Docket R-2019-XXXXXXX

Volume 2

Philadelphia Gas Works

Before The

Pennsylvania Public Utility Commission

Computation of Annual Purchased Gas Costs
For Twelve Months Ending August 31, 2020

66 Pa.C.S. § 1307(f)

Information Submitted Pursuant To:

66 Pa.C.S. §§ 1307(f), 1317, 1318 and
52 Pa. Code § 53.61, et seq.

February 1, 2019

Philadelphia Gas Works 1307(f) - 2019 Prefiling

Table of Contents

Tab 4

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(5)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(5) A listing and updating, if necessary, of projections of gas supply and demand provided to the Commission for any purpose—see § 59.67 (relating to formats). In addition, provide an accounting of the difference between reported gas supply available and gas supply deliverable—including storage—from the utility to its customers under various circumstances and time periods.

Response:

Please see the attached document. PGW's next Annual Resource Planning Report (Forms 1 and 2) is due for submission to the Commission on March 1, 2019, and an updated Annual Resource Planning Report is not available at this time.

ANNUAL RESOURCE PLANNING REPORT

Philadelphia Gas Works

Philadelphia, Pennsylvania

March 2018

Forms 1 & 2

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Philadelphia Gas Works
800 West Montgomery Avenue
Philadelphia, Pennsylvania 19122

ANNUAL RESOURCE PLANNING REPORT
MARCH 2018

Forms 1 & 2

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

PHILADELPHIA GAS WORKS

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. The report must be submitted to:

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

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

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 202, 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: 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, Vice President, Energy Planning & Technical Compliance at 215-684-6317. The following individual is available to answer questions concerning Forms 1 and 2: Ms. Maria Hogan, Director – Gas Planning & Rates 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	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Firm Requirements:						
Retail Residential	30,604	32,668	35,189	35,131	35,382	35,595
Retail Commercial	6,747	7,178	7,507	7,664	7,809	7,968
Retail Industrial	332	378	402	401	401	401
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	1,017	1,715	1,468	1,492	1,503	1,515
Company Use	233	254	267	288	288	288
Other - Prior Period Adjustment	-	-	-	-	-	-
Subtotal Firm	38,934	42,194	44,833	44,976	45,384	45,767
Interruptible Requirements:						
Retail	38	27	138	667	667	667
Electric Power Generation	-	-	-	-	-	-
Company's Own Plant	44	50	91	106	106	106
Unaccounted For Gas	1	1	1	0	0	0
Subtotal Interruptible	83	79	231	773	774	773
SUBTOTAL FIRM AND INTERRUPTIBLE	39,017	42,273	45,064	45,749	46,158	46,540
Transportation:						
Firm Residential	43	60	180	70	70	70
Firm Commercial	3,801	4,138	4,548	4,387	4,472	4,537
Firm Industrial	406	430	468	517	517	517
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	6,265	6,694	8,341	9,503	9,501	10,504
Interruptible Industrial	6,336	5,956	5,492	7,296	7,754	7,917
Other - Non-Utility Power Producers	11,736	11,991	11,829	12,057	12,090	12,057
Subtotal Transportation	28,588	29,269	30,858	33,830	34,406	35,603
TOTAL GAS REQUIREMENTS	67,605	71,541	75,921	79,579	80,564	82,143
Increase (Decrease)	(14,203)	3,936	4,380	3,658	985	1,579
Percent Change (%)	-17.36%	5.82%	6.12%	4.82%	1.24%	1.96%

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

	Historical Data		Current Year [2]	Three Year Forecast [1]		
Index Year	-2	-1	0	1	2	3
Actual Year	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Firm Requirements:						
Retail Residential	368	330	443	460	464	467
Retail Commercial	81	72	94	100	102	105
Retail Industrial	4	4	5	5	5	5
Electric Power Generation	-	-	-	-	-	-
Exchanges with Other Utilities	-	-	-	-	-	-
Unaccounted For Gas	12	17	18	20	20	20
Company Use	3	3	3	4	4	4
Other	-	-	-	-	-	-
Subtotal Firm	468	426	564	589	595	601
Interruptible Requirements:						
Retail	1.5	-	0.2	1.9	1.9	2
Electric Power Generation	0.0	-	-	-	-	-
Company's Own Plant	0.4	0.4	0.5	0.5	0.5	0
Unaccounted For Gas	0.1	0.0	-	0.1	0.1	0.1
Subtotal Interruptible	2.0	0.4	0.7	2.5	2.5	2.5
SUBTOTAL FIRM AND INTERRUPTIBLE	470	426	565	592	597	603
Transportation:						
Firm Residential	1	0	-	-	-	-
Firm Commercial	38	33	45	50	51	51
Firm Industrial	4	3	5	5	5	5
Interruptible Residential	-	-	-	-	-	-
Interruptible Commercial	46	45	-	-	-	-
Interruptible Industrial	27	22	-	-	-	-
Other - Non-Utility Power Producers	45	46	-	-	-	-
Subtotal Transportation	160	150	50	55	56	56
TOTAL GAS REQUIREMENTS	630	577	615	646	653	659
Increase (Decrease)		(53)	38	31	7	7
Percent Change (%)		-8.5%	6.6%	5.1%	1.0%	1.0%

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

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

Section 59.81 **Forms IRP-Gas 2A, 2B and 2C - Annual and Peak Day Energy Resources, Transmission and Storage Contracts**

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

Response: Please see the attached documentation and forms.

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

	Historical Data				Current Year (2)		Three Year Forecast (1)					
Index Year	-2		-1		0		1		2		3	
Actual Year	2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Gas Supply for Sales Service												
Spot Purchases	41,473	192	45,387	178	43,784	262	46,831	254	47,819	273	47,795	258
Storage Withdrawals	10,201	178	10,269	169	13,717	176	13,773	187	11,608	168	11,498	182
LNG Withdrawal	1,259	98	1,357	77	2,470	163	1,903	195	2,010	201	2,033	208
LNG Purchases	-	-	-	-	-	-	-	-	-	-	-	-
Exchanges with other LDCs	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total Gas Supply	52,932	468	57,012	425	59,971	601	62,507	635	61,436	641	61,327	648
Total Transportation Services	28,588	162	29,269	150	30,858	25	33,830	23	34,406	24	35,603	24
TOTAL GAS SUPPLY AND TRANSPORTATION SERVICE	81,521	630	86,281	575	90,829	626	96,337	658	95,842	665	96,929	672
Deductions												
Pipeline: TRANS FUEL	1,006	-	998	-	894	7	1,011	7	1,034	7	1,038	7
Storage: INJ, INJ FUEL, WITHDRAW FUEL, TRANS FUEL	10,583	-	11,314	-	12,419	1	14,236	2	12,378	2	11,885	1
LNG: LIQUE, INJ FUEL, TRANS FUEL	2,327	-	2,428	-	1,594	3	1,512	3	1,866	4	1,863	4
Sales to other LDC's	-	-	-	-	-	-	-	-	-	-	-	-
Total Deductions	13,916	-	14,739	-	14,908	11	16,759	12	15,278	12	14,787	12
NET GAS SUPPLY	67,605	630	71,541	575	75,921	615	79,578	646	80,564	653	82,143	659
BTU	1.050		1.037		1.039		1.037		1.037		1.037	

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

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

FORM-IRP-GAS-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	2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
City Gate Transportation Contracts:												
Transcontinental Transmission Corp.	3,927	59	3,977	59	3,969	59	3,977	59	3,977	59	3,977	59
Texas Eastern Transmission Corp.	2,213	42	2,241	43	2,237	42	2,241	43	2,241	43	2,241	43
Texas Eastern Transmission Corp.	712	20	721	20	-	20	-	20	-	20	-	20
Transcontinental Transmission Corp.	436	5	441	5	441	5	441	5	441	5	441	5
Total	7,288	125	7,380	127	6,646	127	6,659	127	6,659	127	6,659	127
Upstream Transportation Contracts:												
Transcontinental Transmission Corp.	57,588	157	58,151	159	58,039	159	58,151	159	58,310	159	58,151	159
Texas Eastern Transmission Corp.	26,143	71	26,471	72	26,347	72	26,398	72	26,471	72	26,398	72
Texas Eastern Transmission Corp.	8,304	23	8,408	23	8,369	23	8,385	23	8,408	23	8,385	23
Texas Eastern Transmission Corp.	2,537	17	2,569	17	2,564	17	2,569	17	2,569	17	2,569	17
Texas Eastern Transmission Corp.	2,537	17	2,569	17	2,564	17	2,569	17	2,569	17	2,569	17
Transcontinental Transmission Corp.	169	2	171	2	170	2	171	2	171	2	171	2
Texas Eastern Transmission Corp.	1,743	5	1,765	5	1,756	5	1,760	5	1,765	5	1,760	5
Total	99,020	293	100,102	296	99,810	296	100,002	296	100,262	296	100,002	296
Storage-Related Transportation Contracts:												
Dominion Transmission Inc.	8,961	24	9,074	25	9,032	25	9,049	25	9,074	25	9,049	25
Dominion Transmission Inc.	2,715	7	2,749	8	2,736	7	2,741	8	2,749	8	2,741	8
Total	11,676	32	11,822	32	11,767	32	11,790	32	11,822	32	11,790	32

Conversions at 1050 Btu

FORM-IRP-GAS-2C: NATURAL GAS STORAGE
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	2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021	
	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak	Annual	Peak
Transcontinental Transmission Corp.	3,927	59	3,977	59	3,969	59	3,977	59	3,977	59	3,977	59
Dominion Transmission Inc.	3,594	32	3,639	32	3,632	32	3,639	32	3,639	32	3,639	32
Transcontinental Transmission Corp.	3,104	33	3,143	33	3,137	33	3,143	33	3,143	33	3,143	33
Texas Eastern Transmission Corp.	2,379	42	2,409	43	2,405	42	2,409	43	2,409	43	2,409	43
Texas Eastern Transmission Corp.	2,213	20	2,241	20	2,237	20	2,241	20	2,241	20	2,241	20
Transcontinental Transmission Corp.	712	84	721	85	-							
Transcontinental Transmission Corp.	436	5	441	5	441	5	441	5	441	5	441	5
Total	16,366	274	16,571	278	15,820	192	15,850	192	15,850	192	15,850	192

Forecasted Dth to Mcf Conversions at 1050 BTU.

	Contract Expiration Date [1]
Transcontinental Transmission Corp.	3/31/2023
Dominion Transmission Inc.	3/31/2020
Transcontinental Transmission Corp.	10/31/2018
Texas Eastern Transmission Corp.	4/30/2023
Texas Eastern Transmission Corp.	4/30/2023
Transcontinental Transmission Corp. (2)	10/31/2016
Transcontinental Transmission Corp.	4/15/2019

[1] For purposes of this report, contracts that are due to expire are assumed renewed for the forecast years.
[2] Contract terminates in 2016

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

PHILADELPHIA GAS WORKS
800 WEST MONTGOMERY AVENUE
PHILADELPHIA, PENNSYLVANIA

Annual Resource Planning Summary Report

Filed: March 2018

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

PHILADELPHIA GAS WORKS

2018 Annual Resource Planning Summary Report

T A B L E O F C O N T E N T S

Introduction

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

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

I. PGW's Overall Approach to Integrated Resource Planning

II. Supply Forecasting Methodology and Assumptions

III. Demand Forecasting Methodology and Assumptions

IV Design Day Forecasting Methodology and Assumptions

V. PGW Corporate Modeling System

I. PGW's Overall Approach to Integrated Resource Planning

PGW Optimization Standard for Purchasing and Utilizing Gas Supplies

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

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

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

II. Supply Forecasting Methodology and Assumptions
Basic Assumptions

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

Incorporated into our projections are additional implementation steps involved with developing a cohesive gas supply/demand strategy for the near term and the longer range. These include developing a cost relationship comparison for current resources and a review of current contract terms and alternatives for continuing, extending, modifying or eliminating contracts.
In order to achieve this while maintaining a balance between economics and security of supply, the company uses a portfolio strategy approach. This approach incorporates a menu driven selection of services which allows the company to choose only those specific services necessary to meet its requirements. This is achieved by taking into consideration transportation capacity rights and then sources of supply are contracted to cover the firm transport rights over differing seasonal obligations.

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

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

PGW's supply strategy incorporates maintaining full current winter day 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 longer term supply contracts are necessary to support pipeline transportation capacity because reliance upon best effort spot suppliers to fill wintertime supply requirements to meet firm customers' demands has proven to be an unreliable alternative. As a result longer-term contracts are utilized to support firm transportation capacity. To accomplish this end, the Company purchases winter supply contracts with daily deliverability equal to approximately 37% of the contractual daily transportation entitlements on its two interstate pipelines with direct connections to PGW's service territory. Additionally, these supply contracts match the contractual entitlements of the two pipelines by sourcing supply in a manner consistent with the pipeline's upstream contractual requirements. In this way, PGW not only helps ensure the security of supply by sourcing the gas from geographically diverse supply regions but this diversity also allows PGW to take advantage of the pricing basis differential inherent in these supply locations.

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

A second component of PGW's supply portfolio or a volume equal to 27% of pipeline capacity, is purchased gas based on the daily midpoint price published in "Platt's Gas Daily". These contracts 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 WSS storage field in a manner similar to third party supply. Specifically, this storage contract does not contain transportation to the PGW city gate. Therefore, these storages must flow within

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

PGW's contractual upstream capacity rights on TGPL. Delivery from these fields utilizes approximately 8% of the daily TETCO and TGPL capacity rights to the Philadelphia city gates. These storage fields also act as a physical fixed price to counter winter price conditions since the WACOG usually reflects a winter/summer pricing differential. Additionally, PGW purchases 18% of its supply using day purchases as needed. PGW's summer purchasing strategy also incorporates a portfolio approach to the purchase of system supply and storage refill. The GCR filing is again used as a yardstick in purchasing supply for both system supply and storage refill. PGW attempts to always purchase a portion of its supply needs below the projected GCR cost estimate with a portion of the portfolio purchased at default, first-of-the-month pricing. These first of the month pricing option contracts, in most instances, allow PGW to evaluate daily spot prices and provide for a turn-off of first-of-the-month index priced supply in favor of the purchase of more advantageous daily spot purchases.

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

III. Demand Forecasting Methodology and Assumptions
Basic Assumptions

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

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

Customer Demand

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

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

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

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

In addition, consideration must be given to the variation of customer utilization patterns for space heating over the year, recognizing the transitional fall start-up of heaters, the deep winter period needs and the tapering off and shut-down which occurs in the spring. These usage patterns taken in conjunction with anticipated customer counts and appropriate temperature patterns form the basis of determining class and total system demands. Due to the inconsistencies of weather and weather forecasting techniques, no attempt is made to predict the specific daily temperatures of the projection period. Instead PGW has developed a normal monthly temperature pattern by analyzing statistical records of actual temperature patterns over a 20-year period. This pattern reflects 3,957 degree-days annually distributed in a stylized pattern preserving the monthly range of colder to warmer daily temperatures experienced in the January to May period and warmer to colder daily temperatures in the September to December period.

The term "degree days" quantifies the number of degrees of temperature below a base level of 65 degrees Fahrenheit and is used as a tool to measure space heating requirements, i.e. on a day experiencing an average temperature of 40 degrees F. there would be 25 degree days. The annual 3,957 degree days which is composed of the PGW normal monthly temperature patterns, form the basis of the calculation of the temperature sensitive component of demand. The application of the above described baseload, space heating factors and customer counts, when applied to a calendar based daily temperature pattern, produce a daily calculation of total customer requirements identified as sendout. It should be noted that there is a difference between sendout volume and sales volume. Sendout represents those volumes metered at the city gate to supply customers' requirements while sales are those volumes registered on customer meters. The variation between sendout and sales, after adjustments, is that portion which is lost and unaccounted for in the PGW distribution system.

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

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

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

Methodology Used to Develop Monthly Estimates

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

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

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

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

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

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

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

IV. Design Day and Design Hour Forecasting Methodology and Assumptions

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

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

V. PGW Corporate Modeling System

General Description

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

Gas Demand Model

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

Gas Supply Model

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

V. PGW Corporate Modeling System (Continued)

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

Gas Cost Rate Model

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

Revenue Model

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

Summary

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

V. PGW Corporate Modeling System (Continued)

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

Tab 5

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(6)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing, of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) as utility seeking recovery of purchased as costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

53.64(c)(6) Each Section l307 (f) utility shall file with the Commission a statement of its current fuel procurement practices, detailed information concerning, the staffing and expertise of its fuel procurement personnel, a discussion of its methodology for obtaining a least cost and reliable source of as supply, including a discussion of any methodologies, assumptions, models or rules of thumb employed in selecting its gas supply, transportation and storage mix, its loss prevention strategy in the event of fraud, nonperformance or interruption of performance, its participation in capacity release and reallocation programs, the impact, if any, upon least cost fuel procurement by constraints imposed by local transportation end users, interruptible service, balancing, storage and dispatching, options, and its strategy for improving its fuel procurement practices in the future and timetable for implementing these changes.

Response:

I. Current Strategy

PGW's current strategy for meeting the system's supply requirements is to use a portfolio approach in both contract structures and pricing. The Company's supply portfolio is split into four distinct categories. First, the Company enters into winter-only supply contracts. These winter-only supply arrangements provide gas supply that fills approximately thirty-seven percent (37%) of PGW's daily firm transportation entitlements on both Enbridge Energy (formerly Spectra Energy Gas Transmission) and Williams Gas pipelines.

Item 53.64(c)(6) continued

The Enbridge Energy and Williams pipelines represent the only interstate pipeline facilities with physical connections to the PGW service territory. These supply contracts also recognize pipeline receipt and delivery rights. By sourcing supply in this manner, PGW not only ensures security of supply from the pipelines, but also can take advantage of varying basis differentiated pricing in the market. These contracts all contain the ability to set the price for upcoming months, or to have the pricing default to an agreed upon market index. Second, an additional twenty-seven percent (27 %) is priced at the "gas daily mid-point" for each day of usage. These contracts allow for daily changes in volume. The operational flexibility of these contracts allows the company to increase or decrease gas supply to meet variations in send out requirements. Third, the company utilizes one (1) pipeline storage service as an additional source of supply. This storage service does not contain bundled transportation and therefore is moved to the city gates within PGW's firm interstate pipeline capacity. This service represents eight percent (8 %) of supply at a fixed price. Additionally the company purchases eighteen percent (18%) of its supply using day purchases as needed. The Company will again attempt to release capacity totaling 33,000 dekatherms as it did last year. If this proves less economic for the ratepayer, the Company will release these capacities for the winter and summer season separately. These capacity releases have twenty-four hour recall rights in their terms and conditions. They are split between the two interstate pipelines that service PGW. If the need would arise to recall this capacity PGW would do so and use its unbundled storage to fill the TGPL portion of 10,000 dekatherms and depend on market based prices to fill the TETCO portion of 23,000 dekatherms. The Company also releases firm capacity to its firm choice suppliers on a monthly basis based upon there firm pool size.

Additionally, PGW utilizes bundled storage and LNG to meet operational requirements and to accomplish other cost saving initiatives. Specifically, once design winter sendout requirements are ensured of being met, the company may utilize bundled storage and LNG inventories to displace higher priced supply based on the current market conditions. PGW uses a portfolio approach to address system supply and storage refill in the traditional non-peak season. The Gas Supply area uses the GCR filing as a template in an attempt to purchase gas volumes for both system supply and storage refill below the projected cost, when possible. However, some proportion of the supply will always be subject to spot market pricing, either daily or monthly due to the constant need to purchase gas to meet sendout variations that are inherent in a residential firm heating load. PGW seeks to recoup demand charges for its firm transportation through the FERC approved capacity release mechanisms.

The Company also enters into the incremental off system sales market to generate additional revenue when it is economically advantageous to do so. At all times, the Company is studying the market for any economic advantage that can be derived in support of the firm ratepayer.

II. Overview of Gas Supply Section

The Gas Supply Section of Gas Management is comprised of four departments: Gas Supply (which includes Gas Buying and Gas Accounting), Gas Transportation, Retail Choice, and Gas Control. The Gas Supply Section is responsible for ensuring that there is an adequate supply of natural gas available at all times to meet the requirements of PGW's approximately 500,000 firm customers. The Gas Supply Section accomplishes this through continuous interaction with various departments within PGW.

The staff of the Gas Supply Section is expected to maintain an in-depth working knowledge of all facets of the natural gas supply markets. The staff members of the four departments are required to maintain a working knowledge of PGW's natural gas contracts and facilities for the purpose of ensuring the safe and efficient operation of the distribution system, in accordance with company procedures, and in compliance with federal, state, and local regulations.

III. Organization and Staffing

Director of Gas Transportation and Gas Control until December 31, 2018: This person has over a twenty-five year history in the supply area and a seven-year history in gas control. This individual has a BA as well as having a background in natural gas accounting, allocation and confirmation experience under the first stages of FERC Order 636, and its effect on supply portfolio management. This individual retired at the end of December 2018, but has returned on a part-time basis to facilitate a transition to the new Director of Gas Transportation and Gas Control.

The new Director of Gas Transportation and Gas Control, as of January 1, 2019, is an individual with over seven years of experience in the gas supply area and two years of experience in gas control. This individual has a BS and MBA, as well as having a background in natural gas accounting, allocation and confirmation experience under the first stages of FERC Order 636, and its effect on supply portfolio management.

This individual and the departments' staff that report to him interact continuously and provide 24/7 coverage in all situations pertaining to the gas supply portfolio and operation of the natural gas facilities. This is done in conjunction with the Gas Supply Committee, as well as everyday meetings with the VP of Gas Supply and the other direct reports of the VP of Gas Supply. The following departments report directly to the Director: Gas Supply, Gas Control, Retail Choice, and Gas Transportation.

Item 53.64(c)(6) continued

Administrator, Gas Supply: this individual has over twelve years of experience in the gas supply area. This individual has a MBA and BBA, in addition to having an extensive background in the area of gas purchasing. Reporting to this individual are the gas accountants, gas coordinators and gas buyers.

Manager, Gas Control until December 31, 2018: This person has over nineteen years in the supply area, is responsible for the day-today management of the city distribution grid and daily confirmation of each day's gas volumes. This individual supervises the gas control department on a 24/7 basis. The Manager has a BS degree and extensive experience in the Distribution Department's network analysis area, as well as post graduate courses in computer science. This individual retired at the end of December 2018, but has returned on a part-time basis to facilitate a transition to the new Manager of Gas Control.

The new Manager of Gas Control, as of January 1, 2019, is an individual that has over nine years of experience in the supply area, is responsible for the day-today management of the city distribution grid and daily confirmation of each day's gas volumes. This individual supervises the Gas Control Department on a 24/7 basis. The manager has extensive experience in the Distribution Department's network analysis area.

Tab 6

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(7)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(7) A list of off-system sales, including transportation, storage, or capacity releases by the utility at less than the weighted average price of gas, or at less than the original contract cost of transportation, storage, or capacity supplied to the utility for its own customers.

Response: The attached schedules list off-system sales, capacity release, and asset management for the period of January 1, 2018 to December 31, 2018.

Schedule 1 – reflects all off-system sales margins for the period January 1, 2018 to December 31, 2018.

Schedule 2 – would reflect any off-system sales transactions that were done at less than the weighted average cost of gas. The schedule is blank because none of the deals match the criteria.

Schedule 3 – illustrates all capacity release deals.

Schedule 4 - reflects individual capacity release transactions that were done at less than the weighted average cost of capacity.

Schedule 1
Item 53.64(C)(7)

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2018

Off-System Sales			
MONTH	Total Revenue	Ratepayer Margin	Total Credit
Jan-18	$0	$0	$0
Feb-18	$0	$0	$0
Mar-18	$0	$0	$0
Apr-18	$0	$0	$0
May-18	$0	$0	$0
Jun-18	$0	$0	$0
Jul-18	$0	$0	$0
Aug-18	$0	$0	$0
Sep-18	$0	$0	$0
Oct-18	$0	$0	$0
Nov-18	$0	$0	$0
Dec-18	$0	$0	$0

Off-System Sale Profits Per WACOG Worksheet

PGW had no off system sales that were less than the weighted average cost of gas.

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2018

Schedule 3
Item 53.64(C)(7)

	Capacity Release		
	Total	Total	
	TGPL	TETCO	Total
MONTH	Credits	Credits	Credits
Jan-18	$ 559,908	$ 768,975	$ 1,328,884
Feb-18	$ 507,359	$ 710,763	$ 1,218,122
Mar-18	$ 559,951	$ 785,263	$ 1,345,215
Apr-18	$ 198,803	$ 308,353	$ 507,156
May-18	$ 225,949	$ 388,390	$ 614,339
Jun-18	$ 242,766	$ 394,590	$ 637,356
Jul-18	$ 251,325	$ 363,994	$ 615,319
Aug-18	$ 272,694	$ 364,788	$ 637,482
Sep-18	$ 282,548	$ 408,507	$ 691,055
Oct-18	$ 267,717	$ 447,096	$ 714,813
Nov-18	$ 681,740	$ 1,292,116	$ 1,973,856
Dec-18	$ 701,220	$ 1,332,171	$ 2,033,391
TOTAL	$ 4,751,981	$ 7,565,006	$ 12,316,987

Philadelphia Gas Works
Pennsylvania Public Utilities Commission
52 Pa. Code §53.61, et seq.
For the Twelve Months Ending December 31, 2018

M / YR	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	REPLACEMENT SHIPPER
January-18	TETCO	ELA - M-3	Y	98,549	$ 42,297.23	$ 0.4292	$ 42,297.23	Direct Energy
	TETCO	ELA - M-3	Y	162,595	$ 69,785.78	$ 0.4292	$ 69,785.78	CNE
	TETCO	ELA - M-3	Y	434	$ 186.28	$ 0.4292	$ 186.28	Energy Plus
	TETCO	ELA - M-3	Y	2,294	$ 984.58	$ 0.4292	$ 984.58	WGL Energy
	TETCO	ELA - M-3	Y	8,773	$ 3,765.36	$ 0.4292	$ 3,765.36	CIMA
	TETCO	ELA - M-3	Y	14,694	$ 6,306.66	$ 0.4292	$ 6,306.66	BlueRock Energy
	TETCO	ELA - M-3	Y	22,692	$ 9,739.41	$ 0.4292	$ 9,739.41	Sprague
	TETCO	ELA - M-3	Y	5,270	$ 2,261.89	$ 0.4292	$ 2,261.89	South Jersey
	TETCO	ELA - M-3	Y	82,336	$ 35,338.61	$ 0.4292	$ 35,338.61	UGI Energy Services
	TETCO	STX - M-3	Y	471,240	$ 519,259.36	$ 1.1019	$ 519,259.36	Freepoint Commodities
	TETCO	STX - M-3	Y	93,000	$ 79,050.00	$ 0.8500	$ 79,050.00	WGL Energy
				961,877			$ 768,975.16	
	TRANSCO	3-6	Y	98,549	$ 45,323.55	$ 0.45991	$ 45,323.55	Direct Energy
	TRANSCO	3-6	Y	162,595	$ 74,779.13	$ 0.45991	$ 74,779.13	CNE
	TRANSCO	3-6	Y	465	$ 213.90	$ 0.46000	$ 213.90	Energy Plus
	TRANSCO	3-6	Y	2,294	$ 1,054.93	$ 0.45986	$ 1,054.93	WGL Energy
	TRANSCO	3-6	Y	8,804	$ 4,048.91	$ 0.45989	$ 4,048.91	CIMA
	TRANSCO	3-6	Y	14,694	$ 6,758.00	$ 0.45992	$ 6,758.00	BlueRock Energy
	TRANSCO	3-6	Y	22,723	$ 10,450.41	$ 0.45990	$ 10,450.41	Sprague
	TRANSCO	3-6	Y	5,301	$ 2,437.84	$ 0.45988	$ 2,437.84	South Jersey
	TRANSCO	3-6	Y	82,367	$ 37,881.69	$ 0.45991	$ 37,881.69	UGI Energy Services
	TRANSCO	1-3	Y	155,000	$ 4,030.00	$ 0.02600	$ 4,030.00	BP
	TRANSCO	2-3	Y	155,000	$ 4,030.00	$ 0.02600	$ 4,030.00	BP
	TRANSCO	3-6	Y	310,000	$ 368,900.00	$ 1.19000	$ 368,900.00	Shell Energy North Amercia
				1,017,792			$ 559,908.36	
February-18	TETCO	ELA - M-3	Y	84,532	$ 36,061.34	$ 0.4266	$ 36,061.34	Direct Energy
	TETCO	ELA - M-3	Y	150,500	$ 64,203.30	$ 0.4266	$ 64,203.30	CNE
	TETCO	ELA - M-3	Y	420	$ 179.17	$ 0.4266	$ 179.17	Energy Plus
	TETCO	ELA - M-3	Y	2,072	$ 883.91	$ 0.4266	$ 883.91	WGL Energy
	TETCO	ELA - M-3	Y	7,616	$ 3,248.98	$ 0.4266	$ 3,248.98	CIMA
	TETCO	ELA - M-3	Y	15,736	$ 6,712.97	$ 0.4266	$ 6,712.97	BlueRock Energy
	TETCO	ELA - M-3	Y	20,440	$ 8,719.71	$ 0.4266	$ 8,719.71	Sprague
	TETCO	ELA - M-3	Y	5,040	$ 2,150.07	$ 0.4266	$ 2,150.07	South Jersey
	TETCO	ELA - M-3	Y	75,936	$ 32,394.29	$ 0.4266	$ 32,394.29	UGI Energy Services
	TETCO	ELA - M-3	Y	392	$ 167.22	$ 0.4266	$ 167.22	Shipley
	TETCO	STX - M-3	Y	439,824	$ 484,642.07	$ 1.1019	$ 484,642.07	Freepoint Commodities
	TETCO	STX - M-3	Y	84,000	$ 71,400.00	$ 0.8500	$ 71,400.00	WGL Energy
				886,508			$ 710,763.03	
	TRANSCO	3-6	Y	84,560	$ 38,890.04	$ 0.45991	$ 38,890.04	Direct Energy
	TRANSCO	3-6	Y	150,500	$ 69,216.56	$ 0.45991	$ 69,216.56	CNE
	TRANSCO	3-6	Y	420	$ 193.20	$ 0.46000	$ 193.20	Energy Plus
	TRANSCO	3-6	Y	2,072	$ 952.84	$ 0.45986	$ 952.84	WGL Energy
	TRANSCO	3-6	Y	7,644	$ 3,515.68	$ 0.45993	$ 3,515.68	CIMA
	TRANSCO	3-6	Y	15,764	$ 7,250.04	$ 0.45991	$ 7,250.04	BlueRock Energy
	TRANSCO	3-6	Y	20,440	$ 9,400.44	$ 0.45990	$ 9,400.44	Sprague
	TRANSCO	3-6	Y	5,068	$ 2,330.72	$ 0.45989	$ 2,330.72	South Jersey
	TRANSCO	3-6	Y	75,964	$ 34,936.44	$ 0.45991	$ 34,936.44	UGI Energy Services
	TRANSCO	3-6	Y	420	$ 193.20	$ 0.46000	$ 193.20	Shipley
	TRANSCO	1-3	Y	140,000	$ 3,640.00	$ 0.02600	$ 3,640.00	BP
	TRANSCO	2-3	Y	140,000	$ 3,640.00	$ 0.02600	$ 3,640.00	BP
	TRANSCO	3-6	Y	280,000	$ 333,200.00	$ 1.19000	$ 333,200.00	Shell Energy North Amercia
				922,852			$ 507,359.16	
March-18	TETCO	ELA - M-3	Y	89,962	$ 38,377.79	$ 0.42660	$ 38,377.79	Direct Energy
	TETCO	ELA - M-3	Y	168,578	$ 71,915.39	$ 0.42660	$ 71,915.39	CNE
	TETCO	ELA - M-3	Y	496	$ 211.60	$ 0.42661	$ 211.60	Energy Plus
	TETCO	ELA - M-3	Y	2,294	$ 978.62	$ 0.42660	$ 978.62	WGL Energy
	TETCO	ELA - M-3	Y	8,432	$ 3,597.08	$ 0.42660	$ 3,597.08	CIMA
	TETCO	ELA - M-3	Y	15,810	$ 6,744.54	$ 0.42660	$ 6,744.54	BlueRock Energy
	TETCO	ELA - M-3	Y	22,723	$ 9,693.63	$ 0.42660	$ 9,693.63	Sprague
	TETCO	ELA - M-3	Y	5,580	$ 2,380.43	$ 0.42660	$ 2,380.43	South Jersey
	TETCO	ELA - M-3	Y	82,770	$ 35,309.68	$ 0.42660	$ 35,309.68	UGI Energy Services
	TETCO	ELA - M-3	Y	1,023	$ 436.41	$ 0.42660	$ 436.41	Shipley
	TETCO	STX - M-3	Y	486,948	$ 536,568.00	$ 1.10190	$ 536,568.00	Freepoint Commodities
	TETCO	STX - M-3	Y	93,000	$ 79,050.00	$ 0.85000	$ 79,050.00	WGL Energy
				977,616			$ 785,263.17	

TRANSCO	3-6	Y	89,993	$	41,388.72	$	0.45991	$	41,388.72	Direct Energy
TRANSCO	3-6	Y	168,609	$	77,544.95	$	0.45991	$	77,544.95	CNE
TRANSCO	3-6	Y	496	$	228.16	$	0.46000	$	228.16	Energy Plus
TRANSCO	3-6	Y	2,294	$	1,054.93	$	0.45986	$	1,054.93	WGL Energy
TRANSCO	3-6	Y	8,463	$	3,892.36	$	0.45993	$	3,892.36	CIMA
TRANSCO	3-6	Y	15,841	$	7,285.31	$	0.45990	$	7,285.31	BlueRock Energy
TRANSCO	3-6	Y	22,754	$	10,464.98	$	0.45992	$	10,464.98	Sprague
TRANSCO	3-6	Y	5,611	$	2,580.44	$	0.45989	$	2,580.44	South Jersey
TRANSCO	3-6	Y	82,801	$	38,081.02	$	0.45991	$	38,081.02	UGI Energy Services
TRANSCO	3-6	Y	1,023	$	470.58	$	0.46000	$	470.58	Shipley
TRANSCO	1-3	Y	155,000	$	4,030.00	$	0.02600	$	4,030.00	BP
TRANSCO	2-3	Y	155,000	$	4,030.00	$	0.02600	$	4,030.00	BP
TRANSCO	3-6	Y	310,000	$	368,900.00	$	1.19000	$	368,900.00	Shell Energy North Amercia
			1,017,885					$	559,951.45	

April-18	TETCO	ELA - M-3	Y	87,180	$	37,190.99	$	0.4266	$	37,190.99	Direct Energy
	TETCO	ELA - M-3	Y	164,460	$	70,158.63	$	0.4266	$	70,158.63	CNE
	TETCO	ELA - M-3	Y	450	$	191.98	$	0.4266	$	191.98	Energy Plus
	TETCO	ELA - M-3	Y	2,220	$	947.05	$	0.4266	$	947.05	WGL Energy
	TETCO	ELA - M-3	Y	6,990	$	2,981.94	$	0.4266	$	2,981.94	CIMA
	TETCO	ELA - M-3	Y	15,840	$	6,757.35	$	0.4266	$	6,757.35	BlueRock
	TETCO	ELA - M-3	Y	22,050	$	9,406.54	$	0.4266	$	9,406.54	Sprague
	TETCO	ELA - M-3	Y	5,400	$	2,303.64	$	0.4266	$	2,303.64	South Jersey
	TETCO	ELA - M-3	Y	85,260	$	36,371.91	$	0.4266	$	36,371.91	UGI Energy Services
	TETCO	ELA - M-3	Y	1,500	$	639.90	$	0.4266	$	639.90	Shipley
	TETCO	WLA - M-3	Y	540,000	$	52,380.00	$	0.0970	$	52,380.00	Colonial Energy
	TETCO	WLA - M-3	Y	540,000	$	27,540.00	$	0.0510	$	27,540.00	Colonial Energy
	TETCO	STX - M-3	Y	90,000	$	7,290.00	$	0.0810	$	7,290.00	Texla Energy
	TETCO	STX - M-3	Y	471,240	$	54,192.60	$	0.1150	$	54,192.60	Tenaska
				2,032,590					$	308,352.53	

	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH		TOTAL MONTHLY CREDIT		CREDIT DTH		TOTAL CREDIT	
	TRANSCO	3-6	Y	87,210	$	40,041.60	$	0.45914	$	40,041.60	Direct Energy
	TRANSCO	3-6	Y	164,490	$	75,523.80	$	0.45914	$	75,523.80	CNE
	TRANSCO	3-6	Y	450	$	206.70	$	0.45933	$	206.70	Energy Plus
	TRANSCO	3-6	Y	2,220	$	1,019.40	$	0.45919	$	1,019.40	WGL Energy
	TRANSCO	3-6	Y	7,020	$	3,223.20	$	0.45915	$	3,223.20	CIMA
	TRANSCO	3-6	Y	15,870	$	7,286.40	$	0.45913	$	7,286.40	BlueRock
	TRANSCO	3-6	Y	22,050	$	10,124.10	$	0.45914	$	10,124.10	Sprague
	TRANSCO	3-6	Y	5,400	$	2,479.50	$	0.45917	$	2,479.50	South Jersey
	TRANSCO	3-6	Y	85,290	$	39,159.90	$	0.45914	$	39,159.90	UGI Energy Services
	TRANSCO	3-6	Y	1,500	$	688.50	$	0.45900	$	688.50	Shipley
	TRANSCO	3-6	Y	300,000	$	12,300.00	$	0.04100	$	12,300.00	Tenaska
	TRANSCO	2-3	Y	150,000	$	3,000.00	$	0.02000	$	3,000.00	Macquarie
	TRANSCO	1-3	Y	150,000	$	3,750.00	$	0.02500	$	3,750.00	Macquarie
				991,500					$	198,803.10	
May-18	TETCO	ELA - M-3	Y	3,162	$	1,348.91	$	0.4266	$	1,348.91	WGL Energy
	TETCO	ELA - M-3	Y	87,761	$	37,438.84	$	0.4266	$	37,438.84	Direct Energy
	TETCO	ELA - M-3	Y	527	$	224.81	$	0.4266	$	224.81	Energy Plus
	TETCO	ELA - M-3	Y	16,647	$	7,101.60	$	0.4266	$	7,101.60	BlueRock Energy
	TETCO	ELA - M-3	Y	2,418	$	1,031.52	$	0.4266	$	1,031.52	Vista Energy
	TETCO	ELA - M-3	Y	87,544	$	37,346.27	$	0.4266	$	37,346.27	UGI Energy Services
	TETCO	ELA - M-3	Y	15,500	$	6,612.30	$	0.4266	$	6,612.30	SFE Energy
	TETCO	ELA - M-3	Y	166,811	$	71,161.57	$	0.4266	$	71,161.57	CNE
	TETCO	ELA - M-3	Y	21,080	$	8,992.73	$	0.4266	$	8,992.73	Sprague
	TETCO	ELA - M-3	Y	744	$	317.39	$	0.4266	$	317.39	MPower Energy
	TETCO	ELA - M-3	Y	9,641	$	4,112.84	$	0.4266	$	4,112.84	CIMA
	TETCO	ELA - M-3	Y	1,984	$	846.38	$	0.4266	$	846.38	Shipley
	TETCO	ELA - M-3	Y	6,014	$	2,565.57	$	0.4266	$	2,565.57	South Jersey
	TETCO	ELA - M-3	Y	5,250	$	2,239.66	$	0.4266	$	2,239.66	Energy Plus
	TETCO	STX - M-3	Y	93,000	$	7,533.00	$	0.0810	$	7,533.00	Texla
	TETCO	STX - M-3	Y	486,948	$	55,999.02	$	0.1150	$	55,999.02	Tenaska
	TETCO	WLA - M-3	Y	558,000	$	71,758.83	$	0.1286	$	71,758.83	Grays Ferry
	TETCO	WLA - M-3	Y	558,000	$	71,758.83	$	0.1286	$	71,758.83	Grays Ferry
				2,121,031					$	388,390.07	
	TRANSCO	3-6	Y	558	$	256.06	$	0.45889	$	256.06	Energy Plus
	TRANSCO	3-6	Y	744	$	341.62	$	0.45917	$	341.62	MPower Energy
	TRANSCO	3-6	Y	1,984	$	911.09	$	0.45922	$	911.09	Shipley
	TRANSCO	3-6	Y	2,449	$	1,124.37	$	0.45911	$	1,124.37	Vista Energy
	TRANSCO	3-6	Y	3,162	$	1,451.73	$	0.45912	$	1,451.73	WGL Energy
	TRANSCO	3-6	Y	6,045	$	2,775.43	$	0.45913	$	2,775.43	South Jersey
	TRANSCO	3-6	Y	9,641	$	4,426.49	$	0.45913	$	4,426.49	CIMA
	TRANSCO	3-6	Y	15,500	$	7,116.98	$	0.45916	$	7,116.98	SFE Energy
	TRANSCO	3-6	Y	16,647	$	7,643.36	$	0.45914	$	7,643.36	BlueRock Energy
	TRANSCO	3-6	Y	21,111	$	9,693.08	$	0.45915	$	9,693.08	Sprague
	TRANSCO	3-6	Y	87,544	$	40,194.91	$	0.45914	$	40,194.91	UGI Energy Services
	TRANSCO	3-6	Y	87,761	$	40,294.42	$	0.45914	$	40,294.42	Direct Energy
	TRANSCO	3-6	Y	166,842	$	76,604.10	$	0.45914	$	76,604.10	CNE
	TRANSCO	3-6	Y	5,250	$	2,410.50	$	0.45914	$	2,410.50	Energy Plus
	TRANSCO	1-3	Y	110,000	$	1,100.00	$	0.01000	$	1,100.00	United Energy
	TRANSCO	3-6	Y	310,000	$	9,920.00	$	0.03200	$	9,920.00	Spotlight Energy
	TRANSCO	3-6	Y	310,000	$	12,710.00	$	0.04100	$	12,710.00	Tenaska
	TRANSCO	1-3	Y	155,000	$	3,875.00	$	0.02500	$	3,875.00	Macquarie
	TRANSCO	2-3	Y	155,000	$	3,100.00	$	0.02000	$	3,100.00	Macquarie
				1,465,238					$	225,949.14	

June-18	TETCO	ELA - M-3	Y	3,120	$	1,330.99	$	0.4266	$	1,330.99	WGL Energy
	TETCO	ELA - M-3	Y	84,840	$	36,192.75	$	0.4266	$	36,192.75	Direct Energy
	TETCO	ELA - M-3	Y	9,000	$	3,839.40	$	0.4266	$	3,839.40	Energy Plus
	TETCO	ELA - M-3	Y	16,440	$	7,013.31	$	0.4266	$	7,013.31	BlueRock Energy
	TETCO	ELA - M-3	Y	2,100	$	895.86	$	0.4266	$	895.86	Vista Energy
	TETCO	ELA - M-3	Y	85,860	$	36,627.87	$	0.4266	$	36,627.87	UGI Energy Services
	TETCO	ELA - M-3	Y	20,070	$	8,561.86	$	0.4266	$	8,561.86	SFE Energy
	TETCO	ELA - M-3	Y	162,450	$	69,301.18	$	0.4266	$	69,301.18	CNE
	TETCO	ELA - M-3	Y	20,400	$	8,702.64	$	0.4266	$	8,702.64	Sprague
	TETCO	ELA - M-3	Y	2,250	$	959.86	$	0.4266	$	959.86	MPower Energy
	TETCO	ELA - M-3	Y	12,900	$	5,503.14	$	0.4266	$	5,503.14	CIMA
	TETCO	ELA - M-3	Y	2,490	$	1,062.24	$	0.4266	$	1,062.24	Shipley
	TETCO	ELA - M-3	Y	6,270	$	2,674.78	$	0.4266	$	2,674.78	South Jersey
	TETCO	ELA - M-3	Y	120	$	51.19	$	0.4266	$	51.19	Palmco
	TETCO	ELA - M-3	Y	90	$	38.40	$	0.4267	$	38.40	Volunteer Energy
	TETCO	ELA - M-3	Y	630	$	268.76	$	0.4266	$	268.76	Big Apple
	TETCO	ELA - M-3	Y	420	$	179.17	$	0.4266	$	179.17	Josco Energy
	TETCO	STX - M-3	Y	90,000	$	7,290.00	$	0.0810	$	7,290.00	Texla
	TETCO	STX - M-3	Y	471,240	$	54,192.60	$	0.1150	$	54,192.60	Tenaska
	TETCO	WLA - M-3	Y	540,000	$	74,951.98	$	0.1388	$	74,951.98	Grays Ferry
	TETCO	WLA - M-3	Y	540,000	$	74,951.98	$	0.1388	$	74,951.98	Grays Ferry
				2,070,690					$	394,589.96	

	PIPELINE	PATH	RECALL STATUS	MONTHLY VOLUME DTH	TOTAL MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	
	TRANSCO	3-6	Y	9,000	$ 4,132.50	$ 0.45917	$ 4,132.50	Energy Plus
	TRANSCO	3-6	Y	2,280	$ 1,046.70	$ 0.45908	$ 1,046.70	MPower Energy
	TRANSCO	3-6	Y	2,520	$ 1,157.10	$ 0.45917	$ 1,157.10	Shipley
	TRANSCO	3-6	Y	2,100	$ 964.20	$ 0.45914	$ 964.20	Vista Energy
	TRANSCO	3-6	Y	3,150	$ 1,446.30	$ 0.45914	$ 1,446.30	WGL Energy
	TRANSCO	3-6	Y	6,270	$ 2,878.80	$ 0.45914	$ 2,878.80	South Jersey
	TRANSCO	3-6	Y	12,930	$ 5,936.40	$ 0.45912	$ 5,936.40	CIMA
	TRANSCO	3-6	Y	20,100	$ 9,228.60	$ 0.45913	$ 9,228.60	SFE Energy
	TRANSCO	3-6	Y	16,440	$ 7,548.30	$ 0.45914	$ 7,548.30	BlueRock Energy
	TRANSCO	3-6	Y	20,430	$ 9,380.40	$ 0.45915	$ 9,380.40	Sprague
	TRANSCO	3-6	Y	85,890	$ 39,435.60	$ 0.45914	$ 39,435.60	UGI Energy Services
	TRANSCO	3-6	Y	84,870	$ 38,967.30	$ 0.45914	$ 38,967.30	Direct Energy
	TRANSCO	3-6	Y	162,450	$ 74,587.50	$ 0.45914	$ 74,587.50	CNE
	TRANSCO	3-6	Y	90	$ 41.40	$ 0.46000	$ 41.40	Volunteer Energy
	TRANSCO	3-6	Y	150	$ 69.00	$ 0.46000	$ 69.00	Palmco
	TRANSCO	3-6	Y	630	$ 289.20	$ 0.45905	$ 289.20	Big Apple
	TRANSCO	3-6	Y	450	$ 206.70	$ 0.45933	$ 206.70	Josco Energy
	TRANSCO	3-6	Y	300,000	$ 15,300.00	$ 0.05100	$ 15,300.00	Sequent
	TRANSCO	1-3	Y	150,000	$ 1,500.00	$ 0.01000	$ 1,500.00	United Energy
	TRANSCO	3-6	Y	300,000	$ 9,600.00	$ 0.03200	$ 9,600.00	Spotlight Energy
	TRANSCO	3-6	Y	300,000	$ 12,300.00	$ 0.04100	$ 12,300.00	Tenaska
	TRANSCO	1-3	Y	150,000	$ 3,750.00	$ 0.02500	$ 3,750.00	Macquarie
	TRANSCO	2-3	Y	150,000	$ 3,000.00	$ 0.02000	$ 3,000.00	Macquarie
				1,779,750			$ 242,766.00	
July-18	TETCO	ELA - M-3	Y	88,009	$ 37,544.64	$ 0.4266	$ 37,544.64	Direct Energy
	TETCO	ELA - M-3	Y	132,742	$ 56,627.72	$ 0.4266	$ 56,627.72	CNE
	TETCO	ELA - M-3	Y	13,268	$ 5,660.14	$ 0.4266	$ 5,660.14	Energy Plus
	TETCO	ELA - M-3	Y	3,410	$ 1,454.70	$ 0.4266	$ 1,454.70	WGL Energy
	TETCO	ELA - M-3	Y	7,099	$ 3,028.43	$ 0.4266	$ 3,028.43	CIMA
	TETCO	ELA - M-3	Y	8,711	$ 3,716.11	$ 0.4266	$ 3,716.11	BlueRock Energy
	TETCO	ELA - M-3	Y	20,460	$ 8,728.23	$ 0.4266	$ 8,728.23	Sprague
	TETCO	ELA - M-3	Y	39,928	$ 17,033.29	$ 0.4266	$ 17,033.29	South Jersey
	TETCO	ELA - M-3	Y	78,089	$ 33,312.77	$ 0.4266	$ 33,312.77	UGI Energy Services
	TETCO	ELA - M-3	Y	2,232	$ 952.16	$ 0.4266	$ 952.16	Shipley
	TETCO	ELA - M-3	Y	806	$ 343.84	$ 0.4266	$ 343.84	MPower Energy
	TETCO	ELA - M-3	Y	10,850	$ 4,628.62	$ 0.4266	$ 4,628.62	SFE Energy
	TETCO	ELA - M-3	Y	35,278	$ 15,049.61	$ 0.4266	$ 15,049.61	Vista Energy
	TETCO	ELA - M-3	Y	5,766	$ 2,459.77	$ 0.4266	$ 2,459.77	Big Apple
	TETCO	ELA - M-3	Y	279	$ 119.02	$ 0.4266	$ 119.02	Josco Energy
	TETCO	ELA - M-3	Y	341	$ 145.46	$ 0.4266	$ 145.46	Palmco
	TETCO	ELA - M-3	Y	155	$ 66.12	$ 0.4266	$ 66.12	Volunteer Energy
	TETCO	STX - M-3	Y	93,000	$ 7,533.00	$ 0.0810	$ 7,533.00	Texla
	TETCO	STX - M-3	Y	486,948	$ 55,999.02	$ 0.1150	$ 55,999.02	Tenaska
	TETCO	WLA - M-3	Y	558,000	$ 54,795.63	$ 0.0982	$ 54,795.63	Grays Ferry
	TETCO	WLA - M-3	Y	558,000	$ 54,795.63	$ 0.0982	$ 54,795.63	Grays Ferry
				2,143,371			$ 363,993.91	
	TRANSCO	3-6	Y	88,009	$ 40,408.50	$ 0.45914	$ 40,408.50	Direct Energy
	TRANSCO	3-6	Y	132,742	$ 60,947.24	$ 0.45914	$ 60,947.24	CNE
	TRANSCO	3-6	Y	13,299	$ 6,106.07	$ 0.45914	$ 6,106.07	Energy Plus
	TRANSCO	3-6	Y	3,441	$ 1,580.07	$ 0.45919	$ 1,580.07	WGL Energy
	TRANSCO	3-6	Y	7,099	$ 3,259.34	$ 0.45913	$ 3,259.34	CIMA
	TRANSCO	3-6	Y	8,711	$ 3,999.62	$ 0.45915	$ 3,999.62	BlueRock Energy
	TRANSCO	3-6	Y	20,491	$ 9,408.50	$ 0.45915	$ 9,408.50	Sprague
	TRANSCO	3-6	Y	37,381	$ 17,163.07	$ 0.45914	$ 17,163.07	South Jersey
	TRANSCO	3-6	Y	78,089	$ 35,853.67	$ 0.45914	$ 35,853.67	UGI Energy Services
	TRANSCO	3-6	Y	2,263	$ 1,038.81	$ 0.45904	$ 1,038.81	Shipley
	TRANSCO	3-6	Y	806	$ 370.14	$ 0.45923	$ 370.14	MPower Energy
	TRANSCO	3-6	Y	10,881	$ 4,995.96	$ 0.45915	$ 4,995.96	SFE Energy
	TRANSCO	3-6	Y	35,278	$ 16,197.50	$ 0.45914	$ 16,197.50	Vista Energy
	TRANSCO	3-6	Y	5,797	$ 2,661.66	$ 0.45914	$ 2,661.66	Big Apple
	TRANSCO	3-6	Y	279	$ 128.03	$ 0.45889	$ 128.03	Josco Energy
	TRANSCO	3-6	Y	341	$ 156.55	$ 0.45909	$ 156.55	Palmco
	TRANSCO	3-6	Y	186	$ 85.56	$ 0.46000	$ 85.56	Volunteer Energy
	TRANSCO	1-3	Y	155,000	$ 3,875.00	$ 0.02500	$ 3,875.00	Macquarie
	TRANSCO	2-3	Y	155,000	$ 3,100.00	$ 0.02000	$ 3,100.00	Macquarie
	TRANSCO	3-6	Y	310,000	$ 12,710.00	$ 0.04100	$ 12,710.00	Tenaska
	TRANSCO	3-6	Y	310,000	$ 9,920.00	$ 0.03200	$ 9,920.00	Spotlight Energy
	TRANSCO	1-3	Y	155,000	$ 1,550.00	$ 0.01000	$ 1,550.00	United Energy
	TRANSCO	3-6	Y	310,000	$ 15,810.00	$ 0.05100	$ 15,810.00	Sequent
				1,840,093			$ 251,325.29	

August-18	TETCO	ELA - M-3	Y	88,319	$	37,853.53	$	0.4286	$	37,853.53	Direct Energy
	TETCO	ELA - M-3	Y	136,989	$	58,713.48	$	0.4286	$	58,713.48	CNE
	TETCO	ELA - M-3	Y	13,702	$	5,872.69	$	0.4286	$	5,872.69	Energy Plus
	TETCO	ELA - M-3	Y	3,348	$	1,434.95	$	0.4286	$	1,434.95	WGL Energy
	TETCO	ELA - M-3	Y	7,037	$	3,016.06	$	0.4286	$	3,016.06	CIMA
	TETCO	ELA - M-3	Y	8,711	$	3,733.54	$	0.4286	$	3,733.54	BlueRock Energy
	TETCO	ELA - M-3	Y	20,119	$	8,623.01	$	0.4286	$	8,623.01	Sprague
	TETCO	ELA - M-3	Y	51,398	$	22,029.17	$	0.4286	$	22,029.17	South Jersey
	TETCO	ELA - M-3	Y	79,484	$	34,066.84	$	0.4286	$	34,066.84	UGI Energy Services
	TETCO	ELA - M-3	Y	2,170	$	930.06	$	0.4286	$	930.06	Shipley
	TETCO	ELA - M-3	Y	1,147	$	491.60	$	0.4286	$	491.60	MPower Energy
	TETCO	ELA - M-3	Y	14,105	$	6,045.40	$	0.4286	$	6,045.40	SFE Energy
	TETCO	ELA - M-3	Y	35,216	$	15,093.58	$	0.4286	$	15,093.58	Vista Energy
	TETCO	ELA - M-3	Y	6,479	$	2,776.90	$	0.4286	$	2,776.90	Big Apple
	TETCO	ELA - M-3	Y	2,108	$	903.49	$	0.4286	$	903.49	Josco Energy
	TETCO	ELA - M-3	Y	2,511	$	1,076.22	$	0.4286	$	1,076.22	Palmco
	TETCO	ELA - M-3	Y	124	$	53.14	$	0.4285	$	53.14	Volunteer Energy
	TETCO	STX - M-3	Y	93,000	$	7,533.00	$	0.0810	$	7,533.00	Texla
	TETCO	STX - M-3	Y	486,948	$	55,999.02	$	0.1150	$	55,999.02	Tenaska
	TETCO	WLA - M-3	Y	558,000	$	49,271.35	$	0.0883	$	49,271.35	Grays Ferry
	TETCO	WLA - M-3	Y	558,000	$	49,271.35	$	0.0883	$	49,271.35	Grays Ferry
				2,168,915					$	364,788.38	

Philadelphia Gas Works **Schedule 4**
Pennsylvania Public Utilities Commission **Page 4 of 5**
52 Pa. Code §53.61, et seq. **Item 53.64(C)(7)**
For the Twelve Months Ending December 31, 2018

	PIPELINE	PATH	RECALL STATUS	VOLUME DTH	MONTHLY CREDIT	CREDIT DTH	TOTAL CREDIT	
	TRANSCO	3-6	Y	88,350	$ 40,565.05	$ 0.45914	$ 40,565.05	Direct Energy
	TRANSCO	3-6	Y	137,020	$ 62,911.40	$ 0.45914	$ 62,911.40	CNE
	TRANSCO	3-6	Y	13,733	$ 6,305.40	$ 0.45914	$ 6,305.40	Energy Plus
	TRANSCO	3-6	Y	3,379	$ 1,551.24	$ 0.45908	$ 1,551.24	WGL Energy
	TRANSCO	3-6	Y	7,037	$ 3,230.82	$ 0.45912	$ 3,230.82	CIMA
	TRANSCO	3-6	Y	8,742	$ 4,013.88	$ 0.45915	$ 4,013.88	BlueRock Energy
	TRANSCO	3-6	Y	20,150	$ 9,251.64	$ 0.45914	$ 9,251.64	Sprague
	TRANSCO	3-6	Y	51,429	$ 23,613.01	$ 0.45914	$ 23,613.01	South Jersey
	TRANSCO	3-6	Y	79,515	$ 36,508.39	$ 0.45914	$ 36,508.39	UGI Energy Services
	TRANSCO	3-6	Y	2,170	$ 996.34	$ 0.45914	$ 996.34	Shipley
	TRANSCO	3-6	Y	1,147	$ 526.69	$ 0.45919	$ 526.69	MPower Energy
	TRANSCO	3-6	Y	14,105	$ 6,476.21	$ 0.45914	$ 6,476.21	SFE Energy
	TRANSCO	3-6	Y	35,247	$ 16,183.24	$ 0.45914	$ 16,183.24	Vista Energy
	TRANSCO	3-6	Y	6,510	$ 2,989.02	$ 0.45914	$ 2,989.02	Big Apple
	TRANSCO	3-6	Y	2,108	$ 967.82	$ 0.45912	$ 967.82	Josco Energy
	TRANSCO	3-6	Y	2,542	$ 1,167.15	$ 0.45915	$ 1,167.15	Palmco
	TRANSCO	3-6	Y	155	$ 71.30	$ 0.46000	$ 71.30	Volunteer Energy
	TRANSCO	3-6	Y	310,000	$ 12,710.00	$ 0.04100	$ 12,710.00	Tenaska
	TRANSCO	3-6	Y	310,000	$ 9,920.00	$ 0.03200	$ 9,920.00	Spotlight Energy
	TRANSCO	3-6	Y	310,000	$ 15,810.00	$ 0.05100	$ 15,810.00	Sequent
	TRANSCO	1-3	Y	155,000	$ 1,550.00	$ 0.01000	$ 1,550.00	United Energy
	TRANSCO	3-6	Y	120,000	$ 8,400.00	$ 0.07000	$ 8,400.00	Macquarie
	TRANSCO	1-3	Y	155,000	$ 3,875.00	$ 0.02500	$ 3,875.00	Macquarie
	TRANSCO	2-3	Y	155,000	$ 3,100.00	$ 0.02000	$ 3,100.00	Macquarie
				1,988,339			$ 272,693.60	
September-18	TETCO	ELA - M-3	Y	2,670	$ 1,144.36	$ 0.4286	$ 1,144.36	BlueRock Energy
	TETCO	ELA - M-3	Y	1,920	$ 822.91	$ 0.4286	$ 822.91	Shipley
	TETCO	ELA - M-3	Y	75,840	$ 32,505.03	$ 0.4286	$ 32,505.03	Direct Energy
	TETCO	ELA - M-3	Y	10,950	$ 4,693.18	$ 0.4286	$ 4,693.18	SFE Energy
	TETCO	ELA - M-3	Y	83,490	$ 35,783.81	$ 0.4286	$ 35,783.81	UGI Energy Services
	TETCO	ELA - M-3	Y	2,430	$ 1,041.50	$ 0.4286	$ 1,041.50	Josco Energy
	TETCO	ELA - M-3	Y	13,230	$ 5,670.38	$ 0.4286	$ 5,670.38	Energy Plus
	TETCO	ELA - M-3	Y	150	$ 64.30	$ 0.4287	$ 64.30	Volunteer Energy
	TETCO	ELA - M-3	Y	164,100	$ 70,333.26	$ 0.4286	$ 70,333.26	CNE
	TETCO	ELA - M-3	Y	21,660	$ 9,283.47	$ 0.4286	$ 9,283.47	Vista Energy
	TETCO	ELA - M-3	Y	20,580	$ 8,820.59	$ 0.4286	$ 8,820.59	Sprague
	TETCO	ELA - M-3	Y	3,030	$ 1,298.66	$ 0.4286	$ 1,298.66	WGL Energy
	TETCO	ELA - M-3	Y	45,060	$ 19,312.71	$ 0.4286	$ 19,312.71	South Jersey
	TETCO	ELA - M-3	Y	5,010	$ 2,147.29	$ 0.4286	$ 2,147.29	CIMA
	TETCO	ELA - M-3	Y	1,320	$ 565.75	$ 0.4286	$ 565.75	MPower Energy
	TETCO	ELA - M-3	Y	7,140	$ 3,060.21	$ 0.4286	$ 3,060.21	Atlantic Energy
	TETCO	ELA - M-3	Y	5,760	$ 2,468.73	$ 0.4286	$ 2,468.73	Palmco
	TETCO	STX - ELA	Y	150,000	$ 7,500.00	$ 0.0500	$ 7,500.00	United Energy
	TETCO	WLA - M-3	Y	540,000	$ 70,254.01	$ 0.1301	$ 70,254.01	Grays Ferry
	TETCO	WLA - M-3	Y	540,000	$ 70,254.01	$ 0.1301	$ 70,254.01	Grays Ferry
	TETCO	STX - M-3	Y	90,000	$ 7,290.00	$ 0.0810	$ 7,290.00	Texla Energy
	TETCO	STX - M-3	Y	471,240	$ 54,192.60	$ 0.1150	$ 54,192.60	Tenaska
				2,255,580			$ 408,506.76	
	TRANSCO	3-6	Y	180	$ 82.80	$ 0.46000	$ 82.80	Volunteer Energy
	TRANSCO	3-6	Y	1,350	$ 619.80	$ 0.45911	$ 619.80	MPower Energy
	TRANSCO	3-6	Y	1,920	$ 881.70	$ 0.45922	$ 881.70	Shipley
	TRANSCO	3-6	Y	2,460	$ 1,129.50	$ 0.45915	$ 1,129.50	Josco Energy
	TRANSCO	3-6	Y	2,670	$ 1,225.80	$ 0.45910	$ 1,225.80	BlueRock Energy
	TRANSCO	3-6	Y	3,030	$ 1,391.40	$ 0.45921	$ 1,391.40	WGL Energy
	TRANSCO	3-6	Y	5,010	$ 2,300.40	$ 0.45916	$ 2,300.40	CIMA
	TRANSCO	3-6	Y	5,790	$ 2,658.60	$ 0.45917	$ 2,658.60	Palmco
	TRANSCO	3-6	Y	7,140	$ 3,278.40	$ 0.45916	$ 3,278.40	Atlantic Energy
	TRANSCO	3-6	Y	10,950	$ 5,027.40	$ 0.45912	$ 5,027.40	SFE Energy
	TRANSCO	3-6	Y	13,230	$ 6,074.70	$ 0.45916	$ 6,074.70	Energy Plus
	TRANSCO	3-6	Y	20,610	$ 9,462.90	$ 0.45914	$ 9,462.90	Sprague
	TRANSCO	3-6	Y	21,690	$ 9,958.80	$ 0.45914	$ 9,958.80	Vista Energy
	TRANSCO	3-6	Y	45,090	$ 20,702.40	$ 0.45914	$ 20,702.40	South Jersey
	TRANSCO	3-6	Y	75,840	$ 34,821.30	$ 0.45914	$ 34,821.30	Direct Energy
	TRANSCO	3-6	Y	83,520	$ 38,347.20	$ 0.45914	$ 38,347.20	UGI Energy Services
	TRANSCO	3-6	Y	164,100	$ 75,344.70	$ 0.45914	$ 75,344.70	CNE
	TRANSCO	1-3	Y	150,000	$ 3,750.00	$ 0.02500	$ 3,750.00	Macquarie
	TRANSCO	1-3	Y	150,000	$ 1,500.00	$ 0.01000	$ 1,500.00	United Energy
	TRANSCO	2-3	Y	150,000	$ 3,000.00	$ 0.02000	$ 3,000.00	Macquarie
	TRANSCO	3-6	Y	300,000	$ 12,300.00	$ 0.04100	$ 12,300.00	Tenaska
	TRANSCO	3-6	Y	300,000	$ 9,600.00	$ 0.03200	$ 9,600.00	Spotlight Energy
	TRANSCO	3-6	Y	300,000	$ 15,300.00	$ 0.05100	$ 15,300.00	Sequent
	TRANSCO	3-6	Y	300,000	$ 11,490.00	$ 0.03830	$ 11,490.00	Texla

	TRANSCO	3-6	Y	300,000	$	12,300.00	$	0.04100	$	12,300.00	Macquarie
				2,414,580					$	282,547.80	

October-18	PIPELINE	PATH	RECALL STATUS	VOLUME DTH		MONTHLY CREDIT		CREDIT DTH		TOTAL CREDIT	REPLACEMENT SHIPPER
	TETCO	ELA - M-3	Y	15,810	$	6,776.17	$	0.4286	$	6,776.17	Energy Plus
	TETCO	ELA - M-3	Y	24,087	$	10,323.70	$	0.4286	$	10,323.70	Vista Energy
	TETCO	ELA - M-3	Y	186	$	79.72	$	0.4286	$	79.72	Volunteer Energy
	TETCO	ELA - M-3	Y	79,608	$	34,119.99	$	0.4286	$	34,119.99	Direct Energy
	TETCO	ELA - M-3	Y	3,193	$	1,368.51	$	0.4286	$	1,368.51	Josco Energy
	TETCO	ELA - M-3	Y	9,207	$	3,946.13	$	0.4286	$	3,946.13	Atlantic Energy
	TETCO	ELA - M-3	Y	2,976	$	1,275.52	$	0.4286	$	1,275.52	WGL Energy
	TETCO	ELA - M-3	Y	12,059	$	5,168.49	$	0.4286	$	5,168.49	SFE Energy
	TETCO	ELA - M-3	Y	177,227	$	75,959.49	$	0.4286	$	75,959.49	CNE
	TETCO	ELA - M-3	Y	87,141	$	37,348.63	$	0.4286	$	37,348.63	UGI Energy Services
	TETCO	ELA - M-3	Y	1,581	$	677.61	$	0.4286	$	677.61	MPower Energy
	TETCO	ELA - M-3	Y	20,925	$	8,968.47	$	0.4286	$	8,968.47	Sprague
	TETCO	ELA - M-3	Y	46,562	$	19,956.47	$	0.4286	$	19,956.47	South Jersey
	TETCO	ELA - M-3	Y	1,860	$	797.19	$	0.4286	$	797.19	Shipley
	TETCO	ELA - M-3	Y	2,914	$	1,248.94	$	0.4286	$	1,248.94	CIMA
	TETCO	ELA - M-3	Y	11,780	$	5,048.91	$	0.4286	$	5,048.91	Palmco
	TETCO	STX - ELA	Y	155,000	$	3,100.00	$	0.0200	$	3,100.00	United Energy
	TETCO	STX - M3	Y	93,000	$	7,533.00	$	0.0810	$	7,533.00	Texla Energy
	TETCO	STX - M3	Y	486,948	$	55,999.02	$	0.1150	$	55,999.02	Tenaska
	TETCO	WLA - M3	Y	558,000	$	83,700.00	$	0.1500	$	83,700.00	J Aron & Company
	TETCO	WLA - M3	Y	558,000	$	83,700.00	$	0.1500	$	83,700.00	J Aron & Company
				2,348,064					$	447,095.96	

	TRANSCO	3-6	Y	217	$	99.51	$	0.4586	$	99.51	Volunteer Energy
	TRANSCO	3-6	Y	1,612	$	740.28	$	0.4592	$	740.28	MPower Energy
	TRANSCO	3-6	Y	1,860	$	854.05	$	0.4592	$	854.05	Shipley
	TRANSCO	3-6	Y	2,945	$	1,352.22	$	0.4592	$	1,352.22	CIMA
	TRANSCO	3-6	Y	3,007	$	1,380.74	$	0.4592	$	1,380.74	WGL Energy
	TRANSCO	3-6	Y	3,193	$	1,465.99	$	0.4591	$	1,465.99	Josco Energy
	TRANSCO	3-6	Y	9,238	$	4,241.42	$	0.4591	$	4,241.42	Atlantic Energy
	TRANSCO	3-6	Y	11,780	$	5,408.57	$	0.4591	$	5,408.57	Palmco
	TRANSCO	3-6	Y	12,059	$	5,536.91	$	0.4592	$	5,536.91	SFE Energy
	TRANSCO	3-6	Y	15,810	$	7,259.27	$	0.4592	$	7,259.27	Energy Plus
	TRANSCO	3-6	Y	20,925	$	9,607.52	$	0.4591	$	9,607.52	Sprague
	TRANSCO	3-6	Y	24,087	$	11,059.25	$	0.4591	$	11,059.25	Vista Energy
	TRANSCO	3-6	Y	46,562	$	21,378.53	$	0.4591	$	21,378.53	South Jersey
	TRANSCO	3-6	Y	79,639	$	36,565.74	$	0.4591	$	36,565.74	Direct Energy
	TRANSCO	3-6	Y	87,172	$	40,024.41	$	0.4591	$	40,024.41	UGI Energy Services
	TRANSCO	3-6	Y	177,227	$	81,372.21	$	0.4591	$	81,372.21	CNE
	TRANSCO	3-6	Y	310,000	$	15,810.00	$	0.05100	$	15,810.00	Sequent
	TRANSCO	3-6	Y	310,000	$	12,710.00	$	0.04100	$	12,710.00	Tenaska
	TRANSCO	1-3	Y	155,000	$	3,875.00	$	0.02500	$	3,875.00	Macquarie
	TRANSCO	1-3	Y	155,000	$	1,550.00	$	0.01000	$	1,550.00	United Energy
	TRANSCO	1-3	Y	155,000	$	2,325.00	$	0.01500	$	2,325.00	United Energy
	TRANSCO	2-3	Y	155,000	$	3,100.00	$	0.02000	$	3,100.00	Macquarie
				1,737,333					$	267,716.62	
November-18	TETCO	ELA - M-3	Y	9,420	$	4,037.41	$	0.4286	$	4,037.41	Energy Plus
	TETCO	ELA - M-3	Y	23,280	$	9,977.81	$	0.4286	$	9,977.81	Vista Energy
	TETCO	ELA - M-3	Y	120	$	51.43	$	0.4286	$	51.43	Volunteer Energy
	TETCO	ELA - M-3	Y	72,420	$	31,039.21	$	0.4286	$	31,039.21	Direct Energy
	TETCO	ELA - M-3	Y	3,960	$	1,697.25	$	0.4286	$	1,697.25	Josco Energy
	TETCO	ELA - M-3	Y	10,260	$	4,397.43	$	0.4286	$	4,397.43	Atlantic Energy
	TETCO	ELA - M-3	Y	3,780	$	1,620.11	$	0.4286	$	1,620.11	WGL Energy
	TETCO	ELA - M-3	Y	18,900	$	8,100.54	$	0.4286	$	8,100.54	SFE Energy
	TETCO	ELA - M-3	Y	135,780	$	58,195.31	$	0.4286	$	58,195.31	CNE
	TETCO	ELA - M-3	Y	8,370	$	3,587.38	$	0.4286	$	3,587.38	BlueRock Energy
	TETCO	ELA - M-3	Y	80,760	$	34,613.73	$	0.4286	$	34,613.73	UGI Energy Services
	TETCO	ELA - M-3	Y	1,650	$	707.20	$	0.4286	$	707.20	MPower Energy
	TETCO	ELA - M-3	Y	19,380	$	8,306.27	$	0.4286	$	8,306.27	Sprague
	TETCO	ELA - M-3	Y	50,040	$	21,447.15	$	0.4286	$	21,447.15	South Jersey
	TETCO	ELA - M-3	Y	2,010	$	861.49	$	0.4286	$	861.49	Shipley
	TETCO	ELA - M-3	Y	7,350	$	3,150.22	$	0.4286	$	3,150.22	CIMA
	TETCO	ELA - M-3	Y	16,140	$	6,917.61	$	0.4286	$	6,917.61	Palmco
	TETCO	STX - M3	Y	243,420	$	339,424.85	$	1.3944	$	339,424.85	Castleton Commodities
	TETCO	STX - M3	Y	471,240	$	753,984.00	$	1.6000	$	753,984.00	Castleton Commodities
				1,178,280					$	1,292,116.40	
	TRANSCO	3-6	Y	150	$	69.00	$	0.4600	$	69.00	Volunteer Energy
	TRANSCO	3-6	Y	1,680	$	771.30	$	0.4591	$	771.30	MPower Energy
	TRANSCO	3-6	Y	2,010	$	922.80	$	0.4591	$	922.80	Shipley
	TRANSCO	3-6	Y	7,380	$	3,388.50	$	0.4591	$	3,388.50	CIMA
	TRANSCO	3-6	Y	3,810	$	1,749.30	$	0.4591	$	1,749.30	WGL Energy
	TRANSCO	3-6	Y	3,990	$	1,832.10	$	0.4592	$	1,832.10	Josco Energy
	TRANSCO	3-6	Y	8,370	$	3,843.00	$	0.4591	$	3,843.00	BlueRock Energy
	TRANSCO	3-6	Y	10,260	$	4,710.60	$	0.4591	$	4,710.60	Atlantic Energy
	TRANSCO	3-6	Y	16,140	$	7,410.60	$	0.4591	$	7,410.60	Palmco
	TRANSCO	3-6	Y	18,930	$	8,691.30	$	0.4591	$	8,691.30	SFE Energy
	TRANSCO	3-6	Y	9,450	$	4,338.90	$	0.4591	$	4,338.90	Energy Plus
	TRANSCO	3-6	Y	19,380	$	8,898.00	$	0.4591	$	8,898.00	Sprague
	TRANSCO	3-6	Y	23,280	$	10,689.00	$	0.4591	$	10,689.00	Vista Energy
	TRANSCO	3-6	Y	50,070	$	22,989.00	$	0.4591	$	22,989.00	South Jersey
	TRANSCO	3-6	Y	72,420	$	33,250.80	$	0.4591	$	33,250.80	Direct Energy
	TRANSCO	3-6	Y	80,790	$	37,093.80	$	0.4591	$	37,093.80	UGI Energy Services
	TRANSCO	3-6	Y	135,780	$	62,341.80	$	0.4591	$	62,341.80	CNE
	TRANSCO	1-3	Y	150,000	$	1,500.00	$	0.0100	$	1,500.00	United Energy
	TRANSCO	1-3	Y	150,000	$	2,250.00	$	0.0150	$	2,250.00	United Energy
	TRANSCO	3-6	Y	300,000	$	465,000.00	$	1.5500	$	465,000.00	Castleton Commodities
				1,063,890					$	681,739.80	
December-18	TETCO	ELA - M-3	Y	9,951	$	4,264.99	$	0.4286	$	4,264.99	Energy Plus
	TETCO	ELA - M-3	Y	24,459	$	10,483.13	$	0.4286	$	10,483.13	Vista Energy
	TETCO	ELA - M-3	Y	124	$	53.14	$	0.4285	$	53.14	Volunteer Energy
	TETCO	ELA - M-3	Y	72,912	$	31,250.07	$	0.4286	$	31,250.07	Direct Energy
	TETCO	ELA - M-3	Y	4,402	$	1,886.71	$	0.4286	$	1,886.71	Josco Energy
	TETCO	ELA - M-3	Y	11,036	$	4,730.02	$	0.4286	$	4,730.02	Atlantic Energy
	TETCO	ELA - M-3	Y	3,906	$	1,674.12	$	0.4286	$	1,674.12	WGL Energy
	TETCO	ELA - M-3	Y	20,460	$	8,769.15	$	0.4286	$	8,769.15	SFE Energy

TETCO	ELA - M-3	Y	135,129	$ 57,916.29	$ 0.4286	$ 57,916.29	CNE
TETCO	ELA - M-3	Y	8,649	$ 3,706.97	$ 0.4286	$ 3,706.97	BlueRock Energy
TETCO	ELA - M-3	Y	83,514	$ 35,794.10	$ 0.4286	$ 35,794.10	UGI Energy Services
TETCO	ELA - M-3	Y	1,736	$ 744.04	$ 0.4286	$ 744.04	MPower Energy
TETCO	ELA - M-3	Y	16,337	$ 7,002.04	$ 0.4286	$ 7,002.04	Sprague
TETCO	ELA - M-3	Y	52,173	$ 22,361.35	$ 0.4286	$ 22,361.35	South Jersey
TETCO	ELA - M-3	Y	2,015	$ 863.64	$ 0.4286	$ 863.64	Shipley
TETCO	ELA - M-3	Y	7,812	$ 3,348.21	$ 0.4286	$ 3,348.21	CIMA
TETCO	ELA - M-3	Y	17,360	$ 7,440.49	$ 0.4286	$ 7,440.49	Palmco
TETCO	ELA - M-3	Y	62	$ 26.57	$ 0.4285	$ 26.57	Park Power
TETCO	STX - M3	Y	251,534	$ 350,739.01	$ 1.3944	$ 350,739.01	Castleton Commodities
TETCO	STX - M3	Y	486,948	$ 779,116.80	$ 1.6000	$ 779,116.80	Castleton Commodities
			1,210,519			$ 1,332,170.84	
TRANSCO	3-6	Y	155	$ 71.30	$ 0.4600	$ 71.30	Volunteer Energy
TRANSCO	3-6	Y	1,767	$ 811.27	$ 0.4591	$ 811.27	MPower Energy
TRANSCO	3-6	Y	2,046	$ 939.30	$ 0.4591	$ 939.30	Shipley
TRANSCO	3-6	Y	7,812	$ 3,586.70	$ 0.4591	$ 3,586.70	CIMA
TRANSCO	3-6	Y	3,937	$ 1,807.61	$ 0.4591	$ 1,807.61	WGL Energy
TRANSCO	3-6	Y	4,433	$ 2,035.46	$ 0.4592	$ 2,035.46	Josco Energy
TRANSCO	3-6	Y	8,649	$ 3,971.10	$ 0.4591	$ 3,971.10	BlueRock Energy
TRANSCO	3-6	Y	11,036	$ 5,067.26	$ 0.4592	$ 5,067.26	Atlantic Energy
TRANSCO	3-6	Y	17,360	$ 7,970.72	$ 0.4591	$ 7,970.72	Palmco
TRANSCO	3-6	Y	20,491	$ 9,408.50	$ 0.4592	$ 9,408.50	SFE Energy
TRANSCO	3-6	Y	9,982	$ 4,583.04	$ 0.4591	$ 4,583.04	Energy Plus
TRANSCO	3-6	Y	16,337	$ 7,501.07	$ 0.4591	$ 7,501.07	Sprague
TRANSCO	3-6	Y	24,459	$ 11,230.37	$ 0.4592	$ 11,230.37	Vista Energy
TRANSCO	3-6	Y	52,173	$ 23,954.63	$ 0.4591	$ 23,954.63	South Jersey
TRANSCO	3-6	Y	72,912	$ 33,476.59	$ 0.4591	$ 33,476.59	Direct Energy
TRANSCO	3-6	Y	83,545	$ 38,358.78	$ 0.4591	$ 38,358.78	UGI Energy Services
TRANSCO	3-6	Y	135,129	$ 62,043.09	$ 0.4591	$ 62,043.09	CNE
TRANSCO	3-6	Y	62	$ 28.52	$ 0.4600	$ 28.52	Park Power
TRANSCO	1-3	Y	155,000	$ 1,550.00	$ 0.0100	$ 1,550.00	United Energy
TRANSCO	1-3	Y	155,000	$ 2,325.00	$ 0.0150	$ 2,325.00	United Energy
TRANSCO	3-6	Y	310,000	$ 480,500.00	$ 1.5500	$ 480,500.00	Castleton Commodities
			1,092,285			$ 701,220.31	

Tab 7

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(8)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(8) A list of agreements to transport gas by the utility through its system, for other utilities, pipelines or jurisdictional customers including the quantity and price of the transportation.

Response:

Please see the attached list of gas transportation agreements for PGW's jurisdictional customers. PGW has no transportation agreements with other utilities or pipeline customers.

PHILADELPHIA GAS WORKS
JANUARY 2018 - DECEMBER 2018

MTR_NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL_CCF	MDQ (dth)
2250854	92,913	64,910	79,216	38,007	0	0	0	0	0	24,463	67,754	78,539	445,802	784
2026784	8,600	5,466	7,107	6,084	1,342	639	593	598	653	3,580	7,241	8,244	50,147	72
2024683	19,167	22,854	25,274	15,565	2,332	1,967	1,733	1,777	1,855	9,286	21,357	24,535	147,703	291
2123526	19,915	12,609	17,045	8,390	0	0	0	0	0	1,057	10,946	13,791	83,753	452
2188212	18,326	12,052	15,237	6,951	0	0	0	0	0	5,162	14,230	17,291	89,249	302
2250864	15,893	9,501	10,050	4,798	0	0	0	0	33	1,039	8,177	9,960	59,451	591
2239839	24,981	18,643	22,770	11,786	372	248	186	93	83	6,053	16,659	26,266	128,138	120
1594768	1,280,480	1,250,545	1,309,262	1,222,138	1,100,849	1,235,828	1,296,192	1,275,032	1,203,211	1,343,376	1,322,835	1,364,439	15,204,187	17,957
1611016	1,104,788	1,075,192	1,113,338	1,033,264	906,656	1,030,014	1,082,157	1,063,734	1,006,564	1,123,006	1,105,106	1,141,886	12,785,706	17,957
2227843	45,963	43,417	61,696	50,432	34,861	47,480	45,621	49,914	44,387	45,495	51,389	51,356	572,012	17,957
2227846	43,350	41,176	56,486	46,006	31,053	42,815	41,088	44,759	40,069	41,471	46,262	47,123	521,660	17,957
2064973	176,217	147,926	170,130	136,102	105,877	91,260	86,788	82,728	83,537	108,384	142,174	158,109	1,489,232	420
2250859	15,704	8,324	10,215	4,692	11	0	0	0	0	2,296	8,380	11,622	61,244	346
2250860	16,482	10,147	12,141	4,027	22	11	0	0	0	2,100	6,809	9,134	60,873	375
1724230	10,076	5,575	6,953	3,065	3	3	2	3	3	1,376	4,974	6,250	38,284	243
2027533	16,034	10,244	12,203	7,295	861	277	1	2	206	4,260	9,454	11,010	71,848	185
1987805	14,906	9,170	9,838	4,835	351	298	277	267	275	3,222	8,250	10,388	62,076	237
2035554	5,548	3,936	4,937	2,977	732	616	434	388	439	1,368	3,119	3,671	28,165	48
2123525	27,162	22,701	24,598	13,333	0	0	0	0	0	5,639	17,943	22,896	134,272	81
2250842	25,849	17,294	22,760	11,613	0	0	0	0	0	7,763	18,806	22,058	126,143	209
2064975	23,480	20,213	22,630	22,279	21,079	21,275	19,463	18,067	16,717	20,937	20,336	22,247	248,723	250
2211338	83,150	78,359	86,499	72,969	67,788	61,780	64,374	64,512	50,412	100,954	100,534	107,812	939,142	550
2027375	25,123	18,242	21,654	13,900	5,472	4,177	3,372	3,345	3,620	8,737	17,348	20,293	145,283	189
1806081	61,608	64,559	71,660	67,361	60,220	54,468	54,114	55,994	52,860	54,718	58,467	59,087	715,117	690
2035366	3,644	2,244	2,339	1,365	0	0	0	1	0	956	2,036	2,353	14,936	221
2035210	2,747	1,905	2,392	1,187	0	0	0	0	0	938	2,047	2,344	13,561	132
1989426	33,576	23,667	28,629	16,683	3,100	2,678	2,497	2,449	2,720	12,073	23,365	24,798	176,236	320
2024644	8,015	6,283	7,265	4,767	1,313	1,012	923	999	1,077	3,498	6,047	6,973	48,171	480
2123519	91,280	69,619	72,587	60,345	43,028	31,593	23,233	24,177	16,096	33,228	41,045	47,655	553,886	240
1723873	6,593	3,185	3,340	1,915	0	0	0	0	0	791	2,828	3,779	22,430	120
2188210	18,249	18,791	13,278	14,996	11,260	5,495	4,410	3,512	3,570	10,011	0	33,108	136,678	75
2064976	33,506	23,095	25,702	14,086	0	0	0	0	0	4,054	16,034	20,944	137,421	377
1989652	22,682	14,254	17,061	9,315	7,027	6,345	5,681	5,652	5,647	6,621	15,349	18,740	134,374	215
2035356	2,796	1,708	2,140	1,020	0	0	0	0	0	691	1,578	1,882	11,814	41
2024712	0	11,986	14,189	5,144	1	0	0	0	0	2,375	10,811	11,633	56,139	235
2188215	34,657	20,941	25,230	10,243	0	0	0	0	0	0	24,929	23,060	139,062	346
2070271	3,689	2,694	3,245	2,164	5	0	0	0	0	1,109	2,725	3,337	18,968	64
2070249	3,345	2,182	2,586	1,620	8	0	0	0	0	866	2,110	2,512	15,229	64
2070260	3,494	2,275	2,500	1,481	12	0	0	2	1	592	1,775	2,177	14,309	64
2070242	3,096	1,647	1,873	1,120	6	0	0	0	0	686	1,744	2,089	12,261	64
1906628	8,881	6,066	8,101	3,027	0	0	0	0	0	992	5,887	6,848	39,801	9
2025139	11,250	8,128	10,384	6,036	0	0	0	0	0	4,344	9,375	10,206	59,724	90
2227850	32,329	22,644	25,733	16,558	0	0	47	0	12	14,082	24,826	26,808	163,038	956
2211341	13,534	9,591	10,815	7,012	0	0	12	0	12	6,018	10,981	12,066	70,042	956
1987495	16,785	14,702	14,611	14,270	16,606	13,166	7,608	14,114	9,219	9,729	8,424	7,304	146,538	313
1884506	12,754	6,566	7,600	2,331	0	0	0	0	0	673	5,503	7,270	42,696	245
1756663	73,700	47,062	53,502	18,597	0	0	0	0	0	10,155	43,763	55,647	302,427	316
1658879	13,064	8,971	12,827	6,626	971	857	868	1,073	1,115	3,609	8,733	10,457	69,171	269
2026819	17,346	13,995	14,639	17,964	17,130	17,124	17,509	17,635	0	24,394	17,989	17,531	193,255	67
1724853	49,331	35,019	39,916	19,165	0	0	0	0	0	16,134	27,695	31,465	218,725	541
2024307	14,800	10,718	13,376	6,334	0	0	0	0	4	1,802	7,358	8,742	63,135	111
2188226	6,637	6,000	5,911	5,638	3,553	2,792	2,368	3,614	3,704	5,271	7,036	7,780	60,307	522
1921578	9,838	5,931	8,766	4,824	1,408	1,297	938	1,570	1,831	4,489	6,701	6,938	54,531	183
2027635	5,310	3,864	3,989	3,034	4,049	3,328	3,665	3,590	3,557	3,125	3,791	4,162	45,464	154
2157700	72,203	58,416	64,092	59,501	49,685	40,481	34,496	39,414	37,483	48,250	54,440	61,617	620,078	803
2157700	72,203	58,416	64,092	59,501	49,685	40,481	34,496	39,414	37,483	48,250	54,440	61,617	620,078	803
1594769	0	0	0	0	0	0	0	0	0	0	0	0	0	461
1621317	457,366	330,559	401,867	320,387	301,114	282,775	380,029	298,984	265,715	269,127	371,964	359,051	4,038,938	2,650
2090400	267,421	188,108	246,528	185,066	166,701	188,790	260,906	158,484	144,864	210,772	228,472	248,133	2,494,244	2,650
1987797	16,270	12,941	14,111	11,649	9,582	8,312	7,646	8,788	8,072	10,564	12,797	13,417	134,148	281
1987777	10,377	8,514	9,107	8,450	8,153	7,088	6,064	6,912	6,142	8,204	8,625	10,009	97,643	202
1884577	31,282	24,210	28,798	13,317	0	25	0	0	0	7,824	22,070	24,021	151,546	240
1685273	24,538	16,725	20,079	11,929	2,116	1,562	1,535	1,561	1,604	7,659	18,875	20,933	129,115	355
2027531	13,770	10,000	12,933	7,642	53	7	0	0	0	4,851	11,791	14,517	75,564	294
2157694	14,096	9,102	12,030	6,792	610	0	0	0	0	1,913	8,318	9,970	62,831	383
2115837	24,816	19,840	21,683	16,676	10,009	8,588	8,047	8,090	8,529	15,889	22,167	25,071	189,404	240
1771899	0	0	0	0	0	0	0	0	0	0	0	0	0	1,355
1906625	9,582	8,358	9,066	8,205	7,006	5,146	5,535	6,316	5,063	7,149	8,496	8,395	88,317	30
2027477	3,898	2,911	2,127	2,483	2,014	1,323	1,523	1,370	1,840	2,244	2,250	1,717	25,699	513
2036147	6,211	3,633	4,863	2,099	91	69	1	0	63	1,271	3,575	4,335	26,211	223
2024704	0	8,915	9,613	5,227	0	1	1	0	0	1,579	6,099	11,240	42,674	257
2157692	83,806	61,753	68,836	37,025	13,459	10,182	9,585	9,895	10,047	22,919	44,928	59,673	432,107	1,833
2024705	18,206	13,100	16,206	8,582	3,038	2,736	2,190	2,138	2,633	5,750	10,756	13,390	98,726	278
1806076	73,256	47,719	55,776	34,013	15,803	13,942	13,839	14,754	14,868	22,014	48,334	50,938	405,256	840
2035943	5,934	4,415	5,111	3,155	2,372	2,357	2,496	2,462	2,415	2,486	3,824	4,530	41,559	72
1921575	14,864	6,945	8,018	3,689	0	0	0	0	4	1,528	5,263	8,962	49,274	160
2024648	31,462	23,560	29,014	23,776	20,823	18,329	18,440	17,709	17,855	19,385	21,144	24,312	265,808	394
2027406	36,785	28,895	30,924	28,271	21,434	21,708	22,843	25,870	21,436	31,046	30,144	31,348	330,703	600
2027544	32,779	25,670	27,483	24,844	18,530	18,843	19,921	22,571	18,723	27,174	26,531	27,784	290,854	600
2115543	6,020	3,912	4,276	2,418	0	0	0	0	0	1,382	3,658	4,683	26,348	98
2064978	0	0	0	0	0	23,139	27,971	58,911	94,168	114,865	96,549	86,010	501,615	2,400
2026758	12,575	8,020	11,000	5,794	461	0	0	0	0	3,330	9,506	10,927	61,612	409
1884502	93,249	78,200	88,116	82,230	80,313	77,662	75,774	78,089	74,874	83,517	88,780	84,170	984,973	21
1806092	40,877	33,458	38,299	36,973	37,520	39,316	31,115	26,745	26,354	24,580	31,531	26,701	393,469	21
1987500	56,425	32,752	41,076	8,783	0	0	0	0	0	13,240	36,335	42,311	230,921	432
2027402	10,730	9,114	10,578	8,135	4,029	2,769	2,644	5,561	5,875	6,340	8,705	10,215	84,694	50
2027401	9,161	7,678	8,915	6,892	3,442	2,351	2,194	4,568	4,883	5,327	7,318	8,573	71,302	50
1658880	22,371	19,248	19,523	19,067	16,875	15,140	15,674	16,911	15,818	19,575	21,364	20,517	222,081	626
2157696	56,809	41,318	47,687	33,772	18,799	15,749	11,753	14,197	15,024	26,661	39,491	45,320	366,582	417
1724001	19,066	11,323	18,061	6,097	10	0	0	0	0	4,033	15,413	11,140	85,144	503
2035891	8,572	6,646	8,032	6,914	4,763	4,173	4,288	4,443	4,282	6,794	0	0	58,907	359
2036188	27,284	17,641	21,179	13,093	12,018	13,012	14,590	16,440	14,724	12,253	0	0	162,234	36
1921579	3,720	2,398	2,268	2,240	1,863	1,365	731	419	500	1,336	0	0	16,840	240
1909351	8,752	5,337	6,084	3,501	0	0	0	0	0	2,425	5,432	6,193	37,723	110
2198755	17,501	12,139	14,437	5,874	0	0	0	0	69	5,297	14,637	14,786	84,741	252

MTR_NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL_CCF	MDQ (dth)
2024690	41,593	29,690	47,073	27,805	18,332	13,701	10,144	24,397	29,989	36,373	38,248	40,345	357,692	480
2198741	58,998	51,998	33,818	63,801	64,738	64,807	71,603	11,029	390	7,063	61,843	76,380	566,470	254
2024715	30,771	12,220	18,063	4,689	0	0	0	0	1	4,909	17,482	21,308	109,443	410
2035967	0	6,090	6,993	6,784	7,102	6,897	6,793	6,180	5,624	6,854	7,770	8,023	75,110	168
2024851	20,135	14,481	17,122	8,669	265	143	0	0	0	5,484	13,521	15,320	95,141	100
2025158	12,646	7,533	8,410	5,235	1	1	0	1	0	2,163	9,003	12,292	57,285	171
2171231	80,358	63,642	74,603	62,512	46,070	34,493	30,469	29,818	26,640	41,642	61,910	68,358	620,513	994
1724011	13,670	7,091	5,830	3,173	0	0	0	0	0	1,293	6,730	5,787	43,573	469
2023840	7,123	5,132	6,199	4,292	843	654	598	599	630	2,764	4,778	5,865	39,477	112
1658873	14,746	6,527	9,090	3,724	0	0	0	0	0	2,359	8,984	12,955	58,384	377
2036167	16,352	12,085	15,068	7,387	127	0	0	0	0	5,802	12,719	14,311	83,852	626
1806077	80,574	59,166	67,532	40,566	2,582	2,169	2,168	2,064	2,065	27,824	60,041	65,660	412,411	151
2025150	8,119	5,955	7,774	3,611	0	0	0	0	0	2,662	7,309	9,155	44,584	115
2123510	7,561	6,402	7,914	3,143	0	0	0	0	0	2,271	7,541	7,902	42,733	173
2116174	84,124	61,900	74,718	47,596	0	0	0	0	0	26,262	53,198	53,628	401,426	626
2116171	47,057	34,375	41,678	26,318	0	0	0	0	0	13,948	29,119	29,159	221,655	626
2157697	40,707	27,392	30,885	22,209	10,887	9,728	0	18,736	11,328	22,690	32,508	36,979	264,051	720
1989428	74,590	54,186	63,802	41,815	18,591	12,704	7,880	7,248	13,406	28,239	47,079	53,793	423,333	720
2035975	12,793	10,138	12,025	10,750	8,250	8,382	8,742	8,903	8,565	10,150	10,314	11,115	120,128	174
1826616	9,152	6,480	6,656	3,997	1,111	0	0	0	0	0	0	0	27,395	87
2027599	5,783	4,843	8,243	5,617	2,390	1,926	1,834	1,834	1,891	2,231	3,249	3,705	43,544	228
1723898	49,857	32,078	40,404	12,760	0	0	0	0	0	7,139	31,534	36,210	209,982	601
2171221	28,099	22,405	27,048	22,244	17,904	17,294	14,979	16,132	17,292	19,639	24,155	26,566	253,756	150
2132738	152,975	122,110	116,053	108,123	101,434	93,052	97,998	101,219	105,941	110,416	126,092	141,480	1,376,892	300
2123509	32,117	19,474	17,347	10,840	5,529	5,771	7,319	5,927	5,287	8,770	15,574	21,890	155,845	252
2188219	62,193	46,912	55,273	38,270	14,792	13,024	13,376	12,423	9,438	23,387	39,564	44,024	372,677	419
1884573	31,577	26,257	23,732	11,510	0	0	0	0	0	6,208	21,685	23,030	144,000	368
2245170	14,199	7,468	10,013	2,023	10	0	0	0	0	734	5,767	7,489	47,704	304
2116154	13,169	12,102	10,571	13,711	13,509	12,569	7,814	11,091	11,068	13,552	12,416	11,971	143,541	1,252
1921703	38,910	28,121	32,914	20,611	0	0	0	0	0	13,039	28,575	31,260	193,430	345
2123295	5,902	5,942	6,397	2,494	4,417	5,515	6,634	6,618	3,394	5,895	4,748	8	57,962	22
2171230	39,514	21,841	32,263	11,209	103	0	0	0	0	4,238	25,100	28,322	162,591	614
1724240	14,136	6,526	7,935	2,852	0	0	0	0	1	2,021	5,251	8,147	46,869	231
2157686	15,200	6,382	7,398	4,458	0	0	0	0	0	3,011	8,907	8,517	53,874	314
2188213	9,436	4,820	4,703	2,686	0	0	0	0	0	1,304	4,377	4,461	31,786	223
2023947	9,330	6,948	8,345	5,783	3,274	3,132	3,039	2,707	363	1,927	7,021	7,930	59,801	325
2133386	1,855	1,045	1,289	461	36	0	0	0	0	404	986	1,372	7,449	98
1987808	0	0	0	0	0	0	0	0	0	0	0	0	0	1,424
2171219	110,991	75,908	86,160	52,059	16,423	14,251	11,153	11,349	16,624	38,975	74,984	88,174	597,053	1,424
1724003	26,656	22,239	25,361	15,906	4,968	4,730	5,009	4,952	4,905	8,786	20,714	23,175	167,400	565
1621318	29,927	16,612	21,262	7,855	0	0	0	0	41	3,973	17,754	17,647	115,071	843
2123526	19,915	12,609	17,045	8,390	0	0	0	0	0	1,057	10,946	13,791	83,753	452
2027485	42,903	28,071	35,939	22,208	4,129	3,445	3,785	3,589	3,042	13,392	29,156	30,549	220,209	392
2023712	3,089	909	1,292	107	0	0	0	0	0	379	1,404	892	8,071	98
2025166	5,688	3,886	3,417	1,598	0	0	0	1	0	910	3,411	4,589	23,501	254
1987812	15,592	9,510	13,252	5,135	0	0	0	0	0	3,467	10,476	10,529	67,962	272
2115067	0	0	0	0	0	0	0	0	0	0	0	0	0	31
1826506	6,320	5,217	6,284	4,897	3,523	3,307	3,663	3,651	3,752	5,229	6,836	7,396	60,076	130
2132966	6,478	4,739	5,643	3,595	892	738	684	717	764	2,395	4,349	4,978	35,972	43
2116016	4,007	2,613	3,199	1,760	0	0	0	0	0	1,030	2,665	3,179	18,453	43
2027423	5,715	4,005	4,971	3,293	0	0	0	0	0	1,972	4,035	5,062	29,052	86
1723876	11,646	7,487	9,002	5,574	0	0	0	0	0	2,726	7,180	8,174	51,789	241
2116153	32,090	24,060	28,625	19,938	12,457	10,647	10,008	9,895	10,481	15,106	22,587	25,529	221,423	628
2188211	16,834	10,612	13,311	7,132	4,358	2,872	3,503	3,552	3,321	5,748	9,211	11,112	91,566	162
2025049	5,992	3,917	4,837	3,554	2,032	1,835	1,686	1,673	1,629	2,027	3,690	4,621	37,494	65
1884510	27,280	17,535	21,192	12,589	5,385	5,432	4,558	4,618	4,743	9,127	18,148	20,564	151,171	676
1826674	17,734	14,684	16,338	15,723	11,746	11,418	10,310	9,978	9,695	12,757	13,998	13,999	158,379	114
2023831	3,968	3,479	3,121	3,205	2,538	2,364	2,162	2,225	2,232	2,637	3,119	3,665	34,715	132
2025178	18,453	15,548	15,842	11,364	6,365	5,796	5,921	5,933	5,776	8,827	13,122	14,483	127,431	296
1582087	22,037	11,497	18,177	6,478	85	0	0	0	0	2,814	14,147	15,414	90,650	384
1685278	43,198	28,224	34,523	16,905	2,835	2,537	2,559	2,600	2,536	11,586	29,589	32,849	209,941	703
1658878	57,101	32,080	38,666	18,167	94	0	0	0	329	13,871	32,078	38,475	230,860	733
2198748	111,870	102,171	115,189	104,793	93,530	86,404	81,724	83,803	84,917	60,505	101,781	94,571	1,121,257	384
2198744	87,844	80,170	90,076	81,510	74,160	68,766	65,826	67,691	67,906	69,864	81,018	73,671	908,503	384
2239836	16,900	9,179	10,276	3,714	0	0	0	0	41	3,321	11,091	13,425	67,947	340
1724852	84,924	77,175	99,274	53,800	55,986	50,189	44,619	45,295	47,087	65,302	90,637	97,924	812,211	731
1724851	70,403	64,556	84,500	46,233	47,515	42,754	38,525	39,001	40,582	55,589	76,637	83,402	689,697	731
2023960	30,647	25,001	33,015	25,806	24,614	22,540	21,433	20,861	18,802	20,194	22,085	21,394	286,390	1,362
2245376	14,659	10,822	13,526	8,946	2,959	1,768	1,223	1,084	1,623	6,390	10,812	12,396	86,207	204
2123504	28,688	28,158	32,779	27,570	2,726	2,121	1,806	1,995	2,341	14,719	23,474	39,131	205,506	322
2024604	6,068	5,861	5,573	6,296	8,714	10,686	10,458	11,080	10,268	8,552	8,429	7,121	99,106	78
1906623	9,653	7,475	8,514	5,553	1,273	1,127	1,101	1,119	1,160	3,986	8,173	8,543	57,679	362
2250846	6,071	4,177	4,778	1,816	0	0	0	0	10	1,004	5,414	6,495	29,765	213
2115844	67,452	63,326	68,142	58,348	53,015	50,789	49,570	51,964	57,124	54,958	63,819	71,901	710,408	1,851
2115841	56,772	53,523	57,809	48,716	42,536	40,601	38,761	40,473	45,217	42,993	50,838	57,488	575,727	1,093
2123527	18,512	10,488	11,881	9,035	0	10	0	0	0	4,411	12,250	12,935	79,523	454
2250841	75,193	46,514	53,084	28,207	2,173	1,533	1,422	1,234	959	14,530	44,315	53,356	322,520	490
1723998	66,991	49,600	57,493	34,056	14,854	12,816	10,824	11,504	9,644	18,066	37,545	48,865	372,257	400
2024645	12,725	11,371	12,592	8,486	1,312	869	559	705	855	4,666	11,287	11,780	77,207	289
2132737	62,370	45,666	51,896	31,047	12,774	10,132	9,179	13,919	14,669	19,539	41,230	50,887	363,309	697
2116156	22,766	14,679	17,313	9,620	4,731	2,143	1,825	1,768	2,199	8,249	13,956	18,084	117,334	883
2025149	7,299	5,136	5,144	7,421	1,888	991	860	1,032	1,691	2,628	2,459	7,674	44,223	336
2027560	8,371	6,328	6,318	5,546	3,150	2,374	1,485	976	1,368	2,266	3,044	2,850	44,076	8
2036151	10,480	7,248	8,509	5,608	0	0	0	0	0	2,081	8,140	8,962	51,029	72
1724008	41,990	30,785	38,452	29,626	19,737	20,861	18,433	22,523	18,884	28,115	38,611	38,006	346,024	418
2064880	3,340	2,815	2,946	2,444	3,013	3,036	3,020	2,773	2,320	2,527	2,374	3,504	34,112	90
2023958	23,508	12,726	16,167	7,915	0	0	0	5,388	2,763	3,602	11,947	8,751	92,768	523
2024684	8,444	4,419	4,405	1,902	6	0	0	0	1	1,484	3,445	5,281	29,386	211
2116148	11,388	8,436	10,676	6,005	1,332	1,157	1,126	1,052	1,187	3,898	7,250	8,258	61,765	523
2064974	32,964	15,949	21,180	6,887	0	0	0	0	0	5,288	17,263	18,529	118,060	417
2171222	13,570	6,927	8,333	4,333	0	0	0	0	31	1,997	6,257	7,044	48,492	157
2171220	54,033	31,760	32,601	16,522	5,807	5,116	5,668	6,079	4,700	11,902	28,889	36,805	239,884	407
2012880	8,256	5,454	7,660	4,650	2,622	3,047	3,268	3,105	3,302	4,570	7,671	8,517	62,121	104
1724854	99,881	82,418	98,741	89,673	57,434	50,603	42,139	47,255	48,842	72,025	89,288	95,747	874,048	1,046
2188214	29,079	24,281	28,388	19,820	7,166	7,572	671	956	5,386	15,803	23,886	23,230	186,238	172
2171232	0	0	0	0	0	0	0	0	0	0	0	0	0	255
2116158	26,240	0	74,227	52,761	0	0	0	0	0	15,783	33,232	32,312	234,555	714
2116159	25,092	0	40,630	25,803	0	0	0	0	0	5,368	19,998	25,445	142,336	424
2198756	10,594	7,090	8,083	4,291	0	0	0	0	0	2,484	6,488	8,125	47,155	234
2133065	11,106	6,328	9,873	4,032	0	0	0	0	0	1,543	8,467	7,692	49,041	131

MTR_NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL_CCF	MDQ (dth)
2116152	11,722	4,700	7,594	2,728	0	0	0	10	0	1,251	5,892	6,608	40,506	161
2157693	8,935	5,752	6,824	3,588	0	0	0	0	10	1,211	4,919	5,893	37,132	172
2123523	10,176	6,007	8,226	3,639	0	0	0	0	0	1,934	7,625	8,435	46,043	782
2027510	10,266	6,512	5,959	6,835	6,876	6,831	7,323	8,106	6,512	7,826	6,913	5,993	85,951	235
1954681	59,668	43,521	57,033	38,881	26,236	24,578	21,277	21,255	21,374	27,901	42,106	49,795	433,626	907
2027454	6,871	4,364	5,604	3,624	29	0	0	0	0	1,878	5,091	6,803	34,264	187
2035408	2,837	1,272	1,620	818	0	0	0	0	0	0	1,908	1,651	10,105	255
1685269	38,369	36,052	35,834	30,523	31,543	28,710	23,167	19,150	22,011	27,008	27,625	28,463	348,455	178
2116004	5,390	3,811	4,603	2,384	0	0	0	0	0	1,618	4,180	4,440	26,425	38
2123495	13,996	10,322	12,141	7,769	4,396	4,587	2,484	4,815	4,405	6,692	10,514	12,235	94,356	139
1987815	81,431	52,306	59,634	45,257	18,809	18,252	18,670	17,822	17,421	35,569	55,269	68,476	488,915	2,169
1724010	23,841	21,836	23,750	21,077	22,140	20,687	20,465	20,226	18,098	22,905	20,342	17,513	252,878	495
1826561	8,869	6,126	7,741	4,666	1,124	961	827	779	818	2,426	5,812	7,327	47,476	31
2035839	6,740	4,414	5,272	3,161	955	915	862	861	937	2,261	4,429	5,342	36,150	156
1756664	31,949	16,626	20,435	9,098	0	0	0	0	0	5,772	21,130	22,917	127,927	341
1921700	52,449	36,421	38,552	14,084	0	0	0	0	0	13,604	29,114	29,110	213,335	831
2025107	11,793	7,685	9,066	3,977	0	0	0	0	0	1,760	7,196	8,727	50,204	209
2116161	189,144	145,467	166,682	54,763	0	0	0	0	0	8,980	138,451	181,213	884,700	1,225
2157680	65,487	47,650	53,498	47,194	35,408	31,666	31,810	30,809	31,801	40,117	48,877	50,139	514,454	267
2064977	0	10,989	9,545	4,555	506	72	0	0	0	1,614	6,037	7,948	41,266	229
2064977	0	6,655	9,545	4,555	506	72	0	0	0	1,614	6,037	7,948	36,932	229
2036180	46,317	37,528	41,479	39,183	25,944	11,810	23,327	24,494	22,944	28,626	33,641	37,529	372,824	748
1884579	8,590	6,139	6,597	1,991	0	0	0	0	0	2,875	5,776	6,421	38,390	202
2245126	59,918	38,394	49,330	26,542	207	0	0	0	0	17,832	35,374	41,548	269,145	859
1987814	475,782	510,682	568,767	509,243	517,003	482,241	509,178	531,782	475,624	504,326	504,637	502,543	6,091,807	3,432
1658883	46,864	26,794	28,873	13,293	0	0	0	0	69	5,610	23,603	27,083	172,189	521
2157699	57,548	33,301	46,563	8,064	0	0	0	0	0	6,233	31,247	43,339	226,295	1,269
2025174	6,830	4,700	5,386	4,447	3,798	3,777	3,692	3,019	3,001	3,274	3,808	4,616	50,348	254
2157695	34,222	24,347	28,658	15,135	0	0	0	12	0	10,625	24,274	27,329	164,602	31
2239845	56,491	51,196	54,481	47,299	40,399	43,054	41,510	32,078	22,221	22,735	32,053	47,404	490,920	517
2188227	19,832	12,538	15,688	7,694	0	0	0	0	11	5,976	14,098	17,472	93,310	336
1582088	49,872	34,317	39,855	22,871	3,440	3,108	2,871	3,013	3,222	16,401	34,659	38,673	252,301	1,046
2064920	7,381	10,780	12,418	8,510	5,825	4,889	3,950	3,705	4,213	8,414	12,144	12,733	94,963	804
2123514	23,945	11,158	12,792	2,781	35	0	0	0	0	1,937	9,451	12,244	74,344	804
2012845	7,233	10,455	12,010	9,628	4,942	4,789	4,741	5,145	5,377	7,876	10,700	13,949	96,845	804
2123515	31,245	15,616	16,306	2,407	106	47	12	0	0	2,868	11,596	13,329	93,530	804
2123516	63,026	16,480	18,949	11,418	2,655	2,323	2,148	2,125	2,334	7,176	14,945	16,888	160,467	360
1685280	66,966	61,058	62,368	61,628	38,438	54,943	41,457	40,765	45,680	44,434	62,616	63,290	643,642	650
2026766	15,451	10,479	13,303	7,317	0	0	50	12	258	3,772	10,976	12,643	74,262	89
2027581	14,856	8,195	10,818	5,290	0	0	0	0	12	4,357	10,173	11,225	64,926	360
2157687	38,787	26,745	31,558	20,551	107	0	0	11	0	13,439	26,228	30,214	187,640	240
2133091	100,180	91,637	101,163	96,463	97,360	99,248	101,689	98,328	99,714	107,594	107,649	110,981	1,212,006	1,151
2027509	26,349	20,041	24,225	14,872	8,598	7,840	7,752	7,788	9,087	10,460	18,911	20,524	176,447	1,325
1658884	94,575	57,336	65,868	36,818	13,428	33,049	37,698	26,104	29,735	25,518	50,504	61,197	531,831	1,400
2064979	34,125	27,028	30,248	21,379	3,042	138	2,763	15,611	10,920	7,192	16,528	15,143	184,117	1,400
2250849	37,394	25,514	28,419	18,273	28	0	0	0	0	14,640	28,690	31,027	183,985	522
2188218	19,877	13,526	16,748	6,135	0	0	0	0	0	3,954	10,803	14,425	85,469	264
1987803	54,082	37,078	47,012	41,696	58,086	64,608	87,054	86,169	75,951	69,536	53,159	56,270	730,702	456
1989421	29,150	21,088	19,014	11,831	0	0	0	0	12	1,044	15,743	16,462	114,344	251
2024719	8,490	5,587	6,806	3,960	2,695	963	616	636	655	1,901	5,631	6,572	44,514	170
1921701	34,439	27,525	30,510	20,819	15,411	13,489	11,781	10,446	9,396	14,569	24,611	26,300	239,295	504
1701736	524,393	500,895	641,089	141,251	60,996	91,186	150,983	0	79,922	129,717	851,878	1,105,825	4,278,132	30,000
1701737	514,380	485,259	618,595	136,374	58,721	88,087	145,292	0	76,101	124,748	837,148	1,088,503	4,173,208	30,000
2250853	0	0	0	0	0	0	0	0	0	0	0	22,765	22,765	748
2023955	87,470	68,234	74,589	27,413	1,632	0	0	0	0	11,172	35,276	39,468	345,253	320
2027392	12,435	9,012	9,535	8,895	5,331	4,599	4,703	4,987	4,508	6,754	7,864	9,356	87,979	576
2253388	10,418	1,951	7,631	3,072	3,194	5,088	6,776	10,832	6,895	6,625	9,585	152	72,219	1,639
2253387	14,564	2,710	9,325	3,712	3,871	6,055	8,284	13,914	83	0	0	0	62,517	1,639
2171233	40,547	23,925	30,598	16,906	2,995	2,685	2,376	2,683	3,098	11,895	24,583	27,596	189,886	120
2027498	30,655	27,712	29,424	33,143	31,830	26,594	24,096	26,251	27,449	32,435	29,532	29,367	348,488	168
2035986	5,555	3,077	3,156	3,438	3,414	2,187	2,159	2,095	2,226	4,233	4,219	4,420	40,180	126
2036046	3,738	2,744	3,094	2,632	0	0	0	0	0	507	2,283	3,066	18,065	414
1987743	2,542	1,866	2,412	1,318	11	0	0	0	0	660	1,737	2,409	12,956	414
2123512	19,384	14,828	16,399	12,225	2,325	361	0	0	444	5,410	12,124	14,584	98,084	414
2116023	3,460	2,560	2,441	1,464	1,228	1,557	1,593	1,909	2,262	2,354	2,133	3,247	26,208	414
2025156	7,510	4,129	6,050	2,497	0	0	0	0	0	1,894	6,420	7,242	35,742	120
2188222	47,667	36,853	41,978	32,279	11,342	8,478	5,309	6,304	7,951	19,476	38,828	42,312	298,777	611
2239840	165,799	113,431	127,293	86,552	8,705	0	0	0	62	43,613	92,358	106,879	744,693	2,191
1954684	73,995	50,187	72,598	40,280	0	0	0	0	0	19,677	52,084	65,431	374,251	1,565
2036186	132,421	89,079	109,868	66,818	403	0	0	0	0	32,455	82,287	100,738	614,069	2,087
2036194	370,482	335,493	412,183	388,972	363,623	270,412	301,793	322,971	367,085	343,686	315,712	357,212	4,149,626	2,365
2036191	37,900	27,821	24,914	15,093	45,060	45,035	67,931	127,640	45,377	1,524	0	471	438,766	2,203
2115831	27,267	16,809	14,453	11,508	0	0	0	0	0	83	5,516	17,866	93,502	2,203
1806080	14,084	8,535	11,092	8,150	103	0	0	0	0	4,045	10,206	11,640	67,855	277
2027476	10,576	7,774	8,885	7,787	5,896	5,049	4,175	4,765	5,329	6,985	8,878	8,659	84,758	144
2012853	3,979	3,047	3,471	2,578	946	395	66	251	479	1,989	3,594	3,773	24,568	39
2012851	4,223	3,087	3,573	2,455	740	404	323	330	457	1,584	3,007	3,196	23,377	49
2012857	3,487	2,418	2,840	2,095	539	237	98	223	492	1,395	2,825	3,228	19,877	39
2025003	6,405	4,597	5,229	4,175	2,800	0	0	0	0	0	0	0	23,206	65
2025082	2,938	2,154	2,109	1,512	508	0	0	0	0	0	0	0	9,222	163
2027524	27,675	23,559	28,820	16,999	7,293	12,422	23,879	23,680	13,006	12,302	23,104	27,376	240,116	1,774
1987801	26,614	22,632	27,533	16,230	6,778	11,252	22,060	21,846	11,908	11,142	21,296	25,189	224,480	1,774
2198739	10,078	5,171	6,122	2,617	0	0	0	0	1	1,766	5,867	6,887	38,509	240
2024703	18,742	13,310	17,731	8,915	0	0	0	0	0	5,599	13,586	14,566	92,449	1,252
2123490	8,410	4,848	5,864	2,633	4,098	3,662	5,466	6,421	4,166	0	8,575	5,479	59,622	400
2250865	98,013	72,236	85,848	55,877	47,929	44,200	39,660	39,826	42,131	58,791	79,434	84,961	748,907	1,325
2116157	53,023	40,327	43,480	36,061	23,728	22,741	24,685	23,122	19,991	32,655	45,864	47,073	412,749	432
1658874	51,820	45,517	49,473	45,774	40,049	39,525	26,847	36,007	41,350	45,412	51,639	49,356	522,769	503
2123517	25,478	20,955	24,435	12,581	4,607	3,625	2,964	3,075	3,428	8,889	18,088	20,716	148,839	180
2026874	4,346	2,807	3,780	2,086	4	0	0	0	0	1,244	3,049	3,471	20,788	54
1954683	48,487	36,332	42,040	30,483	19,936	17,040	15,182	14,755	16,625	20,458	36,402	40,562	338,300	728
1685268	10,860	5,884	5,259	2,613	0	0	0	0	31	1,293	5,053	5,622	36,615	152
2027381	5,304	3,774	4,287	2,849	1,141	1,067	1,051	1,052	953	1,556	3,825	4,539	31,398	402
2027430	5,293	3,775	4,250	2,840	1,160	1,065	1,046	1,057	946	1,559	3,826	4,525	31,340	402
2027642	26,914	11,304	14,248	4,962	0	0	0	0	0	2,620	10,832	11,911	82,791	27
2115832	31,825	9,776	10,666	3,745	0	0	0	0	0	0	985	10,974	67,972	69
2115588	11,198	6,649	8,486	4,067	1,984	1,784	1,717	1,779	1,796	3,060	7,960	7,853	58,334	385
2115589	10,103	5,936	7,252	3,656	1,843	1,607	1,509	1,554	1,602	2,844	7,194	7,114	52,213	385
2023812	14,915	11,736	12,149	7,665	1,863	1,507	1,671	1,725	1,739	4,696	8,772	10,115	78,554	131
2157685	41,247	25,476	28,254	15,214	3,791	3,439	3,243	3,198	3,294	10,764	22,038	23,392	183,350	496

MTR_NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL_CCF	MDQ (dth)
2023952	37,649	28,845	32,848	21,235	5,908	5,597	5,401	4,591	4,636	16,848	25,100	31,123	219,783	549
1771898	0	0	726	71,979	188,893	154,164	99,634	96,364	94,355	133,999	30,910	38,698	909,723	750
2132941	46	1,433	7,441	6,832	6,307	6,049	6,484	6,582	6,327	6,992	7,533	7,388	69,414	750
1722906	24,351	19,079	18,117	11,546	0	0	0	0	0	6,389	14,022	15,910	109,414	340
2036145	18,124	11,007	13,457	6,768	51	37	0	0	0	3,785	12,162	14,889	80,279	163
2027591	2,838	2,077	2,662	2,048	1,423	1,278	1,297	1,174	1,532	1,860	2,377	2,972	23,539	73
2171228	71,161	51,658	52,961	44,163	38,942	36,352	33,671	36,731	39,239	46,801	61,391	64,624	577,692	400
2026737	11,559	6,951	8,697	3,690	0	0	0	0	0	2,325	6,182	7,916	47,320	231
2027620	18,789	11,972	15,275	8,976	0	1	1	1	1	5,089	13,361	15,044	88,511	235
2116150	19,302	12,913	15,338	7,354	0	0	0	0	0	2,688	10,507	13,247	81,349	302
2026838	18,874	11,912	14,811	6,568	0	0	0	0	0	3,021	11,468	14,548	81,203	72
2269427	4,681	3,822	3,963	701	0	0	0	0	0	218	2,403	4,227	20,016	269
2027589	12,517	7,280	9,437	4,225	0	0	0	0	0	2,202	8,903	10,743	55,306	130
1658876	37,473	23,049	25,740	10,915	0	0	0	0	0	7,922	20,839	39,948	165,885	574
2171235	41,167	22,882	23,317	11,616	0	0	0	0	207	7,653	21,783	28,732	157,357	412
2123520	17,225	11,374	12,465	6,025	0	0	0	11	11	2,101	10,027	14,055	73,293	322
1987786	9,391	6,715	8,184	4,703	0	0	0	0	0	2,395	5,535	6,823	43,746	212
2064980	69,407	42,548	45,132	26,472	0	0	0	0	0	21,886	41,337	46,204	292,986	1,269
2036195	37,105	23,136	24,875	14,204	0	0	0	0	310	4,968	14,939	30,399	149,937	701
2027484	31,617	17,502	23,756	10,951	0	0	0	0	15	1,828	11,954	21,092	118,715	232
2116151	28,266	16,536	16,069	10,944	77	110	0	77	0	5,436	18,313	21,428	117,256	396
2171229	28,591	15,624	19,600	9,383	0	0	0	0	109	4,900	18,446	19,754	116,406	888
2036189	24,495	18,060	21,515	11,835	0	0	0	0	0	5,300	15,526	19,589	116,321	397
2123513	27,240	17,907	13,890	7,190	0	0	0	0	0	6,002	15,540	13,205	100,975	374
2123521	15,946	9,422	10,728	4,259	0	0	0	6,241	10,161	7,786	8,732	9,986	83,261	351
2027483	17,160	11,886	12,961	7,964	1	1	0	1	1	4,701	11,478	15,360	81,514	192
2036193	22,154	14,018	14,573	5,496	0	0	0	0	0	2,793	9,024	10,580	78,639	598
1987496	17,707	10,302	12,917	6,597	0	0	0	0	0	2,907	10,588	16,537	77,556	263
2027464	17,919	11,654	11,289	4,482	0	0	0	0	1	5,408	11,188	12,553	74,494	200
2036185	20,246	8,777	12,735	2,791	0	0	0	0	0	724	11,989	15,966	73,229	341
2157690	15,755	7,464	10,746	3,497	0	0	0	0	32	2,492	8,304	9,117	57,407	494
2123489	13,667	7,906	13,363	4,588	1	4	1	0	1	1,888	7,988	6,225	55,633	225
2171227	15,020	7,175	10,531	4,554	0	0	0	0	0	2,597	8,962	6,672	55,509	92
2115143	13,583	8,306	9,847	3,512	0	0	0	0	4	1,526	7,154	9,260	53,192	797
2198752	10,534	7,347	8,578	5,481	0	0	0	0	0	1,585	6,749	8,147	48,420	232
2250845	12,287	6,109	6,943	3,002	11	0	0	0	0	2,043	5,331	8,012	43,738	281
2115833	10,108	5,624	6,778	3,328	0	0	0	0	0	1,799	5,766	7,117	40,521	270
2115842	10,035	4,878	5,556	2,721	0	3	0	0	0	1,407	5,487	6,431	36,519	278
2116149	9,330	4,964	6,424	1,888	0	0	0	0	0	786	5,860	6,660	35,911	242
2024367	7,151	4,775	5,116	2,536	0	0	0	0	0	1,546	4,744	5,273	31,140	888
2024706	7,247	4,750	5,572	2,496	0	0	0	0	6	952	4,355	5,143	30,522	240
2115141	7,640	4,273	4,791	1,878	0	0	0	0	11	1,683	5,094	4,771	30,141	212
2115136	8,771	5,249	5,468	1,971	0	0	0	0	0	1,557	5,273	0	28,289	202
1906630	6,709	5,137	4,889	2,441	10	0	4	0	2	1,019	2,669	4,735	27,615	215
2198753	6,335	4,220	5,403	2,461	0	0	0	0	0	1,184	3,471	4,180	27,253	197
2024389	5,174	3,221	3,397	1,417	0	0	0	0	2	636	2,877	3,347	20,072	312
2133043	3,960	2,149	2,732	1,481	3	0	0	0	57	756	2,127	2,281	15,545	148
1987810	12,136	6,897	7,387	5,051	41	0	0	0	0	1,604	6,462	7,749	47,327	245
2250862	58,975	44,562	57,175	37,245	0	0	0	0	23	23,146	47,283	50,653	319,062	663
2250850	77,597	59,221	64,280	30,234	0	0	0	0	21	10,354	22,967	32,231	296,904	582
1724856	35,212	24,435	29,554	13,079	0	0	0	0	103	11,792	26,033	30,084	170,292	927
1658875	29,925	24,519	28,242	17,899	196	0	0	0	0	9,043	27,333	32,128	169,285	573
2133093	31,426	21,944	26,152	16,326	1	0	1	0	1	8,628	24,499	25,194	154,174	150
2123528	26,027	16,065	18,206	15,281	568	0	0	0	103	11,803	20,544	21,161	129,758	336
2115137	17,835	20,688	30,880	12,276	628	0	1	0	0	5,844	14,494	17,170	119,816	452
2024702	25,710	19,171	16,407	5,845	0	0	0	0	0	3,180	17,272	23,434	111,018	573
2027520	15,349	10,091	12,023	6,144	1	0	0	0	66	6,406	11,478	14,244	75,801	927
2155650	9,816	6,228	7,617	4,666	1,019	351	259	335	381	2,864	7,764	8,712	50,012	113
2064977	0	10,989	9,545	4,555	506	72	0	0	0	1,614	6,037	7,948	41,266	229
2064977	0	6,655	9,545	4,555	506	72	0	0	0	1,614	6,037	7,948	36,932	229
2027243	0	17,165	18,859	18,819	19,623	19,272	20,047	19,984	18,861	19,389	18,507	19,882	210,410	69
2024694	13,649	6,390	9,254	3,452	0	0	0	0	4	2,194	6,990	6,447	48,380	245
2133071	23,557	15,990	18,591	11,575	4,853	3,916	3,489	3,465	3,838	8,282	15,670	18,269	131,495	250
2027403	23,674	16,065	18,711	11,625	4,657	3,670	3,284	3,270	3,526	8,115	15,777	18,388	130,762	250
2024285	7,748	5,430	6,405	4,018	721	582	496	538	571	2,585	5,499	6,463	41,056	15
2024290	7,538	5,241	6,340	3,984	704	594	512	527	542	2,668	5,117	6,198	39,966	15
2024299	7,517	5,154	6,206	3,645	708	574	488	585	610	2,490	4,927	5,826	38,730	15
2211319	0	0	11,458	14,986	16,209	18,850	19,665	20,166	17,082	17,394	15,827	10,948	162,587	34
2027527	15,230	9,649	14,724	5,210	252	86	39	356	736	4,536	9,570	11,586	71,974	240
2024675	893	749	841	751	622	537	495	525	535	609	704	873	8,134	140
2123460	8,147	4,010	5,312	1,953	0	0	0	0	0	375	4,264	5,511	29,572	135
1884576	38,801	25,888	30,641	19,645	8,716	22	0	0	0	10,968	25,112	27,531	187,324	301
2250863	80,335	54,468	61,484	32,955	7,183	5,758	5,411	5,481	5,736	23,176	50,669	59,737	392,392	173
2027387	16,372	10,989	15,571	11,387	7,612	7,866	7,519	8,049	7,596	11,472	19,819	22,949	147,201	224
1685276	15,545	7,378	9,579	5,777	0	0	0	0	10	2,265	5,001	6,369	51,926	420
1658882	44,529	25,526	32,053	9,716	0	0	0	0	0	11,325	22,330	22,211	167,689	472
1723900	37,314	26,722	0	50,067	20,658	15,799	0	0	0	3,103	10,995	16,081	180,740	521
2171234	93,872	79,087	79,278	63,442	41,215	43,145	38,031	39,512	42,032	53,403	69,988	73,062	716,069	123
2115901	684	456	572	329	29	0	0	0	0	121	438	508	3,137	348
1987633	4,718	2,717	3,378	1,697	0	0	0	0	0	362	2,464	2,936	18,272	348
2035694	1,866	1,196	1,406	797	4	0	0	0	0	324	1,112	1,380	8,084	348
1987683	1,778	1,171	1,510	598	0	0	0	0	0	351	1,183	1,359	7,950	348
2115434	1,087	644	740	366	25	0	0	0	0	225	673	784	4,543	348
2023825	7,578	4,673	6,235	2,029	0	0	0	0	0	1,166	4,529	5,613	31,823	76
2027563	9,802	6,374	8,838	3,702	3	0	0	0	0	1,784	6,088	6,648	43,238	75
2027536	8,406	5,033	5,536	3,162	0	0	0	0	0	636	5,935	8,635	37,344	83
1722889	10,813	6,902	8,472	4,365	51	0	0	0	0	2,894	6,717	7,854	48,068	163
2250843	18,371	14,606	17,023	12,514	3,140	2,210	2,148	2,177	1,838	8,830	14,871	15,611	113,338	266
2026870	4,434	2,903	3,359	1,594	0	0	0	0	0	0	0	0	12,289	82
1806079	29,734	23,239	27,792	12,331	5,600	9,278	5,863	5,332	8,602	12,381	18,010	22,307	180,470	605
2027641	13,152	9,545	12,152	5,992	0	0	0	0	0	3,129	10,132	9,851	63,952	186
2024992	1,513	900	1,138	409	0	0	0	0	0	239	960	990	6,149	400
2025099	6,778	3,048	4,064	1,551	26	0	0	0	0	1,130	4,043	5,125	25,764	400
1986388	6,280	4,000	4,927	2,234	13	0	0	0	0	975	3,866	4,606	26,901	400
2188225	19,543	14,311	17,314	12,110	5,660	5,225	4,958	4,839	4,915	8,681	15,037	17,178	129,770	419
1909334	6,948	5,242	6,316	4,597	1,843	1,450	1,194	1,408	1,436	3,243	5,231	6,003	44,910	130
2027383	9,025	5,766	6,831	3,408	0	0	0	0	0	1,694	4,945	9,683	41,351	54
2123522	5,994	2,075	2,299	1,981	0	0	0	0	0	579	1,484	1,764	16,175	226
1611015	0	0	2,385	40,197	46,367	33,357	29,528	46,223	60,077	71,406	60,896	37,551	427,988	750
2188223	10,907	8,923	9,688	4,085	0	0	10	0	464	2,566	8,176	9,793	54,611	286

MTR_NBR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL_CCF	MDQ (dth)
2064982	823,516	631,760	731,226	518,619	331,370	283,994	264,918	265,372	303,908	420,763	649,409	723,659	5,948,514	2,317
1786008	420,959	314,461	347,635	272,578	196,882	165,956	153,378	146,513	155,721	213,052	273,045	300,305	2,960,484	2,318
1786009	389,404	291,601	322,662	253,188	183,144	154,493	142,637	136,195	144,878	198,482	253,030	277,898	2,747,612	2,317
2036192	61,185	50,320	57,667	46,359	43,983	40,101	39,828	40,203	49,776	46,458	44,568	49,165	569,614	2,317
1658885	1,974	419	4,464	7,461	930	16,732	31,920	44,162	17,742	7,869	2,284	2,387	138,343	1,311
2064981	0	0	0	0	0	0	0	0	928	0	0	0	928	2,317
1658886	0	0	0	0	0	0	0	0	0	0	0	0	0	1,311
2027386	6,263	6,486	6,231	6,849	6,110	5,345	3,640	5,930	4,922	4,330	4,795	3,920	64,823	141
2026820	19,951	17,536	19,526	17,905	18,701	16,924	17,071	17,286	17,083	18,386	15,264	0	195,632	60
2023953	83,940	58,086	72,814	60,645	33,702	26,548	21,636	21,719	25,175	40,863	61,158	68,877	575,164	576
2027564	13,285	5,642	5,820	0	0	0	0	0	0	0	0	0	24,747	215
2027625	5,834	3,657	4,312	0	0	0	0	0	0	0	0	0	13,804	215
2027529	56,915	38,321	45,594	30,055	10,302	8,808	6,874	7,027	7,476	22,428	40,402	44,719	318,920	706
2239841	69,911	54,082	60,346	43,188	35,007	33,049	31,601	31,333	34,373	41,934	53,348	57,101	545,273	1,043
2116160	41,576	39,230	43,796	28,640	0	0	0	0	0	9,410	46,040	42,633	251,324	547
2027433	7,305	4,828	5,444	3,386	971	1,314	3,019	3,430	2,699	2,014	5,173	6,585	46,166	144
2027434	6,617	4,259	4,972	2,990	1,787	2,544	3,376	3,680	2,301	1,918	4,533	5,909	44,886	144
1685277	31,460	17,200	22,345	5,353	0	0	0	0	0	2,732	14,847	18,352	112,289	417
2239838	22,552	14,863	18,543	12,340	5,567	4,936	4,379	4,467	4,987	9,272	16,158	18,309	136,373	313
1582089	49,960	40,167	47,508	27,314	5,825	4,709	4,357	5,410	6,088	18,906	39,662	45,467	295,373	479
2023948	23,407	18,966	20,593	13,923	4,942	4,257	4,522	5,278	4,466	11,603	17,155	18,180	147,291	360
2024714	12,245	8,777	8,190	5,893	18	31	43	41	47	2,739	7,221	9,694	54,938	167
2064820	3,164	1,481	1,881	639	0	0	0	0	0	349	2,249	2,597	12,360	58
2157702	39,736	29,064	35,807	29,705	22,544	19,774	24,200	30,808	22,262	23,374	29,161	31,114	337,549	43
2027583	37,283	34,575	38,246	32,584	39,522	37,877	38,808	38,840	37,038	38,145	36,383	37,175	446,475	725
2036187	53,278	36,279	36,895	18,768	1,577	456	0	0	0	9,724	27,153	31,949	216,079	725
2116162	196,134	147,441	176,487	139,856	103,190	95,939	98,322	108,337	93,758	111,272	144,457	163,895	1,579,089	2,549
1685275	2,380	2,240	2,650	1,410	2,490	1,860	2,160	1,060	0	10	20	0	16,280	226
2027494	24,656	16,707	21,390	9,398	0	0	0	0	0	7,284	17,075	18,990	115,499	100
2123463	5,580	3,438	3,662	2,697	2,075	1,669	1,494	1,607	1,732	2,376	2,680	2,921	31,932	119
2123484	5,173	3,175	3,393	2,474	1,885	1,526	1,367	1,466	1,588	2,164	2,448	2,675	29,334	119
2123467	7,570	5,522	6,733	3,950	735	577	488	659	593	2,219	5,199	5,989	40,235	80
2115593	19,942	14,197	14,872	13,609	8,176	7,922	7,185	8,333	7,301	11,658	13,795	13,185	140,176	388
1575425	18,013	11,995	15,556	5,313	0	0	0	0	0	4,634	11,774	10,385	77,671	383
2211334	17,697	12,795	14,746	7,823	2,534	3,039	799	2,471	3,383	7,469	13,392	16,485	102,634	449
2025146	7,304	4,186	5,256	2,301	8	0	0	7	0	1,038	4,370	5,559	30,028	270
2025172	6,811	3,910	4,939	2,156	0	0	0	5	0	924	4,065	5,203	28,014	208
2027443	24,010	15,934	19,591	0	14,914	3,338	2,450	2,538	2,607	6,895	14,878	17,589	124,743	180
1526478	36,830	28,270	35,021	10,634	0	0	0	0	0	5,416	24,483	27,148	167,801	617
2027160	9,814	7,047	7,931	4,088	0	0	0	0	0	3,079	6,250	7,441	45,650	75
2024698	10,024	6,461	8,160	4,694	0	0	0	0	0	2,114	6,512	7,549	45,513	272
2250858	13,921	8,920	10,801	5,661	0	0	0	0	0	3,207	9,138	10,664	62,313	272
2157683	59,788	45,538	49,364	46,752	40,467	37,147	35,242	39,074	37,957	43,345	46,414	44,277	525,364	1,465

Tab 8

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(9)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(9) A schedule depicting historic monthly end-user transportation through-put by customer. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423 (relating to orders to limit availability of proprietary information).

Response:

Please see the schedule attached to the response to 53.64(c)(8), Tab #7, which also provides the monthly end-user transportation through-put by customer.

Tab 9

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(10)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(10) A schematic system map, locating and identifying by name, the pressure and capacity of all interstate or intrastate transmission pipeline connections, compressor stations, utility transmission or distribution mains 6 inches or larger in size, storage facilities, including maximum daily injection and withdrawal rates, production fields, and each individual supply or transportation customer which represents 5% or more of total system throughput in a month. Each customer or account shall be identified solely by a unique alphanumeric code, the key to which may be provided subject to § 5.423.

Response:

Following the lead of the industry, as well as federal policy guidelines regarding the security of information relating to energy transmission sites, PGW will no longer provide this data to the general public. However, upon request PGW will provide this information to the Commission and will also provide access to this information at a PGW facility of the Company's choosing, upon written request, to parties to this proceeding that have legitimate business reasons to view this information.

Tab 10

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(11)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(11) If any rate structure or rate allocation changes are to be proposed, a detailed explanation of each proposal, reasons therefore, number of customers affected, net effect on each customer class, and how the change relates to or is justified by changes in gas costs proposed in the Section 1307(f) tariff filing. Explain how gas supply, transportation and storage capacity costs are allocated to customers which are primarily nonheating, interruptible or transportation customers.

Response:

PGW is not proposing any rate structure or rate allocation changes in the instant proceeding, therefore, no testimony or schedules have been provided in this pre-filing to support such changes.

PGW will provide testimony regarding gas procurement policies, strategies, and the GCR calculation in its 1307(f) March 1 filing.

Tab 11

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(12)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(12) A schedule depicting the most recent 5-year consecutive 3-day peak data by customer class (or other historic peak day data used for system planning), daily volumetric throughput by customer class (including end-user transportation throughput), gas interruptions and high, low and average temperature during each day.

Response:

Schedule 1 – Three-day peak for FY 13-14 through FY 17-18.

There were not any gas interruptions during the period of FY 13-14 through FY 17-18.

3 DAY PEAK ANALYSIS

Winter Peak Season	Date	Average Temp.	Hi Temp.	Low Temp.	Total Sendout (mcfs)	Firm Sendout	Cogen Sendout	LBS Sendout	BPS Sendout	GTS Sendout	IT Sendout
2013 - 2014	Jan 22	14	19	8	576,853	513,402	59	0	114	2,422	60,855
2013 - 2014	Jan 23	18	26	13	550,700	485,528	61	0	104	1,698	63,310
2013 - 2014	Jan 24	22	29	15	544,086	478,302	61	0	114	3,716	61,893
2014 - 2015	Feb 15	11	17	4	645,370	563,253	0	0	0	4,018	78,099
2014 - 2015	Feb 16	16	21	9	617,947	527,584	0	0	0	3,957	86,406
2014 - 2015	Feb 17	24	30	19	532,242	452,250	0	0	0	3,751	76,241
2015 - 2016	Feb 12	26	30	22	490,537	407,974	43	0	0	3,984	78,536
2015 - 2016	Feb 13	16	24	9	583,377	498,793	43	0	0	3,870	80,671
2015 - 2016	Feb 14	18	24	11	562,929	489,468	43	0	0	3,653	69,765
2016- 2017	Jan 7	21	25	17	496,220	432,592	0	0	0	3,905	59,723
2016 - 2017	Jan 8	21	27	18	528,423	461,805	0	0	0	3,791	62,827
2016- 2017	Jan 9	24	31	19	519,336	449,873	0	0	0	3,709	65,754
2017- 2018	Jan 5	15	19	10	625,642	547,286	0	0	0	0	78,356
2017 - 2018	Jan 6	13	16	8	639,043	565,166	0	0	0	0	73,877
2017- 2018	Jan 7	20	27	9	582,222	516,469	0	0	0	0	65,753

Tab 12

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(13)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(13) Identification and support for any peak day methodology used to project future gas demands and studies supporting the validity of the methodology.

Response: Please see the attached Peak Day analysis. Also attached are excerpts from the August, 2006 ICF International *Natural Gas Supply Study* which supports PGW's peak day methodology.

Peak Day Analysis

PGW performs a peak day analysis on an annual basis to determine its projected sendout requirements during peak conditions. Essentially this process is completed by collecting sendout and average temperature data for all days where the temperature is at or below 32 degrees Fahrenheit, excluding holidays and weekends. All interruptible transportation volumes are removed from total sendout to arrive at firm sendout on a daily basis.

Common statistical practices warrant that no less than thirty (30) data points be utilized in the analysis to ensure its integrity. For this analysis, PGW has utilized data from the period winter of FY 14-15 through FY 16-17 which would reflect the most current consumption behaviors of its customers. This period yielded 53 data points where the average temperature was at or below 32 degrees Fahrenheit.

Degree days are calculated by subtracting the average daily temperature from sixty-five (65).

A standard linear regression was performed on the data using the calculated degree-days and the actual firm daily sendout information. Additionally, in order to confirm the accuracy of the analysis, and to smooth the charting of the data, a quadratic and a cubic regression analysis were also completed.

A resulting R^2 (Correlation Coefficient) indicates an 82.1 % correlation between firm sendout and degree-days. The multiple regression correlation co-efficient, R^2, is a measure of the proportion of variability explained by, or due to the regression (linear relationship) in a sample of paired data. It is a number between zero and one and a value close to zero suggests a poor model.

To verify the level of confidence we can ascribe to the model, we developed the attached Linear Regression Confidence Level Table. Essentially, this table compares the actual versus projected sendout to determine the level of variance expressed as a standard deviation. A standard deviation represents the positive square root of the variance where the variance simply represents the dispersion about the mean. In this analysis the sample standard deviation is 26,150 MCF.

The sample loses one degree of freedom for each estimated parameter. Thus, with a sample of 100 paired values and two estimated parameters (one for the constant and one for the coefficient of “degree days”), there are 100-2=98 degrees of freedom. In this analysis we had 53 data points and there were 51 Degrees of Freedom.

Finally, based upon the models developed, it can be determined that the company’s projected peak day sendout should be set at 672,749 MCF per day at 0 degree Fahrenheit. This calculation is performed using the X Coefficient (i.e. slope) multiplied by the number of degree days and adding the Constant (Y Intercept).

Winter 15-18 Data for Daily Temperatures <= 32 Degrees Fahrenheit

W/O Holidays, Weekends

Day	Date	Daily Temp	Degree Days X	X^2	X^3	Actual Firm Sendout (Mcf)	Firm Sendout Per DD (Mcf)	Linear Projected Firm Sendout (Mcf)	Quadratic Projected Firm Sendout (Mcf)	Cubic Projected Firm Sendout (Mcf)
Tuesday	11/18/2014	28	37	1,369	50,653	350,906	9,484	388,683	387,865	385,838
Wednesday	12/31/2014	32	33	1,089	35,937	340,403	10,315	347,546	350,303	353,546
Monday	1/5/2015	29	36	1,296	46,656	348,249	9,674	378,399	378,239	376,588
Tuesday	1/6/2015	25	40	1,600	64,000	400,833	10,021	419,536	417,684	416,941
Wednesday	1/7/2015	18	47	2,209	103,823	488,236	10,388	491,526	492,753	496,663
Thursday	1/8/2015	22	43	1,849	79,507	479,237	11,145	450,389	448,915	451,043
Friday	1/9/2015	28	37	1,369	50,653	413,890	11,186	388,683	387,865	385,838
Tuesday	1/13/2015	26	39	1,521	59,319	391,385	10,036	409,252	407,587	406,111
Wednesday	1/14/2015	31	34	1,156	39,304	373,561	10,987	357,830	359,459	360,345
Friday	1/16/2015	31	34	1,156	39,304	357,367	10,511	357,830	359,459	360,345
Wednesday	1/21/2015	32	33	1,089	35,937	344,596	10,442	347,546	350,303	353,546
Monday	1/26/2015	28	37	1,369	50,653	379,785	10,264	388,683	387,865	385,838
Tuesday	1/27/2015	27	38	1,444	54,872	407,871	10,733	398,967	397,648	395,711
Wednesday	1/28/2015	29	36	1,296	46,656	397,632	11,045	378,399	378,239	376,588
Friday	1/30/2015	27	38	1,444	54,872	396,701	10,440	398,967	397,648	395,711
Monday	2/2/2015	28	37	1,369	50,653	391,048	10,569	388,683	387,865	385,838
Tuesday	2/3/2015	28	37	1,369	50,653	395,063	10,677	388,683	387,865	385,838
Thursday	2/5/2015	23	42	1,764	74,088	426,585	10,157	440,105	438,348	439,503
Friday	2/6/2015	31	34	1,156	39,304	393,873	11,584	357,830	359,459	360,345
Monday	2/9/2015	30	35	1,225	42,875	365,974	10,456	368,115	368,770	368,058
Thursday	2/12/2015	27	38	1,444	54,872	399,536	10,514	398,967	397,648	395,711
Friday	2/13/2015	22	43	1,849	79,507	454,929	10,580	450,389	448,915	451,043
Tuesday	2/17/2015	24	41	1,681	68,921	452,250	11,030	429,820	427,937	428,104
Wednesday	2/18/2015	25	40	1,600	64,000	420,596	10,515	419,536	417,684	416,941
Thursday	2/19/2015	12	53	2,809	148,877	539,717	10,183	553,232	563,218	552,845
Friday	2/20/2015	16	49	2,401	117,649	552,584	11,277	512,095	515,614	517,798
Monday	2/23/2015	19	46	2,116	97,336	463,598	10,078	481,242	481,558	485,532
Tuesday	2/24/2015	24	41	1,681	68,921	445,516	10,866	429,820	427,937	428,104
Thursday	2/26/2015	29	36	1,296	46,656	379,463	10,541	378,399	378,239	376,588
Friday	2/27/2015	25	40	1,600	64,000	405,365	10,134	419,536	417,684	416,941
Thursday	3/5/2015	21	44	1,936	85,184	421,654	9,583	460,673	459,639	462,625
Friday	3/6/2015	23	42	1,764	74,088	423,507	10,084	440,105	438,348	439,503
Monday	1/4/2016	21	44	1,936	85,184	407,940	9,271	460,673	459,639	462,625
Tuesday	1/5/2016	27	38	1,444	54,872	398,646	10,491	398,967	397,648	395,711
Monday	1/11/2016	31	34	1,156	39,304	334,881	9,849	357,830	359,459	360,345
Wednesday	1/13/2016	28	37	1,369	50,653	379,941	10,269	388,683	387,865	385,838
Tuesday	1/19/2016	26	39	1,521	59,319	430,686	11,043	409,252	407,587	406,111
Thursday	1/21/2016	31	34	1,156	39,304	361,668	10,637	357,830	359,459	360,345
Friday	1/22/2016	27	38	1,444	54,872	397,773	10,468	398,967	397,648	395,711
Wednesday	2/10/2016	31	34	1,156	39,304	355,015	10,442	357,830	359,459	360,345
Thursday	2/11/2016	24	41	1,681	68,921	435,736	10,628	429,820	427,937	428,104
Friday	2/12/2016	26	39	1,521	59,319	419,340	10,752	409,252	407,587	406,111
Thursday	2/18/2016	32	33	1,089	35,937	345,555	10,471	347,546	350,303	353,546
Friday	2/27/2015	25	40	1,600	64,000	405,365	10,134	419,536	417,684	416,941
Thursday	3/5/2015	21	44	1,936	85,184	421,654	9,583	460,673	459,639	462,625
Friday	3/6/2015	23	42	1,764	74,088	423,507	10,084	440,105	438,348	439,503

Winter 15-18 Data for Daily Temperatures <= 32 Degrees Fahrenheit

W/O Holidays, Weekends

Day	Date	Daily Temp	Degree Days X	X^2	X^3	Actual Firm Sendout (Mcf)	Firm Sendout Per DD (Mcf)	Linear Projected Firm Sendout (Mcf)	Quadratic Projected Firm Sendout (Mcf)	Cubic Projected Firm Sendout (Mcf)
Friday	1/6/2017	29	36	1,296	46,656	352,566	9,794	378,399	378,239	376,588
Monday	1/9/2017	24	41	1,681	68,921	449,790	10,970	429,820	427,937	428,104
Friday	2/3/2017	30	35	1,225	42,875	355,990	10,171	368,115	368,770	368,058
Thursday	2/9/2017	27	38	1,444	54,872	369,581	9,726	398,967	397,648	395,711
Friday	3/10/2017	30	35	1,225	42,875	311,755	8,907	368,115	368,770	368,058
Tuesday	3/14/2017	28	37	1,369	50,653	376,677	10,180	388,683	387,865	385,838
Wednesday	3/15/2017	28	37	1,369	50,653	398,105	10,760	388,683	387,865	385,838
Wednesday	12/13/2017	31	34	1,156	39,304	356,661	10,490	357,830	359,459	360,345
Thursday	12/14/2017	31	34	1,156	39,304	354,205	10,418	357,830	359,459	360,345
Friday	12/15/2017	28	37	1,369	50,653	375,156	10,139	388,683	387,865	385,838
Tuesday	12/26/2017	29	36	1,296	46,656	373,541	10,376	378,399	378,239	376,588
Wednesday	12/27/2017	23	42	1,764	74,088	437,038	10,406	440,105	438,348	439,503
Thursday	12/28/2017	19	46	2,116	97,336	477,075	10,371	481,242	481,558	485,532
Friday	12/29/2017	22	43	1,849	79,507	450,419	10,475	450,389	448,915	451,043
Tuesday	1/2/2018	23	42	1,764	74,088	478,604	11,395	440,105	438,348	439,503
Wednesday	1/3/2018	28	37	1,369	50,653	412,224	11,141	388,683	387,865	385,838
Thursday	1/4/2018	21	44	1,936	85,184	490,920	11,157	460,673	459,639	462,625
Friday	1/5/2018	15	50	2,500	125,000	547,286	10,946	522,379	527,279	527,607
Monday	1/15/2018	31	34	1,156	39,304	399,760	11,758	357,830	359,459	360,345
Wednesday	1/17/2018	26	39	1,521	59,319	416,447	10,678	409,252	407,587	406,111
Thursday	1/18/2018	32	33	1,089	35,937	383,912	11,634	347,546	350,303	353,546
Tuesday	1/30/2018	30	35	1,225	42,875	387,491	11,071	368,115	368,770	368,058
Wednesday	1/31/2018	32	33	1,089	35,937	363,246	11,007	347,546	350,303	353,546
Friday	2/2/2018	25	40	1,600	64,000	421,195	10,530	419,536	417,684	416,941
Monday	2/5/2018	32	33	1,089	35,937	349,418	10,588	347,546	350,303	353,546
Thursday	2/8/2018	31	34	1,156	39,304	355,440	10,454	357,830	359,459	360,345
			65	4,225	274,625	404,395	10,500	676,643	721,094	544,506
			Count	75						

Firm Sendout Projection Based Data From 15-18

Data for Daily Temperatures <= 32 Degrees Fahrenheit

R Squared	Change	Student's T	Degrees of Freedom	Critical Value	@ 97.5% Significant
0.831263	0.831263	18.570033	70	1.99	Yes
0.832909	0.001646	0.824525	69	1.98	No
0.835068	0.002159	0.943409	68	1.98	No

Degrees of Freedom	**70**	**69**	**68**
97.5% Significance Level	**1.99**	**1.98**	**1.98**
95.0% Significance Level	**1.66**	**1.66**	**1.66**

LinearProjection at Zero Degrees Fahrenheit	676,643	Mcf
Linear Projection at 15 Degrees Fahrenheit	522,379	Mcf

*Student's T = Square Root[(Increase * Degrees of Freedom)/(1 - R Squared)]*

*Linear SO = Constant + (X * X Coefficient)*

*Quadratic SO = Constant + (X * X Coeff) + (X1u2□* X1u2□Coeff)*

*ic SO = Constant + (X * X Coeff) + (X1u2□* X1u2□Coeff) + (X1u3□* X1u3□Coeff)*

Linear Regression Confidence Level Table

Count	Degree Days X	Firm Sendout (Mcf) Y	Projected Linear Firm Sendout (Mcf) Ydc	Difference Actual Versus Projected Y - Yc	Actual Versus Projected Squared (Y - Yc)²	(Degree Days - Xm) X - Xm	(Degree Days - Xm) Squared (X - Xm)²	sdyc	t*sdyc	Lower Acc Lower	Upper Acc ydc∓ t*sdydc	"- 1 SD" Lower	"+ 1 SD" ydc∓ sdydc	"- 2 SD" Lower	"+ 2 SD" ydc∓ 2sdydc
1	33	340,403	347,546	(7,143)	51,016,206	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
2	33	344,596	347,546	(2,950)	8,700,557	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
3	33	345,555	347,546	(1,991)	3,963,705	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
4	33	383,912	347,546	36,366	1,322,482,473	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
5	33	363,246	347,546	15,700	246,488,496	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
6	33	349,418	347,546	1,872	3,504,205	(6)	31	3,914	7,794	339,752	355,340	323,766	371,326	299,987	395,105
7	34	373,561	357,830	15,730	247,445,833	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
8	34	357,367	357,830	(464)	215,063	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
9	34	393,873	357,830	36,042	1,299,047,773	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
10	34	334,881	357,830	(22,950)	526,685,251	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
11	34	361,668	357,830	3,837	14,724,336	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
12	34	355,015	357,830	(2,816)	7,928,594	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
13	34	356,661	357,830	(1,169)	1,367,331	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
14	34	354,205	357,830	(3,625)	13,143,011	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
15	34	399,760	357,830	41,930	1,758,097,302	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
16	34	355,440	357,830	(2,390)	5,713,673	(5)	21	3,498	6,965	350,865	364,795	334,051	381,610	310,271	405,390
17	35	365,974	368,115	(2,140)	4,580,245	(4)	12	3,125	6,222	361,892	374,337	344,335	391,894	320,555	415,674
18	35	355,990	368,115	(12,125)	147,007,828	(4)	12	3,125	6,222	361,892	374,337	344,335	391,894	320,555	415,674
19	35	311,755	368,115	(56,360)	3,176,415,525	(4)	12	3,125	6,222	361,892	374,337	344,335	391,894	320,555	415,674
20	35	387,491	368,115	19,376	375,444,478	(4)	12	3,125	6,222	361,892	374,337	344,335	391,894	320,555	415,674
21	36	348,249	378,399	(30,150)	909,012,823	(3)	6	2,812	5,599	372,800	383,998	354,619	402,179	330,839	425,958
22	36	397,632	378,399	19,233	369,919,831	(3)	6	2,812	5,599	372,800	383,998	354,619	402,179	330,839	425,958
23	36	379,463	378,399	1,064	1,132,015	(3)	6	2,812	5,599	372,800	383,998	354,619	402,179	330,839	425,958
24	36	352,566	378,399	(25,833)	667,330,102	(3)	6	2,812	5,599	372,800	383,998	354,619	402,179	330,839	425,958
25	36	373,541	378,399	(4,858)	23,599,110	(3)	6	2,812	5,599	372,800	383,998	354,619	402,179	330,839	425,958
26	37	350,906	388,683	(37,777)	1,427,107,075	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
27	37	413,890	388,683	25,207	635,389,737	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
28	37	379,785	388,683	(8,898)	79,177,816	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
29	37	391,048	388,683	2,365	5,591,988	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
30	37	395,063	388,683	6,380	40,700,430	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
31	37	379,941	388,683	(8,742)	76,425,478	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
32	37	398,274	388,683	9,591	91,988,020	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
33	37	362,151	388,683	(26,532)	703,936,104	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
34	37	376,677	388,683	(12,006)	144,152,145	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
35	37	398,105	388,683	9,421	88,761,450	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
36	37	375,156	388,683	(13,527)	182,984,402	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
37	37	412,224	388,683	23,541	554,170,549	(2)	2	2,581	5,140	383,543	393,823	364,903	412,463	341,124	436,243
38	38	407,871	398,967	8,903	79,267,569	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
39	38	396,701	398,967	(2,266)	5,135,329	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
40	38	399,536	398,967	569	323,813	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
41	38	398,646	398,967	(322)	103,387	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
42	38	397,773	398,967	(1,195)	1,427,582	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
43	38	369,581	398,967	(29,386)	863,539,923	(1)	0	2,456	4,891	394,077	403,858	375,188	422,747	351,408	446,527
44	39	391,385	409,252	(17,867)	319,233,809	0	0	2,453	4,884	404,368	414,135	385,472	433,031	361,692	456,811
45	39	430,686	409,252	21,434	459,406,681	0	0	2,453	4,884	404,368	414,135	385,472	433,031	361,692	456,811
46	39	419,340	409,252	10,088	101,773,875	0	0	2,453	4,884	404,368	414,135	385,472	433,031	361,692	456,811
47	39	416,447	409,252	7,195	51,771,836	0	0	2,453	4,884	404,368	414,135	385,472	433,031	361,692	456,811
48	40	400,833	419,536	(18,703)	349,793,540	1	2	2,571	5,120	414,416	424,656	395,756	443,316	371,977	467,095

Linear Regression Confidence Level Table

Count	Degree Days X	Firm Sendout (Mcf) Y	Projected Linear Firm Sendout (Mcf) Ŷdc	Difference Actual Versus Projected Y - Yc	Actual Versus Projected Squared (Y - Yc)²	(Degree Days - Xm) X - Xm	(Degree Days - Xm) Squared (X - Xm)²	sdyc	t*sdyc	Lower Acc Lower	Upper Acc Ŷdc∓ t*sdydc	"- 1 SD" Lower	"+ 1 SD" Ŷdc∓ sdydc	"- 2 SD" Lower	"+ 2 SD" Ŷdc∓ 2sdydc
49	40	420,596	419,536	1,060	1,124,192	1	2	2,571	5,120	414,416	424,656	395,756	443,316	371,977	467,095
50	40	405,365	419,536	(14,171)	200,820,996	1	2	2,571	5,120	414,416	424,656	395,756	443,316	371,977	467,095
51	40	421,195	419,536	1,659	2,752,227	1	2	2,571	5,120	414,416	424,656	395,756	443,316	371,977	467,095
52	41	452,250	429,820	22,429	503,075,318	2	6	2,797	5,569	424,251	435,389	406,041	453,600	382,261	477,380
53	41	445,516	429,820	15,695	246,345,764	2	6	2,797	5,569	424,251	435,389	406,041	453,600	382,261	477,380
54	41	435,736	429,820	5,916	34,996,729	2	6	2,797	5,569	424,251	435,389	406,041	453,600	382,261	477,380
55	41	449,790	429,820	19,969	398,779,324	2	6	2,797	5,569	424,251	435,389	406,041	453,600	382,261	477,380
56	42	426,585	440,105	(13,520)	182,789,807	3	12	3,106	6,184	433,921	446,289	416,325	463,884	392,545	487,664
57	42	423,507	440,105	(16,597)	275,474,046	3	12	3,106	6,184	433,921	446,289	416,325	463,884	392,545	487,664
58	42	437,038	440,105	(3,067)	9,403,905	3	12	3,106	6,184	433,921	446,289	416,325	463,884	392,545	487,664
59	42	478,604	440,105	38,499	1,482,205,436	3	12	3,106	6,184	433,921	446,289	416,325	463,884	392,545	487,664
60	43	479,237	450,389	28,848	832,233,578	4	20	3,476	6,921	443,468	457,310	426,609	474,169	402,829	497,948
61	43	454,929	450,389	4,541	20,617,369	4	20	3,476	6,921	443,468	457,310	426,609	474,169	402,829	497,948
62	43	450,419	450,389	30	908	4	20	3,476	6,921	443,468	457,310	426,609	474,169	402,829	497,948
63	44	421,654	460,673	(39,019)	1,522,494,188	5	30	3,890	7,746	452,927	468,419	436,893	484,453	413,114	508,233
64	44	407,940	460,673	(52,733)	2,780,799,007	5	30	3,890	7,746	452,927	468,419	436,893	484,453	413,114	508,233
65	44	442,443	460,673	(18,230)	332,348,895	5	30	3,890	7,746	452,927	468,419	436,893	484,453	413,114	508,233
66	44	490,920	460,673	30,247	914,872,469	5	30	3,890	7,746	452,927	468,419	436,893	484,453	413,114	508,233
67	46	463,598	481,242	(17,644)	311,307,707	7	56	4,803	9,565	471,677	490,806	457,462	505,021	433,682	528,801
68	46	477,075	481,242	(4,167)	17,361,419	7	56	4,803	9,565	471,677	490,806	457,462	505,021	433,682	528,801
69	47	488,236	491,526	(3,290)	10,821,722	8	72	5,288	10,530	480,996	502,056	467,746	515,306	443,967	539,085
70	49	552,584	512,095	40,489	1,639,366,348	10	110	6,291	12,528	499,566	524,623	488,315	535,874	464,535	559,654
71	50	547,286	522,379	24,907	620,367,196	11	132	6,805	13,551	508,827	535,930	498,599	546,159	474,819	569,938
72	53	539,717	553,232	(13,515)	182,647,505	14	209	8,378	16,682	536,549	569,914	529,452	577,011	505,672	600,791
	65		676,643	(676,643)	457,845,812,414	26	701	14,862	29,595	647,048	706,238	652,863	700,423	629,084	724,202
Tot/Avg	**39**	**404,395**	**373,288**		**29,970,134,357**		**1,396**								

t = 1.99

Xm = 39

Population Variance= **565,474,233**

			Upper Range	Lower Range
Population Standard Deviation of Regression	=	23,780	**1s** 428,175	380,616
			2s 451,955	356,836

Standard error of sendout projection **20,692**

T-factor **1.99**

(T factor) * (Std error of projection) 41,203

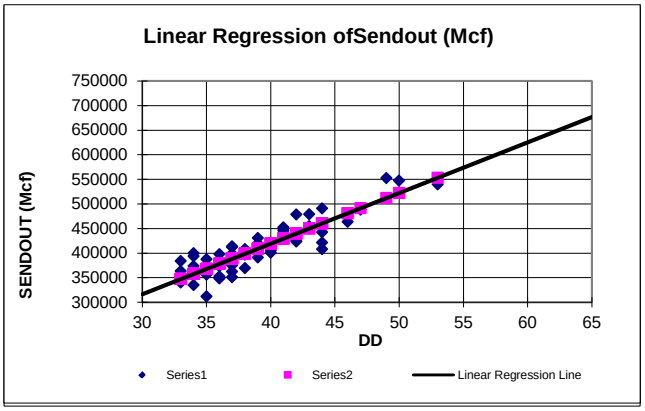
Regression Results

Winter 15-18

Based On Data for Daily Temperatures <= 32 Degrees Fahrenheit

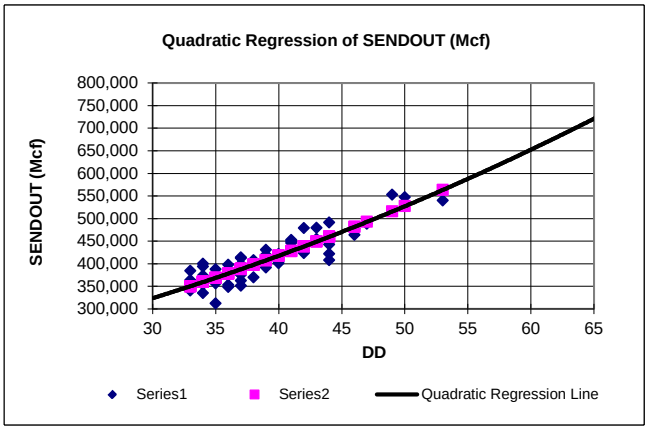
Regression Output:		**Quadratic**			**Cubic**			
Regression Output:		Regression Output:			Regression Output:			
Constant	8,165	Constant	136,216		Constant	1,274,729		
Std Err of Y Est	21,476	Std Err of Y Est	156,787		Std Err of Y Est	1,216,966		
R Squared	0.8313	R Squared	1		R Squared	1		
No. of Observations	72	No. of Observations	72		No. of Observations	72		
Degrees of Freedom	70	Degrees of Freedom	69		Degrees of Freedom	68		
			X	X^2		X	X^2	X^3
X Coefficient(s)	10,284	X Coefficient(s)	3898.4476	78	X Coefficient(s)	(79,695)	2,101	(16)
Std Err of Coef.	554	Std Err of Coef.	7764.7280	95	Std Err of Coef.	88,948	2,146	17
Zero Degree Temp Sendout	676,643			721,094			544,506	
DD 65								

Regression Chart Analysis
Based Upon Data For Temperatures Of <=32 Degrees F.
Winters 15-18



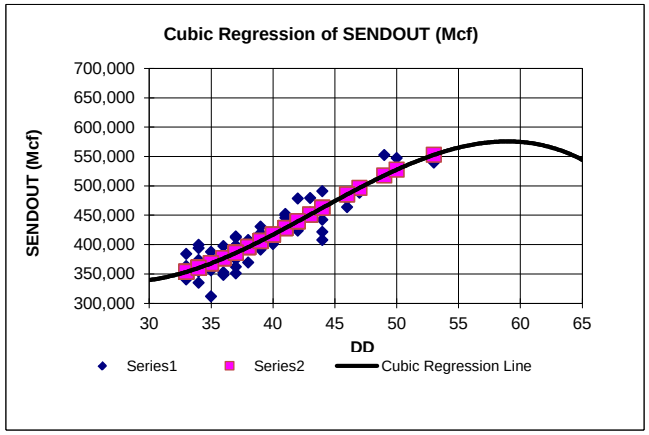
Linear Regression Output

Constant		8,165
Std. Error of Y Estimate		21,476
R Squared		0.831
Number of Observations		72
Degrees of Freedom		70
	X	
X Coefficient	10284	
Std. Err. Of Coefficeint	554	



Quadratic Regression Output

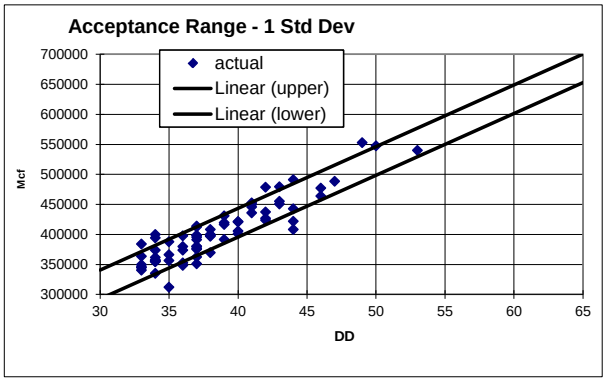
Constant		136,216	
Std. Error of Y Estimate		156,787	
R Squared		0.833	
Number of Observations		72	
Degrees of Freedom		69	
	X	**X ^ 2**	
X Coefficient	3,898	78	
Std. Err. Of Coefficeint	7,765	95	



Cubic Regression Output

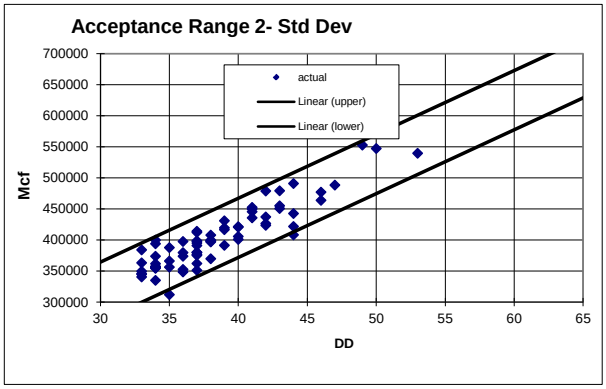
Constant		1,274,729		
Std. Error of Y Estimate		1,216,966		
R Squared		0.835		
Number of Observations		72		
Degrees of Freedom		68		
	X	**X ^ 2**	**X ^ 3**	
X Coefficient	-79695	2101	-16	
Std. Err. Of Coefficeint	88948	2146	17	

Regression Chart Analysis
Based Upon Data For Temperatures Of <=32 Degrees F.
Winters 15-18



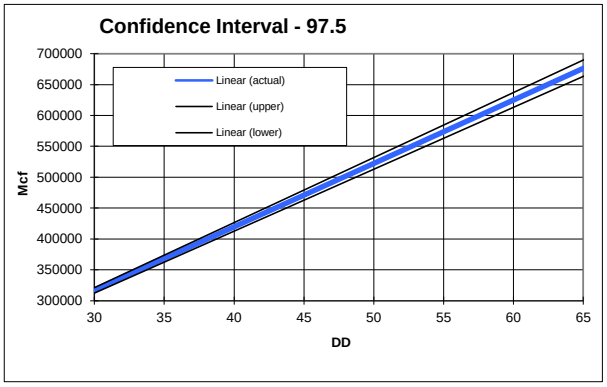
Acceptance Range @ 1 Standard Deviation

Regression Squared	565,474,233
Regression	23,780
Upper Range 1sd	428,175
Lower Range 1sd	380,616



Acceptance Range @ 2 Standard Deviation

Regression Squared	565,474,233
Regression	23,780
Upper Range 2sd	451,955
Lower Range 2sd	356,836



Confidence Interval: 97.5%

Regression Squared	565,474,233
Standard error of sendout projection	20,692
X Mean	39
T Distribution	1.99

PGW Natural Gas Supply Study

Prepared for
Philadelphia Gas Works

August 2006

Outline

- Introduction
- Market Context
- Design Winter and Day Analysis
- Supply Analysis and Issues
- Conclusions and Recommendations

Purpose of the Study

- Update ICF's 1997 supply analysis
- Review design and peak day estimation methodologies
  - Evaluate whether the current methodology is reasonable and yields reasonable results.
- Analyze the use of pipeline and storage capacity
  - Apply an analytic framework that can address whether PGW has the appropriate levels of gas pipeline capacity, storage, and LNG
- Evaluate the effect of expanding LNG liquefaction capabilities
  - Address the question whether expanding liquefaction capabilities with lower cost technology creates benefits for the system
- Develop recommendations for optimal allocation of gas supply assets

Analytic Approach

- Focus has been on the use of pipeline capacity, storage and LNG facilities, not on gas purchasing activities
- Reviewed both average year and design year demand characteristics
- Design year and design day estimations were examined for reasonableness
- Modeled asset usage with Energy Asset Decision Support System
  - Stochastic optimization
  - Useful for asset decision making under conditions of uncertainty
    - Gas and oil prices
    - Demand patterns
- Optimal solution identifies the least cost mix of assets

Key Questions Addressed

- Is PGW's approach to estimating Design Day and Design Winter demand reasonable?
- Does PGW have the correct amount of gas pipeline capacity?
- Does PGW have the correct mix and amount of gas storage capacity?
- Would expanding the liquefaction capabilities at the Richmond plant have a benefit to PGW?
- Does the asset mix allow PGW to benefit from releasing capacity and making off system sales?

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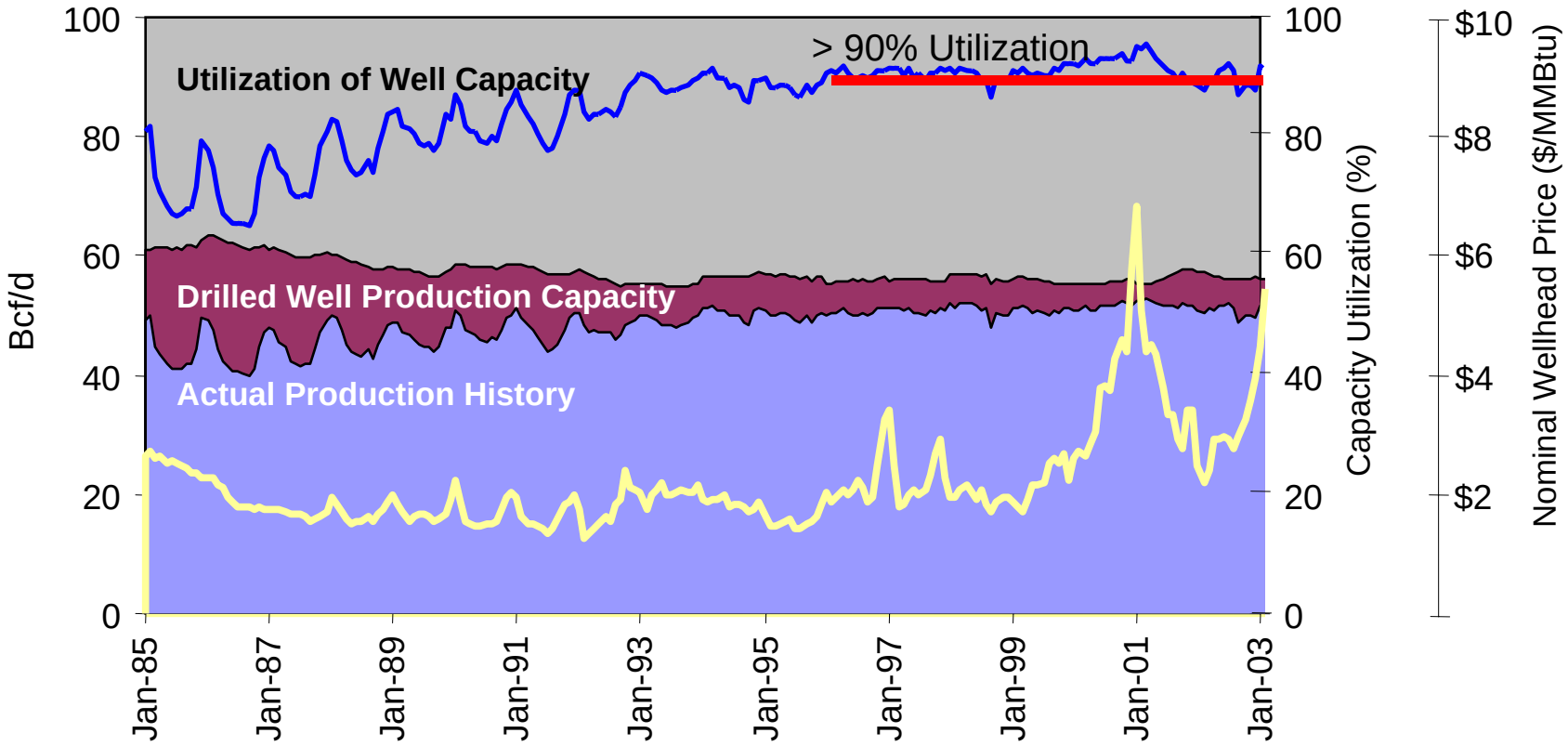
Planning in Today's Market Context

- The market context for PGW today is very different from the 1997 study.
  - Gas prices have tripled: our average price in 1997 was about $2.20/MMBtu, today it has averaged over $6.00/MMBtu
  - Volatility of gas prices has increased
  - Basis spreads have widened and shown substantial volatility
  - Sophistication in gas market risk management has grown
    - Capacity release
    - Off system sales
    - Financial hedges
  - Growing interest in imported LNG

Tight U.S. Supply has Created Volatility



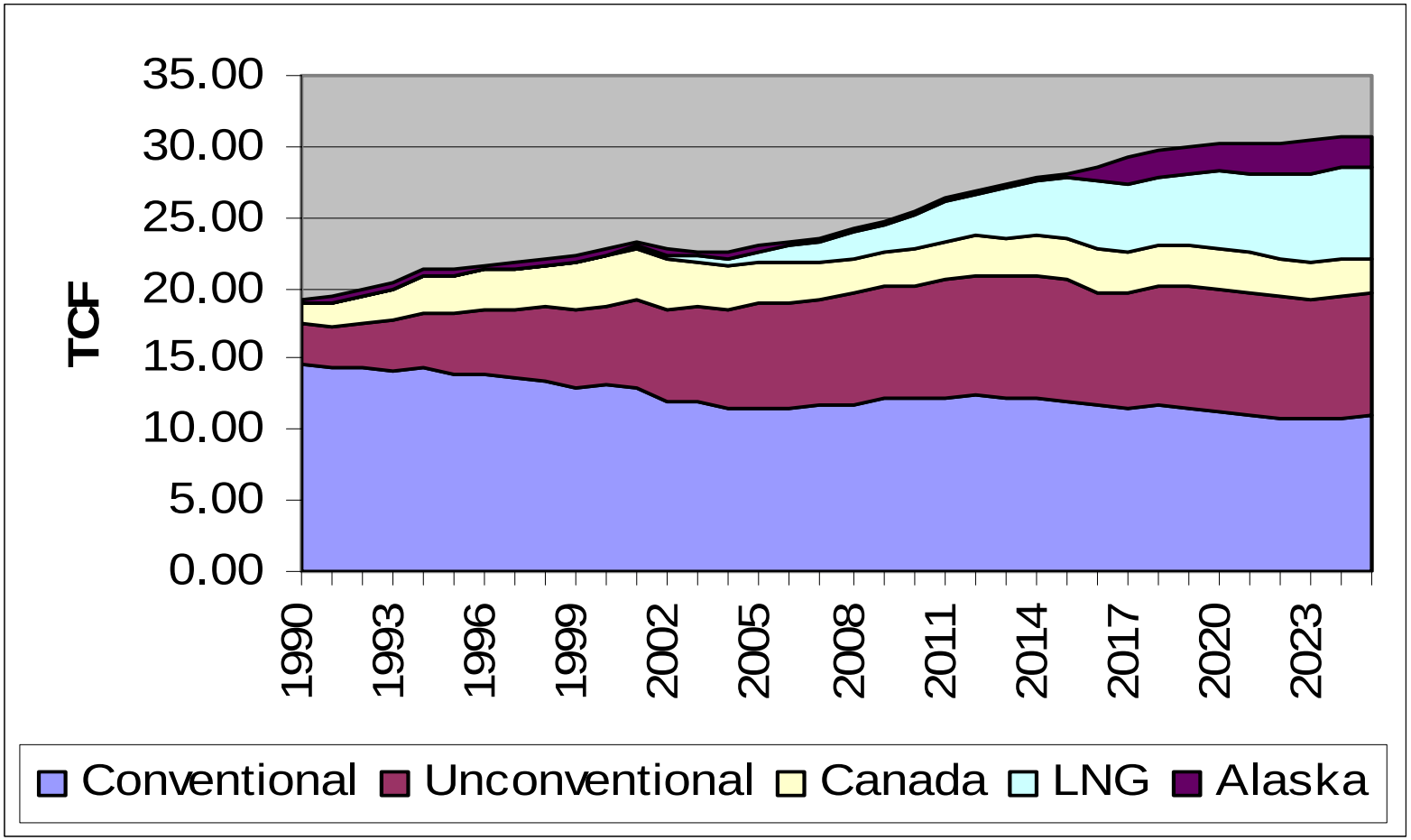
Source: Energy Information Administration

Passion. Expertise. Results.

Volatility is Permanent and is a Major Factor in Capacity Decision-Making

- By 1985, seven years after the Natural Gas Policy Act of 1978, the supply incentives had created a surplus of production capacity: 60 Bcf/d with demand running about 45 Bcf/d.
- Wellhead production met much of seasonal demand, hence gas prices stayed low in the late 80s and 90s. Well utilization rates were in the 70% range.
- As the surplus was worked off (aided by FERC Orders 436, 500 and finally 636), utilization rates crept to over the 90% level. As this happened, gas prices began exhibiting volatiltiy.
- The outlook is that volatility is a permanent fixture of our gas system. Tight natural gas supplies relative to demand leads to swings in prices needed to adjust supply to swings in demand.

LNG Grows to 21% of U.S. Supply



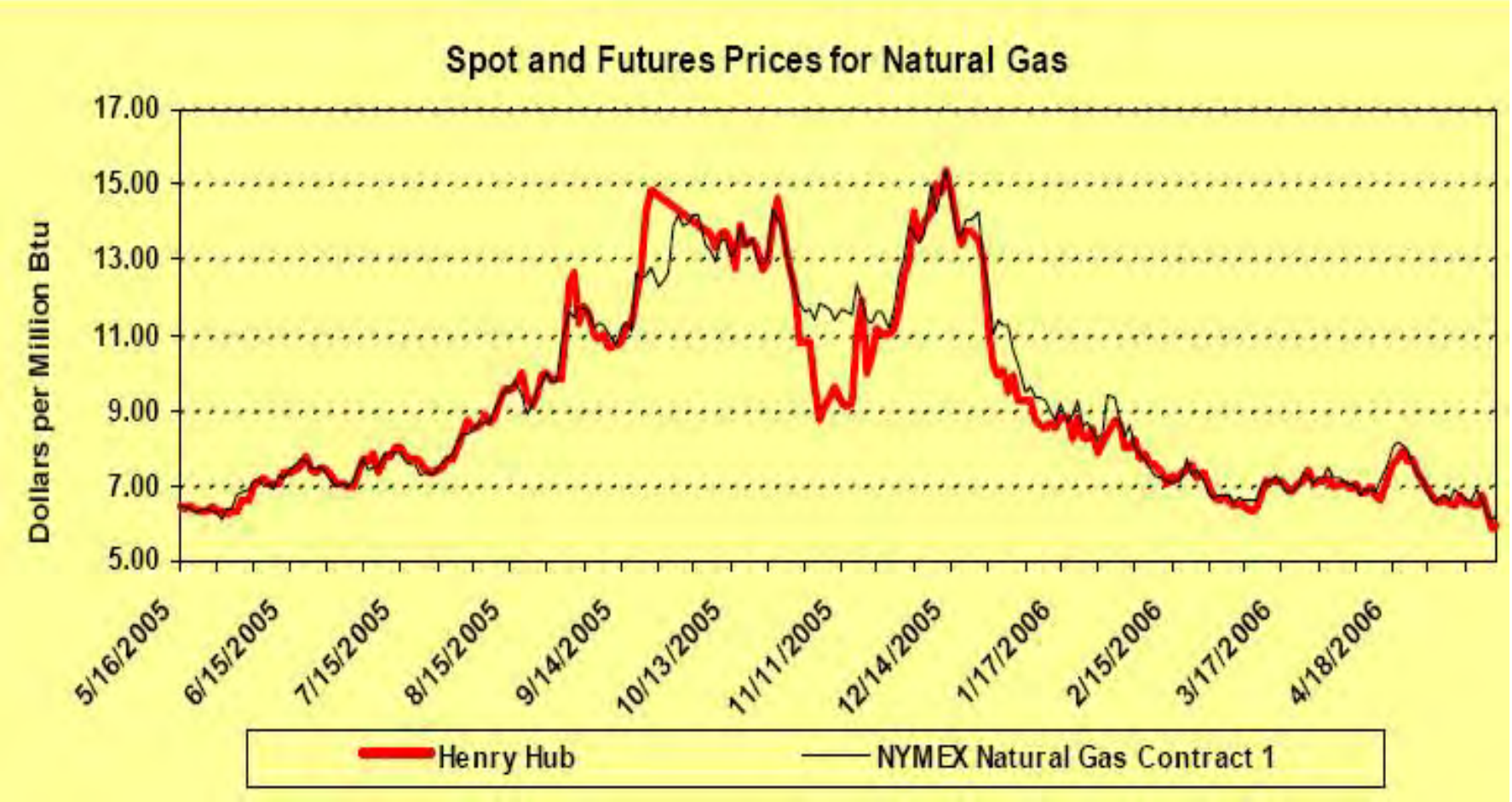
Source: Energy Information Administration, Annual Energy Outlook, 2005

Passion. Expertise. Results.

Conventional Gas Production is being Offset by Imports and Unconventional Sources

- Conventional production is in a long term decline
- Canadian imports have grown since 1990 but are beginning to level off.
- Major new sources are unconventional and LNG
- Alaska gas is expected in the post 2015 time frame

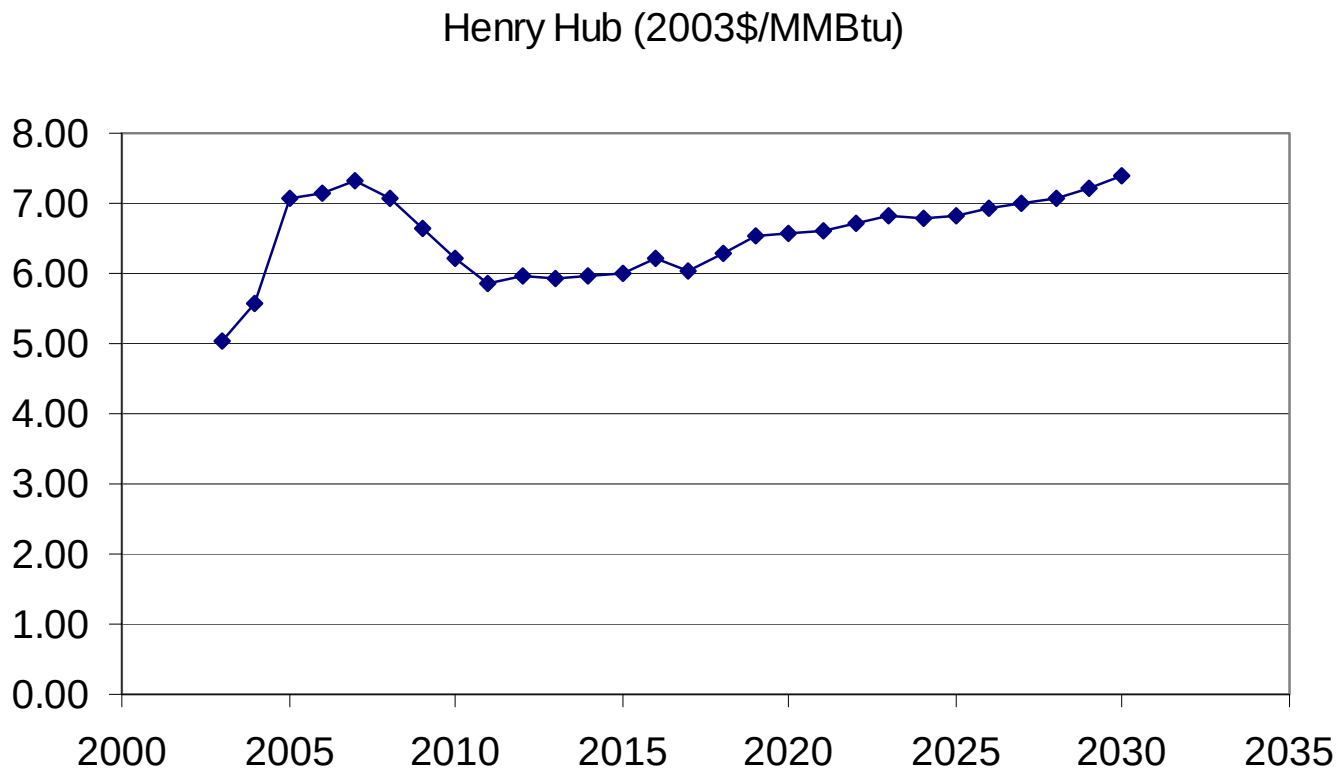
Gas Prices Have Declined from the Hurricane Hump – but Remain High Historically



Hurricane Impact on Gas Prices Reflects Market Sensitivity to Supply Disruption

- The hurricanes in the Gulf in 2005 reduced domestic production of gas by 40%. Gas prices responded.
- Unlike the oil industry where the oil price spike was short-lived, the Hurricane hump lasted much of the winter.
  - Oil markets responded globally: more oil was diverted to U.S. markets in response to prices alleviating the price impact
  - The U.S. is still not integrated into world gas markets so no such relief was available – we were on our own.
- As LNG becomes a larger share of the market, such events' effects may be more manageable.
- Nevertheless, volatility will remain a characteristic of the market.

ICF Reference Case Gas Price Forecast does not Anticipate Continued High Prices



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Long Term, Gas Prices will Decline from Recent Levels but will Recover

- Supply and demand responses to high gas prices will cause prices to fall through about 2010, on an annual basis.
  - Seasonal swings in prices and volatility will nevertheless dominate short term pricing monthly.
- Conventional gas (that is gas developed by conventional gas wells) will continue to decline.
- This will be offset by more gas production from unconventional settings and LNG.
  - Unconventional gas – coal bed methane, deep offshore, deep tight sands, shale – is more costly to produce
  - LNG will become a major supply source, approximately 14 Bcf/d by 2025, but will not be enough to set the price – which will be determined by unconventional resources
  - Most LNG will come through Gulf terminals to use existing pipeline capacity
- Major influencers of future gas prices are power demand growth and the availability of LNG

Significance of Volatility and Supply Uncertainty

- Volatility makes the ability to store gas more critical and causes the value of storage to increase
  - Managing the swings in gas prices is possible only if one can store gas when the price is low
  - Volatility creates “optionality” value for storage and increases the ability to trade around storage assets
- Supply uncertainty also enhances the value of storage
  - Hurricanes in the Gulf will disrupt production and LNG deliveries
- Storage provides a hedge for price and delivery uncertainty in addition to peak day and seasonal deliverability
- Participation in secondary markets through capacity release and off system sales is enhanced by holding assets in volatile markets

Outline

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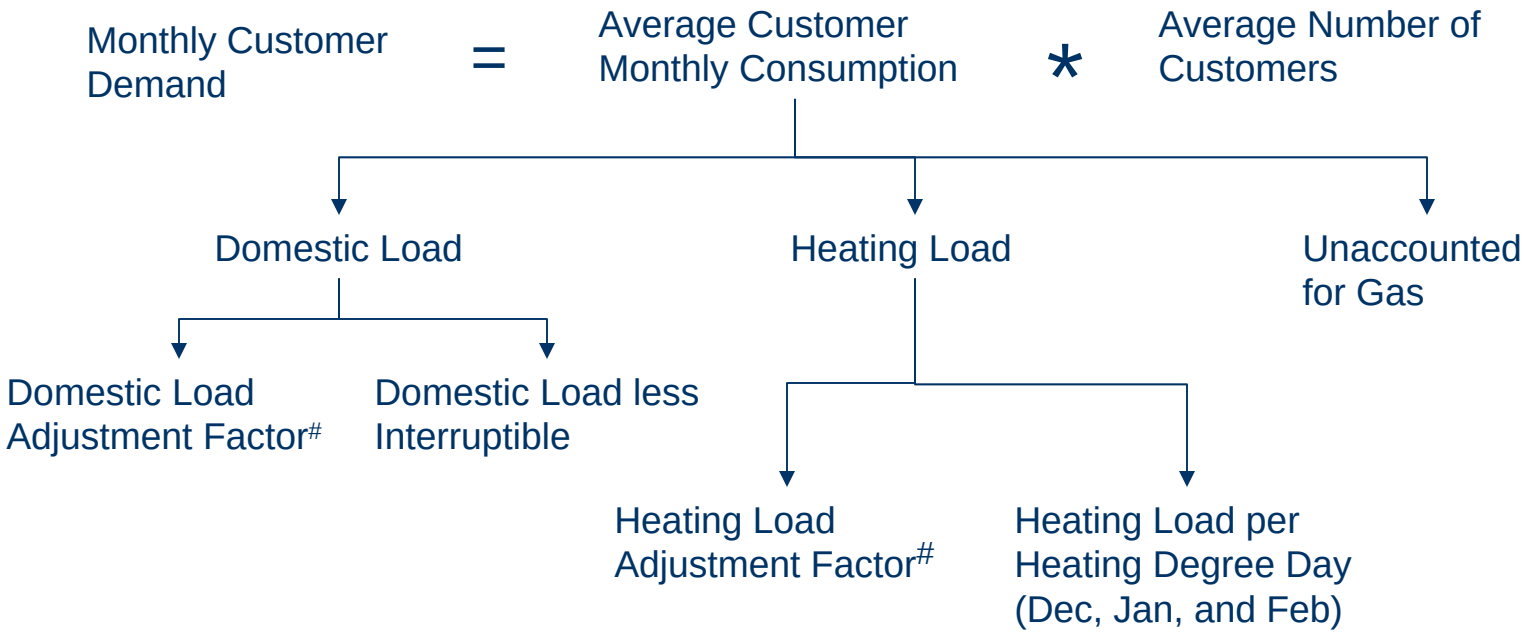
Purpose of Demand Estimation Review

- Design day and winter parameters drive investment decisions and asset allocations
  - Pipeline capacity
  - Storage capacity and utilization
  - LNG storage and vaporization
- Design parameters in turn impact system costs
  - Capacity payments
  - Inventory holding costs
- ICF used design day and design winter estimates to determine the appropriate gas asset mix

PGW's Approach to Estimating Demand

- PGW uses a combination of inputs into demand estimation
  - Historical demand trends for each customer class
  - Customer surveys
  - End use studies – appliance characteristics
  - Judgment of system operators
- Demand is related to temperature through heating degree days (HDD)
- Capacity planning focuses on the "Design Winter" and "Design Day"
  - These are concepts of peak demand that define the largest amount of gas that PGW must be able to deliver to meet system requirements and maintain system integrity
  - These represent statistically derived historical system peak limits

PGW Demand Estimation Methodology Overview



#Adjustment Factors account for error in estimation of demand in previous year

PGW Demand Estimation Methodology Evaluation

- Domestic Load is estimated by using latest year customer load thus accounting for improvements in energy efficiency of customer appliances
- Heating Load Adjustment Factor is estimated using normalized Heating Degree Days thus representing only error in estimation methodology
- Design Day demand estimated using firm load thus making the forecasting regression methodology robust
- Design Day demand estimated using four year peak day heating degree days allowing for a good fit

Philadelphia Winter Heating Degree Days

Data Set (1976-2005)	Nov	Dec	Jan	Feb	Mar	Winter Season
Historical Mean Degree Days	533	862	1,028	844	671	3,938[b]
Historical Peak Degree Days	762	1,219	1,400	1,183	911	4,535[b]
No. of Sample Observations	30	30	30	30	30	30
Sample Standard Deviation	95	144	162	129	99	213
Data Relative to Mean[a] (%)	18	17	16	15	15	5[b]
PGW's Design Degree Days	608	1,005	1,191	973	778	4,555

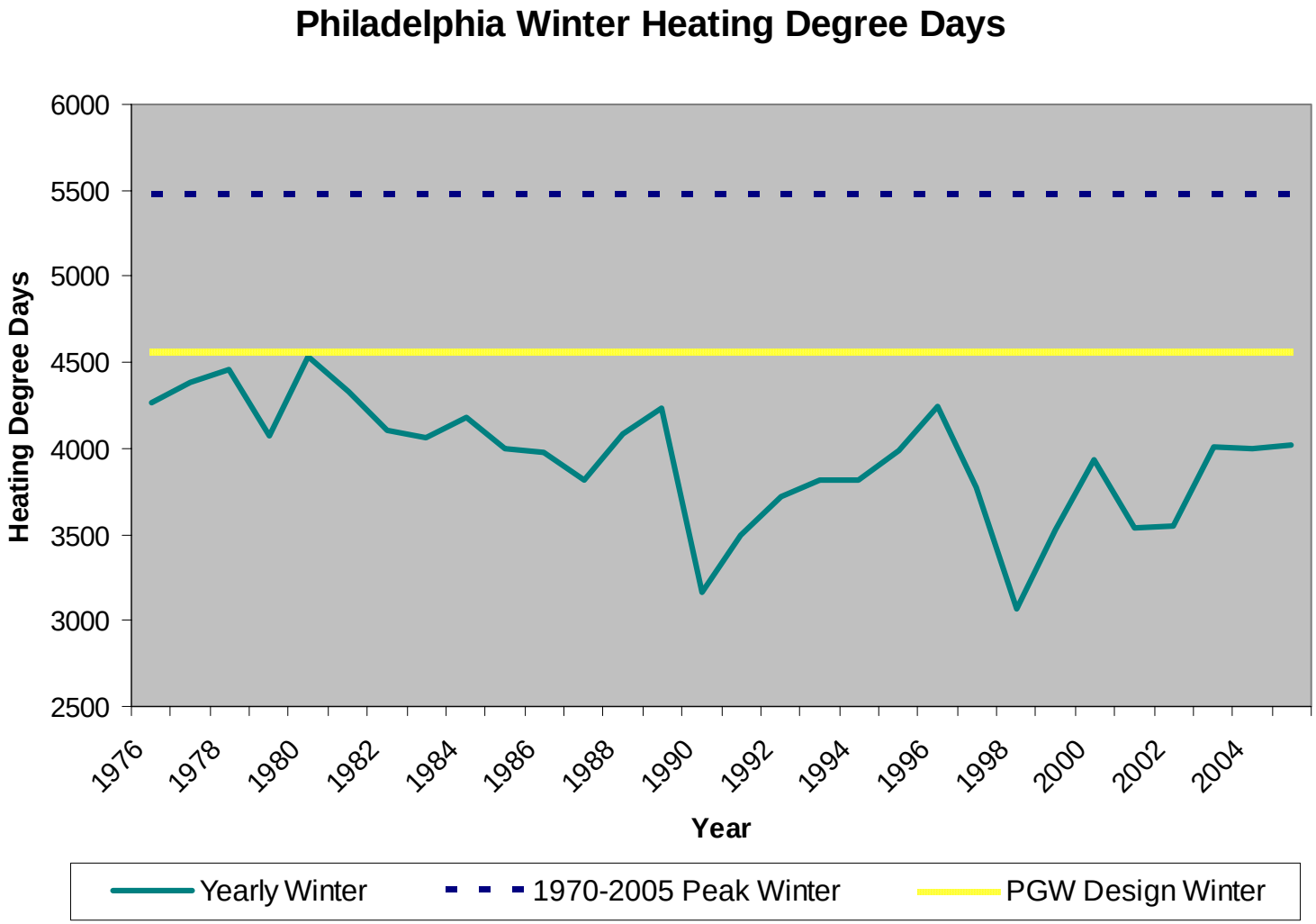
Notes:

[a] It is coefficient of variation, calculated as (sample standard deviation/sample mean)*100.

[b] Individual months do not add up to this total, because it has been calculated independently using the historical winter season data or the standard deviation for the season total.

PGW Design Degree Days are higher than NOAA estimate because of the location and frequency of measurements. PGW measures several times per day at the Richmond Plant. NOAA uses a simple average of the high and low temperatures.

PGW Design Winter Heating Degree Days



PGW's Design Year Estimates

- The previous slide compares the design winter based on coldest winter in 30 years with historical winter weather and the theoretically coldest winter, measured in heating degree days (HDDs).
- Recent winters have been warmer than in the 1980s, and the trend suggests warming.
- PGW's design winter is still substantially below the theoretical coldest winter
  - Theoretical coldest winter includes the coldest winter months picked from the last 30 years and assumes each month is the thirty year cold month

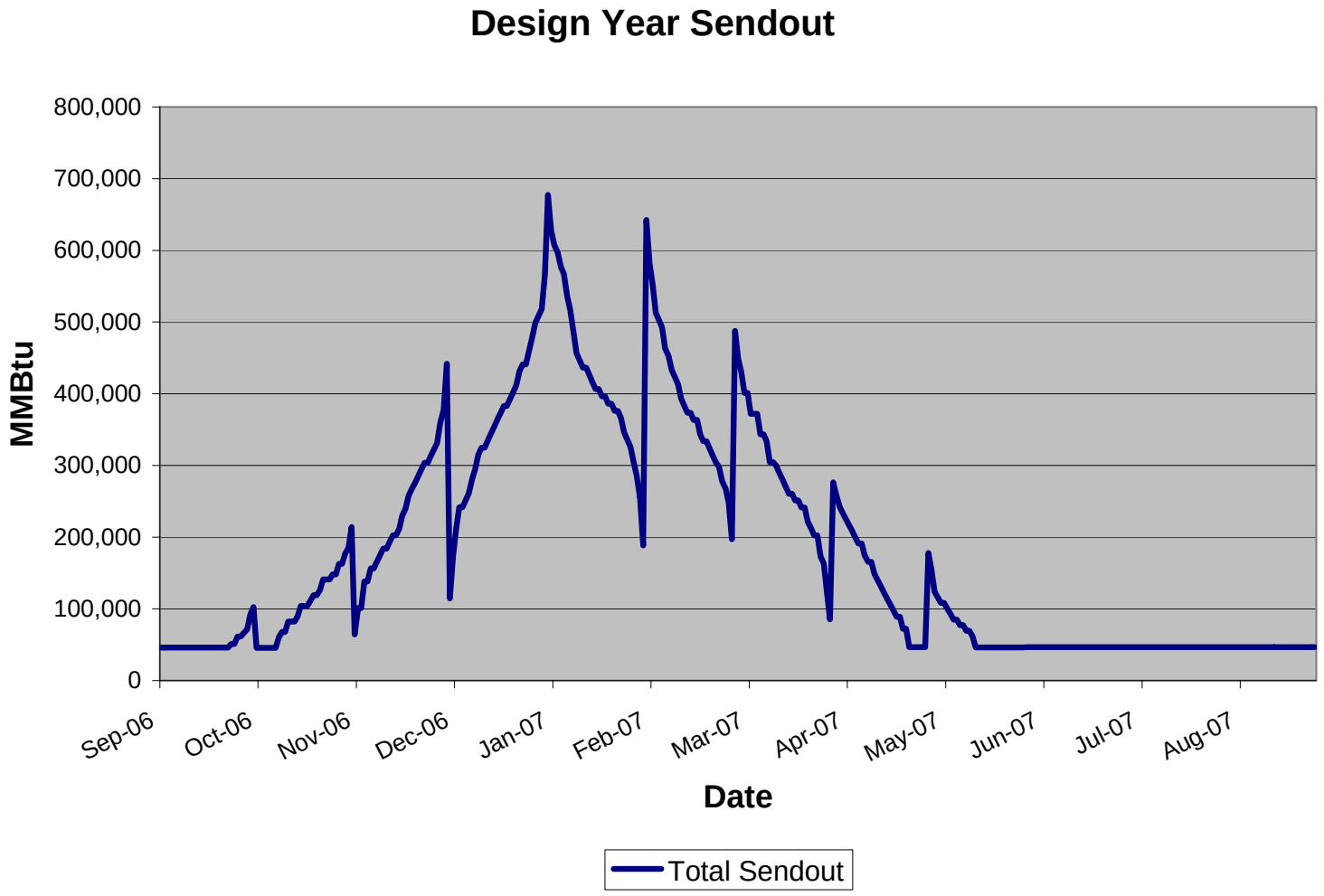
Findings on Peak and Winter Demand

- PGW's approach remains essentially the same as was reviewed in the previous study.
- PGW's approach yields a forecast of design day and design winter that are reasonable estimations.
  - The design conditions are below "theoretical" worst case (which could yield higher than necessary investments)
  - The probability of meeting design winter conditions remains approximately once in every 16 years.
- PGW's approach incorporates recent trends in local markets towards more efficient equipment and demand response to prices.
- Potential for demand growth is modest (given local and national trends).

ICF's Approach to Estimating Design Winter Sendout

- First step is to use design winter parameters for 2006-2007 provided by PGW for its PGC filings with the Philadelphia Gas Commission.
  - These data are from September through August and in the form of load duration curves for each month.
- Data were converted to April through March and randomized to reflect typical random weather and gas pricing patterns.
  - Converting data for April through March makes modeling storage easier
  - Gas sendout and prices are correlated
- Design and average years were differentiated.
  - All the analysis is based on daily, sequential sendout
  - Average and design years differ only in winter sendout

Design Year Sendout for Planning – Sept. 1 to August 31



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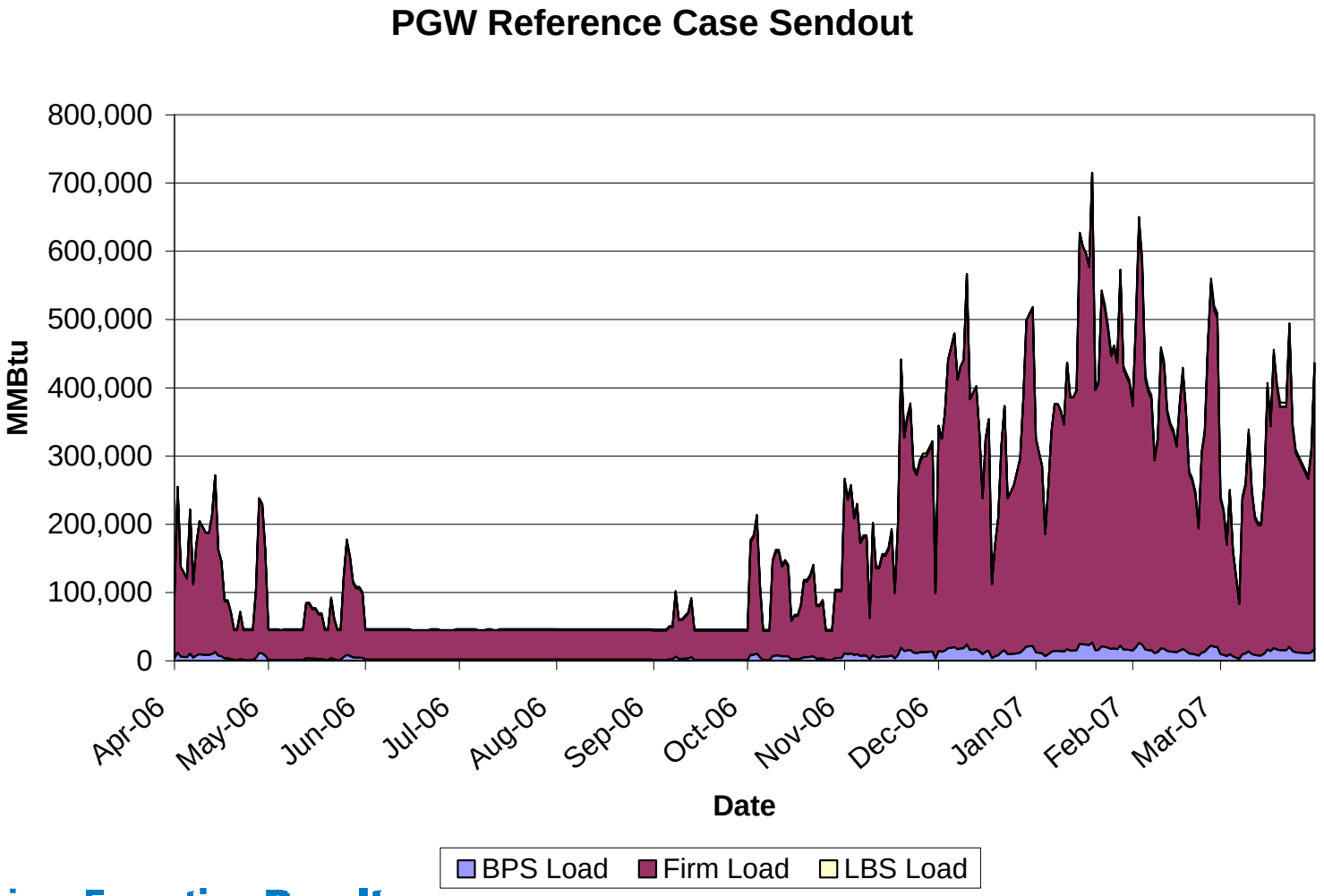
Sendout Reordered and Randomized – April 1 to March 31



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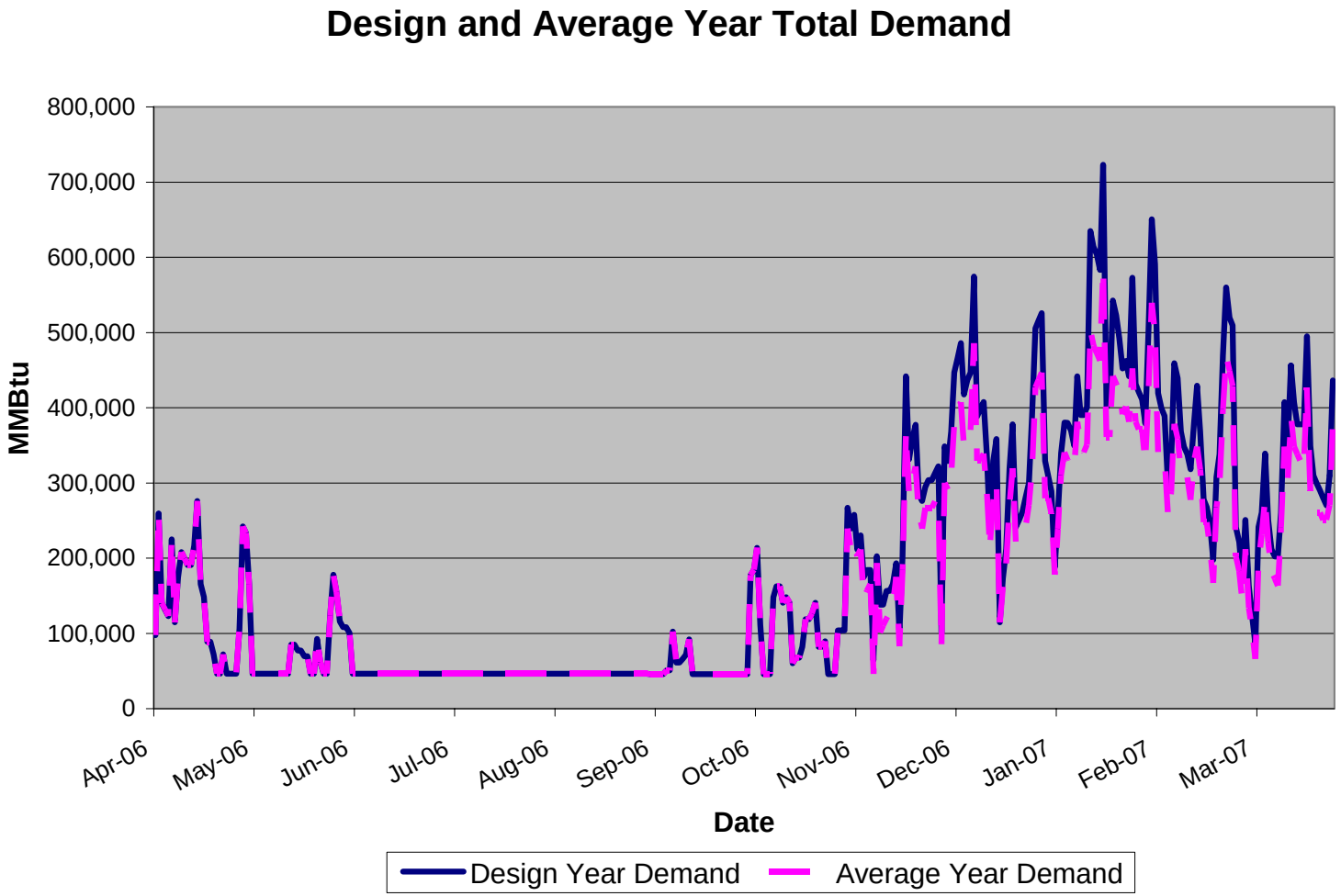
Demand Patterns Modeled Consistent with Gas Prices



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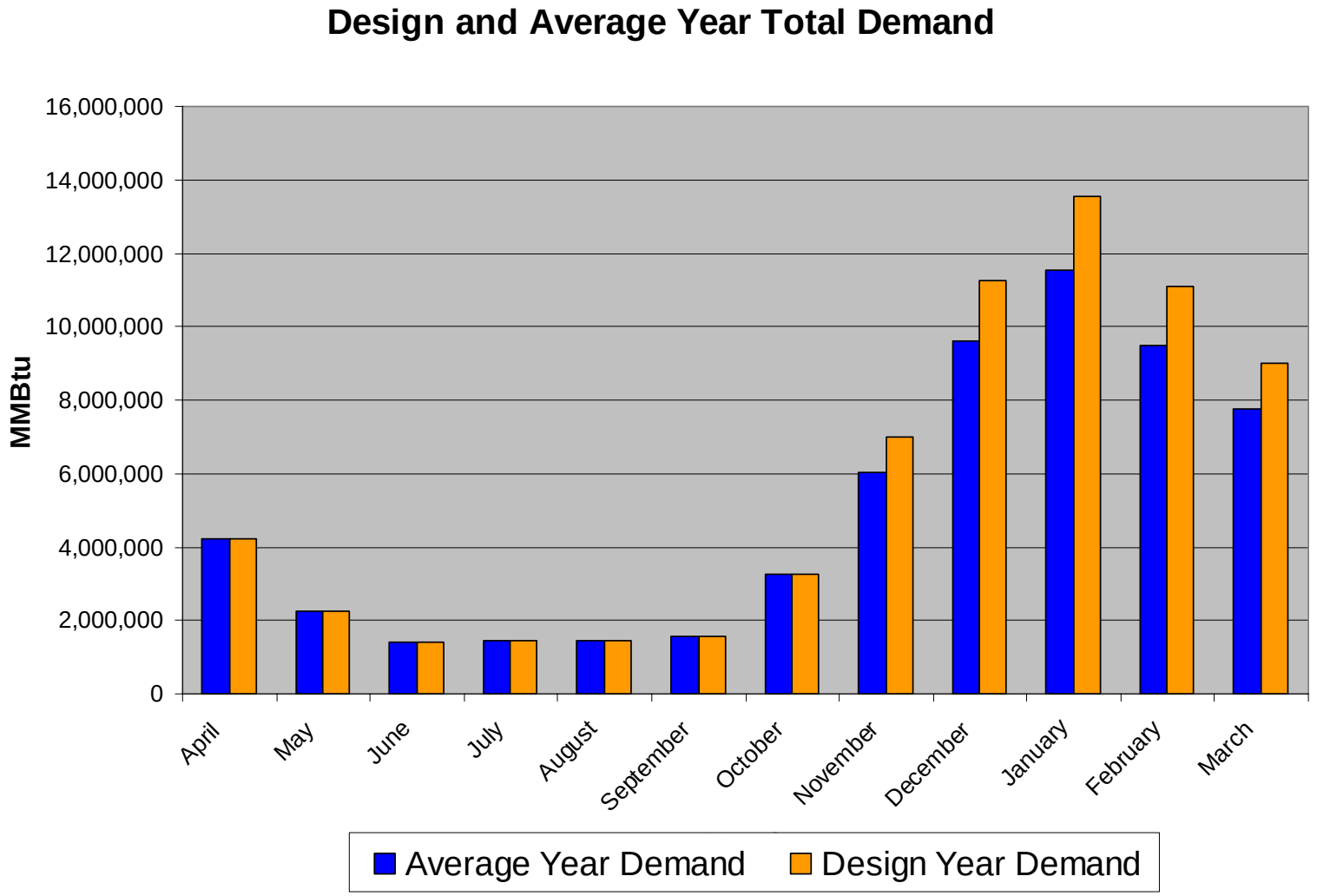
Design and Average Winter Demand -- Simplified



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Outline

- Introduction
- Market Context
- Design Winter and Day Analysis
- Supply Analysis and Issues
- Conclusions and Recommendations

Analytic Approach

- Use sequential optimization to identify the least cost mix of assets when there is volatility in gas demand, prices, and storage operations
  - Traditional approaches (and what was used in 1997) employ load duration curve that are useful for optimizing pipeline capacity and gas contracts.
  - Representing demand sequentially rather than as a load duration curve captures the inter-temporal aspects of gas storage optimization and effects of price volatility
- Key inputs include
  - Sendout and sendout variability – load represented on daily basis
  - Supply system topology and options
  - Gas and oil prices and price volatility
- Once these are implemented, we model the system under different conditions
  - Design year v. average year
  - With different supply options available or not
  - With different gas price patterns

Analytic Approach (contd.)

- Demand inputs
  - ICF used PGW's own forecasts of gas demand for average and design year from the 2006 PGC filing (June 2006)
  - Used a single year rather than multiple years or future year forecasts to simplify the analysis
- Supply topology inputs
  - Gas pipelines – capacity (MDQ), receipt/delivery points, costs, fuel, storage interconnections
  - Gas storage – capacity, injection/withdrawal MDQs, withdrawal ratchets, costs, fuel, pipeline interconnections
  - LNG – liquefaction capacity and rates of liquefaction, storage capacity, vaporization capability, liquefaction expansion potential, costs.

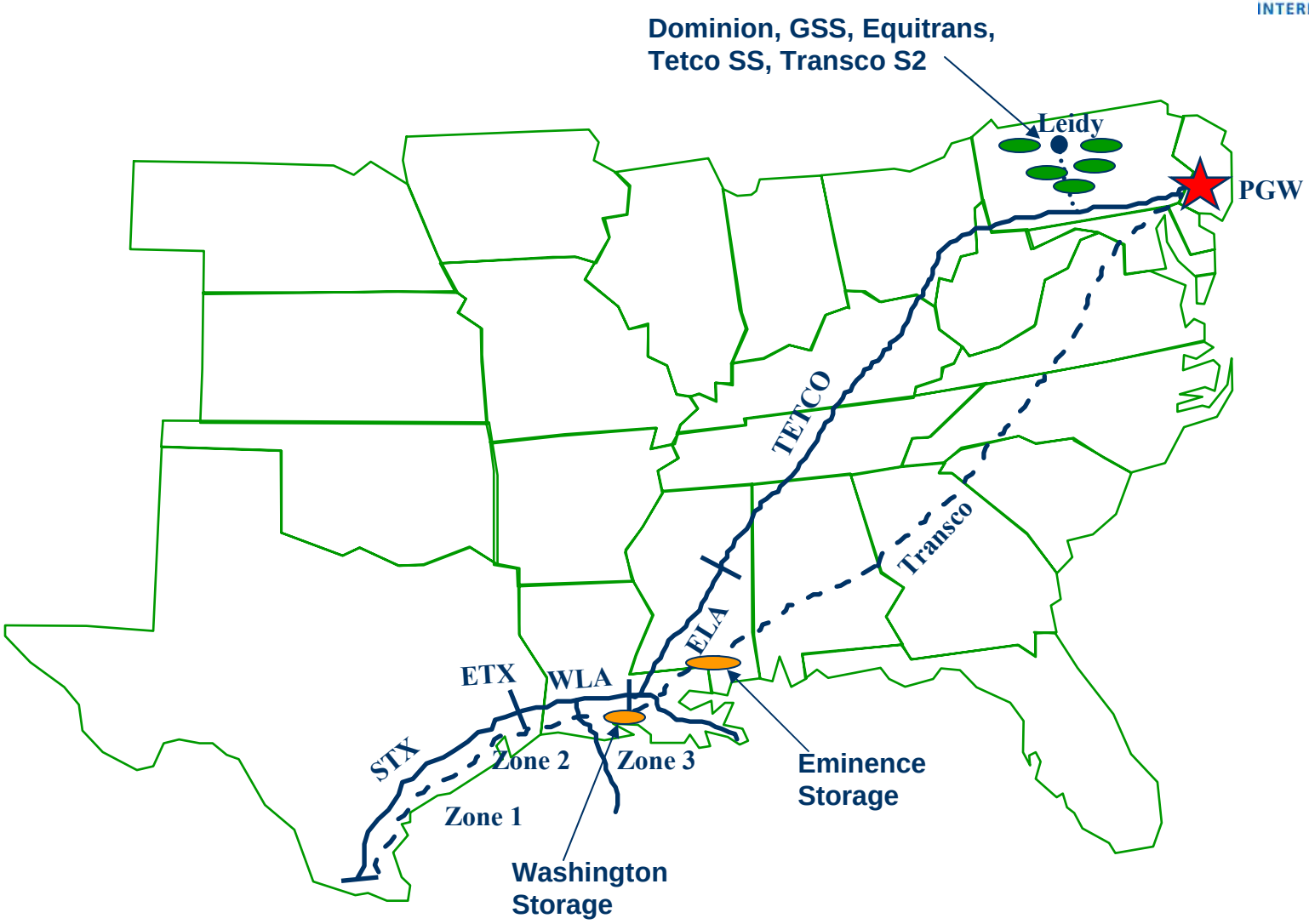
Analytic Approach (contd.)

- Gas pricing inputs
  - Used recent history gas prices and volatility
  - Deployed assumptions about first of month purchasing and spot purchasing practices – PGW sets up 64% of winter supply in firm, first of the month contracts, with spot supply meeting swing demand
  - Prices are represented for supply at each of the pipeline receipt points based on historic basis differentials

Analytic Approach -- Sensitivities

- Sensitivity analyses were undertaken to identify the least cost mix of assets and their utilization.
  - Sensitivities were examined under the design year reference case
  - An average year case was run to examine the potential for capacity release and off-system sales
- Major sensitivities tested various supply asset options
  - Availability of more LNG by expanding LNG liquefaction capacity
  - Reduction in storage capacity by alternately eliminating various storage services
    - Eminence
    - Equitrans
    - WSS
    - Transco S2
  - Demand for storage with larger summer/winter gas price swings

Supply Pipelines and Storage



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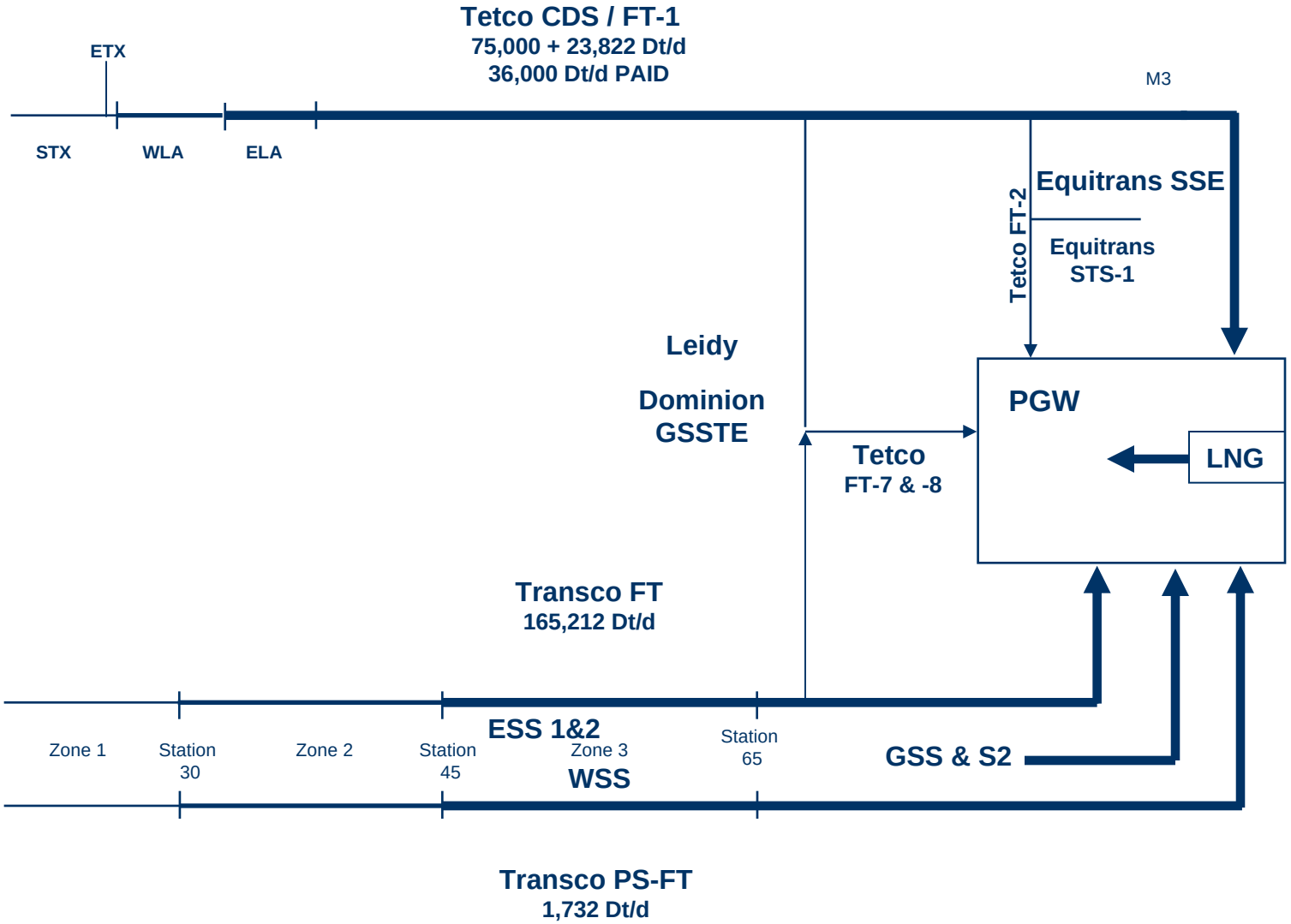
Supply Topology



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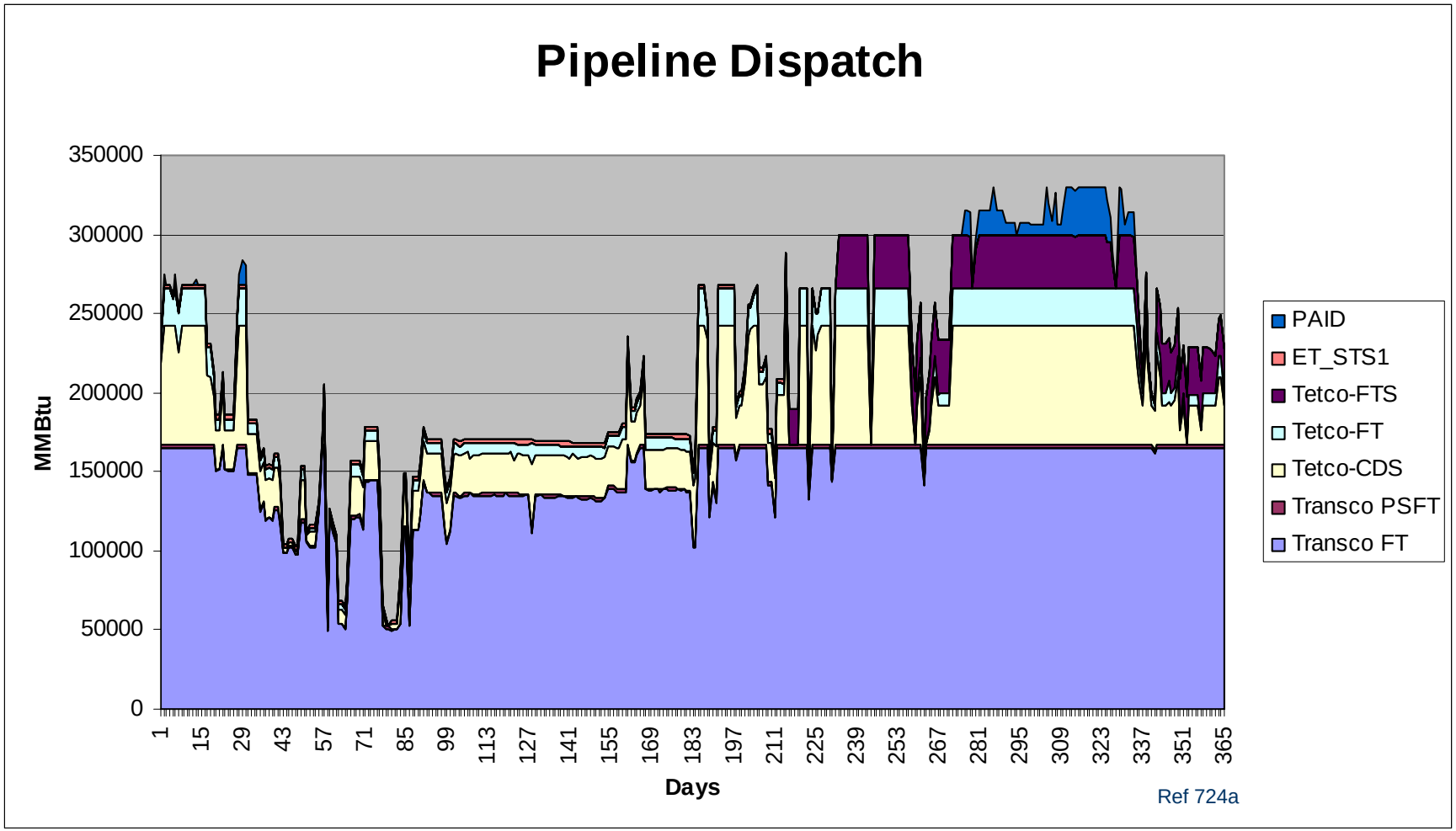
Case Descriptions

- Reference case: Design winter, design peak day, assumes full LNG liquefaction capability is available (LNG 1 and LNG2)
  - LNG-1 case limits liquefaction capability to the current expander system
  - LNG-2 case allows a new system to be built (replacing the current cascade system, which is highly maintenance intensive and has reached the end of its useful life at 37 years)
- Average case: Average year sendout, also with full liquefaction capability
- LNG-1 case: Design winter, no expansion of LNG liquefaction
- LNG 1 Bcf case: Design winter, LNG expansion occurs, but 1 Bcf of storage is reserved for off system sales and is not available to PGW
- Storage sensitivity cases: LNG 1 Bcf case, with alternative storage services not available
  - Focused on storage services that appear in earlier cases to be on the margin

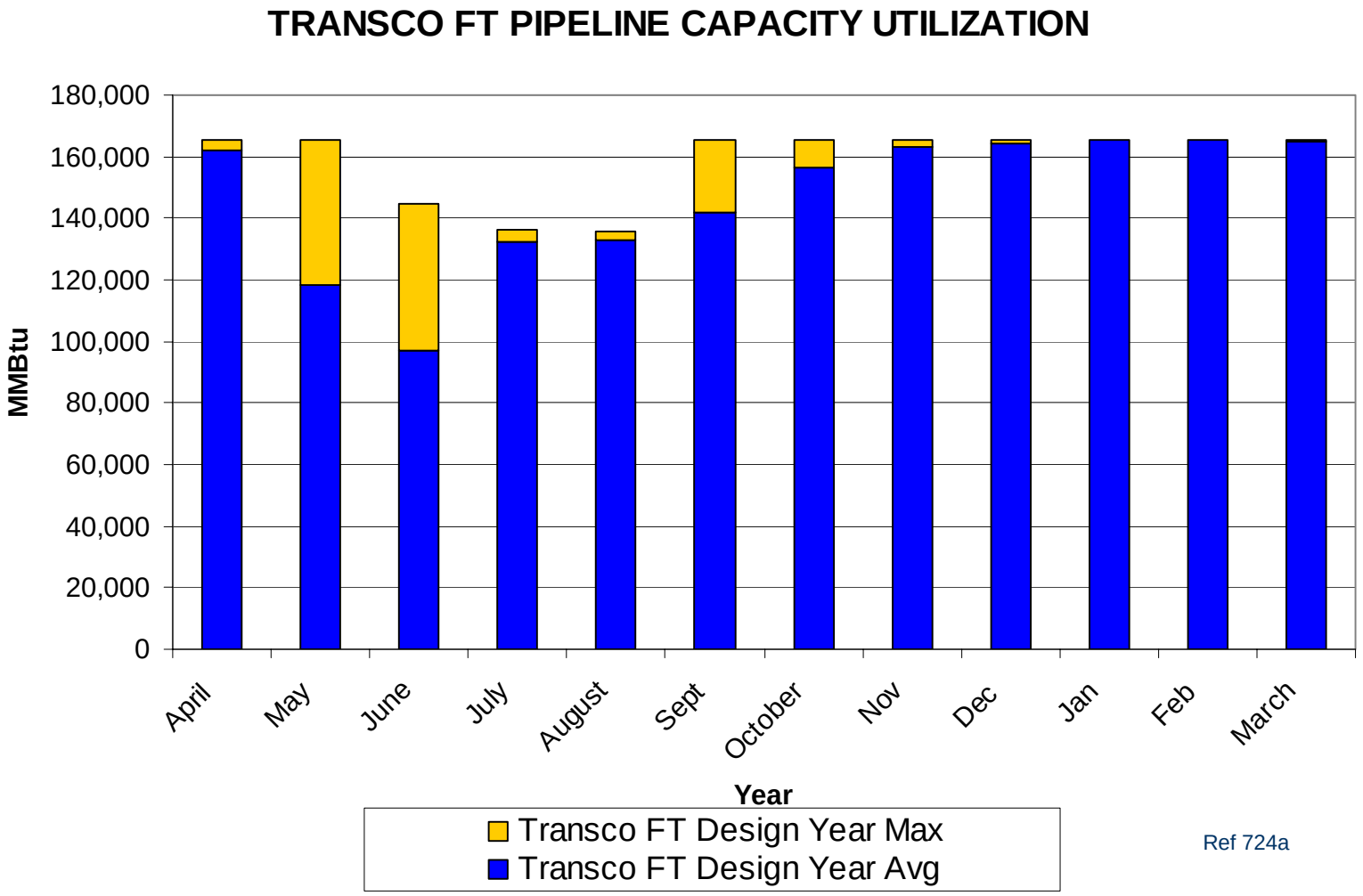
Findings – Pipeline Capacity

- Both long haul pipelines are necessary to meet full requirements in winter
- Transco appears to be the lowest cost and most valuable pipeline asset
  - Under design conditions, the pipeline should operate at a 89% load factor
  - This drops to about 84% during an average year
- Tetco operates at lower load factors
  - Design year: 56%
  - Average year: 46%
  - Nevetheless Tetco reaches its full capacity on some days for six months of the year even in average winter conditions
- PAID call released capacity is critical in winter

Pipeline Utilization Highlights Key Segments



Transco FT Reference Case Utilization is 89 %



Ref 724a

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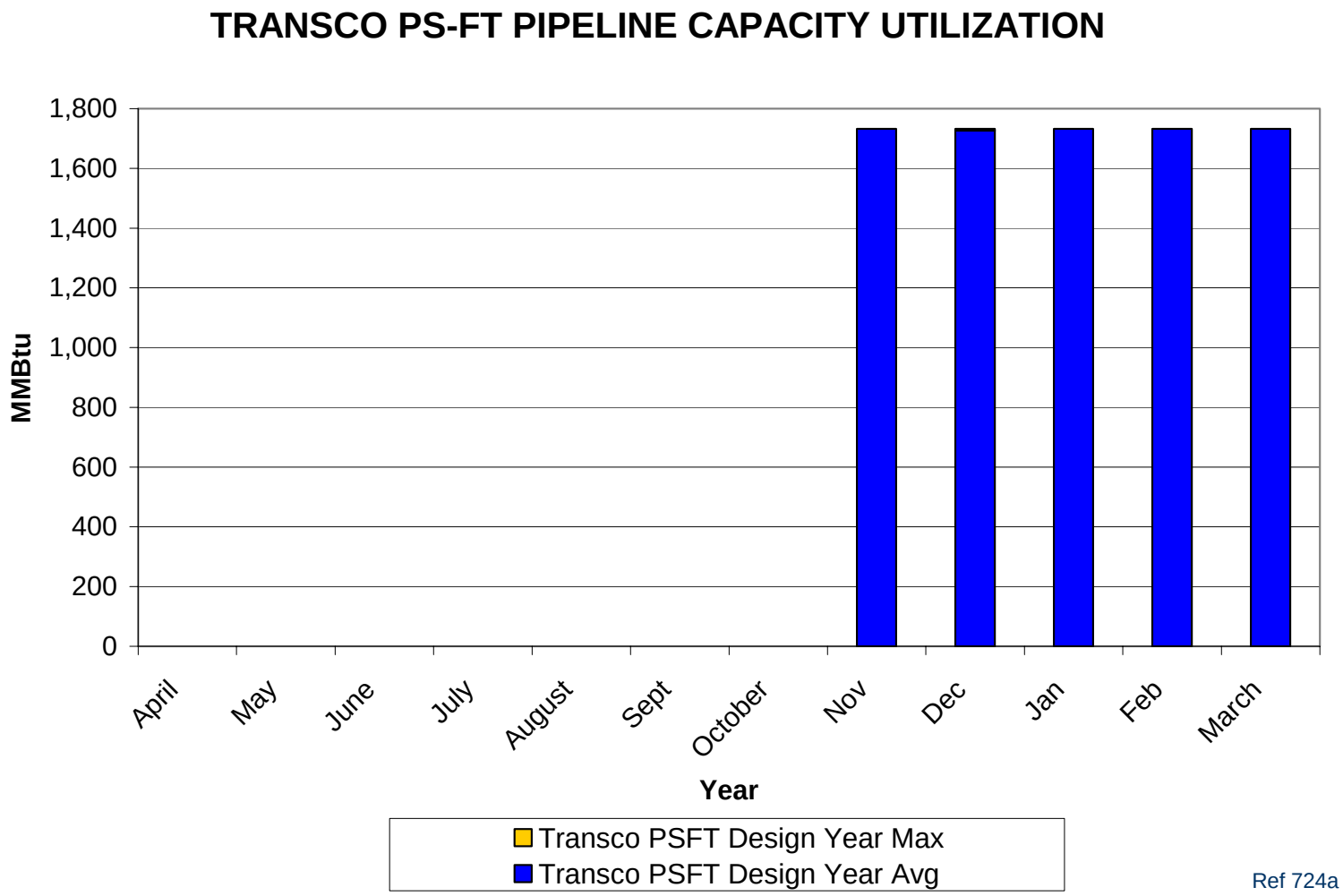
Transco PSFT Reference Case Utilization is 100% in Winter



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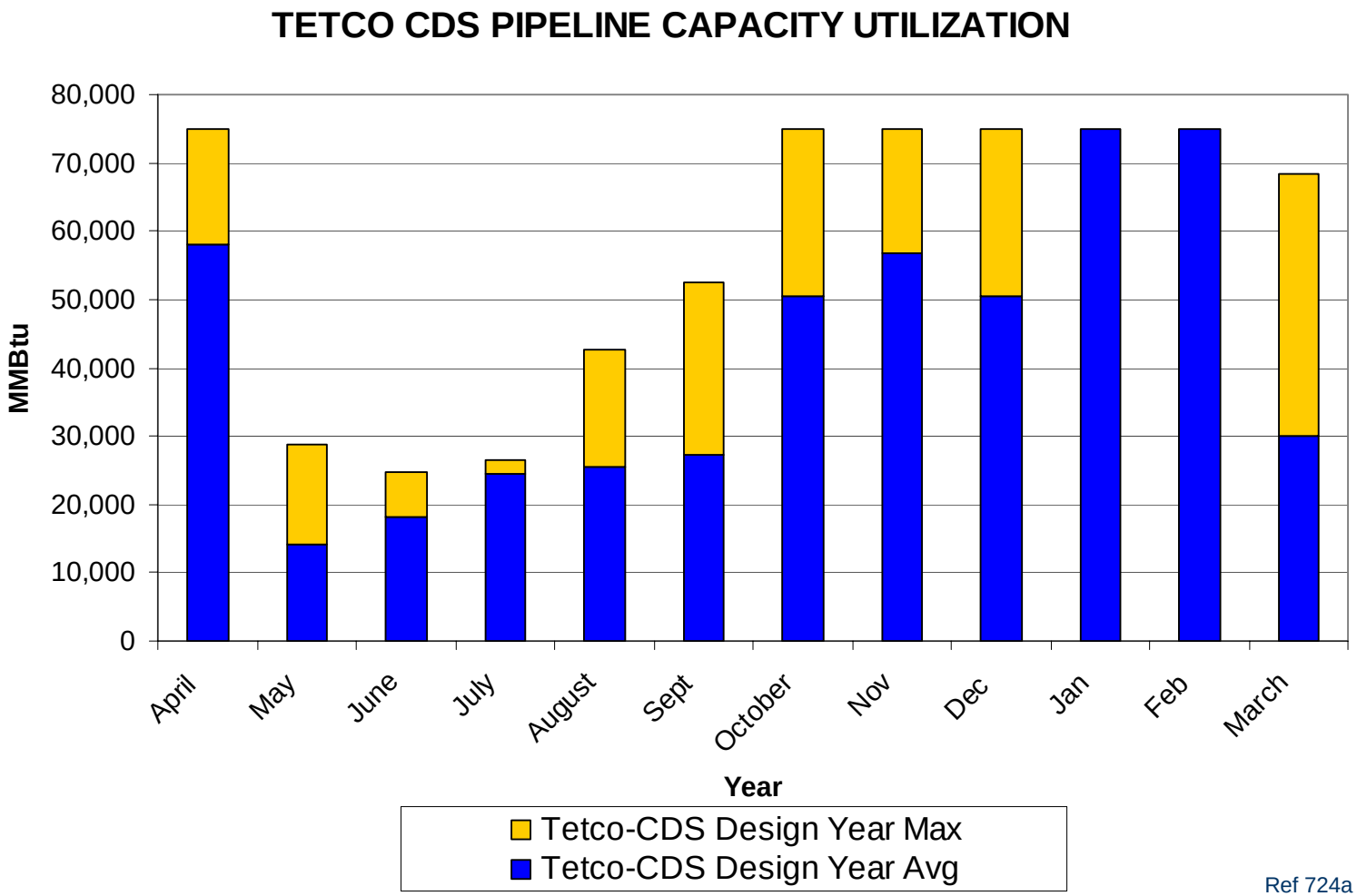
Tetco CDS Reference Case Utilization is 56 %



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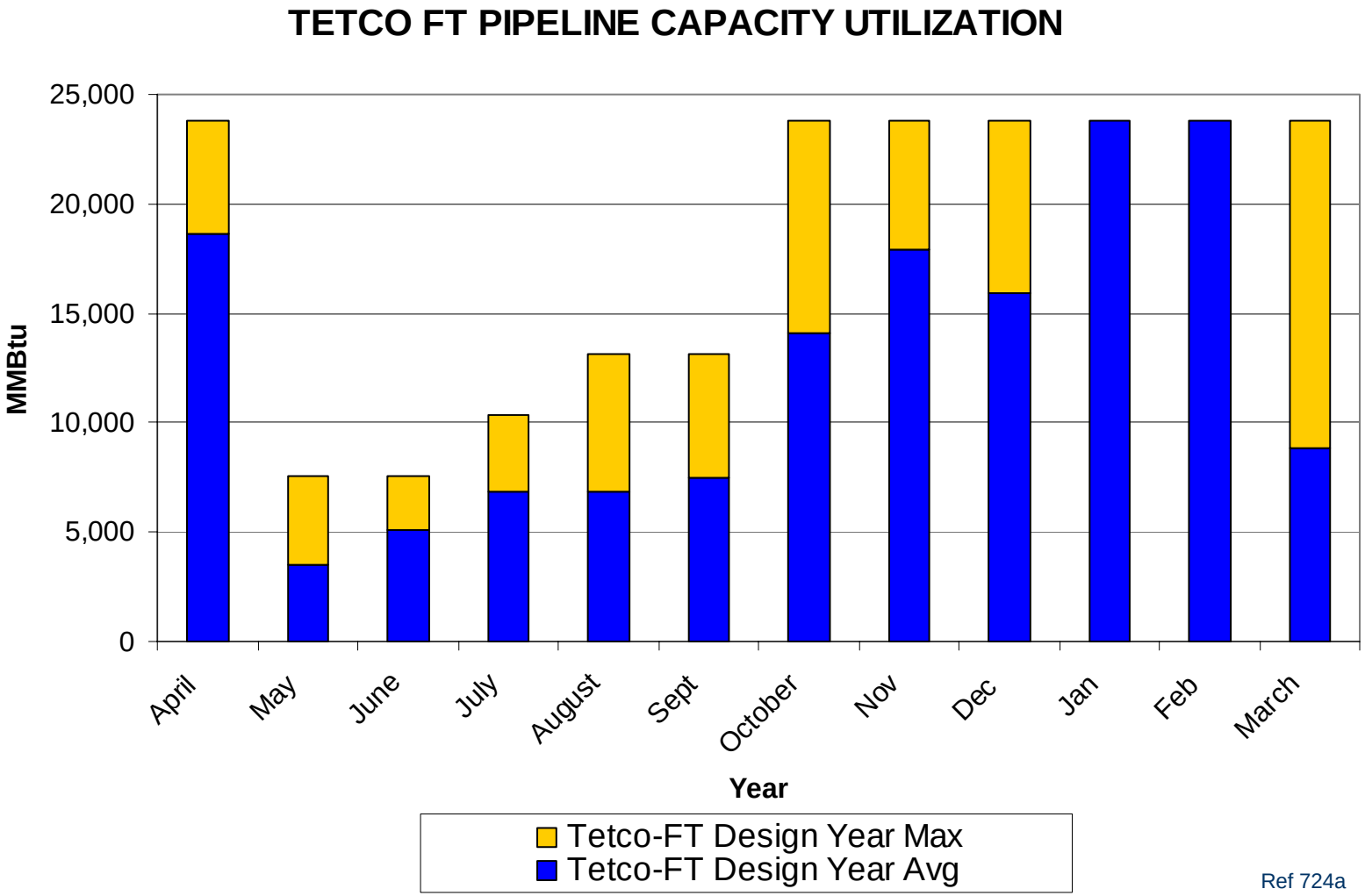
Tetco FT Reference Case Utilization is 53%



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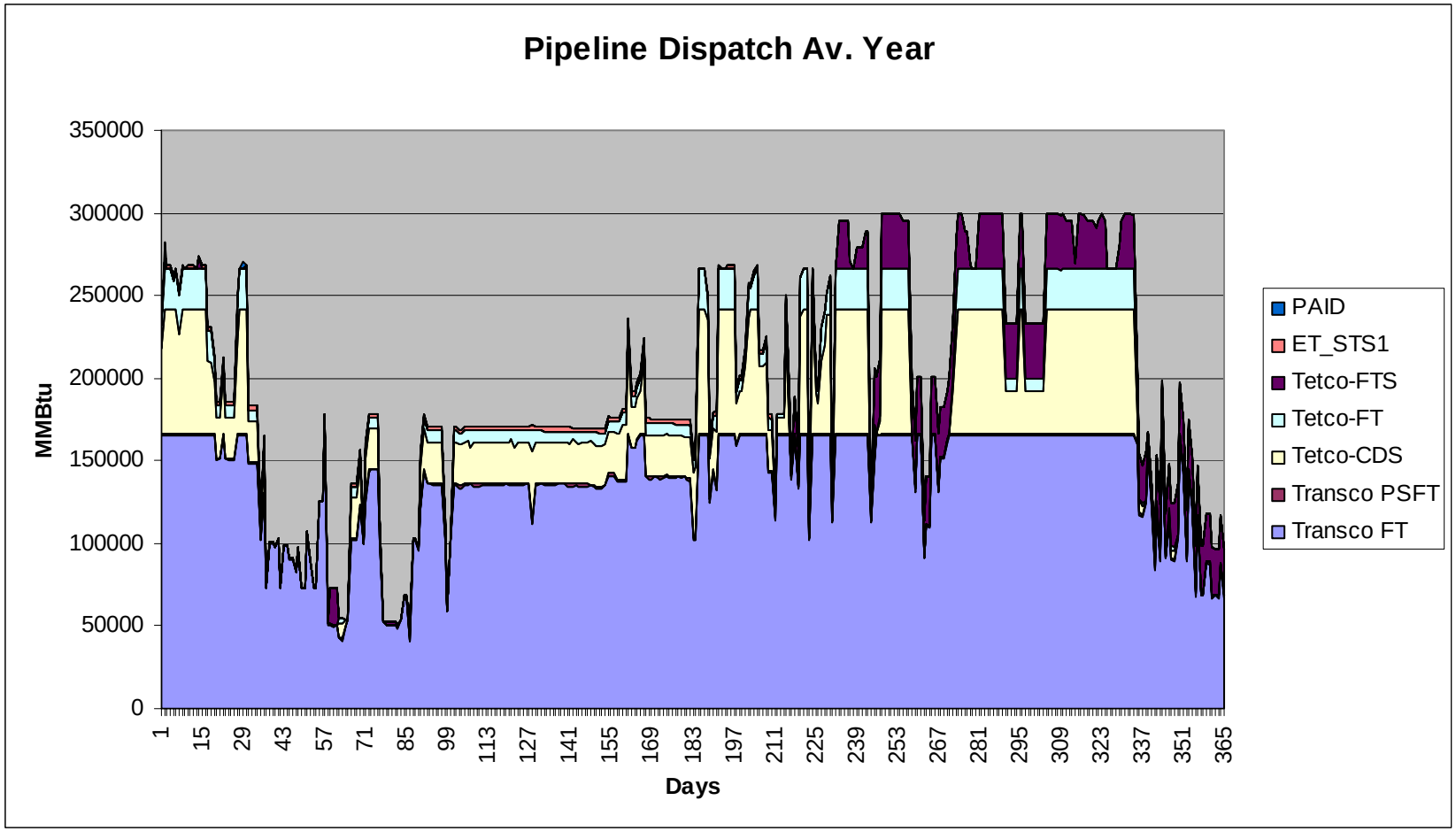
PAID Capacity not Used in Average Year



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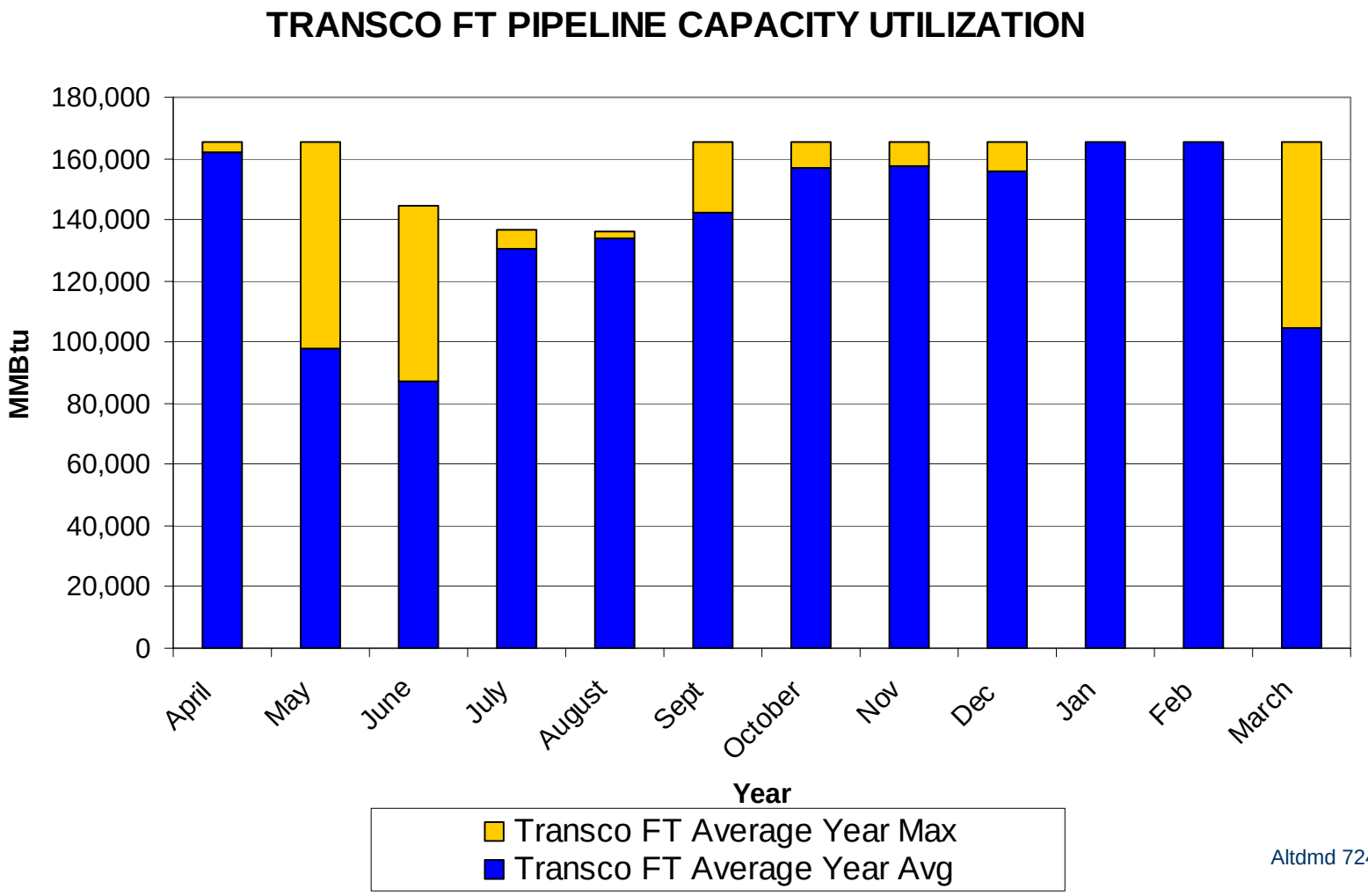
Transco FT Average Case Utilization is 84%



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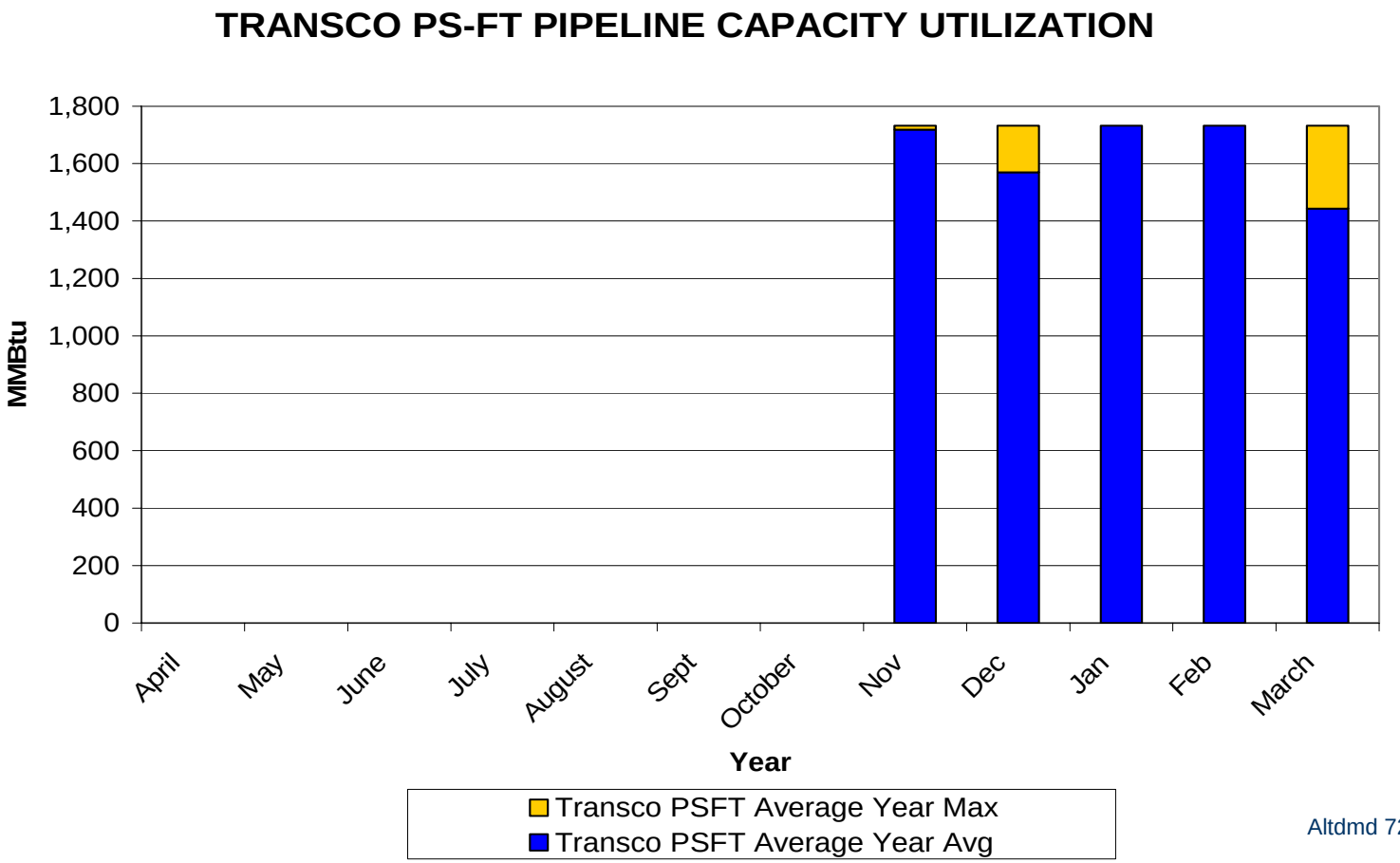
Transco PS-FT Average Case Utilization is over 90% in Winter



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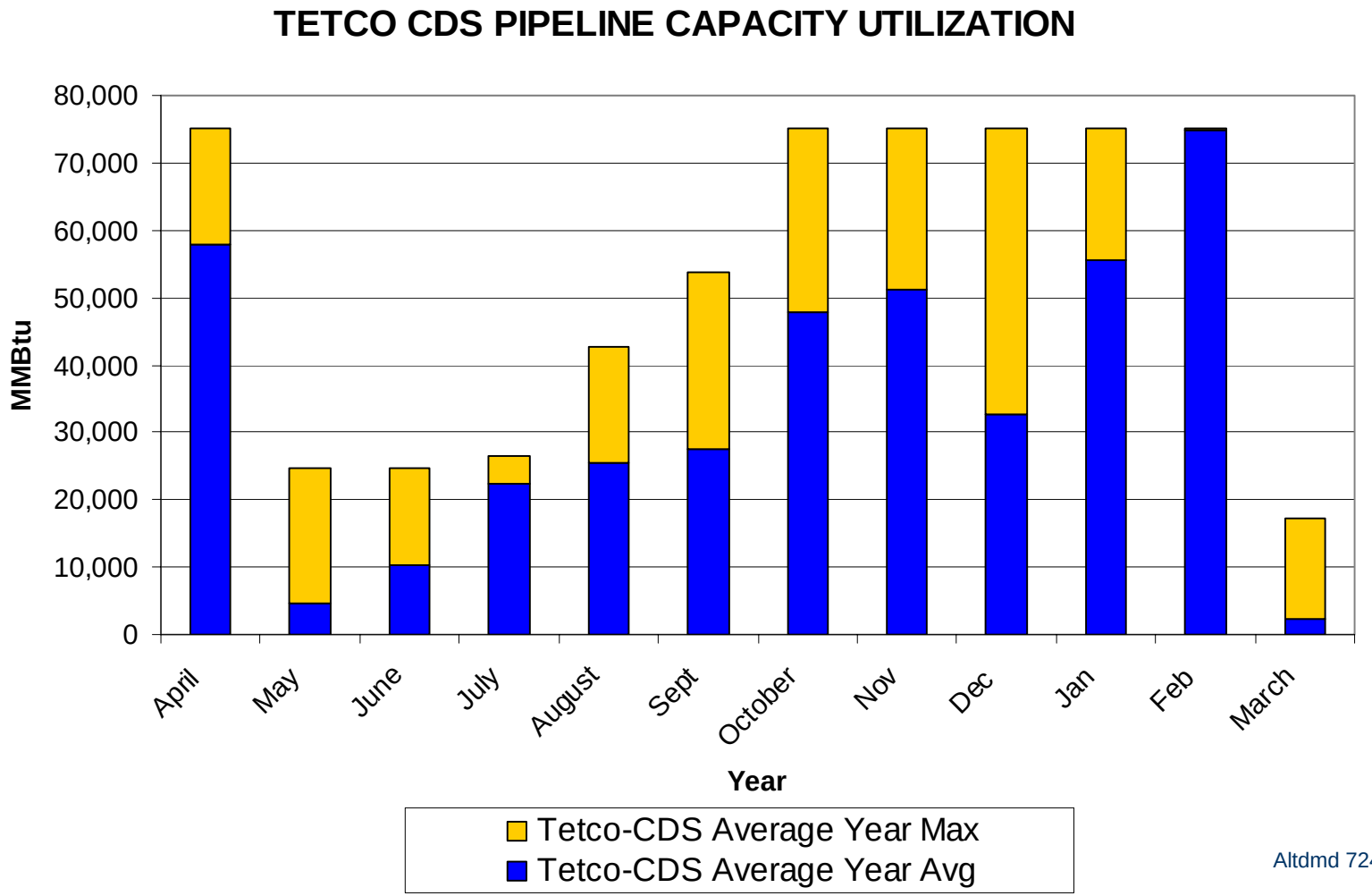
Tetco CDS Average Case Utilization is 46 %



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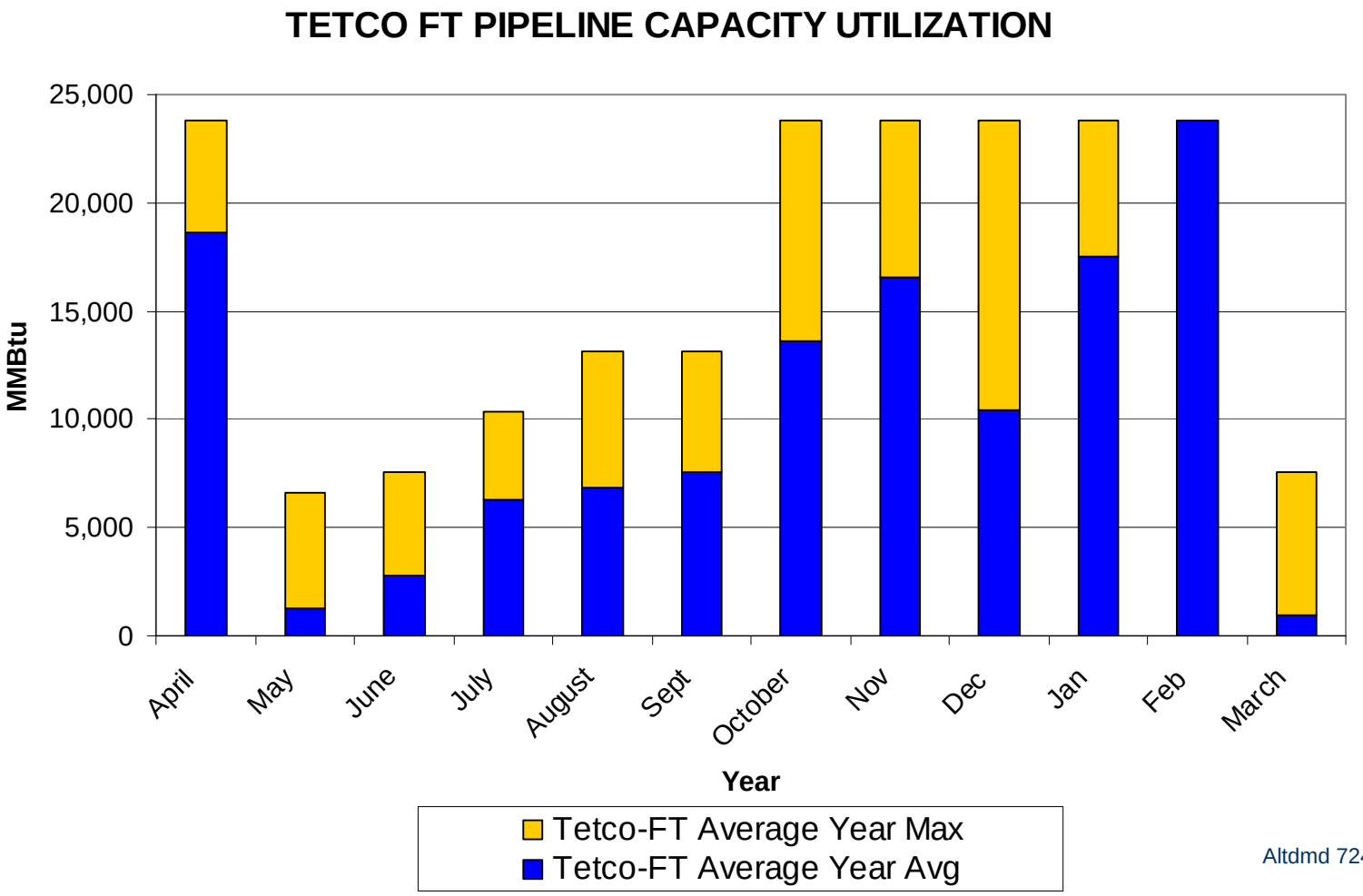
Tetco FT Average Case Utilization is 44%



Altdmd 724a

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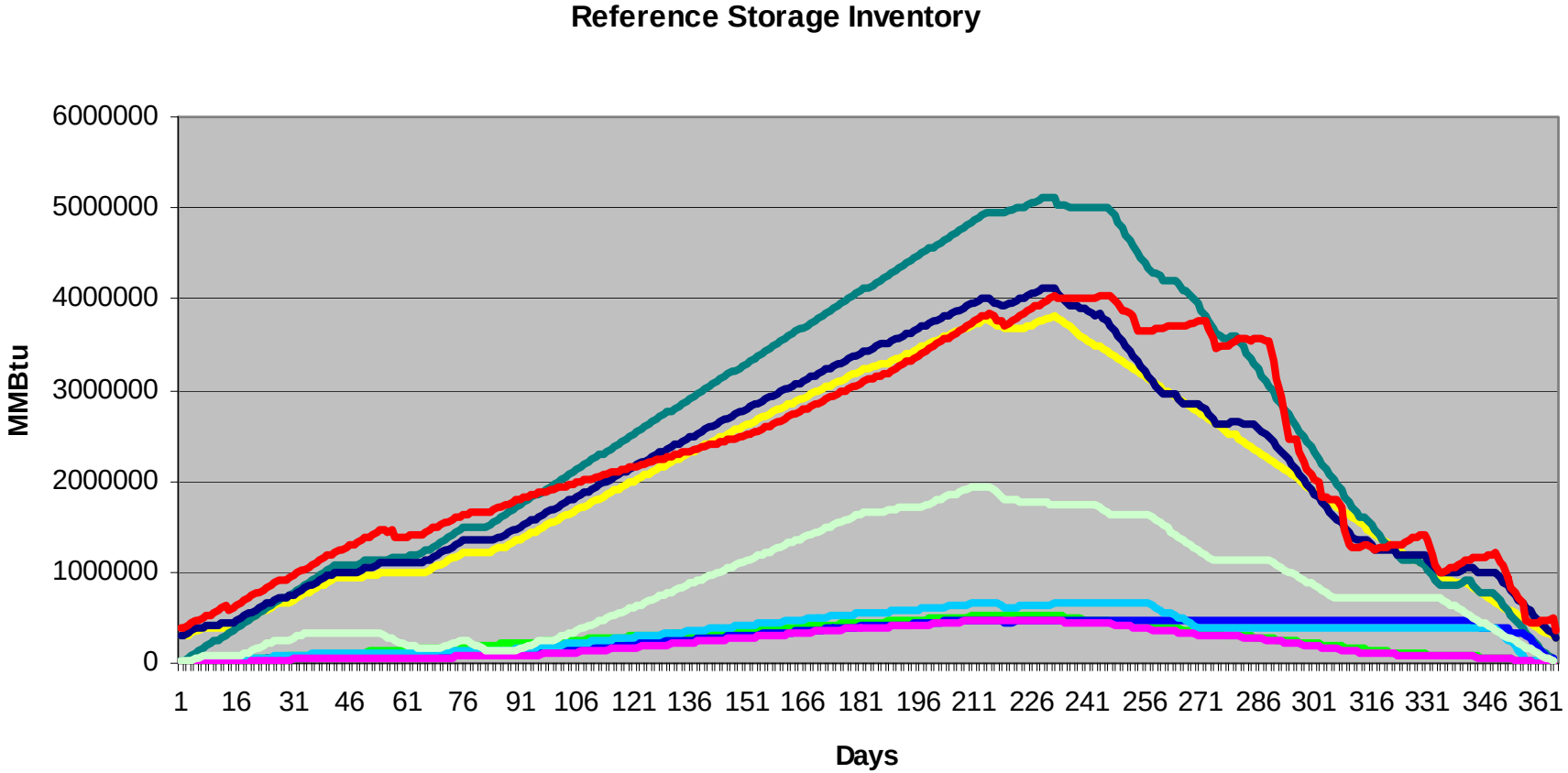
Opportunities for Pipeline Capacity Release and Off – System Sales

- Based on design year system utilization, PGW can offer firm released capacity on both systems in summer and shoulder periods.
- ICF has estimated the intrinsic value of the spare capacity.
  - For Transco FT and PSFT between $1.2 MM and $2.5 MM.
  - For Tetco FT and CDS, up to $6.2 MM
  - (Calculated as basis-sum of fuel and commodity rate x unused capacity)
- The PAID capacity is potentially very valuable in average years where it could be called and resold during peak periods.

Findings – Storage

- The optimization of the system suggests that PGW makes effective use of all of its storage services.
  - Capacity factors for the storage services are very high, even during average years.
  - Where storage services share mainline capacity, they are less valuable on peak days, but are used the rest of the season. Eminence, for example, is not used on peak days, but is fully used the rest of the year.
- Transco WSS despite its lower than contracted usage, is neverthelss a valuable storage for optimizing gas purchases and supply security.
- Equitrans storage should be examined in greater detail – it also provides benefits in supply purchasing, but these do not offset the higher fixed costs in the pricing scenarios analyzed.

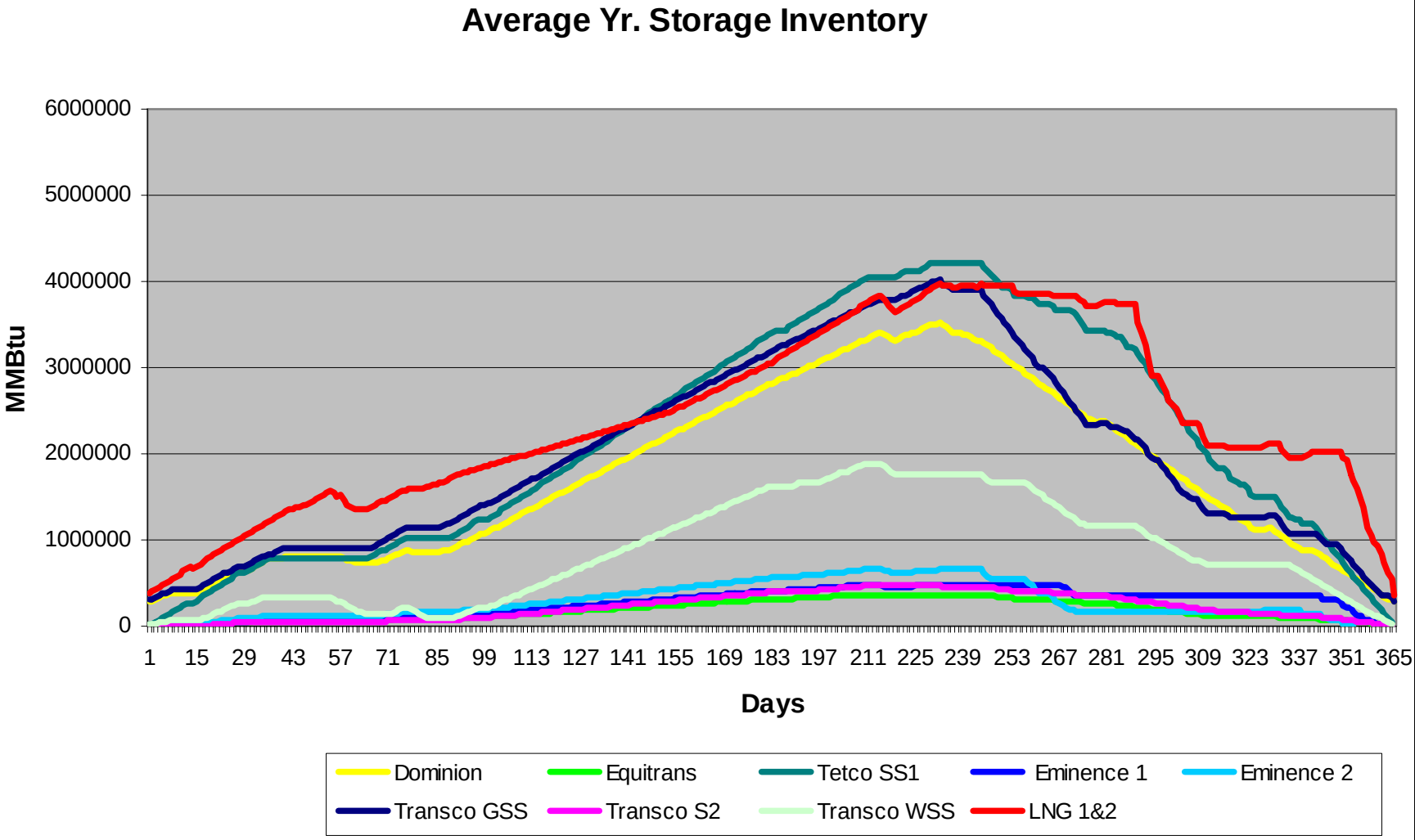
Reference Case Storage Patterns



Reference Case Storage

- The graphic shows the pattern of storage injection and withdrawal and the peak quantities put into storage for each storage service.
- The large storage services (Dominion, Tetco SS1 and Transco GSS) are almost fully utilized in the design year optimization.
- LNG is also filled to near capacity.
- The smaller storage services are also filled.
- WSS appears to be on the margin, not reaching its full contracted capacity.

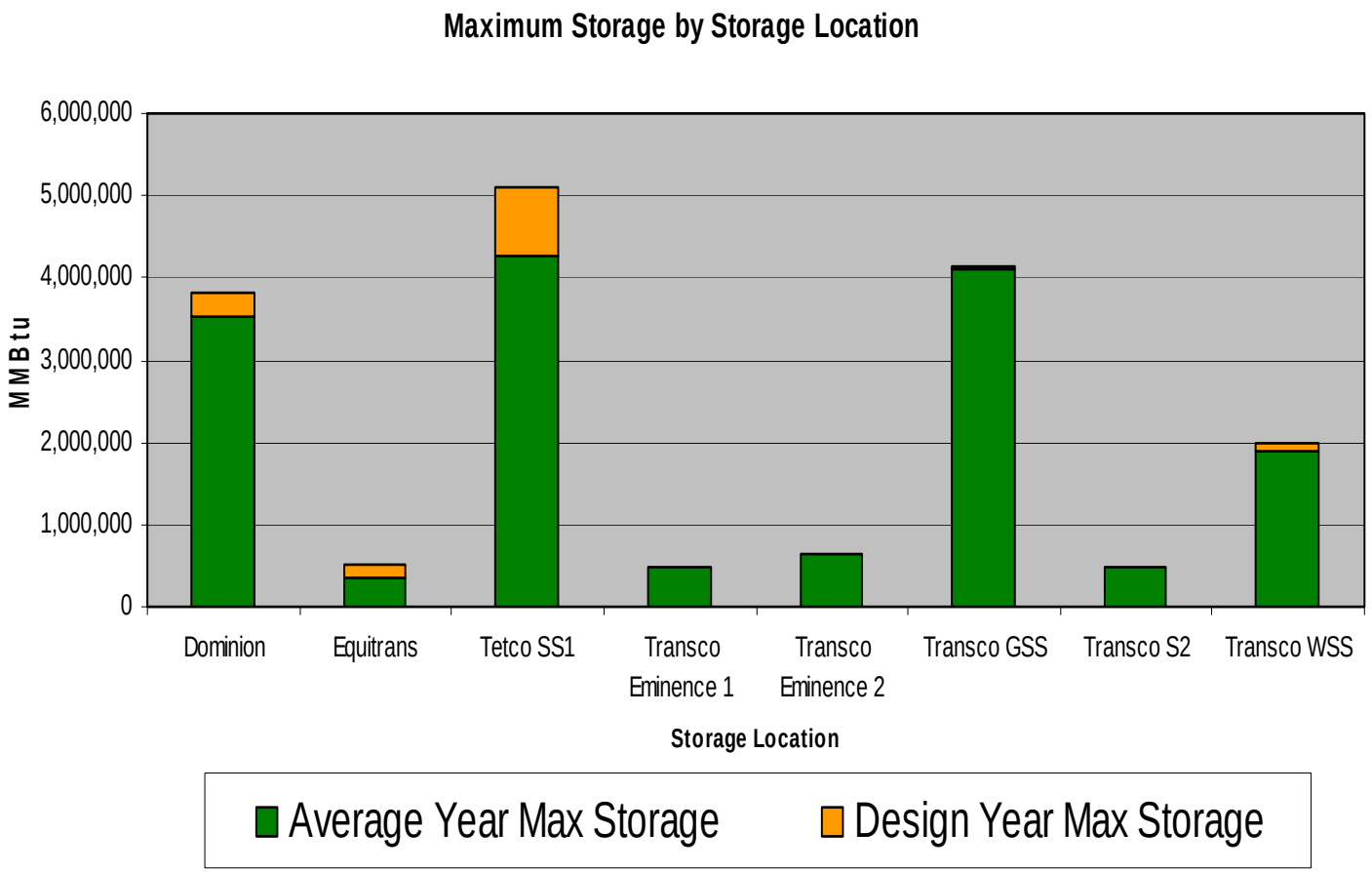
Average Year Storage Patterns



Average Year Storage Utilization

- As expected the model does not fill contracted storage services at the same level as would be expected in a design year
  - (The model has perfect foresight, however, which gas planners do not have.)
  - Gas planners must anticipate design conditions for storage injection.
- The interesting pattern is that the model still fills most of the storage services even when planning for an average winter.

Storage Capacity Utilization is Similar for Design and Average Year Sendout



Transco WSS has the Lowest Capacity Factor

	Storage Cap	Design Year	Cap Factor	Average Year	Cap Factor
Dominion	3,918,971	3,822,823	0.98	3,526,063	0.90
Equitrans	522,500	521,814	1.00	367,475	0.70
Tetco SS1	5,109,200	5,109,200	1.00	4,272,260	0.84
Eminence 1	482,792	482,792	1.00	482,792	1.00
Eminence 2	656,013	656,013	1.00	656,013	1.00
Transco GSS	4,123,733	4,123,733	1.00	4,114,258	1.00
Transco S2	466,548	466,548	1.00	466,548	1.00
Transco WSS	3,335,909	1,981,522	0.59	1,906,339	0.57

Storage Value also Depends on Price Volatility

- We tested a case where volatility and the price difference between summer and winter grew – our high volatility case.
  - We gradually increased winter gas prices to $0.75/MMBtu by Dec. 1, declining back to base levels by April 1
- Results show higher utilization of storage consistent with current levels of storage capacity
- WSS still does not reach current storage capacity levels.

	Storage Cap	Design Year	Hi Volatility
Dominion	3,918,971	3,822,823	3,902,284
Equitrans	522,500	521,814	521,814
Tetco SS1	5,109,200	5,109,200	5,109,200
Eminence 1	482,792	482,792	482,792
Eminence 2	656,013	656,013	656,013
Transco GSS	4,123,733	4,123,733	4,123,733
Transco S2	466,548	466,548	466,548
Transco WSS	3,335,909	1,981,522	2,987,263

What Happens when WSS is Reduced?

- Because WSS uses long haul transportation, it's role appears to be maximized when there is price volatility.
- When WSS storage is eliminated, total system costs increase by about $1.5 million, mostly in purchased gas costs
- The value of WSS is related to its ability to take advantage of the volatility in gas prices.
  - When gas prices drop in the Gulf, PGW can store gas in WSS
  - When prices spike PGW does not have to buy
  - WSS value is therefore tied to its optionality
- WSS also provides supply security, as during the recent hurricane events, where it allowed PGW to bank supplies against winter shortfalls on Transco supply from the Gulf.

What Happens when Equitrans Storage is Reduced?

- ICF also tested the question of whether reducing Equitrans would affect overall costs.
- When Equitrans is reduced, savings occur in lower storage costs (eliminating Equitrans fixed costs) and lower pipeline transportation costs (Equitrans and Tetco FTS)
- The results are similar to WSS elimination
  - Fixed costs decline
  - Purchased gas costs increase
- However with Equitrans, the higher gas costs do not offset the savings in reservation and operating costs. The savings are modest – about $0.4 million
  - These results are dependent on gas price volatility and seasonal patterns.
  - When the high volatility case is considered, Equitrans becomes more valuable.

Background on LNG Issues

- Current System
  - Total storage capacity is just over 4 Bcf
  - Liquefaction is a combination of the old Cascade system and the new expander system
    - Expander liquefaction is limited in summer due to low system throughput and can be expected to produce 2 Bcf
    - Expander can operate in winter, unlike the cascade system
    - Cascade system is old and requires overhaul each year but can fill the remainder of the tank
- Analysis thus far indicates that LNG storage and sendout are strategic elements of the supply portfolio because of flexibility and low cost relative to other options.
- Key question is whether to replace the cascade system?
  - Costs
  - Other LNG options

Alternative Sources of LNG -- Barging

Scale favors barging: typical barges hold 5,000 to 10,000 cubic meters of LNG (112,000 to 225,000 MMBtu)

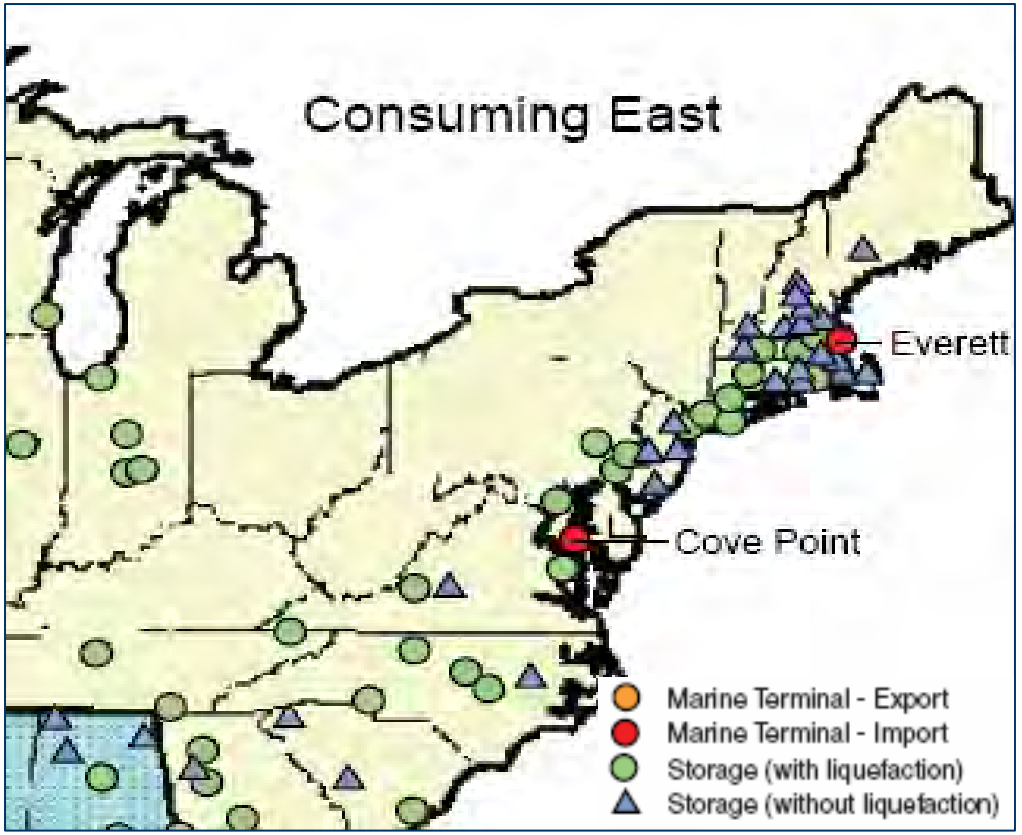
- To top off the tank with 2.5 Bcf would take about 12 to 23 deliveries
- Most barge systems anticipate barging from import terminals, not lightering directly from ships
- Barge costs average about $45 to $50 million
- LNG terminal operators (e.g., Dominion) have looked into barging for longer term market planning but nothing is available in near term
- There currently are no plans for barging services from Cove Point or Distrigas
- It is possible that a Crown Landing project, if developed, could provide barges of LNG for PGW

Alternative Sources of LNG -- Trucking

- Trucks hold typically 10,000 gallons, about 750-1,000 MMBtu
  - To top off the tank with 2.5 Bcf, would take about 3,000 truck loads when only about 1800 trucks (1.5Bcf) can be physically unloaded between March and November
  - Nearest large sources of LNG would be Distrigas (outside Boston) and Transco's facility outside New York
- Distrigas LNG costs are based on delivered gas prices in New England, plus liquefaction charges plus redelivery costs by truck.
  - 2006 average costs have been $7.54/Dt off Algonquin, plus liquefaction charges of between $1.50 and $2.50/Dt
  - Transport costs estimated by PGW in 2004 at $2.74/Dt
- Transco LNG-S service requires buyers supply the gas, pay $0.64/Dt fee and 14.6% fuel retention. Trucking costs are additional.
- Trucking presents logistical challenges in the large number of trucks that would be required

Regional LNG Liquefaction

- Regional liquefaction supports local peaking needs, where facilities have contracts for servicing satellite storage and peaking.
- Nearest large facilities are are Distrigas (Everett) and Transco Station 240 (Carlstadt, N.J.)



Expanding the LNG Liquefaction Capability

- A new nitrogen based system would cost about $22 million
  - Capacity would be 14,000 Mcf per day between April and November
  - For our analysis, we estimated a fixed charge payment of $0.68/Dt
  - Major operating cost would be fuel – it consumes about 14.6% of gas (compared to about 0.75% for the expander system)
  - (This estimate is comparable to Transco LNG-S service, less the costs of trucking.)
- PGW is considering an option where 1 Bcf of LNG storage and sendout capability in the winter could be made available to off system customers.
  - This would help reduce the costs to PGW of the new system.
  - All of our storage sensitivities assumed this option.

Modeling LNG

- ICF's approach was to model the existing expander system and a proposed new system.
  - Current expander system has limitations on liquefaction due to low summer system send out. At most the expander system can deliver about 2.5 Bcf, before boil-off of 2,000 Mcf per day.
  - The current cascade system can fill the balance of the tank, but due to age and high operating costs is scheduled for retirement.
  - New system is estimated to cost $22 million, and would be able to work in tandem with the expander system to fill the tank.
- We modeled the expander (LNG1) and the new system (LNG2)
  - Capital costs of the expander were considered sunk; the capital costs of the new system were included in the cost of operations.
  - Operating costs were included for both.

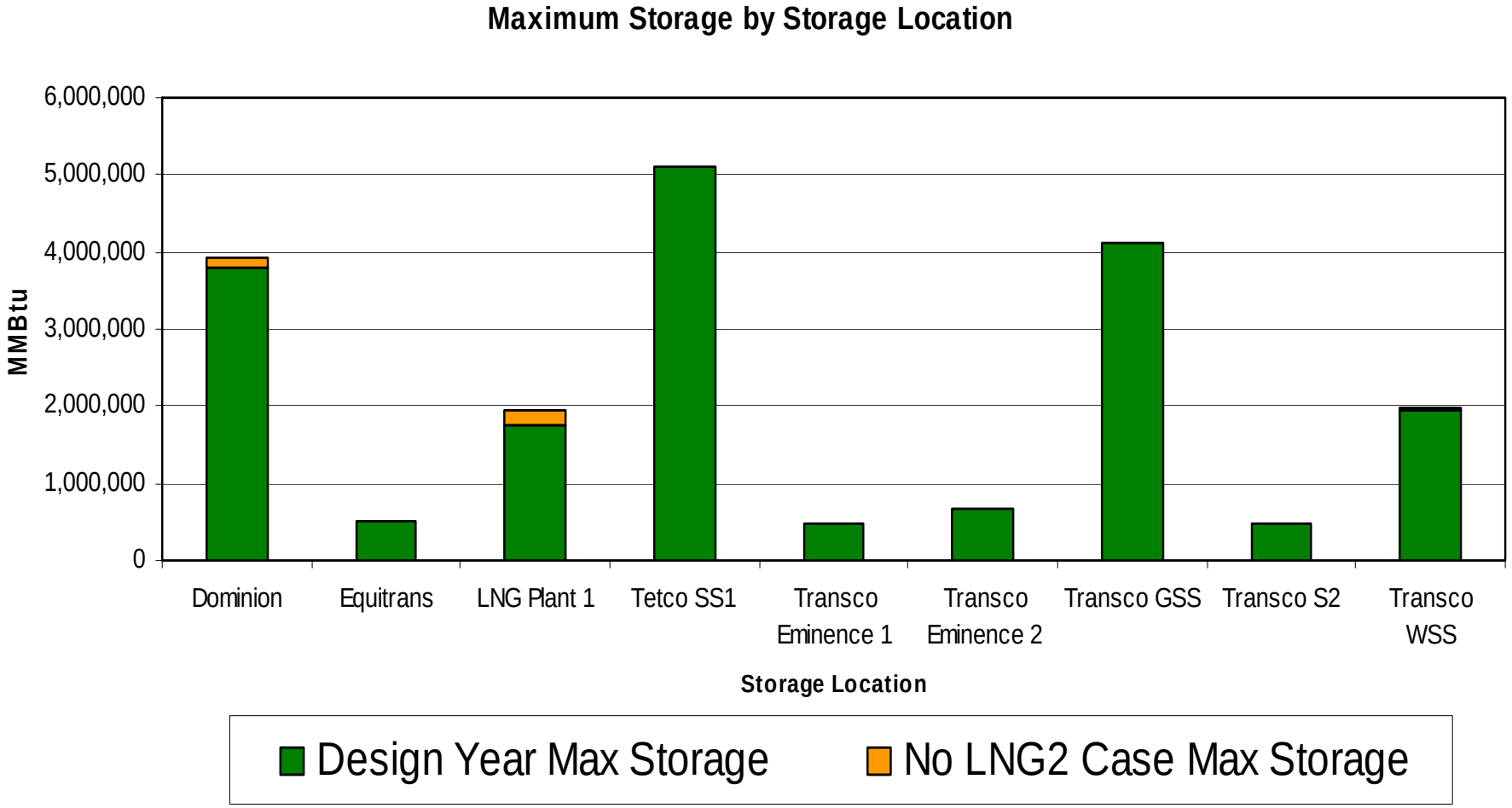
Modeling LNG (contd.)

- LNG expansion was looked at in three ways
  - Full availability of the new unit (LNG 1&2 -- Reference Case)
  - No LNG liquefaction expansion (No LNG 2 Case)
  - Reserving 1 Bcf of storage for off system sales (LNG 1Bcf Case)
- All cases assumed no cascade system

Findings – LNG Liquefaction

- Under all conditions, the least cost solution will maximize LNG storage and use
  - LNG reduces overall system costs
- PGW must have additional liquefaction capacity beyond the expander system to meet native load
  - Cases without expansion led to extensive winter-long interruption of smaller interruptible customers, pushing them into fuel oil markets.
  - The decision to complete the replacement of the Cascade with a newer lower operating and maintenance cost system is essentially an engineering benefit/cost analysis
- A deal where 1 Bcf of LNG storage is dedicated to a third party does not harm your ability to meet domestic load even in a design year.
  - Such a deal should be very advantageous to a third party gas marketer and hence valuable to PGW.

No LNG 2 Case (no Liquefaction Expansion): Small Effect on Traditional Storage



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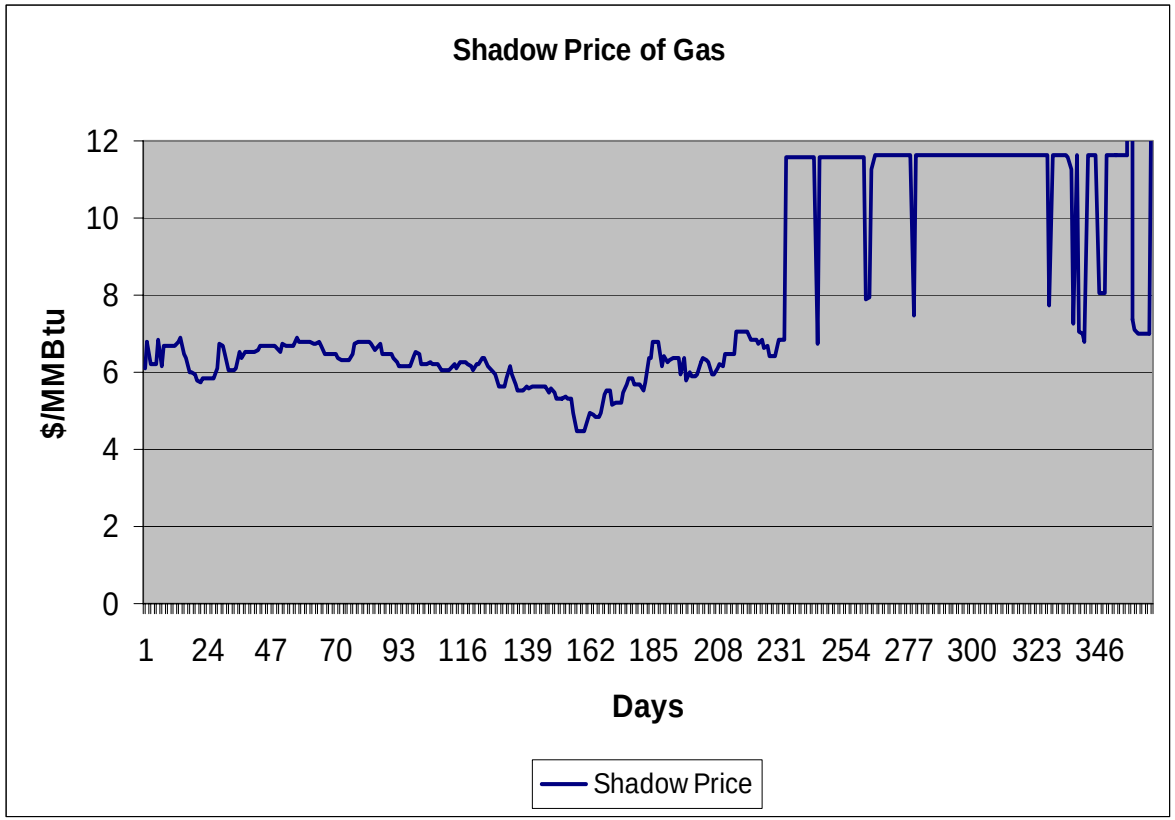
No LNG 2 Case: Modest Effect on Pipeline Utilization

- Drives Tetco CDS to 60% load factor (relative to Reference case LF of 56%)
  - CDS will fill up in December and climb to 75% of capacity in March
- Tetco FT also increases overall load factor to 58% with increases in December (98%) and March (76%)
- Transco summer utilization declines as less gas is needed to meet liquefaction requirements.

No LNG 2 Case: Large Effect on Interruption and Shadow Price of Gas

- No LNG 2, leaves winter deliverability unable to meet interruptible load.
- Interruptible (LBS, BPS) customers switch to distillate fuel oil, driving the shadow price of gas to fuel oil prices.
- The system is left with little cushion.
- The case where there is no expansion of liquefaction costs $19.6 million more than the reference case.



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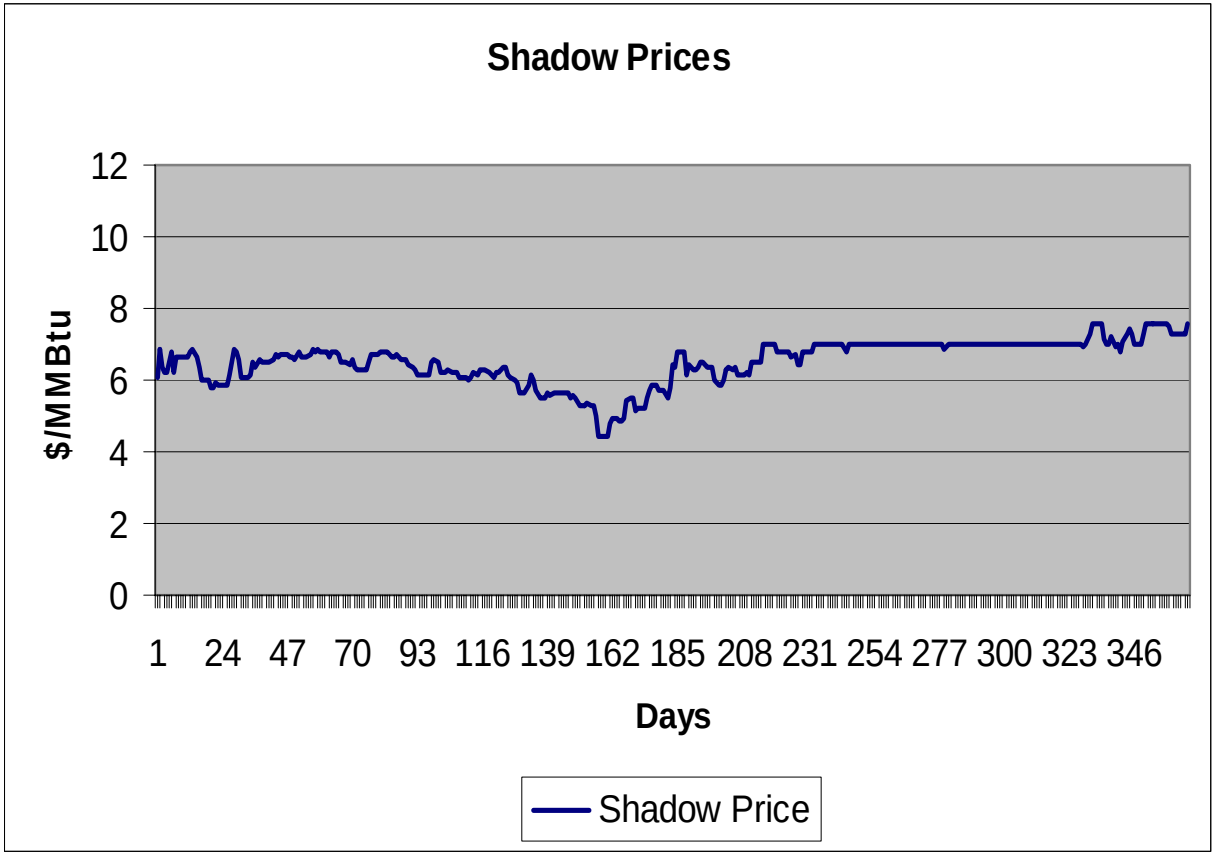
LNG 1 Bcf Case Tests

- ICF ran several sensitivities to test whether the allocation to a third party of 1 Bcf of LNG storage inventory combined with a reduction of LNG sendout capability by 25% affects your ability to meet sendout requirements.
- Cases tested were
  - Reference Case (Design Winter)
  - Elimination alternatively of Eminence, Equitrans, Transco S2, Transco WSS
- In all cases there is adequate supply capability to meet sendout requirements, without interruptions.

LNG 1 Bcf Case does not Affect Sendout

- Reducing LNG storage by 1 Bcf does not lead to interruption
- This assumes that PAID capacity is available.
- When PAID capacity *is not* available, increased interruption occurs in March as inventory is depleted and sendout LNG sendout is compromised.
- The LNG 1 Bcf case creates savings through the off-system sales.



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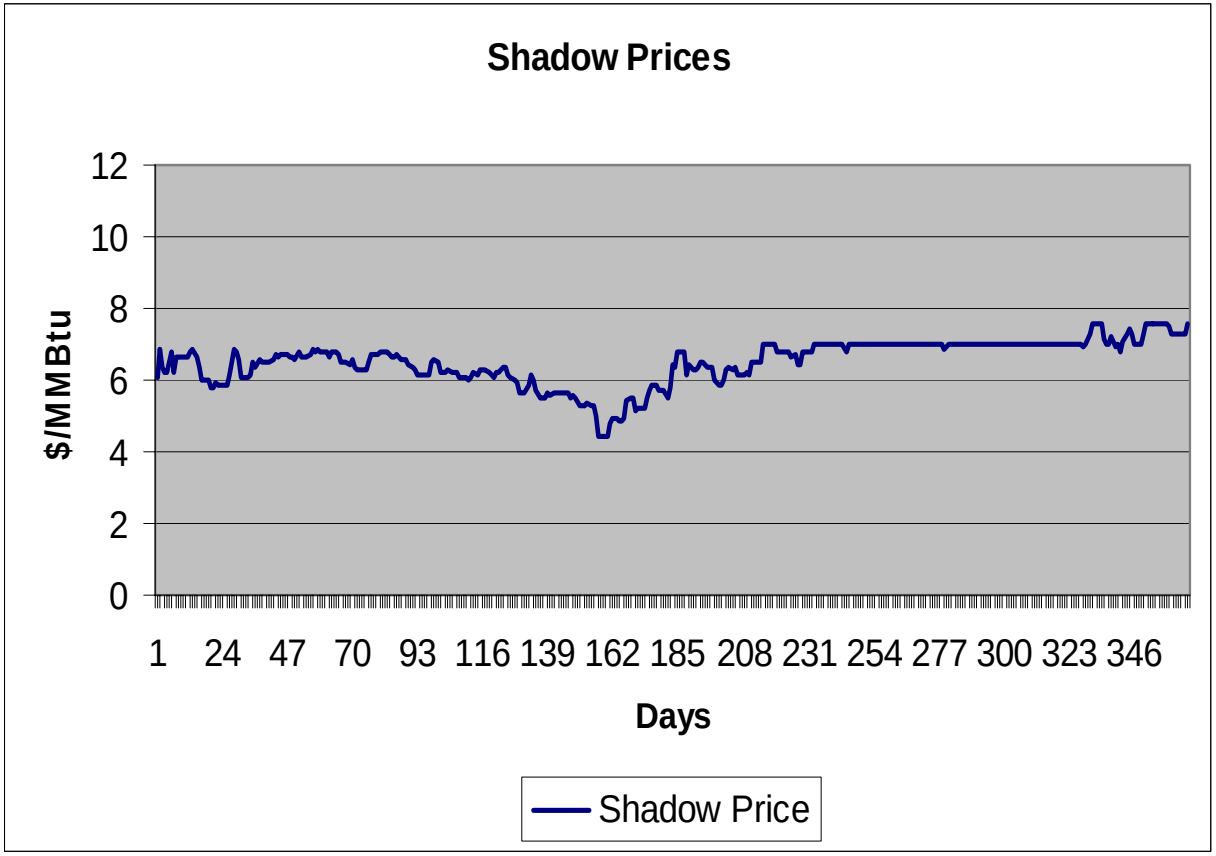
LNG 1 Bcf Case and No Equitrans Suggests a Closer Look at Equitrans

- Reducing LNG storage by 1 Bcf combined with reducing Equitrans does not lead to interruption.
- Our estimate that the savings from avoided Equitrans (and associated transportation) fixed costs is partially offset by higher purchased gas costs.
- On net, eliminating Equitrans creates a $0.4 million savings
- Higher volatility in gas prices will reduce this advantage.



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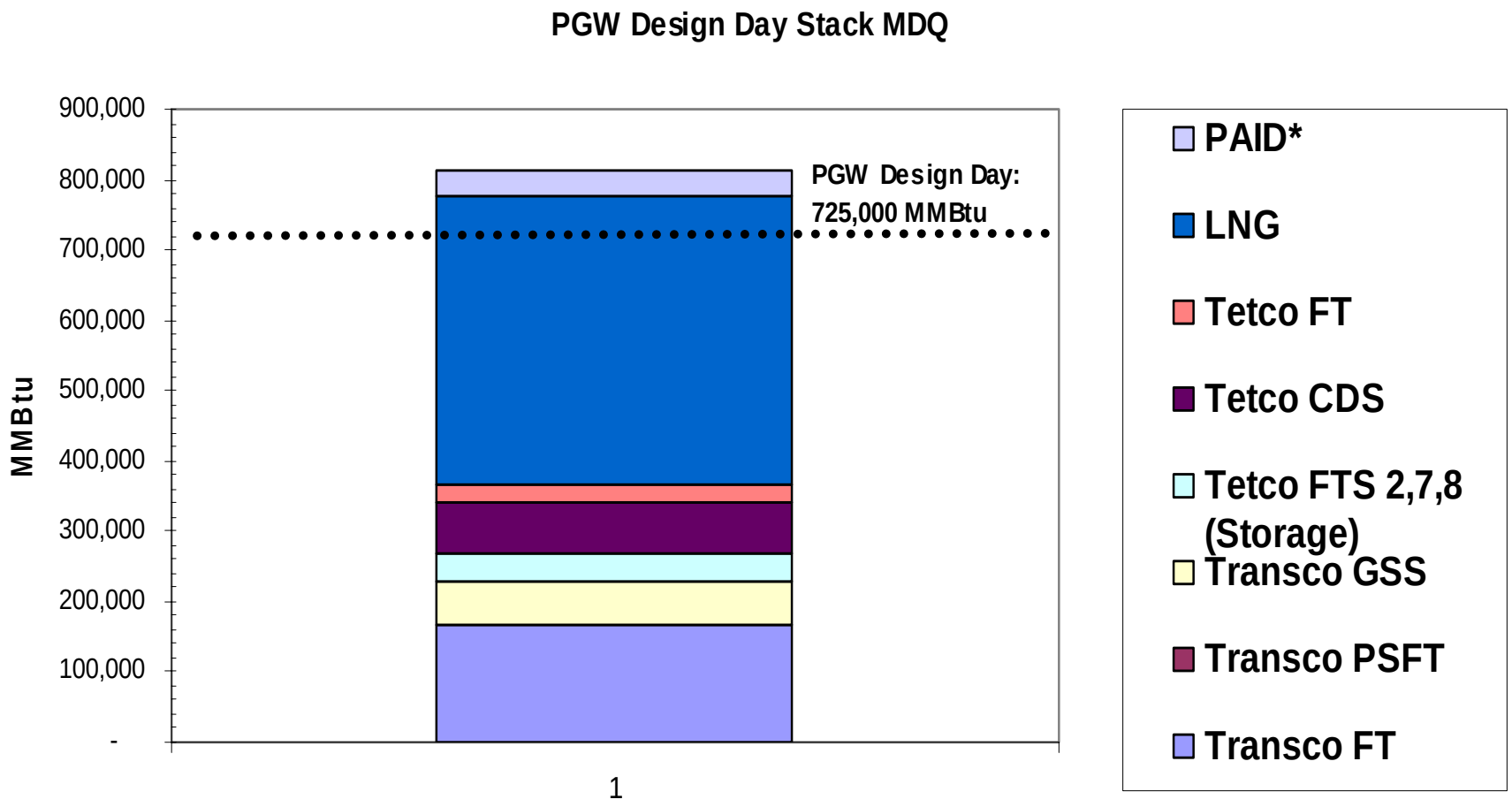
Observation: Design Day Deliverability is an Incomplete Measure of Asset Value



PAID released capacity has no annual demand charge.

Observation: Design Day Deliverability is an Incomplete Measure of Asset Value

- Comparing Design Day requirements with available options is not a complete analysis.
- PGW operates with a 12 percent reserve margin over Design Day sendout requirements. This does not appear unreasonable.
  - Deliverability options on Design Day include
    - Transco long haul pipeline capacity
    - Transco GSS storage
    - Tetco/Dominion/Equitrans Storage delivered through Tetco FTS services
    - LNG
    - PAID – released capacity which has no long term fixed costs
- Design Day does not account for "Design Hour" requirements to maintain system pressures
- Design Day does not account for storage optionality in volatile gas markets.

Conclusions and Recommendations

- PGW's approach to estimating design winter and day conditions is reasonable and yields results that are prudent for capacity planning purposes.
- PGW uses its full pipeline capacity during winter seasons. Overall capacity utilization is higher for Transco, which is the lower cost pipeline, than it is for Tetco.
  - PGW has some opportunities to release capacity on these pipes, or engage in off-system sales when capacity is not needed for native load.
  - PGW should not permanently release capacity without call-back rights for winter seasons.
- PGW storage services appear adequate to meet peak requirements.

Tab 13

Docket No. R-2019-XXXXXXX
Item 53.64 (c)(14)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.64(c) Thirty days prior to the filing of a tariff reflecting an increase or decrease in natural gas costs, each Section 1307(f) gas utility seeking recovery of purchased gas costs under that section shall provide notice to the public, under § 53.68 (relating to notice requirements), and shall file the following supporting information with the Commission, with a copy to the Consumer Advocate, Small Business Advocate and to intervenors upon request:

(14) Analysis and data demonstrating, on an historic and projected future basis, the minimum gas entitlements needed to provide reliable and uninterrupted service to priority one customers during peak periods.

Response: Attached is the Capacity Resource and Asset Management Evaluation Report completed by Summit Energy in January, 2011.

JAN 25, 2011

Capacity Resource and Asset Management

EVALUATION REPORT

SummitEnergy

PGW

Table of Contents

Executive Summary

After conducting a thorough review of PGW's existing asset portfolio, historical operations, and future load projections; and based upon the assumptions and market dynamics stated herein, Summit has identified several recommendations for the utility's consideration. All recommendations have been made based upon the fundamental premise that PGW's primary objective is providing reliable and cost-effective natural gas supply to its customer base. Each of the recommendations can be considered independently of the others.

After comparing PGW's capacity to its design forecast, Summit recommends the utility evaluate eliminating or reducing portions of its existing asset base, provided favorable asset management arrangements cannot be attained. A stack ranking methodology of the cost of each asset was utilized to help determine the most appropriate areas of focus. Based upon its volume and high cost, Summit recommends the release of PGW's Equitrans storage. In addition to eliminating the Equitrans storage from the utility's portfolio, Summit also recommends consideration be given to reducing its Dominion storage (in addition to its associated Tetco FTS-7 and FTS-8 contracts). We estimate that with a reduction of 10,000 Dth of demand of the Dominion storage (along with the associated storage capacity and FTS transport contracts) PGW would still be capable of serving design scenarios. Despite the utility's ability to meet design scenarios with the recommended capacity reductions, it is important to note that such reductions will increase the utility's reliance on LNG and reduce capacity release credits to the gas cost rate. Additionally, reduction of the Dominion storage from approximately 4 Bcf to 3 Bcf could result in new contract rates that may diminish some or all of the potential savings.

While Summit recommends consideration of the elimination and reduction of some assets, we also recommend maintaining others due to their associated value. First and foremost, we recommend PGW retain all existing long-haul interstate capacity due to both its cost-effectiveness as well as the utility's lateral delivery requirements. Additionally, as both Tetco and Transco are fully subscribed it is questionable whether such capacity could ever be regained in the future if it were surrendered.

While we also currently recommend the retention of PGW's production area storage, the market should continue to be monitored for changing dynamics that would impact or alter the future value of the storage assets. Despite the protection that is afforded against balancing penalties and supply disruptions in the production area, this type of storage becomes less valuable in a marketplace lacking volatility.

Summit also recommends PGW continue to actively monitor potential new asset opportunities. With the significant changes that are taking place in the natural gas complex and particularly in the Northeastern US, it is possible that new supply and/or capacity alternatives could develop that could displace or replace current assets.

When taking into account PGW's assets and historical operations, one additional recommendation is to evaluate the feasibility of creating a more dynamic management of the utility's underutilized long-haul capacity. While the utility currently manages an active capacity release program, it is possible that additional benefits could be gained through administering an even more vigorous program. More participation in weekly long-haul capacity releases could yield incremental returns over and above what has historically been received. Based on current market conditions and the complexities involved, Summit would recommend PGW manage any enhanced release program at this time versus relying on a third party.

The market dynamics in the Northeast have vastly changed in the past several years and are still rapidly evolving. Therefore, Summit recommends a short-term approach to any further contractual asset retention. It is also Summit's belief that PGW would be well served to internally re-evaluate its asset portfolio on a regular basis (annual to every two years) to ensure it can take better advantage of any future market developments.

In conclusion, Summit advocates that PGW utilize the enclosed report to consider these recommendations and take action accordingly.

Introduction and Scope

The following report outlines independent analysis conducted by Summit Energy Services, Inc. (Summit) regarding the natural gas capacity resources of Philadelphia Gas Works (PGW). This assessment was constructed based upon a thorough investigation of the utility's existing gas capacity asset portfolio, the utility's servicing obligations, and a detailed review of existing and projected market fundamentals. The study consisted of the following:

- Review and analysis of PGW current gas supply infrastructure assets (pipeline capacity, storage, and LNG)
- Assessment of range of appropriate levels of capacity resources
- Investigation of alternative supply and/or capacity options
- Examination of value of utilizing third party asset management
- Review of asset management payment structures

Background

PGW initially engaged Summit through a competitive request for proposal to perform a thorough evaluation of both PGW's capacity portfolio holdings and its commodity purchasing strategies. PGW program evaluations have been periodically performed by independent parties in the past, the most recent being a study issued by a third party in 2006. Such studies must be re-evaluated at discrete time intervals to consider changes not only in the load characteristics of PGW itself, but also to evaluate changes that occur in both the commodity and capacity markets.

Summit Approach

Upon engagement, Summit reviewed historical testimony of PGW personnel outlining the utility's operational practices as well as the aforementioned study from 2006. In addition, Summit reviewed testimony from prior Gas Cost Rate (GCR) proceedings.

PGW has historically maintained the perspective that keeping the existing infrastructure portfolio intact best enables the utility to provide safe, adequate, and reliable service to its customers. Although there were recommendations which advocated the future consideration of shedding the most marginal economic assets in the portfolio, the previous study largely supported the utility's viewpoint. A contrary opinion from a GCR proceeding participant, however, called for more definitive action, stating that PGW had a large amount of excess capacity that needed to be relinquished, and that its current portfolio holdings were causing the GCR to be inflated.

As Summit prepared to re-evaluate the PGW portfolio and provide its own assessment, the utility collected and disseminated updated information to Summit including the following:

- Most current information concerning historical design day, design year, and actual delivery send out data
- Utility-controlled Liquefied Natural Gas (LNG) liquefaction and vaporization capacities, boil-off histories, and historical monthly inventories
- Capacity release and off-system sales histories, including both long-term and short-term transactions
- Third party supplier agreements designating volumes, price structures, optionality, delivery points, etc.
- Commodity purchasing program details, including historical purchase information

The provided data was supplemented with questions set forth by Summit as additional information was required, as well as with detailed interviews of PGW strategic and tactical personnel. These discussions provided opportunities to learn about operational constraints and details that were not set forth in the provided documentation. This was particularly necessary with the LNG asset evaluation, as this was not jurisdictional at the interstate level and lacked the visibility of FERC-mandated tariffs for long-haul and storage capacity.

Summit next engaged in its own analysis independent of PGW. This consisted of first establishing a set of assigned costs for each capacity asset in the PGW portfolio. This included a standard set of assumptions involving the commodity cost, heating values, utilization of current interstate pipeline tariffs, and other factors to make sure assets were evaluated using equivalent measures.

Summit included all relevant costs for each asset to assign an "as delivered" cost. This included demand charges, commodity charges, fuel, as well as any carrying costs for assets such as storage and LNG. Storage assets also included transportation for both injection and withdrawal capacity to deliver to the PGW city gate. Additional considerations such as storage cycling requirements and load factor assumptions were also integrated. After each asset was assigned a cost, Summit then stack ranked the assets to ascertain relative costs.

Once such analysis was complete, Summit prepared both a "snapshot analysis" of how PGW is currently managed, as well as a set of recommendations to best position PGW in the future in light of market shifts. These findings and recommendations are incorporated herein.

PGW Historical Operations

Reviewing the historical performance of PGW operations, Summit concludes that PGW has succeeded in its core mission of ensuring that all system delivery requirements are fulfilled. PGW has not had to curtail firm service customers and has been able to satisfy all design day and design winter delivery scenarios. Thus, it is evident that the current asset portfolio is adequate to meet needs now and into the anticipated future. This does not answer the question, however, of whether PGW carries excess capacity in its portfolio. This issue is discussed in the recommendation section of this report.

Long-haul Transportation Capacity

Due to the nature of peaking assets not being required at all times, utilities are naturally over-subscribed (or "long") on their capacity during most periods. While it would be optimal to have "load following" capacity, it is not feasible for pipelines to provide this service. Thus, most interstate pipeline long-haul firm transportation and storage are based upon demand charges for the largest amount of capacity the purchaser requires on a given day. This requires a careful balancing of one's needs.

Generally, PGW has performed well balancing such needs. Interstate long-haul capacity is first scheduled to serve "as needed" daily demand, with any unutilized capacity next being scheduled to deliver gas into either interstate storage or PGW-owned LNG liquefaction facilities. Any excess capacity beyond such needs is released into a relatively liquid secondary capacity market using an internal bidding system supplemented by the applicable interstate pipeline electronic bulletin board (EBB) system. This allows other entities to bid on such capacity, though PGW permits the originally selected bidder to retain a right of first refusal to match the right of the highest bid.

PGW's participation in the secondary capacity markets allows them to effectively recoup or "monetize" assets on otherwise sunk costs. The values of these assets can fluctuate over time, and are typically less valuable in times of lower demand.

Storage Capacity

Storage is critical towards achieving the goal of delivering peak day needs, as interstate capacity alone is insufficient for this task. Interstate storage is another asset that PGW extensively utilizes, and is largely divided into production area storage (Gulf region) and market area storage (Pennsylvania market area). These classifications are important due to their very different strategic characteristics.

Production area storage tends to have large amounts of capacity associated per storage field (many are abandoned gas reservoirs), and usually does not have equivalent long-haul transportation contracts associated directly with it, although there are usually receipt point rights that match the storage field.

Production storage has three primary functions. First, it can be used when there are temporary issues with obtaining gas from the furthest points in the Gulf due to hurricanes or well freeze-offs in the winter season. Owners of such storage can make withdrawals until the supply disruption ends.

Second, variations between actual usage and nominations can be managed with storage assets to avoid daily balancing penalties. Additionally, the potential for large penalties (upward of $50/Dth) to be incurred during Operational Flow Order (OFO) periods would be less likely to materialize, as needed gas can be drawn from storage or unnecessary gas can be injected. This is valuable during crisis times when it is difficult to purchase or sell incremental gas.

Finally, the use of storage in "contango" markets (those where future pricing is significantly higher than current month pricing) make it less expensive to purchase gas in current months, carry volumes in storage, and then withdraw it during higher priced periods. As long as the future month price premium exceeds the cost of the storage assets, storage is a tool for price risk management, in addition to its physical reliability.

Market area storage shares many of the same characteristics as production area storage, but there are some key differentiators. As many of the storage fields have physically less capacity, PGW is required to contract for multiple storage services, each of which has differing pricing and deliverability structures. This does have an ancillary benefit, however, since it effectively diversifies their portfolio across multiple locations, and allows for receipt of gas at additional delivery points in the event of force majeure.

Market area storage is designed to provide security of supply in the event long line purchases are lost, to meet peak day demand and design year requirements, and to provide swing and balancing service. In addition, it provides a physical price hedge for a

portion of the portfolio. PGW manages these fields to be regularly "cycled" according to minimum pipeline requirements.

PGW-Owned LNG Infrastructure

PGW has substantial LNG assets that are owned and maintained internally, including storage facilities at Richmond (4,045,800 Mcf capacity) and Passyunk (253,000 Mcf capacity). These assets are critical to the utility's ability to meet design day capacity needs due to their large vaporization and send out capabilities (411,000 Mcf/day and 47,000 Mcf/day, respectively). As is typical with LNG storage managed by utilities, PGW holds LNG in order to meet high deliverability needs on a short-term basis, often in the form of "needle-peak" demand spikes in the winter season.

LNG has several drawbacks when compared to more traditional natural gas deliveries. First, liquefaction occurs at much slower rates than the vaporization itself, so replenishing exhausted supplies requires considerably more time. While a market exists for delivered LNG, the associated costs are uneconomical. Second, PGW's current liquefaction system achieves maximum efficiency only during select parts of the year (late winter and autumn), so it is a rigid schedule.

While there are limitations, the LNG capacity PGW owns has some unique benefits. First, the capacity itself is substantial (approximately 4.3 Bcf). Although it would only satisfy 10 days of deliverability at full utilization, the LNG provides insurance against a catastrophic upstream event. Second, it serves as an economic arbitrage tool in the event of a price spike. In such an event, PGW could look to sell incoming pipeline/storage gas to another delivery point for a short period of time, and displace such delivery with LNG. Thus, while illiquid relative to capacity markets, LNG assets could actually result in higher monetization in selected instances. Lastly, as they are self-owned, these LNG assets are not subject to the same rules governing interstate storage, including cycling requirements, variable tariff pricing over time, etc.

Capacity Monetization

PGW employs a variety of strategies to balance its own load requirements and effectively mitigate demand charges. They have increasingly become an active participant in the capacity release market and generally have had little difficulty finding a third party to whom it could release its excess pipeline demand. PGW releases capacity as available on either a monthly or semi-monthly basis dependent upon how actual load is performing relative to plan. They have been successful at obtaining values for some longer term and winter releases near, at, or above maximum tariff rates. This practice helps to offset nearly all demand charges associated with those volumes that are released. Conversely, shorter term releases made during the summer season have often yielded values that are well below actual demand cost, which in turn fail to recover the total cost of the released volumes. Over recent years, PGW's expanded capacity release activities have yielded an average release benefit increase of over 600% when comparing the early 2000's to the years leading up to 2010.

In addition to the capacity release strategy, PGW historically has looked at off-system sales (i.e., bundling capacity availability with natural gas itself and selling to third parties at delivery points other than PGW). This option has several limitations per PGW's current resource mix. The off-system sales market is much more short-term in nature (often for a few days at most) and for maximum benefits requires marketing of the supply. Additionally, unlike capacity release, which utilizes the pipeline EBB to monitor and credit back demand dollars, PGW has to devote resources to nominate gas and bill the buyer accordingly. This method of cost recovery works best when pricing substantially rises due to system constraints or extreme weather conditions. In select years past, this was strictly done during instances where PGW was solicited by a third party. Such activities yielded financial benefit for the utility and were based upon existing market conditions.

PGW has also recently employed a one year asset management agreement for a portion of its storage capacity. This type of release has the potential to recover all or more than the value of the actual demand charges. A third party will often pay a premium for such assets (as often pipeline storage can be oversubscribed) to more effectively arbitrage trading positions.

PGW has utilized this strategy successfully for their Transco WSS production storage, releasing approximately half of their storage position to a third party at a rate that exceeded the utility's actual tariff costs. Under this Asset Management Agreement (AMA), PGW releases 1.5 Bcf of Transco WSS storage capacity in return for $1.1 million via monthly payment installments. The third party arrangement, which is currently the only instance of PGW utilizing the services of an outsourced asset manager, has been a lucrative agreement for the utility based on the market value of the storage capacity. That said, it should be noted such values of storage will fluctuate with the market and the value that can be derived will vary.

Assumptions

Summit approached its analysis with a core set of assumptions. Some of these are more numerical in nature to better evaluate the assets in the portfolio on an "apples to apples" basis. Others more specifically focus around organizational goals.

Reliability

Summit operated under the fundamental premise that PGW has a mandated public service duty to ensure that its service delivery requirements must always be met. This is a different operational mindset than what is held by many non-utility entities. For instance, a for-profit industrial might elect to shut down production and sell off any gas if premium prices existed in the marketplace. Other companies, such as trading entities, might incorporate a greater element of risk into their decision-making by reducing capacity commitments and relying on supply availability at the time it is required.

Summit also focused on unique attributes of the PGW system, especially its reliance on interstate pipeline laterals and its limited LNG liquefaction capabilities. Although PGW

is served by the interstate pipeline system, PGW is actually fed by laterals off of the main pipeline system which constrains deliveries during winter peak demand times when the laterals are delivering full requirements. In addition, Summit examined the relative subscription rates of capacity and storage on the interstate systems to determine the availability to replace any asset removed from the capacity portfolio. Based on such analysis, one core assumption is that there currently tends to be a limited ability to replace service with alternative firm asset commitments. Last, Summit assumed that a financial commitment (i.e., a delivered contract with liquidated damages) was inferior to a physical asset, due to downstream damage that could be created in the event the supplier was unable to fulfill delivery requirements during a peak day.

Economics

Summit prepared its analysis with a standard set of economic assumptions to ensure uniformity as it evaluated each capacity asset in the PGW portfolio. While such assumptions would change over the contract life of the respective assets and under varying commodity pricing thresholds, the relative values of each asset generally remain consistent.

Forward pricing of natural gas changes daily, so to incorporate consistency in our analysis, our first assumption was a base case NYMEX estimate of $5.00/Dth. Additionally, analysis was run using NYMEX estimates ranging from $3.50/Dth to $7.00/Dth in various scenarios.

Summit also used currently effective tariffs to project demand and commodity charges, fuel ratios and storage ratchet requirements. Such numbers are subject to future rate case adjustments, but generally have more stability than the natural gas commodity itself. While different pipeline filings could affect the value of one capacity asset versus another, such changes occur infrequently and can be evaluated periodically to ensure where they each rank from a cost standpoint. PGW has swing contracts within their supply portfolio that carry an additional pipeline demand component, as these are no-notice contracts. The models do not take these additional demand charges into account, as the impact of these charges on the stack ranking would be negligible.

Operations

Where necessary, Summit assumed a Btu conversion of 1.03 to convert Mcf measurements to Dth. This is also the value used by PGW in many of their conversions, and typically, there is low variation in Btu factors across interstate pipelines.

Historical data indicates consistent year-over-year load declines independent of weather factors, which has been confirmed by PGW's own analysis. While this decline is generally modest (approximately half a percent per year), this reinforces the need to perform an internal review of its assets based on current and future needs. For our analysis, Summit used the 2010/2011 Design Day/Year model (shown on next page). Summit did not model asset needs based on a normal load forecast as this was considered imprudent given PGW's core mission of customer reliability.

Second, Summit assumed historical storage injection and withdrawal patterns, including fulfilling cycling requirements as governed by tariffs. This includes injecting gas on a daily and seasonal basis, which limits maximizing more aggressive "fill" strategies that would be based solely on price. Similarly, withdrawal from each individual storage field creates both a floor and a cap on deliverability. Summit assumed compliance with applicable pipeline tariffs as well as a fairly consistent cycling pattern based upon historical data.

2010-11 Design Forecast* (MDth)

	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11
1	42.0	42.5	62.3	115.3	678.7	645.5	475.2	282.3	189.3	42.6	42.6	42.3
2	42.0	42.5	89.7	174.6	628.6	585.8	447.3	264.7	155.0	42.6	42.6	42.3
3	42.0	42.5	108.0	204.3	598.6	555.9	419.4	238.4	129.3	42.6	42.6	42.3
4	42.0	42.5	126.2	224.1	588.6	516.1	400.7	229.6	120.7	42.6	42.6	42.3
5	42.0	42.5	135.3	243.8	558.5	506.2	391.4	220.8	112.2	42.6	42.6	42.3
6	42.0	42.5	144.5	273.5	538.5	486.3	382.1	212.0	103.6	42.6	42.6	42.3
7	42.0	42.5	153.6	283.4	518.5	466.4	372.8	203.2	95.0	42.6	42.6	42.3
8	42.0	57.7	162.7	293.3	498.4	456.4	363.5	194.4	95.0	42.6	42.6	42.3
9	42.0	57.7	171.9	303.2	488.4	446.4	354.2	185.6	86.5	42.6	42.6	42.3
10	42.0	65.4	181.0	313.1	478.4	436.5	344.9	176.8	86.5	42.6	42.6	42.3
11	42.0	73.0	190.1	322.9	468.4	426.5	335.6	176.8	77.9	42.6	42.6	42.3
12	42.0	80.6	199.2	332.8	458.4	416.6	326.3	168.0	69.3	42.6	42.6	42.3
13	42.0	80.6	208.4	342.7	448.4	406.6	317.0	159.2	69.3	42.6	42.6	42.3
14	42.0	88.2	217.5	352.6	438.3	396.7	307.7	150.4	60.8	42.6	42.6	42.3
15	42.0	95.9	226.6	362.5	428.3	386.7	298.4	141.6	60.8	42.6	42.6	42.3
16	42.0	103.5	235.7	372.4	418.3	376.8	289.1	132.8	43.6	42.6	42.6	42.3
17	42.0	103.5	244.9	382.3	418.3	366.8	279.8	124.1	43.6	42.6	42.6	42.3
18	42.0	111.1	254.0	392.2	408.3	356.9	270.5	115.3	43.6	42.6	42.6	42.3
19	42.0	111.1	263.1	402.0	398.3	346.9	261.1	106.5	43.6	42.6	42.6	42.3
20	42.0	118.8	272.2	411.9	388.3	337.0	251.8	97.7	43.6	42.6	42.6	42.3
21	42.0	118.8	281.4	421.8	378.3	327.0	242.5	88.9	43.6	42.6	42.6	42.3
22	42.0	126.4	290.5	431.7	368.2	317.1	233.2	88.9	43.6	42.6	42.6	42.3
23	47.5	126.4	299.6	441.6	358.2	307.1	223.9	71.3	43.6	42.6	42.6	42.3
24	47.5	134.0	308.8	451.5	348.2	297.2	214.6	71.3	43.6	42.6	42.6	42.3
25	53.0	134.0	308.8	471.3	338.2	267.3	205.3	44.9	43.6	42.6	42.6	42.3
26	58.6	141.7	317.9	481.2	328.2	257.4	196.0	44.9	43.6	42.6	42.6	42.3
27	58.6	149.3	327.0	491.0	318.2	247.4	177.4	44.9	43.6	42.6	42.6	42.3
28	69.6	164.6	345.3	510.8	298.1	197.6	168.1	44.9	43.6	42.6	42.6	42.3
29	80.7	172.2	372.6	510.8	288.1		149.5	44.9	43.6	42.6	42.6	42.3
30	97.2	195.1	427.4	530.6	258.1		121.6	44.9	43.6	42.6	42.6	42.3
31		218.0		580.0	188.0		84.3		43.6		42.6	42.3

***Based on the temperature pattern for a design year in the PGW Model. PGW's design day send out at 0º is 681,200 Mcf.

Market Dynamics

An analysis of historical market drivers and pricing trends is often effective for establishing a forecast for future contingencies. This approach, however, loses efficacy if new pricing drivers are introduced such that the supply and demand fundamentals of the market are altered. The following analysis reveals that many pre-2007 market conditions are no longer domestic driving factors today. Further, a new paradigm has evolved in the natural gas complex specifically impacting Northeast gas transportation markets.

US Natural Gas Landscape

In 2006 and 2007, most, if not all, energy markets were indicative of the rapid economic growth experienced both domestically in the US, and abroad. Natural gas consumption continued to witness an upward growth trend into 2007, pushing demand to record levels. Optimism of seemingly unstoppable growth for energy helped push fuel prices to elevated levels and had most market analysts expecting an extended upward trend in prices, which in turn resulted in growing investor interest.

Coming out of 2007, demand evidence was compelling: US natural gas consumption in the first half of 2008 exceeded that of 2007, setting new five-year highs. Demand was not alone in supporting prices during this time. After many years of strong investment in natural gas exploration and production (the gas rig count had been setting new highs for four years running), natural gas production in the US was unable to keep pace with demand. The amount of gas in storage was insufficient at five-year average levels. The result: a steady uptrend in pricing through 2008.

The impact of the "Great Recession" on US natural gas consumption was delayed, but by early 2009, demand had fallen to five-year minimums. Despite this, US natural gas production remained very strong as a result of the favorable investment environment of 2008. In fact, gas production in the US set new highs in 2009. High volumes of natural gas in storage resulted and subsequently persisted throughout 2009. As such, gas prices fell coming out of 2008 and heading into 2009.

In mid 2009, US natural gas consumption began showing signs of recovery and had recovered to near five-year highs by early 2010. US natural gas production also continued to show impressive growth as a result of shale production and storage volumes reached an all-time high in November 2010. Logically, gas prices have remained near the $4-$5 range since March.

As we turn to 2011 and beyond, a few major themes emerge as key drivers for the US natural gas market. Demand hinges on industrial market recovery as well as technological advancements through increased investment in the exploration and production industry. The fundamental outlook going forward is for strong growth in production to persist at rates greater than the expected growth in consumption. As such, Summit anticipates prices to remain relatively flat through 2011 and into 2012. Over the next 5 years, our outlook is for the market to move in a slightly upward direction; however, prices are not expected to reach the highs seen pre-2009.

Regional Transportation Pricing Landscape: Northeast

Basis costs in the Northeast historically have been heavily influenced by the incremental escalation of regional natural gas demand while interstate pipeline capacity infrastructure has remained relatively static. The resulting shortage of pipeline capacity to bring sufficient gas into the region created a floor for regional transportation prices making the Northeast a premium gas market. Other regional market drivers like weather, particularly the severity and duration of winter temperatures and precipitation, LNG capabilities, and Canadian gas imports into the region have also been key pricing drivers.

Much has changed in the Northeast since the 2006 study of PGW's assets was completed. The 2006 study was written in the wake of two major hurricanes in 2005 that introduced extreme national natural gas pricing volatility and took significant Gulf supplies off-system for the winter of 2005-2006. Since 2006, we have not seen similar destructive hurricane activity hit producing regions in the Gulf. Subsequently, the credit crisis of 2008 introduced another macro-environment alteration to the industry. Additionally, the cost of obtaining capital for the whole of the industry increased.

The largest market drivers in the Northeast post-2006 have not been the credit crisis nor hurricane activity. Rather, the Northeast natural gas market has responded to simple supply and demand fundamentals consisting of an increase in production and pipeline infrastructure and a simultaneous dip in consumer demand.

In 2008, Northeast natural gas consumption was approximately 9 Bcf/day. In late 2008, the last leg of the Rockies Express Pipeline brought an additional 1.8 Bcf/day into the region via the TCO pipeline system. This provided a 20% boost to Northeast supplies and brought immediate relief to the historically premium regional pricing complex.

Marcellus Shale gas has also introduced increased supply into the Northeast. This intra-region supply is expected to eventually bring as much as 6 Bcf/day into the Northeast's supply mix. Currently, Marcellus Shale is contributing 0.7 to 1.3 Bcf/day of supply. The long-term impact of this shale find is dependent on the following: further build-out of a pipeline gathering system that will connect Marcellus Shale gas to major interstate pipelines, the domestic price of natural gas (which will impact break-even rates for Marcellus drilling rigs), and environmental legislation regarding the hydraulic fracturing required to pull shale gas from underground formations.

The natural gas pipeline infrastructure in the Northeast has experienced exponential growth since 2009. Fifteen new pipeline extensions are set to be completed in the Northeast region by 2013 that will allow approximately 11 Bcf/day[1] in additional gas throughput. This increase in infrastructure is a dramatic shift from the early to mid 2000's when new pipeline build-outs were far less common. Historically, due to the lack of infrastructure, basis prices were bid up to premium levels as various parties competed for the remaining pipeline volumes that were not consumed by upstream pipeline market

[1] www.ferc.gov/industries/gas/gen-info/horizon-pipe.pdf

participants. The new infrastructure has already provided significant relief to regional basis prices and has allowed the new supply from the Rockies and Marcellus Shale to move with more freedom in the region.

While the EIA has not yet released its calendar-year 2010 natural gas consumption numbers for the Northeast states, we expect demand to have decreased proportionately to the broader macro-economic impact of the United States recession.

The changes to the supply and demand landscape of the Northeast outlined above have caused regional transportation prices and assets to decline in value. Excess intra-region supply threatens to displace a large portion of gas entering the region from the Gulf, Rockies, and Canada. While interstate pipeline capacity assets into the Northeast, particularly from the Gulf, have managed to retain value (likely due to a 'wait-and-see' approach as to whether the new supply paradigm will persist in the Northeast), regional basis prices have retreated significantly since early 2009. The new supplies have all but removed the historical pricing volatility in the region.

Summit Analysis Process

Based upon Summit's historical findings of the PGW program as well as the above mentioned dynamics in the marketplace that have occurred in the last several years, Summit designed its own "cost to deliver" model that effectively stack ranks each contracted capacity asset in the PGW portfolio. While the model is based upon the assumptions stated herein, these have been examined through multiple scenarios, and our analysis indicates relative asset rankings generally remain consistent.

The model integrated financial costs including the natural gas commodity as well as associated tariff charges. Additional costs associated with storage assets, such as transportation costs to deliver withdrawals from storage and applicable carrying costs unique to each storage agreement, were also incorporated.

These assets were stack ranked solely on a cost basis. In the first set of scenarios, cost models assumed no spread between winter and summer prices (i.e., NYMEX values flat throughout year). As seen in the table on the following page, the impact of increases in commodity cost to the relative weighted average costs is marginal. Even if NYMEX values were to return to their historical settlement highs, the stack rankings within each category remain consistent.

		NYMEX: $3.5/Dth Year-Round	NYMEX: $5/Dth Year-Round	NYMEX: $7/Dth Year-Round
Market Area Storage	Equitrans SS3	$7.665	$9.442	$11.811
	Tetco SS1-A*	$6.307	$8.035	$10.339
	Dom GSS Tetco FTS8	$6.062	$7.766	$10.037
	Dom GSS Tetco FTS7	$6.022	$7.726	$9.998
	Tetco SS1-B	$5.743	$7.471	$9.776
	Transco GSS	$5.314	$6.976	$9.192
	Transco S2	$5.290	$6.955	$9.174
	LNG	$4.329	$5.953	$8.119
Production Area Storage	Transco ESS1	$5.447	$7.036	$9.155
	Transco ESS2	$5.447	$7.036	$9.155
	WSS Transco FT*	$4.594	$6.200	$8.341
Long-Haul Transport	Tetco CDS	$4.504	$6.145	$8.333
	Tetco FT-1	$4.490	$6.130	$8.318
	Transco FT	$4.237	$5.827	$7.947

*Tetco SS1-A and WSS Transco FT are primary tools employed by PGW to avoid interstate pipeline balancing penalties on differentials between actual consumed and delivered volumes.

Next, cost models assumed $5.00 NYMEX in summer months, with summer-to-winter spreads of $.50, $1.00, and $2.00. Since most gas is consumed in the winter months, the model assumed storage gas was bought in the summer and used in the winter, while long-haul was based on winter pricing. As seen in the table below, growth in summer-to-winter spreads increases the value of all storage assets, and the lowest cost storage options begin to provide a lower weighted average cost of gas than long-haul; however, the increased value does not outweigh the costs for Equitrans in any of the sample scenarios. In addition, such large summer-to-winter commodity spreads are not expected to materialize in the foreseeable future, as spreads have eroded in recent years due to gas-fired power generation and high storage levels.

		NYMEX: $5/Dth Summer, $5.5/Dth Winter	NYMEX: $5/Dth Summer, $6/Dth Winter	NYMEX: $5/Dth Summer, $7/Dth Winter
Market Area Storage	Equitrans SS3	$9.442	$9.442	$9.442
	Tetco SS1-A	$8.035	$8.035	$8.035
	Dom GSS Tetco FTS8	$7.766	$7.766	$7.766
	Dom GSS Tetco FTS7	$7.726	$7.726	$7.726
	Tetco SS1-B	$7.471	$7.471	$7.471
	Transco GSS	$6.976	$6.976	$6.976
	Transco S2	$6.955	$6.955	$6.955
	LNG	$5.953	$5.953	$5.953
Production Area Storage	Transco ESS1	$7.036	$7.036	$7.036
	Transco ESS2	$7.036	$7.036	$7.036
	WSS Transco FT	$6.200	$6.200	$6.200
Long-Haul Transport	Tetco CDS	$6.692	$7.239	$8.333
	Tetco FT-1	$6.677	$7.224	$8.318
	Transco FT	$6.357	$6.887	$7.947

Based on the scenarios examined on the previous page, changes in the absolute cost of gas do not have a significant impact on the relative cost of delivery options. Additionally, large summer-to-winter commodity spreads are not expected, and modest spreads do not result in changes to the assessment of the highest cost assets. Thus, recommendations for optimization are based on the $5.00 year-round NYMEX scenario.

Asset Stack Ranking

Market Area Storage	Max Storage Quantity (Dth)	Storage Demand (Dth)	Estimated WACOG ($/Dth)
Equitrans SS3	522,500	4,998	$9.442
Tetco SS1-A	2,647,080	44,118	$8.035
Dom GSS Tetco FTS8	3,007,810	22,495	$7.766
Dom GSS Tetco FTS7	911,161	6,815	$7.726
Tetco SS1-B	2,462,120	20,847	$7.471
Transco GSS	4,123,733	53,871	$6.976
Transco S2	466,554	5,191	$6.955
LNG	4,428,073	469,680	$5.953

Production Area Storage	Max Storage Quantity (Dth)	Storage Demand (Dth)	Estimated WACOG ($/Dth)
Transco ESS1	482,792	47,986	$7.036
Transco ESS2	656,013	65,201	$7.036
WSS Transco FT	3,335,909	39,246	$6.200

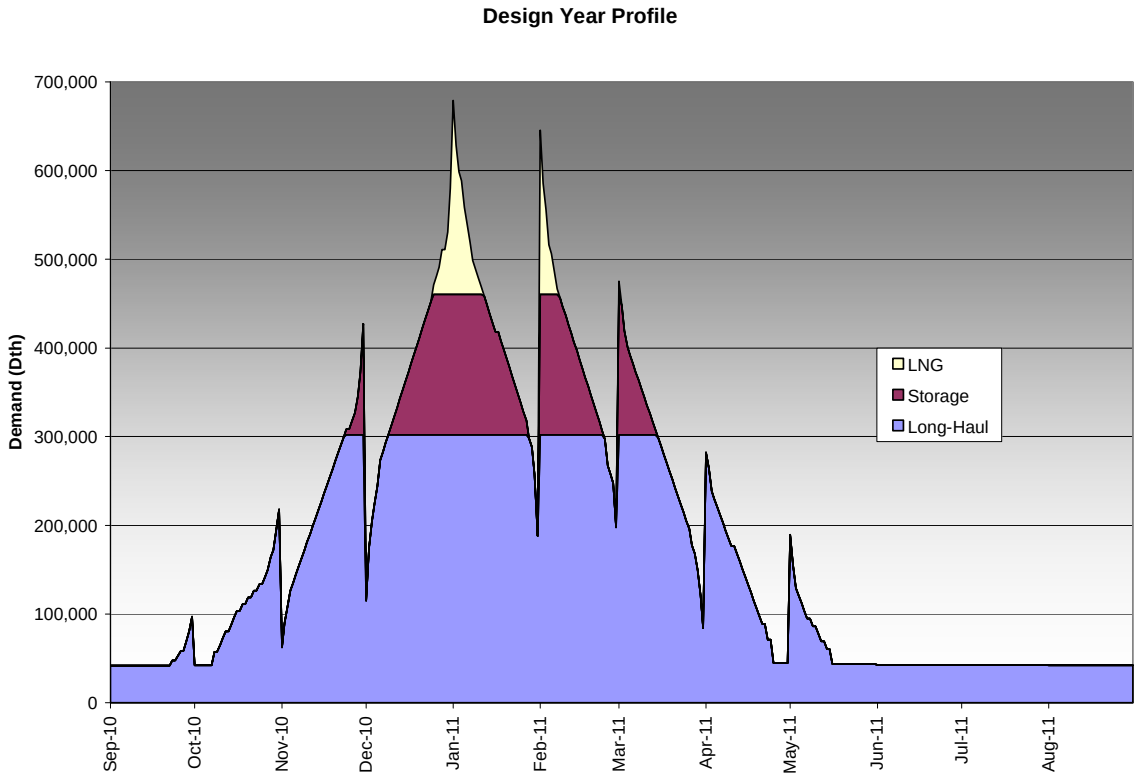
Long-Haul Transport	Capacity (Dth)	Estimated WACOG ($/Dth)
Tetco CDS	75,000	$6.145
Tetco FT-1	59,822	$6.130
Transco FT	167,179	$5.827

Based upon our initial analysis of storage assets (table above), Equitrans storage was the highest cost delivered asset to serve PGW. Tetco SS1-A was the next highest cost asset due to its relatively high reservation of demand, though this asset plays a significant part in meeting PGW's balancing needs on the Tetco pipeline. Long-haul transportation across Tetco or Transco is intuitively the cheapest option, as it is taken directly from the production area, assessed fuel and transportation costs, and then delivered directly to the market. Storage requires additional costs (demand, storage capacity, fuel, and associated transportation), which raise the total cost of delivery.

After the initial stage of cost-based stack ranking, Summit next created a delivery prioritization model that incorporated relative receipt and delivery constraints of each asset. Thus, long-haul and short-haul interstate capacity is inherently limited by the maximum daily quantity (MDQ) of each transport agreement. Similarly, some storage agreements not only have limits on their injections, withdrawals, and total capacity, but also on seasonal requirements such as ensuring certain percentages of gas in storage are actually withdrawn. Finally, PGW-owned LNG not only has capacity restrictions, but also operational constraints on its liquefaction. These constraints are more physical than contractual.

Summit then incorporated the 2010-2011 peak design consumption model and evaluated alternative scenarios when considering the appropriate ways to guarantee deliveries are met. This included ensuring that maximum deliveries were made via already contracted assets delivering at variable costs, thus avoiding additional incremental purchases. Also, LNG reserves were always maintained to ensure adequate deliverability from vaporization would exist for any necessary peak day/year.

Given PGW's limited capability to aggressively refill its LNG capacity, Summit not only evaluated the needs of a single design year, but also that of two consecutive design years. The results illustrate that as the highest cost storage capacity is eliminated, PGW quickly approaches a scenario where it might not be able to meet its operational requirements.



LNG Usage – Design Year Scenarios

Non-LNG Assets	Non-LNG Capacity (1)	LNG Inventory Needed for Design Winter (1,2)	LNG Inventory Needed for Consecutive Design Winters (1,3)
All current assets	460,336	2,237,800	2,965,601
Current asset mix less 5,000 Dth of demand	455,336	2,371,900	3,233,801
Current asset mix less 7,500 Dth of demand	452,836	2,441,900	3,373,801
Current asset mix less 10,000 Dth of demand	450,336	2,513,053	3,516,106
Current asset mix less 12,500 Dth of demand	447,836	2,586,075	3,662,151
Current asset mix less 15,000 Dth of demand	445,336	2,664,129	3,818,257

(1) Volumes in Dth.
(2) Volume represents the design demand in excess of non-LNG capacity, inclusive of boil-off volumes for withdrawal season.
(3) Volume represents the minimum amount of LNG necessary at the beginning of withdrawal season in year 1 to meet two consecutive design winters; this assumes 2,000,000 Dth of liquefaction in a calendar year.

Summit's modeling revealed that any combination of assets that satisfy consecutive design year requirements would always result in some unutilized capacity in any reasonable asset mix. Given that PGW will necessarily be "long" in most circumstances, Summit then proceeded to evaluate which assets could either be directly monetized (capacity release) or indirectly monetized (asset management relationships, off-system sales).

Outsourced Asset Management

PGW requested that Summit advise the Company regarding possible AMAs, including a review of the best practices regarding the payment structure of such arrangements. An asset management program provides for the utility to turn over the management of all or some of its assets to a third party. Under this arrangement, the asset manager commits to satisfy the utility's delivery obligations in return for having the ability to use the asset or assets however the manager decides when such deliveries are not required. The release of one's entire asset portfolio is a popular strategy for smaller municipalities (~5 Bcf or less of annual firm requirements) who will bundle and assign their assets while simultaneously fulfilling their delivery requirements. It enables the utility to reap a larger recovery of dollars than they would have by self-managing their portfolio.

With the exception of the aforementioned AMA for a portion of PGW's storage, PGW does not currently employ this type of asset management strategy and generally retains institutional self-control of its asset base with the exception of capacity release programs. There are numerous asset managers in the marketplace with the primary objectives of providing reliable gas supply to the utility city gate, managing the utility's existing asset

base, and optimizing the value of such contracts. Additionally, there are numerous natural gas distributors who utilize the services of a third party asset manager. Despite this utilization, however, the strategy is not necessarily the most appropriate approach for all gas distributors, nor does it appear to be a rapidly increasing practice. Instead, many utilities regularly perform internal review of their capacity needs.

For a utility, releasing control and management of one's assets to a third party can, at times, pose significant risks and complexities that may offset the benefits achieved by the program. The primary benefit that can be achieved under a third party asset management agreement is the optimization of those assets, some of whose benefits may otherwise be unrealized. Outsourced firms may be better positioned to deliver optimization value because of the following:

- Inherently possess larger scale and flexibility
- More substantial and broader market presence/expertise
- Greater resource availability
- Core operational function

Additionally, there may be value derived from an outsourced AMA as it may enable the utility to focus more intently on customer service and its distribution operations.

While there can be benefits from AMAs, there are also numerous risks to consider. Some of the risks that may exist for a gas distributor evaluating such an arrangement consist of the following:

- Diminished control over a primary business function
- Loss of expertise in a key operational arena
- Exposure to counterparty risk
- Program profitability limitations
- Performance/auditing validation

If PGW considers the possible utilization of an outsourced asset management firm, the utility should carefully weigh the pertinent risks and benefits to ensure the goals of the program align with their overall business objectives. PGW should also consider any internal operational benefits or constraints that may enhance or deter the introduction of such a third party firm. In addition, it is prudent to be cognizant of futures pricing and market dynamics in order to assess the potential viability and profitability of entering an AMA.

Current market levels reflect a summer-to-winter spread differential of approximately $0.55/Dth, therefore demonstrating a relatively low level of potential profit should any holder look to arbitrage a storage asset. This can be contrasted with market levels from December 2009 (one year ago) when a summer-to-winter spread differential of approximately $1.00/Dth existed in the market. In this example, the asset's potential value was nearly cut in half over just a 12-month span. A more distant market snapshot from the 2006 – 2007 timeframe would reflect a $3.00/Dth differential. This second example renders a $2.45/Dth decrease in value when compared to current market. These

various points in time demonstrate how storage profitability can rapidly erode in an ever-changing marketplace.

Due to Summit's market outlook, we do not anticipate a significant increase in the summer-to-winter spreads over the short-term, thus reducing the overall value that can be derived from PGW's storage assets. Because of current market conditions and the aforementioned spread analysis, the likelihood of interested parties willing to enter AMAs is reduced as is the compensation that could be realized.

However, due to the nature of the evolving natural gas market, individual PGW assets may present an AMA opportunity (as opposed to a third party assuming the entire utility portfolio). This is due to the fact that many niche counterparties might ascribe a higher value to a specific asset than another based upon their own unique requirements. As an example, a growing producer with Marcellus Shale production in Pennsylvania might highly value storage and short-haul capacity, but have little interest in long-haul capacity from the Gulf coast. Thus, an exploration of the options surrounding each independent asset could yield greater value than the entire portfolio as well as increase the number of interested parties.

Should market fundamentals support entering into an AMA, there are various forms of compensation that can be structured with the asset manager. The most prevalent payment constructs consist of 1) outright fixed payment over the term of the agreement and 2) shared-benefit payments based on a percentage split of the gains from the optimization. An asset with a greater value will typically render increased flexibility in terms of negotiating compensation structures as well as potentially other contractual criteria. Ultimately, each party's projected valuations of the asset(s), risk appetite, and regulatory constraints can shape the compensation structure of the agreement.

Due to the nature of PGW's core objectives of providing reliable and cost-effective gas supply to its customer base, Summit would consider a set monthly payment schedule as a best practice, provided such payment represents a value PGW deems as fair and appropriate for such asset(s) in the marketplace. This type of structure would produce guaranteed payments that would benefit ratepayers. By securing a set value for the asset upon entering the AMA, market risk can be eliminated and therefore a known compensation threshold would be established. Furthermore, a fixed price agreement avoids the speculative nature associated with a shared-benefit arrangement that is reliant upon future market outcomes to determine its revenue.

Summit Recommendations

Based upon our analysis of current PGW operating parameters, existing and continuing market trends, and an integrated analysis, Summit makes the following recommendations.

1. **Evaluate elimination or reduction of portion of current asset base after assessing asset management opportunities, and leverage PGW-owned LNG assets.**

   - Eventual release of Equitrans storage as it is the highest unit cost asset in the PGW portfolio; the net cost of this asset per year is approximately $541,000 (after adjustments for net capacity release credits). However, due to contractual notification of abandonment provisions and the unique geographical position of this asset within the Marcellus Shale supply basin, it would be prudent to first perform an RFP to determine if opportunity exists for a third party AMA that would guarantee value above PGW's cost.
   - While Tetco SS1-A is the next highest cost delivery option in the stack ranking, it provides PGW with flexibility in balancing load. For every 1 degree of variance between actual and expected temperatures, PGW experiences a change in demand of approximately 10,000 Dth. Since PGW is able to retroactively balance their load through their SS1 assets, PGW's exposure to balancing penalties is reduced. Hence, Tetco SS1 assets should be retained.
   - The next highest cost asset is Dominion storage, along with its Tetco FTS-7 and FTS-8 contracts. Reduction of 10,000 Dth of demand at contract renewal (along with associated storage capacity and FTS transport contracts) would not impede PGW's ability to serve customers in design scenarios. The net cost of this asset per year is approximately $670,000 (after adjustments for net capacity release credits). It is important to note that there is potential that FTS-7 and FTS-8 contracts could eventually bring Marcellus Shale gas into PGW, thereby changing their functionality and subsequent value. Since the Dominion agreement is specially negotiated, any subsequent renewal needs to factor in both the risk and opportunities of both new pricing and delivery terms changing; reduction of the Dominion storage from approximately 4 Bcf to 3 Bcf could result in new contract rates that may diminish some or all of the potential savings.
   - PGW should maintain their LNG inventory consistent with the appropriate level of risk, understanding that their liquefaction capabilities are limited, in order to serve consecutive design winters. Any elimination and/or reduction of designated assets would necessarily entail a greater reliance upon PGW's own LNG assets.
   - Many natural gas utilities in PA and surrounding areas do not have utility-owned LNG facilities. For those that do, LNG usage on a peak design day comprises of approximately 27% of the total portfolio; however, when propane is incorporated with LNG into peak day usage for these same utilities, the proportion increases to 32%. Currently, PGW's LNG comprises 32% of their peak design day portfolio. Reducing portions of their non-LNG capacity as referenced in this report would increase this amount to 34%.

2. **Production area storage still worthwhile assets; however internal evaluation should be an on-going process**

   - It serves as protection against supply area production "shocks" and interstate pipeline balancing penalties.
   - It is valued as a hedging tool on inter-seasonal basis becoming less valuable as market volatility has flattened.
   - Monetization opportunities exist with asset managers, but value may decrease with lessened volatility.
   - Internal evaluation of WSS and Eminence storage value should occur regularly.

3. **Maintain current long-haul interstate capacity allocations**

   - Pipeline lateral delivery requirements necessitate preservation of delivery rights.
   - It is the least expensive delivery option.
   - Transco and Tetco capacity to market area is currently fully subscribed and could potentially be lost if surrendered.
   - Long-haul assets are easiest to monetize when not required due to liquid secondary release market.

4. **Evaluate more dynamic/active resource management (internal or external) for underutilized assets**

   - Traditional asset management (entire portfolio turnover to third party with payment/shared savings structure) is likely unworkable due to complexity and declining liquidity of capable providers.
   - Certain individual assets, particularly those where long-term elimination or reduction is contemplated, should be bid out for potential AMAs to validate the market value of such assets against PGW's costs.
   - More aggressive tactics such as weekly long-haul capacity releases marketed to others should be considered even if potentially requiring additional resources.

5. **Monitor supply/capacity market for more economical infrastructure**

   - Marcellus Shale/transport projects should be entertained to determine if they can displace Transco/Tetco storage and/or portion of LNG-filled capacity.
   - Opportunities to increase long-haul capacity at expense of short-haul capacity/storage also should be considered.
   - Both history and anticipated infrastructure projects strongly suggest that market pricing will be fluid and volatile for the foreseeable future. This makes forecasting the optimal asset mix impossible for any substantial length of time. Thus, PGW is best positioned to continuously evaluate its assets by not committing to long-term contracts, thus maintaining flexibility to shift its portfolio between short-haul and long-haul pipeline capacity and its own LNG capacity.

Adoption of Recommendations and Path Forward

Summit advocates that PGW utilize this report and consider these recommendations, while also establishing processes to more fully monetize its existing capacity assets. In addition, the market dynamics in the Northeast have vastly changed over the past several years and appear to be still evolving rapidly. Thus, Summit recommends a short-term approach to any further contractual asset retention and PGW would be well served to internally re-evaluate its asset portfolio on a regular (annual to every two years) basis to ensure it can take better advantage of any future market developments.

Tab 14

Docket No. R-2019-XXXXXXX

Item 53.64(i)(1)

Philadelphia Gas Works
Pennsylvania Public Utility Commission
52 PA Code 53.61, et seg.

Item 53.64(i) Utilities shall comply with the following:

(1) Thirty days prior to the filing of a tariff reflecting increases or decreases in purchased gas expenses, gas utilities under 66 Pa.C.S. § 1307 (f) recovering expenses under that section shall file a statement for the 12-month period ending 2 months prior to the filing date under 66 Pa.C.S.§ 1307(f) as published in accordance with subsection (b) which shall specify:

(i) The total revenues received under 66 Pa.C.S. § 1307(a), (b) or (f), including fuel revenues received, whether shown on the bill as 66 Pa.C.S.§ 1307(f) as published in accordance with subsection (b) which shall specify:

(ii) The total gas expenses incurred.

(iii) The difference between the amounts in sub paragraphs (I) and (ii).

(iv) Evidence explaining how actual costs incurred differ from the costs allowed under subparagraph (ii).

(v) How these costs are consistent with a least cost fuel procurement policy, as required by 66 Pa.C.S. § 1318 (relating to determination of just and reasonable natural gas rates).

Response: Please see attached schedule. Additionally, please refer to Item 53.64(c)(6) for a detailed discussion regarding the company's least cost fuel procurement policy.

CALENDAR YEAR 2018
PHILADELPHIA GAS WORKS
C-FACTOR RECONCILIATION

MONTH	NET COST OF FUEL 1 ($)	TOTAL GCR REVENUE BILLED 2 ($)	C FACTOR % of GCR 3	C FACTOR REVENUE BILLED 4 = (2 * 3) ($)	LOAD BALANCING REVENUE 5 ($)	LNG SALES GCR BILLED REVENUE 6 ($)	TOTAL C FACTOR REVENUE BILLED 7 = (4 + 5 + 6) ($)	NATURAL GAS REFUNDS 8 ($)	OVER/ (UNDER) RECOVERY 9 = (7 + 8 - 1) ($)
JANUARY 2018	33,708,079	48,255,247	100.8%	48,631,719	110,288	152,507	48,894,514	0	15,186,435
FEBRUARY	22,699,166	33,328,279	100.8%	33,588,295	109,440	42,323	33,740,059	0	11,040,893
MARCH	23,436,643	25,778,813	100.6%	25,934,802	110,484	0	26,045,287	0	2,608,644
APRIL	14,299,108	21,242,258	100.4%	21,325,900	108,365	0	21,434,264	0	7,135,156
MAY	8,990,555	8,554,511	100.4%	8,588,194	107,415	2,697	8,698,306	0	(292,249)
JUNE	7,387,676	4,188,053	100.3%	4,202,559	108,842	644	4,312,045	0	(3,075,631)
JULY	7,433,255	3,366,599	100.3%	3,376,547	108,034	700	3,485,280	0	(3,947,975)
AUGUST	8,289,071	3,090,390	100.3%	3,099,522	112,196	0	3,211,718	0	(5,077,353)
SEPTEMBER	6,806,335	3,506,061	104.0%	3,647,441	118,414	854	3,766,708	0	(3,039,627)
OCTOBER	11,894,412	4,806,212	107.5%	5,168,361	111,261	0	5,279,622	2,638	(6,612,152)
NOVEMBER	22,789,491	14,283,132	107.5%	15,359,368	113,201	0	15,472,568	210	(7,316,713)
DECEMBER	31,738,145	26,740,061	106.3%	28,424,226	132,144	0	28,556,371	0	(3,181,774)
Totals	199,471,936	197,139,616		201,346,934	1,350,083	199,725	202,896,743	2,848	3,427,655

STATEMENT OF RECONCILIATION
UNIVERSAL SERVICES & ENERGY CONSERVATION SURCHARGE
CALENDAR YEAR 2018

Month		USC Applicable Volumes	USC Charge	USC Revenue Billed	USC Expenses	Monthly Over/(Under) Recovery	Cumulative Over/(Under) Recovery
December 2017							($8,491,639)
January 2018	Actual	11,176,645	$ 1.4845	$ 16,591,730	$ 17,137,459	$ (545,730)	($9,037,369)
February	Actual	7,734,457	$ 1.4845	$ 11,481,801	$ 13,471,632	$ (1,989,831)	($11,027,200)
March	Actual	6,735,807	$ 1.5995	$ 10,773,923	$ 10,570,930	$ 202,993	($10,824,206)
April	Actual	5,943,997	$ 1.7145	$ 10,190,982	$ 8,005,397	$ 2,185,586	($8,638,621)
May	Actual	2,448,499	$ 1.7145	$ 4,197,952	$ 3,270,043	$ 927,909	($7,710,712)
June	Actual	1,291,720	$ 1.6788	$ 2,168,474	$ 243,316	$ 1,925,158	($5,785,554)
July	Actual	1,086,850	$ 1.6430	$ 1,785,695	$ 853,059	$ 932,636	($4,852,918)
August	Actual	1,017,168	$ 1.6430	$ 1,671,208	$ 586,971	$ 1,084,237	($3,768,681)
September	Actual	1,098,293	$ 1.5434	$ 1,695,106	$ (1,876,979)	$ 3,572,085	($196,596)
October	Actual	1,511,556	$ 1.4438	$ 2,182,385	$ 335,100	$ 1,847,285	$1,650,689
November	Actual	4,238,857	$ 1.4438	$ 6,120,062	$ 4,723,978	$ 1,396,083	$3,046,772
December	Actual	7,140,155	$ 1.2811	$ 9,146,896	$ 9,136,000	$ 10,896	$3,057,669

USC Expenses	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
ELIRP Expense	$ 347,964	$ 354,668	$ 8,647	$ 448,997	$ 1,173,520	$ 790,028	$ 647,725	$ 1,364,409	$ 4,554	$ 797,695	$ 437,794	$ 204,587	$ 6,580,588
ELIRP Labor	$ 14,054	$ 4,742	$ 18,459	$ 14,800	$ 14,182	$ 18,444	$ 14,573	$ 45,997	$ 16,281	$ 12,938	$ 21,293	$ 14,951	$ 210,714
CRP Discount	$ 15,365,947	$ 11,933,868	$ 9,345,516	$ 6,545,968	$ 1,181,194	$ (1,246,795)	$ (1,769,297)	$ (1,978,385)	$ (1,871,956)	$ (1,297,656)	$ 3,128,211	$ 7,808,615	$ 47,145,231
CRP Forgiveness	$ 597,001	$ 540,512	$ 679,760	$ 582,734	$ 710,387	$ 579,338	$ 1,874,354	$ 1,075,449	$ (109,542)	$ 711,525	$ 862,430	$ 663,925	$ 8,767,872
Senior Citizen Discount	$ 812,493	$ 637,843	$ 518,548	$ 412,898	$ 190,760	$ 102,302	$ 85,703	$ 79,500	$ 83,684	$ 110,598	$ 274,251	$ 443,922	$ 3,752,500
Bad Debt Expense Offset*					$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 17,137,459	$ 13,471,632	$ 10,570,930	$ 8,005,397	$ 3,270,043	$ 243,316	$ 853,059	$ 586,971	$ (1,876,979)	$ 335,100	$ 4,723,978	$ 9,136,000	$ 66,456,906

CRP Participation												
Rate Case Participation Rate	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Actual Participation Rate*	49,311	49,312	49,313	49,314	47,795	47,419	47,940	48,110	48,110	49,465	50,609	51,885
CRP Under(Over) Participation	10,689	10,688	10,687	10,686	12,205	12,581	12,060	11,890	11,890	10,535	9,391	8,115
Average Shortfall Per CRP Participant												
CRP Discount	$ 15,365,947	$ 11,933,868	$ 9,345,516	$ 6,545,968	$ 1,181,194	$ (1,246,795)	$ (1,769,297)	$ (1,978,385)	$ (1,871,956)	$ (1,297,656)	$ 3,128,211	$ 7,808,615
Actual Participation Rate	49,311	49,312	49,313	49,314	47,795	47,419	47,940	48,110	48,110	49,465	50,609	51,885
Average Shorfall per CRP Participant	$ 312	$ 242	$ 190	$ 133	$ 25	$ (26)	$ (37)	$ (41)	$ (39)	$ (26)	$ 62	$ 150
Shortfall*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bad Debt Expense Offset* 7.5%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	

*Bad Debt Expense Offset Applicable When Actual CRP Participation Exceeds 60,000

Tab 15

Docket No. R-2019-XXXXXXX
Item 53.65 (1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (1)

The costs of the affiliated gas, transportation or storage as compared to the average market price of other gas, transportation or storage and the price of other sources of gas, transportation and storage.

Response:

PGW has no affiliates, see response to 53.64(c)(1) for price of gas, transportation and storage.

Tab 16

Docket No. R-2019-XXXXXXX
Item 53.65 (2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (2)

Estimates of the quantity of gas, transportation or storage available to the utility from all sources.

Response:

PGW has no affiliates and provided is a summary of all transport and storage.

Philadelphia Gas Works

Gas Supply Group – Supply and Transportation

Abstract of Natural Gas Contracts

This document contains confidential information for the use of the Gas Operations personnel only. It is important to note that this is a brief summary of the terms and conditions of our contracts. The pipeline tariffs and contract files should be referenced for complete information.

PHILA.GAS WORKS

TABLE OF CONTENTS
SUPPLY

TRANSPORTATION CONTRACTS

Transco FT (Firm Transportation)
Transco PSFT (Peaking Service Firm Transportation)
Transco IT (Interruptible Transportation)
Tetco CDS (Comprehensive Delivery Service)
Tetco FT1 (Firm Transportation Service)
Tetco FT1 (Firm Transportation Service)
Tetco FT1 (Firm Transportation Service)
Tetco FTS 2 (Firm Transportation Service)
Tetco FTS 7 (Firm Transportation Service)
Tetco FTS 8 (Firm Transportation Service)
Tetco IT (Interruptible Transportation)

PHILA.GAS WORKS

TABLE OF CONTENTS
UNDERGROUND STORAGE

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	1 Year
Initial Contract Date:	11/01/2018
Contract Expiration Date:	10/31/2019
Quality of Service:	Firm
Daily Maximum:	20,000 DT
Availability:	Year Round
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day is priced at *Platts Gas Daily* midpoint index.
Most Recent Negotiation:	Contract expires on 10/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #3
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	1 Year
Initial Contract Date:	11/01/2018
Contract Expiration Date:	10/31/2019
Quality of Service:	Firm
Daily Maximum:	15,000 DT
Availability:	Year Round
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day is priced at *Platts Gas Daily* midpoint index.
Most Recent Negotiation:	Contract expires on 10/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #5
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	15,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	15,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month Index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #25
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	15,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	15,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month Index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #28
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	15,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	15,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month Index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT2
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month Index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month Index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

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PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT2
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #28
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #26
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #16
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Apr-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #1
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Apr-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #16
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expires on 03/31/19.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #25
Delivery Pipeline & Contract #:	Tetco

Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/19.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #28
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	20,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	20,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/19.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #26
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	15,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	15,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/19.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT2
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Tetco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/19.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #24
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	1 Year
Initial Contract Date:	11/01/2017
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	15,000 DT
Availability:	Year Round
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day defaults to Platts *Gas Daily* Mid-Point index.
Most Recent Negotiation:	Contract expired on 10/31/18.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Tetco Gas Supply Contract #26
Delivery Pipeline & Contract #:	Tetco
Associated Transportation Contract:	Tetco FT and CDS
Contract Term:	1 Year
Initial Contract Date:	11/01/2017
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	20,000 DT
Availability:	Year Round
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	Next day nomination change. Nominations subject to Tetco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day defaults to Platts *Gas Daily* Mid-Point index.
Most Recent Negotiation:	Contract expired on 10/31/18.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #34
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract # 1003691
Contract Term:	1 Year
Initial Contract Date:	11/01/2018
Contract Expiration Date:	10/31/2019
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day defaults to Platts *Gas Daily* Mid-Point index.
Most Recent Negotiation:	Contract expires 10/31/19.

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PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #36
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract # 1003691
Contract Term:	1 Year
Initial Contract Date:	11/01/2018
Contract Expiration Date:	10/31/2019
Quality of Service:	Firm
Daily Maximum:	20,000 DT per Day
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day defaults to Platts *Gas Daily* Mid-Point index.
Most Recent Negotiation:	Contract expires 10/31/19.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #30
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract # 1003691
Contract Term:	1 Year
Initial Contract Date:	11/01/2018
Contract Expiration Date:	10/31/2019
Quality of Service:	Firm
Daily Maximum:	20,000 DT per Day
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day defaults to Platts *Gas Daily* Mid-Point index.
Most Recent Negotiation:	Contract expires 10/31/19.

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #7
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Apr.-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #14
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr.-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #2
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr.-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #6
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr.-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #29
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Summer Supply
Initial Contract Date:	04/01/2018
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Apr.-Oct.
Availability:	Summer Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 10/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #7
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #6
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #29
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or default to an index.
Most Recent Negotiation:	Contract expired on 03/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #14
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or default to an index.
Most Recent Negotiation:	Contract expired on 03/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #2
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #30
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2018
Contract Expiration Date:	03/31/2019
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired 3/31/2019.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #29
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or default to an index.
Most Recent Negotiation:	Contract expired on 03/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #30
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #30
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #29
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 03/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #14
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #8
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	15,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	15,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #33
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	11/01/2017
Contract Expiration Date:	03/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Nov.-Mar.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for each month can be negotiated or defaults to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired on 3/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #30
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	01/01/2018
Contract Expiration Date:	01/31/2018
Quality of Service:	Firm
Daily Maximum:	5,000 DT per Day Jan.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	5,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Fixed price for the month was negotiated.
Most Recent Negotiation:	Contract expired 01/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #14
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract 1003691
Contract Term:	Winter Supply
Initial Contract Date:	12/01/2018
Contract Expiration Date:	12/31/2018
Quality of Service:	Firm
Daily Maximum:	10,000 DT per Day Dec.
Availability:	Winter Supply Contract
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	10,000 DT per Day
Nomination & Scheduling:	Firm must take contract. Nominations subject to Transco rules.
Other Terms & Conditions:	Pricing for the month defaulted to *Inside FERC*'s First of Month index.
Most Recent Negotiation:	Contract expired 12/31/2018.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #8
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract # 1003691
Contract Term:	1 Year
Initial Contract Date:	11/01/2017
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	20,000 DT per Day
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day is priced at *Platts Gas Daily* midpoint index.
Most Recent Negotiation:	Contract expired 10/31/18.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
GAS SUPPLY CONTRACT

Name & Type of Service:	Transco Gas Supply Contract #22
Delivery Pipeline & Contract #:	Transco
Associated Transportation Contract:	Transco FT Contract # 1003691
Contract Term:	1 Year
Initial Contract Date:	11/01/2017
Contract Expiration Date:	10/31/2018
Quality of Service:	Firm
Daily Maximum:	25,000 DT per Day
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	None
Nomination & Scheduling:	24 hour notice business day. Next day nomination change. Nominations subject to Transco rules. No limit to amount of changes within the month.
Other Terms & Conditions:	Pricing for each day is priced at *Platts Gas Daily* midpoint index.
Most Recent Negotiation:	Contract expired 10/31/18.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Transportation Contract

Name & Type of Service:	Transco FT
Delivery Pipeline & Contract #:	Transco FT 1003691
Associated Transportation Contract:	Transco Supply Contracts, WSS, ES, and Spot Supply contracts.
Contract Term:	13 Years
Initial Contract Date:	02/01/1992
Contract Expiration Date:	03/31/2005
Quality of Service:	Firm
Daily Maximum:	165,212 DT
Availability:	Year Round
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	N/A
Most Recent Negotiation:	Contract is now in the evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Transportation Contract

Name & Type of Service:	Transco Peaking Service FT
Delivery Pipeline & Contract #:	Transco FT 1005001
Associated Transportation Contract:	Transco Supply Contracts, WSS, ES, and Spot Supply contracts.
Contract Term:	13 Years
Initial Contract Date:	02/01/1992
Contract Expiration Date:	03/31/2005
Quality of Service:	Firm
Daily Maximum:	1,967 DT
Availability:	Winter Peaking Dec-Feb
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	N/A
Most Recent Negotiation:	Contract is now in the evergreen state.

PHILA.GAS WORKS
PGW NATURAL GAS CONTRACT INFORMATION
Interruptible Transportation Contract

Name & Type of Service:	Transco Interruptible Transportation
Delivery Pipeline & Contract #:	Transco IT 1002427
Associated Transportation Contract:	Transco Supply Contracts, WSS, ES, and Spot Supply contracts.
Contract Term:	13 Years
Initial Contract Date:	02/01/1992
Contract Expiration Date:	03/31/2005
Quality of Service:	Firm
Daily Maximum:	See Transco Tariff
Availability:	See Transco Tariff
Fuel (%):	Subject to Transco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	N/A
Most Recent Negotiation:	Contract is now in the evergreen state.

PHILA.GAS WORKS
NATURAL GAS CONTRACT INFORMATION
Comprehensive Delivery Service

Name & Type of Service:	Tetco CDS
Delivery Pipeline & Contract #:	Tetco #800232
Associated Transportation Contract:	Tetco Supply Contracts, Spot Supply contracts.
Contract Term:	2.8 Years
Initial Contract Date:	12/15/1998
Contract Expiration Date:	10/31/2001
Quality of Service:	Firm
Daily Maximum:	75,000 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract is now in the evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FT 1
Delivery Pipeline & Contract #:	Tetco #800233
Associated Transportation Contract:	Tetco Supply Contracts, Spot Supply contracts.
Contract Term:	2.8 Years
Initial Contract Date:	12/15/1998
Contract Expiration Date:	10/31/2001
Quality of Service:	Firm
Daily Maximum:	23,822 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract is now in the evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FT 1
Delivery Pipeline & Contract #:	Tetco #800514
Associated Transportation Contract:	Tetco Supply Contracts & Spot Supply contracts.
Contract Term:	7.8 Years
Initial Contract Date:	12/15/1996
Contract Expiration Date:	10/31/2003
Quality of Service:	Firm
Daily Maximum:	18,000 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FT 1
Delivery Pipeline & Contract #:	Tetco #800515
Associated Transportation Contract:	Tetco Supply Contracts & Spot Supply contracts.
Contract Term:	10.8 Years
Initial Contract Date:	12/15/1996
Contract Expiration Date:	10/31/2007
Quality of Service:	Firm
Daily Maximum:	18,000 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FTS 2
Delivery Pipeline & Contract #:	Tetco #800232
Associated Contract:	
Contract Term:	8.75 Years
Initial Contract Date:	06/01/1993
Contract Expiration Date:	03/31/2002
Quality of Service:	Firm
Daily Maximum:	5,394 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FTS 7
Delivery Pipeline & Contract #:	Tetco #331725
Associated Contract:	Dominion GSS
Contract Term:	10 Years
Initial Contract Date:	08/07/1996
Contract Expiration Date:	03/31/2005
Quality of Service:	Firm
Daily Maximum:	7,788 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Firm Transportation

Name & Type of Service:	Tetco FTS 8
Delivery Pipeline & Contract #:	Tetco #331822
Associated Contract:	Dominion GSS
Contract Term:	10 Years
Initial Contract Date:	08/07/1996
Contract Expiration Date:	03/31/2005
Quality of Service:	Firm
Daily Maximum:	25,709 DT per Day
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Interruptible Transportation

Name & Type of Service:	Tetco IT
Delivery Pipeline & Contract #:	Tetco #710468
Associated Contract:	Supply Contracts, Spot Supply
Contract Term:	1 Year
Initial Contract Date:	04/01/1993
Contract Expiration Date:	03/31/1994
Quality of Service:	Interruptible
Daily Maximum:	See Tetco Tariff
Availability:	See Tetco Tariff
Fuel (%):	Subject to Tetco fuel rates
Minimum Take Level:	N/A
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	See Tetco Tariff
Most Recent Negotiation:	Contract in Evergreen status.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	Dominion GSS Storage Service
Delivery Pipeline & Contract #:	Tetco
Associated Contract:	Tetco FTS 7 Contract#331725 Tetco FTS 8 Contract#331822
Contract Term:	13 Years
Initial Contract Date:	09/30/1993
Contract Expiration Date:	03/31/2006
Quality of Service:	Firm (Unbundled)
Daily Maximum Withdrawal:	34,047 DT Inventory % W/D Rate >35% 34,047 <35% 31,323 <16% 23,833 <10% 21,450
Availability (Withdrawal/Injection):	Year round
Daily Maximum Injection:	21,772 DT <50% 18,313 DT >50%
Maximum Storage Quantity:	3,918,971 DT
Fuel (%):	1.95 % injection
Nomination & Scheduling:	GISB Standards. Within day nomination changes may be accomplished as long as both Tetco and Dominion parties are notified and can confirm.
Other Terms & Conditions:	Contract in Evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	SS1
Delivery Pipeline & Contract #:	Tetco Contract #400121
Associated Contract:	None
Contract Term:	19 Years
Initial Contract Date:	06/01/1993
Contract Expiration Date:	04/30/2012
Quality of Service:	Firm (Bundled)
Daily Maximum Withdrawal:	44,118 DT 100%>20% 44,118 <20%>=10% 36,764 <10%>= 0% 29,413
Availability (Withdrawal/Injection):	Year round
Daily Maximum Injection:	13,606 DT
Maximum Storage Quantity:	2,647,080 DT
Fuel (%) Injection & Withdrawal:	Subject to Tetco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage is a No Notice Service

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PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	SS1
Delivery Pipeline & Contract #:	Tetco Contract #400209
Associated Contract:	None
Contract Term:	19 Years
Initial Contract Date:	06/01/1993
Contract Expiration Date:	04/30/2012
Quality of Service:	Firm (Bundled)
Daily Maximum Withdrawal:	20,847 DT 100%>20% 20,847 <20%>=10% 17,372 <10%>= 0% 13,899
Availability (Withdrawal/Injection):	Year round
Daily Maximum Injection:	12,656 DT
Maximum Storage Quantity:	2,462,120 DT
Fuel (%) Injection & Withdrawal:	Subject to Tetco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage is a No Notice Service

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	GSS
Delivery Pipeline & Contract #:	Transco Contract #1000791
Associated Contract:	None
Contract Term:	10 Years
Initial Contract Date:	07/09/2012
Contract Expiration Date:	03/31/2023
Quality of Service:	Firm (Bundled)
Daily Maximum Withdrawal:	61,567 DT

Inventory %	W/D Rate
100%>35%	61,567
35%>=20%	60,951
20%>= 7%	45,560
7%>=0%	33,862

Availability (Withdrawal/Injection):	Year round
Daily Maximum Injection:	<50% 22,910
	>50% 19,270
Maximum Storage Quantity:	4,123,733 DT
Fuel (%) Injection :	Subject to Transco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage is a No Notice Service

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	S 2
Delivery Pipeline & Contract #:	Transco Contract #1000943
Associated Contract:	None
Contract Term:	5 Years
Initial Contract Date:	04/16/1996
Contract Expiration Date:	04/15/2001
Quality of Service:	Firm (Bundled)
Daily Maximum Withdrawal:	5,191 DT 100%>20% 5,191 20%>=10% 4,238 10%>= 0% 3,482 (Inventory % / W/D Rate)
Availability (Withdrawal/Injection):	Injection from April 16 to Nov 15 Withdrawal from Nov 16 to April 15
Daily Maximum Injection:	3,900 DT
Maximum Storage Quantity:	466,548 DT
Fuel (%) Injection & Withdrawal:	Subject to Transco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Contract is now in the evergreen state. Storage is a No Notice Service.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	WSS
Delivery Pipeline & Contract #:	Transco Contract #1038582
Associated Contract:	Transco 1003691 & 1005001
Contract Term:	1 Year
Initial Contract Date:	04/01/2001
Contract Expiration Date:	03/31/2002
Quality of Service:	Firm (Unbundled)
Daily Maximum Withdrawal:	35,115

Inventory %	W/D Rate
100%>80%	35,115
80%>=60%	31,471
60%>= 40%	28,512
40%>=20%	23,828
20%>=0 %	19,283

Availability (Withdrawal/Injection):	Year Round
Daily Maximum Injection:	<50% 18,533
	>50% 15,588
Maximum Storage Quantity:	3,335,909 DT
Fuel (%) Injection :	Subject to Transco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage converted to Part 284G. Contract is now in the evergreen state.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	ES
Delivery Pipeline & Contract #:	Transco Contract #1010416
Associated Contract:	Transco 1003691 & 1005001
Contract Term:	Contract Pending
Initial Contract Date:	N/A
Contract Expiration Date:	10/31/2016
Quality of Service:	Firm (Unbundled)
Daily Maximum Withdrawal:	38,327 DT non-ratcheted
Availability (Withdrawal/Injection):	Year Round
Daily Maximum Injection:	3,198 DT
Maximum Storage Quantity:	323,416 DT
Fuel (%) Injection :	Subject to Transco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage contract 1010416 has been abandoned back to the pipeline.

PHILA.GAS WORKS

PGW NATURAL GAS CONTRACT INFORMATION
Underground Storage Contract

Name & Type of Service:	ES
Delivery Pipeline & Contract #:	Transco Contract #1039085
Associated Contract:	Transco 1003691 & 1005001
Contract Term:	June 1, 2001 through March 31, 2005
Initial Contract Date:	06/01/2001
Contract Expiration Date:	03/31/2016
Quality of Service:	Firm (Unbundled)
Daily Maximum Withdrawal:	52,077 DT non-ratcheted
Availability (Withdrawal/Injection):	Year Round
Daily Maximum Injection:	4,346 DT
Maximum Storage Quantity:	439,455 DT
Fuel (%) Injection :	Subject to Transco Tariff Revisions
Nomination & Scheduling:	GISB Standards.
Other Terms & Conditions:	Storage contract 1039085 has been abandoned back to the pipeline.

Tab 17

Docket No. R-2019-XXXXXXX
Item 53.65 (3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (3)

Efforts made by the utility to obtain gas, transportation or storage from nonaffiliated interests.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Tab 18

Docket No. R-2019-XXXXXXX
Item 53.65 (4)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (4)

The specific reasons why the utility has purchased gas, transportation or storage from an affiliated interest and demonstration that the purchases are consistent with a least cost fuel procurement policy.

Response:

PGW has no affiliates, therefore, all gas purchases were made from non-affiliated interests. Also see the response to 53.64(c)(6) outlining PGW's current least cost fuel procurement practices.

Tab 19

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 53.65 (5) The sources and amounts of gas, transportation or storage, which have been withheld from the market by the utility or, affiliated interest and the reasons why the gas, transportation or storage has been withheld?

Response: PGW has no affiliates.

PGW operates two LNG Peak shaving facilities with a total usable storage capacity of 3.9 Bcf, 18.72 percent of PGW's total storage capacity. When pipeline and underground storage deliveries are insufficient to meet sendout requirements, LNG storage withdrawals will be considered. These LNG storage withdrawals are based upon incremental costs, weather forecasts, inventory balances, distribution system requirements, and other variables such as plant maintenance and operating requirements all of which can influence the vaporization and liquefaction rates of PGW's LNG facilities.

PGW used a total of 2,381,561 Mcf of LNG to meet city sendout requirements during fiscal year 2018.

Tab 20

Docket No. R-2019-XXXXXXX
Item 1317 (a)(1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(1)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(1) The utility's participation in rate proceedings before the Federal Energy Regulatory Commission which affect the utility's gas costs.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Tab 21

Docket No. R-2019-XXXXXXX
Item 1317 (a)(2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(2)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(2) The utility's efforts to negotiate favorable contracts with gas suppliers and to renegotiate existing contracts with gas suppliers or take legal actions necessary to relieve the utility from existing contract terms which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Tab 22

Docket No. R-2019-XXXXXXX
Item 1317 (a)(3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(3)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(3) The utility's efforts to secure lower cost gas supplies both within and outside of the Commonwealth, including the use of transportation arrangements with pipelines and other gas distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Tab 23

Docket No. R-2019-XXXXXXX
Item 1317 (a)(4)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (a)(4)

General rule.--In every rate proceeding instituted by a natural gas distribution utility, pursuant to section 1307(f) (relating to sliding scale of rates; adjustments), each such utility shall be required to supply to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, information, data and statements regarding:

(4) The sources and amounts of all gas supplies which have been withheld or have been caused to be withheld from the market by the utility and the reasons why such gas is not to be utilized.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Tab 24

Docket No. R-2019-XXXXXXX
Item 1317 (b)(1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(1)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(1) Efforts made by the utility to obtain gas supplies from nonaffiliated interests.

Response:

Please refer to Item 53.65 (3) contained in this filing.

Tab 25

Docket No. R-2019-XXXXXXX
Item 1317 (b)(2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(2)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(2) The specific reasons why the utility has purchased gas supplies from an affiliated interest and demonstration that such purchases are consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (4) contained in this filing.

Tab 26

Docket No. R-2019-XXXXXXX
Item 1317 (b)(3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (b)(3)

Integrated gas companies.--In the case of a natural gas distribution utility which purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), such utility shall, in addition to the materials required in subsection (a), be required to provide to the commission such information, to be established by commission regulation within 120 days of the passage of this section, that will permit the commission to make specific findings as to whether any purchases of gas from an affiliated interest are consistent with a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. Such information shall include, but need not be limited to, statements regarding:

(3) The sources and amounts of all gas supplies which have been withheld from the market by the utility or any affiliated interest and the reasons why such gas is not being utilized.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Tab 27

Docket No. R-2019-XXXXXXX
Item 1317 (c)(1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (c)(1)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(1) The projected peak day and seasonal requirements of the firm customers utilizing the distribution system of the natural gas distribution company during the 12-month projected period specified in section 1307(f)(1). Where operationally required, the design peak day requirements shall be specified for discrete segments of each natural gas distribution system.

Response:

Please refer to Item 53.64(c)(13) contained in this filing.

Tab 28

Docket No. R-2019-XXXXXXX
Item 1317 (c)(2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (c)(2)

Reliability plans.--As part of its filing under section 1307(f) or if it is not required to make such a filing on an annual basis, a natural gas distribution company, as defined in section 2202 (relating to definitions), shall file a proposed reliability plan with the commission which shall, at a minimum, identify the following:

(2) The transportation capacity, storage, peaking or on-system production that ensures deliverability of the natural gas supplies necessary to meet such projected period peak day and seasonal requirements.

Response:

PGW does not maintain a specific document entitled a Reliability Plan, however, all of the components that would be contained in such a document are prepared by PGW and are contained in this filing in Items 53.64 (c)(1), 53.64 (c)(3), 53.64 (c)(5), 53.64 (c)(6), 53.64 (c)(10), 53.64 (c)(12), 53.64 (c)(13), 53.64 (c)(14), 53.65 (2) and 53.65 (5).

Tab 29

Docket No. R-2019-XXXXXXX
Item 1317 (d)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1317 (d)

Supply plans.--As part of its filing under section 1307(f), a natural gas distribution company shall file a proposed plan with the commission for acquisition or receipt of natural gas supplies.

Response:

Please refer to Item 53.64(c)(1) and 53.65 (2) contained in this filing.

Tab 30

Docket No. R-2019-XXXXXXX
Item 1318 (a)(1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(1)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(1) The utility has fully and vigorously represented the interests of its ratepayers in proceedings before the Federal Energy Regulatory Commission.

Response:

Please refer to Item 53.64(c)(4) contained in this filing.

Tab 31

Docket No. R-2019-XXXXXXX
Item 1318 (a)(2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(2)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(2) The utility has taken all prudent steps necessary to negotiate favorable gas supply contracts and to relieve the utility from terms in existing contracts with its gas suppliers which are or may be adverse to the interests of the utility's ratepayers.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Tab 32

Docket No. R-2019-XXXXXXX
Item 1318 (a)(3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(3)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(3) The utility has taken all prudent steps necessary to obtain lower cost gas supplies on both short-term and long-term bases both within and outside the Commonwealth, including the use of gas transportation arrangements with pipelines and other distribution companies.

Response:

Please refer to Item 53.64(c)(1) contained in this filing.

Tab 33

Docket No. R-2019-XXXXXXX
Item 1318 (a)(4)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (a)(4)

General rule.--In establishing just and reasonable rates for those natural gas distribution companies, as defined in section 2202 (relating to definitions), with gross intrastate operating revenues in excess of $40,000,000 under section 1307(f) (relating to sliding scale of rates; adjustments) or 1308(d) (relating to voluntary changes in rates) or any other rate proceeding, the commission shall consider the materials provided by the utilities pursuant to section 1317 (relating to regulation of natural gas costs). No rates for a natural gas distribution utility shall be deemed just and reasonable unless the commission finds that the utility is pursuing a least cost fuel procurement policy, consistent with the utility's obligation to provide safe, adequate and reliable service to its customers. In making such a determination, the commission shall be required to make specific findings which shall include, but need not be limited to, findings that:

(4) The utility has not withheld from the market or caused to be withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Tab 34

Docket No. R-2019-XXXXXXX
Item 1318 (b)(1)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(1)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(1) That the utility has fully and vigorously attempted to obtain less costly gas supplies on both short-term and long-term bases from nonaffiliated interests.

Response:

Please refer to Item 53.65 (3) contained in this filing.

Tab 35

Docket No. R-2019-XXXXXXX
Item 1318 (b)(2)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(2)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(2) That each contract for the purchase of gas from its affiliated interest is consistent with a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (4) contained in this filing.

Tab 36

Docket No. R-2019-XXXXXXX
Item 1318 (b)(3)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (b)(3)

Limitation on gas purchased from affiliates.--In any instance in which a natural gas distribution company purchases all or part of its gas supplies from an affiliated interest, as that term is defined in section 2101 (relating to definition of affiliated interest), the commission, in addition to the determinations and findings set forth in subsection (a), shall be required to make specific findings with regard to the justness and reasonableness of all such purchases. Such findings shall include, but not be limited to findings:

(3) That neither the utility nor its affiliated interest has withheld from the market any gas supplies which should have been utilized as part of a least cost fuel procurement policy.

Response:

Please refer to Item 53.65 (5) contained in this filing.

Tab 37

Docket No. R-2019-XXXXXXX
Item 1318 (c)

Philadelphia Gas Works

Pennsylvania Public Utility Commission
52 Pa. Code §53.61, et seq.

Item 1318 (c)

Shut-in gas; special rule.--In determining whether a gas utility has purchased the least costly natural gas available, the commission shall consider as available to the utility any gas supplies that reasonably could have been brought to market during the relevant period but which were voluntarily withheld from the market by the utility or an affiliated interest of the utility.

Response:

Please refer to Item 53.65 (5) contained in this filing.