in delivered volumes.

5 **Q. DOES PEOPLES EARN A RETURN ON THE GAS IT SELLS TO**  
6 **ITS SALES CUSTOMERS?**

7 A. No. The costs of the gas commodity, and its transportation to the  
8 Company’s system, are recovered by the Company on a dollar-for-dollar  
9 basis through the purchased gas adjustment (“PGA”) clause, and are not  
10 the subject of this case. Peoples’ bill to a transportation customer includes  
11 no charges for the gas commodity since the customer has purchased it  
12 from an entity other than Peoples. The Company makes no profit on the  
13 gas, and is indifferent as to whether a customer eligible for transportation  
14 service selects that service or sales service. The base rate for service is the  
15 same in either case.

16 **Q. WHAT IS THE DIFFERENCE BETWEEN “SALES” CUSTOMERS**  
17 **AND “TRANSPORTATION” CUSTOMERS?**

18 A. Sales customers purchase natural gas from Peoples on a “delivered” basis;  
19 that is, Peoples buys the gas from a supplier, has it delivered to the  
20 Peoples system through an interstate pipeline on which Peoples has  
21 contracted for capacity, and delivers the gas through the Company’s  
22 distribution system to each customer’s meter. Sales customers receive a  
23 single bill each month from Peoples, which includes applicable base rate  
24 charges that are the subject of this case, a PGA charge to recover the cost  
25 of the gas and other charges (various taxes, energy conservation charges,

1 franchise fees, etc.). Sales customers consist primarily of residential and  
2 small commercial customers.

3 **Q. WHAT IS A “TRANSPORTATION” CUSTOMER?**

4 A. There are two types of transportation customers. The first type consists of  
5 customers – generally larger volume users – who buy their natural gas  
6 from a supplier or marketer other than Peoples. These customers arrange  
7 for their gas to be delivered to an interstate pipeline, and contract with the  
8 pipeline to transport the gas to the Peoples system. These customers also  
9 contract with Peoples to deliver the gas across Peoples’ system to their gas  
10 consuming facilities.

11 The second type of transportation customer is one whose usage  
12 may not be large enough to justify the customer’s contracting individually  
13 with a gas supplier for supply, and/or with an interstate pipeline for the  
14 capacity required to deliver the gas to the Peoples system. These  
15 customers are served under Peoples’ Natural Choice Transportation  
16 Service program. They contract with a natural gas marketer that has been  
17 qualified by Peoples as a “pool manager,” and participate in a “pool” of  
18 customers. The pool manager buys gas for the entire customer pool it  
19 serves, and holds transportation capacity on an interstate pipeline to  
20 deliver the gas to the Peoples system. Peoples transports the gas it  
21 receives from the pipeline for the pool manager’s account (which  
22 customers in the pool have purchased from the pool manager) to the  
23 customers’ locations. These customers receive two bills each month – one  
24 from the pool manager for the cost of the gas as delivered to the Peoples  
25 system, and one from Peoples for transporting the gas through its system



1 to the customers' locations.

2 **Q. HOW DOES PEOPLES RECEIVE DELIVERIES OF NATURAL**  
3 **GAS FROM THE INTERSTATE PIPELINES YOU'VE**  
4 **MENTIONED AND THAT ARE DEPICTED ON EXHIBIT**  
5 **\_\_\_(WNC-2)?**

6 A. As I stated earlier, Peoples receives its gas supplies through three  
7 separately owned transmission pipeline systems – FGT, Southern and  
8 Gulfstream -- each regulated by the FERC. FGT was the first pipeline to  
9 deliver natural gas in Florida in the late 1950s. FGT delivers natural gas  
10 to Peoples through interconnects or “city gates” at more than 59 locations  
11 from Panama City to Miami. Southern began delivering natural gas to  
12 Peoples in or about 1991 in the Jacksonville area at one city gate.  
13 Gulfstream began delivering natural gas in Florida in 2002 through a  
14 pipeline system that originates in Mobile, Alabama, proceeds along the sea  
15 bed of the Gulf of Mexico, and makes landfall in Manatee County,  
16 Florida. Peoples receives natural gas from Gulfstream at six different  
17 locations, primarily in central Florida. As I also mentioned earlier,  
18 receiving natural gas supply through multiple interstate pipelines gives  
19 Peoples valuable flexibility and reliability in providing and maintaining  
20 service to its customers.

21 **Q. HOW DO CUSTOMERS IN FLORIDA UTILIZE NATURAL GAS?**

22 A. Residential customers use gas for a variety of uses including water and  
23 space heating, cooking and clothes drying. Commercial natural gas  
24 customers use gas in many of the same ways and include hospitals and  
25 associated health care facilities, lodging, education, food service, grocery

1 stores, laundry, dry cleaning and recreation facilities. Industrial customers  
2 use gas in a variety of ways and include businesses such as construction  
3 (production of shingles, drywall, cement and asphalt), agriculture (fruit  
4 processing, freeze protection and aquaculture), manufacturing (aluminum  
5 extrusion, steam generation, paper and phosphate), and food processing  
6 (dairy, bakery and bottled water).

7 **Q. PLEASE PROVIDE AN OVERVIEW OF TRENDS IN**  
8 **RESIDENTIAL GAS USE.**

9 A. Compared to many areas of the United States where natural gas is nearly a  
10 necessity for home heating because of cold winters, average usage per  
11 residential customer in Florida is low. That already low usage per  
12 customer has been gradually declining due to a number of factors, not the  
13 least of which is Peoples' aggressive conservation programs. However,  
14 although usage per customer is declining, existing and new residents of  
15 Florida continue to want access to natural gas because of its beneficial  
16 characteristics. While our customer base and the costs to serve that  
17 growing base have continued to increase, because we have helped our  
18 customers use natural gas more efficiently our revenues have not increased  
19 proportionally.

20 **Q. WHAT ARE SOME OF THE BENEFITS OF NATURAL GAS?**

21 A. First, most of the natural gas Peoples distributes is domestically produced.  
22 Approximately 84% of natural gas consumed in the United States is  
23 produced in the United States and most of the remaining 16% is produced  
24 in Canada.

25 Next, natural gas is extremely reliable. Transmission capacity into

1 Florida has tripled in the last 10 to 12 years. As I have described, we now  
2 have multiple interstate transmission pipelines in multiple corridors  
3 bringing natural gas into Florida and the capacity on those pipelines is  
4 already planned to increase further. In addition, natural gas storage  
5 facilities and the import of liquefied natural gas ("LNG") augment the  
6 supply picture.

7 **Q. ARE THERE OTHER BENEFITS FROM UTILIZING NATURAL**  
8 **GAS?**

9 A. Yes. Natural gas is a very energy efficient fuel. It can be used directly in  
10 appliance and other applications without the energy loss associated with  
11 the conversion to electricity. When the full cycle of producing, processing  
12 and transporting is considered, natural gas, when delivered directly to a  
13 customer is about 90% efficient compared to about 30% if electricity is  
14 utilized. There are several benefits derived from this high energy  
15 efficiency. The first benefit is that if natural gas is employed in direct use  
16 applications, less total energy is used to provide the same or enhanced  
17 service to our customers. The second benefit is that if natural gas is  
18 employed in direct use applications, power plants do not have to operate  
19 as much. In fact in 2007, had Peoples residential customers and only 25  
20 percent of commercial customers used all electric appliances, the  
21 construction of an additional 600 megawatt power plant would have been  
22 required to generate over 3.5 million MWh of power.

23 Finally, natural gas is the cleanest of all fossil fuels. In addition to  
24 containing little or no sulfur, particulates or mercury, natural gas has 30  
25 percent less carbon than oil and 45 percent less carbon than coal. So,

1 when natural gas is combusted, there is less carbon dioxide (CO<sub>2</sub>) emitted.  
2 Combining the low carbon content of natural gas with the energy  
3 efficiency of its direct use results in opportunities to greatly reduce our  
4 carbon footprint. "Carbon footprint" is a measure of the impact human  
5 activities have on the environment in terms of the amount of CO<sub>2</sub>  
6 produced. Studies have shown that a consumer replacing an electric water  
7 heater with a natural gas tankless water heater can reduce his or her carbon  
8 footprint by about 3,000 pounds annually. Adding a dryer, range and  
9 furnace to the water heater can result in a total reduction of about 4,000  
10 pounds of carbon dioxide annually. Displacing the 3.5 million MWh of  
11 electricity I have just mentioned with natural gas applications would  
12 provide a reduction of over 1.5 million tons of carbon dioxide on an  
13 annual basis. Thus, direct use of natural gas should play a vital role as a  
14 solution to environmental challenges in the future.

15 Peoples has aggressively promoted the efficient use of natural gas  
16 in the past, through our conservation programs and appliance rebates and  
17 through expanding our distribution system to provide natural gas, and  
18 therefore carbon reduction, to customers in many areas around the state.  
19 Our company plans to continue these activities in the future.

20 **Q. DO YOU HAVE ANY EMPIRICAL OR OTHER EVIDENCE THAT**  
21 **DEMONSTRATES THE EFFICIENCY AND ENVIRONMENTAL**  
22 **BENEFITS YOU HAVE DESCRIBED?**

23 A. Yes. Earlier this year, Black and Veatch Corporation released a study  
24 titled "Direct Use of Natural Gas – Implications for Power Generation,  
25 Energy Efficiency, and Carbon Emissions." The study was prepared for

1 the AGF and its purpose was to examine the market impact of the  
2 increased direct use of natural gas for residential and commercial end uses.

3 **Q. WHAT MARKET IMPACTS WERE ADDRESSED?**

4 A. Black and Veatch focused on overall energy usage, total energy costs, and  
5 total CO<sub>2</sub> emissions for a wide range of scenarios encompassing high and  
6 low CO<sub>2</sub> restrictions, high and low technology and high and low gas  
7 supply cases.

8 **Q. WHAT WERE THE RESULTS OF THIS STUDY?**

9 A. In all scenarios the increased direct use of natural gas reduced overall  
10 energy consumption, reduced the total price of energy and lowered total  
11 carbon emissions. In addition, a significant amount of new power  
12 generation was avoided. The Executive Summary of the study is attached  
13 to my testimony as Exhibit \_\_\_(WNC-3). I want to point out that this  
14 study concluded that Florida is one of the areas in the United States that  
15 would most benefit from the increased direct use of natural gas.

16 **Q. WHAT IS THE SIGNIFICANCE OF THESE BENEFITS IN THIS  
17 CASE?**

18 A. The United States Congress continues to consider the passage of  
19 legislation that addresses climate change issues by mandating, in some  
20 fashion, reduction of carbon emissions. The Florida Legislature this year  
21 also passed legislation requiring various actions to reduce energy usage  
22 with the goal of reducing carbon emissions. It is clear from the AGF  
23 study that increasing the availability and direct use of natural gas is a very  
24 cost-effective way to help accomplish this goal.

25 However, despite the benefits of natural gas I have just described,

1 and the state and national pressure to lower carbon emissions, expanding  
2 our system to make natural gas available to more areas and customers in  
3 the state is a real challenge.

4 **Q. TO WHAT CHALLENGE DO YOU REFER?**

5 A. Most of our customer additions are new homes in new housing  
6 developments. Many of these developments are located some distance  
7 from interstate natural gas transmission pipelines or our existing gas mains  
8 and are built out over multiple years. Unless Peoples is able to commit to  
9 a developer that we will extend our gas mains to the project prior to the  
10 time construction of the development commences, the developer will not  
11 be willing to design the homes for gas use. So Peoples must spend  
12 significant capital dollars up front, even though revenues only grow  
13 gradually over multiple years as homes are completed and families move  
14 in. Without the ability to recover these up front costs in a timely manner,  
15 Peoples is not always able to make this commitment. Then, as additional  
16 development occurs in the same area, construction becomes more costly  
17 *and thus even more challenging. As a result, customers lose the*  
18 *opportunity to have natural gas service and the state loses the opportunity*  
19 *for significant carbon reductions. Lewis Binswanger will describe this*  
20 *challenge in more detail and support the Company's proposal to address*  
21 *this.*

22 **Q. IN GENERAL, WHAT RELIEF IS PEOPLES SEEKING IN THIS**  
23 **RATE PROCEEDING?**

24 A. Peoples is proposing an increase in its base rates to account for changes in  
25 its rate base and operating expenses since its last base rate proceeding.

1 The Company is also seeking approval for two new tariff-based cost  
2 recovery mechanisms. The new base rates and other mechanisms will  
3 provide Peoples a better opportunity to achieve its allowed rate of return  
4 and recover its cost of service, and allow the Company to better provide  
5 safe, reliable service in a manner that is environmentally responsible and  
6 consistent with federal and state policies.

7 **Q. WHEN WAS PEOPLES LAST RATE PROCEEDING?**

8 A. Peoples' last rate case (Docket No. 020384-GU) was filed in June 2002.  
9 The final order (Order No. PSC-03-0038-FOF-GU) was issued on January  
10 6, 2003, and a clarifying order (Order No. PSC-03-0415-FOF-GU) was  
11 issued on March 25, 2003. Through those orders, the Commission  
12 authorized the Company to revise its rates and charges so as to produce a  
13 return on common equity ("ROE") within the range of 10.25% to 12.25%,  
14 with a midpoint of 11.25%.

15 **Q. IS PEOPLES CURRENTLY EARNING A REASONABLE RETURN**  
16 **ON COMMON EQUITY?**

17 A. No. The Company's achieved ROE as of December 31, 2007 was 9.96%  
18 and, based on the Company's projections, is expected to drop further by  
19 the end of 2008. As Paul Higgins will testify, without rate relief, the  
20 adjusted ROE for 2009 is expected to drop further to 5.61%.

21 **Q. WHAT ARE THE ADDITIONAL REVENUES FOR WHICH**  
22 **PEOPLES SEEKS APPROVAL IN THIS CASE?**

23 A. Based on the 2009 projected test year, the Company requires a revenue  
24 increase of \$26,488,091 to earn a fair return on its investment.

25 **Q. WHY IS IT NECESSARY FOR PEOPLES TO SEEK RATE**

1           **RELIEF AT THIS TIME?**

2    A.    In the more than five years since Peoples was last authorized to increase or  
3           adjust its rates, a number of factors have contributed to the necessity for  
4           the Company to seek this adjustment. The Consumer Price Index (“CPI”)  
5           during the period 2002 through 2007 increased more than 17%, which has  
6           not only required that the Company pay more for the goods and services it  
7           purchases, but also contributed to a steady increase in the level of the  
8           Company’s direct and indirect payroll costs. The core of Peoples’  
9           infrastructure investment consists of thousands of miles of steel and plastic  
10          pipe of varying diameters. The costs of these materials have increased by  
11          more than the average increase in the CPI since the Company’s last rate  
12          case. The cost of steel pipe of the diameters generally used by Peoples has  
13          more than doubled, and corresponding costs of plastic pipe have increased  
14          more than 45%. Additionally, as Mr. Higgins will testify, the costs of  
15          insurance and health care have continued to escalate at rates significantly  
16          higher than that of general inflation. Since Peoples’ last rate case,  
17          additional compliance costs, such as those associated with Pipeline  
18          Integrity Management requirements of the U.S. Department of  
19          Transportation’s Pipeline and Hazardous Materials Safety Administration,  
20          have been imposed on the Company, and have contributed to the increase  
21          in the cost of providing service to customers. As a final example, Donna  
22          Hobkirk will testify that the depreciation rates ordered by the Commission  
23          as a result of the Company’s last depreciation study (Docket No. 060496-  
24          GU) resulted in a substantial increase in depreciation expense.

25                 Notwithstanding the added customers and the accompanying



1 increase in the size of the Company's distribution system, the Company  
2 has been experiencing a declining use per residential customer from the  
3 average usage levels on which our current rates were based. As Susan  
4 Richards will testify, this continues a pattern that gas distribution  
5 companies across the nation have experienced over the last couple of  
6 decades. This long-term pattern is partially due to increasing appliance  
7 efficiency and tighter building standards, but in addition, Peoples has  
8 embraced and aggressively promoted energy efficiency with technologies  
9 like tankless water heaters, which use fewer therms a year than tank water  
10 heaters. The decline in per-customer use has accelerated in recent years  
11 due to price elasticity associated with the rising cost of natural gas. Our  
12 residential customers now use approximately 11% less gas than they did in  
13 2002. That is more than one month's average usage. Our combined  
14 efforts have lowered customer's bills over the last six years and we are  
15 proud of the achievement. However, since the recovery of costs under  
16 Peoples' current rate design is largely based on customers' consumption of  
17 gas, the declining use per customer has, in effect, penalized Peoples for its  
18 conservation efforts, and adversely impacted Peoples' ability to recover its  
19 cost of service and earn a reasonable rate of return.

20 **Q. IS ENERGY EFFICIENCY IMPORTANT TO FLORIDA?**

21 A. Yes. This is one of the most important issues facing Peoples and its  
22 customers at this time. It is also fundamentally important for state energy  
23 policy. Peoples needs to be able to expand its system to offer the energy  
24 efficiency and carbon reduction benefits of the direct use of gas in lieu of  
25 electricity to more citizens of Florida. That will increase gas use in those

1 applications but decrease gas use overall through less need for gas-fired  
2 power generation. Peoples also needs to continue promoting conservation  
3 and energy efficiency to all of its customers by offering programs and  
4 incentives for efficient gas use. That also decreases overall gas use  
5 through efficiency but decreases Peoples' revenues and therefore its  
6 ability to earn its allowed return.

7 Over the last two years, I have monitored what other utilities are  
8 doing to address these opportunities, participated in numerous conferences  
9 and roundtable debates addressing the issues, worked with independent  
10 groups to refine and clarify calculations and conclusions, and led efforts to  
11 communicate the importance of these findings. In particular, I have met  
12 with hundreds of stakeholders in Florida, including customers, city and  
13 county officials, business leaders and elected officials. Although  
14 continuing dialogue will reveal even more opportunities, our proposals in  
15 this proceeding will provide immediate solutions to the challenge of  
16 meeting increasing needs of our population in an energy efficient, cost  
17 effective way.

18 **Q. WHAT CAPITAL INVESTMENTS HAS PEOPLES MADE SINCE**  
19 **ITS LAST RATE PROCEEDING?**

20 A. The Company has continued to expand its pipeline distribution system in  
21 order to make natural gas available as an energy-efficient, low-carbon  
22 energy choice to more customers in Florida. In addition, Peoples has  
23 invested capital to maintain facilities necessary to operate our system in a  
24 safe and reliable manner. Peoples also spends significant capital dollars to  
25 relocate its lines as required for municipal and other governmental

1 improvement projects. During the period 2004 through 2007, Peoples has  
2 made capital expenditures of over \$182 million to provide service to  
3 existing and new customers. As Bruce Narzissenfeld will testify, during  
4 2008 and the 2009 projected test year, we will spend an additional \$122  
5 million. Since new base rates were last set by the Commission, the  
6 estimated impact on Peoples' revenue requirements have been increased  
7 by more than \$25 million just by the expansions of the Company's  
8 distribution system to add approximately 100,000 new residential and  
9 commercial customers.

10 **Q. WHAT EFFORTS HAS PEOPLES MADE SINCE ITS LAST RATE**  
11 **CASE TO CONTROL OPERATING EXPENSE LEVELS?**

12 A. Peoples has made substantial efforts to control expense levels and avoid  
13 the need for rate relief. The Company has implemented organizational  
14 and operational enhancements through consolidation of facilities, and  
15 standardization of business practices and processes that have helped to  
16 control operating and maintenance expenses for the benefit of the general  
17 body of ratepayers. For example, we improved our operations by reducing  
18 our division offices from 15 to 14. We also combined our four regional  
19 areas into three, thereby reducing supervisory and administrative costs.  
20 Since its last case, Peoples has also combined its four separate call centers  
21 into a single virtual call center. This resulted in additional reductions of  
22 supervisory and administrative costs. Through these restructurings,  
23 Peoples was able to reduce its workforce by approximately 11% while  
24 improving service levels. As a result of these and other measures,  
25 Peoples' annual operating and maintenance expense has increased only

1 modestly since the last rate case at an average annual rate of 3.9%.

2 **Q. HAVE THERE BEEN SPECIFIC ACTIONS TAKEN BY PEOPLES**  
3 **TO IMPROVE THE LEVEL OF SERVICE PROVIDED TO**  
4 **CUSTOMERS?**

5 A. Yes. Peoples has invested heavily in improving service to customers since  
6 our last rate case. I mentioned previously that we had consolidated from  
7 four separate regional call centers into a single virtual call center. This  
8 consolidation allowed us to centralize leadership for the function and  
9 standardize procedures and service levels for all of our customers. Our  
10 call center agents are focused on meeting the needs of our customers and  
11 because of their constant contact with customers are often the first ones to  
12 identify areas where we can take action and improve service. One area  
13 they identified as an area of opportunity was meter reading. Customers  
14 are more security conscious than ever before, and as a result our meter  
15 readers are increasingly challenged by fences and locked gates that force  
16 us to estimate meter readings. But estimated reads frustrate customers and  
17 often lead to unexpected true-ups when actual reads can be taken. In  
18 response, we put in place a company-wide initiative to hold estimates to  
19 1% or less of all of our reads. Our team members have focused hard and  
20 have met this target through increased communication with customers and  
21 the use of automated meter reading on the most inaccessible meters.

22 Another challenge customers gave us was to provide next day  
23 service when they called us to have service restored or turned on. We felt  
24 strongly that our customers deserved this enhanced level of service and  
25 have accomplished it successfully for more than two years now.

1           We've also made investments in technology that have enhanced  
2           service levels for our customers. In just the last year, we have replaced the  
3           Interactive Voice Response ("IVR") system for our call center. The new  
4           IVR system is easier for customers to use and offers services that were not  
5           available in our previous system. Customers can now find a convenient  
6           location for automated bill payment, or obtain contact information for a  
7           licensed gas contractor 24 hours a day, seven days a week. With our old  
8           system, this information was only available when speaking with a  
9           customer service representative during normal business hours. We have  
10          seen the number of customers whose needs are met entirely without ever  
11          needing to talk with one of our agents increase about 40%. This has made  
12          our agents more accessible to those customers who actually need to speak  
13          with us.

14                 We also brought our electronic bill website online earlier this year  
15          and customers have responded positively to the option of receiving their  
16          monthly bills online.

17   **Q.   HOW DO YOU MEASURE THE SUCCESS OF CUSTOMER**  
18   **SERVICE INITIATIVES SUCH AS THESE?**

19   A.   It is difficult to measure success with any real precision. However, one  
20          measure would be the level of customer complaint activity at the  
21          Commission. During 2007, a total of 74 complaints were made to the  
22          Commission by Peoples' more than 334,000 customers. Thirty-seven  
23          were related to service, and 37 to billing. While I would obviously prefer  
24          to have no complaints of any kind, that is probably unrealistic, but the 74  
25          complaints represent only about two one hundredths of one percent of

1 Peoples' total customer base. We hope the very small number of  
2 complaints suggests the Company's customer service efforts are well  
3 received.

4 **Q. WILL THE BASE RATES AUTHORIZED IN PEOPLES' LAST**  
5 **RATE CASE PRODUCE THE COMPANY'S CURRENTLY**  
6 **AUTHORIZED RATE OF RETURN?**

7 A. No. As Mr. Higgins will testify, absent the rate relief sought, projections  
8 for the 2009 projected test year show an overall rate of return of 6.02%,  
9 equating to an ROE of 5.61%. This ROE can be compared to the 11.25%  
10 ROE midpoint currently authorized by the Commission, and to the 11.50%  
11 ROE midpoint supported by Dr. Donald Murry, and is not adequate to  
12 maintain Peoples' financial integrity.

13 **Q. WHY WON'T THE BASE RATES AUTHORIZED IN THE LAST**  
14 **RATE CASE PRODUCE THE AUTHORIZED RATE OF RETURN?**

15 A. The Company's authorized rates are currently inadequate primarily  
16 because of the effects of inflation and the capital invested to respond to  
17 customer demands for natural gas. The service rates authorized in the  
18 Company's last rate proceeding were based on the costs the Company was  
19 projected to incur in its fiscal year ended December 31, 2003. Peoples is  
20 seeking approval in this proceeding for rates necessary to recover its cost  
21 of service for the 2009 projected test year. Although the Company has  
22 been successful in expanding its customer base, the effects of continuing  
23 inflation on the Company's operating and construction costs, declining  
24 base rate revenues from existing customers and the continued expansion  
25 and improvement of the Company's distribution system, have combined to

1 render the previously authorized rates inadequate for recovery by the  
2 Company of its cost of service. Those rates will not produce a fair rate of  
3 return on the property of the Company used and useful in providing public  
4 service in the projected test year.

5 **Q. WHAT OTHER WITNESSES WILL TESTIFY ON BEHALF OF**  
6 **PEOPLES IN THIS PROCEEDING, AND ON WHAT AREAS OR**  
7 **TOPICS WILL THEY TESTIFY?**

8 A. There are 11 other witnesses who will provide direct testimony on behalf  
9 of Peoples.

10 Gordon Gillette, the Chief Financial Officer of TECO Energy, will  
11 testify regarding the Company's capital structure, the Company's  
12 strategies with respect to credit ratings and access to capital markets, and  
13 why no debt should be imputed to Peoples through a parent company debt  
14 adjustment.

15 Dr. Donald Murry, of C. H. Guernsey & Company, will present  
16 testimony with respect to the appropriate ROE for Peoples.

17 Donna Hobkirk, Manager, Plant Accounting, will testify with  
18 respect to the Company's plant in service during the historic base year, the  
19 depreciation expense and reserves associated with that plant, and non-  
20 utility allocations of plant.

21 Bruce Narzissenfeld, Vice President of Operations, will describe  
22 the capital expenditures planned by the Company during 2008 and the  
23 2009 projected test year.

24 Alan Felsenthal, of Huron Consulting Group, will address several  
25 aspects of the income tax calculations submitted by Peoples in this

1 proceeding.

2 Richard Wall, General Manager, South Region, will present  
3 information used to develop the miscellaneous service charges in the  
4 Company's tariff.

5 Susan Richards, Manager, Budget and Finance, will testify  
6 regarding customer and throughput forecasts and the base revenue budget  
7 for the 2009 projected test year.

8 Paul Higgins, Assistant Controller, will testify with respect to the  
9 Company's budget process, the O&M benchmark calculation, and the  
10 calculation of and foundation for the revenue requirements in the 2009  
11 projected test year. He will also present the Company's proposals to  
12 establish a storm damage reserve, to change the method of recovering the  
13 portion of bad debt expense attributable to the cost of gas, and for the  
14 treatment of off system sales for purposes of this case.

15 Daniel Yardley, of Yardley and Associates, will testify regarding  
16 the cost of service study, billing determinants and appropriate rate design.

17 Lewis Binswanger, Director, Strategic Planning and Regulatory,  
18 will explain in more detail how we operate, and present testimony on the  
19 appropriateness of the Gas System Reliability Rider and the Carbon  
20 Reduction Rider for which the Company is seeking approval.

21 Finally, Kandi Floyd, Manager, State Regulatory, will present the  
22 new and revised tariff sheets reflecting the requested rate adjustments and  
23 other tariff changes for which Peoples seeks the Commission's approval  
24 and explain some of the non-rate tariff changes for which Peoples is  
25 seeking approval.



1 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

2 A. Peoples adjusted its base rates and customer charges in early 2003 as a  
3 result of the Commission's final orders in the Company's last rate case.  
4 Since then, Peoples has invested significant capital to provide clean,  
5 reliable, energy efficient natural gas to a growing customer base. Peoples  
6 continuing activities related to conservation, energy efficiency and system  
7 expansion are critical to state energy and environmental policy goals.  
8 Peoples has also worked hard to mitigate the impacts of rising costs in  
9 areas such as healthcare, materials and supplies, and depreciation expense,  
10 and to identify ways to address the impact of declining usage per  
11 customer.

12 Despite these efforts, the Company's earnings are now below the  
13 bottom of its authorized earnings range and are expected to decline  
14 further. These facts have made it necessary that Peoples request  
15 adjustments in its base rates and customer charges.

16 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

17 A. Yes, it does.

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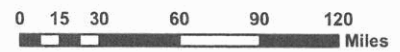
25

# Interstate Gas Suppliers of Florida



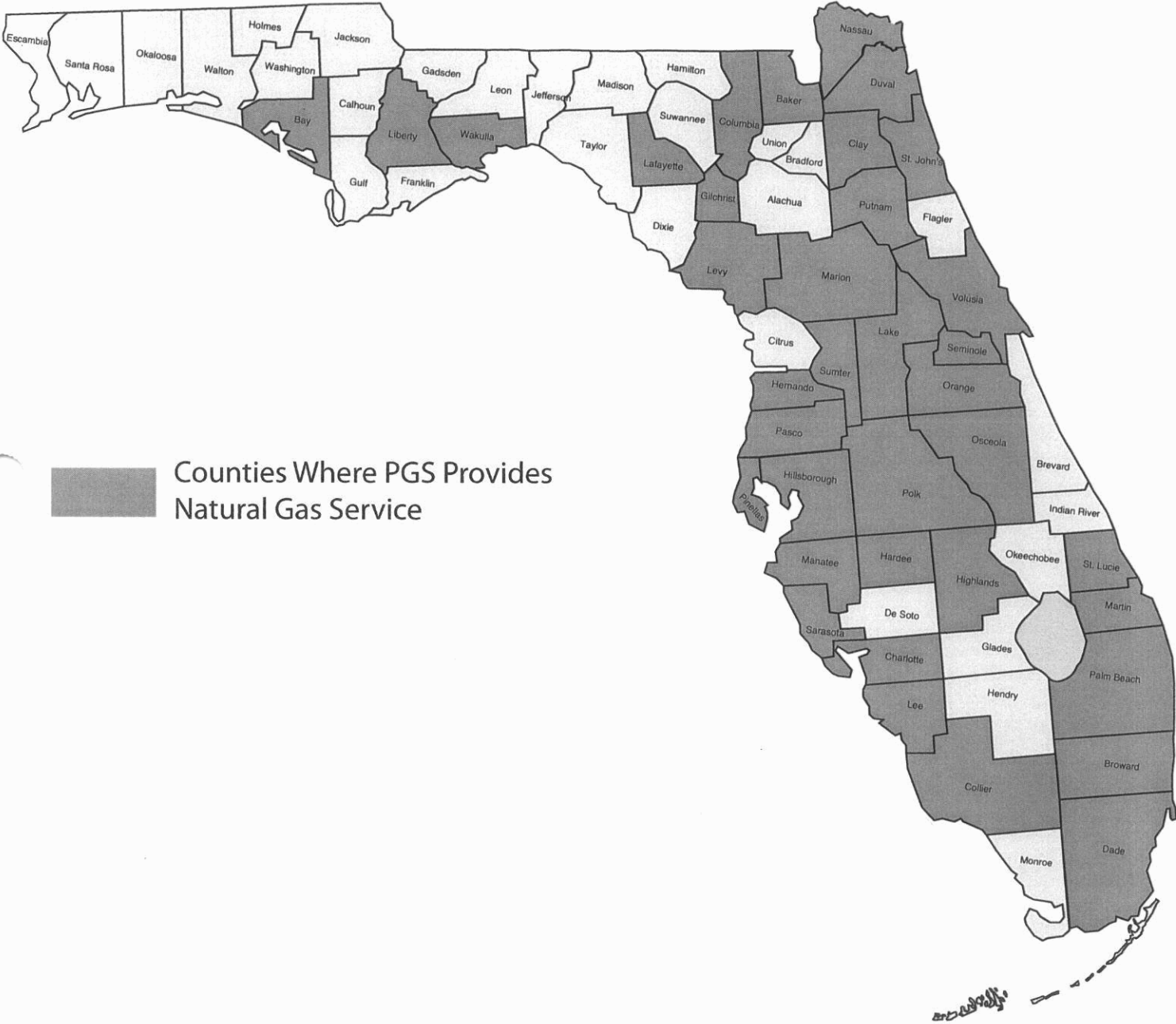
**Gas Transmission - Interstate**

- Florida Gas Transmission Co.
- Gulfstream Natural Gas System, LLC
- Southern Natural Gas Co.
- Gulf South Pipeline Co., LP





# PGS Natural Gas Service Areas



## **Direct Use of Natural Gas**

### ***Implications for Power Generation, Energy Efficiency, and Carbon Emissions***

**April 2008**

**Prepared for the American Gas Foundation by:**



**Black & Veatch Corporation  
5151 San Felipe, Suite 1900  
Houston, TX 77056**

## 1.0 EXECUTIVE SUMMARY

The North American energy market will experience continued uncertainty for the foreseeable future. In spite of notable increases in natural gas prices in recent years, the use of natural gas for power generation in the U.S. is expected to increase significantly in response to efforts to regulate greenhouse gas emissions. Concerns are also heightened regarding availability of energy supplies to meet growing demand. Both trends suggest that any comprehensive approach to addressing our nation's energy needs will include significant new commitments to both increasing energy efficiency and reducing the environmental impacts of energy use.

In addressing the challenge of meeting increasing demand for energy while also reducing greenhouse gas emissions restrictions through 2030, it is clear that a "silver bullet" does not exist. Rather it is prudent for policy makers to consider pursuing a number of alternatives which together yield a practical energy policy that advances energy efficiency and reduces CO<sub>2</sub> emissions while sustaining economic growth. The analysis presented in this report examines the potential for the increased use of natural gas in residential and commercial applications to increase the productivity of available energy supplies, reduce overall energy cost, and reduce related CO<sub>2</sub> emissions.

### *Purpose and Scope*

The analysis summarized in this report examined the impact of the increased direct use of natural gas for Residential & Commercial ("R&C") end uses. End uses considered include space heating, water heating, cooking, and clothes drying. The study analyzes the effect of the increased direct use of natural gas on expected use of gas for electric generation and the net effect in total energy use, energy costs and CO<sub>2</sub> emissions.

Although there are several factors that drive the use of natural gas for power generation, there is a growing concern that the overall natural gas supply/demand balance could be adversely impacted as demand of natural gas for power generation continues to grow. The underlying framework of the study considers the impact of the increased use of natural gas for direct applications in a series of scenarios. This study examines the impact of future scenarios that may influence ongoing policy debate and establishes a quantitative approach that can be replicated or expanded for future analysis.

The scenarios identified key drivers of uncertainty within the natural gas market. The key uncertainties are the natural gas supply, new technology for R&C applications and the environmental regulations related to CO<sub>2</sub> emissions. The combinations of these three variables create five distinct scenarios.

- Reference Case – Baseline Technology/No CO<sub>2</sub> Restrictions
- Natural Gas Supply Lower & High Technology/High CO<sub>2</sub> Restrictions
- Natural Gas Supply Lower & 2006 Technology/High CO<sub>2</sub> Restrictions
- Natural Gas Supply Higher & High Technology/Low CO<sub>2</sub> Restrictions
- Natural Gas Supply Higher & 2006 Technology/Low CO<sub>2</sub> Restrictions

The scenarios employ assumptions regarding supply sensitivities as referenced in the Energy Information Administration's Annual Energy Outlook ("AEO") 2007<sup>1</sup> integrated price cases. The Natural Gas Supply Higher scenario drives lower prices and higher consumption of natural gas relative to the reference case. The Natural Gas Supply Lower scenario drives higher prices and lower consumption. The High Technology and 2006 Technology cases from the Energy Information Administration ("EIA") were incorporated into these two supply environments. Higher Technology refers to high efficiencies of appliances and building shells which lower energy consumption. Conversely, lower technology is linked to increased energy consumption. The effect of technology on energy consumption makes it a key variable for both supply worlds. The Low and High CO<sub>2</sub> restriction scenarios reflect implementation of moderate and stringent controls on CO<sub>2</sub> emissions from the U.S. electric sector. This will increase the use of natural gas fueled generation.

This study examined the impact of increased direct use of natural gas in the context of each scenario by forecasting primary energy consumption, energy costs, and CO<sub>2</sub> emissions with and without an assumed increase in the direct use of natural gas to half the R&C electric loads capable of operating on natural gas but currently powered by electricity. This scenario assumption of increased direct gas use amounts to about 7% of the total R&C electric load in 2030. The study also utilizes three underlying energy metrics that provide a clear measure of each scenario.

- Energy consumption (as measured in Quadrillion Btu)
- Total energy cost (as measured in 2005 dollars)
- CO<sub>2</sub> Emissions (as measured in millions of tons)

Some of the forecasting that was analyzed in this study was based on the AEO 2007. Although the AEO 2008 was released too late to incorporate in this study, B&V has reviewed the early release of the AEO 2008 and has come to the conclusion that, while the forecasts indicate lower natural gas and electric demand, there would still be significant savings in primary energy use, CO<sub>2</sub> emissions and the cost of energy from the increased direct use of natural gas with the use of the updated AEO forecast. The AEO 2008 forecasts a slight reduction in electric load growth from the 2007 forecast amounting to 5% less electric consumption in 2030. The natural gas consumption forecast for 2008 is 10% less in 2030 than the AEO forecast for 2007.

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<sup>1</sup> B&V utilized the high and low integrated price cases from AEO 2007.

### ***Major Findings***

- ❖ Increased direct use of natural gas in R&C applications can increase the productivity of available energy supplies, reduce overall energy cost, and reduce related CO<sub>2</sub> emissions in all scenarios considered.
- ❖ Natural gas demand for power generation is expected to increase significantly in a CO<sub>2</sub> constrained world. Nuclear power and renewables could offset part of the increase but natural gas demand is still projected to increase over the forecast horizon with an accompanying upward pressure on gas prices.
- ❖ The increased direct use of natural gas for R&C applications rather than for power generation is expected to decrease energy consumption in the United States. Within the scenarios considered, a shift of 7% of the total electric load for R&C applications to natural gas, indicates that the energy savings can range from 1.25-2.00 quadrillion Btu in 2030 – or 6% of total energy consumption growth projected by AEO through 2030. In the absence of restrictions on CO<sub>2</sub> emissions, there is a greater proportion of coal fired plants in the electric generation mix. Coal generation gets displaced when the increased direct use of gas for R&C applications decreases electricity demand.
- ❖ Depending on the scenario, the avoided generation capacity is forecast to range from 63 to 80 GW. The avoided investment costs are forecast to range from \$49 billion to \$122 billion.<sup>2</sup>
- ❖ With restrictions on the total level of CO<sub>2</sub> emissions, natural gas generation is displaced when the increased direct use of gas for R&C applications decreases electricity demand. A larger market percentage of the direct use of natural gas for R&C applications drives a net decrease in overall gas consumption as well as energy costs (since the decrease in gas demand for power generation is higher than the increase in direct use of natural gas in the R&C sectors).
- ❖ In the scenario where CO<sub>2</sub> restrictions match the levels proposed by the Lieberman-Warner Senate bill currently being debated in Congress, the value of the reduction in energy costs is significant and ranges from \$18 to almost \$29 billion dollars by the year 2030.
- ❖ Emissions are decreased in all scenarios considered. The highest impacts are in the Reference Case where coal fired generation is displaced. The CO<sub>2</sub> constrained scenarios also show a decrease in CO<sub>2</sub> emissions when there is a greater direct use of gas in R&C applications.

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<sup>2</sup> The estimate of avoided electric generating capacity in GW was based on simplified assumptions of the demand for uses that can be served by natural gas or electricity at the time of peak demand for supplying electric utilities. A detailed analysis of residential and commercial electric load patterns by end use coincident with electric system peaks would be required to better estimate the avoided generation capacity. Such a detailed analysis should be included in subsequent investigations.

- ❖ There are regional implications to CO<sub>2</sub> emissions regulations and the direct use of natural gas for R&C applications rather than for power generation. Some of the states with larger potential for greater direct use of natural gas for R&C uses are also the states applying CO<sub>2</sub> restrictions in advance of any restrictions by the federal government, notably, these include California, Florida and the Northeast states participating in the Regional Greenhouse Gas Initiative (“RGGI”). For these states, the increased use of natural gas by R&C customers stands to reduce overall costs of energy supplies and reduce emissions consistent with state goals. Several measures are being considered to decrease emissions, and the front runners among these are increased end use efficiency, increased nuclear generation and increased use of renewable fuels. However these measures alone are unlikely to reduce CO<sub>2</sub> emissions to the projected targets and a combination of multiple smaller measures are required to approach the CO<sub>2</sub> target.

### ***Summary Results***

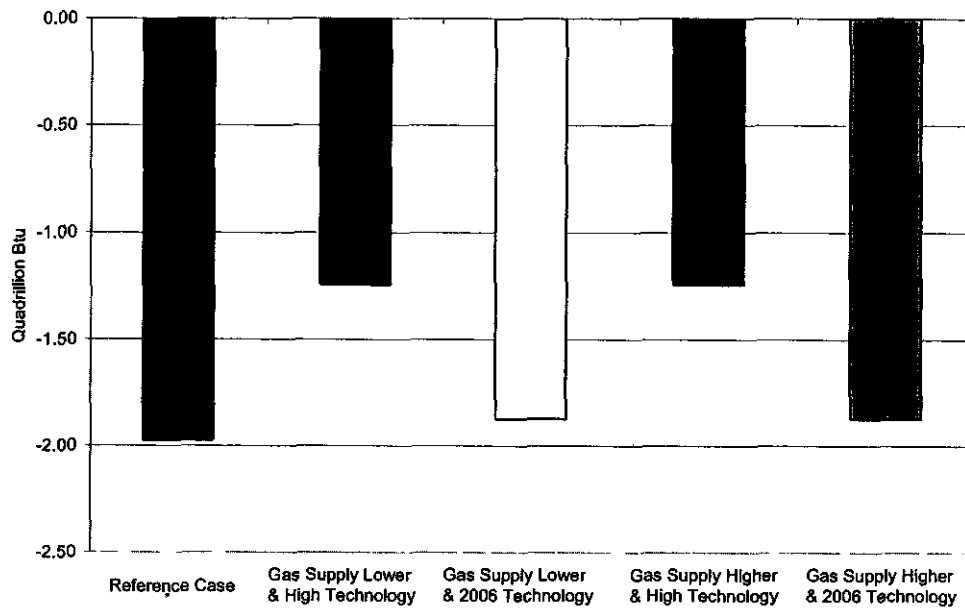
The analysis assessed the net impact through 2030 of an increase in direct use of natural gas for R&C applications and entailed the following steps in order to examine the impact on the U.S. energy market:

- Forecast the impact of the increased natural gas demand from shifting a percentage of current electric demand for switchable R&C applications to natural gas;
- Forecast the impact of corresponding decreased electricity demand for R&C applications; and
- Estimate the net impact on the energy requirements in the U.S. from a shift in R&C demand from electricity to natural gas.

The net impact on energy consumption from the increased direct use of natural gas for R&C applications instead of for power generation is shown in Figure 1.1. The analysis indicates a net decrease in the total energy consumption in the United States that ranges from 1.25 quadrillion Btu to almost 2 quadrillion Btu in 2030. The greater efficiency of natural gas in the R&C applications when compared to electricity is the contributing factor that drives the expected savings in energy. The “real energy” analysis takes into account the efficiency of the appliance and the overall energy acquisition and delivery process.



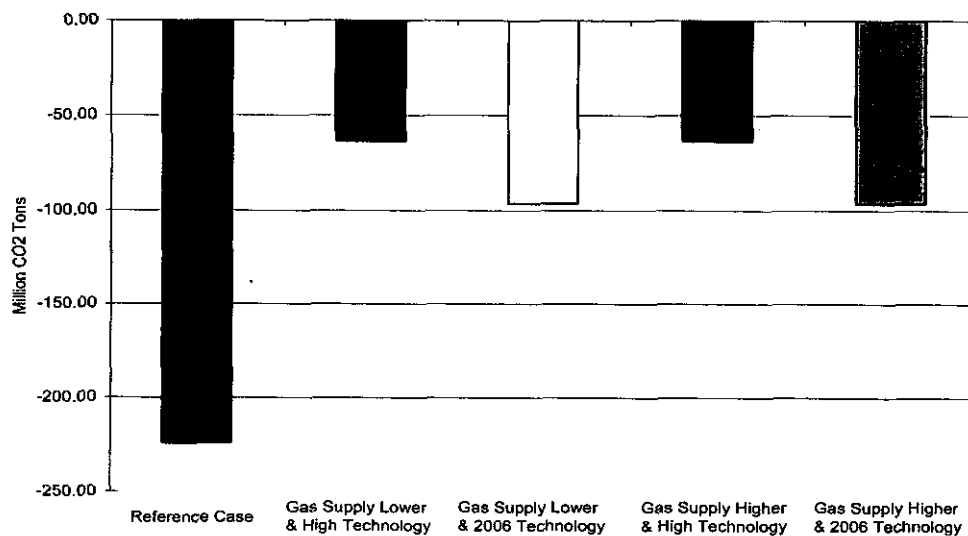
**Figure 1.1: Decrease in Energy Consumption in 2030 – Real Energy**



Source: EIA, B&V Analysis

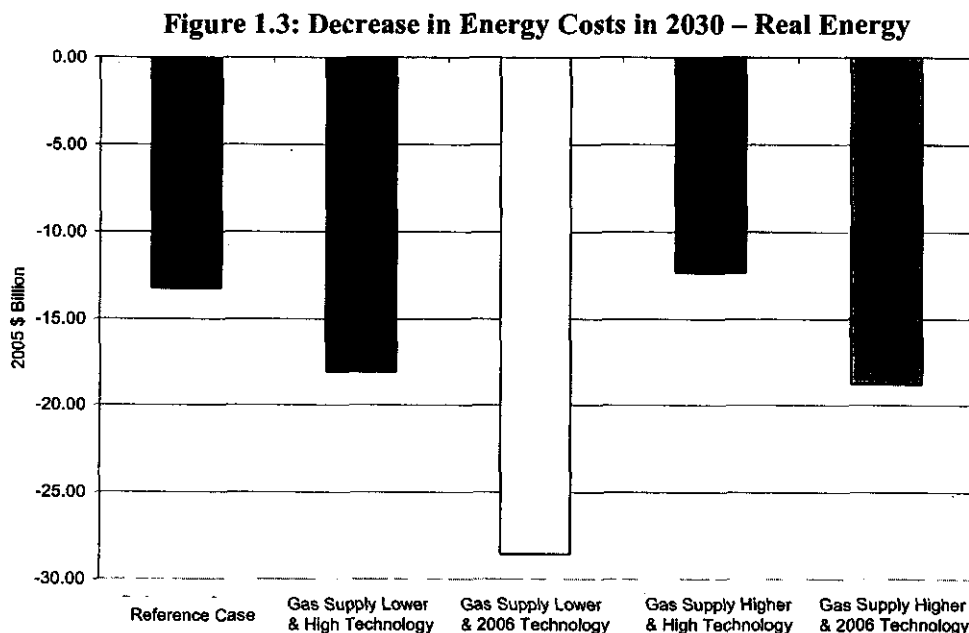
The net impact on CO<sub>2</sub> emissions from the increased direct use of natural gas for R&C applications is shown in Figure 1.2. In all the scenarios considered, there is a net decrease in the total CO<sub>2</sub> emissions from the increased use of natural gas for R&C applications. The Reference Case shows the largest decrease in emissions of over 200 million tons of CO<sub>2</sub> driven by a decrease in coal fired generation. The decrease in CO<sub>2</sub> emissions in the other scenarios range from about 60 to almost 100 million tons of CO<sub>2</sub>.

**Figure 1.2: Decrease in Emissions in 2030 – Real Energy**



Source: EIA, B&V Analysis

The net impact on the total energy costs for the U. S. is shown in Figure 1.3. In all the scenarios considered, there is a net decrease in the total energy costs in 2030. The savings in energy costs range from \$12 billion to almost \$29 billion in 2030.



Source: EIA, B&V Analysis

### ***Additional Observations***

#### **Expectation of Current Market Conditions for Natural Gas to Continue**

Natural gas production in the lower 48, including both onshore and offshore production, is expected to peak in 2017 at 53.4 Bcf/day. With the exception of the Rockies and other unconventional plays, the supply of natural gas in the U.S. is projected to decline. There is an expectation of a flat trend in the domestic supply of natural gas in the U.S. Increased reliance on LNG is projected as imports increase to keep up with growth in the demand for natural gas. Appendix B provides a more detailed overview of natural gas supply in North America. Since the U.S. will be competing with countries that have very aggressive demand projections for natural gas, it is likely that the price of natural gas will continue to be sustained at the current high levels.

#### **Drivers of Natural Gas Demand Remain Strong**

Natural gas is a versatile fuel with a number of important characteristics that make it a premium fuel. It is a clean burning fuel with relatively low emissions when compared to coal, petroleum and other fossil fuels. As a fuel with a delivery efficiency amounting to about 90% from production to consumption, it offers an

extremely efficient alternative to serve end uses wherever applicable.<sup>3</sup> In contrast, the delivery efficiency for oil is 86% and the delivery efficiency for electricity is 27% as a result of the efficiencies of the source fuels used to generate the electricity as well as the losses during the conversion of the source fuel to electricity and the losses during the transmission of electricity to serve end use markets.<sup>4</sup> The real energy method for measuring efficiency used in this report takes into account these losses as well as the appliance efficiency. Natural gas also offers reliability of supply due to the large proportion that is domestically produced, the underground pipeline network that is not easily affected by weather and other disruptions, and the ability to store the gas and use it when required.

**Gas Use for Power Generation is Expected to Increase Significantly**

The power generation industry in the U.S. is facing serious uncertainty - maybe more serious than any uncertainty it has faced in the last 25 years. This uncertainty stems from a number of factors, including a national imperative calling for reductions in greenhouse gas emissions that are believed to be a major contributor to global warming. Natural gas demand for power generation is expected to increase significantly in the coming years. Increased end use efficiency, nuclear power and renewables may offset some of the increase, but gas demand for electricity production will increase multiple times before the U.S. gets even close to the CO<sub>2</sub> caps targeted in recently proposed legislation.

**CO<sub>2</sub> Emissions Regulations Will Significantly Impact the Natural Gas Market**

Emerging trends towards greater energy efficiency as well as a more highlighted focus on the environmental implications of our energy use further support the adoption of measures that would decrease energy consumption and reduce our environmental footprint. CO<sub>2</sub> emissions controls are expected to become a reality in the United States with several legislative climate change targets having been proposed in the 110th Congress. Several measures are being considered as means to help decrease CO<sub>2</sub> emissions to the levels that are being widely considered as likely targets in impending regulations.

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<sup>3</sup> "Public Policy and Real Energy Efficiency, Assessing the effects of Federal policies on energy consumption and the environment", October 2005, American Gas Foundation.

<sup>4</sup> "Source Energy and Emission Factors for Residential Energy Consumption", August 2000, American Gas Association ("AGA").