A-125042

ARP 2004

Philadelphia Gas Works
Gregory J. Stunder
Senior Attorney

PGW

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ORIGINAL

March 1, 2004

VIA EXPRESS MAIL

RECEIVED

MAR 0 1 2004

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

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

IRP 125042

RE: Philadelphia Gas Works Annual Resource Planning Report

Dear Secretary McNulty,

Enclosed for filing is an original and three (3) copies of Philadelphia Gas Works Annual Resource Planning Report, Forms 1 and 2.

Please contact me if you have any questions regarding this filing at 215-684-6878.

Respectfully submitted,

Gregory J. Stunder
Senior Attorney

Enclosures

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

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

March 2004

Forms 1 & 2

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
MARCH 2004

Forms 1 & 2

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

PHILADELPHIA GAS WORKS

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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, Manager - Gas Planning at (215) 684-6317. The following individual will be available to answer questions concerning each section:

Ms. Maria Hogan, Administrator – 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)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Requirements:						
Retail Residential	35,591	47,656	45,135	44,749	44,302	43,872
Retail Commercial	10,369	13,317	12,606	12,898	12,918	12,905
Retail Industrial	1,098	1,337	1,199	1,462	1,508	1,552
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	1,416	2,669	2,397	2,251	2,237	2,222
Company Use	126	113	124	135	135	135
Other	-	-	-	-	-	-
Subtotal Firm	48,599	65,091	61,462	61,495	61,101	60,686
Interruptible Requirements:						
Retail	6,315	5,984	4,181	5,562	5,359	5,008
Electric Power Generation	114	110	87	100	99	98
Company's Own Plant	258	371	200	283	344	299
Unaccounted For Gas	185	420	342	112	44	76
Subtotal Interruptible	6,872	6,885	4,810	6,057	5,847	5,481
SUBTOTAL FIRM AND INTERRUPTIBLE	55,471	71,976	66,272	67,552	66,948	66,167
Transportation:						
Firm Residential	-	-	-	491	788	1,082
Firm Commercial	-	-	-	161	259	357
Firm Industrial	-	-	-	130	211	292
Interruptible Residential	-	-	-			
Interruptible Commercial	-	59	82	183	200	217
Interruptible Industrial [3]	2,416	1,614	2,256	5,004	5,486	5,941
Other - Non-Utility Power Producers	9,903	9,315	8,184	7,925	7,925	7,925
Subtotal Transportation	12,318	10,988	10,522	13,894	14,868	15,814
TOTAL GAS REQUIREMENTS	67,790	82,964	76,794	81,446	81,816	81,981
Increase (Decrease)	na	15,174	(6,170)	4,651	370	166
Percent Change (%)	na	22.38%	-7.44%	6.06%	0.45%	0.20%

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

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Requirements:						
Retail Residential	319	432	512	519	513	508
Retail Commercial	93	121	143	150	150	149
Retail Industrial	10	12	14	17	17	18
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	13	24	27	26	26	26
Company Use	1	1	1	2	2	2
Other	-	-	-	-	-	-
Subtotal Firm	436	590	697	713	708	703
Interruptible Requirements:						
Retail	23	25	10	-	-	-
Electric Power Generation	-	-	-	-	-	-
Company's Own Plant	1	2	5	4	4	4
Unaccounted For Gas	-	-	-	-	-	-
Subtotal Interruptible	23	27	15	4	4	4
SUBTOTAL FIRM AND INTERRUPTIBLE	459	616	711	717	712	707
Transportation:						
Firm Residential	-	-	-	6	9	13
Firm Commercial	-	-	-	2	3	4
Firm Industrial	-	-	-	2	2	3
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	-	-	-	-	-	-
Interruptible Industrial	-	1	-	-	-	-
Other - Non-Utility Power Producers	37	42	-	-	-	-
Subtotal Transportation	37	43	-	9	15	20
TOTAL GAS REQUIREMENTS	496	659	711	726	726	727
Increase (Decrease)	na	162	53	17	1	-
Percent Change (%)	na	32.69%	7.99%	2.35%	0.07%	0.04%

[1] Peak Day is forecasted at a 2 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: NATURAL GAS SUPPLY
TABLE 1: ANNUAL/PEAK SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast [1]					
Index Year	-2		-1		0		1		2		3	
Actual Year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Gas Supply for Sales Service												
TETCO	-	-	-	-	-	-	-	-	-	-	-	-
TRANSCO	5,401	1	19,477	53	15,146	53	11,309	53	-		-	-
Spot Purchases	53,905	190	50,053	184	56,903	238	56,735	227	67,511	275	66,702	270
Storage Withdrawals	14,817	257	16,428	208	13,063	164	9,633	166	9,555	166	10,019	166
LNG Withdrawal	1,242	11	3,335	171	2,742	255	2,085	270	2,553	270	2,209	270
Company Production	-	-	-	-	-	-	-	-	-	-	-	-
LNG Purchases	-	-	127	-	-	-	-	-	-	-	-	-
Exchanges with other LDCs	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Gas Supply	75,364	459	89,421	616	87,853	711	79,762	717	79,620	712	78,931	707
Total Transportation Services	12,318	37	10,988	43	10,522	-	13,894	9	14,868	15	15,814	20
TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE	87,683	496	100,409	659	98,375	711	93,655	726	94,488	726	94,745	727
Deductions												
Underground Storage Injections & Fuels	16,425	-	14,534	-	18,408	-	9,935	-	9,868	-	10,349	-
LNG Liquefactions & Fuels	1,666	-	2,742	-	3,173	-	2,274	-	2,804	-	2,415	-
Sales to other LDC's	1,802	-	169	-	-	-	-	-	-	-	-	-
Total Deductions	19,893	-	17,445	-	21,581	-	12,209	-	12,672	-	12,764	-
NET GAS SUPPLY	67,790	496	82,964	659	76,794	711	81,446	726	81,816	726	81,981	727

[1] Peak Day is forecasted at a 2 degree temperature.

FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
City Gate Transportation Contracts:	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
Texas Eastern Transmission Corp.	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43
Texas Eastern Transmission Corp.	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20
Transcontinental Transmission Corp.	453	5	453	5	453	5	453	5	453	5	453	5
Total	9,137	128	9,137	128	9,137	128	9,137	128	9,137	128	9,137	128
Upstream Transportation Contracts:												
Transcontinental Transmission Corp.	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160
Texas Eastern Transmission Corp.	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73
Texas Eastern Transmission Corp.	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23
Texas Eastern Transmission Corp.	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
Texas Eastern Transmission Corp.	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
Transcontinental Transmission Corp.	172	2	172	2	172	2	172	2	172	2	172	2
Total	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293
Storage-Related Transportation Contracts:												
Dominion Transmission Inc.	9,110	25	9,110	25	9,110	25	9,110	25	9,110	25	9,110	25
Dominion Transmission Inc.	2,760	8	2,760	8	2,760	8	2,760	8	2,760	8	2,760	8
Equitrans	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5
Total	13,782	38	13,782	38	13,782	38	13,782	38	13,782	38	13,782	38

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

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
	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
ANR	1,824	12	1,824	12	-	-	-	-	-	-	-	-
Transcontinental Transmission Corp.	802	80	802	80	802	80	802	80	802	80	802	80
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	18,562	294	18,562	294	16,738	281	16,738	281	16,738	281	16,738	281

[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.	3/31/13
Dominion Transmission Inc.	3/31/06
Transcontinental Transmission Corp.	Evergreen
Texas Eastern Transmission Corp.	4/30/12
Texas Eastern Transmission Corp.	4/30/12
ANR	3/31/03
Transcontinental Transmission Corp.	10/31/13
Equitrans	3/31/04
Transcontinental Transmission Corp.	4/15/04

[2] For purposes of this report, except ANR, 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 2004

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

PHILADELPHIA GAS WORKS

2004 Annual Resource Planning Summary Report

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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 5 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 meeting its contractual obligations to supply all of its current customers in its service territory on the coldest day and throughout the season. 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, intending to secure the lowest overall price, consistent with the primary 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 maximize net contributions subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage contracts are drawn upon so as to always maintain an inventory level sufficient for protection in the event that design temperature conditions should occur in the remaining segment of any 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, maximizing net contributions subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions

The PGW Gas Supply Policy Committee, representing 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 first securing transportation capacity rights. Then sources of supply are contracted to cover the firm transport rights taking into consideration 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 damage to peak day and peak winter season delivery capability. Direct control of all storage is sought to permit PGW to minimize winter costs by injecting lower priced summer 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 deliverabilty 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 long term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime capacity required 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 deliverabilty equal to approximately 64% 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 and Global Insight) 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 32% 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

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

do not contain bundled transportation to the PGW city gate. Therefore, storages must flow within PGW's contractual upstream capacity rights on TETCO and TGPL. Typical daily delivery from these fields utilizes approximately 4% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price counter to 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/or 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) Customer Survey - Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
2) 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.
3) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
4) Judgement -- 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 43 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 customer's 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, reveals 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 4555 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 as a tool to measure space heating requirements, i.e., on a day experiencing an average temperature of 40 degrees F. there would be counted 25 degree days. The annual 4555 degree days, which compose 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 and space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produces a daily statement 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 reported 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. In addition, they differ on a monthly basis in the distribution pattern. For the convenience of distributing meter reading and billing efforts

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

uniformly over the available number of working days in a month, 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 readings. For example, assume the month of January contained 900 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 company records for these customers would have reflected 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 December temperature experience, while cycle 20 customers, with meter readings taken possibly December 28 and January 29, would reflect principally the January temperature experience.

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

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by class of customers from sales reported for the previous year's summer months. 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 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, the following categories 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 budget run. Declines are projected for anticipated losses to electric and other fuels or demolitions and from 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 within the Marketing Department, where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their sphere, project annual load additions which are translated into count 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 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 customers.

Finally, incremental Marketing efforts are concentrated on Air Conditioning and Co-generation opportunities. Rate design has been implemented fostering off-peak increase in utilization of current supply resources in an air conditioning discount, an interruptible Co-generation Rate and a Natural Gas Vehicle (NGV) Service. It is intended to limit on-peak expansion to acceptable interruptible availability of current resources rather than allowing the creation of new peak demands.

IV. Design Day Forecasting Methodology and Assumptions

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

The projected demands for design day is developed utilizing previous winter period 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 is reduced to base sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a calculated sendout versus the actual sendout from which the necessary constants (factors) required to have the calculated sendout match, within a reasonable percent of error to the actual sendout are developed. The process is repeated in a quadratic regression and a cubic regression procedure. This approach produces a curvilinear regression method, the results of which are analyzed by statistical significance testing and the best-fit curve is selected for use in developing the design day sendouts. The factors derived from the curve selected are used to calculate current load requirements for a 0 degrees F day and a -5 degrees F hour. 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 expectations on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate model 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 is totally interactive in that it 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 sale revenues. The corporate model system is composed of five separate models. Each model operates independently, but requires substantial external data inputs as well as data output results from one or more of the other models 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 average usage per customer and demands by rate classification. This data is transferred to the 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 re-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, supplemental fuel requirements, etc. Data is transferred to both the cost model and the revenue model downstream.

V. PGW Corporate Modeling System (Continued)

Gas Cost Model

The gas cost model is 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. It transfers these expenses to the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop the net natural gas expenses, net applicable GCR expenses and the GCR. It ascribes responsibility for the raw material costs, to firm and interruptible classes in accordance with PGW's tariff requirements, assigning cost on an as-used basis to customer classes applicable to such charges, and compensates for natural gas refunds and previous over or under billing of fuel expenses. Detail summary reports include specifics of raw material adjustment, statements of reconciliation, and determination of applicable sales and expenses. It transfers the results to 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 and budget 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 model system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes in a timely manner. Results assist in the development of PGW's annual Operating Budget.

V. PGW Corporate Modeling System (Continued)

The model allows the evaluation of remaining winter period requirements on both normal and design temperature patterns and the extrapolation of current years 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.

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 FIRST CLASS MAIL

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Office of Consumer Advocate
5th Floor, Forum Place Bldg.
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Gregory J. Stunder, Esq.

Date: March 1, 2004

Philadelphia Gas Works
Gregory J. Stunder
Senior Attorney

PGW

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

ORIGINAL

June 4, 2004

VIA OVERNIGHT MAIL

RECEIVED

JUN 0 4 2004

PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

James J. McNulty
Secretary
PA Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

Re: Philadelphia Gas Works - Annual Resource Planning Report

IRP-125042

Dear Secretary McNulty:

Enclosed for filing please find an original and seven (7) Philadelphia Gas Works' Annual Resource Planning Report, that includes Forms 3-9 and the Summary Report.

If you have any questions regarding this matter, please contact me. Thank you for your assistance with this matter.

Respectfully submitted,

Gregory J. Stunder

cc: Calvin Birge, Bureau of Conservation, Economics, and Energy Planning
Office of the Consumer Advocate
Office of the Small Business Advocate
Office of Trial Staff

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IRP-125042

ANNUAL RESOURCE PLANNING REPORT

Forms 3 - 9

Philadelphia Gas Works
Philadelphia, Pennsylvania

June 2004

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT

June 2004

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

PHILADELPHIA GAS WORKS
ANNUAL RESOURCE PLANNING REPORT

TABLE OF CONTENTS

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, 2C, 3, 4A, 4b, 5, 6, 7, 8 and 9 along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the June 1 filing. Please note that Forms 1A, 1B, 2A, 2B, 2C were already filed in the company's March 1 filing and included herein, without modification, for completeness.

All questions concerning the ARPR should be directed to Mr. Kenneth Dybalski, Manager – Gas Planning (215) 684-6317. The following individuals will be available to answer questions concerning specific forms:

Ms. Maria Hogan - Forms 3,4 and 6 at (215) 684-6618
Ms. Cristina Coltro – Forms 5,7,8, and 9 at (215) 684-6785

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
REPORTING UTILUTY: PHILADELPHIA GAS WORKS

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Fiscal Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Customers [1]						
Retail Residential	492,562	488,275	485,469	472,068	463,889	455,784
Retail Commercial	26,713	26,523	26,892	26,630	26,588	26,485
Retail Industrial	1,022	969	1,131	1,006	1,001	996
Other	-	-	-	-	-	-
Subtotal Sales Service	520,297	515,767	513,492	499,704	491,479	483,265
Electric Power Generation	3	8	5	5	5	5
Interruptible Customers	465	493	451	426	405	383
Transportation Service [2]	8	13	40	10,980	16,388	21,761
CUSTOMER TOTAL	520,773	516,281	513,987	511,116	508,277	505,414
Increase (Decrease)	na	(4,492)	(2,294)	(2,872)	(2,838)	(2,863)
Percent Change (%)	na	-0.9%	-0.4%	-0.6%	-0.6%	-0.6%

[1] Customer Count is based on the average number of billings over the course of the year.

[2] The increase in Transportation customers is due to Interruptible 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)

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Gas Supply:						
Supply Contracts	59,306	69,530	72,048	68,044	67,511	66,702
Storage Withdraws	14,817	16,428	13,063	9,633	9,555	10,019
LNG	1,242	3,463	2,742	2,085	2,553	2,209
Subtotal Gas Supply	75,364	89,421	87,853	79,762	79,620	78,931
Transportation	12,318	10,988	10,522	13,894	14,868	15,814
TOTAL GAS SUPPLY	87,683	100,409	98,375	93,655	94,488	94,745
Requirements:						
Firm Requirements	48,599	65,091	61,462	61,495	61,101	60,686
Liqufaction	1,666	2,742	3,173	2,274	2,804	2,415
Interruptible Requirements	6,872	6,885	4,810	6,057	5,847	5,481
Storage Injections	16,425	14,534	18,408	9,935	9,868	10,349
Sales to other LDC's	1,802	169	-	-	-	-
Subtotal Firm & Interruptible	75,364	89,421	87,853	79,761	79,620	78,931
Transportation	12,318	10,988	10,522	13,894	14,868	15,814
Load Reductions						
TOTAL GAS REQUIREMENTS	87,683	100,409	98,376	93,655	94,488	94,745
Surplus (Deficiency)	0	0	0	0	0	0

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

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Gas Supply:						
Supply Contracts	191	237	292	281	275	270
Storage Withdraws	257	208	164	166	166	166
LNG	11	171	255	270	270	270
Subtotal Gas Supply	459	616	711	717	712	707
Transportation	37	43	-	9	15	20
TOTAL GAS SUPPLY	496	659	711	726	726	727
Requirements:						
Firm Requirements	436	590	697	713	708	703
Interruptible Requirements	23	27	15	4	4	4
Subtotal Firm & Interruptible	459	616	711	717	712	707
Transportation	37	43	-	9	15	20
Load Reductions	-	-	-	-	-	-
TOTAL GAS REQUIREMENTS	496	659	711	726	726	727
Surplus (Deficiency)	0	0	0	0	0	0

[1] Peak Day is forecasted at a 2 degree temperature.

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

Response: Please see the attached forms.

FORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Conservation Works Program (CWP)

Existing [X] Proposed [ ]

Contact Person: Cristina Coltro
(215) 684-6785

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, automatic clock thermostat, insulation, etc.

Actual and/or Anticipated Results:

			Energy Savings		
Year	Peak Load Reduction Mcf	Electic Mwh	Gas Mcf	Oil Gallons	Other Results
2000 (1)			12.5		4087 Homes w/ Treatment
2001 (1)			13		4225 Homes w/ Treatment
2002 (2)			13		3180 Homes w/ Treatment

Monetary and Personal Resources:

		Categorized program Expenses		
Year	Personnel Est. Hrs. (4)	Outside Services	Admin. (PGW Internal)	Total
2000 (1)	44,957	$1,999,867	$60,000	$2,059,867
2001 (1)	46,475	$2,352,533	$60,000	$2,412,533
2002 (2)	34,980	$1,922,540	$60,000	$1,982,540

(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 forms.

FORM-IRP-GAS-6

ENERGY USERS

COMPANY: PHILADELPHIA GAS WORKS

Fiscal Year Ending August 31, 2003

	Number of Customers	Sales (Mcf)
Firm:		
Residential:		
Heating	425,214	45,345,456
Non-heating	63,061	2,108,704
Commercial	26,523	13,259,582
Industrial	969	1,331,868
Sub-total Firm	515,767	62,045,610
Interruptible		
Commercial & Industrial	501	6,093,984
Total Gas Sold	516,268	68,139,594
Unbilled Adjustment	-	263,927
Transportation	13	10,827,982
Utility Use	-	112,738
Total	516,281	79,344,241

Section 59.82 **Forms IRP-Gas 7 - Conservation and Load Management Program Cost Benefit Analysis Inputs**

Response: Please see the attached forms.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (4)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Conservation Works Program (CWP) - 2000 (1)	NA	12.5	44,957	$1,999,867	$60,000	$2,059,867
Conservation Works Program (CWP) - 2001 (1)	NA	13	46,475	$2,352,533	$60,000	$2,412,533
Conservation Works Program (CWP) - 2002 (2)	NA	13	34,980	$1,922,540	$60,000	$1,982,540

(1) Actual

(2) Actual figures except for Energy Savings

(4) 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 Results**

Response: Please see the attached forms.

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

t	Year	Energy Savings (E) Mcf	Average Energy Cost (ACE) $ per Mcf	Avoided Enegy Cost (MCE) $ per Mcf	Participant Demand Savings (D) Mcf	Utility Capacity Savings (G) Mcf	Average Demand Costs (ACD) $/Mcf	Avoided Demand Costs (MCD) $/Mcf	Participant Costs (PC) $
1	2002	39,270	$ 10.99	$ 3.03565	N/A	N/A	N/A		$ -
2	2003	39,270	$ 12.38	$ 5.62767	N/A	N/A	N/A		$ -
3	2004	39,270	$ 16.58	$ 5.43056	N/A	N/A	N/A		$ -
4	2005	39,270	$ 16.14	$ 5.43686	N/A	N/A	N/A		$ -
5	2006	39,270	$ 10.38	$ 4.84106	N/A	N/A	N/A		$ -
6	2007	39,270	$ 9.95	$ 4.41356	N/A	N/A	N/A		$ -
7	2008	39,270	$ 9.95	$ 4.41536	N/A	N/A	N/A		$ -
8	2009	39,270	$ 10.07	$ 4.53326	N/A	N/A	N/A		$ -
9	2010	39,270	$ 10.07	$ 4.53191	N/A	N/A	N/A		$ -
10	2011	39,270	$ 10.26	$ 4.71894	N/A	N/A	N/A		$ -
11	2012	39,270	$ 10.44	$ 4.90597	N/A	N/A	N/A		$ -
12	2013	39,270	$ 10.63	$ 5.09300	N/A	N/A	N/A		$ -
13	2014	39,270	$ 10.82	$ 5.28004	N/A	N/A	N/A		$ -
14	2015	39,270	$ 11.00	$ 5.46707	N/A	N/A	N/A		$ -
15	2016	39,270	$ 11.19	$ 5.65410	N/A	N/A	N/A		$ -
16	2017	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
17	2018	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
18	2019	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
19	2020	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
20	2021	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
21	2022	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
22	2023	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
23	2024	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
24	2025	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
25	2026	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

				Discount Rates					
t	Year	Incentive Cost (I) $	Utility Costs (UC) $	Participant (d) %	Non-Participant (d) %	Utility (1) (d) %	Escalation Rate (e) %	System Sales or Demand (S) Mcf	Sales or Demand Ratio (f) %
1	2002	$ -	$1,922,540	5.9	5.9	5.9	$ -	58,640,508	0.0079
2	2003	$ -	$ -	5.9	5.9	5.9	$ -	69,189,282	0.0067
3	2004	$ -	$ -	5.9	5.9	5.9	$ -	65,421,830	0.0071
4	2005	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
5	2006	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
6	2007	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
7	2008	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
8	2009	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
9	2010	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
10	2011	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
11	2012	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
12	2013	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
13	2014	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
14	2015	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
15	2016	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
16	2017	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
17	2018	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
18	2019	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
19	2020	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
20	2021	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
21	2022	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
22	2023	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
23	2024	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
24	2025	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
25	2026	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074

(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 59.81 **Forms IRP-Gas 9 - 2000 Annual Resource Summary Planning Report**

Response: The Summary Report is included as a separate document.

Company Name:
FORM-IRP-GAS-9

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

Program:

Conservation Works Program (CWP)

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						
2002	2026	$ 2,367,648	$ 1,922,540	$ 5,507,442	$ 27,896	$ 5,507,442	$ 27,896

	NET PRESENT VALUE			BENEFIT COST RATE			
Discounted Payback Period Yrs.	Participant (NPVp) $	Non-Part (NPVnp) $	Utility (NPVu) $	Participant (BCRp)	Non-Part (BCRnp)	Utility (BCRu)	Rate Impact Non-Part (RIMnp) $/Mcf
25	$ 5,479,546	(5,022,227.16)	$445,108.34	197.43	0.32	1.23	0.038

ANNUAL RESOURCE PLANNING REPORT

Summary Report

Philadelphia Gas Works
Philadelphia, Pennsylvania

June 2004

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT

June 2004

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

PHILADELPHIA GAS WORKS
ANNUAL RESOURCE PLANNING REPORT

TABLE OF CONTENTS

Table of Contents (Continued)

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, 2C, 3, 4A, 4b, 5, 6, 7, 8 and 9 along with a general discussion of the methodologies, data sources, and assumptions are being submitted to meet the requirements of the June 1 filing. Please note that Forms 1A, 1B, 2A, 2B, 2C were already filed in the company's March 1 filing and included herein, without modification, for completeness.

All questions concerning the ARPR should be directed to Mr. Kenneth Dybalski, Manager – Gas Planning (215) 684-6317. The following individuals will be available to answer questions concerning specific forms:

Ms. Maria Hogan - Forms 1,2,3,4 and 6 at (215) 684-6618
Ms. Cristina Coltro – Forms 5,7,8, and 9 at (215) 684-6785

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 5 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 meeting its contractual obligations to supply all of its current customers in its service territory on the coldest day and throughout the season. 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, intending to secure the lowest overall price, consistent with the primary 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 maximize net contributions subject to reliability constraints. Supply contract obligations are honored and prudent Gas Control operational requirements are assumed. Storage contracts are drawn upon so as to always maintain an inventory level sufficient for protection in the event that design temperature conditions should occur in the remaining segment of any 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, maximizing net contributions subject to reliability constraints.

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions

The PGW Gas Supply Policy Committee, representing 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 first securing transportation capacity rights. Then sources of supply are contracted to cover the firm transport rights taking into consideration 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 damage to peak day and peak winter season delivery capability. Direct control of all storage is sought to permit PGW to minimize winter costs by injecting lower priced summer 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 deliverabilty 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 long term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime capacity required 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 deliverabilty equal to approximately 64% 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 and Global Insight) 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 32% 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

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

do not contain bundled transportation to the PGW city gate. Therefore, storages must flow within PGW's contractual upstream capacity rights on TETCO and TGPL. Typical daily delivery from these fields utilizes approximately 4% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price counter to 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/or 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) Customer Survey - Information as gathered by PGW's Marketing Department and used for annual projections by month and year.
2) 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.
3) Historical Data -- data showing long-term demand trends, conservation and utilization patterns by the various classes of customers -- Residential, Commercial, Industrial and Interruptible.
4) Judgement -- 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 43 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 customer's 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, reveals 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 4555 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 as a tool to measure space heating requirements, i.e., on a day experiencing an average temperature of 40 degrees F. there would be counted 25 degree days. The annual 4555 degree days, which compose 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 and space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produces a daily statement 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 reported 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. In addition, they differ on a monthly basis in the distribution pattern. For the convenience of distributing meter reading and billing efforts

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

uniformly over the available number of working days in a month, 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 readings. For example, assume the month of January contained 900 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 company records for these customers would have reflected 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 December temperature experience, while cycle 20 customers, with meter readings taken possibly December 28 and January 29, would reflect principally the January temperature experience.

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

Methodology Used to Develop Monthly Estimates

A trial domestic factor is developed by class of customers from sales reported for the previous year's summer months. 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 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, the following categories 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 budget run. Declines are projected for anticipated losses to electric and other fuels or demolitions and from 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 within the Marketing Department, where staff dealing with individual classes of customers and having the most direct knowledge of conditions within their sphere, project annual load additions which are translated into count 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 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 customers.

Finally, incremental Marketing efforts are concentrated on Air Conditioning and Co-generation opportunities. Rate design has been implemented fostering off-peak increase in utilization of current supply resources in an air conditioning discount, an interruptible Co-generation Rate and a Natural Gas Vehicle (NGV) Service. It is intended to limit on-peak expansion to acceptable interruptible availability of current resources rather than allowing the creation of new peak demands.

IV. Design Day Forecasting Methodology and Assumptions

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

The projected demands for design day is developed utilizing previous winter period 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 is reduced to base sendout by removal of the interruptible load. A computer generated linear regression procedure is utilized to develop a calculated sendout versus the actual sendout from which the necessary constants (factors) required to have the calculated sendout match, within a reasonable percent of error to the actual sendout are developed. The process is repeated in a quadratic regression and a cubic regression procedure. This approach produces a curvilinear regression method, the results of which are analyzed by statistical significance testing and the best-fit curve is selected for use in developing the design day sendouts. The factors derived from the curve selected are used to calculate current load requirements for a 0 degrees F day and a -5 degrees F hour. 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 expectations on an annual basis (by day) to the derived base-year design day requirements.

V. PGW Corporate Modeling System

General Description

The corporate model 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 is totally interactive in that it 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 sale revenues. The corporate model system is composed of five separate models. Each model operates independently, but requires substantial external data inputs as well as data output results from one or more of the other models 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 average usage per customer and demands by rate classification. This data is transferred to the 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 re-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, supplemental fuel requirements, etc. Data is transferred to both the cost model and the revenue model downstream.

V. PGW Corporate Modeling System (Continued)

Gas Cost Model

The gas cost model is 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. It transfers these expenses to the Gas Cost Rate Model.

Gas Cost Rate Model

The gas cost rate model is used to develop the net natural gas expenses, net applicable GCR expenses and the GCR. It ascribes responsibility for the raw material costs, to firm and interruptible classes in accordance with PGW's tariff requirements, assigning cost on an as-used basis to customer classes applicable to such charges, and compensates for natural gas refunds and previous over or under billing of fuel expenses. Detail summary reports include specifics of raw material adjustment, statements of reconciliation, and determination of applicable sales and expenses. It transfers the results to 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 and budget 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 model system allows PGW management to effectively address supply/demand balancing, supply facilities planning, projected sales, cost, revenues, and sendout volumes in a timely manner. Results assist in the development of PGW's annual Operating Budget.

V. PGW Corporate Modeling System (Continued)

The model allows the evaluation of remaining winter period requirements on both normal and design temperature patterns and the extrapolation of current years 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.

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)

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Requirements:						
Retail Residential	35,591	47,656	45,135	44,749	44,302	43,872
Retail Commercial	10,369	13,317	12,606	12,898	12,918	12,905
Retail Industrial	1,098	1,337	1,199	1,462	1,508	1,552
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	1,416	2,669	2,397	2,251	2,237	2,222
Company Use	126	113	124	135	135	135
Other	-	-	-	-	-	-
Subtotal Firm	48,599	65,091	61,462	61,495	61,101	60,686
Interruptible Requirements:						
Retail	6,315	5,984	4,181	5,562	5,359	5,008
Electric Power Generation	114	110	87	100	99	98
Company's Own Plant	258	371	200	283	344	299
Unaccounted For Gas	185	420	342	112	44	76
Subtotal Interruptible	6,872	6,885	4,810	6,057	5,847	5,481
SUBTOTAL FIRM AND INTERRUPTIBLE	55,471	71,976	66,272	67,552	66,948	66,167
Transportation:						
Firm Residential	-	-	-	491	788	1,082
Firm Commercial	-	-	-	161	259	357
Firm Industrial	-	-	-	130	211	292
Interruptible Residential	-	-	-			
Interruptible Commercial	-	59	82	183	200	217
Interruptible Industrial [3]	2,416	1,614	2,256	5,004	5,486	5,941
Other - Non-Utility Power Producers	9,903	9,315	8,184	7,925	7,925	7,925
Subtotal Transportation	12,318	10,988	10,522	13,894	14,868	15,814
TOTAL GAS REQUIREMENTS	67,790	82,964	76,794	81,446	81,816	81,981
Increase (Decrease)	na	15,174	(6,170)	4,651	370	166
Percent Change (%)	na	22.38%	-7.44%	6.06%	0.45%	0.20%

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

	Historical Data		Current Year	Three Year Forecast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Requirements:						
Retail Residential	319	432	512	519	513	508
Retail Commercial	93	121	143	150	150	149
Retail Industrial	10	12	14	17	17	18
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	13	24	27	26	26	26
Company Use	1	1	1	2	2	2
Other	-	-	-	-	-	-
Subtotal Firm	436	590	697	713	708	703
Interruptible Requirements:						
Retail	23	25	10	-	-	-
Electric Power Generation	-	-	-	-	-	-
Company's Own Plant	1	2	5	4	4	4
Unaccounted For Gas	-	-	-	-	-	-
Subtotal Interruptible	23	27	15	4	4	4
SUBTOTAL FIRM AND INTERRUPTIBLE	459	616	711	717	712	707
Transportation:						
Firm Residential	-	-	-	6	9	13
Firm Commercial	-	-	-	2	3	4
Firm Industrial	-	-	-	2	2	3
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	-	-	-	-	-	-
Interruptible Industrial	-	1	-	-	-	-
Other - Non-Utility Power Producers	37	42	-	-	-	-
Subtotal Transportation	37	43	-	9	15	20
TOTAL GAS REQUIREMENTS	496	659	711	726	726	727
Increase (Decrease)	na	162	53	17	1	-
Percent Change (%)	na	32.69%	7.99%	2.39%	0.07%	0.04%

[1] Peak Day is forecasted at a 2 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: NATURAL GAS SUPPLY
TABLE 1: ANNUAL/PEAK SUPPLY
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(Volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast [1]					
Index Year	-2		-1		0		1		2		3	
Actual Year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Gas Supply for Sales Service												
TETCO	-	-	-	-	-	-	-	-	-	-	-	-
TRANSCO	5,401	1	19,477	53	15,146	53	11,309	53	-		-	-
Spot Purchases	53,905	190	50,053	184	56,903	238	56,735	227	67,511	275	66,702	270
Storage Withdrawals	14,817	257	16,428	208	13,063	164	9,633	166	9,555	166	10,019	166
LNG Withdrawal	1,242	11	3,335	171	2,742	255	2,085	270	2,553	270	2,209	270
Company Production	-	-	-	-	-	-	-	-	-	-	-	-
LNG Purchases	-	-	127	-	-	-	-	-	-	-	-	-
Exchanges with other LDCs	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Gas Supply	75,364	459	89,421	616	87,853	711	79,762	717	79,620	712	78,931	707
Total Transportation Services	12,318	37	10,988	43	10,522	-	13,894	9	14,868	15	15,814	20
TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE	87,683	496	100,409	659	98,375	711	93,655	726	94,488	726	94,745	727
Deductions												
Underground Storage Injections & Fuels	16,425	-	14,534	-	18,408	-	9,935	-	9,868	-	10,349	-
LNG Liquefactions & Fuels	1,666	-	2,742	-	3,173	-	2,274	-	2,804	-	2,415	-
Sales to other LDC's	1,802	-	169	-	-	-	-	-	-	-	-	-
Total Deductions	19,893	-	17,445	-	21,581	-	12,209	-	12,672	-	12,764	-
NET GAS SUPPLY	67,790	496	82,964	659	76,794	711	81,446	726	81,816	726	81,981	727

[1] Peak Day is forecasted at a 2 degree temperature.

FORM-IRP-GAS-2B: NATURAL GAS TRANSPORTATION
REPORTING UTILITY: PHILADELPHIA GAS WORKS
(volumes in MMcf)

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
City Gate Transportation Contracts:	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
Texas Eastern Transmission Corp.	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43	2,570	43
Texas Eastern Transmission Corp.	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20	2,390	20
Transcontinental Transmission Corp.	453	5	453	5	453	5	453	5	453	5	453	5
Total	9,137	128	9,137	128	9,137	128	9,137	128	9,137	128	9,137	128
Upstream Transportation Contracts:												
Transcontinental Transmission Corp.	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160	58,546	160
Texas Eastern Transmission Corp.	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73	26,578	73
Texas Eastern Transmission Corp.	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23	8,442	23
Texas Eastern Transmission Corp.	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
Texas Eastern Transmission Corp.	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17	2,359	17
Transcontinental Transmission Corp.	172	2	172	2	172	2	172	2	172	2	172	2
Total	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293	98,456	293
Storage-Related Transportation Contracts:												
Dominion Transmission Inc.	9,110	25	9,110	25	9,110	25	9,110	25	9,110	25	9,110	25
Dominion Transmission Inc.	2,760	8	2,760	8	2,760	8	2,760	8	2,760	8	2,760	8
Equitrans	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5	1,911	5
Total	13,782	38	13,782	38	13,782	38	13,782	38	13,782	38	13,782	38

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

	Historical Data				Current Year		Three Year Forecast					
Index Year	-2		-1		0		1		2		3	
Actual year	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007	
	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
ANR	1,824	12	1,824	12	-	-	-	-	-	-	-	-
Transcontinental Transmission Corp.	802	80	802	80	802	80	802	80	802	80	802	80
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	18,562	294	18,562	294	16,738	281	16,738	281	16,738	281	16,738	281

[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.	03/31/2006
Transcontinental Transmission Corp.	Evergreen
Texas Eastern Transmission Corp.	04/30/2012
Texas Eastern Transmission Corp.	04/30/2012
ANR	03/31/2003
Transcontinental Transmission Corp.	10/31/2013
Equitrans	03/31/2004
Transcontinental Transmission Corp.	04/15/2004

[2] *For purposes of this report, except ANR, all contracts due to expire are assumed renewed for the forecast years.*

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
REPORTING UTILUTY PHILADELPHIA GAS WORKS

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Fiscal Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Firm Customers [1]						
Retail Residential	492,562	488,275	485,469	472,068	463,889	455,784
Retail Commercial	26,713	26,523	26,892	26,630	26,588	26,485
Retail Industrial	1,022	969	1,131	1,006	1,001	996
Other	-	-	-	-	-	-
Subtotal Sales Service	520,297	515,767	513,492	499,704	491,479	483,265
Electric Power Generation	3	8	5	5	5	5
Interruptible Customers	465	493	451	426	405	383
Transportation Service [2]	8	13	40	10,980	16,388	21,761
CUSTOMER TOTAL	520,773	516,281	513,987	511,116	508,277	505,414
Increase (Decrease)	na	(4,492)	(2,294)	(2,872)	(2,838)	(2,863)
Percent Change (%)	na	-0.9%	-0.4%	-0.6%	-0.6%	-0.6%

[1] Customer Count is based on the average number of billings over the course of the year.

[2] The increase in Transportation customers is due to Interruptible 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)

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Gas Supply:						
Supply Contracts	59,306	69,530	72,048	68,044	67,511	66,702
Storage Withdraws	14,817	16,428	13,063	9,633	9,555	10,019
LNG	1,242	3,463	2,742	2,085	2,553	2,209
Subtotal Gas Supply	75,364	89,421	87,853	79,762	79,620	78,931
Transportation	12,318	10,988	10,522	13,894	14,868	15,814
TOTAL GAS SUPPLY	87,683	100,409	98,375	93,655	94,488	94,745
Requirements:						
Firm Requirements	48,599	65,091	61,462	61,495	61,101	60,686
Liqufaction	1,666	2,742	3,173	2,274	2,804	2,415
Interruptible Requirements	6,872	6,885	4,810	6,057	5,847	5,481
Storage Injections	16,425	14,534	18,408	9,935	9,868	10,349
Sales to other LDC's	1,802	169	-	-	-	-
Subtotal Firm & Interruptible	75,364	89,421	87,853	79,761	79,620	78,931
Transportation	12,318	10,988	10,522	13,894	14,868	15,814
Load Reductions						
TOTAL GAS REQUIREMENTS	87,683	100,409	98,376	93,655	94,488	94,745
Surplus (Deficiency)	0	0	0	0	0	0

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

	Historical Data		Current Year	Three Year Forcast		
Index Year	-2	-1	0	1	2	3
Actual Year	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Gas Supply:						
Supply Contracts	191	237	292	281	275	270
Storage Withdraws	257	208	164	166	166	166
LNG	11	171	255	270	270	270
Subtotal Gas Supply	459	616	711	717	712	707
Transportation	37	43	-	9	15	20
TOTAL GAS SUPPLY	496	659	711	726	726	727
Requirements:						
Firm Requirements	436	590	697	713	708	703
Interruptible Requirements	23	27	15	4	4	4
Subtotal Firm & Interruptible	459	616	711	717	712	707
Transportation	37	43	-	9	15	20
Load Reductions	-	-	-	-	-	-
TOTAL GAS REQUIREMENTS	496	659	711	726	726	727
Surplus (Deficiency)	0	0	0	0	0	0

[1] Peak Day is forecasted at a 2 degree temperature.

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

Response: Please see the attached forms.

FORM-IRP-GAS-5 PROGRAM DESCRIPTION

Company: Philadelphia Gas Works (PGW)

Program: Conservation Works Program (CWP)

Existing [X] Proposed [ ]

Contact Person: Cristina Coltro
(215) 684-6785

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, automatic clock thermostat, insulation, etc.

Actual and/or Anticipated Results:

			Energy Savings		
Year	Peak Load Reduction Mcf	Electic Mwh	Gas Mcf	Oil Gallons	Other Results
2000 (1)			12.5		4087 Homes w/ Treatment
2001 (1)			13		4225 Homes w/ Treatment
2002 (2)			13		3180 Homes w/ Treatment

Monetary and Personal Resources:

		Categorized program Expenses		
Year	Personnel Est. Hrs. (4)	Outside Services	Admin. (PGW Internal)	Total
2000 (1)	44,957	$1,999,867	$60,000	$2,059,867
2001 (1)	46,475	$2,352,533	$60,000	$2,412,533
2002 (2)	34,980	$1,922,540	$60,000	$1,982,540

(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 forms.

FORM-IRP-GAS-6

ENERGY USERS

COMPANY: PHILADELPHIA GAS WORKS

Fiscal Year Ending August 31, 2003

	Number of Customers	*Sales (Mcf)*
Firm:		
Residential:		
Heating	425,214	45,345,456
Non-heating	63,061	2,108,704
Commercial	26,523	13,259,582
Industrial	969	1,331,868
Sub-total Firm	515,767	62,045,610
Interruptible		
Commercial & Industrial	501	6,093,984
Total Gas Sold	516,268	68,139,594
Unbilled Adjustment	-	263,927
Transportation	13	10,827,982
Utility Use	-	112,738
Total	516,281	79,344,241

Section 59.82 **Forms IRP-Gas 7 - Conservation and Load Management Program Cost Benefit Analysis Inputs**

Response: Please see the attached forms.

FORM-IRP-GAS-7 PROGRAM SUMMARY

Company: Philadelphia Gas Works (PGW)

Program Name	Peak Load Reduction (Mcf)	Energy Use Change (Mcf)	Personnel Est. Hrs (4)	Categorized Program Expenses		
				Outside Services	Adm.	Total
Conservation Works Program (CWP) - 2000 (1)	NA	12.5	44,957	$1,999,867	$60,000	$2,059,867
Conservation Works Program (CWP) - 2001 (1)	NA	13	46,475	$2,352,533	$60,000	$2,412,533
Conservation Works Program (CWP) - 2002 (2)	NA	13	34,980	$1,922,540	$60,000	$1,982,540

(1) Actual

(2) Actual figures except for Energy Savings

(4) 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 Results**

Response: Please see the attached forms.

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

t	Year	Energy Savings (E) Mcf	Average Energy Cost (ACE) $ per Mcf	Avoided Enegy Cost (MCE) $ per Mcf	Participant Demand Savings (D) Mcf	Utility Capacity Savings (G) Mcf	Average Demand Costs (ACD) $/Mcf	Avoided Demand Costs (MCD) $/Mcf	Participant Costs (PC) $
1	2002	39,270	$ 10.99	$ 3.03565	N/A	N/A	N/A		$ -
2	2003	39,270	$ 12.38	$ 5.62767	N/A	N/A	N/A		$ -
3	2004	39,270	$ 16.58	$ 5.43056	N/A	N/A	N/A		$ -
4	2005	39,270	$ 16.14	$ 5.43686	N/A	N/A	N/A		$ -
5	2006	39,270	$ 10.38	$ 4.84106	N/A	N/A	N/A		$ -
6	2007	39,270	$ 9.95	$ 4.41356	N/A	N/A	N/A		$ -
7	2008	39,270	$ 9.95	$ 4.41536	N/A	N/A	N/A		$ -
8	2009	39,270	$ 10.07	$ 4.53326	N/A	N/A	N/A		$ -
9	2010	39,270	$ 10.07	$ 4.53191	N/A	N/A	N/A		$ -
10	2011	39,270	$ 10.26	$ 4.71894	N/A	N/A	N/A		$ -
11	2012	39,270	$ 10.44	$ 4.90597	N/A	N/A	N/A		$ -
12	2013	39,270	$ 10.63	$ 5.09300	N/A	N/A	N/A		$ -
13	2014	39,270	$ 10.82	$ 5.28004	N/A	N/A	N/A		$ -
14	2015	39,270	$ 11.00	$ 5.46707	N/A	N/A	N/A		$ -
15	2016	39,270	$ 11.19	$ 5.65410	N/A	N/A	N/A		$ -
16	2017	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
17	2018	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
18	2019	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
19	2020	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
20	2021	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
21	2022	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
22	2023	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
23	2024	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
24	2025	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -
25	2026	20,796	$ 11.38	$ 5.84114	N/A	N/A	N/A		$ -

Company Name:
FORM-IRP-GAS-8

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

PROGRAM: Conservation Works Program

				Discount Rates					
t	Year	Incentive Cost (I) $	Utility Costs (UC) $	Participant (d) %	Non-Participant (d) %	Utility (1) (d) %	Escalation Rate (e) %	System Sales or Demand (S) Mcf	Sales or Demand Ratio (f) %
1	2002	$ -	$1,922,540	5.9	5.9	5.9	$ -	58,640,508	0.0079
2	2003	$ -	$ -	5.9	5.9	5.9	$ -	69,189,282	0.0067
3	2004	$ -	$ -	5.9	5.9	5.9	$ -	65,421,830	0.0071
4	2005	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
5	2006	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
6	2007	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
7	2008	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
8	2009	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
9	2010	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
10	2011	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
11	2012	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
12	2013	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
13	2014	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
14	2015	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
15	2016	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0071
16	2017	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
17	2018	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
18	2019	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
19	2020	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
20	2021	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
21	2022	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
22	2023	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
23	2024	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
24	2025	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074
25	2026	$ -	$ -	5.9	5.9	5.9	$ -	65,511,665	0.0074

(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 59.81 **Forms IRP-Gas 9 - 2000 Annual Resource Summary Planning Report**

Response: The Summary Report is included as a separate document.

Company Name:
FORM-IRP-GAS-9

Philadelphia Gas Works (PGW)
Cost-Benefit Analysis Input

Program:

Conservation Works Program (CWP)

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						
2002	2026	$ 2,367,648	$ 1,922,540	$ 5,507,442	$ 27,896	$ 5,507,442	$ 27,896

	NET PRESENT VALUE			BENEFIT COST RATE			
Discounted Payback Period Yrs.	Participant (NPVp) $	Non-Part (NPVnp) $	Utility (NPVu) $	Participant (BCRp)	Non-Part (BCRnp)	Utility (BCRu)	Rate Impact Non-Part (RIMnp) $/Mcf
25	$ 5,479,546	(5,022,227.16)	$445,108.34	197.43	0.32	1.23	0.038