

A-125042

ARP 2011

Philadelphia Gas Works

Gregory J. Stunder
Senior Attorney



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ORIGINAL

March 1, 2011

VIA EXPRESS MAIL

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
2nd Floor, 1 North
400 North Street
Harrisburg, PA 17120

RECEIVED

MAR 1 2011

IRP-125042

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

RE: Philadelphia Gas Works Annual Resource Planning Report

Dear Secretary Chiavetta,

Enclosed for filing is an original and seven (7) copies of Philadelphia Gas Works Annual Resource Planning Report, Forms 1 and 2.

Please contact me if you have any questions regarding this filing.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gregory J. Stunder", is written over the typed name and title.

Gregory J. Stunder
Senior Attorney

Enclosures

cc: Calvin Birge, Conservation, Economics and Energy Planning (w/enc.)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the participants listed below in accordance with the requirements of §1.54 (relating to service by a participant).

VIA EXPRESS MAIL

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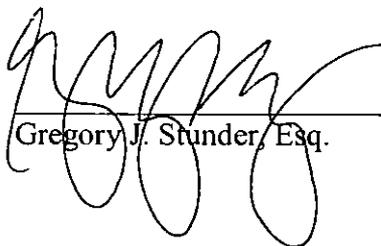
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Date: March 1, 2011



Gregory J. Stunder, Esq.

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ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

March 2011

Forms 1 & 2

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**PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU**

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122**

ANNUAL RESOURCE PLANNING REPORT

MARCH 2011

Forms 1 & 2

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81**

PHILADELPHIA GAS WORKS

TABLE OF CONTENTS

<u>EXHIBIT NO.</u>	<u>REGULATION</u>	<u>DESCRIPTION</u>
1	59.81	General
2	59.81	Forms IRP-Gas 1A, and 1B Annual and Peak Day Energy Demand
3	59.81	Forms IRP-Gas 2A, 2B, and 2C Annual and Peak Day Energy Resources, And transmission and storage contracts

Section 59.81: **General**

Pursuant to Section 59.81 (a), each major jurisdictional gas utility must file an annual resource planning report (ARPR) on or before June 1, 1996 and June 1 of each succeeding year, except Form 1A/2A which filing date is March 1. One (1) original and seven (7) copies of the report must be submitted to:

Secretary
Pennsylvania Public Utility Commission
P.O. Box 3265
Harrisburg, PA 17105-3265

One copy should be submitted unbound for ease of duplication.

One courtesy copy should also be submitted to:

Pennsylvania Public Utility Commission
Conservation, Economics and Energy Planning
P.O. Box 3265
Harrisburg, PA 17105-3265
Attn. Calvin Birge

Also submit one (1) copy to the following:

Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1921

Office of Small Business Advocate
Suite 1102, Commerce Building
300 N. Second Street
Harrisburg, PA 17101

Be sure to indicate the name and telephone number of at least one individual at the company who is familiar with the filing and will be available to answer any questions the Commission staff may have. You may also wish to list those individuals who are directly involved in the preparation of the various document components.

Information contained in annual resource planning reports must be utility-specific. The report should follow an outline similar to that which is contained herein, with narrative accompanying the required data. Forms may be modified to accommodate wide columns of numbers and enhance readability, but the general format should be used to maintain consistency.

This information is not generally considered confidential. Utilities are obligated to provide complete information. However, we will treat as confidential those portions of the report designated by the utility as proprietary. If a utility's proprietary claim is challenged, the Commission will direct the utility to file a petition for protective order pursuant to 52 PA Code 5.423.

All questions concerning the reporting requirements for Forms IRP Gas 1A through 9 should be addressed to Pennsylvania Public Utility Commission Bureau of Conservation, Economics and Energy Planning.

Response:

An original, seven (7) copies, and one unbound copy of Forms 1A, 1B, 2A, 2b, and 2C along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the March 1 filing.

All questions concerning the ARPR should be directed to Mr. Kenneth Dybalski, Director, Gas Planning & Rates at 215-684-6317. The following individual is available to answer questions concerning Forms 1 and 2:
Ms. Maria Hogan, Manager – Gas Planning at (215) 684-6618.

Section 59.81 **Forms IRP-Gas 1A, and 1B – Annual and Peak Day Demand**

The load growth projections shall reflect the effects of price elasticity, market induced conservation, building and appliance efficiency standards, and the effects of the utility's existing and planned conservation and load management activities.

Response: Please see the attached documentation and forms.

FORM-IRP-GAS-1A: ANNUAL GAS REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)

Index Year Actual Year	Historical Data		Current Year	Three Year Forecast		
	-2 2008-2009	-1 2009-2010	0 2010-2011	1 2011-2012	2 2012-2013	3 2013-2014
Firm Requirements:						
Retail Residential	37,670	35,295	40,359	39,459	39,231	39,023
Retail Commercial	9,726	8,924	9,434	9,337	9,266	9,247
Retail Industrial	630	570	598	585	569	565
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	1,308	1,424	1,847	2,039	2,005	1,999
Company Use	738	632	620	718	718	718
Other - Prior Period Adjustment	-	-	-	-	-	-
Subtotal Firm	50,070	46,846	52,858	52,137	51,788	51,552
Interruptible Requirements:						
Retail	1,156	1,038	787	777	739	705
Electric Power Generation	14	12	12	11	10	9
Company's Own Plant	65	67	90	122	44	44
Unaccounted For Gas	45	43	43	31	29	28
Subtotal Interruptible	1,280	1,160	933	940	821	785
SUBTOTAL FIRM AND INTERRUPTIBLE	51,350	48,006	53,791	53,077	52,610	52,337
Transportation:						
Firm Residential	13	15	5	15	15	15
Firm Commercial	1,863	2,145	2,323	2,921	3,078	3,234
Firm Industrial	217	238	274	299	317	321
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	6,375	5,834	6,411	6,510	6,564	6,616
Interruptible Industrial	4,839	6,489	6,041	6,486	6,507	6,528
Other - Non-Utility Power Producers	9,632	8,901	9,771	9,260	9,260	9,260
Subtotal Transportation	22,940	23,622	24,824	25,491	25,741	25,974
TOTAL GAS REQUIREMENTS	74,290	71,627	78,614	78,568	78,351	78,311
Increase (Decrease)		(2,663)	6,987	(46)	(218)	(39)
Percent Change (%)		-3.6%	9.4%	-0.1%	-0.3%	-0.1%

FORM-IRP-GAS-1B: PEAK DAY REQUIREMENTS
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(VOLUMES IN MMcf)

Index Year Actual Year	Historical Data		Current Year ⁽²⁾	Three Year Forecast ⁽¹⁾		
	-2 2008-2009	-1 2009-2010	0 2010-2011	1 2011-2012	2 2012-2013	3 2013-2014
Firm Requirements:						
Retail Residential	376	345	451	465	463	461
Retail Commercial	97	87	105	110	109	109
Retail Industrial	6	6	7	7	7	7
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	13	14	21	24	24	24
Company Use	7	6	7	8	8	8
Other	-	-	-	-	-	-
Subtotal Firm	500	458	590	614	611	608
Interruptible Requirements:						
Retail	10.1	5.5	8.6	9.4	8.9	8.5
Electric Power Generation	0.0	-	0.0	0.0	0.0	0.0
Company's Own Plant	1.8	1.2	0.6	0.6	0.1	0.1
Unaccounted For Gas	0.0	0.3	0.3	0.4	0.3	0.3
Subtotal Interruptible	11.9	6.9	9.5	10.4	9.4	8.9
SUBTOTAL FIRM AND INTERRUPTIBLE						
	512	465	600	625	621	617
Transportation:						
Firm Residential	0	0	-	-	-	-
Firm Commercial	15	17	24	30	33	34
Firm Industrial	1	2	2	3	3	3
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	34	38	-	-	-	-
Interruptible Industrial	13	21	-	-	-	-
Other - Non-Utility Power Producers	43	34	-	-	-	-
Subtotal Transportation	106	113	26	33	36	37
TOTAL GAS REQUIREMENTS						
	618	578	626	658	656	655
Increase (Decrease)	48	(40)	48	32	(2)	(1)
Percent Change (%)	8.4%	-6.4%	8.2%	5.1%	-0.3%	-0.2%

(1) Peak Day is forecasted at a 2 degree temperature.

(2) Current Year Peak Day is forecasted at a 5 degree temperature.

Section 59.81

Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts

The forecast of energy sources shall indicate sources of all presently available and new supplies which the utility estimates will become available, displayed by component parts.

Response:

Please see the attached documentation and forms.

FORM-IRP-GAS-2A: ANNUAL/PEAK SUPPLY
TABLE 1: ANNUAL/PEAK SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

Index Year Actual Year	Historical Data				Current Year ⁽²⁾		Three Year Forecast ⁽¹⁾					
	-2 2008-2009		-1 2009-2010		0 2010-2011		1 2011-2012		2 2012-2013		3 2013-2014	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Gas Supply for Sales Service												
TETCO	-	-	-	-	-	-	-	-	-	-	-	-
TRANSCO	-	-	-	-	-	-	-	-	-	-	-	-
Spot Purchases	53,592	208	51,238	180	60,049	287	58,169	280	57,442	282	55,310	282
Storage Withdrawals	12,688	178	12,652	205	11,749	183	15,286	182	12,699	182	15,347	182
LNG Withdrawal	1,545	125	1,118	80	1,414	167	1,480	204	1,366	199	1,274	198
Company Production	-	-	-	-	-	-	-	-	-	-	-	-
LNG Purchases	-	-	-	-	-	-	-	-	-	-	-	-
Exchanges with other LDCs	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Gas Supply	67,825	512	65,008	465	73,213	637	74,935	666	71,507	663	71,931	662
Total Transportation Services	22,940	106	23,622	113	24,598	11	25,103	14	25,340	15	25,558	15
TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE	90,765	618	88,630	578	97,811	648	100,038	679	96,847	678	97,490	677
Deductions												
Pipeline: TRANS FUEL	2,979	-	3,052	-	3,514	18	3,141	17	3,137	17	2,994	17
Storage: INJ, INJ FUEL, WITHDRAW FUEL, TRANS FUEL	12,853	-	12,533	-	13,745	3	16,682	3	13,917	3	14,949	3
LNG: LIQUE, INJ FUEL, TRANS FUEL	643	-	1,418	1	1,938	1	1,647	1	1,442	1	1,235	1
Sales to other LDC's	-	-	-	-	-	-	-	-	-	-	-	-
Total Deductions	16,475	-	17,002	1	19,197	22	21,470	22	18,496	22	19,179	22
NET GAS SUPPLY	74,290	618	71,627	578	78,614	626	78,568	658	78,351	656	78,311	656
BTU	1.036		1.032		1.027		1.027		1.027		1.027	

⁽¹⁾ Peak Day is forecasted at a 2 degree temperature.

⁽²⁾ Current Year Peak Day is forecasted at a 5 degree temperature.

FORM-IRP-GAS-2C: NATURAL GAS STORAGE ⁽¹⁾
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)

Index Year Actual year	Historical Data				Current Year		Three Year Forecast					
	-2 2008-2009		-1 2009-2010		0 2010-2011		1 2011-2012		2 2012-2013		3 2013-2014	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Transcontinental Transmission Corp.	3,723	60	3,723	60	3,723	60	3,723	60	3,723	60	3,723	60
Dominion Transmission Inc.	3,481	32	3,481	32	3,481	32	3,481	32	3,481	32	3,481	32
Transcontinental Transmission Corp.	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36	3,086	36
Texas Eastern Transmission Corp.	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43	2,467	43
Texas Eastern Transmission Corp.	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20	2,219	20
Transcontinental Transmission Corp.	1,106	110	1,106	110	1,106	110	1,106	110	1,106	110	1,106	110
Equitrans	507	5	507	5	507	5	507	5	507	5	507	5
Transcontinental Transmission Corp.	453	5	453	5	453	5	453	5	453	5	453	5
Total	17,042	311	17,042	311	17,042	311	17,042	311	17,042	311	17,042	311

⁽¹⁾ Rank contracts in order of magnitude for the current year, noting the transportation provided and termination date for each contract reported. Reporting should proceed along rank ordering until 75% of total is accounted for, or until ten contracts have been listed, whichever occurs first.

Conversions at 1030 Btu

	Contract Expiration Date ⁽²⁾
Transcontinental Transmission Corp.	03/31/2013
Dominion Transmission Inc.	03/31/2012
Transcontinental Transmission Corp.	Evergreen
Texas Eastern Transmission Corp.	04/30/2012
Texas Eastern Transmission Corp.	04/30/2012
Transcontinental Transmission Corp.	10/31/2013
Equitrans	03/31/2012
Transcontinental Transmission Corp.	04/15/2012

⁽²⁾ For purposes of this report, all contracts due to expire are assumed renewed for the forecast years.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

**PHILADELPHIA GAS WORKS
800 WEST MONTGOMERY AVENUE
PHILADELPHIA, PENNSYLVANIA**

Annual Resource Planning Summary Report

Filed: March 2011

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Sections 59.81-59.84**

PHILADELPHIA GAS WORKS

2011 Annual Resource Planning Summary Report

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SECTION I -- PGW's Overall Approach to Integrated Resource Planning

SECTION II -- Supply Forecasting Methodology and Assumptions

SECTION III -- Demand Forecasting Methodology and Assumptions

SECTION IV -- Design Day Forecasting Methodology and Assumptions

SECTION V -- PGW Corporate Modeling System

Introduction

By Order entered January 11, 1996, the Pennsylvania Public Utility Commission (PUC) adopted final regulations (52 PA Code §§ 59.81 - 59.84) which set forth revised requirements for filing an Annual Resource Planning Report (the Plan). The Plan submitted represents Philadelphia Gas Works' (PGW or the Company) belief that integrated resource planning (IRP) is a workable approach to utility planning.

This plan summary contains historical data and projections for annual, winter and peak day supply to meet projected customer requirements in a least cost manner, while ensuring adequate and reliable service. It is organized into the following five sections:

- I. PGW's Overall Approach to Integrated Resource Planning
- II. Supply Forecasting Methodology and Assumptions
- III. Demand Forecasting Methodology and Assumptions
- IV. Design Day Forecasting Methodology and Assumptions
- V. PGW Corporate Modeling System

I. PGW's Overall Approach to Integrated Resource Planning

PGW Optimization Standard for Purchasing and Utilizing Gas Supplies

As reasonably anticipated PGW intends on meeting its contractual obligations to supply all of its current firm customers in its service territory on the coldest day, throughout the heating season and throughout the year. Projected customer requirements for design day and design winter conditions form the basis for capacity commitments for pipeline supply, storage, and transportation contracting.

Natural gas supplies are purchased under a portfolio approach with PGW intending to secure the lowest overall price consistent with the corporate goals of reliability and security of supply. In addition, consideration is given to maintaining a diversity of sources and types of supply, coupled with contractual and operational flexibility on both a daily and seasonal basis. Short term purchases from spot market sources are utilized to the maximum degree that they are more economical, available, and transportable.

Natural gas supplies are utilized so as to minimize gas costs subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage gas is drawn down so as to always maintain an inventory level sufficient for the remaining winter in the event that design temperature conditions should occur in the remaining segment of the winter season. Within the above parameters, priority is given to utilizing the most economical sources of supply first within the context of preserving the capability of meeting seasonal and annual demands rather than the momentary daily requirements. All facilities and sources of supply - flowing, storage and LNG are available to achieve the intended end, namely, minimizing gas costs subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions Basic Assumptions

The PGW Gas Supply Policy Committee comprised of senior corporate management as well as Gas Planning, Gas Control, Gas Supply, and Regulatory departmental management, approved the aforementioned Optimization Standard for Purchasing and Utilizing Gas Supplies (Section I). All natural gas purchases continue to be made in accordance with this standard. Projected sales, revenues and natural gas expenses in this report result from this agreement, particularly in the areas of inventory valuation, priorities of gas selection and interruptible supply availability.

Incorporated into our projections are additional implementation steps involved with developing a cohesive gas supply/demand strategy for the near term and the longer range. These include developing a cost relationship comparison for current resources and a review of current contract terms and alternatives for continuing, extending, modifying or eliminating contracts.

In order to achieve this while maintaining a balance between economics and security of supply, the company uses a portfolio strategy approach. This approach incorporates a menu driven selection of services which allows the company to choose only those specific services necessary to meet its requirements. This is achieved by taking into consideration transportation capacity rights and then sources of supply are contracted to cover the firm transport rights over differing seasonal obligations.

Operating flexibility is sustained by variations in contract stipulations to permit the system to swing on the most economical gas supplies available while maintaining the ability to supply rapidly fluctuating temperature requirements. Storage facilities are substituted wherever opportunity affords to reduce annual expense for flowing 365 day pipeline service without reducing design day and design winter season delivery capability. Direct control of all storage is paramount to permit PGW to minimize winter costs by injecting lower priced purchases and to cycle storage to balance daily take fluctuations to avoid overrun/balancing charges.

II. Supply Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

PGW's supply strategy incorporates maintaining full current winter day deliverability with regard to transportation capacity but to convert, where possible, to storage rather than winter flowing contracts to enhance financial and operational flexibility. A variety of longer term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime supply requirements to meet firm customers' demands has proven to be an unreliable alternative. As a result longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 50% of the contractual daily transportation entitlements on its two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions but this diversity also allows PGW to take advantage of the pricing basis differential inherent in these supply locations.

These contracts all contain the ability to fix the price for upcoming months as well as to allow the pricing to default to an agreed upon market index when there is no market advantage in fixing a price before the month begins. PGW uses this fixed price option in conjunction with its Gas Cost Rate (GCR) filing (GCR filing includes pricing based upon the NYMEX) by always attempting to buy under the GCR forecasted prices. Through the matching of the duration supply contracts to a seasonal demand, such as the winter operating season, the firm ratepayers benefit from not paying demand charges year-round.

A second component of PGW's supply portfolio or a volume equal to 27% of pipeline capacity, is purchased gas based on a first-of-the-month index pricing methodology with contracts that allow for daily change in volumetric take. This allows the Company to effectively shut-off higher priced supply replacing such supply with daily cheaper spot priced gases. Under assumed normal winter conditions, PGW utilizes certain storage fields (Eminence and Washington) in a manner similar to third party supply. Specifically, these storage contracts do not contain

II. Supply Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

transportation to the PGW city gate. Therefore, these storages must flow within PGW's contractual upstream capacity rights on TGPL. Delivery from these fields utilizes approximately 23% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price to counter winter price conditions since the WACOG usually reflects a winter/summer pricing differential. PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW attempts to always purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first of the month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index priced supply in favor of the purchase of more advantageous daily spot purchases.

Operating conditions permitting, the Company enters into the FERC approved capacity release market to offset demand charges it pays for its firm transportation and the incremental off-systems sales market when it is economically advantageous for the firm ratepayer. In both instances, these opportunities are sought only when firm customer needs are satisfied. Additionally, PGW's bundled storages and LNG can be utilized as a substitute for higher price gas supply based on market pricing conditions and the results of PGW's status report. Effectively, the Gas Supply Group is at all times studying the market for any economic advantage it can bring to the firm ratepayer.

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions**

PGW uses a combination of four basic methods to develop demand projections. They are:

- 1) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
- 2) Customer Survey -- Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
- 3) Relative End Use -- Projections via Marketing methods of customer load sizing by appliance type, maximum input, maximum summer and winter full load hour (FLH) calculations which are used to develop yearly and monthly demand requirements.
- 4) Judgment -- Experienced opinion as applied to the evaluation of the combination of all data to develop the basic demand requirements.

Customer Demand

The total system-wide demand is a function of the projected gas demand per customer and the anticipated number of customers in each class. In determining customer demand, consideration is given to projecting current customer usage, augmented by significant gains or losses in each of numerous homogeneous groups for the period being projected. The Gas Planning Department attempts to determine for each customer class, the level of demand relating to experienced temperatures and the component of demand that is apparently not affected by changes in temperature. Within each class the most recent summer and winter usage patterns are established from historical records. Summer data provides an insight into each class of customers non-temperature sensitive load requirements or baseload which can be expressed in terms of thousands of cubic feet (Mcf) per day, per customer. Similarly, winter data after removal of the daily baseload level provides the temperature sensitive load requirements for each class of customer.

This usage primarily reflects space heating but also includes such other temperature sensitive needs as water heating attributable to colder ground water inlet temperatures and similar process variations. This overall heating requirement can be expressed in terms of the cubic feet of gas

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

utilized per degree of temperature change on a per customer basis for each separate customer classification.

In addition, consideration must be given to the variation of customer utilization patterns for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 30-year period. This pattern reflects 4360 degree-days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced in the January to May period and warmer to colder daily temperatures in the September to December period.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit and is used as a tool to measure space heating requirements, i.e. on a day experiencing an average temperature of 40 degrees F. there would be 25 degree days. The annual 4360 degree days which is composed of the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above described baseload, space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produce a daily calculation of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes metered at the city gate to supply customers' requirements while sales are those volumes registered on customer meters. The variation between sendout and sales, after adjustments, is that portion which is lost and unaccounted for in the PGW distribution system.

III. Demand Forecasting Methodology and Assumptions **Basic Assumptions (Continued)**

Sales and sendout differ on a monthly basis in the degree day distribution pattern. For efficiency, meter reading and billing efforts are distributed uniformly over the available number of working days in a month and the majority of PGW customers are divided into 20 individual groups or cycles containing residential, commercial and industrial accounts within a specific geographic area. When these cycle customers are billed each month they reflect meter reading usage not for the calendar month being billed, but for the number of days and temperature pattern of degree-days experienced during their specific interval between meter readings. For example, assume the month of January contained 900 calendar degree-days. The customers in cycle 10 being billed for the month of January might have had meter readings taken on December 15 and again on January 17. Sales billed and reported in the company records for these customers would reflect the number of days and degree days between these reading dates rather than the 900 degree days of the month. Similarly, cycle 1 customers that might have had meter readings taken on December 1 and January 2 would reflect principally the month of December temperature experience, whereas, cycle 20 customers with meter readings taken possibly December 28 and January 29 would reflect principally the month of January temperature experience.

An average of the 20 cycles (Average Cycle Degree-Days) is used as the temperature pattern upon which to project the volume of sales in the forecast period. Both projections of sales and sendouts represent the full demand for that period from both firm and interruptible customers.

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by classes of customers from sales reported for the summer months in the previous year. This average factor is then utilized in the sendout formula with the customer counts for the months of July, August and September. A comparison between what the formula calculates and the actual experienced for those three months is ascertained and the trial

III. Demand Forecasting Methodology and Assumptions Basic Assumptions (Continued)

domestic (baseload) factors are finalized to replicate the total sendout experienced. The finalized domestic factors (DOMs) are then utilized in conjunction with the actual sales and customer counts for the months of December, January and February to determine the average Mcf per degree day for each of the individual months for the remaining temperature sensitive load. The results are weighted by degree-days to give an average value which is utilized as a trial value for the heating factor.

The finalized domestic factor and the trial heating factor developed, as such, are then applied in the sendout calculations together with customer counts for the months of December, January and February (the peak winter heating period) to project an estimated sendout for each of these months. The projected sendout is then compared with the actual sendout experienced. Any variation between the projected and actual is adjusted to force the replication of the actual sendout experience thus resulting in the determination of a finalized heating factor.

To project the number of customers for each individual rate class, each rate class of customers are reviewed and accumulated individually. Current customers are ascertained from the number of billings data available from sales and revenue actually experienced immediately prior to the commencement of a model run. Declines are projected for anticipated losses to electric and other fuels, demolitions and transfers to other rates. Direct transfers from a non-heating to a heating account, as a result of a current customer's conversion to gas heat, moves the domestic load to the new category. Projected additional customers are developed by the Marketing Department where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their expertise, project annual load additions which are translated into customer counts based upon typical customer usage for that individual customer class. The approximate month of turn-on is also developed to permit reflection of the effective portion of the load addition within the fiscal period under study. Interruptible class customers as well as other large special accounts are detailed individually incorporating expected gains and losses as direct contact and experience has indicated.

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions (Continued)

The base revenue projections for both firm and interruptible customer groups are derived as the product of the projected sales volumes and the present tariff rate for each individual customer class within each group. The GCR revenue projections are derived as the product of the GCR factor and the projected sales volumes to the firm GCR customers.

IV. Design Day and Design Hour Forecasting Methodology and Assumptions

Each year a six year estimate of Design Day and Design Hour requirements anticipated under design day and design hour operating conditions is prepared to ensure that adequate resources are under contract and to further ensure that PGW can fulfill its supply obligation for its firm customer requirements on a design day and design hour.

The projected demands for design day are developed utilizing previous winter periods data for all weekdays where the temperature average for the day is 32 degrees Fahrenheit or below. The total sendout for these days as recorded under actual conditions and is reduced to firm sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a sendout model from actual daily sendouts and degree days, and the process is repeated in a quadratic regression and a cubic regression procedure. From the predicted sendouts in the regression, which are within a reasonable percent of error to the actual sendout, factors are derived to replicate the actual sendouts. The factors derived from this are used to determine the current load requirements for a 0 degrees F day and from this data, the load for a -5 degrees F hour is calculated. PGW's Marketing Department's load projections for present and future years are then applied to these requirements to develop design day and design hour present and future load requirements. This is achieved by the addition of the projected marketing load growth on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate modeling system is a tool used by PGW management to project sales, revenues and expenses, as well as to examine key planning strategies and evaluate their effects on company operations. The system provides the ability to determine the results of alternate plans and scenarios, while at the same time allowing for responses to "what if" type situations quantifying revenue and expenses. The system combines the power of the computer with the experience of management to develop both short and long range projections based upon experienced historical data for sales and sendout volumes, raw material expenses and revenues. The corporate model system is composed of five separate parts. Each part operates independently but requires substantial external data inputs as well as data output results from one or more of the other parts in the system.

Gas Demand Model

The gas demand model is used to forecast total requirements for gas based upon current customer usage experience with adjustments for projected gains and losses. Input data includes domestic and space heating usage factors, customer counts by rate classifications, temperature patterns and results in projections of sales and sendout volumes. Detail and summary reports include sales and sendout by rate classification. This data is then used by the Gas Supply Model.

Gas Supply Model

The supply model is used to dispatch the various supply sources in accordance with contract availability limitations. It develops the necessary balance between supply and demand which reflects plant fuel and storage injection requirements as well as customer demands by identifying the availability of interruptible load balancing sales. Detail and summary reports include daily and monthly load requirements, the volumes taken from each source by pipeline contract, storage balances, LNG requirements, etc.

V. PGW Corporate Modeling System (Continued)

This model is also used to determine natural gas and other raw material costs dispatched. The model tracks the various cost components of each contract - the demand, capacity, commodity, injection and withdrawal charges - providing monthly and annual details and summary information including inventory valuations and expenses for supplemental LNG supplies. This data is then used by the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop the GCR. This model in conjunction with the gas supply model and demand model ascribes responsibility for the raw material costs to firm rate classes in accordance with PGW's tariff requirements, and compensates for the Interruptible Revenue Credit, gas transportation Supplier Storage Peaking and migration charges, interest, and the previous over or under billing of fuel expenses. The GCR is then used by the Revenue Model.

Revenue Model

The revenue model is used to project billed revenue by rate classification in accordance with PGW's rate tariffs. It prepares the net billed revenue, GCR revenues, senior citizen discounts, and cycle billing information all detailed by rate classification. The detail and summary reports provided by this model are directed to the accounting and financial departments for inclusion in various financial reviews.

Summary

The corporate modeling system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes. Results assist in the development of PGW's annual Operating Budget, setting of the GCR and planning of supply resources.

V. **PGW Corporate Modeling System (Continued)**

The model also provides a Status Report for the evaluation of remaining winter period requirements on both normal and design temperature patterns and the extrapolation of the current year based upon the experience to date and an assumption of temperatures anticipated for the remaining period of the year, this latter acting as a guide for both financial cash flow planning and winter operations.

Philadelphia Gas Works
Gregory J. Stunder
Senior Attorney



800 W. Montgomery Avenue, Philadelphia, PA 19122
Telephone: (215) 684-6878 – Fax (215) 684-6798
Email: greg.stunder@pgworks.com

June 2, 2011

ORIGINAL

VIA EXPRESS MAIL

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
2nd Floor, 1 North
400 North Street
Harrisburg, PA 17120

**DOCUMENT
FOLDER**

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JUN - 2 2011

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

ARP-125042

RE: Philadelphia Gas Works Annual Resource Planning Report

Dear Secretary Chiavetta,

Enclosed for filing is an original and seven (7) copies of Philadelphia Gas Works Annual Resource Planning Report, Forms 3 to 9.

Please contact me if you have any questions regarding this filing.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gregory J. Stunder".

Gregory J. Stunder
Senior Attorney

Enclosures

CERTIFICATE OF SERVICE

ARP-125042

I hereby certify that I have this day served a true copy of the foregoing document upon the participants listed below in accordance with the requirements of §1.54 (relating to service by a participant).

VIA EXPRESS MAIL

Aron Beatty, Esq.
Office of Consumer Advocate
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555 Walnut Street
Harrisburg, PA 17101-1921

Patrick Gregory, Esq.
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Commonwealth Keystone Building
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Harrisburg, PA 17120

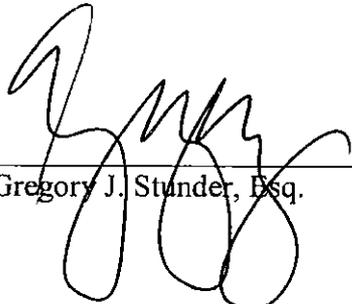
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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU



Gregory J. Stunder, Esq.

Date: June 2, 2011

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

ARP-125042

**Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122**

ANNUAL RESOURCE PLANNING REPORT

JUNE 2011

Forms 3 to 9

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

**Information Submitted in Compliance with and Pursuant to Title 52
Pennsylvania Code Section 59.81 and 59.82**

PHILADELPHIA GAS WORKS
ANNUAL RESOURCE PLANNING REPORT
JUNE 2011

An original and seven (7) copies of Forms 3, 4A, 4b, 5, 6, 7, 8 and 9 are being submitted with the current filing in order to meet the requirements set forth in 52 Pa.Code §52.81 and §52.82.

Forms 1A, 1B, 2A, 2B, 2C along with a general discussion of the methodologies, data sources, and assumptions were already filed in the Company's March filing.

Questions concerning the ARPR may be directed to Mr. Kenneth Dybalski, Director – Gas Planning & Rates – (215) 684-6317. The following individuals are available to answer questions concerning specific forms:

- Forms 1, 2, 3, 4 and 6 – Ms. Maria Hogan at (215) 684-6618
- Forms 5, 7, 8 and 9 – Ms. Elsa Leung at (215) 684-6786

The following indicates the filing dates for the items listed:

March 2011 (Filing Date – March 1, 2011)

Forms IRP Gas 1A/1B Annual and Peak Day Energy Demand

Forms IRP-Gas 2A/2B/2C Annual and Peak Day Energy Resources, and transmission and storage contracts

Other Data:

Section I PGW's Overall Approach To Integrated Resource Planning

Section II Supply Forecasting Methodology and Assumptions

Section III Demand Forecasting Methodology & Assumptions

Section IV Peak Day Forecasting Methodology and Assumptions

Section V PGW Corporate Modeling System

June 2011 (Filing Date – June 2, 2011)

Form IRP-Gas 3 Historical, Current and Forecast Number Of Customers

Forms IRP-Gas 4A/4B Annual and Peak Day Energy Supply and Demand

Form IRP-Gas 5 Energy Conservation Report-Program Description

Form IRP-Gas 6 Energy Users

Form IRP-Gas 7 Conservation and Load Management Program Summary

Form IRP-Gas 8 Conservation and Load Management Program Cost Benefit Analysis Inputs

Form IRP-Gas 9 Conservation and Load Management Program Cost Benefit Analysis Results

Section 59.81 **Forms IRP-Gas 3 - Historical, Current and Forecast Number of Customers**

Provide the number of year end customers displayed by component parts.

Response: Please see the attached form.

FORM-IRP-GAS-3: NUMBER OF CUSTOMERS ⁽¹⁾
 REPORTING UTILITY: PHILADELPHIA GAS WORKS

	Historical Data		Current Year	Three Year Forecast			
	Index Year Fiscal Year	-2 2008-2009	-1 2009-2010	0 2010-2011	1 2011-2012	2 2012-2013	3 2013-2014
Firm Customers							
Retail Residential		469,461	468,550	468,403	459,617	455,390	451,180
Retail Commercial		24,675	24,327	24,112	24,190	24,242	24,263
Retail Industrial		709	657	636	645	633	621
Other		-	-	-	-	-	-
Subtotal Sales Service		494,844	493,535	493,151	484,451	480,266	476,065
Electric Power Generation		3	3	3	3	3	3
Interruptible Customers		162	142	128	129	126	123
Transportation Service ⁽²⁾		1,828	2,191	2,341	3,006	3,187	3,399
CUSTOMER TOTAL		496,836	495,871	495,623	487,589	483,582	479,590
Increase (Decrease)		N/A	(966)	(248)	(8,034)	(4,007)	(3,992)
Percent Change (%)		N/A	-0.2%	0.0%	-1.6%	-0.8%	-0.8%

⁽¹⁾ Customers are based on the average number of billings over the course of the year.

⁽²⁾ The increase in Transportation Customers is due to customers switching to transportation.

Section 59.81 **Forms IRP-Gas 4A and 4B - Annual and Peak Day Energy Supply and Demand**

Response: Please see the attached forms.

FORM-IRP-GAS-4A: ANNUAL SUPPLY AND REQUIREMENTS SUMMARY
 REPORTING UTILITY: PHILADELPHIA GAS WORKS
 (Volumes in MMcf)

Index Year Actual Year	Historical Data		Current Year	Three Year Forecast		
	-2 2008-2009	-1 2009-2010	0 2010-2011	1 2011-2012	2 2012-2013	3 2013-2014
Gas Supply:						
Supply Contracts	50,613	48,187	56,535	55,028	54,304	52,316
Storage Withdrawals	12,688	12,652	11,749	15,286	12,699	15,347
LNG	1,545	1,118	1,414	1,480	1,366	1,274
Exchanges with Other LDCs	-	-	-	-	-	-
Subtotal Gas Supply	64,846	61,956	69,699	71,794	68,369	68,937
Transportation	22,940	23,622	24,598	25,103	25,340	25,558
TOTAL GAS SUPPLY	87,786	85,578	94,297	96,897	93,709	94,495
Requirements:						
Firm Requirements	50,070	46,846	52,858	52,137	51,788	51,552
Liquefaction	643	1,418	1,938	1,647	1,442	1,235
Interruptible Requirements	1,280	1,160	933	940	821	785
Storage Injections	12,853	12,533	13,745	16,682	13,917	14,949
Sales to other LDC's	-	-	-	-	-	-
Subtotal Firm & Interruptible	64,846	61,956	69,473	71,406	67,968	68,521
Transportation	22,940	23,622	24,824	25,491	25,741	25,974
Load Reductions						
TOTAL GAS REQUIREMENTS	87,786	85,578	94,297	96,897	93,709	94,495
Surplus (Deficiency)	-	-	-	-	-	-

FORM-IRP-GAS-4B: PEAK DAY SUPPLY AND REQUIREMENTS SUMMARY ⁽¹⁾
 REPORTING UTILITY: PHILADELPHIA GAS WORKS
 (Volumes in MMcf)

Index Year Actual Year	Historical Data		Current Year	Three Year Forecast		
	-2 2008-2009	-1 2009-2010	0 2010-2011	1 2011-2012	2 2012-2013	3 2013-2014
Gas Supply:						
Supply Contracts	208	180	287	280	282	282
Storage Withdraws	178	205	183	182	182	182
LNG	125	80	167	204	199	198
Subtotal Gas Supply	512	465	637	666	663	662
Transportation	106	113	11	14	15	15
TOTAL GAS SUPPLY	618	578	648	679	678	677
Requirements:						
Firm Requirements ⁽²⁾	500	458	590	614	611	608
Interruptible Requirements	12	6	10	10	9	9
Storage & LNG Fuels	-	1	22	22	22	22
Subtotal Firm & Interruptible	512	465	622	646	642	639
Transportation	106	113	26	33	36	37
Load Reductions	-	-	-	-	-	-
TOTAL GAS REQUIREMENTS	618	578	648	679	678	677
Surplus (Deficiency)	-	-	-	-	-	-

⁽¹⁾ Peak Day for the actual/estimated year is forecasted at a 5 degree temperature. For the fully forecasted years, the Peak Day is based on a 2 degree temperature.

Section 59.82 **Forms IRP-Gas 5 - Energy Conservation Report -Program Description**

Response: Please see the attached form.

IFORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Conservation Works Program (CWP)

Existing [X] Proposed []

Contact Person: Elsa Leung
(215) 684-6786

Objective: To reduce energy usage, therefore, making bills more affordable for low-income customers whose usage is average or above average and who are participants in the Customer Responsibility Program.

Details of Activity and Implementation Schedule:

Eligible customers are targeted for program participation. For each participating household, PGW's contractors will perform an energy diagnostic audit, energy education, and conservation treatments such as home repairs, programmable thermostat, insulation, etc.

Actual and/or Anticipated Results:

Year	Energy Savings				Other Results
	Peak Load Reduction Mcf	Electric Mwh	Gas Mcf	Oil Gallons	
2004 (1)			16		2,985 Homes w/ Treatment
2005 (1)			14		2,721 Homes w/ Treatment
2006 (2)			13		2,621 Homes w/ Treatment
2007 (2)			17		1,685 Homes w/ Treatment
2008 (2)			15		1,764 Homes w/Treatment
2009 (2)			13		926 Homes w/Treatment

Monetary and Personnel Resources:

Year	Categorized program Expenses			
	Personnel Est. Hrs. (3)	Outside Services	Admin. (PGW Internal)	Total
2004 (1)	32,835	\$2,008,697	\$50,000	\$2,058,697
2005 (1)	29,931	\$2,014,086	\$50,000	\$2,064,086
2006 (1)	28,831	\$2,199,912	\$60,000	\$2,259,912
2007 (1)	18,535	\$1,522,950	\$50,000	\$1,572,950
2008 (1)	19,404	\$2,449,851	\$50,000	\$2,499,851
2009 (1)	10,186	\$2,035,985	\$50,000	\$2,085,985

(1) Actual

(2) Actual number of participants, actual expenditure, estimated energy savings

(3) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home.

Section 59.82 **Forms IRP-Gas 6 - Energy Users**

Response: Please see the attached form.

FORM-IRP-GAS-6
ENERGY USERS
COMPANY: PHILADELPHIA GAS WORKS

Fiscal Year Ending August 31, 2010

	<u>Number of Customers</u>	<u>Sales (Mcf)</u>
Firm:		
Residential:		
Heating	435,477	34,632,150
Non-heating	33,073	662,915
Commercial	24,327	8,925,196
Industrial	<u>657</u>	<u>570,409</u>
Sub-total Firm	493,535	44,790,670
 Interruptible		
Commercial & Industrial	<u>145</u>	<u>1,049,318</u>
Total Gas Sold	493,680	45,839,988
Unbilled Adjustment	-	276,161
Transportation	2,191	23,135,876
Utility Use	<u>-</u>	<u>632,040</u>
Total	<u>495,871</u>	<u>69,884,065</u>

Section 59.82 **Forms IRP-Gas 7 – Program Summary**

Response: Please see the attached form.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (3)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Conservation Works Program (CWP) - 2002 (1)	NA	13	34,980	\$1,922,540	\$60,000	\$1,982,540
Conservation Works Program (CWP) - 2003 (1)	NA	13	37,587	\$1,975,962	\$60,000	\$2,035,962
Conservation Works Program (CWP) - 2004 (1)	NA	16	32,835	\$2,008,697	\$50,000	\$2,058,697
Conservation Works Program (CWP) - 2005 (1)	NA	14	29,931	\$2,014,086	\$50,000	\$2,064,086
Conservation Works Program (CWP) - 2006 (1)	NA	13	28,831	\$2,199,912	\$60,000	\$2,259,912
Conservation Works Program (CWP) - 2007 (1)	NA	17	18,535	\$1,522,950	\$50,000	\$1,572,950
Conservation Works Program (CWP) - 2008 (1)	NA	15	19,404	\$2,449,851	\$50,000	\$2,499,851
Conservation Works Program (CWP) - 2009 (1)	NA	13	10,186	\$2,035,985	\$50,000	\$2,085,985

(1) Actual

(2) Actual figures except for Energy Savings

(3) Personnel hours were estimated by multiplying the number of homes by 11, the average number of hours spent per home

Section 59.82 **Forms IRP-Gas 8 - Conservation and Load Management Program Cost
Benefit Analysis Inputs**

Response: Please see the attached forms.

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis

PROGRAM:

Conservation Works Program

t	Year	Energy Savings (E) Mcf	Average Energy Cost (ACE) \$ per Mcf	Avoided Energy Cost (MCE) \$ per Mcf	Participant Demand Savings (D) Mcf	Utility Capacity Savings (G) Mcf	Average Demand Costs (ACD) \$ per Mcf	Avoided Demand Costs (MCD) \$ per Mcf	Participant Costs (PC) \$
1	2009	20094.4	19.3562	10.7242	N/A	N/A	N/A		0
2	2010	20094.4	17.0887	8.4567	N/A	N/A	N/A		0
3	2011	20094.4	18.4416	9.8096	N/A	N/A	N/A		0
4	2012	20094.4	18.9957	10.3637	N/A	N/A	N/A		0

Company Name: Philadelphia Gas Works (PGW)
 FORM-IRP-GAS-8 Cost-Benefit Analysis

PROGRAM: Conservation Works Program

t	Year	Incentive Cost (l) \$	Utility Costs (UC) \$	Discount Rates			Escalation Rate (e) %	System Sales (S) Mcf	Sales Ratio (f) %
				Participant (d) %	Non-Participant (d) %	Utility (1) (d) %			
1	2009	\$ -	\$ 2,085,985.00	5.9	5.9	5.9	0	47,316,082	0.004462
2	2010	\$ -	\$ -	5.9	5.9	5.9	0	52,518,255	0.004020
3	2011	\$ -	\$ -	5.9	5.9	5.9	0	52,167,105	0.004047
4	2012	\$ -	\$ -	5.9	5.9	5.9	0	51,958,828	0.004064
5	2013	\$ -	\$ -	5.9	5.9	5.9	0	51,950,950	0.004064
6	2014	\$ -	\$ -	5.9	5.9	5.9	0	51,960,120	0.004063
7	2015	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
8	2016	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
9	2017	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
10	2018	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
11	2019	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
12	2020	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
13	2021	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
14	2022	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
15	2023	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004055
16	2024	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
17	2025	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
18	2026	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
19	2027	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
20	2028	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
21	2029	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
22	2030	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
23	2031	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
24	2032	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127
25	2033	\$ -	\$ -	5.9	5.9	5.9	0	52,073,159	0.004127

(1) The Participant, Non-Participant and Utility discount rates are based on PGW's long-term debt and AFUDC (Allowance for Funds Used During Construction).

Section 59.82 **Forms IRP-Gas 9 - Conservation and Load Management Program Cost-Benefit Analysis Results**

Response: Please see the attached form.

Company Name:
FORM-IRP-GAS-9

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis

PROGRAM:

Conservation Works Program

Period of Analysis		Total Utility Benefits (Bu) \$	Total Utility Costs (Cu) \$	Revenue Reduction Cost (Cr) \$	Participant Revenue Requirement (Rp) \$	Total participant Benefits (Bp) \$	Total Participant Costs (Cp) \$
Beginning Year	Ending Year						
2009	2033	\$ 2,877,628	\$ 2,085,985	\$ 5,141,034	\$ 15,362	\$ 5,141,034	\$ 15,362

Discounted Payback Period Yrs.	NET PRESENT VALUE				BENEFIT COST RATE			Rate Impact Non-Part (RIMnp) \$/Mcf
	Participant (NPVp) \$	Non-Part (NPVnp) \$	Utility (NPVu) \$		Participant (BCRp) \$	Non-Part (BCRnp) \$	Utility (BCRu) \$	
25	\$ 5,125,671.78	\$ (4,329,983.31)	\$ 791,642.51		\$ 334.65	\$ 0.40	\$ 1.38	0.05