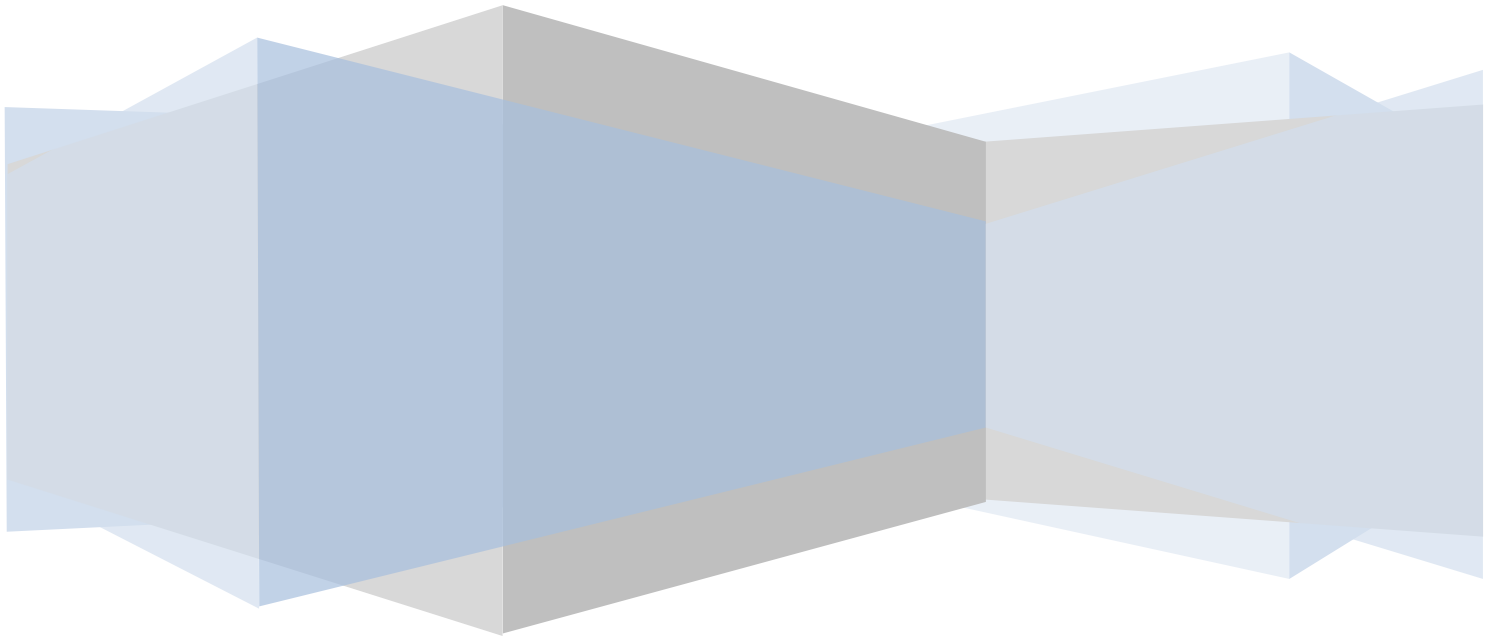
October 2008

The Philadelphia Gas Works: Challenges and Solutions



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Foreword

Many learned reports have been issued over the years about the operations of the Philadelphia Gas Works, but we would venture to say that this is the first such report prompted in no small part by good news regarding PGW. Under the leadership of CEO Tom Knudsen and Finance chief Joe Bogdonavage, PGW has stopped hemorrhaging cash. Collections are up, an emergency City loan has been repaid and the City-owned utility's credit outlook has improved. Moreover, Mayor Nutter has appointed a new oversight board, chaired by David Seltzer, that seems determined to look at PGW with a fresh eye. The purpose of this report therefore is not to sound an alarm about an imminent crisis, but to provide a clear-headed look at PGW's operational handicaps and burdensome rate structure—and to point the way toward still-needed reforms.

The report's main message is that unless major changes are pursued, recent improvements will prove transitory. The underlying structural problems are simply too great. Here are some of the findings that leap out:

- PGW's overlapping governance structure is inefficient, expensive and, perhaps most important, creates a situation where, in the words of the report, "no one oversight group is held responsible or accountable for PGW's performance."
- For a variety of reasons, labor costs are higher than at comparable utilities. The number of employees per customer is double the national average.
- PGW is so starved of capital that it often borrows money to fund ongoing operations, which the report likens to using a credit card to pay monthly bills. Its long-term debt as a percentage of total assets is triple the national average for gas-only utilities. Though its credit outlook has gone from "negative" to "stable", its bond rating is still dismally low.
- PGW caps the utility bills of low-income customers, requiring full-paying customers to make up the difference. With gas prices rising this subsidy program has grown five-fold since 2002, a hidden cost that amounts to nearly a fifth of a full-paying customer's bill. Because their bills are based upon household income and not actual gas consumption, low income customers have no incentive to conserve and indeed use nearly 50 percent more gas on average than full-paying customers.
- PGW's rates are the highest in Pennsylvania and the highest among 20 Snowbelt cities—an issue that affects not only customers' pocketbooks but the City's economic competitiveness.

Most other cities, as the report notes, manage to meet their citizens' needs for natural gas without actually owning a gas company. So it's logical to ask whether, with all its other challenges, Philadelphia should be in this business. The report examines the pros and cons of different ownership models, including an outright sale. Those hoping for a windfall will be disappointed, however. While many variables play into the valuation of a concern like PGW, the report concludes that, if the City decided to divest itself of PGW in the near future, it might well have to pay private owners to take it off its hands.

Indeed, no clear path emerges from the report's analysis of the pros and cons of different ownership models. A fair reading might lead to the conclusion that the legal, financial and political hurdles to selling PGW—or turning it over to an independent authority—currently outweigh the potential benefits. But that

conclusion in no way justifies maintaining the status quo. “Truly transformational change is needed to reverse a never-ending cycle of increasing costs,” the report’s authors conclude. “Without it, PGW’s debt burden will continue to grow, customer bills will continue to rise and finances will drift perpetually downward … Business-as-usual is simply not an option.”

We want to thank Steve Wray and Erik Johanson of the Economy League of Greater Philadelphia and Rick Stys and Derek Hansel of Fairmount Capital Advisors for their hard work on this cogent report. We hope it will prove valuable in charting a future course for PGW.

Sincerely,

Feather Houstoun
President
William Penn Foundation

Donald Kimelman
Managing Director, Philadelphia Program
The Pew Charitable Trusts

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Acknowledgements

The Economy League would like to express its appreciation to The Pew Charitable Trusts and William Penn Foundation for commissioning this report. It gave us the opportunity to learn about the challenges facing the Philadelphia Gas Works and to explore potential solutions for improving its service to the City of Philadelphia. In particular, we would like to thank Suzanne Biemiller and Donald Kimelman of Pew, as well as Shawn McCaney and Feather Houstoun of William Penn, who provided valuable support and guidance throughout the project.

We would also like to acknowledge members of the project team, including Rick Stys and Derek Hansel of Fairmount Capital Advisors, who provided expertise and useful feedback on the financial nuances of our analysis, and Christy Kwan, whose tireless research and data-digging formed the backbone of the report. The production of this report was also greatly aided by the copy editing of Colleen Gallagher.

Many individuals in Philadelphia also graciously gave their time and assistance to the project team. We would like to thank Alan Butkovitz, Rina Cutler, Steve Buckley, Rob Dubow, Cathy Paster and Janet Parrish of the City of Philadelphia; David Seltzer, Seth Shapiro and Hal Sorgenti of the Philadelphia Facilities Management Corp.; Tom Charles of the Pennsylvania Public Utilities Commission; and Keith Holmes of Gas Workers Local 686.

Finally, we would like to thank the highly-responsive members of the PGW management team, especially Darlene Sahlender, Tom Knudsen, and Joe Bogdonavage, Craig White, Abby Pozefsky, Tom Kuczynski, Randall Gyory and Steven Hershey.

—Steve Wray and Erik Johanson
Economy League of Greater Philadelphia
October 2008

About the Project Partners

The Pew Charitable Trusts

The Pew Charitable Trusts is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public and stimulate civic life. In the Philadelphia region, Pew partners with many local institutions to encourage a thriving arts and cultural community; support the health and welfare of the region's neediest residents; inform discussion on important issues facing the City; and, more broadly, strengthen Philadelphia's appeal to visitors and residents alike.

The William Penn Foundation

The William Penn Foundation, founded in 1945 by Otto and Phoebe Haas, is dedicated to improving the quality of life in the Greater Philadelphia region through efforts that foster rich cultural expression, strengthen children's futures, and deepen connections to nature and community. In partnership with others, the Foundation works to advance a vital, just, and caring community.

The Economy League of Greater Philadelphia

The Economy League of Greater Philadelphia is an independent, nonpartisan, nonprofit organization dedicated to research and analysis of the region's resources and challenges with the goal of promoting sound public policy and increasing the region's prosperity.

Fairmount Capital Advisors

Fairmount Capital Advisors is a financial advisory firm established in 1987 to serve governmental and not-for-profit clients. Fairmount has advised its clients on capital market transactions for virtually every type of credit, including derivative product services. The firm also provides clients with a variety of consulting services including valuation, strategic financial planning and economic impact analysis.

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CBIZ Valuation Group is solely dedicated to the "art and science" of valuation, financial advisory and litigation support services. CBIZ provides valuation, financial advisory and litigation support services for: businesses partnerships, and joint ventures; capital cost segregation; closely-held equity, debt, derivative securities, economic loss or damages, fixed asset records, intellectual property, insurance appraisals, machinery and equipment, and real estate.

Executive Summary

In the 13 years since the Economy League's last study of the Philadelphia Gas Works found it had become a risk to the City and its customers, the City-owned utility has taken strides in the right direction. Better billing practices and enforcement tools have repaired PGW's once-chronically deficient collection rates. PGW has repaid an eight-year-old loan from the City, and the utility's improved credit outlook could lower future capital costs. With a management plan to build on this momentum, a new administration in City Hall, and new mayoral appointees on PGW's executive board, it is time to ask whether a lasting remedy is finally within reach.

Impediments and Remedies

Although PGW is no longer in crisis, its ailments have merely shifted from acute to chronic. Despite improvements, its rates still outpace the cost of gas service in Philadelphia's peer cities. PGW remains too troubled for the City to profitably sell, yet keeping it will require difficult decisions about reducing subsidies to low-income customers, seeking even higher rates, allowing its workforce to shrink, and spending tens of millions to improve its efficiency. If the City declines to make fundamental changes, it will continue to forgo any return on PGW's considerable assets, PGW's debt will keep mounting, and residents will be saddled with ever-higher gas bills.

Five fundamental impediments require reform:

A Labyrinthine Governance Structure

PGW's capacity for reform will hinge on management's flexibility and responsiveness. Yet, more than 30 elected and appointed officials have their hands on the PGW steering wheel. The resulting governance gridlock convolutes even mundane operational processes, thwarts coherent policy, and increases already-high operating costs.

> **Remedy: *Governance reform.*** A streamlined governance structure is essential to improve management's flexibility and responsiveness and should be considered a prerequisite to continued City ownership.

A Low-Income Customer Base

PGW's strictly urban service area leaves it particularly vulnerable to Philadelphia's shrinking population and high concentration of poverty. One in four PGW customers receives heavily subsidized service, which drives up costs to the extent that full rate-paying customers are forced to pay the highest natural gas rates in Pennsylvania.

To aid PGW's many low-income customers, its largest social program is based on income rather than usage and therefore gives participants no incentive to conserve gas. As a result, these customers use 47 percent more gas than customers paying the full rate. Rising commodity prices will increase the cost of this overuse, ensuring that the rates paid by full-freight customers have nowhere to go but up.

Remedy: *Reform Social Programs*. Low-income residents will always require some degree of aid, whether provided directly by PGW or through some other government program. Still, the City must rein in the skyrocketing cost of its social programs, which will require an appropriate balance between PGW's dual roles as a gas works and social welfare agency. Potential strategies:

- Create incentives for conservation by discounting bills rather than basing them on income.
- Make this "hidden tax" on full-fare customers more transparent and equitable by paying social program costs out of the City's general fund.
- Cap the program's costs.

Onerous Capital Obligations

Limited cash flow over the past 12 fiscal years has forced PGW to continually use short-term loans to fund certain operations—akin to using a credit card to pay monthly bills. PGW also continually borrows money to finance the bulk of repairs and replacement of its infrastructure—like paying down a mortgage and then taking out a home equity loan for the same amount. As a result, PGW incrementally adds to its long-term debt burden each year.

To keep its debt from rising faster, PGW has kept its capital spending reined in. This has helped control debt service obligations and improve PGW's credit outlook, but it has caused some to question the prudence of postponing replacement of the utility's aging, City-owned physical assets.

Remedy: *Enhance Cash Flow*. Management's Business Transformation initiative could produce sustainable, long-term cost savings. However, the City has funded only a scaled-back portion of the initiative that is unlikely to change PGW's fundamentally flawed cost structure. Longer-term initiatives would require a much larger upfront investment but offer a more substantial payoff.

Rising Energy Prices

Although bill collections have improved even amid escalating costs and the highest rates in Pennsylvania, the recent rise in energy prices poses a threat. Increased commodity costs will mean even higher bills for PGW's unsubsidized customers. Any resulting increase in delinquent payments would limit PGW's ability to meet revenue expectations and control bad debt expenses. PGW can do little to mitigate the impact of this trend: Commodity costs are directly passed through to PGW customers and represent an increasingly large portion of customer bills.

Remedy: *Strategic Energy Initiatives*. Strategically leveraging the City's other utility operations could mitigate PGW's lack of business diversification and create a more cost-effective, sustainable and profitable enterprise for the whole City. Potential strategies:

- Search for potential synergies with the operations of the Philadelphia Water Department.
- Acquire the assets of competitor energy commodities to tap commercial and industrial markets.
- Promote natural gas as a clean energy source, burnishing PGW as an environmentally friendly alternative.

High Labor Costs

PGW's staffing ratios are far out of line with industry standards partly because of the unique demands of distributing natural gas in a wholly urban environment. PGW also requires a labor force with the institutional knowledge to handle its unique operating environment. Looming retirements put that institutional knowledge at risk—by 2011, more than 600 of PGW's 1,700 employees will become eligible to retire, which would leave behind a younger, less experienced staff.

> **Remedy: *Succession Planning and Planned Attrition*.** Retirements present an opportunity to better align staffing ratios with industry standards. Succession planning would mitigate the deleterious consequences of losing institutional knowledge and leverage labor attrition as a way to reduce operating costs.

Potential Strategic Alternatives

The City would lose money by selling PGW in its present state. An updated valuation as part of this report found that the City would likely have to pay another entity to take PGW off its hands.

This reality does not necessarily rule out a sale. The City's decision should be driven by its objectives. If the City's priority is eliminating PGW as an ongoing financial liability, it could sell PGW at a loss. If the City considers PGW a strategic asset, it could adopt policies to encourage civic objectives such as economic development and sustainability. To sift through these options, policymakers must first establish clear goals. The City has three ownership options:

Sell Assets to a Private Firm

Selling PGW would remove its liabilities from the City's balance sheet. Although a new operating structure ultimately could lower the cost to customers, selling PGW would take months and cost the City millions.

The price would hinge in part on the type of transaction. Options include:

- An immediate sale by standard auction.
- A deferred sale via an operating and maintenance contract.
- A two-step sale of PGW's liquefied natural gas and distribution assets.

Retain City Ownership

Retaining PGW would allow the City to act to protect the public interest. Yet, many would argue that the City's actions regarding PGW to date have not been in the public interest and that City control has been anything but a safeguard. Without strategic action, the public interest will continue to be at risk.

Continued City ownership would also allow any savings realized from improvements to accrue to the City and its customers. However, the City is constrained in its ability to improve PGW's existing position. Because the City has limited resources to fund such reform, continued ownership represents a financial risk. As long as the City owns PGW, it will remain exposed to the consequences of inaction.

The City can take several steps to shield itself from this escalating financial risk:

- Support internal managerial reform: Invest in policies and programs to make PGW operate more efficiently and effectively.
- Enter into an operating and maintenance contract: A private operator would take on PGW's operating responsibilities, while the City would retain ownership of physical assets and liabilities.
- Give PGW employees an ownership stake in the utility: Lease PGW to a private equity firm, giving PGW employees equity shares in the company and a natural incentive to boost efficiency.

Create a New Authority

Transferring PGW's assets and liabilities to a new, independent authority would allow the City to eliminate the financial risk of PGW from its balance sheets while retaining a degree of representation in the authority's governance, a voice in setting rates, and greater flexibility to explore other potential strategic initiatives, such as expanding its role into alternative energy markets or energy conservation. Continued public employment would limit any labor backlash, and tax-exempt status would minimize the new entity's capital—and therefore customer—costs.

The process of conveyance would be costly and time-consuming to the City and would require sustained political and legal cooperation among all stakeholders, while not necessarily correcting PGW's underlying structural impediments.

Such an authority could assume control of:

- PGW assets and liabilities only.
- Metropolitan gas assets and liabilities by joining PGW with PECO Gas.

A Need for Action

Business as usual is not a viable alternative; the City must act while it still can. If nothing is done to remedy PGW's fundamental flaws, it will continue to deteriorate, and it will do so at an increasing cost to the City and its rate-paying customers. Eventually, PGW will be on life support, and decision-makers will be left with an impossible choice between throwing more money into an enterprise with no hope of survival and simply pulling the plug.

Glossary

Drawn from: American Gas Association, "2004-2006 Performance Benchmarks for Natural Gas Utilities"

Assets: The total accounting value of a company's productive resources at a point in time (as on a balance sheet).

Capitalization: The structure of a firm's long-term financing. "Capitalization" refers to the combination of debt and equity, which (in addition to retained earnings) is the monetary equivalent of the firm's assets.

Customer: An entity which enters into an account with a utility in order to receive natural gas for heating, power, feedstock, and other uses. For current purposes, an individual gas meter functionally represents each customer account. As such the terms "customer," "meter," and "account" are used interchangeably.

Customers per employee: Total customers (including both sales and transportation) divided by total employees**.**

Debt: The summed monetary value of a company's short- and long-term obligations to repay money that it has borrowed from lenders.

Depreciation: The operating expense that, as an accounting mechanism, represents the predetermined annual write-down of a durable capital asset. Depreciation, as an accounting item, impacts net income and taxes. It is not a cash expenditure, but is an annual recognition of long-lived asset costs which are spread over the years that these assets are expected to be in operation.

EBITDA: A measure which describes, for an accounting period, the total company income net of operations expense, but not yet net of interest, tax, depreciation, and amortization expenses. This measure facilitates comparisons of companies' economic output from operations.

Long-term debt: Financial instruments that become due on a date at least one year beyond the current accounting period. These include the mortgages and bonds, which represents a company's capital borrowings. By issuing debt, the company has an obligation to repay its lenders the amount borrowed plus regular increments of interest.

Mcf: 1000 cubic feet, a standard unit measurement in the oil and gas industry for natural gas.

Net value: The residual value of a company's assets after deducting liabilities.

Operations and maintenance (O&M): These are accounting summaries of expenditures attributable to company operations. Most importantly, these are expenses over which management has direction. These are distinct from (i.e., do not include) expenses imposed from outside of operations such as interest payments and amortization.

Operating revenue: The receipts from utility operations and sales of gas, excluding non-utility and other income, before expenses are considered.

Therm: A unit of measurement for energy, equivalent to 100,000 British thermal units.

Section I. Why Yet Another Report on PGW?

Philadelphia is an aging, post-industrial city that has taken heartening strides in recent years. Yet, familiar challenges—violent crime, low educational attainment, the rising cost of municipal employee benefits—still eat away at budgetary resources and compromise Philadelphia's ability to continue this progress.

Although many cities face similar concerns, Philadelphia has a policy concern that is uniquely its own: The Philadelphia Gas Works, the 170-year-old natural gas distribution system owned by the City, is an anomaly among America's utilities. Nowhere else in the country is there a municipally owned utility that deals exclusively in natural gas and operates in an entirely urban environment. No other city owns a utility whose customer base is as large or includes such a high proportion of low-income households or whose governance structure is as byzantine as PGW's. As a result, no model solutions exist for PGW to emulate. These constraints—along with an aging infrastructure—have left PGW in a generally uncompetitive and financially precarious position. The upshot: Philadelphia residents are charged much higher than average rates to heat their homes. Meanwhile, the City government's balance sheet carries PGW's growing capital debt while gaining no revenue from this considerable investment.

However, like the City itself, PGW stands at a crossroads. Recent operational efficiencies have created an environment in which deeper structural solutions might now be possible. It might now be feasible to fundamentally reconfigure energy distribution in Philadelphia to give residents better service at more competitive rates and end the financial risk to taxpayers. With a new administration in City Hall and with new mayoral appointees on the Philadelphia Facilities Management Corp., PGW's Board of Directors, interest is high in taking a fresh look at the roots of this long-standing problem and in determining whether a lasting remedy is finally within reach.

A. The Roots of the Problem

Most other large U.S. cities satisfactorily meet their energy needs through either private energy companies that typically cover neighboring jurisdictions and provide additional service such as electricity, or through diversified public utilities that also serve suburban customers. Why does Philadelphia not follow this norm?

Formed in 1835 by City ordinance, Philadelphia's gas utility originally operated under private management, but soon was absorbed by the City under a board of trustees and subsequently placed under the Department of Public Works. In 1897, the City contracted with the United Gas Improvement Co. to operate PGW. This arrangement retained City ownership and lasted until 1972, when the City transferred that responsibility to the Philadelphia Facilities Management Corp. a not-for-profit entity that is now one of several overseeing PGW.

Today, the utility remains a component of City government, responsible for acquiring, storing and distributing natural gas within city limits—an area of 129 square miles and about 1.45 million residents. About 95 percent of PGW's customers are households; 5 percent are commercial or industrial customers. Despite being owned by the City, PGW is operated as a regulated near-monopoly, separate from the City's

general fund. It is required to pay an $18 million annual dividend to the City, but this dividend has not been increased since 1980, and City Council has granted it back to PGW each year since 2004.

The City considered selling PGW on several occasions throughout its history. In each instance, City leaders were either unwilling or unable to part with the assets and instead settled for restructuring management as a temporary solution. By 1995, PGW had fallen into such a state of financial and operational disarray that the Economy League concluded that PGW was unsellable without transformative change.

Since then, PGW has made noteworthy operational improvements. Yet, little has been done to correct the structural issues at the root of PGW's troubles. Recent increases in natural gas prices have compounded the financial impact of each of these factors, making it all the more timely to pursue true transformation.

B. Research Methodology

With all this in mind, The Pew Charitable Trusts and the William Penn Foundation asked the Economy League of Greater Philadelphia to evaluate the current state of the Philadelphia Gas Works and potential strategic alternatives for its future. In turn, the Economy League engaged Fairmount Capital Advisors, a financial advisory firm, to lead the project's valuation effort. Fairmount contracted with CBIZ Valuation to assist in this process. (Please see Appendix A for full description of valuation methodologies, calculations, and considerations.)

Research included an in-depth review of PGW's financial documents, rate filings, credit agency reports, and other consultant reports, as well as interviews with key stakeholders. The review also included a benchmarking analysis to put PGW's operating performance and governance in a competitive context. Benchmark utilities were selected to fill two distinct comparison groups. The first set was chosen to reflect other cities and regions[1] that have large, municipally owned natural gas utilities:

- Citizens Public Service: San Antonio, TX
- Citizens Gas and Coke Utility: Indianapolis, IN
- Memphis Light Gas and Water: Memphis, TN

The second set was chosen to reflect competitors with demographic and socioeconomic similarities to Greater Philadelphia:

- Baltimore Gas and Electric: Baltimore, MD
- Peoples Gas: Chicago, IL

Other natural gas utilities across Pennsylvania were used as additional points of reference:

- Columbia Gas Co.
- Peoples Natural Gas Co.
- Equitable Gas Co.
- National Fuel Gas Distribution
- PECO Energy: Gas Division

[1] Use of the term "region" throughout this report refers to a central city and surrounding suburban jurisdictions.

- T.W. Phillips Gas and Oil Co.
- UGI Penn National Gas
- UGI Utilities

National benchmarking was conducted based on the American Gas Association's 2004-2006 Performance Benchmarks for Natural Gas Utilities of March 7, 2008. Metrics are recreated from the methodology as established by the AGA. For AGA metrics, fiscal 2006 data were used unless otherwise noted.[2] Pennsylvania benchmarking was conducted based on rate filings and annual reports. For comparisons within Pennsylvania, fiscal 2007 data were used unless otherwise noted.

It is important to keep in mind that utilities' fiscal years vary. For example, PGW's fiscal year ends on August 31, while Memphis Light Gas and Water's fiscal year ends on December 31. The comparison data points were for what utilities deemed as fiscal 2006. Also, to ensure accurate comparisons across utilities, if a utility provided more than just natural gas, information was obtained only for natural gas customers; other services such as electricity were ignored unless otherwise noted. It should also be noted that industry officials tend to question the validity of comparisons among gas utilities, noting the difficulties in controlling for varying operating environments, commodity mixes, and labor constructs, particularly between public and private entities. For instance, a utility may offer both gas and electric service and report its long-term debt in the aggregate, hindering comparisons with gas-only service. Nevertheless, this report found that using other utilities as benchmarks gave needed context to descriptions of PGW's operations.

Additionally, budget trends require scrutiny to detect whether non-operating changes have affected year-to-year financials. For instance, neither of the following two accounting changes was the result of changes in PGW's operational practices, but both had a noteworthy impact on its bottom line.

For the first time, in its fiscal 2007 budget, PGW included "other post-employment benefits" in its audited statements. The Governmental Accounting Standards Board in 2004 began requiring public agencies to report their non-pension postemployment benefit obligations on a current basis by calendar year 2008. These costs primarily reflect anticipated retiree healthcare obligations, but also include other benefits such as insurance. The board now requires that these post-employment "costs" be reflected in the operating statement similar to pension costs, which are driven by actuarial estimates. In 2007, PGW's actuarial obligations for post-employment benefits amounted to $45.2 million,[3] of which PGW paid $18.8 million in pay-as-you-go healthcare expenses. The difference, $26.4 million, is recorded as a liability and also is expensed in 2007.

An accounting change in the way that PGW reports some service terminations also has affected its budget. Until fiscal 2007, PGW had been reporting financial information related to customer requests to shut off gas service which was then moved to PGW's own account awaiting new ownership or tenants. Removal of portions of these so-called soft-off accounts from PGW's financial information had a material impact on its accounts receivable and bad debt expense, and resulted in a more than 1 percent increase in collection rates for fiscal 2006 and 2007.

[2] Per the AGA Statistics Manager, data for fiscal 2007 will not be available until fall 2008.
[3] Obligation is reduced to $38 million once PGW begins to fund its obligation and realizes returns similar to those of its pension fund.

Section II. Five Impediments to Reform

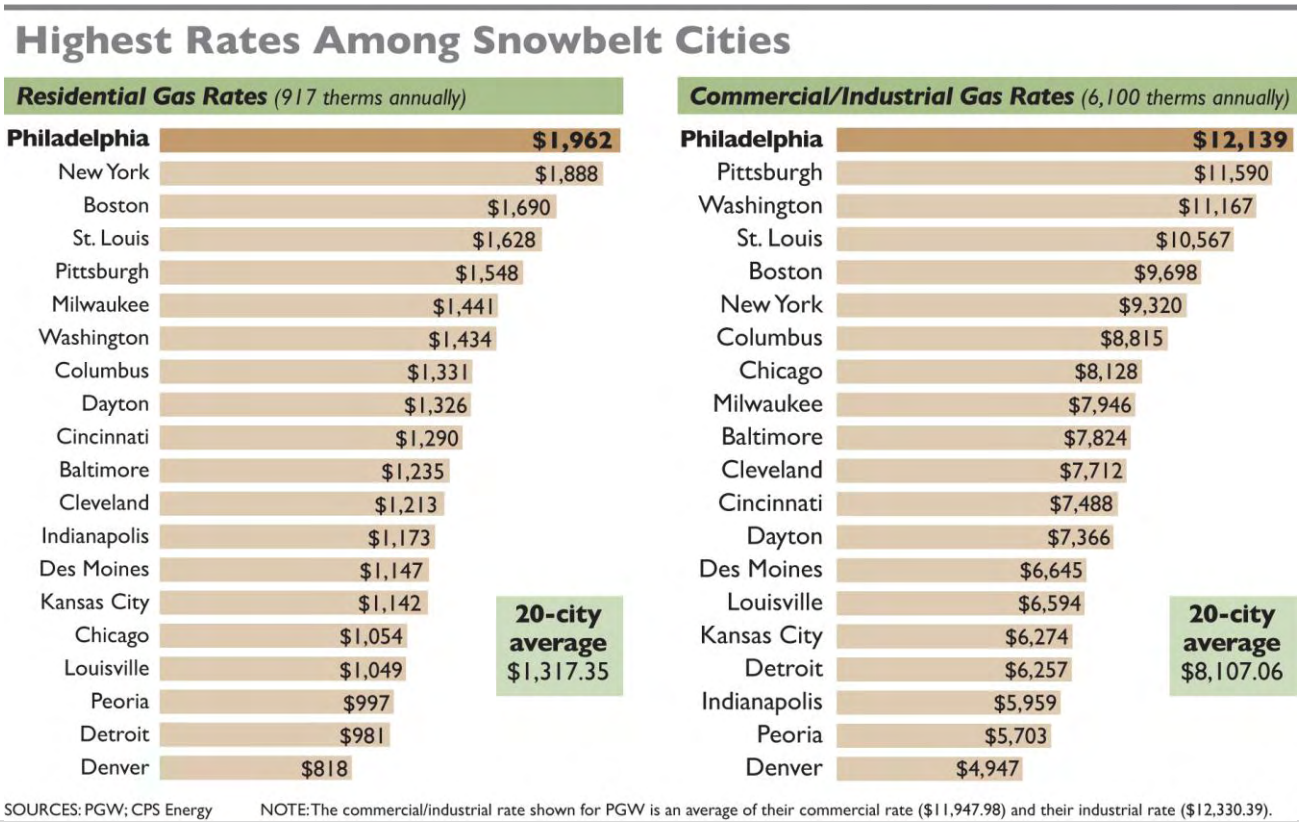
By keeping management costs essentially flat in recent years while vastly improving its billing practices, PGW has achieved relative operating stability. To build on this momentum, its executive team has formulated a plan to generate even greater efficiencies. This plan aims to free up cash to begin incrementally reducing PGW's long-term debt and even allow it to resume its annual $18 million payment to the City budget, which the City has been forced to plow back into PGW every year since 2004.

Unfortunately, even if the City were to invest in further operational reform, fundamental structural realities could prove overwhelming. Five systemic factors require remedy:

- A labyrinthine governance structure.
- A low-income customer base.
- Onerous capital obligations.
- Rising energy prices.
- High labor costs.

These ongoing structural impediments drive up customer rates, which are the costs that matter most. PGW's rates outpace the cost of gas service in Philadelphia's peer cities. As a result, Philadelphians pay more for gas than do residents and businesses in other cities. Ultimately, it is for this reason that reform is so important.

Figure 1.



A. Byzantine Oversight

More than 30 elected and appointed officials at four separate entities have their hands on the PGW steering wheel. This overlapping governance drives up PGW's operating costs and complicates every attempt at transformation. PGW's byzantine governance framework has been the subject of significant concern and study over the years. In 1995 the Economy League found "governance gridlock," with a confusing and contradictory regime severely limiting the ability of PGW managers to operate the enterprise. The Economy League observed three principal obstacles:

- **A lack of performance incentives:** PGW's annual $18 million obligation to the City is fixed, regardless of performance.
- **A lack of accountability:** No governance body is held directly accountable for PGW's performance, and each is largely invisible to the public eye.
- **Vulnerability to political manipulation:** A lack of incentives and accountability leaves PGW open to political considerations and imperatives.

PGW's day-to-day operations are run by a professional staff that reports to the Philadelphia Facilities Management Corp., a private, not-for-profit entity comprising seven mayoral appointees. PFMC acts as PGW's board of directors and is responsible for the organization's executive management. More oversight comes from within City Hall: The City's finance director is responsible for approving the operating and capital budget forms, and the deputy mayor for transportation and utilities serves as an *ex officio* member of the PFMC.

Another layer of City oversight comes from the Philadelphia Gas Commission (PGC)—two mayoral appointees, two City Council appointees, and the City Controller. PGC's responsibilities include all powers not specifically granted to the PFMC. Per the 1951 Home Rule Charter, PGC's most direct authority over PGW is approval of senior executive appointments and the annual operating budget, but its responsibilities also include general oversight as well as reviewing and making recommendations regarding contracts, acquisitions, and the capital budget, which are then submitted to City Council for approval.

Figure 2. Government Entities Responsible for PGW

Government Entity	Composition	Responsibilities
City of Philadelphia		
PGW	Professional staff	Day-to-day operations and management of assets.
PFMC	7 mayoral appointees	Executive management and policy direction; identifies upper-level professional staff to be approved by PGC.
PGC	2 mayoral and 2 City Council appointees, and City Controller	Approves operating budget and PGW personnel; reviews supply contracts and capital budget for approval by City Council; assumes all other powers not specifically granted to PFMC.
Commonwealth of Pennsylvania		
PUC	5 gubernatorial appointees	Sets rates; serves as regulatory authority and oversees compliance with customer service and safety standards.

SOURCE: Black & Veatch; Pennsylvania Economy League

Since the 1995 Economy League report, yet another layer has been added. In 2000, PGW became subject to the Commonwealth of Pennsylvania's Public Utilities Commission, a five-member body appointed by the governor that regulates natural gas and other types of utilities statewide. Whereas in 1995 the City controlled regulation and rate-making through the PGC, that authority now lies with the state-appointed PUC, which also oversees compliance with customer service and safety standards. The inclusion of PUC into PGW's governance framework has further blurred the lines of authority between the PFMC and PGC. Statutorily, PGC is granted all powers not specifically granted to the PFMC. In practice, PGC and PFMC have been left to sort out their niche. The result is increased and overlapping oversight of day-to-day operations, to the detriment of performance.

Too Much Governance Equals a Lack of Governance

Some hold the position that PGW's myriad of overseers acts as a hedge, and that restricting flexibility is a necessary evil to prevent managerial incompetence. Given PGW's history of mismanagement, the fear of inadequate oversight is understandable. However, to accept the status quo is to accept continual decline.

In fairness, PGW's unwieldy governing structure is the result of a series of well-intentioned attempts at reform. Each new entity was introduced to fill some perceived need for better oversight. As a result, each entity has carved out a niche and serves some purpose for some interested party, and each can justify its existence through some chartered or contractual claim of authority. But although each entity may have a reason to exist in its own right, as a whole the layering of oversight and authority convolutes even mundane operational processes and thwarts coherent political directives. As a result, no one oversight group is held responsible or accountable for PGW's performance.

A surfeit of scrutiny has hindered performance not just in some oblique sense. It has tangibly increased the cost of PGW's operations. PGW's fiscal 2009 budget includes $961,000 for Gas Commission-related expenses and $3.3 million in PUC-related expenses, including Gas Commission personnel salaries as well as legal fees, lobbyists and consultants for the regulatory process. In other words, PGW must budget over $4 million for the coming year simply to justify its already-constrained operating budget. In addition to these direct costs, substantial indirect costs are incurred to satisfy the demands of regulators for information. PGW's ability to address ongoing concerns will hinge on management's flexibility and responsiveness. To this end, its governance has been nothing but a stumbling block. A streamlined structure is essential and should be a prerequisite to continued City ownership.

How Are Other Municipal Gas Utilities Governed?

Three other large, municipally owned natural gas entities provide models of more streamlined budgetary, personnel, and regulatory processes.

San Antonio: CPS Energy, a municipally owned gas and electric system, is managed by an independent, five-member board of trustees appointed by the mayor. The mayor also appoints a 15-member citizens advisory committee as a liaison between the utility and customers. The City Council nominates board and advisory committee appointees and approves the utility's budget. Rates and regulations are set collaboratively by the board and City Council.

Memphis: The mayor appoints a five-member board of commissioners to manage the utility's assets and a president to oversee operations. The City Council acts as the utility's regulatory body and sets rates and approves budgets, commissioners and executive personnel. The Tennessee Regulatory Authority regulates municipally owned safety standards.

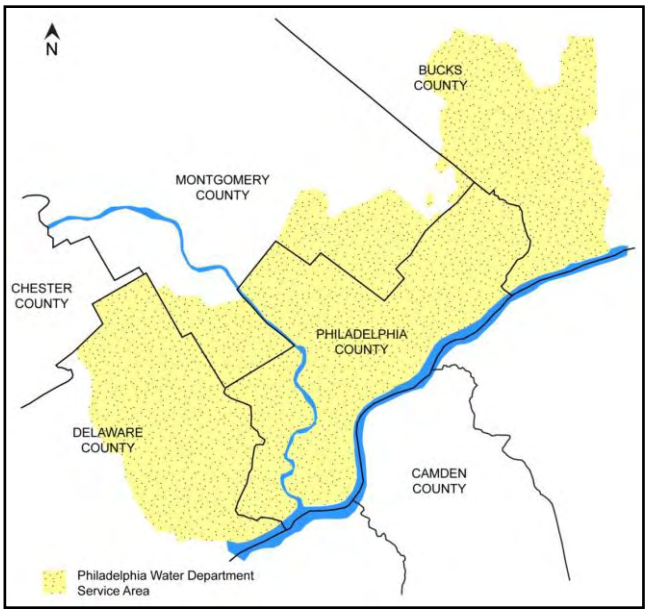
Indianapolis: The Indianapolis Citizens Gas and Coke Utility is governed as a public charitable trust, operating as a not-for-profit entity responsible for managing the utility outside of City government control. A self-sustaining five-member board of trustees appoints a seven-member board of directors, which approves the budget and executive personnel. A state regulatory commission sets rates, promulgates safety standards, and oversees customer service standards.

A Local Model: The Philadelphia Water Department

The governance structure of the Philadelphia Water Department more closely mirrors gas utilities in San Antonio and Memphis than it does PGW. PWD exists as an enterprise fund, a department operating under the managing director's office with the support of the administration's financial and legal functions for budgeting and legal affairs. Rate-setting authority is vested in the City water commissioner with input from City Council. Council and the City Controller weigh in to the extent that they oversee, review and approve City budgets and the awarding of contracts. Far fewer entities have direct influence over PWD operations, so PWD jumps through far fewer hoops than does PGW to run its business.

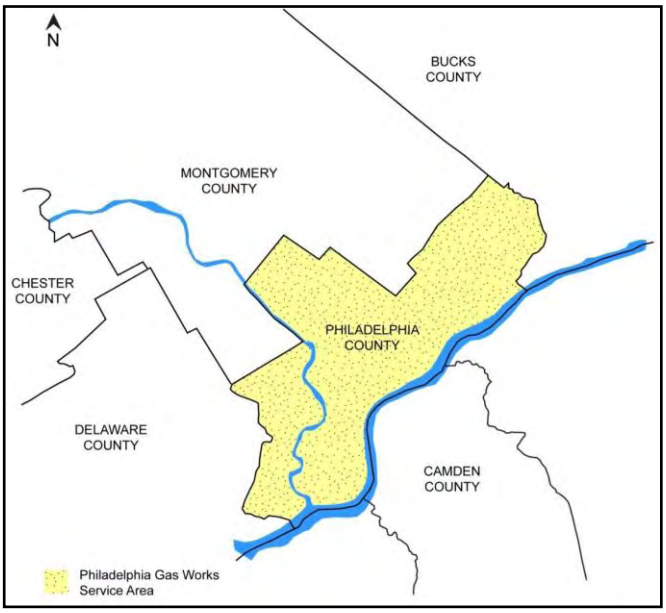
In truth, natural gas distribution is a more complex, competitive, and costly business than water service. For this reason, comparisons between PGW and PWD are difficult and should be interpreted carefully. Yet, it would be useful for decision-makers to establish whether in fact PWD operations are more efficient and effective, and if so, how much its organization and governance contribute to any differences.

Figure 3. PWD Service Territory



SOURCE: PWD Reports; Economy League

Figure 4. PGW Service Territory



SOURCE: Economy League

PWD escapes several challenges that PGW must manage:

Competition: PGW must compete for customers with providers of alternative energy sources, such as steam, electricity, propane and heating oil. There are no competitors for water.

Commodity costs: Natural gas is a far more expensive commodity than water: At over $130 per month, PGW's average monthly residential bill is more than six times higher than PWD's 2007 average monthly water bill of $20.36. Moreover, while a water bill is unlikely to vary from month-to-month, natural gas is subject to large seasonal fluctuations and volatile commodity markets—all reflected in monthly bills.

Flexible customer base: PWD can contract with neighboring municipalities to provide water and wastewater service, thereby diversifying and expanding its service territory to more affluent suburbs. PGW, on the other hand, is constrained by a mandate to provide service to City residents and is unable to compete beyond City limits. As a result, even though both PGW and PWD are Philadelphia-based municipal utilities, PWD's wider customer base makes it less likely to suffer from the City's deteriorating socioeconomic condition.

Hazards: When a water main breaks, there are floods. When a gas main breaks, there are explosions.

Public wrangling: For all of these reasons, people are naturally more likely to scrutinize PGW than PWD: PGW is simply more visible because of elevated concerns over safety and money.

Nevertheless, the two utilities' inherent differences do not rule out the possibility that PWD's structure holds lessons for PGW. The fact remains that Philadelphia owns two publicly operated utilities with valuable assets, yet one seems to perform better financially than the other. The perceived difference in performance is confirmed at least in part by bond ratings: Among City of Philadelphia-related bonds, only aviation revenue bonds carry higher ratings than water and sewer revenue bonds, while PGW bonds are rated below the City's general obligation bonds.

A Fundamental Difference: Although rating agencies cited various credit constraints for PWD, they noted a key feature—operational flexibility—as an important mitigating factor: "A key credit strength is the system's independent rate-setting authority. The system raised rates in each of the past four fiscal years, and rate increases are expected to continue."[4] Credit reports also noted PWD's strong cash balances as a stabilizing factor, allowing it to spend about $20 million a year in internally generated funds on capital projects. By contrast, PGW has been unable to generate excess funds internally, relying almost entirely on long-term debt for capital spending since 1993.

PWD's independent rate-setting authority clearly is at the heart of its higher credit ratings. In reality, PGW cannot expect to achieve PWD's level of rate-setting autonomy. Still, a streamlined governance structure within City government could improve PGW's long-term financial performance simply by removing barriers to operational dexterity.

Figure 5. City of Philadelphia Bond Ratings

	Moody's	S&P	Fitch
Water & Sewer Bonds	**A3**	**A-**	**A-**
PGW Bonds	**Baa2**	**BBB-**	**BBB-**
General Obligation Bonds	Baa1	BBB	BBB+
Aviation Revenue Bonds	A3	A	A

SOURCE: PWD reports

[4] "Fitch Rates Philadelphia, Pennsylvania Water & Sewer Revs "A-"; Stable Outlook. April 5, 2005.

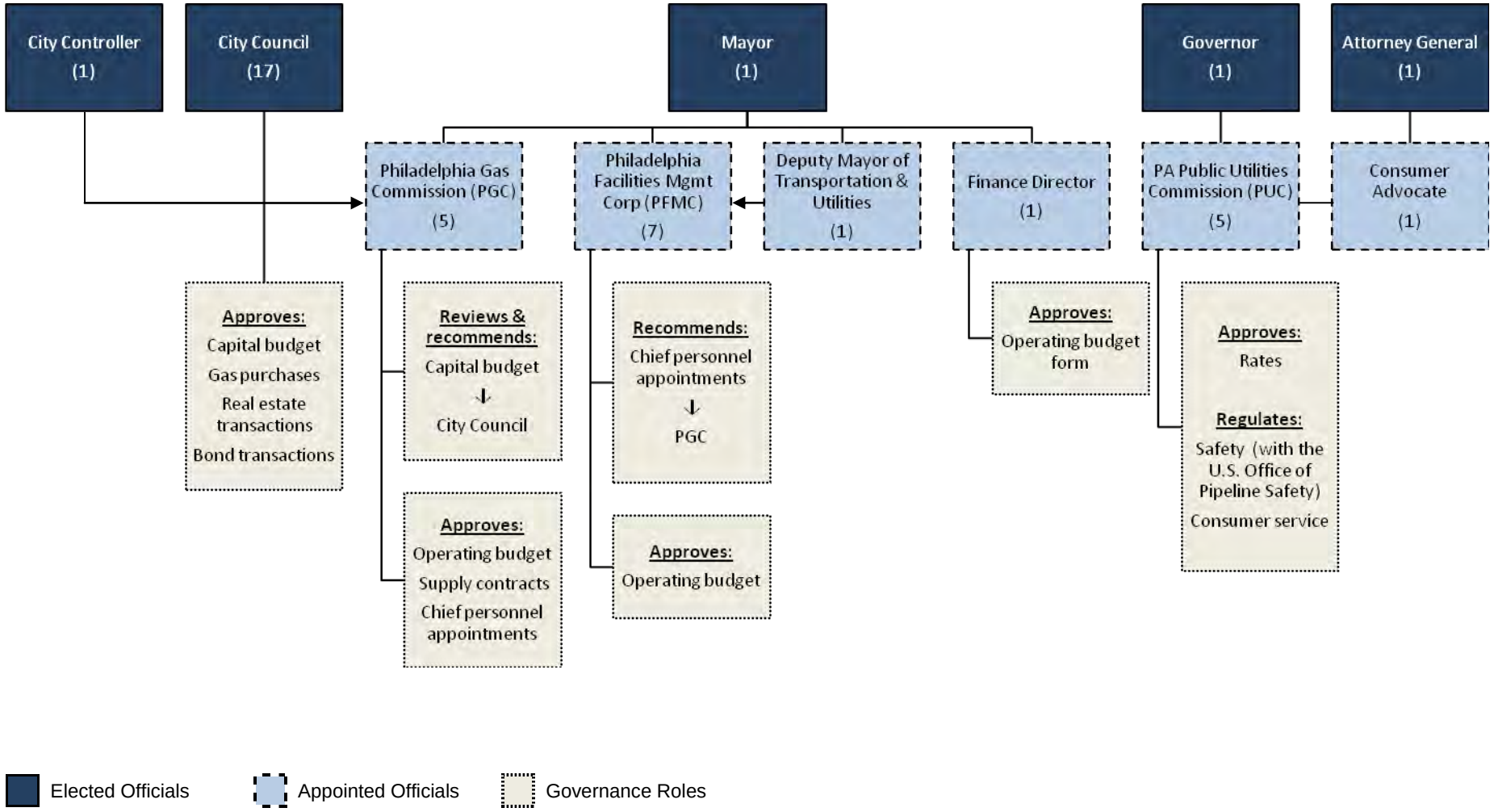
Figure 6. Operating Comparisons Between PGW and PWD

	PGW	PWD
Service Territory (population)	City (1.4 million)	City & "agreement areas" in surrounding suburbs (2.2 million)
Utility Services	Natural Gas	Water and Wastewater
Legal Foundation	Management Agreement (1972)	Home Rule Charter (1951)
Rate-Setting Authority	Pennsylvania PUC	Independent
Employees	1,735	2,039
Customers	505,000 accounts	475,000 water accounts 470,000 wastewater accounts
Operating Revenues	$859 million	$494 million
Collection Rate	96 percent	86 percent
Debt Capitalization	82 percent	78 percent
Total Assets	$1.7 billion	$2.4 billion
Annual Debt Service	$93 million	$174 million
Average Debt Per Customer	$2,400	$1,100
Internally Generated Funds for Capital Spending	$0	$20 million
Average Monthly Bill	$136.67	$20.36 (water only)
Key Credit Factors	➢ Weak demographic trends ➢ Improving collections ➢ Moderately high debt load ➢ Dependence on PUC for rate increases ➢ Weak liquidity	➢ Weak demographic trends ➢ Weak – but stable – collections ➢ Above-average debt load ➢ Independent rate-setting authority ➢ Maintenance of strong cash balances

NOTES: Financial data is for FY2007.
SOURCE: Philadelphia Gas Works and Philadelphia Water Department reports

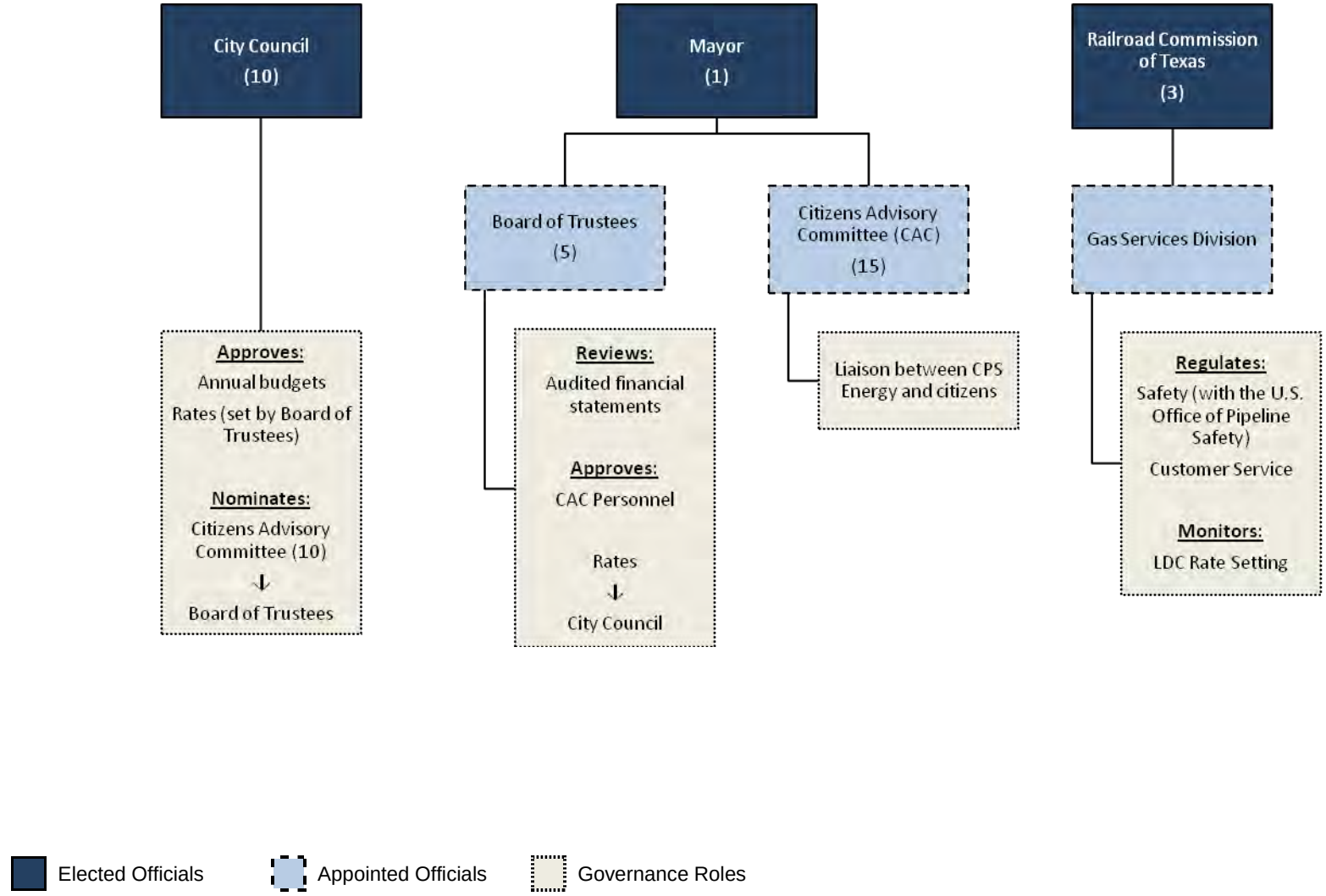
GOVERNANCE STRUCTURE AND ROLES
Municipally Owned Utilities

Figure 7. Philadelphia Gas Works Governance



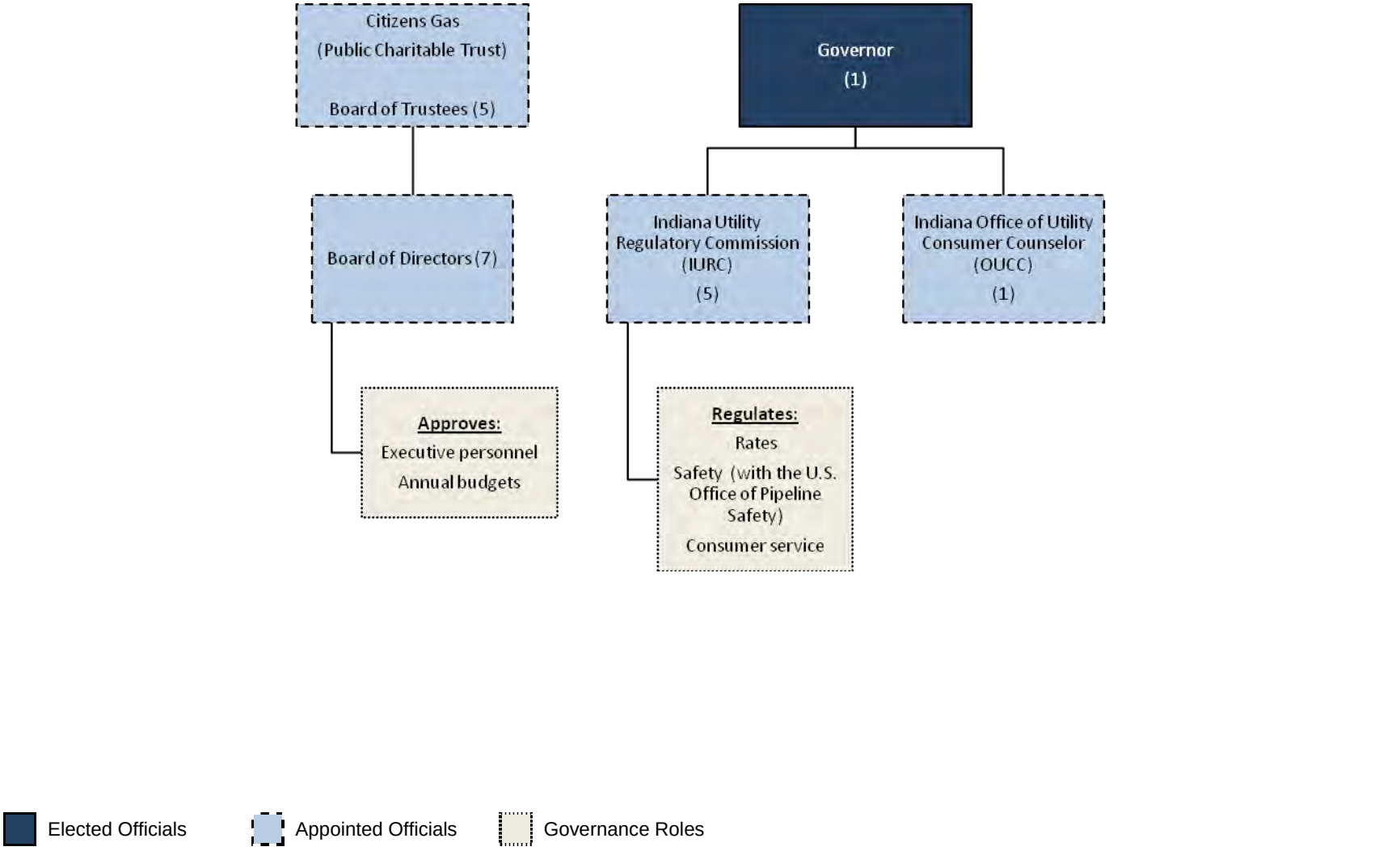
SOURCE: Philadelphia Gas Works; Pennsylvania Economy League

Figure 8. San Antonio: CPS Energy Governance



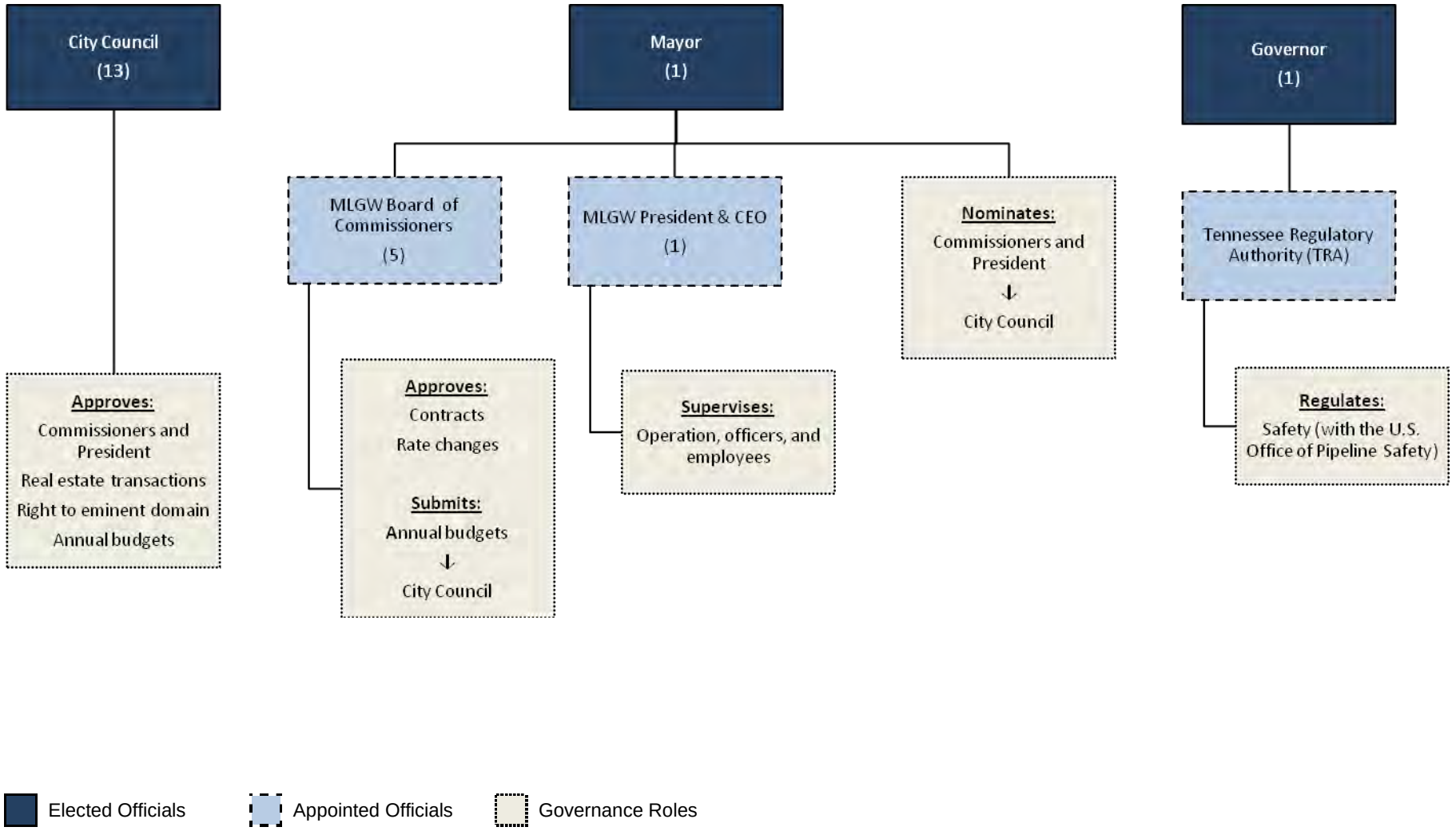
SOURCE: CPS Energy reports

Figure 9. Indianapolis: Citizens Gas and Coke Utility Governance



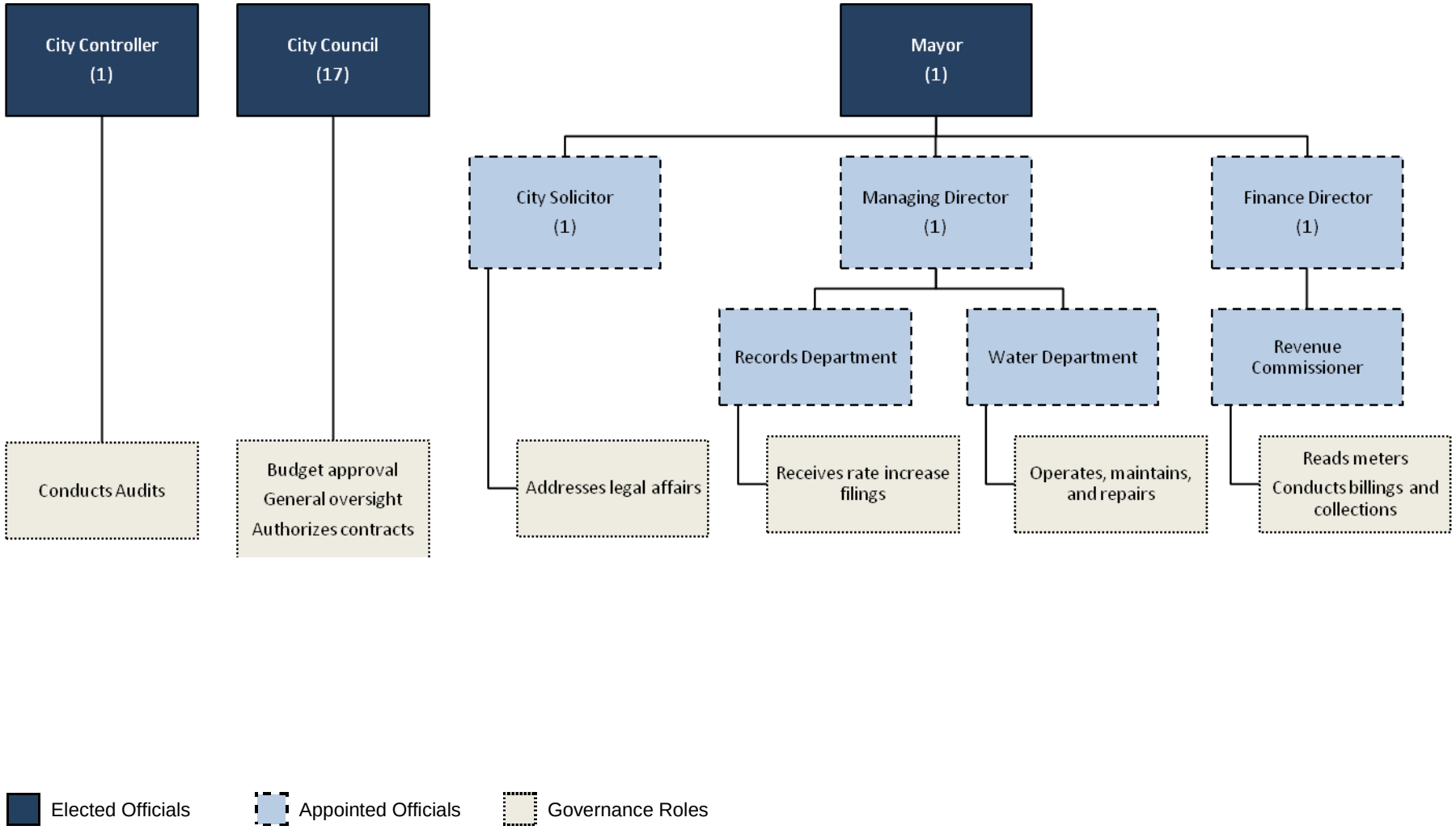
SOURCE: Citizens Gas reports

Figure 10. Memphis: Memphis Light, Gas, and Water Governance



SOURCE: MLGW reports

Figure 11. Philadelphia Water Department Governance



SOURCE: PWD reports

B. Customers: The Socioeconomics of Rates

Limited to a strictly urban service area,[5] PGW serves a high proportion of low-income customers whose heavily subsidized bills leave other City residents paying the highest natural gas rates in Pennsylvania. One out of every four PGW households receives some discount on its monthly bill. Moreover, the relatively high cost of PGW's discount programs exacerbates its other challenges: Higher subsidies increase the bills of full-freight customers, who then post higher rates of delinquent payments. This drives up labor costs by necessitating a larger collections operation, leaving less revenue to maintain infrastructure, which then must be financed by adding to PGW's growing debt.

Challenging Demographics

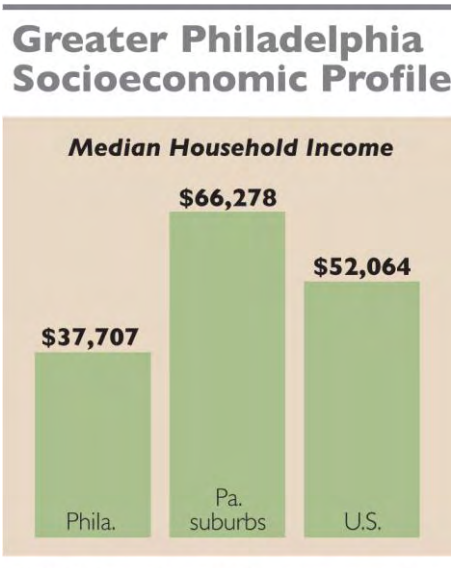
The challenging demographics of PGW's customer base are a byproduct of Philadelphia's shrinking population and high concentration of poverty. The City has lost nearly 30 percent of its population over the past half-century, and the Delaware Regional Valley Planning Commission projects no overall percentage increase in population between 2005 and 2035. Moreover, while PGW's customer base has entered a steady state of decline, enrollment in its largest subsidy program has markedly increased. Since 2002, the Philadelphia median household income has fallen by 5 percent. Compared with households in the five counties of Southeastern Pennsylvania (PECO's general service area), the median Philadelphia household earns 43 percent less; compared with the United States, the median Philadelphia household earns 28 percent less.

Normally, a business would seek to mitigate the impact of such challenging demographics by diversifying and expanding its products and services. Whereas regional utilities like PECO can spread the added costs of serving low-income customers across a broader, more diverse customer base, PGW is restricted to the City, making it difficult to minimize its expenses.

Social Obligations

PGW responds to the needs of its low-income customers by administering a variety of discounts or payment plans. These programs do not subtract from the operating budget's bottom line —all the costs associated with rate subsidies are borne by other customers through the universal service charge, a component of PGW's rates that is masked on residential customer bills. However, to the extent that rising social program costs drive up the bills of those paying full rates and make it more difficult for them to pay their bills on time, if at all, these social costs hinder collections, which lowers PGW's revenue and raises its bad-debt expenses.

Figure 12.



SOURCE: U.S. Census Bureau, 2006 American Community Survey

[5] PGW is limited to Philadelphia for regulated gas services; its franchise is for the City only. Nonregulated works such as repair services are unconstrained.

The Customer Responsibility Program (CRP) began in 1989 and is PGW's largest social program, capping utility bills for about 78,000, or 15 percent, of its residential customers. For customers with gross household incomes below 50 percent of the federal poverty line, the required annual payment is 8 percent of their income; for customers earning 50 percent to 100 percent of the poverty line, the payment is 9 percent of income; customers with incomes of 100 percent to 150 percent pay 10 percent of income. In other words, customers are not charged based on their consumption and have little incentive to consume less gas. The CRP is a PUC-mandated program.

Conservation Works Program (CWP) is a $2 million conservation program that takes a holistic approach to reduce gas usage of CRP customers. CRP customer gas usage is, on average, higher than non-CRP residential customers, due in large part to lack of incentive to conserve but also the condition of the City's housing. The goal of the program is to lower CRP gas bills and improve payment rates through education and weatherization, thereby reducing the CRP's long-term per capita costs. About 2,300 homes are weatherized through the CWP each year. CWP also is a PUC-mandated program.

The Senior Citizen Program was discontinued in 2003 but remains "grandfathered" into PGW's social offerings. It amounts to a 20-percent discount on an actual monthly bill (as opposed to an amount based on income paid by CRP enrollees), regardless of income. About 41,000 participants remain in the program, slightly less than one-tenth of PGW's residential customer base.

Federal, state, and private programs provide additional financial relief for customers but, unlike the CRP, senior discount and conservation programs, have outside funding. The most significant is the federally funded Low Income Home Energy Assistance Program (LIHEAP). LIHEAP funds are administered by the Commonwealth of Pennsylvania through two grants: the standard Cash credit and a CRISIS credit targeted at customers whose service has been shut off or is in danger of being shut off. The eligibility for LIHEAP funds is household income up to 150 percent of the federal poverty guideline. About 57,000 customers are enrolled in the LIHEAP Cash program and 13,000 in the CRISIS program. The other program is the Utility Emergency Services Fund that enables customers to use matching grants to erase outstanding obligations.

Figure 13. PGW Social Programs

Service Type	What Is It?	Who Is Eligible?	What's the Benefit?	Participants
Customer Responsibility Program	Low-income payment support program	Residents at or below 150% of the federal poverty level	0-50% of FPL: 8% of income 51-100% of FPL: 9% of income 101-150% of FPL: 10% of income	78,000
Senior Citizen Discount	Elderly discount program	Grandfathered participants	20% reduction of monthly bill	41,000
Conservation Works Program	Energy savings program	CRP customers	Reducing gas usage of low-income households cost-effectively	2,300 homes annually
Non-PGW Social Programs	LIHEAP (federally funded grant program)	150% of FPL; different requirements for Cash and CRISIS programs	Federal grants for low-income customers; funding administered by Commonwealth	70,000 (overlap with PGW programs)

SOURCE: Black & Veatch; Philadelphia Gas Works

Social Program Costs Soar

The rising cost of PGW's social programs has been driven by the CRP, which grew nearly five-fold from 2002 to 2007 because of increased participation and commodity costs. This increase has almost entirely offset the significant strides PGW has made in reducing its bad debt expense. Additionally, despite eliminating the senior citizen discount in 2004, that program's cost has decreased only marginally: Steady declines in participation have been partly offset by increasing costs of providing the discount. As a whole,[6] PGW's social program costs from $85 million in 2002 to $144 million in 2007, a rise of almost 70 percent and representing more than 18 percent of PGW's entire budget.

Although growing CRP enrollment has played a role in the rising cost of PGW's social programs, the primary culprit is the rate structure. Because CRP bills are set at a fixed rate based on annual income and do not fluctuate based on commodity prices or usage, CRP customers have no economic incentive to conserve. The result is that on average, a CRP customer uses 131 Mcf[7] per year, 47 percent more than the 89 Mcf used by customers paying the full rate. This disparity is exacerbated by rising commodity prices, which increase the variable cost of subsidizing service to all CRP customers. This trend is expected to accelerate, as reflected in PGW's 2009 budget, which is forecasting a possible 50 percent increase in the CRP program subsidy and a 30 percent increase in the senior citizen discount subsidy, despite the attrition of participants in the senior citizen program.

Figure 14.

Breaking Down PGW's Budget: SOCIAL PROGRAM COSTS

Improved collection rates have allowed PGW to reduce its budgeted bad debt. These savings, however, have been offset by the rising cost of the Customer Responsibility Program, whose enrollment has increased five-fold.

Annual social program cost components ($ millions)

Social program	2002	2003	2004	2005	2006	2007	2008	2009
Bad debt	$52	$85	$71	$70	$40	$40	$37	$44
CRP	16	33	48	61	88	87	80	120
Senior citizen	15	20	19	17	16	15	13	21
CWP	2	2	2	2	2	2	2	2
Total	$85	$140	$140	$150	$146	$144	$132	$187
Social program cost per customer	$169	$281	$281	$302	$300	$285	$263	$374

Average gas usage, CRP vs. full-rate customers

CRP customers pay a fixed rate based on their annual income, and thus have no incentive to conserve.

SOURCE: Philadelphia Gas Works; Economy League calculations * 2008 figures are amounts estimated and 2009 figures are amounts budgeted

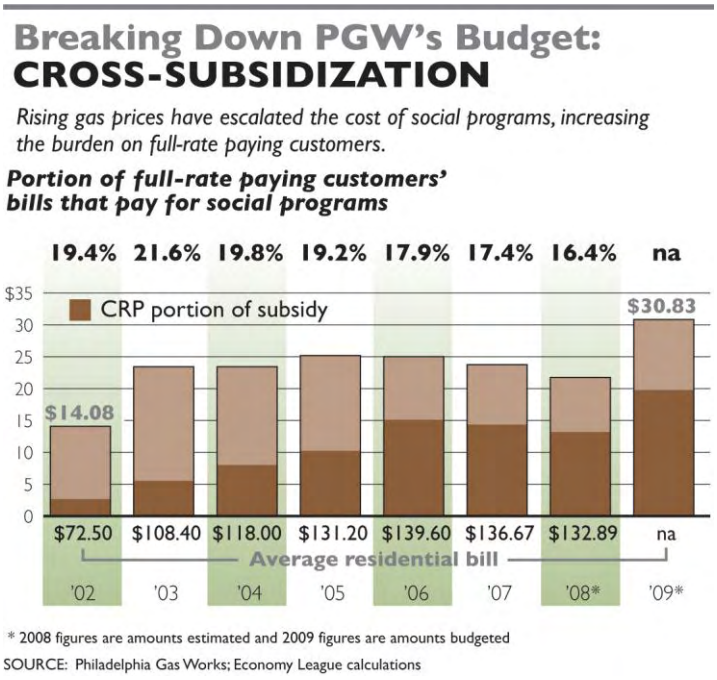
[6] PGW includes bad debt in calculating its social program costs to reflect the full level of cross-subsidization between full rate-paying customers and subsidized customers.
[7] 1000 cubic feet, a standard unit measurement in the oil and gas industry for natural gas.

For this reason, a spike in natural gas prices is of particular concern for PGW and its full rate-paying customers, which will bear an increasingly large burden of social program costs. Like fuel costs, the budgetary impact of social program costs is indirect: Subsidies are passed through to full rate-paying customers through the regularly adjusted universal service charge. This rate structure means that escalating social program costs have driven up the amount of cross-subsidization between full rate-paying customers and subsidized social program participants. Since 2002, the soaring CRP has almost fully negated the benefit of cost savings from bad debt reductions, maintaining the overall level of cross-subsidization at approximately $24 per month, slightly less than one-fifth of a full rate-paying customer's bill. In other words, only senior citizens—whose bills are discounted 20 percent—pay an amount that closely reflects actual consumption.

Not all PGW's social programs are created equal. The per capita subsidy for the CRP is much higher than the senior discount program because of the programs' rate structures: CRP enrollees make fixed payments based on income, while senior discount enrollees receive a discount off the top of their fully allocated bill. As a result, the CRP has twice as many enrollees as the senior discount program at five times the cost. So while total enrollment in social programs has remained relatively constant, the larger proportional enrollment in CRP has increased PGW's overall social program costs.

Because PGW customers already have the highest rates in the state and among major Snowbelt cities nationally, its unsubsidized customers have a limited ability to absorb additional rate increases. In 2006, PGW's average peak winter month[8] residential bill was the highest among Pennsylvania utilities and more than 15 percent higher than the second-highest average bill. Similarly, a 2007 study by CPS Energy found PGW's bills highest of 20 large U.S. Snowbelt cities. But with a declining customer base characterized by a high concentration of poverty, the need for additional rate increases to cover fixed expenses seems inevitable.

Figure 15.



[8] Peak winter months are defined in this case as December through February.

Figure 16.

Social Program Enrollment

The total percentage of PGW customers with discounted rates has remained steady. However, costs are up, as enrollment has increased in the expensive Customer Responsibility Program and decreased in the relatively inexpensive senior discount program.

NOTE: 2008 is amount estimated, 2009 is amount budgeted, and 2010 is amount forecast.
SOURCE: Philadelphia Gas Woks; Economy League calculations

Figure 17.

Pennsylvania Utility Average Peak Winter Month Residential Bill, 2006

For customers using at least 20 Mcf per month.

Utility	Monthly bill
PGW	**363.72**
UGI Corp.	$311.78
Equitable Gas	$308.65
PECO Energy: Gas	$256.67
National Fuel Gas	$254.90
Columbia Gas of Pennsylvania	$240.14
UGI Penn Natural Gas	$239.06
Peoples Natural Gas	$231.51

SOURCE: Black & Veatch

Figure 18: Breaking Down a Sample PGW Monthly Bill

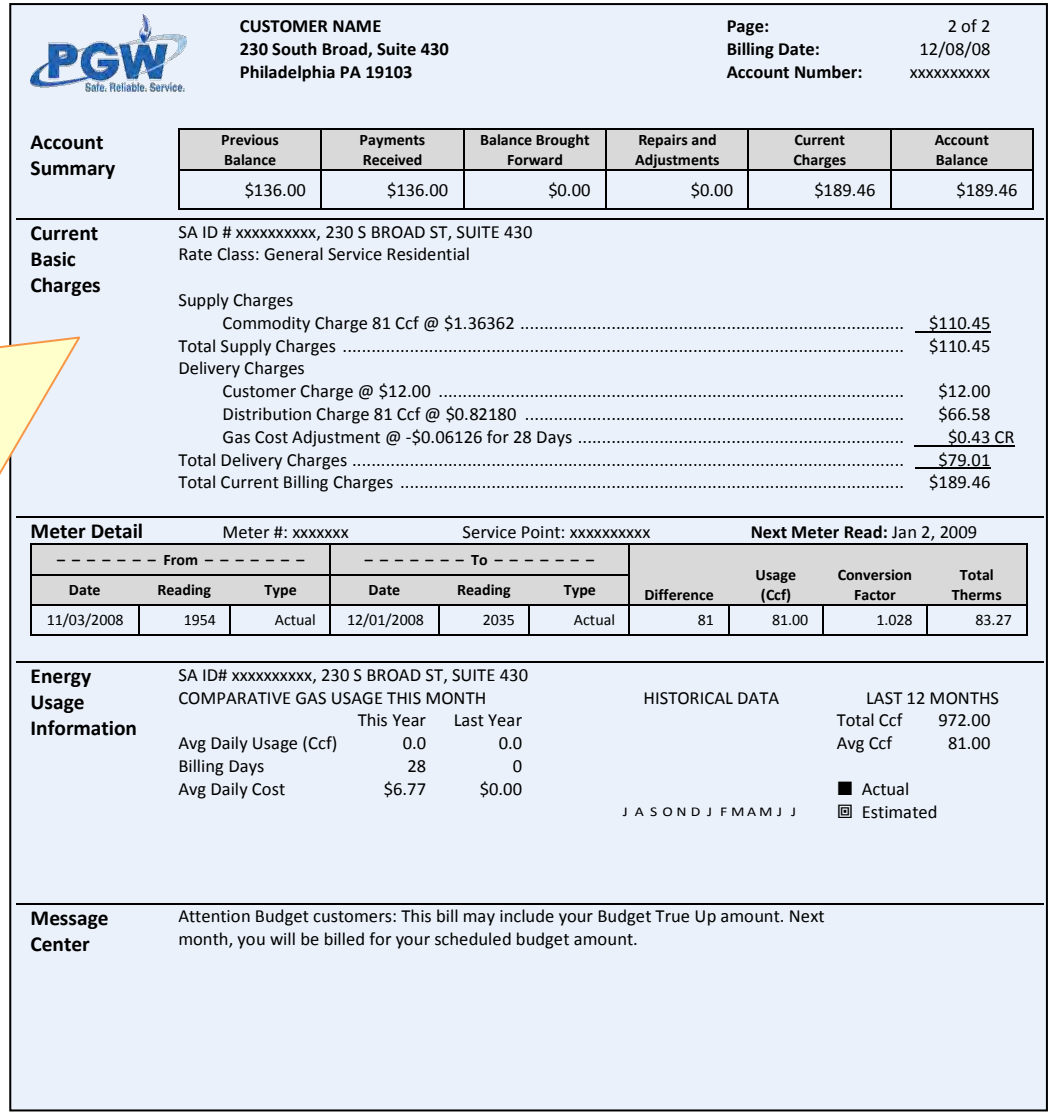
Supply Charges

- Commodity charge – The "pass-through" to customers for the cost of gas purchase, transportation, and storage.

Delivery Charges

- **Customer charge** – The flat rate for meter reading, billing, gas line connection.
- **Distribution charge** – The costs associated with gas service. There are two components of the distribution charge:
  - **Base rate:** The costs associated with operation, maintenance, debt service and working capital.
  - **Universal service charge:** The cost to fund the social programs. Appearing under the label "delivery charges," this cross-subsidy is masked on customers' bills.
- **Gas cost adjustment** – The amount billed or credited to make up for the difference of projected gas costs (versus the actual cost) based on weather normalization adjustments.

(Rates as of 08/14/2008)



PGW Safe. Reliable. Service.

CUSTOMER NAME
230 South Broad, Suite 430
Philadelphia PA 19103

Page: 2 of 2
Billing Date: 12/08/08
Account Number: xxxxxxxxxx

Account Summary

Previous Balance	Payments Received	Balance Brought Forward	Repairs and Adjustments	Current Charges	Account Balance
$136.00	$136.00	$0.00	$0.00	$189.46	$189.46

Current Basic Charges

SA ID # xxxxxxxxxx, 230 S BROAD ST, SUITE 430
Rate Class: General Service Residential

Supply Charges
Commodity Charge 81 Ccf @ $1.36362 ..... $110.45
Total Supply Charges $110.45
Delivery Charges
Customer Charge @ $12.00 ..... $12.00
Distribution Charge 81 Ccf @ $0.82180 ..... $66.58
Gas Cost Adjustment @ -$0.06126 for 28 Days ..... $0.43 CR
Total Delivery Charges $79.01
Total Current Billing Charges $189.46

Meter Detail Meter #: xxxxxxx Service Point: xxxxxxxxxx **Next Meter Read:** Jan 2, 2009

From			To						
Date	Reading	Type	Date	Reading	Type	Difference	Usage (Ccf)	Conversion Factor	Total Therms
11/03/2008	1954	Actual	12/01/2008	2035	Actual	81	81.00	1.028	83.27

Energy Usage Information

SA ID# xxxxxxxxxx, 230 S BROAD ST, SUITE 430
COMPARATIVE GAS USAGE THIS MONTH

	This Year	Last Year
Avg Daily Usage (Ccf)	0.0	0.0
Billing Days	28	0
Avg Daily Cost	$6.77	$0.00

HISTORICAL DATA
LAST 12 MONTHS
Total Ccf 972.00
Avg Ccf 81.00
J A S O N D J F M A M J J
■ Actual
▣ Estimated

Message Center

Attention Budget customers: This bill may include your Budget True Up amount. Next month, you will be billed for your scheduled budget amount.

SOURCE: Philadelphia Gas Works

A PUC Disconnect

Short of a dramatic transformation in PGW's cost structure, even higher rates are necessary to provide the cash to reduce PGW's long-term debt burden. This was one justification for PGW's 2006 filing with the PUC for $100 million in rate increases. PGW's aims were to:

- Cover increases in nonfuel operating expenses.
- Cover debt service ratios.
- Provide adequate liquidity.
- Repay the City's $45 million loan.
- Reinstitute its $18 million payment to the City's general fund.
- Repay short-term obligations.
- Further reduce its debt.

PGW considered a rate increase necessary to build upon the momentum of improved collections and solidify its financial position. Management projected that the additional $100 million would have sufficiently improved its liquidity position to reduce its long-term debt by 30 percent over six years and lower its debt-to-equity ratio from about 80:20 to 50:50. Over the long-term, PGW argued, debt reduction would improve PGW's cost-competitiveness and underlying financial structure, providing a benefit to customers that would outweigh the immediate rate increase.

The PUC ruled that granting PGW's full request was unnecessary because setting rates on forecasts of projected revenues needed to implement a business strategy is an inappropriate methodological approach. PUC evaluates natural gas utilities on a "test-year" basis, which is used to determine a utility's needs for the coming year. For investor-owned utilities, the PUC considers requirements to meet investor obligations and builds predetermined rates of return into rate relief allowances.

But as a municipal entity, PGW is not concerned with investor returns. Its rate increase requests are evaluated by the PUC on a completely different basis than any other gas company in Pennsylvania. PGW's rate request was predicated on how much cash it would need to meet its operating requirements and current debt service requirements. Ultimately, the PUC granted PGW $25 million of the $100 million it requested, enough to satisfy its short-term cash needs but insufficient to address its full financial objectives. This decision was consistent with prior PUC decisions: Of PGW's $225 million in rate increase requests since 2000, the PUC has granted $94.6 million, or 42 percent.

PUC's rate-setting methodology features an underlying philosophy of determining financial requirements based on an assessment of net investment and related income in a specific twelve month period. For investor-owned utilities, this approach works—their financial objective is to satisfy the need for investor returns, and base rates generally are set to adhere to this standard. Access to financing—long and short—is assured. But PGW has no shareholders to provide working capital and is heavily reliant on short-term borrowings for day-to-day operations, loans that have become increasingly vulnerable in the credit markets.

As a result, the PUC's policy ensures nothing more than momentary survival for PGW. The reality is that if PGW is unable to generate additional cash, it will not be able to reduce the financial impact of its ongoing

liabilities. In this case, fundamental constraints will continue to plague operations: PGW will continue to rely on short-term borrowing to compensate for its constrained liquidity position, and when its line of credit proves inadequate, it will again be forced to file for additional rate relief—a never-ending cycle of increasing cost to its customers.

Business Customers: An Opportunity

PGW's residential customer base offers little chance of improving cash flow. The utility's share of the City's residential market approaches saturation at 86 percent, well above most other cities' utilities. However, there is an untapped source of revenue within its territory: PGW has barely penetrated the City's business customer base, which is a much more lucrative market. The revenue generated from PGW's residential customers pales in comparison with that generated from its relatively small number of commercial and industrial customers. While 95 percent of PGW customers are classified as residential, only 56 percent of sales volumes and only 70 percent of its revenues are generated from residential customers. On the other hand, PGW's commercial and industrial users, representing just 5 percent of PGW's customer base, account for 44 percent of sales volumes and 30 percent of its revenues. PGW is relatively comparable with its benchmark utilities in this regard, exhibiting only a slightly less diversified customer mix than average.

Although this low market share in commercial and industrial sectors represents potential growth, the opportunity to tap this market is limited somewhat by the higher initial cost of installing natural gas service compared with other energy sources, and the lack of regulatory support enjoyed by private entities for aggressive marketing efforts.

Figure 19.

Gas Utilities' Customer Mixes : Residential vs. Commercial

As with its peers, most of PGW's customers are households. Industrial and commercial clients are an area of opportunity for growth if PGW can become cost-competitive.

Residential | Commercial/Industrial/Other

Utility	Customers		Sales volumes		Revenues	
PGW	95%	5%	56%	44%	70%	30%
Public						
Indianapolis	91%	9%	42%	58%	64%	36%
Memphis	92%	8%	37%	63%	54%	46%
San Antonio	93%	7%	15%	85%	24%	76%
Private						
Phila: PECO gas	91%	9%	43%	57%	66%	34%
Baltimore	93%	7%	39%	61%	76%	24%
Chicago	94%	6%	60%	40%	84%	16%

NOTE: "Other" aggregates AGA's alternative classifications of volumes and revenues: "electric utility sales" and "natural gas used as a vehicle fuel".

SOURCE: American Gas Association

C. Capital Costs and Cash Flow

PGW's limited cash flow over the past 12 fiscal years has forced it to continually use short-term loans to fund certain operations—akin to using a credit card to pay monthly bills. In 2000, PGW fell short of the cash needed to cover an initial spike in its gas costs that winter and needed a $45 million loan from the City's general fund. Chronic cash constraints also mean it must continually borrow money to finance the bulk of repairs and replacement of its aging, City-owned infrastructure, leaving the City utility with costly debt on its books and the City government with no dividend on its assets. The utility's uncompetitive costs are driven by this constant reliance on debt: PGW's ratio of long-term debt to total assets stands at more than 70 percent—three times the national average for gas-only utilities. As a result, PGW incrementally adds to its long-term debt burden each year. Although the utility has curbed the growth of its long-term debt, the level remains high and is unlikely to shrink absent more substantial and frequent rate increases.

Because PGW is not an investor-owned utility, it conforms to a different set of debt standards. Municipal utilities have only one way to "build" equity—through retained earnings—which can then be used to fund capital expenditures. The lack of cash flow at PGW has prevented its adding to retained earnings and has required the use of debt to fund all its annual capital improvements.

Figure 20.

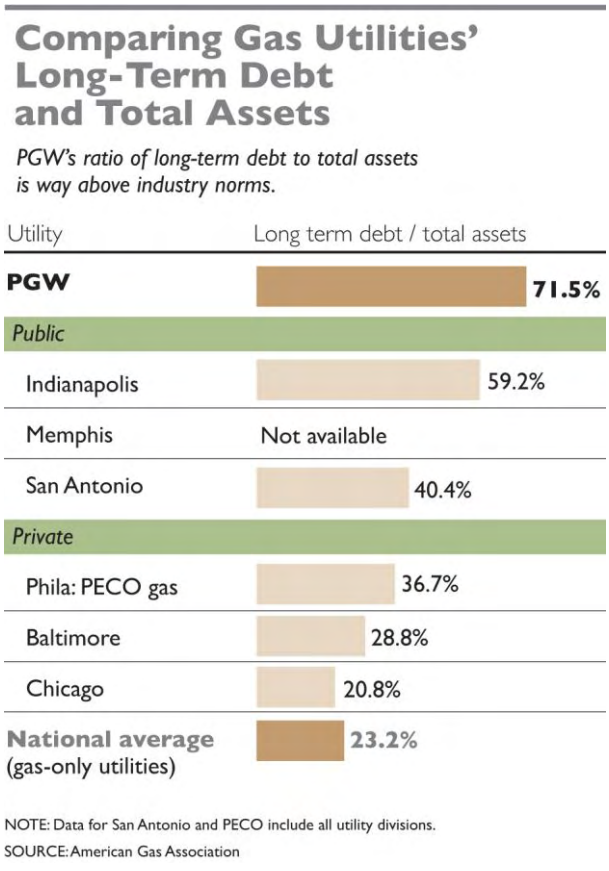
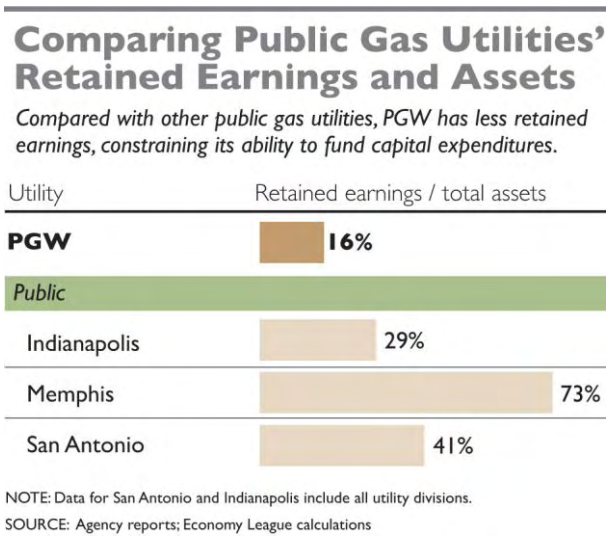


Figure 21.



Limited Capital Investment

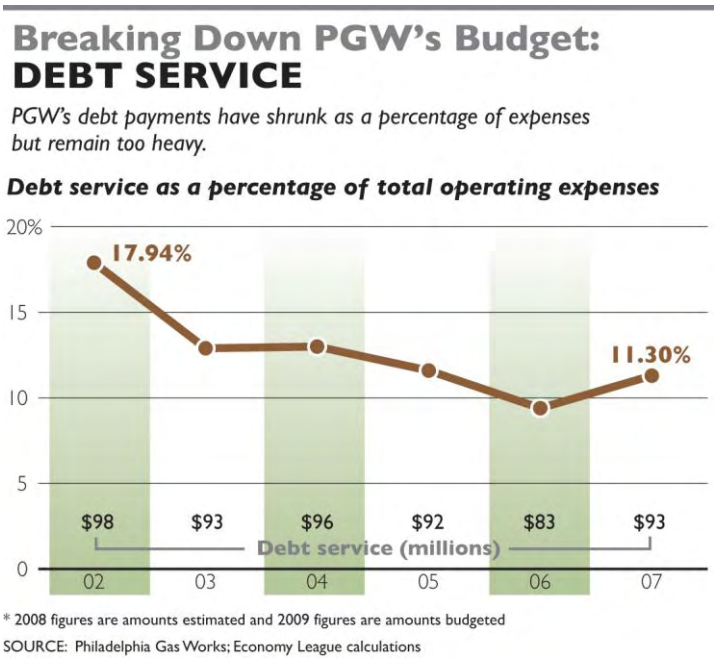
To keep its debt from rising faster, PGW has kept its capital spending reined in, not an ideal long-term solution. Over 15 years, its capital improvement program grew from $51 million in 1993 to $70 million in 2007—an average annual increase of 2.1 percent. This restraint has kept the incremental additions to its long-term debt burden in check, controlling its annual debt service costs. From 2002 to 2007, PGW's debt service decreased from 18 percent of total operating expenses to 11 percent.[9]

While limiting its debt growth has been prudent, the utility is, nonetheless, constantly under pressure to balance risk versus spending. PGW monitors the safety of its City-owned physical assets—3,016 miles of gas mains, 457,913 service lines, 515,464 meters, and 207 regulator stations—by replacing 18 miles of cast iron mains annually, regular leak surveys, and its maintenance program both for in-street facilities as well as its liquefied natural gas plants. PGW has operated relatively incident-free in recent years, a testament to the adequacy of its capital-intensive main replacement program.

However, PGW has not been able to adequately maintain nonessential assets such as offices, customer service centers, and its outlying operating stations. From a strategic standpoint, the City's physical assets are valuable to the extent that they remain attractive to would-be buyers. If the City ultimately decides to sell PGW, such a sale would be predicated partly on the appeal of the system's infrastructure, especially its LNG operations. The primary purpose of the City's two liquefied natural gas facilities is to allow PGW to store reserves to assure service due to the highly seasonal nature of natural gas demand and soften the impact of inevitable spikes in gas prices during high demand periods. PGW estimates the annual savings attributable to its LNG supply at about $60 million, or about 10 percent of its total gas purchase costs.[10]

Part of PGW's challenge is related to Philadelphia's largely aged housing stock and its largely built-out landscape, which drives up capital costs. More than 75 percent of the homes in the City were built before 1960, compared with 56 percent of the suburban housing stock in Southeastern Pennsylvania. Older homes are more costly to maintain and less likely to be well-insulated. Also, as with any big city, much of Philadelphia is covered with asphalt and concrete, surfaces that are more difficult and costly to dig through than dirt and grass.

Figure 22.



[9] Includes fuel costs; debt service as a percent of nonfuel costs decreased from 40 percent in 2002 to 33 percent in 2007.

[10] PGW is required to meet certain standards of supply and demand balance, and its storage facilities, including the LNG plants, ensure that it has sufficient capacity to meet these requirements and secure it against disruptions in service.

Effect on PGW's Credit Rating

For its most recent bond issue, all three major credit rating agencies indicated renewed confidence in PGW by revising credit outlooks from "negative" to "stable". According to Moody's Investors Service: "A stable credit outlook is assigned to reflect a confidence in the management of the utility and its ability to implement measures and adhere to collection practices that will maintain the steady course required [for credit rating upgrade]."

Still, according to Standard & Poor's, an improved credit rating is contingent upon sustaining recent managerial and financial improvements, which is constrained by several factors: "Even with the benefit of stronger collection enforcement tools, the utility needs to demonstrate an ability to sustain recent improvements in collection rates in the face of higher commodity costs and the system's weak demographic profile." Even though PGW's credit outlook has been upgraded, its credit rating remains barely above investment grade, resulting in higher capital costs than at peer utilities and highlighting the ongoing constraints that will limit the future viability of PGW as an enterprise.

PGW's improved collection rates indicate that its professional management team is improving the utility's financial footing. According to stakeholders and industry reports, sustained competent leadership has helped establish professional working relations with the PUC—and with its labor union, Local 686. In particular, credit rating agencies have cited "stable utility management" and a "demonstrated record of operational improvements" as justifying a recent upgrade to PGW's credit outlook. Interviews confirmed renewed confidence in PGW's internal management.

Figure 23. Benchmarking Public Utility Bond Ratings

Utility	Effective Date	Moody's	S&P	Fitch
PGW	2007	Baa2	BBB-	BBB-
Public				
Indianapolis	2008	A2	A+	n/a
Memphis	2007	n/a	n/a	n/a
San Antonio	2007	Aa1	AA	AA+

NOTES: Ratings reflects reports for most recently available natural gas distribution system bond issuance. Indianapolis: Series 2008C natural gas distribution system bonds; San Antonio: senior lien debt; Memphis: MLGW reports no debt for its gas division.
SOURCE: Agency financial reports

D. Gas Prices: Recent Spike and Long-Term Trend

The global commodities boom had eased as of September 2008, but natural gas prices remained elevated and are likely to trend higher in coming months and years, which will mean even higher bills for PGW's unsubsidized customers and higher costs for the utility's collections department. Like social programs, rising fuel prices drive up the amount of cross-subsidization between those paying full price for heating and appliances and those receiving discounts. Since 2002, this cross-subsidization has declined slightly from approximately one-fifth of a full-cost customer's bill. However, the recent spike in natural gas prices likely will reverse that trend for the coming fiscal year.

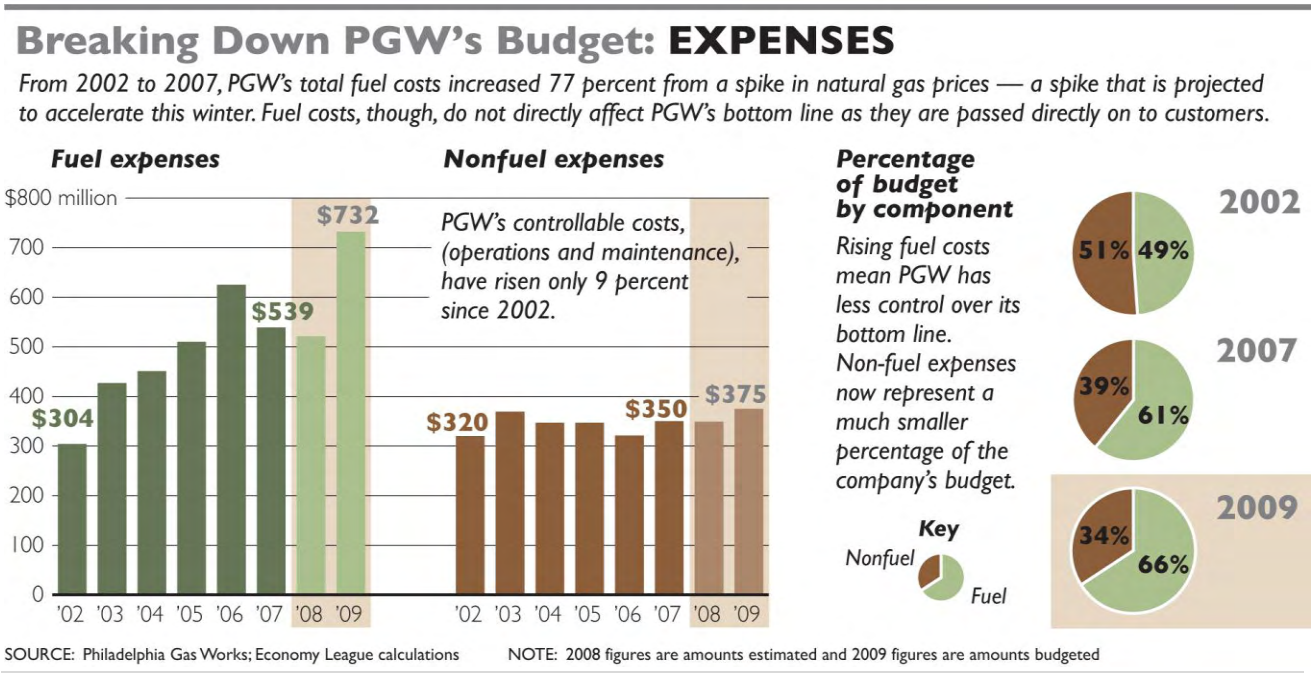
Fuel costs are passed on to PGW customers through the gas cost rate, which is adjusted quarterly to keep up with the variability in natural gas prices. Although fuel costs do not directly hurt PGW's bottom line, resulting fluctuations in customer bills do. Customer bills nearly doubled from 2002 to 2007, from $72.50 to $136.67 per month. As a result, PGW's nonfuel expenses have not escaped the impact of a near-doubling of natural gas prices.

Higher bills tend to impede collections, a driving force in PGW's ability to meet revenue expectations and control bad debt expense. These expenses are covered by the delivery charge, or base rate. The base rate is not regularly adjusted and must generate sufficient revenue to cover all of PGW's nonfuel expenses. When base rate revenue falls short, PGW must file with the PUC for rate increases to cover fixed costs. PGW's improved collection rates and cash flow have placed it on more solid financial footing. However, with fuel cost increases expected to accelerate, PGW has budgeted for an increase in bad debt expense for its coming fiscal year.

Price volatility in the natural gas industry makes PGW's operating budget highly variable from year to year. For instance, PGW's budget grew by 10 percent from 2005 to 2006 and then shrank by 11 percent from 2006 to 2007. In both cases, the driving cost was fuel, growing and shrinking by almost identical margins. But because of PGW's rate structure—fuel costs and the variable usage costs of CRP enrollees are borne directly by PGW's full-rate customers—fuel expenses do not directly affect PGW's bottom line.

Because they respond to distinct demands, fuel and operating and maintenance expenses have experienced very different trends in recent years. PGW's fuel costs increased 77 percent from 2002 to 2007, from $304 million to $539 million. This rise was attributable to a spike in natural gas prices, which, according to the U.S. Energy Administration, also nearly doubled over that period. The spike had eased but is expected to continue and even accelerate through the winter of 2008-2009.

Figure 24.



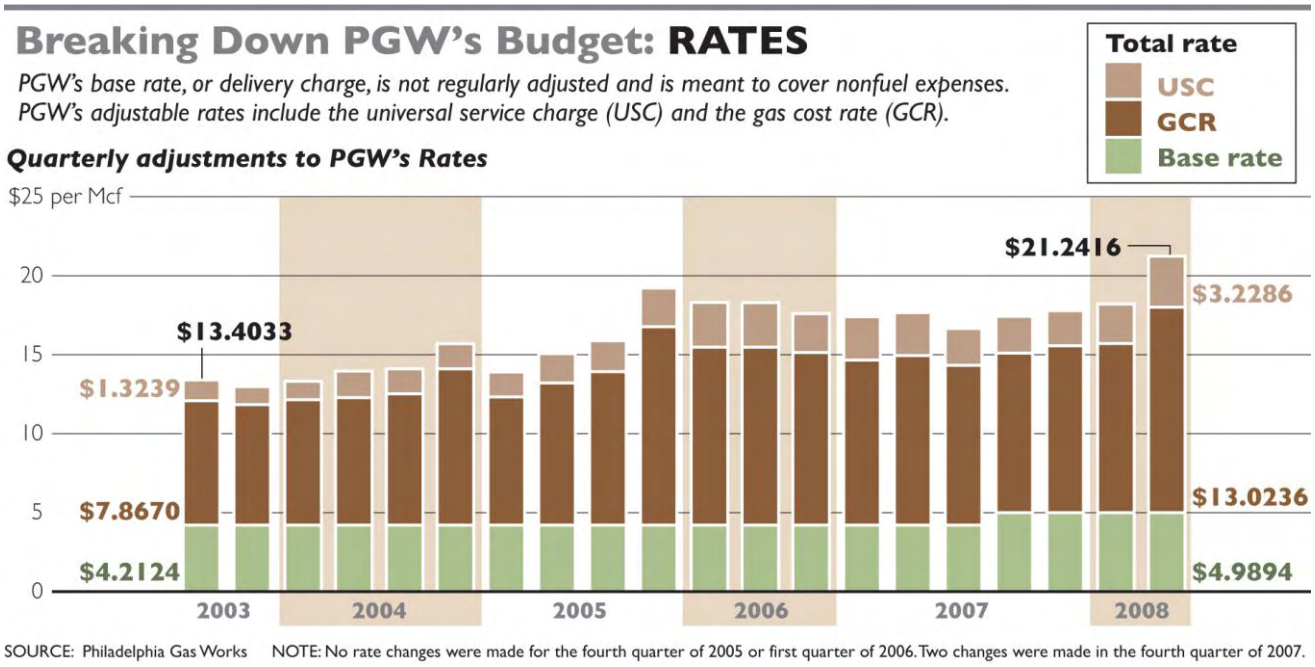
At the same time, nonfuel costs increased by just 9 percent, from $320 million to $350 million. PGW had managed to suppress its controllable costs: Labor and benefits (which account for approximately 50 percent of PGW's operating and maintenance expenses), interest payments, and depreciation each increased by an annual rate of less than 4 percent from 2002 to 2007, closely mirroring inflation. These differences have shifted the subcomponent proportions of PGW's budget from a nearly 50-50 split in 2002 to more than a 60-40 edge for fuel costs in 2007.

Because fuel costs are passed on to customers through the gas cost rate and universal service charge, PGW has very little[11] control over the impact of rising natural gas prices on overall rates charged to customers. Its cost control primarily is limited to the base rate, which has remained relatively stable in recent years. In this respect, fuel cost increases and flat operating and maintenance expenses have combined to alter the relative weight of PGW's rate components. In September 2003, the base rate represented 31 percent of the total volume-based portion[12] of PGW's rates; in June 2008, it represented just 23 percent. Thus, PGW has lost a noteworthy amount of control over total customer costs.

A Turnaround for Collection Rates

Although PGW's ability to mitigate the impact of rising fuel costs is still hindered by its costly social programs and cash constraints, it has made progress in collecting overdue bills. Despite a near-doubling of residential customer bills in four years, PGW's collection rate has increased from a decade low of 87 percent in 2003 to 96 percent in 2005, a level PGW has maintained over the past three fiscal years.

Figure 25.



[11] PGW does realize some cost savings related to off-site gas storage and LNG capacity, which can defray some of the cost of spot-market fuel purchases.

[12] Does not include flat customer application.

The efficacy of PGW's billing system had become a major source of concern in 1999, when a new computer software program proved unable to handle PGW's complex operations. Complications cost PGW millions of dollars in unbudgeted expenses and millions more in revenue from unbilled services. Collection rates dropped into the 80-percent range in 2001, well below industry standards.

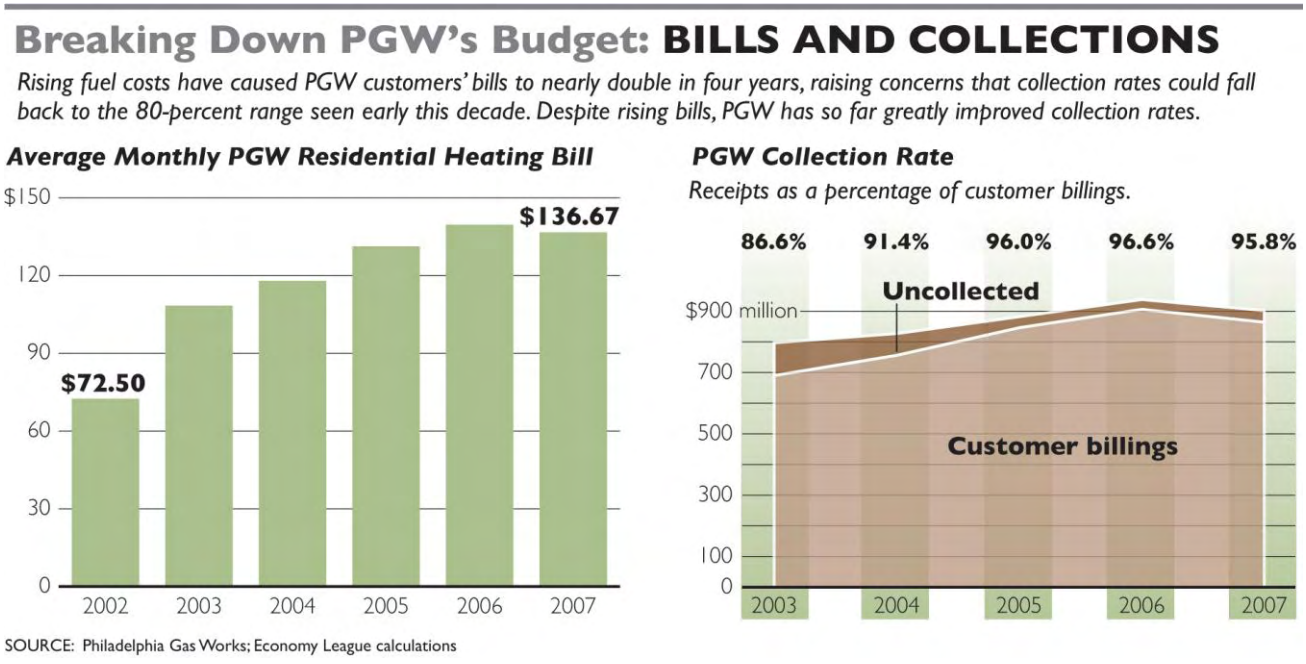
Computer flaws were corrected, and by 2004 collection rates were back above 90 percent. Since 2004, a number of reforms have further strengthened PGW's capabilities and flexibility to manage accounts receivable. Also, Pennsylvania Act 201, the Responsible Utility Customer Protection Act, grants PGW broader and more flexible authority to more effectively manage the service of delinquent customers.

As a result, PGW was able to reduce its budgeted bad debt expense by more than 50 percent, from $85 million in 2002 to $40 million in 2007. The impact of this trend is clear: In 2003, bad debt expense accounted for 23 percent of PGW's nonfuel costs; in 2007, it accounted for just 11 percent. Even so, rising social program costs have offset this improvement.

E. High Labor Costs

PGW's uncompetitive costs also are driven by higher-than-average staffing ratios. Its workforce totals over 1,700 employees. About half serve in the operations department, including field services, distribution and gas processing. A fifth serves in the customer activities department, including collections, customer service and account management. The remainder is interspersed across the system and services, marketing and planning, finance, and administration departments. About 71 percent of PGW employees are unionized members of Gas Workers Local 686.

Figure 26.



PGW's volume of sales and number of customers per employee are both less than half the national average and far below the ratio at any other Pennsylvania natural gas utility, an ongoing factor that impedes efforts to reform PGW's uncompetitive costs. One underlying factor in high labor costs is PGW's operating environment—the unique demands of providing natural gas distribution service to a wholly urban environment translates into additional labor demands and therefore higher costs. For example, the extra staffing required to operate PGW's extensive social subsidy programs and debt collection operations contribute to its high staff-to-customer ratio. Another factor is constraints on the extent to which PGW can outsource services as compared to other utilities. Limited outsourcing leaves PGW to fulfill labor needs in-house, driving up the utility's staffing levels.

Figure 27.

PGW's Workforce

Department	Personnel	Share of total workforce
Operations	956	55%
Customer Activities	382	22%
Systems and Services	239	14%
Marketing and Planning	62	4%
Administration	53	3%
Finance	43	2%

NOTE: Does not include four employees at the Gas Commission; personnel totals represent an average estimate for FY2007

SOURCE: Philadelphia Gas Works

Figure 28.

Comparing Pennsylvania Gas Utilities

PGW has more employees than other Pennsylvania gas utilities.
Data are for year ending December 31, 2007.

Utility	Employees	Therms/employee	Customers/employee
PGW	**1,735**	**341,786**	**280**
PECO Energy: Gas Division	548	1,623,022	872
UGI Corp.	882	1,053,036	366
Equitable Gas	415	1,224,118	657
National Fuel Gas	343	1,319,269	617
Columbia Gas of Pennsylvania	495	834,239	831
T.W. Phillips Gas and Oil	205	1,206,298	305
UGI Penn Natural Gas	378	1,289,509	422
Peoples Natural Gas	487	1,437468	733
National Average (Gas utilities only)	**903**	**1,276,154**	**664**

NOTES: The number of PECO gas employees includes the employees in gas operations and allocation of the employees in support functions; customer count represents a yearly average; labor efficiency metrics are not reported for peer utilities due to difficulties in breaking out gas employees from other commodities, a general limitation with utility-related benchmark data.

SOURCE: Agency annual reports

Looming Retirements

PGW's labor force is characterized in large part by highly skilled workers equipped with the institutional knowledge to handle its unique operating environment. A hiring freeze in place for much of the past two decades has put that institutional knowledge at risk. By 2011, nearly 700 of PGW's 1,700 employees will be eligible to retire, which would leave behind a younger, less experienced staff. Although PGW's competitive wages and benefits make it unlikely that eligible employees will retire *en masse*, the utility's unique operating constraints make the wave of coming retirements a concern for decision-makers.

Figure 29. PGW Retirement-Eligible Employees (Cumulative)

	2008	2009	2010	2011
Senior Team	3	8	11	14
Management	10	15	17	17
Managers	12	19	19	25
Supervisors	47	55	61	74
Skilled Nonunion	39	42	50	69
Unskilled Nonunion	8	12	12	13
Skilled Union	192	247	273	318
Unskilled Union	80	103	116	140
Total	**391**	**501**	**559**	**670**
Percent of Current Workforce	**23%**	**29%**	**32%**	**39%**

NOTES: Current workforce reflects FY2007 estimates and excludes Gas Commission employees; management figure excludes senior team.
SOURCE: Philadelphia Gas Works

Section III: Strategies for Lasting Change

A. The Case for Reform

PGW is not in a state of crisis. Noteworthy operational improvements made by current management have slowed its financial decline. Yet little has been done to correct the structural issues at the root of PGW's troubles. Among them, a labyrinthine governance structure, low-income customer base, onerous capital obligations, rising energy prices, and high labor costs, have driven up costs and continue to impede reform. The result is uncompetitive service that is a risk to City and customer budgets alike: the City has granted back PGW's $18 million contribution to the General Fund every year since 2004, and captive customers continue to pay the highest rates for gas in Pennsylvania.

Truly transformational change is needed to reverse a never-ending cycle of increasing costs. Without it, PGW's debt burden will continue to grow, customer bills will continue to rise, and finances will drift perpetually downward. As long as the City owns PGW, it will remain exposed to these consequences of inaction. The City cannot afford to rest on the laurels of recent operational improvements. Business-as-usual is simply not an option.

Guiding Principles

Transformational change must begin with fundamental improvements to the utility's existing structures. To be sure that action is based on sound public policy, decision-makers should judge options by whether they are:

- **Streamlined:** The City needs to overhaul PGW's governance and smooth regulatory relations.
- **Proactive:** Policy-makers need to actively monitor trends driving changes in natural gas service to ward off potentially negative effects on customers and taxpayers.
- **Strategic:** Policy decisions should be guided by clear objectives, and every step taken should advance a larger strategic vision.

B. Opportunities for Reform

Several strategies that adhere to these principles offer opportunities to tackle PGW's problematic organizational framework, rate structure, energy strategy, and labor outlook.

Gain Control Over Social Programs

The City must confront social program costs regardless of PGW's future organizational form: Low-income customers will require some form of rate protection even if the City relinquishes ownership. Given Philadelphia's high concentration of poverty, decision-makers must determine an appropriate balance between PGW's dual roles as gas works and social welfare agency before reforming CRP's rate structure. The City has three potential options:

- **Realign CRP program payments** from a fixed to a discounted rate structure, similar to the senior citizen program. The discount would aid low-income customers, but it would also reinstitute an incentive to conserve by charging according to usage. Such a reform would almost certainly reduce consumption by CRP customers, thereby reducing the amount of cross-subsidization required to support the program.
- **Remove social program costs from PGW's rate structure** altogether. From a policy perspective, cross-subsidization represents a hidden tax to the City's full rate-payers. Including social program costs in the City's general fund would make these costs more transparent and equitable.
- **Cap the program's costs** at a predetermined level each year. The CRP is the only customer assistance program in the state that is not capped at a maximum cost or number of customers. Realistically, a cap would also require some reform of the CRP's rate structure or eligibility requirements, but at least it would somewhat stabilize cross-subsidization.

Any reform to PGW's rate structure would require PUC approval. PGW's most recent rate hike request with the PUC elicited unanimous opposition from local elected officials and civic groups. This illustrates that reforming social programs may require Philadelphia's elected and civic leaders to undergo a wholesale shift in attitude toward PGW.

Strategic Energy Initiatives

Water: The City might consider restructuring PGW to look more like PWD, or even merge their operations. Logistical constraints could prove significant: Legally, PWD is a chartered operational department of the City government, while PGW exists outside City government operations as enterprise under a management agreement. Political ramifications would include renegotiating labor contracts and gaining PUC approval.

Still, the Water Department represents a key asset that the City could leverage to improve PGW's financial position. Combining gas and water operations would eliminate PGW's lack of business diversification, and it would do so with a stable—and increasingly valuable—commodity. The public policy community increasingly is coming to the realization that drinking water is a finite resource. Projections of diminishing supply indicate that demand for fresh water capacity will grow, with some experts going so far as to say that water is "the next oil."

If the City could find a legally and politically feasible way to combine its water and gas operations, it could transform the economics of providing gas service to create a more cost-effective, sustainable, and potentially profitable enterprise for the whole City.

Steam: The City could also remedy PGW's lack of product diversification by acquiring the assets of competitor commodities. For example, the Center City steam loop limits PGW's market share of commercial office buildings, including many municipal buildings downtown. Steam's lower cost draws large institutional customers away from natural gas. Although such a transaction would require a large upfront investment and a willing counterparty, it would mitigate PGW's competitive cost disadvantage, increase PGW's commercial and industrial market share, and give the City ownership of a clean energy resource with the potential to grow.

Conservation: Natural gas is a "clean" energy source that stands to benefit from greater environmental awareness. Promoting PGW in this way could burnish its image as an environmentally friendly energy alternative.

The natural gas industry has been actively sounding the clean-energy message nationwide. In Philadelphia, the recently created Mayor's Office of Sustainability possibly could aid a local campaign. Although it may be difficult to sell PGW as an economic development tool—its relatively high installation costs compared with other energy sources hardly would be attractive to developers—it may be possible to sell the clean-energy angle.

Over the long-term, PGW could realize savings by implementing more sustainable and cost-saving energy practices. For instance, Duke Power's "save a watt" plan encourages customers to cut back on energy usage by helping to pay for house weatherization, more energy-efficient appliances, and incentives for developers to use more energy-efficient technologies. Customers would benefit from lower bills and utilities would be rewarded through the regulatory process for its energy savings.

Naturally, over time, encouraging energy efficiency would lower consumption, which would hinder the utility's ability to cover its fixed costs. PGW promotes conservation through its relatively small, $2 million Conservation Works Program, which educates CRP enrollees about conservation and provides home weatherization. To resolve this dilemma, PGW officials have begun advocating for a reform of rate structures to "decouple" the recovery of fixed costs from the volume of natural gas delivered. Theoretically, this rate reform would free utilities to encourage customers to conserve by ensuring the financial stability to cover their operation and maintenance expenses. Given the larger public interest found in energy conservation, policymakers should support this reform, which would require PUC approval.

Labor Outlook

If addressed strategically, PGW's looming wave of retirements could be an opportunity to improve PGW's uncompetitive cost structure. Succession planning would mitigate the deleterious consequences of loss of institutional knowledge and leverage labor attrition as a way to reduce operating costs. With union contract negotiations scheduled for fiscal 2009, the future of PGW's labor construct is fluid and should be addressed proactively.

B. Potential Strategic Alternatives: Pros and Cons

The universe of potential alternatives for PGW's future is expansive. Yet it is an imperfect universe. While previous reports detail dozens of models for restructuring PGW, none represents a panacea for the numerous issues at the root of PGW's troubles. This reality reinforces the urgency of reforming PGW's existing structures: working to remedy PGW's existing impediments not only will provide Philadelphia with more competitive gas service in the short-term, but it will also improve its long-term value and the viability of potential strategic alternatives.

This section explores the benefits and risks associated with a representative set of previously proposed solutions for restructuring PGW. This is not a strictly financial evaluation; ultimately, the City may decide to eschew balance sheet considerations in favor of other civic objectives, such as rate management, economic development, or sustainability. The key will be for policymakers to develop a set of clearly defined goals for the City's natural gas utility, and to consider future options in that context.

What is PGW Worth?

Any discussion of alternatives has to consider a sale of PGW, and any discussion of a sale has to begin with an effort to determine what PGW is worth. For this report, Fairmount Capital Advisors and CBIZ Valuation partnered to update the findings from previous analyses to determine a range for the current value of PGW.

The value of an organization depends on its ability to generate positive cash flow from its operating assets. The most common industry-accepted practice in valuing an organization involves the concept of what the value would be to a "willing buyer" purchasing from a "willing seller". The validity of this approach depends on both buyer and seller having knowledge of all relevant facts, including real marketplace data involving publicly traded companies and recent merger/acquisition transactions. Although variations to this model exist, valuations in most transactions have their roots in this concept.

Methodological Approaches: Baseline valuations create an estimate or range to serve as a starting point in determining overall value. Typically, this analysis starts with consideration of similar public companies (where value is known and determined by the market), recent transactions of similar companies, and an organization's ability to generate positive cash flow over time, as measured by earnings before interest, taxes, depreciation and amortization (EBITDA). The primary methodological approaches to determine this factor are:

- **Comparable company analysis:** Uses parameters such as size, service area type, products and services offered. Most often, comparable companies are publicly traded firms where financial information is readily available. Once a sample field is selected (typically 5 to 10 companies), several valuation metrics are identified. These metrics typically examine the organization's ability to generate cash flow from operations without having a view on capital structure (debt-versus-equity funded). Once selected, market values are determined and various financial and valuation ratios (including cash flow) are developed. Operating cash flow is compared to market values to generate cash flow multiples. These multiples are applied to PGW's EBITDA in arriving at an estimated value.
- **Comparable transaction analysis:** Incorporates recent public and private market transactions of similar companies to PGW. Different from the comparable company analysis, this method looks at actual prices paid for organizations as they relate to cash flow (or EBITDA). Once again, these valuation multiples are reviewed and applied to PGW's cash flow in arriving at an estimated value.
- **Discounted cash flow analysis:** Evaluates a company's ability to generate cash from operations as a return on investment. This methodology examines future annual operating cash flows generated by an organization and discounts them back to the present. The discount rate used in this analysis should reflect the level of risk associated with PGW's business, or its cost of capital.

These methods are used to determine the organization's enterprise value, a measure often used as an alternative to straightforward market capitalization. Enterprise value is calculated as market capitalization plus debt, minority interest and preferred shares, minus total cash and cash equivalents. This value is the theoretical takeover price of an organization. In the event of a buyout, an acquirer would have to take on the company's debt, but would have access to its cash.

Enterprise value differs significantly from simple market capitalization in several ways, and many consider it to be a more accurate representation of an organization's true value. The value of a firm's debt would need to be paid by the buyer when taking over a company, and thus enterprise value provides a much more accurate takeover valuation because it includes debt in its calculation.

No matter what scientific method is applied to valuing an organization, though, one must still look at the individual entity and determine any unique characteristics which may either entice or distract a willing buyer from making an acquisition. Such characteristics need to be individually examined in an effort to apply either premiums or discounts to the initial valuation analysis.

Updating the Baseline Value of PGW: PGW's status as a distinct entity—and in particular its separate audited financial statements—allow its operations, assets, and obligations to be clearly identified (including the rights-of-way), carved out of the City, and sold to a third party. In a transaction such as this, which is not uncommon, the City would identify a particular collection of PGW's assets and sell them as an ongoing entity.

Several prior studies have employed the mentioned industry-standard practices to estimate the value of PGW in a sale to a third party. For this analysis, Fairmount Capital Advisors and CBIZ Valuation did not consider any premiums or discounts in arriving at its conclusion; the analysis employs only currently available data and does not adjust for anything that is uncertain or not in place. This approach produced an updated baseline value range of $1.300.0 billion to $1.475.0 billion. (Please see Appendix A for a detailed set of calculations used to generate these estimates.)

Figure 30. PGW Valuation Analysis ($ millions)

Valuation Components	
Baseline Value Range	$1,300.0 to $1,475.0
Offsetting Items	-$1,262.7
Defeasance Requirements	*-1,169.9*
Outstanding Notes Payable (as of (8/08)	*-68.0*
Unfunded Pension Liability	*-60.0*
Cash (as of 8/08)	*50.2*
Estimated Transaction Costs	*-15.0*
Estimated Net Value Range (before OPEB)	$37.3 to $212.3
Estimated Potential OPEB Liability	-$350.0
Estimated Net Value Range (with OPEB)	-$312.7 to -$137.7

NOTE: See Appendix A for full description of methodologies and calculations
SOURCE: Fairmount Capital calculations

Off-Setting Items: The true economic value of PGW also includes current outstanding liabilities and restricted assets of the organization. These liabilities and restricted assets include—but are not limited to—short- and long-term outstanding debt, reserve

funds, investment contracts, derivative product contracts, and other unfunded liabilities. A sale would require the City to pay off, defease, or "unwind" these financial obligations.[13] The City would have the option to assume some or all of these obligations. Any un-assumed obligations would be netted against a sale price to determine the City's "net proceeds" of a sale.

The value of many obligations change on a daily basis. As of October 6, 2008, analysis estimates the value of PGW's obligations to be $1,297.7 billion, plus an estimated $15 million for the cost to pay the transaction costs in a sale. In addition, the Government Accounting Standards Board's new requirement to report before other post-employment benefit (OPEB) obligations. PGW's OPEB requirement amounts to a $45.2 million annual contribution (PGW currently pays about $18 million annually) and an overall estimated present value potential liability of $350 million. Including OPEB obligations, the estimated "overall net" value to the City of a sale under current conditions is -$312.7 million to -$137.7 million. (Please see Appendix A for a detailed set of calculations used to generate these estimates.)

Factors That Could Affect PGW's Value

Although a baseline value serves as the basis for the price PGW would command, many factors could positively or negatively affect the net proceeds from a sale. Ultimately, the net impact of these factors—and the price PGW could command—will depend on negotiated trade-offs reflecting both City priorities and how potential acquirers value these factors with respect to their acquisition price:

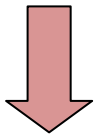
Strategic vs. Financial Buyer: PGW's value would depend in part on the type of prospective buyer. Financial buyers view acquisitions as investments, prioritizing financial ratios, cash flows, and return on investment over a given time horizon—typically, anywhere from 5 to 30 years. A financial buyer looks to make changes to a company's operating environment and exits after maximizing returns—typically, they will look for a 15-25 percent return on the equity invested.

Strategic investors view acquisitions with a long-term investment horizon, with no explicit future intention to sell. Frequently, strategic investors will pay more than financial investors for an acquisition target. Strategic investors place additional value on the potential to integrate operations, with the intent of reducing duplication and expenses, gaining market share, or somehow otherwise leveraging a larger platform to gain further price concessions or efficiencies.

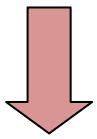
In the case of PGW, financial investors likely would be attracted to its size and potential for incremental value from streamlined operations. Strategic investors—especially local ones—likely would be attracted to an opportunity for operational synergies through greater purchasing flexibility and economies of scale. The value of potential synergies has been estimated between $60-100 million per year. Theoretically, a strategic buyer would include these potential savings in the price it would be willing to pay for PGW.

[13] Existing legal structures may mitigate the need for such defeasance. While the study of such structures is beyond the scope of this analysis, continued interest in the feasibility of a sale will require additional analysis of the availability of such structures.

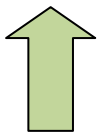
Maintain Annual City Dividend Payment: PGW's value also would depend on the City's expectation of receiving future dividends. PGW's traditional annual payment of $18 million was suspended in 2004 and is not expected to be reinstituted (as reflected in this analysis). The larger the expected future dividend, the lower the initial sale price. If the dividend payment is maintained at historic levels, there would be a negative adjustment to any sale price of up to $150 million. In addition, retaining the dividend payment would require the City to monitor the ongoing financial health of the buyer to track their continuing ability to pay the dividend.



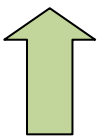
Public-to-Private (Public Company) Ownership: PGW enjoys financial benefits that may not be available through an acquisition by a non-public entity, potentially reducing its value to prospective buyers. The largest of these are tax related: although the City and Commonwealth may waive tax requirements, it is unlikely any Federal tax would be forgiven. There also may be a potential tax liability associated with transferring City-owned rights-of-way to private ownership. An acquirer also could face increased insurance costs due to liability limits for governmental entities. Public companies would face additional expenses associated with reporting standards, such as those promulgated in Sarbanes-Oxley. Any analysis performed on behalf of a potential buyer would include provisions for these expenses to some degree, ultimately decreasing operating cash flows and the potential net proceeds of a sale to the City.



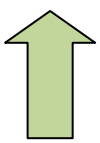
Implementation of "Business Transformation" Initiatives: Management is in the process of implementing several programs which could enhance revenues and increase PGW's value. A portion of the return on these "Business Transformation" initiatives is expected to be immediate and is reflected in the fiscal 2009 budget—therefore, they are inherently included in baseline valuation estimates. Additional cash flow benefits in the future could further increase PGW's value. However, the uncertainty of these benefits requires discounting methods to generate reasonably conservative cash flow forecasts.



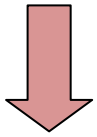
Benchmarking for Potential Expense Savings: Streamlining PGW's current operations to be more in line with industry standards would drive down costs, increase cash flow, and increase PGW's value. Estimates of potential reductions have run as high as $25 million—if entirely realized, such savings could increase the value of PGW by as much as $200 million.



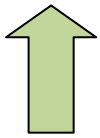
Ability to Increase Base Rates: Rate increases augment cash flow and increase PGW's value. However, rate increases require PUC approval. Historically, this regulatory process has limited the potential for augmenting cash flow. In a different organizational form, PGW likely would operate in a different regulatory environment, potentially increasing rate-setting flexibility. The ability to set rates at 'market' levels that better reflect the operating needs of the organization would improve its cash flow position and potentially increase its value. Changing rate setting methodologies to a "rate of return" method (used for investor owned utilities) from the current "cash flow" method could have a potential positive impact of up to $75 million per year and increase PGW's value.



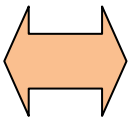
Eventual Outcome of Other Post-Employment Benefit Obligation (OPEB): A recent Government Accounting Standards Board pronouncement (GASB Statement 45) that requires governmental entities to report OPEB obligations similar to pension obligations (using actuarial estimates and annual funding obligations) may impact PGW's value. These obligations are properly recorded by PGW and are included in its valuation, although their status with regards to a transaction remains somewhat uncertain.



Better Use of Non-Operating Assets: If certain non-operating assets can be carved out of PGW and sold separately, they may have value to a strategic buyer with the knowledge and financial wherewithal to better utilize them. It is difficult to estimate any potential value which could be realized from these assets; therefore, it has not been included in our analysis. However, a portion of assets currently owned by PGW (certain land and buildings, possibly the owned LNG plants, for example) are not crucial to PGW operations and may be more valuable under a different or enhanced use.



Changes to the Social Programs: The burden of PGW's social programs falls on PGW's full-freight customers, with the majority of its costs not affecting PGW. The costs which do affect PGW are the additional burden of bad debt associated with the social program recipients. These programs likely will remain in place regardless of potential reforms or a sale, and the burden will either remain with rate-paying customers as part of their permanent rate, or else the City will identify other funds with which to subsidize this program. In any case, changes to social programs should not have a material impact on cash flow, and therefore will have little effect on value.



Scenario 1: Sell Assets to a Private Firm

An updated valuation indicates that the City cannot sell PGW at the current time for a positive return – it likely would have to pay for another entity to take PGW off its hands. However, this reality does not rule out a sale. To the extent that it could find a willing buyer, the City theoretically could sell PGW at a loss to accomplish other strategic objectives.

Pros: The primary benefit to the City of selling PGW would be removing it as a liability from the City's balance sheet. The purchaser would not only acquire PGW assets but also assume its debt. The sale would transfer the responsibility of managing the enterprise to a third party. If the purchaser had expertise or existing market power, the new operating structure could also lower the cost of providing service to Philadelphia gas customers.

Cons: Selling PGW would be costly to the City. Transaction costs are estimated at $15 million, and the process of bond defeasance and assigning or unwinding other contractual agreements alone would take months and involve lawyers, consultants and investment bankers. Perhaps more important, the City would lose operating control over PGW, exposing PGW's employees and customers to the business plan of a private enterprise—as is the case, of course, in most other cities. Under new ownership, labor contracts could be renegotiated and customer costs re-evaluated.

The sale price ultimately would hinge in part on the type of transaction. Previous analysis has identified three potential models:

- **A:** Immediate sale
- **B:** Deferred sale
- **C:** Two-step sale

Alternative 1A: Immediate Sale

The most basic model for the City to sell PGW assets is by way of a standard auction, with the assets being sold to the highest bidder.

Pros: If the City's principal objective is to fully remove PGW's liabilities from the City's balance sheet, this alternative would be the quickest way to cut its ties with PGW.

Cons: Of course, the quickest way to cut ties with PGW is also the quickest way to lose control over its future direction.

Alternative 1B: Deferred Sale

In a deferred sale, the City would engage a private party in an operating and maintenance contract for a set period. At that time, the City and operator also would negotiate a fixed price at which the City would have the right to sell—and the operator the obligation to purchase—the assets, and a higher fixed price at which the operator would have the right to purchase—and the City the obligation to sell—the assets.

Pros: Unlike an immediate sale, a deferred sale would benefit the City by creating an incentive for operating efficiencies and increase the ultimate value of PGW. Even if a sale was not consummated at the end of the contract period, the deferment would increase PGW's value to the City. The City would also be protected from the risks of a standard operating and maintenance contract: If the operator failed to improve the enterprise and PGW's value declined over the contract period, the City would have the right to sell its assets to the operator at the predetermined price.

Cons: This theoretical protection assumes that the operator is solvent at the end of the contract period. Even an apparently healthy company's financial situation could change over time, leaving the City saddled with assets shrinking in value.

Alternative 1C: Two-Step Sale

Another alternative would be to sell PGW's liquefied natural gas and distribution assets separately.

Pros: Previous analysis has suggested that a two-step sale would increase the prices that purchasers would be willing to pay for each set of assets.

Cons: Analysis has questioned the practicality of this model, given the legal and logistical constraints. The City would need to value each set of assets and obtain the consent of bondholders and credit providers to conduct two separate sales. Legal implications related to income tax law and commercial paper obligations also would constrain the process. Decision-makers would need to determine whether the potential increase in asset value would be worth the expense and effort.

Scenario 2: Retain City Ownership

Pros: The chief benefit to the City government of keeping PGW would be continued control. City ownership ensures that reforms to PGW are addressed with the public interest in mind and that any savings realized from changes to its cost structure would accrue to the City and PGW customers. This construct allows policymakers to set priorities for PGW and to implement them in a strategic fashion, while avoiding the cost and logistical hassles of attempting to terminate ownership.

Cons: On the other hand, many would argue that the City's actions regarding PGW to date have *not* been in the public interest, and that City control has been anything but a safeguard. Without strategic action, the public interest will continue to be at risk.

There are also financial disadvantages: The City is constrained in its ability to improve PGW's existing position. Although recent managerial improvements have stabilized PGW's finances, its fundamental structure creates uncompetitive costs.

If the City is unwilling or unable to accomplish the transformation that PGW needs, its debt burden will continue to grow, customer costs will continue to rise, and PGW's finances will drift perpetually downward. Managerial improvements have slowed the pace of this decline, but transformation is needed to halt the spiral. Because the City has limited resources to fund such reform, continued ownership represents a financial risk. As long as the City owns PGW, it will remain exposed to the consequences of inaction.

That said, the City can take several steps to shield itself from this escalating financial risk. Each alternative is viable only to the extent that PGW's fundamental flaws are corrected:

- **A:** Support internal managerial reform efforts.
- **B:** Enter into an operating and management contract.
- **C:** Give PGW employees an ownership stake in the utility.

Alternative 2A: Internal Restructuring

The City could put its weight behind full implementation of management's existing reform plan, the Business Transformation initiative. PGW's executive team has formulated policies and programs to build on the momentum created by recent financial stability through greater efficiency and effectiveness of operations and by transforming PGW's business model.

Pros: In theory, the Business Transformation plan would produce sustainable, long-term cost savings to the enterprise and the City. In turn, these savings would free up cash to incrementally reduce long-term debt and reinstitute PGW's annual dividend to the City. Fully successful execution could reverse PGW's downward financial spiral and spare customers the continual rate hikes needed to keep PGW solvent.

Cons: The drawbacks to Business Transformation are its upfront cost and delayed payback. Management projects that the full set of initiatives would cost $31 million and return $29 million over its first two years. After that, cash flow would become positive, generating an average of $19 million over six years.

The currently approved portion of Business Transformation is a scaled-back initiative that includes programs most likely to return measurable, short-term gains, such as improvements to collection methods and internal resource management. Instead of a 24-month payback period, "BT Lite" features a 19-month payback of an estimated average of $10 million over six years, slightly more than half of the projected benefit of full implementation.

Most longer-term initiatives to optimize PGWs' business model, such as so-called succession planning—to keep workforce skill levels from deteriorating following a looming wave of retirements—and building a culture of innovation, are more expensive and more difficult to measure, and have been put on hold. As it stands, the truncated version of Business Transformation is unlikely to change the fundamental cost structure of the enterprise.

Alternative 2B: Operating and Maintenance Contract

Pros: Contracting with a private company to operate and manage PGW for a predetermined time would permit the City to retain ownership of PGW assets while transferring a portion of its liabilities to another entity. The private operator would assume some of the enterprise's financial risk, including financial responsibility for maintenance and payroll.

From the asset owner's perspective, the key to a successful contract would be the performance incentives and operating flexibility built into the agreement to boost operating efficiencies and gradually reduce costs.

Cons: The reality is that an operating and maintenance contract would not represent a dramatic departure from the current management paradigm and would fail to address the fundamental structural flaws facing PGW. Politically, it would be difficult to structure a contract that allows a private operator enough flexibility to achieve transformation. Additionally, the shift of liabilities would not absolve the City of its responsibility to protect PGW customers. If at the end of its contract the private operator has failed to improve the enterprise's cost structure, the customers ultimately would pay the price, and the City would be left to resume operating a utility in even worse shape than before.

Alternative 2C: Lease to an Employee-Owned Firm

A variation on the operating and maintenance contract model is a joint agreement with a private equity firm and PGW employees. The City would lease PGW assets to the firm, with employees receiving equity shares in the company.

Pros: From the City's perspective, this model would be more political feasible. It would reduce the difficulty of structuring incentives and flexibility into an operating and maintenance contract by giving employees natural incentives to reduce costs and increase revenue. PGW's employee union would be unlikely to support a sale of PGW assets to a non-City entity, a tack generally associated with layoffs. But union leadership might be more amenable to a sale that included a tangible financial benefit to its members, even if the result was a smaller staff. The likelihood of future layoffs would become more palatable.

Cons: The transaction could take a variety of forms, from a public ownership-private operations model (closer to an operating and maintenance contract) to a lease agreement to a private firm with an option to

buy (closer to a sale). In either case, the City at least initially would retain ownership of assets. This would present political pitfalls. For an employee buyout to truly transform PGW, the City would have to retain just enough control to ensure political palatability but not so much as to invite political interference in management.

Scenario 3: Create a New Authority

The City could terminate its direct ownership by transferring PGW's assets and liabilities to a new, independent authority incorporated under state law. The authority would issue its own debt to purchase PGW at fair-market value.

Pros: As with a sale, the primary benefit to the City would be eliminating the financial risk of PGW from its balance sheets. Unlike a sale, the authority model also would keep PGW in the public domain. The City would be able to retain a degree of representation in the entity's governance, allowing the City to use the authority as a vehicle to explore other potential strategic initiatives, such as expanding its role into alternative energy markets or energy conservation. The entity also would retain tax-exempt status for future bond issues, reducing its capital costs and therefore customers' costs. PGW's workers would remain public employees, limiting the potential for labor backlash.

Any new authority also would be exempt from the rate-making authority of PUC. Pursuant to the Public Utilities Code, no authority organized under the Pennsylvania Municipality Authorities Act is subject to PUC jurisdiction over its rates and charges. This shift could return rate-setting control to the City, which theoretically could streamline the new authority's regulatory framework and enhance operating flexibility.

Cons: On the other hand, conveying PGW to an authority would be subject to certain PUC approvals. Gaining such approvals would be just part of a large-scale transition effort. The transaction process would mirror a sale to a private firm: The process of bond defeasance and assigning or unwinding other contractual agreements alone would take months and involve lawyers, consultants and investment bankers, all at significant cost to the City. Moreover, because the authority would be required to issue its own debt to purchase PGW's assets and assume its liabilities, the transition effort would also require a careful determination of the extent of the new authority's debt capacity.

Legally, conveyance would affect collective bargaining agreements, pension obligations, tort claims protection,[14] eminent domain rights, rights of way issues, liening authority, procurement rules, and dispute resolution. The legal considerations would have to be negotiated and approved by both the City and new authority. Overall, creating an authority would require sustained political and legal cooperation among all stakeholders. Such an authority could assume control of:

- **A:** PGW assets only.
- **B:** Metropolitan gas assets by joining PGW and PECO Gas.

[14] PGW is currently protected by a liability cap of $500,000 for tort claims.

In either case, conveyance would require action on the part of City government and all relevant stakeholders as well as the consent of bondholders—potentially significant obstacles considering the size and complexity of such a transaction.

Alternative 3A: Authority Ownership of PGW Assets and Liabilities

Pros: The primary benefit to the City of transferring PGW's assets and liabilities to an independent municipal authority would be the unilateral ability to build qualifications into enabling legislation. Thus, although the new authority's legal independence would limit City control, the City would have some ability to protect its interests through the incorporation process and its power to take over the authority if it did not produce the expected benefits.

Cons: Still, a municipal authority would represent little more than a change in ownership and fail to transform PGW. At the end of the day, rate-payers would remain saddled with its uncompetitive costs. Considering the numerous logistical considerations and sizable transition costs, stakeholders might consider ways to enhance the attractiveness of creating an authority, perhaps by including PGW with other municipally owned assets such as Philadelphia International Airport and the Water Department.

Alternative 3B: Authority Ownership of Metropolitan Gas Assets and Liabilities

As has been proposed by members of the Pennsylvania legislature, merging PGW's assets with PECO's gas assets under a new metropolitan gas authority under state law would require certain PUC approvals, plus PECO's consent and cooperation.

Pros: A metropolitan authority could provide the additional benefit of easing PGW's structural and market-based constraints by diversifying its customer base. Moreover, potential economies of scale could reduce costs to both PGW and PECO customers: PGW customers would benefit from a more balanced customer base and stable cash flow, while PECO customers would benefit from the authority's ability to issue tax-exempt bonds and from PGW's capacity to store LNG.

Cons: In reality, the viability of such an arranged marriage could be constrained by a new group of stakeholders. In addition to the many logistical impediments, gaining the consent of PECO could be difficult, given the likely backlash from its suburban gas customers. Politically, the marriage likely would be viewed as a bailout of PGW, and for this reason PECO would have little incentive to engage in such a transaction.

D. How to Choose Among Alternatives

Ultimately, decisions about PGW's ownership should be driven by the City's goals. If the City's primary goal—on top of preserving PGW's core mission to provide safe and reliable gas service to the citizens of Philadelphia—is to bring PGW's average monthly bills more in line with those of peer utilities, its principal objectives would be to reduce expenses and increase revenue. That would limit rate increases and, perhaps, build a cash cushion to allow gradual rate decreases. If the City decides to use PGW as an economic development or sustainability tool and is willing to forgo short-term costs reductions for long-term

economic and environmental gains, its principal objective would be to expand the business. This would mean adopting policies to encourage the use of PGW as a strategic asset to supply energy at existing and future facilities. If the City's priority is to eliminate PGW as a liability, its principal objective would be to sell or transfer its assets and debt.

These goals are not mutually exclusive. Short-term cost reductions almost certainly would improve the long-term competitiveness of PGW service, just as strategic expansion of PGW's business would increase revenue and limit rate increases. Some of these objectives also could be accomplished outside of City control or ownership.

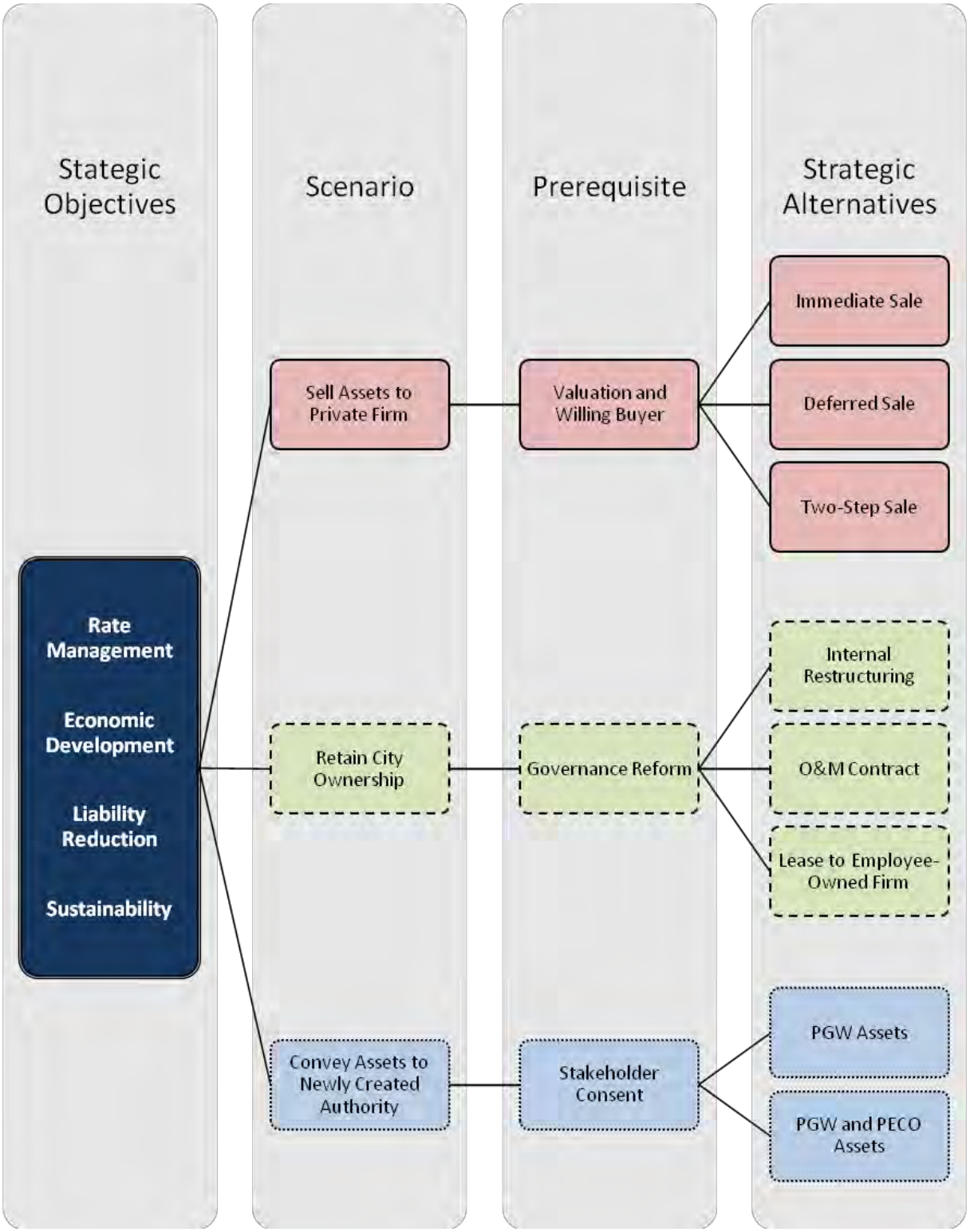
First, however, the City must clarify its goals and evaluate its alternatives accordingly.

Figure 31. Strategic Alternatives for PGW Ownership: Pros and Cons

Scenario ***Strategic Alternative***	**Key to Success**	**Pros for the City**	**Cons for the City**
Sell assets to a private firm	**Valuation and willing buyer**	**Eliminate financial liability**	**Transition costs; loss of strategic control**
Immediate sale	*Market for purchasing the assets*	*Quickest exit from responsibilities*	*Quickest loss of control*
Deferred sale	*Operator effectiveness*	*Potential operating efficiencies before sale*	*Dependent on potentially risky long-term assumptions*
Two-step sale	*Established legality & investor consent*	*Potential for higher net value of sale*	*Numerous key logistical and legal constraints*
Retain City ownership	**Governance reform**	**Minimal transition costs; retain strategic control**	**Lure of status quo; continued financial liability**
Internal restructuring	*Support for transformative initiatives*	*Build off recent operating improvements*	*Large upfront cost with delayed payback*
O&M contract	*Contract performance incentives & operating flexibility*	*Partial shift of financial liability*	*Not a transformative approach*
Lease to employee-owned firm	*Contract structure; political will*	*Provides labor incentives to address cost structure*	*Continued political influence*
Create a new authority	**Government action**	**Shift financial liability; benefits of continued public ownership**	**Logistical constraints and transition costs; loss of strategic control**
Authority ownership of PGW assets	*Political will and certain PUC approvals*	*Transfer debt exposure*	*Not a transformative approach*
Authority ownership of metropolitan gas assets	*Political will, incentives for PECO, and certain PUC approvals*	*Diversify PGW's operating environment*	*Likely political opposition*

SOURCE: Economy League

Figure 32: PGW Decision Tree of Previously Proposed Strategic Alternatives



E. Final Observation

Since research for this report began, the financial world has changed. The sudden vulnerability of credit markets has created uncertainty regarding the financial means of potential suitors for PGW. It would appear that a sale—or even conveyance to an authority—will be even more difficult in the current market, limiting the City's ability to maximize the value of PGW through a transaction.

Market conditions underscore the importance of taking the more immediate steps outlined in this report to upgrade PGW's existing life as a City entity. Focusing on ways to enhance PGW's current condition will not only provide Philadelphians with more competitive gas service, but it will enhance its value for a future time when market conditions are more amenable to revisiting potential strategic alternatives.

Of course, the City has another alternative: That is, to do nothing. That would be the most politically palatable alternative because it would require minimal effort. And in reality, recent operational improvements have slowed PGW's financial decline to a point where it could survive for a time with no change of approach.

But if nothing is done to correct PGW's fundamental flaws, it will continue to deteriorate, and it will do so at an increasing cost to the City and its rate-paying customers. Eventually, PGW will be on life support, and decision-makers will be left with an impossible choice between throwing more money into an enterprise with no hope of survival and simply pulling the plug. If this report has highlighted anything, it is that the status quo is not an option and that the City's only alternative is to pursue significant reforms for PGW while it still can.

Appendix A: Methodology and Calculations for PGW Valuation

Information and Assumptions Used in the Analysis

The information used in the valuation analyses is derived from various sources. As mentioned previously, the basic valuation methods have been transcribed from previous valuation reports. Most incorporated the potential results of operating efficiencies, rate increases, synergies, etc. Our analysis *did not* include any 'possibilities' and only reflected *actual* operating results and rate increases. We have used general market conditions as of the date on the spreadsheets and have used management's most recent operating forecasts. It is also assumed that there would be no further dividend payment to the City.

Other items used in our analysis include (but were not limited to) PGW's submitted operating budget dated 5/29/08), PGW audited financial statements, management's five-year forecast, and various internal and external documents supplied by management.

Current Market Debt Defeasance

PGW has approximately $1.157 billion of tax-exempt long-term debt outstanding. Under a number of different scenarios (sale to a private entity, entrance into a "non-qualifying" management contract, transfer to a public agency without bondholder consent, etc.), it will be necessary to defease all of this outstanding debt along with associated investment agreements and interest rate swaps. Under current market conditions, which are subject to change, the amount required to defease the outstanding tax-exempt debt is $1.116 billion (including existing reserve funds).

In addition, PGW has approximately $68 million of taxable note outstanding. This note will have to be paid off.

Interest Rate Derivatives

PGW currently has in place interest rate derivative agreements with a total notional amount of $312 million. As interest rates have changed since the execution of these agreements, there is currently a market value of the interest rate derivative agreements to PGW's swap counterparty. We estimate that in today's market, termination of these agreements would require a termination payment from PGW to the swap counterparty of $8.8 million.

Investment Agreements

PGW and the City of Philadelphia (acting on PGW's behalf) have entered into two investment agreements in which PGW has received upfront payments in exchange for forgoing rights to investment income on certain funds. The defeasance of the bond issues to which these investment agreements relate will require the early termination of the investment agreements, and trigger payments due from PGW to the investment agreement providers in an amount equal to the unamortized value of the upfront interest payment.

The sum of the amounts that would be needed to defease PGW's financial obligations is currently estimated at $1.117 billion.

Unfunded Post-Employment Benefit Obligations

In addition to PGW's outstanding financial obligations, it also has significant unfunded obligations to retirees that add to the financial burden of the organization. Unfunded pension liabilities are estimated to total $60 million as of the latest fiscal year, and other post-employment benefit (OPEB) obligations total another estimated $350 million. The Government Accounting Standards Board's new requirement to report OPEB amounts to a $45.2 million annual required contribution and an overall estimated present value potential liability of $350 million. Including OPEB requirements, the net value of PGW is reduced to below zero. The City could expect to lose money on a sale of PGW.

Figure 33. Net Overall Value of PGW – Summary Analysis

($ millions)

Baseline Value Range:		***1,300.0***
	to	***1,475.0***
Offsetting Items:		
Debt Defeasance Requirements:		
1975 Ordinance:		
Escrow Requirements	289.0	
Reserve Funds on Hand	(33.8)	
Sub-Total	255.2	
1998 Ordinance:		
Escrow Requirements	961.4	
Reserve Funds on Hand	(58.1)	
Swap Termination Value	11.4	
Sub-Total	914.7	
Total Defeasance Requirements		(1,169.9)
Outstanding Note Payable (comm. paper) *(as of 8/08)*		(68.0)
Unfunded Pension Liability		(60.0)
Cash *(as of 8/08)*		50.2
Estimated Transaction Costs		(15.0)
Net Offsetting Items		***(1,262.7)***

Other Post Employment Benefit Obligations (OPEB): *(GASB Statement No. 45)*	
Annual Required Contribution	45.2
Estimated Potential Liability	***350.0***

Estimated Range of Net Value to the City Before OPEB Payments		***37.3***
	to	***212.3***
Estimated Potential OPEB Liability		***(350.0)***
Estimated Range of Net Value to the City With OPEB Effect		***(312.7)***
	to	***(137.7)***

Figure 34. Update of PGW Baseline Valuation Estimate

($ millions)		
PGW 2008 Est. EBITDA	$	151.8
PGW 2008 Est. EBIT	$	114.5
PGW 2008 Est. Revenues (CM)	$	865.6

	Enterprise Value Multiples				*Estimated Enterprise Value*	
	EBITDA	*EBIT*	*Revenues*			
Report 1						
Comparison of Selected Companies	8.0	12.4				
Proforma as a Taxable Entity					$	1,382.2
Discounted Cash Flow					$	1,425.0
Report 2						
Company Comparables	7.8					
Market Transaction Comparables	9.2	13.3	2.2			
Estimated Multiples:						
EBITDA X	8.3				$	1,263.4
EBIT X		12.9			$	1,472.5
Revenues X			2.2		$	1,910.0
OVERALL ESTIMATION RANGE					***$***	***1,300.0***
				to	***$***	***1,475.0***

(1)

(1) Does not include annual OPEB payments.

Figure 35. Comparison of Selected Companies (2007)

($ millions)

Company	Closing Price 1/3/2007	% of 52 Week High	Equity Market Cap	Enterprise Value	Enterprise Value Multiples EBITDA 2007	EBIT 2007	Total Debt/ Cap	Ratings Moody's	Ratings S&P
AGL Resources	$ 39.72	100%	$ 3,109	$ 5,207	8.7	11.2	56.2%	Baa1	BBB+
Atmos Energy	**$ 32.24**	**98%**	**$ 2,641**	**$ 5,095**	**8.7**	**12.2**	**59.8%**	**Baa3**	**BBB**
New Jersey Resources	$ 48.32	92%	$ 1,372	$ 1,858	9.6	11.6	45.2%	Aa3	AA-
Nicor	**$ 46.71**	**94%**	**$ 2,105**	**$ 2,738**	**7.1**	**12.6**	**44.4%**	**A2**	**AA-**
Northwest Natural Gas	$ 42.34	98%	$ 1,170	$ 1,789	8.6	12.7	51.3%	A3	A+
Piedmont Natural Gas	**$ 26.88**	**95%**	**$ 2,025**	**$ 2,944**	**9.3**	**13**	**50.7%**	**A3**	**A**
South Jersey Industries	$ 33.53	99%	$ 982	$ 1,513	10.2	NA	55.3%	Baa2	BBB+
WGL Holdings	**$ 32.81**	**98%**	**$ 1,608**	**$ 2,275**	**7.8**	**11.4**	**44.4%**	**A2**	**AA-**
High		100%	$ 3,109	$ 5,207	10.2	13	59.8%		
Median		**98%**	**$ 1,817**	**$ 2,506**	**8.7**	**12.2**	**51.0%**		
Low		92%	$ 982	$ 1,513	7.1	11.2	44.4%		

Updated	#######				**Trailing 12 mos.**	**Trailing 12 mos.**			
AGL Resources	$ 34.02	83%	$ 2,648	$ 4,542	7.5	9.8	56.9%	Baa2	A-
Atmos Energy	**$ 27.67**	**90%**	**$ 2,493**	**$ 4,481**	**7.6**	**11.5**	**53.7%**	**Baa3**	**BBB**
New Jersey Resources	$ 33.92	97%	$ 1,447	$ 1,979	12.3	15.8	50.0%		
Nicor	**$ 44.11**	**98%**	**$ 1,972**	**$ 2,426**	**6.6**	**13.3**	**47.9%**	**Baa2**	**AA**
Northwest Natural Gas	$ 47.40	93%	$ 1,265	$ 1,830	8.4	12.4	52.6%	A2	AA-
Piedmont Natural Gas	**$ 27.24**	**97%**	**$ 1,809**	**$ 2,703**	**8.9**	**13.0**	**53.7%**	**A3**	**A**
South Jersey Industries	$ 39.00	99%	$ 1,161	$ 1,539	9.8	12.4	49.7%		
WGL Holdings	**$ 35.61**	**98%**	**$ 1,754**	**$ 2,506**	**7.2**	**9.8**	**44.9%**	**A2**	**AA-**
High		99%	$ 2,648	$ 4,542	12.3	15.8	56.9%		
Median		**97%**	**$ 1,782**	**$ 2,466**	**8.0**	**12.4**	**51.3%**		
Low		83%	$ 1,161	$ 1,539	6.6	9.8	44.9%		

Updated	#######				**Trailing 12 mos.**	**Trailing 12 mos.**			
AGL Resources	$ 30.01	73%	$ 2,301	$ 4,466	8.3	11.5	56.9%	Baa2	A-
Atmos Energy	**$ 24.48**	**83%**	**$ 2,490**	**$ 4,678**	**7.8**	**11.6**	**53.7%**	**Baa3**	**BBB**
New Jersey Resources	$ 35.33	86%	$ 1,485	$ 2,086	12.3	26.5	50.0%		
Nicor	**$ 45.02**	**87%**	**$ 2,033**	**$ 2,245**	**5.9**	**11.5**	**47.9%**	**Baa2**	**AA**
Northwest Natural Gas	$ 50.89	92%	$ 1,345	$ 1,925	8.9	13.2	52.6%	A2	AA-
Piedmont Natural Gas	**$ 30.33**	**86%**	**$ 2,223**	**$ 3,212**	**10.4**	**15.2**	**53.7%**	**A3**	**A**
South Jersey Industries	$ 34.35	87%	$ 1,021	$ 1,461	12.6	17.6	49.7%		
WGL Holdings	**$ 31.43**	**87%**	**$ 1,569**	**$ 2,271**	**6.9**	**9.8**	**44.9%**		**AA-**
High		92%	$ 2,490	$ 4,678	12.56	26.48	56.9%		
Median		**86%**	**$ 1,801**	**$ 2,258**	**8.6**	**12.37**	**51.3%**		
Low		73%	$ 1,021	$ 1,461	5.88	9.75	44.9%		

Figure 36. PGW Pro Forma as Taxable Entity (2007)

($ millions)

		Report 1 - 2007 Estimate				
		No Rate Increase	*$25 Million Rate Increase*	2007 Actual	2008 Estimate	2009 Budget
Operating Revenues		$ 970.7	$ 997.5	$ 859.4	$ 865.6	$ 1,104.5
EBITDA		**$ 117.7**	**$ 142.7**	**$ 128.8**	**$ 151.8**	**$ 167.1**
Depreciation & Amortization		$ (46.0)	$ (46.0)	$ (36.4)	$ (37.3)	$ (37.2)
EBIT		**$ 71.7**	**$ 96.7**	**$ 92.4**	**$ 114.5**	**$ 129.9**
Utility Plant, net		$ 1,007.6 *(2006)*	$ 1,007.6 *(2006)*	$ 1,040.4 *(2007)*	$ 1,040.4 *(2007)*	$ 1,040.4 *(2007)*
Implied Debt (Assuming 50/50 Debt/Cap)		$ 503.8	503.8	520.2	520.2	520.2
Implied Book Equity		$ 503.8	503.8	520.2	520.2	520.2
Interest Expense @ 6.5% Cost of Debt		$ 32.7	$ 32.7	$ 33.8	$ 33.8	$ 33.8
EBT		**$ 39.0**	**$ 64.0**	**$ 58.6**	**$ 80.7**	**$ 96.1**
Taxes @ 35%		$ 13.6	$ 22.4	$ 20.5	$ 28.3	$ 33.6
Implied Net Income		**$ 25.3**	**$ 41.6**	**$ 38.1**	**$ 52.5**	**$ 62.5**
Implied ROE		5.0%	8.3%	7.3%	10.1%	12.0%
Implied Market Cap @ 2.0x Market/Book		1,007.6	1,007.6	1,040.4	1,040.4	1,040.4
Implied P/E Ratio (x)		39.8	24.2	27.3	19.8	16.7
Illustrative Valuation						
Implied Market Cap @ P/E Multiple of	15.0	$ 379.8	$ 623.5	$ 571.2	$ 787.0	$ 937.1
Implied Enterprise Value		**$ 883.6**	**$ 1,127.3**	**$ 1,091.4**	**$ 1,307.2**	**$ 1,457.3**
2008 & 2009 Average						*$ 1,382.2* *(1)*

(1) Does not include annual OPEB payments.

Figure 37. Discounted (Free) Cash Flow Analysis (2007)

($ millions)

		2007 Actual	2008 Est.	2009 Budget	2010 Est.	2011 Est.	2012 Est.	2013 Est.	2014 Est.
		(n/a)	*(n/a)*						*(n/a)*
OPERATING REVENUES									
Gas Revenues		840.1	846.3	1,083.2	1,024.5	1,042.5	1,035.4	1,023.6	1,020.8
Other Operating Revenues		19.2	19.0	21.3	21.0	21.4	21.5	21.5	21.7
Total Operating Revenues		859.3	865.3	1,104.5	1,045.5	1,063.9	1,056.9	1,045.1	1,042.5
OPERATING EXPENSES									
Total Fuel		539.3	521.4	732.3	677.3	644.2	636.2	625.5	623.8
Contribution Margin		320.0	343.9	372.2	368.2	419.7	420.7	419.6	418.7
Total Operating Expenses (O&M)		280.4	279.1	301.9	286.2	290.3	301.3	312.5	321.5
Operating Income		39.6	64.8	70.3	82.0	129.4	119.4	107.1	97.2
Other Income		13.1	17.5	11.4	13.6	14.7	16.8	17.7	16.1
EBIT		52.7	82.3	81.7	95.6	144.1	136.2	124.8	113.3
Corporate Taxes @	35.0%	18.4	28.8	28.6	33.5	50.4	47.7	43.7	39.7
EBIAT		34.3	53.5	53.1	62.1	93.7	88.5	81.1	73.6
Depreciation and Amort.		44.4	44.6	45.6	47.3	48.7	50.3	51.4	52.2
Capital Expenditures		(70.0)	(66.1)	(72.7)	(70.0)	(80.0)	(63.0)	(40.0)	(35.0)
Other Post Employment Benefits		26.4	25.8	25.6	24.6	23.5	22.1	20.6	18.8
Change in Net Working Capital		36.5	17.7	(34.3)	(2.2)	1.0			
Annual OPEB payments		18.8	17.3	19.0	20.8	22.7	25.0	27.4	30.1
Free Cash Flow		90.4	92.7	36.3	82.6	109.6	122.9	140.5	139.7
Sum of Present Value of Free Cash Flow	$377.39			36.3	82.6	109.6	122.9	140.5	
@ Cost of Capital of	8.0%								

Notes:

(1) Includes $50 million rate increase for 2011

(2) Includes benefits from BT of $19.9, $20.7, $16.2, $11.9 million in 2010, 2011, 2012, 2013, respectively

(3) Does not include annual OPEB payments.

		Low	*High*	*Median*
Estimated Range of Enterprise Value		1,032.2	1,867.0	1,449.58
Range Subset:				
Multiple	(8.0-9.0)	1,106.7	1,750.7	1,428.69
Discount Rate	(8%-9%)			
Value		1,100.0	1,800.0	*$ 1,425.0*

Terminal Value Sample Calculation

Terminal EBITDA *(2013)*		224.2
Terminal Value Multiple		8.0
Terminal Value		1,793.6
Discount Rate of	9.50%	
Present Value of Terminal Value		#####

Enterprise Value, ***with Notes (1) & (2)***

Discount Rate	*Terminal Value Multiple (x)*	*7.5*	*8.0*	*8.5*	*9.0*	*9.5*
	9.50%	1,428.4	1,499.6	1,570.8	1,642.0	1,713.2
	9.00%	1,458.7	1,531.6	1,604.4	1,677.3	1,750.1
	8.50%	1,489.8	1,564.4	1,638.9	1,713.5	1,788.0
	8.00%	1,521.8	1,598.1	1,674.4	1,750.7	1,827.0
	7.50%	1,554.6	1,632.7	1,710.8	1,788.9	1,867.0

Enterprise Value, ***without Notes (1) & (2)***

Discount Rate	*Terminal Value Multiple (x)*	*7.5*	*8.0*	*8.5*	*9.0*	*9.5*
	9.50%	1,032.2	1,083.8	1,135.3	1,186.9	1,238.4
	9.00%	1,054.0	1,106.7	1,159.4	1,212.2	1,264.9
	8.50%	1,076.3	1,130.3	1,184.2	1,238.2	1,292.2
	8.00%	1,099.3	1,154.5	1,209.7	1,264.9	1,320.2
	7.50%	1,122.8	1,179.3	1,235.9	1,292.4	1,348.9

Figure 38. Comparable Companies Analysis (2001)

($ millions)

Current Analysis	Firm Enterprise Value as a Multiple of: Trailing 12 Months EBITDA	Firm Enterprise Value as a Multiple of: Latest Audit EBITDA	Equity (Market Cap) Value as a Multiple of: Trailing 12 Months Net Income	Equity (Market Cap) Value as a Multiple of: Latest Audit Net Income	Latest Audit
AGL Resources	7.5	8.1	12.6	13.6	12/31/2007
Atmos Energy	**7.6**	**7.9**	**14.8**	**17.1**	**9/30/2007**
Equitable Resources Inc.	23.1	18.2	34.9	29.5	12/31/2007
Nicor Corp.	**6.6**	**7.1**	**n/a**	**14.1**	**12/31/2007**
NiSource	7.5	7.9	n/a	16.1	12/31/2007
ONEOK	**9.8**	**9.8**	**n/a**	**15.3**	**12/31/2007**
Peoples Energy Corp.	n/a	11.7	n/a	neg.	9/30/2006
Sempra Energy	**7.6**	**8.8**	**n/a**	**14.6**	**12/31/2007**
Southwest Ggas Corp.	6.4	6.6	n/a	15.3	12/31/2007
WGL Industries	**7.2**	**7.9**	**n/a**	**15.3**	**9/30/2007**
Mean	9.2	9.4	20.8	16.8	
Median	**7.5**	**8.0**	**12.6**	**15.3**	
Low	6.4	6.6	12.6	13.6	
High	23.1	18.2	34.9	29.5	

December 21, 2001 Analysis	Firm Value as a Multiple of: LTM EBITDA	Firm Value as a Multiple of: 2001 Est. EBITDA	Equity Value as a Multiple of: LTM Net Income	Equity Value as a Multiple of: 2001 Est. Net Income
Mean	6.8	6.7	13.0	13.1
Median	**7.1**	**6.5**	**13.4**	**12.8**
Low	5.1	4.9	9.0	9.3
High	8.2	7.9	16.2	17.0

Additional Company Analysis *(Fairmount)*					
UGI Corporation	7.1	7.4			9/30/2007
Dominion Resources, Inc.	**10.0**	**12.7**			**12/31/2007**

Figure 39. Market Approach – Comparable Transactions Analysis

Transaction Data
($000s)

Date	Acquiree	Source	Purchase Price: Business Enterprise Value	Purchase Price: Enterprise Value	Performance Measures: Revenues	Performance Measures: EBIT	Performance Measures: EBITDA	Performance Measures: Net Income	Profit Margins: EBIT	Profit Margins: EBITDA	Profit Margins: Net Income	Business Ent. Value to: Revenue	Business Ent. Value to: EBIT	Business Ent. Value to: EBITDA	Ent. Value to: Revenue	Ent. Value to: EBIT	Ent. Value to: EBITDA
09/30/04	Gulfterra Energy Partners LP	Thomson	4,609,057	4,550,113	1,036,337	277,104	373,052	98,635	26.74%	36.00%	9.52%	4.45	16.6	12.4	4.39	16.42	12.20
08/24/07	**KeySpan Corp**	**Thomson**	**12,001,127**	**11,863,427**	**7,662,000**	**891,100**	**1,287,600**	**398,600**	**11.63%**	**16.81%**	**5.20%**	**1.57**	**13.5**	**9.3**	**1.55**	**13.31**	**9.21**
09/01/06	TransMontaigne Inc	Thomson	872,799	858,317	7,881,865	85,597	111,708	33,429	1.09%	1.42%	0.42%	0.11	10.2	7.8	0.11	10.03	7.68
05/30/07	**Kinder Morgan Inc**	**Thomson**	**27,791,006**	**27,558,006**	**4,682,189**	**908,813**	**1,166,798**	**600,068**	**19.41%**	**24.92%**	**12.82%**	**5.94**	**30.6**	**23.8**	**5.89**	**30.32**	**23.62**
07/02/07	Cascade Natural Gas Corp	Thomson	478,044	455,680	437,948	34,634	52,435	12,890	7.91%	11.97%	2.94%	1.09	13.8	9.1	1.04	13.16	8.69
07/01/01	**Louisana Gas Service Company**	**Done Deals**	**365,000**	**NA**	**450,000**	**NA**	**35,200**	**12,200**	**NA**	**7.82%**	**2.71%**	**0.81**	**NA**	**10.4**	**NA**	**NA**	**NA**
04/01/04	LIG Pipeline Company and its subsidiaries (LA)	Done Deals	78,500	NA	802,000	NA	4,200	(3,000)	NA	0.52%	-0.37%	0.10	NA	18.7	NA	NA	NA
07/30/04	**American Central Eastern Texas Gas Company (TX)**	**Done Deals**	**240,000**	**NA**	**33,300**	**NA**	**13,600**	**10,700**	**NA**	**40.84%**	**32.13%**	**7.21**	**NA**	**17.6**	**NA**	**NA**	**NA**
03/28/03	PNG Corporation (TX) and subsidiaries	Done Deals	40,000	NA	44,500	NA	(1,100)	(2,700)	NA	-2.47%	-6.07%	0.90	NA	NM	NA	NA	NA
09/24/04	**Gas Solutions, Ltd. (TX)**	**Done Deals**	**30,300**	**NA**	**12,100**	**NA**	**9,100**	**7,700**	**NA**	**75.21%**	**63.64%**	**2.50**	**NA**	**3.3**	**NA**	**NA**	**NA**
07/16/04	Spectrum Field Services, Inc.	Pratt Stats	140,000	140,000	98,772	(6,689)	9,675	(5,954)	-6.77%	9.80%	-6.03%	1.42	NM	14.5	1.42	NM	14.47
12/29/04	**Gulf South Pipeline Company, LP**	**Pratt Stats**	**1,136,000**	**1,135,560**	**211,739**	**14,358**	**14,389**	**14,044**	**6.78%**	**6.80%**	**6.63%**	**5.37**	**NM**	**NM**	**5.36**	**NM**	**NM**
11/10/05	Prism Gas Systems I, L.P.	Pratt Stats	92,918	86,993	71,384	(2,413)	(1,430)	3,405	-3.38%	-2.00%	4.77%	1.30	NM	NM	1.22	NM	NM
11/01/05	**Wyoming Interstate Company, Ltd.**	**Pratt Stats**	**212,000**	**212,000**	**74,000**	**43,000**	**55,000**	**41,000**	**58.11%**	**74.32%**	**55.41%**	**2.86**	**4.9**	**3.9**	**2.86**	**4.93**	**3.85**
04/29/08	Lodi Gas Storage, L.L.C.	Pratt Stats	444,262	434,772	62,852	33,744	38,067	24,223	53.69%	60.57%	38.54%	7.07	13.2	11.7	6.92	12.88	11.42
11/30/05	**Terasen, Inc.**	**Pratt Stats**	**4,958,900**	**4,958,900**	**1,446,000**	**285,500**	**NA**	**120,400**	**19.74%**	**NA**	**8.33%**	**3.43**	**17.4**	**NA**	**3.43**	**17.37**	**NA**
02/09/05	ACN Utility Services, Inc.	Pratt Stats	16,500	15,831	79,724	792	1,884	744	0.99%	2.36%	0.93%	0.21	20.8	8.8	0.20	19.98	8.40
Subject Company					-	-	-	-	**NA**	**NA**	**NA**						
All Transactions:																	
	High		27,791,006	27,558,006	7,881,865	908,813	1,287,600	600,068	58.1%	75.2%	63.6%	7.21	###	23.82	6.92	30.32	23.62
	Median		**365,000**	**656,999**	**211,739**	**38,817**	**24,795**	**12,890**	**9.8%**	**10.9%**	**5.2%**	**1.57**	**###**	**####**	**2.21**	**13.31**	**9.21**
	Low		16,500	15,831	12,100	(6,689)	(1,430)	(5,954)	-6.8%	-2.5%	-6.1%	0.10	4.93	3.33	0.11	4.93	3.85

This schedule was compiled from financial information provided by the client or outside sources.
CBIZ Valuation Group assumes no responsibility for the accuracy or completeness of such information.

Figure 40. Summary of PGW's Outstanding Long-Term Indebtedness

1975 Ordinance	Par Outstanding	Call Date	Call Price	Average Coupon
Eleventh Serices C [1]	25,021,806	n/a	n/a	n/a
Sixteenth Series	25,905,000	7/1/2009	101%	5.480%
Seventeenth Series [2]	148,875,000	7/1/2013	100%	5.266%
Eighteenth Series (AMBAC)	15,505,000	8/1/2014	100%	5.490%
Eighteenth Series (CIFG, Assured)	37,075,000	8/1/2014	100%	5.138%
Nineteenth Series	14,450,000	10/1/2017	100%	5.000%
1975 Ordinance Total	**266,831,806**			**5.221%**

1998 Ordinance				
First Series A	95,815,000	current	par	5.082%
First Series C	10,115,000	current	par	4.914%
Second Series	10,905,000	7/1/2009	101%	5.138%
Third Series	11,105,000	8/1/2011	100%	5.141%
Fourth Series	95,125,000	8/1/2013	100%	5.031%
Fifth Series A-1	120,000,000	9/1/2014	100%	5.009%
Fifth Series A-2	30,000,000	current	par	3.500%
Sixth Series	311,615,000	current	par	3.500%
Seventh Series	230,900,000	10/1/2017	100%	4.994%
1998 Ordinance Total	**915,580,000**			**4.415%**

Total Outstanding	**1,182,411,806**

[1] Eleventh Series C Bonds are Tax Exempt Capital Accumulater Bonds and have not been included in the preliminary analysis

[2] Seventeenth Series Bonds maturing 2019 to 2026 are callable as of 7/1/2013 at 100%

Figure 41. PGW Defeasance Amounts and Termination Values

Series	Gross Defeasance of Debt	Sinking and Debt Service Reserve Holdings [1]	Sinking Reserve Fund Investment Agreements [2]	Swap [3]
1975 Ordinance	331,278,201	19,466,914	14,317,161	-
1998 Ordinance	1,074,317,534	40,721,638	17,423,608	11,388,012
Total	**1,405,595,735**	**60,188,552**	**31,740,769**	**11,388,012**

[1] Sinking and Debt Service Reserve Fund values provided by PGW as of 9/30/08; General SFR funds allocated on a pro-rata basis

[2] FSA Investment Agreement values are net of breakage fee as of 10/1/08; assumes scheduled reductions from 8/23/02 through 9/30/08

[3] JPMorgan conversion swap termination value as of 10/1/08; unwind swap rate is 3.31735%; DV01 approx. $250,000

Figure 42. Summary of PGW's Net Defeasance Requirement

Sources of Funds	1975 Ordinance [1]	1998 Ordinance	Total
Transfers from Debt Service Reserves	33,784,075	58,145,246	91,929,321
Additional required Equity contribution (Debt)	255,176,765	903,231,050	1,158,407,815
Additional required Equity contribution (Swap)	-	11,388,012	11,388,012
Total Sources of Funds	288,960,840	972,764,308	1,261,725,148
Uses of Funds			
Debt Defeasance			
Cost of Investments[1]	255,176,470	447,835,937	703,012,407
Cost of Investments Purchased with Reserve Transfers[1]	33,784,049	58,145,023	
Cash Deposit	321	455,395,336	455,395,657
Total Cost of Investments	288,960,840	961,376,296	1,158,408,064
Swap Termination	-	11,388,012	11,388,012
Total Uses of Funds	288,960,840	972,764,308	1,261,725,148
Net Defeasance Requirements[2]	**288,960,840**	**972,764,308**	**1,261,725,148**
Total Equity Required	**255,176,765**	**914,619,062**	**1,169,795,827**

[1] Includes principal cost plus accrued interest

[2] Net of interest earnings on investments purchased with equity and interest earnings on transfers

Figure 43. List of Backup Tables

1975 Ordinance

- Sources and Uses
- Escrow Fund Cash Flow
- Reserve Funds Cash Flow
- Primary Purpose Fund Optimized Dedicated Portfolio
- Reserve Funds Optimized Dedicated Portfolio
- Summary of Bond Refunded
- Debt Service to Maturity and to Call

1998 Ordinance

- Sources and Uses
- Escrow Fund Cash Flow
- Reserve Funds Cash Flow
- Primary Purpose Fund Optimized Dedicated Portfolio
- Reserve Funds Optimized Dedicated Portfolio
- Summary of Bond Refunded
- Debt Service to Maturity and to Call

Appendix B: Profile of Northeast U.S. Gas Service

Figure 44. Functional Characteristics of Natural Gas LDCs in Northeast U.S. Cities

Northeast U.S. Regions	Natural Gas LDC	Parent Company	Ownership	Commodity Types	Service Territory	Gas Customers (Approx.)	Total Employees (Approx.)	Bond Ratings (S&P)
Boston	Boston Gas	National Grid	Private	Gas	Region	245,000	1,400	A-
New York	ConEdison	ConEdison of New York	Private	Steam, electric, & gas	Region	1,100,000	15,000	A+
Philadelphia	PGW	n/a	Public	Gas	City	500,000	1,735	BBB-
Baltimore	BGE	Constellation Energy	Private	Electric & Gas	Region	640,000	3,000	BBB+
Washington, D.C.	Washington Gas	WGL Holdings	Private	Gas	Region	1,050,000	1,600	AA-
Pittsburgh	Equitable Gas	Equitable Resources	Private	Gas	Region	275,000	1,300	BBB
Detroit	Detroit Edison	DTE Energy	Private	Electric & gas	Region	2,200,000	10,200	BBB
Chicago	Peoples Gas Light	Integrys Energy Group	Private	Gas	City	830,000	1,500	A-

SOURCE: Agency reports.
NOTES: Information generated from company profiles and FY2007 annual reports; some regions have more than one natural gas provider – in these cases, the regional LDC with the largest customer base was chosen; bond ratings refer to unsecured issuer rating.

Appendix C: References

Interviews

Butkovitz, Alan, Controller, City of Philadelphia. June 30, 2008.

Considine, Daniel, Communications Manager, Citizens Gas and Coke Utility. July 25, 2008.

Cutler, Rina, Deputy Mayor for Transportation and Utilities, City of Philadelphia. June 18, 2008.

Dubow, Rob, Finance Director, City of Philadelphia. July 8, 2008.

Gotbaum, Josh, BlueWolf Capital Management. June 3, 2008.

Holmes, Keith, President, Gas Workers Local 686. June 26, 2008.

Knudsen, Thomas, Chief Executive Officer, Philadelphia Gas Works. June 9, 2008.

Parrish, Janet, Executive Director, Philadelphia Gas Commission. June 23, 2008.

Seltzer, David, Seth Shapiro, & Hal Sorgenti, Board Members, Philadelphia Facilities Management Corporation. June 25, 2008.

PGW & Philadelphia

Applied Public Policy Research Institute for Study and Evaluation, "Philadelphia Gas Works Customer Responsibility Program," Final Evaluation Report. February 2006.

Black & Veatch, Independent Consultant's Engineering Report, in City of Philadelphia, Pennsylvania Gas Works Revenue Bonds, Dated: April 25, 2007.

Black & Veatch, Independent Consultant's Engineering Report, in City of Philadelphia, Pennsylvania Water and Wastewater Revenue Bonds, Dated: April 2005.

City of Philadelphia Comprehensive Annual Financial Report, For the Fiscal Year Ended June 30, 2007.

City of Philadelphia Home Rule Charter, 1951.

City of Philadelphia, Water Department FY2007 Annual Financial Report.

Fitch Ratings, "Fitch Affirms Philadelphia, PA's Gas Works Revs at 'BBB-/BB+'; Off Watch Negative." July 27, 2006.

Golden, Joseph F., Response to Public Advocate's Data Requests Regarding Fiscal Year 2008 Operating Budget Proceeding, Supplemental Response to Question PA-OB-53, Philadelphia Gas Commission.

Gorman, Howard S., Testimony on Behalf of the Philadelphia Gas Works, Before the Pennsylvania Public Utility Commission, December 2006.

KPMG, Philadelphia Gas Works Basic Financial Statements and Supplementary Information, August 31, 2007 and 2006. As Submitted: January 9, 2008.

Moody's Investors Service, "Moody's Assigns Baa2 Rating to City of Philadelphia's Gas Work Revenue Bonds; Outlook Changed to Stable." January 19, 2006.

Pennsylvania Economy League, "The Philadelphia Gas Works: Governing for Performance." December 1995.

Pennsylvania Public Utilities Commission, "Pennsylvania Public Utility Commission v. Philadelphia Gas Works," Opinion and Order. Public Meeting held September 13, 2007.

Pennsylvania Public Utilities Commission, "Pennsylvania Public Utility Commission v. Philadelphia Gas Works," Opinion and Order. Public Meeting held March 21, 2003.

Philadelphia Gas Works Fiscal Year 2008-2009 Operating Budget Filing. As Filed: May 29, 2008.

Philadelphia Gas Works Five-Year Forecast, FY2009-2013, As Filed with the Philadelphia Gas Commission: November 15, 2007.

Recommended Decision in the Matter of the Fiscal Year 2008 Budgets and Oversight Review & PGW's Proposed Amendments to Fiscal Year 2008 Operating and Capital Budgets, Janet Parrish, Esq. and Tarleton D. Williams, Hearing Examiners. June 20, 2008.

Standard and Poor's, "Philadelphia Gas Works Outlook Revised to Stable; 'BBB-' Rating Affirmed." March 23, 2007.

Standard and Poor's Ratings Direct, Philadelphia, Pennsylvania; Gas. August 7, 2008.

Standard and Poor's Ratings Direct, Philadelphia, Pennsylvania; Water and Sewer Revenue Bonds. March 2, 2007.

Pennsylvania

Columbia Gas of Pennsylvania, Inc, Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

Equitable Gas Company, A Division of Equitable Resources, Inc, Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

PECO Energy Company, Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

Peoples Natural Gas Company d/b/a Dominion Peoples, Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

National Fuel Gas Distribution Corporation, Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

T.W. Phillips Gas and Oil Co., Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

UGI Penn Natural Gas, Inc., Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007. As Submitted: April 30, 2008.

UGI Utilities, Inc., Annual Report to the Pennsylvania Public Utility Commission for the year ended December 31, 2007.

National

American Gas Association, "2004-2006 Performance Benchmarks for Natural Gas Utilities." March 7, 2008.

American Gas Association, "2006 Ranking of Companies by Total Sales Customers."

American Gas Association, "eGUS Database." FY2006.

Bauers, Sandy, "Water, water everywhere – but it's not unlimited," *The Philadelphia Inquirer*, Section D. August 11, 2008.

City of Memphis, Memphis Light, Gas and Water Division Annual Report. Various Years.

City of Indianapolis, Citizens Gas and Coke Utility Annual Report. Various Years.

City of San Antonio, Texas, CPS Energy Annual Report. Various Years.

City of San Antonio, Texas, Electric and Gas Systems Revenue Bonds, New Series 2008, Official Statement. Dated: June 5, 2008.

Con Edison Company of New York, FY2007 Annual Report.

Constellation Energy, Inc., Annual Report. Various Years.

Diaz, John, "Gas Transmission and Distribution Briefing," Moody's Investors Service. As Presented: April 24, 2007.

Integrys, Inc., Annual Report. Various Years.

The New York Times, "It Comes Every Month. How Come You Don't Understand It?" August 2, 2008.

Peirce, Neal, "Tempting Targets for Dramatic Energy Cuts," Washington Post Writers Group. May 11, 2008.