UGI Penn Natural Gas, Inc.
1307(f) Annual Purchased Gas Cost Filing – 2016
Docket No. R-2016-2543314

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Book 2 – Filed June 1, 2016
Supporting Schedules, Tariff Addenda and Direct Testimony Pursuant to § 53.64(a)

SUPPORTING SCHEDULES

UGI Penn Natural Gas, Inc.
Computation of the Cost of Gas
Applicable to Rates: R, N, CIAC, GL and IS

Effective December 1, 2016
Computation Year Ending November 30, 2017

C - Projected Cost	$	69,231,335	
S - Projected Sales - Mcf		21,810,059	
C / S Projected Cost per Mcf	$	3.1743	
E - Experienced Cost	$	3,306,338	
E / S Experienced Cost per Mcf 1/	$	(0.1495)	
PGC = (C/S + E/S) @ 12/1/2016 - Proposed (per Mcf)	$	3.0248	
PGC = (C/S + E/S) @ 6/1/2016 - Current (per Mcf)	$	3.0248	2/
PGC Change (per Mcf)	$	-	
Typical Residential Heating Customer's Monthly Bill Percent Change		0.0%	

1/ See Schedule C, Page 1 for the development of this rate.
2/ See Supplement No. 57 to Tariff PNG Gas - Pa. P.U.C. No. 8, effective June 1, 2016.

UGI Penn Natural Gas, Inc.
Computation of the Projected Recovery of Gas Cost: C
For the 2016 PGC Year (Mcf)

Effective December 1, 2016
Computation Year Ending November 30, 2017

Month	Year	Projected Cost C	Projected Sales S	PGC Revenue 1/	PGC Over / (Under) Collection
December	2016	$ 11,736,874	3,066,569	$ 10,260,741	$ (1,476,133)
January	2017	$ 11,096,636	3,994,539	$ 12,679,865	$ 1,583,229
February	2017	$ 9,064,875	3,959,612	$ 12,568,996	$ 3,504,121
March	2017	$ 7,951,472	3,114,930	$ 9,887,722	$ 1,936,250
April	2017	$ 4,451,729	1,954,738	$ 6,204,924	$ 1,753,195
May	2017	$ 2,832,850	1,060,910	$ 3,367,645	$ 534,795
June	2017	$ 1,950,547	605,286	$ 1,921,359	$ (29,188)
July	2017	$ 2,028,894	444,629	$ 1,411,386	$ (617,508)
August	2017	$ 1,901,273	351,347	$ 1,115,279	$ (785,994)
September	2017	$ 2,061,102	484,898	$ 1,539,211	$ (521,891)
October	2017	$ 4,043,186	907,120	$ 2,879,471	$ (1,163,715)
November	2017	$ 10,111,898	1,865,483	$ 5,921,603	$ (4,190,295)
Total		$ 69,231,335	21,810,059	$ 69,758,202	$ 526,866

1/ December 2014 reflects proration of the PGC rates.

UGI PENN NATURAL GAS
PROJECTED DEMAND VOLUMES IN DTH
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
DEMAND

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16
Supply								
Options	242,474	242,474	242,474	242,474	242,474	242,474	242,474	0
Leidy Supply - UGI	502	502	502	502	502	502	502	502
LNG Service	7,700	7,700	7,700	7,700	7,700	7,700	7,700	0
UGI ES Peak SVC I	0	0	0	0	0	0	0	18,500
UGI ES Peak SVC II	0	0	0	0	0	0	0	0
Peak SVC	0	0	0	0	0	0	0	11,230
UGI ES Delivered Supply	0	0	0	0	0	0	0	51,995
UGI ES Delivered Supply	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481
UGI ES Delivered Supply	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049
UGI ES Delivered Supply	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Storage Demand								
Transco GSS	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532
Transco SS2	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875
Transco LSS	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518
Transco ESS	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Columbia FSS	500	500	500	500	500	500	500	500
Storage Capacity								
Transco GSS	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576
Transco SS2	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250
Transco LSS	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053
Transco ESS	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847
Columbia FSS	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362
Transportation								
Columbia:FTS	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532
Columbia:SST	250	250	250	250	250	250	500	500
Columbia:GULF FTS-1	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324
Tennessee FT-G	1,200	600	500	400	400	600	715	843
Tennessee 404 FT-G	0	0	0	0	0	0	0	939
Tennessee 4-4 FT-A	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000
Transco FT DEMAND	12,279	12,279	12,279	12,279	12,279	12,279	12,279	15,116
Transco FT DEMAND - PSFT	0	0	0	0	0	0	0	0
Transco FT DEMAND - POCONO	500	500	500	500	500	500	500	500

UGI PENN NATURAL GAS
PROJECTED SUPPLY VOLUMES IN DTH OR DTH/D
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
COMMODITY

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	TOTAL
Monthly Take									
Spot Leidy	15,048	15,550	15,048	15,550	15,550	15,048	15,550	15,048	**122,392**
Spot TGP_Z4	11,978	11,978	11,978	11,978	11,978	11,978	11,978	0	**83,846**
Spot Tenn Z4	611,208	247,064	37,918	45,977	10,175	74,033	490,861	373,448	**1,890,684**
Spot TCOPool	350,520	362,204	350,520	362,204	362,204	350,520	362,204	294,024	**2,794,400**
Appalachian	62,550	64,635	62,550	64,635	64,635	62,550	64,635	62,550	**508,740**
Daily Delivered	191,679	346,641	251,003	275,557	198,904	202,290	348,650	0	**1,814,723**
DaLeidyCall	52,200	53,940	52,200	53,940	53,940	52,200	53,940	828,450	**1,200,810**
DaTennCall2	52,230	53,971	52,230	53,971	53,971	52,230	53,971	504,868	**877,442**
LNG Service	7,700	7,700	7,700	7,700	7,700	7,700	7,700	0	**53,900**
Trig Delivered	580,000	280,000	150,000	140,000	140,000	170,000	430,000	0	**1,890,000**
Trig Tenn-Z4	135,000	139,500	135,000	139,500	139,500	135,000	139,500	160,000	**1,123,000**
MoTennCall	4,500	0	0	0	0	0	0	10,800	**15,300**
Injected Net Vol									
Transco GSS	180,000	403,000	390,000	397,000	356,500	325,500	309,596	0	**2,361,596**
Transco SS2	164,850	170,351	164,880	170,376	170,376	164,880	170,376	0	**1,176,089**
Transco LSS	100,440	103,788	100,440	103,788	103,788	100,440	103,788	0	**716,472**
Transco ESS	11,978	11,978	11,978	11,978	11,978	11,978	11,978	0	**83,846**
Columbia FSS	0	4,185	4,050	4,185	4,550	3,000	900	0	**20,870**
Withdrawn Gross Vol									
Transco GSS	0	0	0	0	0	0	0	0	**0**
Transco SS2	0	0	0	0	0	0	0	0	**0**
Transco LSS	0	0	0	0	0	0	0	0	**0**
Transco ESS	0	0	0	0	0	0	0	0	**0**
Columbia FSS	0	0	0	0	0	0	0	0	**0**
Tranport/Wdl/Inj Fuel	15,969	8,811	4,503	4,789	4,073	5,225	13,687	22,162	**79,218**
Total PGC Demand Served	**1,596,877**	**881,069**	**450,296**	**478,896**	**407,291**	**522,525**	**1,368,664**	**2,216,225**	**7,921,844**
Total Choice Bundled Demand	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total UGI Bundled Demand	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total CPG Bundled Demand	**4,500**	**0**	**0**	**0**	**0**	**0**	**0**	**10,800**	**15,300**
Transportation									
Col SST WD	0	0	0	0	0	0	0	0	**0**
Col FT Leach	343,913	355,376	343,913	355,376	355,376	343,913	355,376	288,482	**2,741,726**
Col FT Appl	61,371	63,417	61,371	63,417	63,417	61,371	63,417	61,371	**499,150**
Tennessee 4-4	742,701	384,747	172,105	184,605	148,971	208,050	627,398	530,941	**2,999,519**
Transco 4-6	0	0	0	0	0	0	0	0	**0**
Transco 6-6	15,000	15,500	15,000	15,500	15,500	15,000	15,500	15,000	**122,000**

UGI PENN NATURAL GAS
PROJECTED DEMAND UNIT RATE IN $/DTH
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
DEMAND

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16
Supply								
Options	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	0.0000
Leidy Supply - UGI	0.2085	0.2155	0.2085	0.2155	0.2155	0.2085	0.2155	0.2085
LNG Service	11.1429	11.4675	11.1429	11.4675	11.4675	11.1429	11.4675	0.0000
UGI ES Peak SVC I	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	220.0000
UGI ES Peak SVC II	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Peak SVC	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	30.0000
UGI ES Delivered Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375
Storage Demand								
Transco GSS	3.0210	3.1217	3.0210	3.1217	3.1217	3.0210	3.1217	3.0210
Transco SS2	8.4432	8.7246	8.4432	8.7246	8.7246	8.4432	8.7246	8.4432
Transco LSS	4.5621	4.7142	4.5621	4.7142	4.7142	4.5621	4.7142	4.5621
Transco ESS	0.6327	0.6538	0.6327	0.6538	0.6538	0.6327	0.6538	0.6327
Columbia FSS	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010
Storage Capacity								
Transco GSS	0.0159	0.0164	0.0159	0.0164	0.0164	0.0159	0.0164	0.0159
Transco SS2	0.0276	0.0285	0.0276	0.0285	0.0285	0.0276	0.0285	0.0276
Transco LSS	0.0168	0.0174	0.0168	0.0174	0.0174	0.0168	0.0174	0.0168
Transco ESS	0.0756	0.0781	0.0756	0.0781	0.0781	0.0756	0.0781	0.0756
Columbia FSS	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288
Transportation								
Columbia:FTS	6.2290	6.0530	6.0530	6.0530	6.0530	6.0530	6.0530	6.0530
Columbia:SST	6.0590	5.8830	5.8830	5.8830	5.8830	5.8830	5.8830	5.8830
Columbia:GULF FTS-1	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917
Tennessee FT-G	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773
Tennessee 404 FT-G	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.2796
Tennessee 4-4 FT-A	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898
Transco FT DEMAND	14.2653	14.7408	14.2653	14.7408	14.7408	14.2653	14.7408	20.1528
Transco FT DEMAND - PSFT	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Transco FT DEMAND - POCONO	2.5641	2.6496	2.5641	2.6496	2.6496	2.5641	2.6496	2.5641

UGI PENN NATURAL GAS
PROJECTED SUPPLY UNIT RATE IN $/DTH
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
COMMODITY

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	AVERAGE
Supply Rate									
Spot Leidy	0.9245	0.9655	1.0085	1.1085	1.0685	0.8960	1.0125	1.2935	**1.0347**
Spot TGP_Z4	1.6980	1.7915	1.9045	2.0020	2.0520	2.0570	2.0910	0.0000	**1.6995**
Spot Tenn Z4	1.0045	0.9205	0.8760	0.9735	0.9435	0.7835	0.8750	1.2335	**0.9513**
Spot TCOPool	1.5268	1.5973	1.6912	1.7619	1.8031	1.7792	1.8231	1.3935	**1.6720**
Appalachian	1.5268	1.5973	1.6912	1.7619	1.8031	1.7792	1.8231	1.3935	**1.6720**
Daily Delivered	1.7654	1.8609	1.9763	2.0759	2.1270	2.1321	2.1669	0.0000	**1.7631**
DaLeidyCall	0.9348	0.9760	1.0191	1.1194	1.0793	0.9062	1.0231	1.3050	**1.0454**
DaTennCall2	1.0634	0.9790	0.9343	1.0323	1.0022	0.8414	0.9333	1.2935	**1.0099**
LNG Service	10.9620	11.0530	11.1560	11.2510	11.3010	11.3160	11.3550	0.0000	**9.7993**
Trig Delivered	2.9861	2.9989	3.0397	3.0423	3.0934	3.0525	3.0985	0.0000	**2.6639**
Trig Tenn-Z4	0.2820	0.3730	0.4760	0.5710	0.6210	0.6360	0.6750	1.3625	**0.6246**
MoTennCall	1.0634	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.2935	**0.2946**
Injection Rate									
Transco GSS	0.0488	0.0488	0.0488	0.0488	0.0488	0.0488	0.0488	0.0000	**0.0427**
Transco SS2	0.0317	0.0317	0.0317	0.0317	0.0317	0.0317	0.0317	0.0000	**0.0277**
Transco LSS	0.0277	0.0277	0.0277	0.0277	0.0277	0.0277	0.0277	0.0000	**0.0242**
Transco ESS	0.0411	0.0411	0.0411	0.0411	0.0411	0.0411	0.0411	0.0000	**0.0360**
Columbia FSS	0.0000	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153	0.0000	**0.0115**
Withdrawal Rate									
Transco GSS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Transco SS2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Transco LSS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Transco ESS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Columbia FSS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Transportation Rate									
Col SST WD	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Col FT Leach	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	**0.0194**
Col FT Appl	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	**0.0194**
Tennessee 4-4	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	**0.0534**
Transco 4-6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	**0.0000**
Transco 6-6	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	**0.0074**
Total Com Vol	**1,596,877**	**881,069**	**450,296**	**478,896**	**407,291**	**522,525**	**1,368,664**	**2,216,225**	**7,921,844**
Total Com Cost	**2,770,152**	**1,334,084**	**585,989**	**626,739**	**523,831**	**699,669**	**2,299,028**	**2,964,025**	**11,803,518**
Com Unit Rate	**1.7347**	**1.5142**	**1.3013**	**1.3087**	**1.2861**	**1.3390**	**1.6798**	**1.3374**	**1.4900**
Total Dem Cost	**1,203,325**	**1,216,670**	**1,190,750**	**1,213,921**	**1,213,921**	**1,192,125**	**1,234,565**	**6,221,847**	**14,687,125**
Dem Unit Rate	**0.7535**	**1.3809**	**2.6444**	**2.5348**	**2.9805**	**2.2815**	**0.9020**	**2.8074**	**1.8540**
Total System Costs	**3,973,478**	**2,550,754**	**1,776,739**	**1,840,660**	**1,737,752**	**1,891,794**	**3,533,593**	**9,185,873**	**26,490,642**
System Unit Rate	**2.4883**	**2.8951**	**3.9457**	**3.8436**	**4.2666**	**3.6205**	**2.5818**	**4.1448**	**3.3440**

UGI PENN NATURAL GAS
PROJECTED PURCHASED GAS COSTS IN ($)
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
DEMAND

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	TOTAL
Supply									
Options	84,866	84,866	84,866	84,866	84,866	84,866	84,866	0	**594,061**
Leidy Supply - UGI	105	108	105	108	108	105	108	105	**851**
LNG Service	85,800	88,300	85,800	88,300	88,300	85,800	88,300	0	**610,600**
UGI ES Peak SVC I	0	0	0	0	0	0	0	4,070,000	**4,070,000**
UGI ES Peak SVC II	0	0	0	0	0	0	0	0	**0**
Peak SVC	0	0	0	0	0	0	0	336,900	**336,900**
UGI ES Delivered Supply	0	0	0	0	0	0	0	1,334,400	**1,334,400**
UGI ES Delivered Supply	0	0	0	0	0	0	0	89,336	**89,336**
UGI ES Delivered Supply	0	0	0	0	0	0	0	103,914	**103,914**
UGI ES Delivered Supply	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	**3,212,000**
Storage Demand									
Transco GSS	170,783	176,476	170,783	176,476	176,476	170,783	176,476	170,783	**1,389,036**
Transco SS2	218,468	225,750	218,468	225,750	225,750	218,468	225,750	218,468	**1,776,871**
Transco LSS	34,298	35,441	34,298	35,441	35,441	34,298	35,441	34,298	**278,956**
Transco ESS	6,327	6,538	6,327	6,538	6,538	6,327	6,538	6,327	**51,460**
Columbia FSS	751	751	751	751	751	751	751	751	**6,004**
Storage Capacity									
Transco GSS	43,671	45,126	43,671	45,126	45,126	43,671	45,126	43,671	**355,187**
Transco SS2	78,557	81,175	78,557	81,175	81,175	78,557	81,175	78,557	**638,926**
Transco LSS	13,894	14,358	13,894	14,358	14,358	13,894	14,358	13,894	**113,009**
Transco ESS	6,339	6,550	6,339	6,550	6,550	6,339	6,550	6,339	**51,556**
Columbia FSS	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	**8,147**
Transportation									
Columbia:FTS	115,436	112,174	112,174	112,174	112,174	112,174	112,174	112,174	**900,655**
Columbia:SST	1,515	1,471	1,471	1,471	1,471	1,471	2,942	2,942	**14,752**
Columbia:GULF FTS-1	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	**217,126**
Tennessee FT-G	18,453	9,226	7,689	6,151	6,151	9,226	10,995	12,963	**80,854**
Tennessee 404 FT-G	0	0	0	0	0	0	0	4,958	**4,958**
Tennessee 4-4 FT-A	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	**1,493,226**
Transco FT DEMAND	175,164	181,002	175,164	181,002	181,002	175,164	181,002	304,630	**1,554,130**
Transco FT DEMAND - PSFT	0	0	0	0	0	0	0	0	**0**
Transco FT DEMAND - POCONO	1,282	1,325	1,282	1,325	1,325	1,282	1,325	1,282	**10,427**
SUBTOTAL	**1,672,018**	**1,686,949**	**1,657,949**	**1,683,874**	**1,683,874**	**1,659,486**	**1,690,188**	**7,563,002**	19,297,341
Non-Choice Cap Rel/Sharing Mech Credit	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(235,273)**	**(487,816)**	**(2,224,727)**
Choice Capacity Assignment FT Credits	**(168,631)**	**(170,217)**	**(167,136)**	**(169,891)**	**(169,891)**	**(167,299)**	**(170,561)**	**(803,550)**	**(1,987,176)**
Bal. Service Credit	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(400,000)**
Risk Mgt Tools	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**1,686**
Total Demand	**1,203,325**	**1,216,670**	**1,190,750**	**1,213,921**	**1,213,921**	**1,192,125**	**1,234,565**	**6,221,847**	14,687,125

UGI PENN NATURAL GAS
PROJECTED PURCHASE GAS COSTS IN ($)
UNDER NORMAL WEATHER
8 MONTH PERIOD - APRIL THROUGH NOVEMBER
COMMODITY

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	TOTAL
Supply Cost									
Spot Leidy	13,912	15,013	15,176	17,237	16,615	13,483	15,744	19,465	126,645
Spot TGP_Z4	20,339	21,459	22,812	23,980	24,579	24,639	25,046	0	162,853
Spot Tenn Z4	613,959	227,422	33,216	44,758	9,600	58,005	429,503	460,648	1,877,112
Spot TCOPool	535,174	578,548	592,791	638,176	653,072	623,636	660,316	409,722	4,691,436
Appalachian	95,501	103,241	105,783	113,882	116,540	111,287	117,833	87,163	851,232
Daily Delivered	338,388	645,065	496,067	572,041	423,073	431,308	755,476	0	3,661,418
DaLeidyCall	48,798	52,643	53,197	60,381	58,217	47,306	55,187	1,081,138	1,456,866
DaTennCall2	55,544	52,840	48,800	55,714	54,087	43,946	50,373	653,059	1,014,364
LNG Service	84,407	85,108	85,901	86,633	87,018	87,133	87,434	0	603,634
Trig Delivered	1,731,942	839,685	455,961	425,921	433,072	518,926	1,332,346	0	5,737,853
Trig Tenn-Z4	38,070	52,034	64,260	79,655	86,630	85,860	94,163	218,000	718,670
MoTennCall	4,785	0	0	0	0	0	0	13,970	18,756
Injection Cost									
Transco GSS	8,789	19,678	19,044	19,386	17,408	15,894	15,118	0	115,317
Transco SS2	5,226	5,400	5,227	5,401	5,401	5,227	5,401	0	37,282
Transco LSS	2,779	2,872	2,779	2,872	2,872	2,779	2,872	0	19,825
Transco ESS	492	492	492	492	492	492	492	0	3,446
Columbia FSS	0	64	62	64	70	46	14	0	319
Withdrawal Cost									
Transco GSS	0	0	0	0	0	0	0	0	0
Transco SS2	0	0	0	0	0	0	0	0	0
Transco LSS	0	0	0	0	0	0	0	0	0
Transco ESS	0	0	0	0	0	0	0	0	0
Columbia FSS	0	0	0	0	0	0	0	0	0
Transportation Cost									
Col SST WD	0	0	0	0	0	0	0	0	0
Col FT Leach	6,672	6,894	6,672	6,894	6,894	6,672	6,894	5,597	53,189
Col FT Appl	1,191	1,230	1,191	1,230	1,230	1,191	1,230	1,191	9,684
Tennessee 4-4	39,660	20,545	9,190	9,858	7,955	11,110	33,503	28,352	160,174
Transco 4-6	0	0	0	0	0	0	0	0	0
Transco 6-6	111	115	111	115	115	111	115	111	903
Injected Value	870,803	1,396,267	1,432,743	1,537,951	1,481,107	1,389,382	1,390,030	0	9,498,284
Withdrawn Value	0	0	0	0	0	0	0	0	0
Choice Bundled Sale Credit	0	0	0	0	0	0	0	0	0
UGI Bundled Sale Credit	0	0	0	0	0	0	0	0	0
CPG Bundled Sale Credit	(4,785)	0	0	0	0	0	0	(13,970)	(18,756)
Options Credit	0	0	0	0	0	0	0	(420)	(420)
Total Cost	2,770,152	1,334,084	585,989	626,739	523,831	699,669	2,299,028	2,964,025	11,803,518

UGI PENN NATURAL GAS
PROJECTED SUPPLY VOLUMES IN DTH
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
DEMAND

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
Supply												
Options	0	229,367	229,367	229,367	229,367	229,367	229,367	229,367	229,367	229,367	229,367	0
Leidy Supply - UGI	502	502	502	502	502	502	502	502	502	502	502	502
LNG Service	0	0	0	0	7,700	7,700	7,700	7,700	7,700	7,700	7,700	0
UGI ES Peak SVC I	18,500	18,500	18,500	18,500	0	0	0	0	0	0	0	18,500
UGI ES Peak SVC II	29,000	29,000	29,000	0	0	0	0	0	0	0	0	0
Peak SVC	11,230	11,230	11,230	11,230	0	0	0	0	0	0	0	11,230
UGI ES Delivered Supply	51,995	51,995	51,995	51,995	0	0	0	0	0	0	0	51,995
UGI ES Delivered Supply	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481
UGI ES Delivered Supply	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049	4,049
UGI ES Delivered Supply	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Storage Demand												
Transco GSS	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532	56,532
Transco SS2	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875	25,875
Transco LSS	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518	7,518
Transco ESS	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Columbia FSS	500	500	500	500	500	500	500	500	500	500	500	500
Storage Capacity												
Transco GSS	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576	2,746,576
Transco SS2	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250	2,846,250
Transco LSS	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053	827,053
Transco ESS	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847	83,847
Columbia FSS	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362	35,362
Transportation												
Columbia:FTS	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532	18,532
Columbia:SST	500	500	500	500	250	250	250	250	250	250	500	500
Columbia:GULF FTS-1	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324	6,324
Tennessee FT-G	874	831	890	1,017	1,200	600	500	400	400	600	715	843
Tennessee 404 FT-G	1,803	2,054	1,834	1,277	0	0	0	0	0	0	0	939
Tennessee 4-4 FT-A	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000	34,000
Transco FT DEMAND	15,116	15,116	15,116	15,116	12,279	12,279	12,279	12,279	12,279	12,279	12,279	12,279
Transco FT DEMAND - PSFT	3,416	3,416	3,416	0	0	0	0	0	0	0	0	0
Transco FT DEMAND - POCONO	500	500	500	500	500	500	500	500	500	500	500	500

UGI PENN NATURAL GAS
PROJECTED SUPPLY VOLUMES IN DTH OR DTH/D
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
COMMODITY

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	TOTAL
Monthly Take													
Spot Leidy	15,550	15,550	14,045	0	15,048	15,550	15,048	15,550	15,550	15,048	15,550	15,048	**167,536**
Spot TGP_Z4	0	0	0	0	11,978	11,978	11,978	11,978	11,978	11,978	11,978	0	**83,846**
Spot Tenn Z4	554,153	1,054,000	364,112	0	759,407	380,296	173,328	182,337	154,929	215,794	651,043	368,114	**4,857,513**
Spot TCOPool	362,204	362,204	0	0	350,520	362,204	350,520	362,204	362,204	350,520	362,204	294,024	**3,518,808**
Appalachian	64,635	64,635	60,465	64,635	62,550	64,635	62,550	64,635	64,635	62,550	64,635	62,550	**763,110**
Daily Delivered	106,471	51,772	0	0	785,142	620,248	401,421	412,354	344,263	379,186	799,746	0	**3,900,603**
DaLeidyCall	856,065	856,065	773,220	650,697	52,200	53,940	52,200	53,940	53,940	52,200	53,940	828,450	**4,336,857**
DaTennCall2	807,664	988,497	877,686	739,763	52,230	53,971	52,230	53,971	53,971	52,230	53,971	662,614	**4,448,797**
LNG Service	0	0	0	0	7,700	7,700	7,700	7,700	7,700	7,700	7,700	0	**53,900**
Trig Delivered	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Trig Tenn-Z4	250,000	350,000	200,000	100,000	0	0	0	0	0	0	0	0	**900,000**
MoTennCall	17,980	32,240	34,664	19,530	4,500	0	0	0	0	0	0	10,800	**119,714**
Injected Net Vol													
Transco GSS	0	0	0	0	180,000	403,000	390,000	397,000	356,500	325,500	309,596	0	**2,361,596**
Transco SS2	0	0	0	0	164,850	170,351	164,880	170,376	170,376	164,880	170,376	0	**1,176,089**
Transco LSS	0	0	0	0	100,440	103,788	100,440	103,788	103,788	100,440	103,788	0	**716,472**
Transco ESS	0	0	0	0	11,978	11,978	11,978	11,978	11,978	11,978	11,978	0	**83,846**
Columbia FSS	0	0	0	0	0	4,185	4,050	4,185	4,550	3,000	900	0	**20,870**
Withdrawn Gross Vol													
Transco GSS	385,175	796,514	739,616	439,456	0	0	0	0	0	0	0	0	**2,360,761**
Transco SS2	0	155,403	390,195	630,491	0	0	0	0	0	0	0	0	**1,176,089**
Transco LSS	157,666	214,396	193,221	152,471	0	0	0	0	0	0	0	0	**717,754**
Transco ESS	0	0	41,673	42,173	0	0	0	0	0	0	0	0	**83,846**
Columbia FSS	0	6,355	7,772	6,743	0	0	0	0	0	0	0	0	**20,870**
Tranport/Wdl/Inj Fuel	34,037	47,077	34,715	27,219	16,233	8,685	4,511	4,726	4,178	5,360	14,100	22,087	**222,930**
Total PGC Demand Served	**3,403,735**	**4,707,664**	**3,471,531**	**2,721,939**	**1,623,275**	**868,534**	**451,116**	**472,615**	**417,800**	**536,048**	**1,410,028**	**2,208,713**	**22,292,998**
Total Choice Bundled Demand	**121,810**	**160,650**	**120,756**	**77,270**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**480,486**
Total UGI Bundled Demand	**0**	**0**	**35,003**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**35,003**
Total CPG Bundled Demand	**17,980**	**32,240**	**34,664**	**19,530**	**4,500**	**0**	**0**	**0**	**0**	**0**	**0**	**10,800**	**119,714**
Transportation													
Col SST WD	0	6,235	7,625	6,616	0	0	0	0	0	0	0	0	**20,477**
Col FT Leach	355,376	355,376	0	0	343,913	355,376	343,913	355,376	355,376	343,913	355,376	288,482	**3,452,478**
Col FT Appl	63,417	63,417	59,325	63,417	61,371	63,417	61,371	63,417	63,417	61,371	63,417	61,371	**748,725**
Tennessee 4-4	800,373	1,397,401	561,461	99,530	755,838	378,509	172,513	181,480	154,201	214,780	647,983	366,384	**5,730,453**
Transco 4-6	0	0	40,794	41,283	0	0	0	0	0	0	0	0	**82,077**
Transco 6-6	15,500	15,500	14,000	0	15,000	15,500	15,000	15,500	15,500	15,000	15,500	15,000	**167,000**

UGI PENN NATURAL GAS
PROJECTED DEMAND UNIT RATE IN $/DTH
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
DEMAND

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
Supply												
Options	0.0000	0.3700	0.3700	0.3700	0.3700	0.3700	0.3700	0.3700	0.3700	0.3700	0.3700	0.0000
Leidy Supply - UGI	0.2155	0.2155	0.2016	0.2155	0.2085	0.2155	0.2085	0.2155	0.2155	0.2085	0.2155	0.2085
LNG Service	0.0000	0.0000	0.0000	0.0000	11.1429	11.4675	11.1429	11.4675	11.4675	11.1429	11.4675	0.0000
UGI ES Peak SVC I	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	220.0000
UGI ES Peak SVC II	125.2705	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Peak SVC	30.0000	30.0000	30.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	30.0000
UGI ES Delivered Supply	25.6640	25.6640	25.6640	25.6640	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	25.6640	25.6640	25.6640	25.6640	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	25.6640	25.6640	25.6640	25.6640	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.6640
UGI ES Delivered Supply	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375	10.0375
Storage Demand												
Transco GSS	3.1217	3.1217	2.8196	3.1217	3.0210	3.1217	3.0210	3.1217	3.1217	3.0210	3.1217	3.0210
Transco SS2	8.7246	8.7246	7.8803	8.7246	8.4432	8.7246	8.4432	8.7246	8.7246	8.4432	8.7246	8.4432
Transco LSS	4.7142	4.7142	4.2580	4.7142	4.5621	4.7142	4.5621	4.7142	4.7142	4.5621	4.7142	4.5621
Transco ESS	0.6538	0.6538	0.5905	0.6538	0.6327	0.6538	0.6327	0.6538	0.6538	0.6327	0.6538	0.6327
Columbia FSS	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010	1.5010
Storage Capacity												
Transco GSS	0.0164	0.0164	0.0148	0.0164	0.0159	0.0164	0.0159	0.0164	0.0164	0.0159	0.0164	0.0159
Transco SS2	0.0285	0.0285	0.0258	0.0285	0.0276	0.0285	0.0276	0.0285	0.0285	0.0276	0.0285	0.0276
Transco LSS	0.0174	0.0174	0.0157	0.0174	0.0168	0.0174	0.0168	0.0174	0.0174	0.0168	0.0174	0.0168
Transco ESS	0.0781	0.0781	0.0706	0.0781	0.0756	0.0781	0.0756	0.0781	0.0781	0.0756	0.0781	0.0756
Columbia FSS	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288
Transportation												
Columbia:FTS	6.0530	6.0530	6.4110	6.4110	6.4110	6.4110	6.4110	6.4110	6.4110	6.4110	6.4110	6.4110
Columbia:SST	5.8830	5.8830	6.2410	6.2410	6.2410	6.2410	6.2410	6.2410	6.2410	6.2410	6.2410	6.2410
Columbia:GULF FTS-1	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917	4.2917
Tennessee FT-G	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773	15.3773
Tennessee 404 FT-G	5.2796	5.2796	5.2796	5.2796	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.2796
Tennessee 4-4 FT-A	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898	5.4898
Transco FT DEMAND	20.8246	20.8246	18.8093	20.8246	14.2653	14.7408	14.2653	14.7408	14.7408	14.2653	14.7408	14.2653
Transco FT DEMAND - PSFT	29.3555	29.3555	26.5146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Transco FT DEMAND - POCONO	2.6496	2.6496	2.3932	2.6496	2.5641	2.6496	2.5641	2.6496	2.6496	2.5641	2.6496	2.5641

UGI PENN NATURAL GAS
PROJECTED SUPPLY UNIT RATE IN $/DTH
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
COMMODITY

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	AVERAGE
Supply Rate													
Spot Leidy	1.5440	1.6175	1.6465	0.0000	1.5195	1.5410	1.5675	1.6385	1.6065	1.5050	1.5760	1.7550	1.4598
Spot TGP_Z4	0.0000	0.0000	0.0000	0.0000	2.5290	2.5355	2.5695	2.6155	2.6260	2.6170	2.6355	0.0000	1.5107
Spot Tenn Z4	1.4915	1.6025	1.6065	0.0000	1.5195	1.5335	1.5650	1.6235	1.5990	1.4975	1.5635	1.6450	1.4373
Spot TCOPool	1.7015	1.9225	0.0000	0.0000	2.2781	2.2844	2.3414	2.3691	2.3626	2.2143	2.2368	1.9790	1.8075
Appalachian	1.7015	1.9225	1.9415	1.8710	2.2781	2.2844	2.3414	2.3691	2.3626	2.2143	2.2368	1.9790	2.1252
Daily Delivered	2.6526	2.7813	0.0000	0.0000	2.6143	2.6209	2.6557	2.7027	2.7134	2.7042	2.7231	0.0000	2.0140
DaLeidyCall	1.5563	1.6301	1.6591	1.6612	1.5317	1.5533	1.5799	1.6511	1.6190	1.5172	1.5884	1.7680	1.6096
DaTennCall2	1.5527	1.6643	1.6683	1.6477	1.5809	1.5949	1.6266	1.6854	1.6608	1.5588	1.6251	1.7070	1.6310
LNG Service	0.0000	0.0000	0.0000	0.0000	11.7420	11.7610	11.8100	11.8560	11.8640	11.8550	11.8710	0.0000	6.8966
Trig Delivered	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Trig Tenn-Z4	1.5525	1.6425	1.6575	1.6350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5406
MoTennCall	1.5527	1.6643	1.6683	1.6477	1.5809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.7070	0.8184
Injection Rate													
Transco GSS	0.0000	0.0000	0.0000	0.0000	0.0488	0.0488	0.0488	0.0488	0.0488	0.0488	0.0488	0.0000	0.0285
Transco SS2	0.0000	0.0000	0.0000	0.0000	0.0317	0.0317	0.0317	0.0317	0.0317	0.0317	0.0317	0.0000	0.0185
Transco LSS	0.0000	0.0000	0.0000	0.0000	0.0277	0.0277	0.0277	0.0277	0.0277	0.0277	0.0277	0.0000	0.0161
Transco ESS	0.0000	0.0000	0.0000	0.0000	0.0411	0.0411	0.0411	0.0411	0.0411	0.0411	0.0411	0.0000	0.0240
Columbia FSS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153	0.0000	0.0077
Withdrawal Rate													
Transco GSS	0.0419	0.0419	0.0419	0.0419	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0140
Transco SS2	0.0000	0.0317	0.0317	0.0317	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0079
Transco LSS	0.0212	0.0212	0.0212	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0071
Transco ESS	0.0000	0.0000	0.0411	0.0411	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0069
Columbia FSS	0.0000	0.0153	0.0153	0.0153	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0038
Transportation Rate													
Col SST WD	0.0000	0.0192	0.0192	0.0192	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0048
Col FT Leach	0.0194	0.0194	0.0000	0.0000	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0162
Col FT Appl	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194	0.0194
Tennessee 4-4	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534	0.0534
Transco 4-6	0.0000	0.0000	0.0308	0.0308	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0051
Transco 6-6	0.0074	0.0074	0.0074	0.0000	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	0.0074	0.0068
Total Com Vol	3,403,735	4,707,664	3,471,531	2,721,939	1,623,275	868,534	451,116	472,615	417,800	536,048	1,410,028	2,208,713	22,292,998
Total Com Cost	5,837,942	8,659,108	6,558,661	5,276,088	3,245,348	1,610,170	753,787	808,963	681,343	862,967	2,802,531	3,959,836	41,056,744
Com Unit Rate	1.7152	1.8394	1.8893	1.9384	1.9993	1.8539	1.6709	1.7117	1.6308	1.6099	1.9876	1.7928	1.8417
Total Dem Cost	5,898,932	2,437,528	2,506,214	2,675,384	1,206,380	1,222,679	1,196,760	1,219,931	1,219,931	1,198,134	1,240,654	6,152,063	28,174,590
Dem Unit Rate	1.7331	0.5178	0.7219	0.9829	0.7432	1.4078	2.6529	2.5812	2.9199	2.2351	0.8799	2.7854	1.2638
Total System Costs	11,736,874	11,096,636	9,064,875	7,951,472	4,451,729	2,832,850	1,950,547	2,028,894	1,901,273	2,061,102	4,043,186	10,111,898	69,231,334
System Unit Rate	3.4482	2.3571	2.6112	2.9213	2.7424	3.2616	4.3238	4.2929	4.5507	3.8450	2.8675	4.5782	3.1055

UGI PENN NATURAL GAS
PROJECTED PURCHASED GAS COSTS IN ($)
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
DEMAND

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	TOTAL
Supply													
Options	0	84,866	84,866	84,866	84,866	84,866	84,866	84,866	84,866	84,866	84,866	0	848,658
Leidy Supply - UGI	108	108	98	108	105	108	105	108	108	105	108	105	1,272
LNG Service	0	0	0	0	85,800	88,300	85,800	88,300	88,300	85,800	88,300	0	610,600
UGI ES Peak SVC I	0	0	0	0	0	0	0	0	0	0	0	4,070,000	4,070,000
UGI ES Peak SVC II	3,632,843	0	0	0	0	0	0	0	0	0	0	0	3,632,843
Peak SVC	336,900	336,900	336,900	336,900	0	0	0	0	0	0	0	336,900	1,684,500
UGI ES Delivered Supply	1,334,400	1,334,400	1,334,400	1,334,400	0	0	0	0	0	0	0	1,334,400	6,672,000
UGI ES Delivered Supply	89,336	89,336	89,336	89,336	0	0	0	0	0	0	0	89,336	446,682
UGI ES Delivered Supply	103,914	103,914	103,914	103,914	0	0	0	0	0	0	0	103,914	519,568
UGI ES Delivered Supply	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	401,500	4,818,000
Storage Demand													
Transco GSS	176,476	176,476	159,398	176,476	170,783	176,476	170,783	176,476	176,476	170,783	176,476	170,783	2,077,862
Transco SS2	225,750	225,750	203,903	225,750	218,468	225,750	218,468	225,750	225,750	218,468	225,750	218,468	2,658,025
Transco LSS	35,441	35,441	32,011	35,441	34,298	35,441	34,298	35,441	35,441	34,298	35,441	34,298	417,291
Transco ESS	6,538	6,538	5,905	6,538	6,327	6,538	6,327	6,538	6,538	6,327	6,538	6,327	76,979
Columbia FSS	751	751	751	751	751	751	751	751	751	751	751	751	9,006
Storage Capacity													
Transco GSS	45,126	45,126	40,759	45,126	43,671	45,126	43,671	45,126	45,126	43,671	45,126	43,671	531,325
Transco SS2	81,175	81,175	73,319	81,175	78,557	81,175	78,557	81,175	81,175	78,557	81,175	78,557	955,771
Transco LSS	14,358	14,358	12,968	14,358	13,894	14,358	13,894	14,358	14,358	13,894	14,358	13,894	169,050
Transco ESS	6,550	6,550	5,916	6,550	6,339	6,550	6,339	6,550	6,550	6,339	6,550	6,339	77,122
Columbia FSS	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018	12,221
Transportation													
Columbia:FTS	112,174	112,174	118,809	118,809	118,809	118,809	118,809	118,809	118,809	118,809	118,809	118,809	1,412,435
Columbia:SST	2,942	2,942	3,121	3,121	1,560	1,560	1,560	1,560	1,560	1,560	3,121	3,121	27,727
Columbia:GULF FTS-1	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	27,141	325,688
Tennessee FT-G	13,440	12,779	13,686	15,639	18,453	9,226	7,689	6,151	6,151	9,226	10,995	12,963	136,397
Tennessee 404 FT-G	9,519	10,844	9,683	6,742	0	0	0	0	0	0	0	4,958	41,746
Tennessee 4-4 FT-A	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	186,653	2,239,838
Transco FT DEMAND	314,784	314,784	284,321	314,784	175,164	181,002	175,164	181,002	181,002	175,164	181,002	175,164	2,653,338
Transco FT DEMAND - PSFT	100,278	100,278	90,574	0	0	0	0	0	0	0	0	0	291,130
Transco FT DEMAND - POCONO	1,325	1,325	1,197	1,325	1,282	1,325	1,282	1,325	1,325	1,282	1,325	1,282	15,598
SUBTOTAL	**7,260,440**	**3,713,126**	**3,622,146**	**3,618,420**	**1,675,437**	**1,693,673**	**1,664,673**	**1,690,598**	**1,690,598**	**1,666,210**	**1,697,002**	**7,440,349**	**37,432,672**
Non-Choice Cap Rel/Sharing Mech Credit	**(540,316)**	**(840,316)**	**(690,316)**	**(517,816)**	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(250,273)**	**(235,273)**	**(447,979)**	**(4,773,653)**
Choice Capacity Assignment FT Credits	**(771,403)**	**(385,493)**	**(375,827)**	**(375,431)**	**(168,994)**	**(170,932)**	**(167,850)**	**(170,605)**	**(170,605)**	**(168,014)**	**(171,285)**	**(790,518)**	**(3,886,958)**
Bal. Service Credit	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(50,000)**	**(600,000)**
Risk Mgt Tools	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**211**	**2,530**
Total Demand	**5,898,932**	**2,437,528**	**2,506,214**	**2,675,384**	**1,206,380**	**1,222,679**	**1,196,760**	**1,219,931**	**1,219,931**	**1,198,134**	**1,240,654**	**6,152,063**	**28,174,590**

UGI PENN NATURAL GAS
PROJECTED PURCHASE GAS COSTS IN ($)
UNDER NORMAL WEATHER
12 MONTH PERIOD - DECEMBER THROUGH NOVEMBER
COMMODITY

	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	TOTAL
Supply Cost													
Spot Leidy	24,009	25,152	23,125	0	22,866	23,962	23,588	25,478	24,981	22,647	24,506	26,410	266,724
Spot TGP_Z4	0	0	0	0	30,292	30,370	30,777	31,328	31,454	31,346	31,568	0	217,137
Spot Tenn Z4	826,519	1,689,035	584,946	0	1,153,919	583,184	271,259	296,024	247,731	323,151	1,017,906	605,548	7,599,222
Spot TCOPool	616,290	696,337	0	0	798,528	827,410	820,699	858,107	855,752	776,139	810,160	581,873	7,641,295
Appalachian	109,976	124,261	117,393	120,932	142,497	147,651	146,453	153,128	152,708	138,501	144,572	123,786	1,621,859
Daily Delivered	282,426	143,995	0	0	2,052,598	1,625,633	1,066,044	1,114,456	934,121	1,025,395	2,177,785	0	10,422,454
DaLeidyCall	1,332,308	1,395,431	1,282,885	1,080,907	79,957	83,785	82,470	89,061	87,330	79,197	85,679	1,464,695	7,143,706
DaTennCall2	1,254,094	1,645,123	1,464,232	1,218,899	82,569	86,081	84,957	90,961	89,632	81,415	87,707	1,131,061	7,316,730
LNG Service	0	0	0	0	90,413	90,560	90,937	91,291	91,353	91,284	91,407	0	637,244
Trig Delivered	0	0	0	0	0	0	0	0	0	0	0	0	0
Trig Tenn-Z4	388,125	574,875	331,500	163,500	0	0	0	0	0	0	0	0	1,458,000
MoTennCall	27,918	53,656	57,829	32,179	7,114	0	0	0	0	0	0	18,435	197,132
Injection Cost													
Transco GSS	0	0	0	0	8,789	19,678	19,044	19,386	17,408	15,894	15,118	0	115,317
Transco SS2	0	0	0	0	5,226	5,400	5,227	5,401	5,401	5,227	5,401	0	37,282
Transco LSS	0	0	0	0	2,779	2,872	2,779	2,872	2,872	2,779	2,872	0	19,825
Transco ESS	0	0	0	0	492	492	492	492	492	492	492	0	3,446
Columbia FSS	0	0	0	0	0	64	62	64	70	46	14	0	319
Withdrawal Cost													
Transco GSS	16,127	33,350	30,968	18,400	0	0	0	0	0	0	0	0	98,845
Transco SS2	0	4,928	12,373	19,993	0	0	0	0	0	0	0	0	37,294
Transco LSS	3,335	4,534	4,087	3,225	0	0	0	0	0	0	0	0	15,180
Transco ESS	0	0	1,713	1,733	0	0	0	0	0	0	0	0	3,446
Columbia FSS	0	97	119	103	0	0	0	0	0	0	0	0	319
Transportation Cost													
Col SST WD	0	120	146	127	0	0	0	0	0	0	0	0	393
Col FT Leach	6,894	6,894	0	0	6,672	6,894	6,672	6,894	6,894	6,672	6,894	5,597	66,978
Col FT Appl	1,230	1,230	1,151	1,230	1,191	1,230	1,191	1,230	1,230	1,191	1,230	1,191	14,525
Tennessee 4-4	42,740	74,621	29,982	5,315	40,362	20,212	9,212	9,691	8,234	11,469	34,602	19,565	306,006
Transco 4-6	0	0	1,256	1,272	0	0	0	0	0	0	0	0	2,528
Transco 6-6	115	115	104	0	111	115	111	115	115	111	115	111	1,236
Injected Value	**0**	**0**	**0**	**0**	**1,273,913**	**1,945,424**	**1,908,187**	**1,987,016**	**1,876,436**	**1,749,989**	**1,735,498**	**0**	**12,476,464**
Withdrawn Value	**1,200,372**	**2,593,095**	**3,034,928**	**2,811,273**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9,639,669**
Choice Bundled Sale Credit	**(264,840)**	**(349,285)**	**(262,547)**	**(168,001)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**(1,044,674)**
UGI Bundled Sale Credit	**0**	**0**	**(97,319)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**(97,319)**
CPG Bundled Sale Credit	**(27,918)**	**(53,656)**	**(57,829)**	**(32,179)**	**(7,114)**	**0**	**0**	**0**	**0**	**0**	**0**	**(18,435)**	**(197,132)**
Options Credit	**(1,780)**	**(4,800)**	**(2,380)**	**(2,820)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**(11,780)**
Total Cost	**5,837,942**	**8,659,108**	**6,558,661**	**5,276,088**	**3,245,348**	**1,610,170**	**753,787**	**808,963**	**681,343**	**862,967**	**2,802,531**	**3,959,836**	**41,056,744**

UGI Penn Natural Gas, Inc.
Computation of the Experienced Cost Factor: E
For the 2016 PGC Year

Schedule C
Page 1 of 6

Effective December 1, 2016
Computation Year Ending November 30, 2017

SUPPLIER REFUND CREDITS

Prior	(Amortized Balance at November 30, 2016)	Schedule C, Page 2	$	29,183
Current	(Twelve Months Ended November 30, 2016)	Schedule C, Page 3		133,821
Interest	(Twelve Months Ended November 30, 2016)	Schedule C, Page 3		11,635

OVER / (UNDER) COLLECTION

Prior	(Amortized Balance at November 30, 2016)	Schedule C, Page 4		1,140,120
Current	(Twelve Months Ended November 30, 2016)	Schedule C, Page 6		1,743,563
Interest	(Twelve Months Ended November 30, 2016)	Schedule C, Page 6		248,016
TOTAL E			$	3,306,338
TOTAL S (Mcf) 1/				22,110,059
E/S Refund / (Collection) $/Mcf:			$	0.1495

1/ The Total Sales include a projection 300,000 Mcf for projected Migration Rider volumes.

UGI Penn Natural Gas, Inc.
Prior Supplier Refund Credit Balance: 1/
To Be Included In the 2016 PGC Experienced Cost Factor

Month	Year		Beginning Refund / (Collection) Balance	(Refunded) / Collected	Ending Refund/ (Collection) Balance
March	2015		$ 627,708	$ (255,292)	$ 372,416
April	2015		$ 372,416	$ (136,194)	$ 236,222
May	2015		$ 236,222	$ (48,590)	$ 187,632
June	2015		$ 187,632	$ (27,986)	$ 159,646
July	2015		$ 159,646	$ (21,606)	$ 138,040
August	2015		$ 138,040	$ (19,273)	$ 118,767
September	2015		$ 118,767	$ (20,720)	$ 98,047
October	2015		$ 98,047	$ (37,032)	$ 61,015
November	2015		$ 61,015	$ (74,918)	$ (13,903)
December	2015		$ 334,342	$ (72,855)	$ 261,487
January	2016		$ 261,487	$ (42,182)	$ 219,305
February	2016		$ 219,305	$ (46,775)	$ 172,530
March	2016		$ 172,530	$ (37,949)	$ 134,581
April	2016	est.	$ 134,581	$ (28,283)	$ 106,298
May	2016	est.	$ 106,298	$ (14,389)	$ 91,909
June	2016	est.	$ 91,909	$ (8,423)	$ 83,486
July	2016	est.	$ 83,486	$ (6,056)	$ 77,430
August	2016	est.	$ 77,430	$ (4,763)	$ 72,667
September	2016	est.	$ 72,667	$ (6,496)	$ 66,171
October	2016	est.	$ 66,171	$ (11,787)	$ 54,384
November	2016	est.	$ 54,384	$ (25,201)	$ 29,183

1/ Including interest.

UGI Penn Natural Gas, Inc.
List of Current Supplier Refunds
To Be Included In the 2016 PGC Experienced Cost Factor

Supplier	Principal Amount	Date Received	Interest Rate	Interest Weight	Interest Amount
Columbia Gas	$ 51,950	Dec-15	6%	18	$ 4,676
Columbia Gas	$ (732)	Jan-16	6%	17	$ (62)
Tennessee	$ 82,603	Jan-16	6%	17	$ 7,021
Total: Rates R, GL, N & CIAC	$ 133,821				$ 11,635

UGI Penn Natural Gas, Inc.
Prior Over / (Under) Collection Balance: 1/
To Be Included In the 2016 PGC Experienced Cost Factor

Month	Year		Beginning Over/(Under) Collection Balance	(Refunded) / Collected	Ending Refund/ (Collection) Balance
March	2015		$ (14,885,930)	$ 3,710,958	$ (11,174,972)
April	2015		$ (11,174,972)	$ 2,335,956	$ (8,839,016)
May	2015		$ (8,839,016)	$ 838,967	$ (8,000,049)
June	2015		$ (8,000,049)	$ 484,809	$ (7,515,240)
July	2015		$ (7,515,240)	$ 381,145	$ (7,134,095)
August	2015		$ (7,134,095)	$ 340,884	$ (6,793,211)
September	2015		$ (6,793,211)	$ 366,013	$ (6,427,198)
October	2015		$ (6,427,198)	$ 653,646	$ (5,773,552)
November	2015		$ (5,773,552)	$ 1,306,693	$ (4,466,859)
December	2015		$ 9,979,683	$ 487,987	$ 10,467,670
January	2016		$ 10,467,670	$ (1,305,375)	$ 9,162,295
February	2016		$ 9,162,295	$ (1,436,843)	$ 7,725,452
March	2016		$ 7,725,452	$ (1,269,196)	$ 6,456,256
April	2016	est.	$ 6,456,256	$ (1,339,330)	$ 5,116,926
May	2016	est.	$ 5,116,926	$ (720,697)	$ 4,396,229
June	2016	est.	$ 4,396,229	$ (455,020)	$ 3,941,209
July	2016	est.	$ 3,941,209	$ (349,665)	$ 3,591,544
August	2016	est.	$ 3,591,544	$ (288,599)	$ 3,302,945
September	2016	est.	$ 3,302,945	$ (364,501)	$ 2,938,444
October	2016	est.	$ 2,938,444	$ (596,240)	$ 2,342,204
November	2016	est.	$ 2,342,204	$ (1,202,084)	$ 1,140,120

1/ Including interest and Migration Rider amounts.

UGI Penn Natural Gas, Inc.
Development of the Current Over/(Under) Collection
For the Period Ending: November 30, 2016

Schedule C
Page 5 of 6

	Mcf Sales	Base Rate	Revenue	Cost	(Under) / Over Collection	Interest Rate	Interest Weight	Interest
Apr-15	2,314,325	$ 4.3354	$ 10,033,439	$ 5,236,130	$ 4,797,309	6%	14	$ 335,812
May-15	825,396	$ 4.3320	$ 3,575,653	$ 2,861,882	$ 713,771	6%	13	$ 46,395
Jun-15	472,771	$ 3.7725	$ 1,783,513	$ 2,493,983	$ (710,470)	6%	12	$ (42,628)
Jul-15	366,386	$ 3.2774	$ 1,200,798	$ 2,130,750	$ (929,952)	6%	11	$ (51,147)
Aug-15	327,142	$ 3.2863	$ 1,075,078	$ 2,525,690	$ (1,450,612)	6%	10	$ (72,531)
Sep-15	351,836	$ 3.2886	$ 1,157,048	$ 3,156,179	$ (1,999,131)	6%	9	$ (89,961)
Oct-15	629,333	$ 3.2871	$ 2,068,691	$ 3,872,023	$ (1,803,332)	6%	8	$ (72,133)
Nov-15	1,279,177	$ 3.2896	$ 4,207,968	$ 5,285,987	$ (1,078,020)	6%	7	$ (37,731)
Dec-15	2,132,372	$ 3.4469	$ 7,349,986	$ 8,105,868	$ (755,882)	6%	18	$ (68,029)
Jan-16	3,092,027	$ 3.5806	$ 11,071,393	$ 11,921,980	$ (850,587)	6%	17	$ (72,300)
Feb-16	3,421,370	$ 3.5785	$ 12,243,366	$ 9,968,610	$ 2,274,756	6%	16	$ 181,980
Mar-16	2,766,843	$ 3.3873	$ 9,372,015	$ 7,826,680	$ 1,545,335	6%	15	$ 115,900
Total	17,978,978		$ 65,138,948	$ 65,385,762	$ (246,814)			$ 173,627

UGI Penn Natural Gas, Inc.
Development of the Current Over/(Under) Collection
For the Period Ending: November 30, 2016

		Mcf Sales	Base Rate	Revenue	Cost	(Under) / Over Collection	Interest Rate	Interest Weight	Interest
Apr-16	est.	2,064,476	$ 3.2131	$ 6,633,368	$ 3,973,478	$ 2,659,890	6%	14	$ 186,192
May-16	est.	1,050,322	$ 3.2131	$ 3,374,791	$ 2,550,754	$ 824,037	6%	13	$ 53,562
Jun-16	est.	614,787	$ 3.3654	$ 2,069,005	$ 1,776,739	$ 292,266	6%	12	$ 17,536
Jul-16	est.	442,073	$ 3.5177	$ 1,555,080	$ 1,840,660	$ (285,580)	6%	11	$ (15,707)
Aug-16	est.	347,665	$ 3.5177	$ 1,222,981	$ 1,737,752	$ (514,771)	6%	10	$ (25,739)
Sep-16	est.	474,168	$ 3.5177	$ 1,667,980	$ 1,891,794	$ (223,814)	6%	9	$ (10,072)
Oct-16	est.	860,401	$ 3.5177	$ 3,026,632	$ 3,533,593	$ (506,961)	6%	8	$ (20,278)
Nov-16	est.	1,839,482	$ 3.5177	$ 6,470,747	$ 9,185,873	$ (2,715,126)	6%	7	$ (95,029)
PGC Computation Year (12/2015 - 11/2016)		19,105,986		$ 66,057,344	$ 64,313,780	$ 1,743,563			$ 248,016

TARIFF ADDENDA

UGI PENN NATURAL GAS, INC.

GAS TARIFF

INCLUDING THE GAS SERVICE TARIFF

AND

THE CHOICE SUPPLIER TARIFF

Rates and Rules

Governing the

Furnishing of

Gas Service and Choice Aggregation Service

in the

Territory Described Herein

Issued: June 1, 2016

Effective for service rendered on and after December 1, 2016.

Issued By:

Paul J. Szykman
Vice President – Rates and Government Relations
Vice President and General Manager – Electric Utilities
2525 N. 12th Street, Suite 360
Post Office Box 12677
Reading, PA 19612-2677

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NOTICE

This tariff makes changes, increases and decreases to existing rates. (See Page 2.)

LIST OF CHANGES MADE BY THIS SUPPLEMENT

(Page Numbers Refer to Official Tariff)

Rider B – Purchased Gas Costs, Page 31

- The Annual Gas Cost Rate is decreased.
- The Annual E-Factor is increased.

Rider C – Migration Rider, Page 32

- The Migration Rider is increased.

Price to Compare, Page 35(a)

- The Annual C-Factor is decreased.
- The Annual E-Factor is increased.

Gas Beyond the Mains, Pages 58-59

- This Rate schedule is cancelled.

RULES AND REGULATIONS

11. RIDER B- Continued

SECTION 1307(F) PURCHASED GAS COSTS

Revenue Sharing Allocation: Effective December 1, 2012, through November 30, 2016 the sum of the revenues derived from all Off-System Sales, Exchanges of Natural Gas, Capacity Release on interstate pipelines and Storage Asset Management, will be allocated 75% to the retail customers served and 25% to the Company.

Adjustment to Rates: Whenever a change is made to the level of purchased gas costs reflected in base rates, the amount of the adjustment to the applicable rate schedules will be equal to the change in the purchased gas costs increased by the percentage of State Gross Receipts Tax recovered through base rates.

Filing with Pennsylvania Public Utility Commission: Audit, Rectification

The Company's annual Section 1307(f) filing or its annual reconciliation statement shall be submitted to the Commission by March 1 of each year, or such other time as the Commission may prescribe by order or by regulation.

The Company shall notify the Commission of any change in the price of purchased gas from any supplier which change would cause an increase or decrease of more than one percent (1%) in the "C" factor as defined above. Such notification will be given not more than thirty (30) days after the effective date of such change in price, or as soon as reasonably practical thereafter.

Quarterly Adjustments

When making the December 1, March 1 and June 1 quarterly C-factor adjustments, the Company will refund or recover all actual and projected incremental over or under collections from December 1 through November 30 over remaining PGC year sales volumes. When making September 1 quarterly C-factor adjustments, the Company will refund or recover all actual and projected incremental over or under collections from December 1 through November 30 over sales volumes applicable to the six months of June through November. Any quarterly PGC rate change will be capped at 25% of the then-current PGC rate, with any amounts above this cap being brought forward for inclusion in the calculation of subsequent quarterly C-factor adjustments. When actual November data is reconciled with the projected November data used to establish PGC rates effective December 1, the resulting over or under collection amount shall be refunded or recovered in the Company’s next quarterly filing over the applicable annual PGC sales volumes plus migration rider volumes.

Rider B – Purchased Gas Cost

Annual Gas Cost Rate	$ 3.1743 /MCF	(D)
Annual E-Factor	($ 0.1495) /MCF	(I)
Purchased Gas Cost	$ 3.0248 /MCF	

(D) Indicates Decrease (I) Indicates Increase

12. RIDER C

MIGRATION RIDER

This Migration Rider provides for a method under Section 1307 (f) of the Public Utility Code for the recovery of the experienced net under / overcollection of purchased gas costs from ratepayers who shifted from retail service Rate Schedules R, N, and CIAC, of this tariff to transportation service Rate Schedules RT, NT, DS, LFD, IS, and XD. Except for customers served under Rates RT and NT the Company may waive this rider for customers with competitive conditions.

The Migration Rider Rate for PGC shall equal the current Section 1307(f) rates less the "C" (current cost of gas) as approved in the Company's most recent Section 1307(f) natural gas cost proceeding. All revenue recovered under this rider will be credited to the Company's Section 1307(f) mechanism. The recovery period for the experienced net over/(under) collection of purchased gas costs from a ratepayer to whom this rider applies will be one year from the date on which a ratepayer last shifted from retail service to transportation service.

Customers that have received transportation service from the Company for at least twelve consecutive months and that transfer to retail service under Rate R, N, or CIAC shall not be charged the associated PGC Gas Cost Adjustment for a period of twelve months.

The currently effective Migration Rider applicable to commodity costs are shown below:

All Customers Shifting from PGC	($0.1495) per MCF	(I)

(I) Indicates Increase

RULES AND REGULATIONS

14.A Rider F

GAS PROCUREMENT CHARGE

Applicability

This non-reconcilable Rider shall be applied to rates for each Mcf (1,000 cubic feet) of gas supplied under Rate Schedules R, N, and CIAC of this Tariff, and shall be reflected in the Price to Compare. Effective April 3, 2013, Rider F shall be a volumetric charge as described below, and shall remain in effect until reviewed and updated in the Company's next base rate case.

Rider F, or Gas Procurement Charge ("GPC"), recovers costs associated with gas procurement that were unbundled from base rates in the Commission's Order at Docket No. R-2012-2314224. The GPC rate is calculated by dividing total unbundled gas procurement costs by the sales volumes for the 12 months ending September 30, 2012, for Rate R, N and CIAC customers as approved by the Public Utility Commission at Docket No. R-2012-2314224.

Rider F Charge

Rates: R, N and CIAC: $ 0.0400 per Mcf

The collection of the Rider F charges will be summarized by Rate Schedule sub-accounts in the Gas Operating Revenue FERC Account No. 480000 for Rate R and 481000 for Rates N and CIAC. The associated costs are recorded in FERC Account Nos. 920101, 920201, 920401, 920501, 921005, 923001, 923007, 926001 through 926027, 131000 through 176000 and 231000 through 245000.

14.B PRICE TO COMPARE

The Price to Compare ("PTC") is composed of the Annual Gas Cost Rate, Annual E-Factor, Gas Procurement Charge and Merchant Function Charge. The PTC rate will change whenever any components of the PTC change. The current PTC rate is detailed below:

Price to Compare - Rate Schedule R

Annual C-Factor	$ 0.31743 / CCF	(D)
Annual E-Factor	($ 0.01495) / CCF	(I)
Gas Procurement Charge	$ 0.00400 / CCF	
Merchant Function Charge	$ 0.00968 / CCF	
Total Rate Schedule R Price to Compare	$ 0.31616 / CCF	

Price to Compare - Rate Schedules N and CIAC

Annual C-Factor	$ 3.1743 / MCF	(D)
Annual E-Factor	($ 0.1495) / MCF	(I)
Gas Procurement Charge	$ 0.0400 / MCF	
Merchant Function Charge	$ 0.0121 / MCF	
Total Rate Schedule N Price to Compare	$ 3.0769 / MCF	

(D) Indicates Decrease (I) Indicates Increase

GAS BEYOND THE MAINS SERVICE – SCHEDULE GBM

This Rate Schedule is cancelled. (C)

RATE GBM - CONTINUED

This Rate Schedule is cancelled. (C)

TESTIMONY

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
v.	:	Docket No. R-2016-2543314
UGI PENN NATURAL GAS, INC.	:	

DIRECT TESTIMONY

OF

TRACY A. HAZENSTAB

PNG STATEMENT NO. 1

Date: June 1, 2016

Q. Please state your name and business address.

A. My name is Tracy A. Hazenstab, and my business address is UGI Utilities, Inc., 2525 N. 12th Street, Reading, PA 19605.

Q. By whom are you employed and in what capacity?

A. I am employed by UGI Utilities, Inc. as a Senior Analyst – Rates.

Q. What is your educational background?

A. I graduated from Pennsylvania State University in 1996 with a Bachelor of Arts Degree in International Politics.

Q. Please describe your professional experience.

A. I was hired at PPL Gas Utilities Corporation in 2001 as a Contact Center Analyst. My primary responsibilities involved reporting all aspects of performance at the Company's contact center, including the following metrics: grade of service, meter reading performance, aging summaries, call handling statistics, billing reports, bad debt collections and customer satisfaction scores. In 2004, I became a Business Analyst, responsible for contact center reporting, budget reporting, and operations statistics, which developed into responsibility over the preparation of PPL Gas' (UGI CPG's predecessor) Purchased Gas Cost ("PGC") annual 1307(f) and quarterly rate tariff filings and related computations. I joined the Rates Department of UGI Utilities, Inc. in 2008 when UGI acquired PPL Gas. Between 2008 and 2013, I have been significantly involved and/or primarily responsible for the preparation of UGI Central Penn Gas, Inc.'s ("UGI CPG's") Purchased Gas Cost ("PGC") annual 1307(f) and quarterly rate tariff filings and related computations. Since 2013, I have been primarily responsible for the preparation of UGI Penn Natural Gas, Inc.'s ("UGI PNG's or the "Company's") PGC annual 1307(f) and quarterly rate tariff filings and related computations. I also have been primarily responsible for the preparation of rate tariff filings and related computations for the Universal Service Program ("USP") Rider and State

Tax Adjustment Surcharge ("STAS") on behalf of UGI CPG since 2009 and UGI PNG since 2013. Additionally, since 2011, I have been primarily responsible for the preparation of the Generation Supply Rate tariff filings and related computations for UGI Utilities, Inc. – Electric Division. In addition, I have assisted in the development of certain supporting schedules in the 2015 base rate proceeding on behalf of UGI Utilities, Inc. – Gas Division at Docket No. R-2015-2518438, the 2010 base rate case proceeding on behalf of UGI CPG at Docket No. R-2010-2214415, the 2008 base rate case proceeding on behalf of UGI PNG at Docket No. R-2008-2079660 and the 2008 base rate case proceeding on behalf of UGI CPG at Docket No. R-2008-2079675. Most recently, I have assisted in preparing the initial and quarterly Distribution System Improvement Charge ("DSIC") filings for UGI CPG and UGI PNG, beginning October 1, 2014. Finally, I am primarily responsible for the development and preparation of the Purchased Gas Adjustment ("PGA") and Actual Cost Adjustment ("ACA") surcharge filings for UGI CPG's Maryland division, along with testifying in annual hearings concerning these charges before an administrative law judge at the Maryland Public Service Commission.

Q. Have you previously testified before the Pennsylvania Public Utility Commission ("Commission")?

A. Yes, I testified before the Commission in UGI CPG's PGC 1307(f) proceedings at Docket Nos. R-2014-2420279, R-2015-2480937 and UGI PNG's PGC 1307(f) proceeding at Docket No. R-2015-2480934. I also have testified before the Maryland Public Service Commission in UGI CPG's PGA hearings for the past six years at Case Numbers 9511(c), 9511(d), 9511(e), 9511(g), 9511(i), and 9511(j). Also, in addition to submitting this testimony on behalf of UGI PNG in its 2016 PGC 1307(f) proceeding, I will be submitting testimony in UGI CPG's 2016 PGC 1307(f) proceeding at Docket No. R-2016-2543311.

Purpose of Testimony

Q. What is the purpose of your Direct Testimony?

A. My testimony will address certain components of the Company's 2016 PGC 1307(f) filing and will explain and support the development and computation of UGI PNG's PGC rate proposed to be effective on December 1, 2016. In addition, I will discuss the following items relating to the Company's proposed PGC rate: (1) UGI PNG's Revenue Sharing Incentive Mechanism and (2) UGI PNG's Retainage Rate (as defined below).

Q. Which portions of the Company's 2016 PGC 1307(f) filing are you sponsoring?

A. As shown in the Contents of Filing and Witness Index list, I am sponsoring Schedule A, Schedule B – Page 1, Schedule C and the *pro forma* Tariff Addendum to PNG Gas – Pa. P.U.C. No. 8, which have been submitted in accordance with Section 53.64(a) of the Commission's regulations at 52 Pa. Code §53.64(a). Additionally, I am sponsoring the following sections of the preliminary supporting information filed on April 29, 2016 in this proceeding in accordance with 52 Pa. Code §53.64(c): Sections 7, 8, 10, 12, and related attachments, and the portions of Sections 4 not supported by other witnesses in this proceeding.

Q. Were these portions of the filing prepared by you or persons under your supervision or control?

A. Yes.

Q. Are they true and correct to best of your information and belief?

A. Yes.

Summary of Rate Proposal

Q. Please describe the Company's rate proposal in this proceeding.

A. The Company is proposing a PGC rate of $3.0248 per Mcf, effective December 1, 2016.

Q. How does this proposed PGC rate compare to the current PGC rate?

A. The current PGC rate of $3.0248 per Mcf became effective June 1, 2016 via tariff Supplement No. 57 to PNG Gas – Pa. P.U.C. No. 8, which reflected a quarterly PGC rate increase of $0.3046 per Mcf or 11.2% from the PGC rate then in effect. The proposed PGC rate of $3.0248 per Mcf, effective December 1, 2016, will result in no change for PGC customers compared to the rate that took effect June 1, 2016.

Development of the PGC Rate

Q. Please summarize the major components that comprise the PGC rate.

A. The basic PGC rate formula is (C-E)/S, where the "C-factor" or the Projected Cost of Gas component represents the projected cost of gas for the rate computation period beginning December 1, 2016 through November 30, 2017; the "E-factor" or the Experienced Cost Factor represents the experienced over/under collections due to variations between projected gas costs and actual gas costs as well as the variances between projected gas sales and actual gas sales; and the "S" or the Projected Sales component represents the projected Mcf of gas to be billed to customers during the effective computation period. UGI PNG's PGC rate is comprised of the Projected Cost of Gas per Mcf (C/S) and the Experienced Cost per Mcf (-E/S) (e.g. the Gas Cost Adjustment Charge).

Q. Please summarize the PGC rate computation supporting schedules you prepared in this filing.

A. Schedules A, B and C provide the detailed computation of UGI PNG's proposed 2016 PGC rate. In particular:

- Schedule A is the PGC computation schedule showing, at a summary level, the computation of the PGC rate for Rate Schedules R – Residential Service, N – Non-Residential Service, CIAC – Air Conditioning Service and GL – Gas Lighting Service and IS – Interruptible Service.

- Schedule B, Page 1, provides the development of the Projected Cost of Gas or C-factor and Projected Sales for the computation period beginning December 1, 2016 through November 30, 2017.
- Schedule B, Pages 2 through 13, provide UGI PNG's forecasted PGC supply portfolio by month.
- Schedule C, Page 1, provides the computation of the Experienced Cost Factor or E-factor, which is comprised of the current and prior Supplier Refunds and current and prior period over/under collections, including interest.
- Schedule C, Page 2, provides the remaining ending balance of the "prior" Supplier Refunds previously reflected in the prior year's PGC 1307(f) proceeding. The ending balance is included in the E-factor computation shown on Schedule C, Page 1.
- Schedule C, Page 3, provides a list of "current" Supplier Refunds, representing Supplier Refunds that have been received by the Company and identified in this year's 1307(f) filing but not reflected in the prior year's 1307(f) proceeding, and the related interest component. Both the current Supplier Refunds and interest amount are included in the E-factor computation shown on Schedule C, Page 1.
- Schedule C, Page 4, provides the development of the prior under/over collection balance which is included in the E-factor computation shown on Schedule C, Page 1.
- Schedule C, Page 5, provides the monthly and total under/over collections and interest computation for the Historic Period (defined below) ending March 31, 2016.
- Schedule C, Page 6, provides the projected under/over collections and interest computation on a month-by-month basis for the Interim Period (defined below), April 1, 2016 through November 30, 2016. Schedule C, Page 6 also shows the current over/under collection and related interest amount over the PGC computation

period, December 2015 – November 2016, each of which is included in the E-factor computation shown on Schedule C, Page 1.

Q. Please summarize the computation of the proposed PGC rate for the twelve months beginning December 1, 2016.

A. As shown on Schedule A, the PGC rate of $3.0248 per Mcf is equal to the Projected Cost of Gas per Mcf (C/S), $3.1743, plus the Experienced Cost of Gas per Mcf (-E/S), ($0.1495). The Projected Cost of Gas or C-factor of approximately $69.2 MM is divided by Projected Sales (S) of approximately 21.8 Bcf, resulting in the Projected Cost per Mcf (C/S) of $3.1743. The Experienced Cost Factor or E-factor of $3,306,338 is divided by Total Sales, inclusive of Projected Sales and Migration Rider volumes of approximately 21.8 Bcf, resulting in the Experienced Cost per Mcf (-E/S) of ($0.1495).

Q. Please explain the development of the total Projected Cost of Gas, or C-factor, amount.

A. The projected cost of gas is shown on a month-by-month basis and in total for the twelve months period December 1, 2016 through November 30, 2017, on Schedule B, Page 1. Projected Capacity Release Credits, Off-System Sales Credits, Exchange Credits, and Asset Management Fee credits are all reflected in the C-factor computation. Schedule B, Pages 2 through 13 detail these projected costs by month.

Q. Please explain the development of the Projected Sales or "S" amount.

A. On an annual basis, UGI PNG projects sales volumes for the upcoming PGC computation period. The PGC sales forecast ending November 30, 2017 was used to estimate the monthly demand volumes provided in Attachments 1-B-1 and 1-B-2 of the Book 1 supporting information filed on April 29. In general, the process to forecast PGC sales takes into consideration various factors, including trending and regression analysis, customer growth, customer conservation, economic data, normal weather conditions and natural gas to alternate fuel price relationships. Schedule B, Page 1 shows the Projected Sales or "S" amount of 21.8 Bcf for the period beginning December 1, 2016 through November 30, 2017. Those sales projections form the basis for UGI PNG's forecasted PGC supply portfolio by month, and the resulting supply mix as shown on Schedule B, Pages 2 through 13. UGI PNG used a similar methodology to project sales volumes for the Interim Period of April 1, 2016 through November 30, 2016. Projected sales for this period are detailed monthly on Schedule C, Page 6, and are utilized to determine the annual E-Factor.

Q. How has the Company recognized Customer Choice volumes in the Projected Sales amount?

A. Estimated Customer Choice volumes of 2.9 Bcf have been excluded from PGC retail sales in developing the Projected Sales. Thus, the Projected Sales amount of 21.8 Bcf is net of the excluded Customer Choice volumes.

Q. Please explain the development of Experienced Cost Factor or E-factor.

A. The E-factor computation consists of two basic components: Supplier Refunds and over/under collections. Interest is included in both of these components.

Q. Please explain the Supplier Refund amounts included in the E-factor computation.

A. The Supplier Refunds and over/under collection amounts are further classified as "prior" or "current," where "prior" refers to the remaining balances of intended amounts for refund/recovery from the prior year's PGC 1307(f) proceeding that have not been fully refunded to or recovered from PGC customers due to variations in sales volumes and "current" refers to the intended amounts for refund/recovery which were not previously incorporated in the prior year's PGC rate components. The prior Supplier Refund Balance of $29,183 reflects the ending balance projected at November 30, 2016. This balance is detailed in Schedule C, Page 2, and is included in the E-factor computation on Schedule C, Page 1. As shown on Schedule C, Page 1, the current Supplier Refunds total $133,821. As shown on Schedule C, Page 3, the interest on the current Supplier Refund will be returned at the rate of six percent (6%). The related total interest amount of $11,635 is included in the E-factor computation on Schedule C, Page 1.

Q. How will Supplier Refunds be returned to UGI PNG's PGC customers?

A. Both prior and current Supplier Refunds will be returned to UGI PNG's customers through the E-Factor as applied to actual PGC sales beginning December 1, 2016.

Q. Please explain the over/under collection amount included in the E-Factor.

A. Schedule C, Page 1 provides the development of the prior and current over/under collections amounts plus interest. The current over collection is detailed at Schedule C, Pages 5 and 6 and includes the effect for UGI PNG's quarterly PGC rate increase of $0.3046 per Mcf implemented on June 1, 2016. The prior period over collection amount is also shown on Schedule C, Page 1 and detailed on Schedule C, Page 4. This amount is presently charged to the PGC customer class through the operation of the E-Factor. Also reflected in the remaining balance of the prior period over collection are the monthly amounts received from transportation customers through the application of the Migration Rider.

Q. Please explain how the Company determines the applicable interest rate to use in computing the total interest expense related to the over/under collection amount in the E-factor computation.

A. UGI PNG's current tariff allows for the refunding of interest on over collections and recovery of interest on under collections consistent with the provisions of 66 Pa.C.S. §1307(f)(5). While recovery of interest on under collections is allowed at the legal rate of interest at six percent (6%), the refunding of interest on over collections is required at the legal rate of interest, plus two percent, or at eight percent (8%). Consistent with the methodology approved by the Commission for the E-factor interest calculations at Docket No. R-00038410, the Company calculates interest on the over/under collections for two distinct periods: a historic 12-month period ending two months prior to the filing date of this proceeding ("Historic Period") and an 8-month interim period of projected over/under collections from the end of the Historic Period to the beginning of the rate effective period ("Interim Period"). The resulting net under/over collection amount in each period determines the applicable interest rate to be used to calculate the monthly interest expense in such period. The total amount of monthly interest expense over the PGC computation period, from the months of December 2015 through March 2016 of the Historic Period[1] plus the entire Interim Period, is then calculated on Schedule C, Page 6, and then carried into the E-Factor computation.

Q. Please summarize the development of the total interest expense included in the E-factor.

A. In this year's filing, the Historic Period is the 12-month period ending March 31, 2016, and the Interim Period represents the months of April 1, 2016 through November 30, 2016. As shown on Attachment 12-1 in Book 1 and Schedule C, Page 5, the Company was under collected in the Historic Period by an amount of $264,814. Thus, as shown on Schedule C, Page 5, the Company computed the monthly interest amounts in the Historic Period utilizing an interest rate of six percent (6%). As shown on Schedule C, Page 6, the Company is projected to be net under collected in the Interim Period by an amount of ($470,059) and the Company computed the monthly interest amounts in the Interim Period utilizing an interest rate of six percent (6%). The total amount of monthly interest expense calculated over the PGC computation period, December 2015 through November 2016, is shown on Schedule C, Page 6, in the amount of $248,016, which is included in the E-Factor computation shown on Schedule C, Page 1.

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1 The interest expense from the months April 2015 through November 2015 are already included in the December 1, 2015 compliance filing using the projected interest rate for the Historic Period from the prior year's 1307(f) filing.

Q. Please explain the development of the Total Sales used to calculate the Experienced Cost of Gas per Mcf (-E/S).

A. The projected sales used to calculate the Experienced Cost per Mcf (-E/S) were determined using the Projected Sales as described above and shown on Schedule A, Page 1, plus an additional 300,000 Mcf to reflect the annual projected transportation volumes subject to the Migration Rider for the PGC year beginning December 1, 2016. The inclusion of the Migration Rider volumes projection to compute the Experienced Cost per Mcf (-E/S) is consistent with the terms of the 2011 PGC 1307(f) Settlement approved by the Commission at Docket R-2011-2238943.

Revenue Sharing Incentive Mechanism

Q. Please describe UGI PNG's current Revenue Sharing Incentive Mechanism ("RSIM").

A. Rules applicable to UGI PNG's RSIM are set forth on page 31 of UGI PNG's Tariff – Gas P.U.C. No. 8. Briefly, net margins derived from off-system sales, exchanges, and capacity releases (excluding Choice and operational releases) are allocated 75% to the PGC and 25% to the Company. The current RSIM went into effect December 1, 2009. This current sharing mechanism is consistent with that of UGI Utilities, Inc. – Gas Division and UGI CPG.

Q. Is UGI PNG proposing to change the current sharing mechanism in this PGC Filing?

A. Yes. The current RSIM is set to expire November 30, 2016. UGI PNG is proposing to extend the current RSIM through November 30, 2021.

Retainage Rate

Q. Does UGI PNG retain a percentage of gas delivered on behalf of transportation service customers to reflect lost and unaccounted for ("LAUF") and company use gas (collectively, the "Retainage Rate")?

A. Yes, in a Commission-approved settlement of the 2009 PGC proceeding at Docket No. R-2009-2105909, UGI PNG agreed, among other things:

> 22. Beginning December 1, 2009, and each December 1 thereafter, to calculate the retainage rate for applicable transportation rate schedules as of December 1 each year by using a three-year average of actual lost and unaccounted for gas ("LAUF") and company use gas through September 30th of each year.

Consistent with this settlement provision, PNG established an initial Retainage Rate of 0.9% based on a three-year average of LAUF and company use gas for the three years ending September 30, 2009. The current Retainage Rate is 0.9%, as found on pages 51, 57, 63, 69, 73, 80 of its Gas Tariff. PNG will next update its Retainage Rate, at the time of its compliance filing in this proceeding, to reflect a three-year average of LAUF and company use gas through September 30, 2016.

Q. Please describe the Commission's regulations at 52 Pa. Code §59.111 addressing LAUF or Unaccounted for Gas ("UFG") reporting requirements and standards.

A. 52 Pa. Code §59.111 became effective in August of 2013. This regulation adopts a uniform definition of UFG, requires NGDCs to file annual reports on or before September 30, 2014 reporting UFG levels for the twelve months ending August 31 of each year, and establishes UFG standards which NGDCs have to address in annual PGC proceedings occurring after August 11, 2014.

Q. Has the Company filed its annual reports on UFG beginning with its first report on September 30, 2014?

A. Yes.

Q. In last year's PGC proceeding, did UGI PNG agree to provide a schedule that reconciles the volumes and calculations in its annual UFG report?

A. Yes. In a Commission approved settlement, UGI PNG agreed to provide this schedule, upon request in the form of discovery.

Q. Does this conclude your direct testimony?

A. Yes it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	
v.	:	
	:	
UGI PENN NATURAL GAS, INC.	:	Docket No. R-2016-2543314
	:	

DIRECT TESTIMONY
OF
ANGELINA M. BORELLI

PNG STATEMENT No. 2

Dated: June 1, 2016

Q. Please state your name and address.

A. Angelina M. Borelli; my business address is UGI Utilities, Inc., 2525 North 12th Street, Suite 360, Reading, Pennsylvania 19612.

Q. By whom are you employed, and in what capacity?

A. I am employed by UGI Utilities Inc. as Director - Gas and Electric Supply.

Q. Please briefly describe your responsibilities in that capacity.

A. As Director – Gas and Electric Supply, I am responsible for gas and electric supply planning, procurement, and scheduling for UGI Utilities, Inc. ("UGI"), UGI Penn Natural Gas, Inc. ("PNG"), and UGI Central Penn Gas, Inc. ("CPG") (collectively, the "UGI NGDCs" or the "Companies").

Q. What is your educational background?

A. Please see my resume that is attached as Exhibit UGI-AMB-1.

Q. Have you testified previously before the Pennsylvania Public Utility Commission?

A. Yes. I previously provided testimony in 2016 for UGI's Base Rate Case and UGI Electric Division's Default Service Petition. Please see Exhibit UGI-AMB-1 for the specific Docket numbers.

Q. Were portions of the information filed by PNG in this proceeding prepared by you or persons under your direct supervision and control?

A. Yes. I supervised the preparation of portions of the April 29, 2016 "Book 1" supporting information shown on the Table of Contents and Witness Index. Additionally, in this June 1, 2016 "Book 2" filing, I am sponsoring Schedule B, Pages 3 through 14.

Q. Is the information in these sections true and correct to the best of your knowledge and belief?

A. Yes.

Q. What topics will you address in your direct testimony?

A. My testimony addresses: (1) a review of Winter 2015-2016, (2) the calculation of projected peak day demand for Winter 2016-2017, (3) and an LNG supply for Forest City.

<u>Review of Winter 2015-2016</u>

Q. Was PNG able to supply the firm demand requirements of its core market customers during Winter 2015-2016 ?

A. Yes. PNG was able to fully supply its core market customers' firm demand this past winter. Although warmer than the previous two winters, PNG experienced a number of significantly colder than normal days with increased demand and many pipeline restrictions. As the capacity planner for its system, PNG holds primary firm assets for its core market customers, which include both PGC and Choice customers, to ensure reliable supply deliveries as well as sufficient no-notice balancing assets to meet unpredictable demand swings and supply disruptions.

Q. What were some of the pipeline restrictions PNG faced this past winter?

A. Transcontinental Gas Pipe Line ("Transco") issued operational flow orders ("OFOs") in December, January and February. For each individual gas day during the OFO periods, PNG had to ensure deliveries to its Transco city gates were at least within five percent of actual flows. PNG was able to comply with these OFOs and scheduled sufficient deliveries to its Transco city gates because it contracts for sufficient primary firm capacity on each pipeline to meet the peak day demand requirements of its core market customers.

In addition to the Transco OFO, Columbia Gas Pipeline also issued critical day notices. PNG was also able to comply with Columbia's restrictions by scheduling sufficient deliveries to its Columbia city gate because PNG contracts for sufficient primary firm capacity on each pipeline to meet the peak day demand requirements of its core market customers. Please see Exhibit PNG-AMB-2 for a copy of such a notice from each pipeline.

Q. How does PNG ensure reliable supply deliveries during periods of significantly colder than normal temperatures?

A. PNG contracts for primary firm asset-backed capacity to meet its projected firm peak daily, monthly and seasonal demand requirements for each upcoming winter. This capacity is comprised of firm transportation, firm delivered supply, firm storage, and firm peaking services. By contracting for sufficient firm capacity to meet projected demand during design cold conditions, PNG is able to meet its responsibilities as the supplier of last resort and ensure reliable supply deliveries to core market customers every day of the year.

Peak Day Demand

Q. Briefly describe the general methodology PNG uses to project firm peak day demand.

A. PNG plans to meet the anticipated peak day demand of its core market customers and firm transportation customers at the design cold temperature in its service territory established in a Commission-approved settlement in PNG's 2007 PGC proceeding at Docket No. R-00072334, and re-affirmed in a Commission-approved settlement of PNG's 2011 PGC proceeding at Docket No. R-2011-2238943. I think it is fair to say that the settled peak day temperature was intended to (a) reflect the potentially coldest day PNG might expect to experience over thirty years, updated every five years; (b) provide some certainty for planning purposes and (c) resolve disputes among the settling parties over the methodology for calculating peak day temperatures. Since design day temperatures are not experienced each year, and firm customer demand can be dynamic, PNG uses standard statistical techniques applied to actual historical winter data to project peak day demand before the adjustments discussed below. In general, firm customer usage is correlated with temperature, but other dynamic factors, including but not limited to customer conservation efforts (or lack thereof), appliance saturation, natural gas market pricing, changes in customer mix and changes in the general level of economic activity will also influence firm customer demand and will be reflected in the actual data used to extrapolate anticipated peak day demand. Once PNG uses standard statistical techniques to project firm peak day demand from historical usage data, it adjusts the results for growth and the known and anticipated contractual peak day firm requirement of its large firm transportation customers to determine its firm peak day demand requirement.

Q. What are PNG's projected firm peak day demands for the next five years?

A. PNG's projected firm peak day demand requirements for the next five winters are shown in Table 1 below. For illustrative purposes, I have also included the projected currently contracted firm capacity and the associated projected long or short capacity positions.

Table 1 – PNG's Projected Firm Peak Day Capacity Positions (Dth)

Winter	Projected Firm Peak Day Demand	Contracted Firm Capacity / Supply	Projected Capacity Length/(Shortfall)
2016-2017	634,610	623,380	(11,230)
2017-2018	637,206	623,222	(13,984)
2018-2019	639,802	623,222	(16,580)
2019-2020	642,398	623,222	(19,176)
2020-2021	644,994	623,222	(21,772)

Q. Is the projected firm peak day capacity for 2016-17 the same as what is shown on Attachments 14-1 and 14-2 of PNG's Book 1?

A. No. The quantity of supply received from an inter-company capacity release from CPG has been updated as a result of using incorrect temperature in CPG's peak day calculation. Please see Exhibits UGI-AMB-3 and UGI-AMB-4 for revised Attachments 14-1 and 14-2.

Q. Can you describe the process PNG used to calculate the above results?

A. As discussed in the previous section of my direct testimony, PNG experienced a day on Saturday, February 13, 2016, that, while not a design cold peak day with a mean temperature of -6 degrees Fahrenheit, it was a day where PNG experienced a mean temperature of 2 degrees Fahrenheit. Given the relatively cold temperature experienced on February 13, 2016, PNG started with the actual firm demand on this day, adjusted for the day of the week, and extrapolated, using standard statistical techniques, what its firm demand would be at a design cold temperature of -6 degrees to develop its projection shown above.

Q. Did PNG look at any alternative methods to project firm peak day demand?

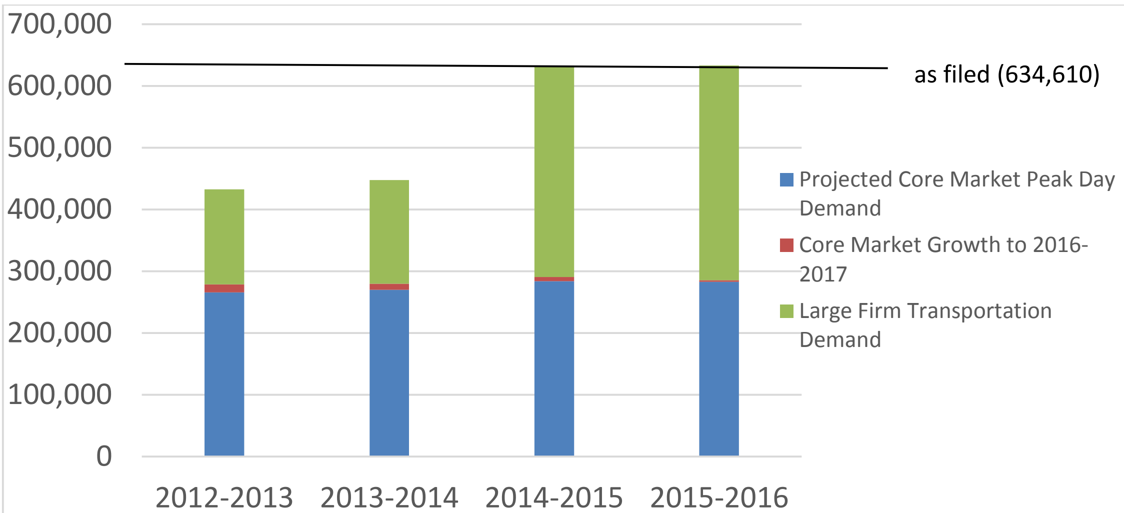
A. Yes. PNG developed peak day demands by performing individual linear regression analyses on firm core market demand for each of the past four winters, and then averaging the results from the last four of these winters.

Q. What were the results of the analysis of each of the past four winters?

A. The resulting peak day from this method is 631,239 dth. Chart 2 below shows the projected peak day demand for each of the past four years using individual linear regression results for the core market plus growth from each year to 2016-2017 as well as 2016-2017's large firm transportation contractual peak day demand.

Chart 2 – PNG's Projected 2016-2017 Firm Peak Day Demand (Dth)

Based on Data from Each of the Previous Four Years



Q. **Why didn't PNG accept the results from this methodology?**

A. PNG analyzed this result and determined the projected peak day demand was being underestimated since actual firm demand on Saturday, February 13, 2016, exceeded what this linear equation would have projected at the same mean temperature.

Q. **Please briefly explain the inclusion of growth numbers in PNG's projected peak day demands for Winter 2016-2017 through Winter 2019-2020.**

A. PNG adds customer growth projections to the upcoming winter to project future peak day demands for each subsequent winter.

Q. **Is PNG's projected firm peak day demand growing?**

A. Yes. PNG is projecting, consistent with historical experience, firm demand growth due to customer additions resulting from new construction; conversions to natural gas from alternative energy sources such as heating oil, propane, and electricity; and customers upgrading the number or type of their appliances, such as, for example, a customer who previously only used gas for cooking upgrading to gas heat. PNG has specifically seen significant interest from large electric generation facilities due to the proximity to lower costs Marcellus shale supplies and access to the electric transmission facilities. In addition, there are interruptible transportation customers who have switched from interruptible service to firm service. It is also likely that customer additions from new construction will accelerate as the construction market rebounds from historic lows. In addition, PNG is in the second year of its five-year Growth Extension Tariff ("GET Gas") pilot program, for which each of the UGI NGDCs will be investing $5 million per year to extend its natural gas distribution system to unserved and under-served areas. GET Gas provides prospective customers with the opportunity to switch to natural gas and spread the line extension costs over a 10-year period. Given the price advantage natural gas has over competing energy products, more customers have been switching to natural gas, a trend PNG expects to continue while natural gas pricing remains the more economic fuel. Partially offsetting the growth in peak day demand is the long-term decrease in use per customer resulting from gains in energy efficiency.

Q. How does PNG plan to contract for supply to meet the projected demand growth?

A. Due to PNG's projected demand growth over the next several years, as shown in Table 1 above, PNG plans to issue a Request-for-Proposal for a 5-year delivered service for Winter 2016-2017 through Winter 2020-2021 to cover the projected capacity shortfalls shown in Table 1 and to roll-over certain existing peaking contracts, which is discussed in UGI Statement No. 3, the Direct Testimony of David C. Beasten.

LNG Supply Service to Forest City

Q. Please describe PNG's distribution pipeline system used to supply Forest City, Pennsylvania with natural gas.

A. PNG receives gas from its Tennessee gate station in Susquehanna County, Pennsylvania known as the Uniondale gate station. From there the supply flows into two separate feeds flowing south into the distribution system; the western line flows into Scranton, the eastern line serves Forest City. Supply serving Forest City travels south approximately five miles from the point it flows through the Uniondale gate station.

Q. Is there any work being done to the distribution system in that area?

A. Yes, PNG has taken a portion of the eastern line out of service in order to conduct maintenance and upgrades. This work will be completed during the months of April through October during 2016 and 2017. During this period, PNG will be unable to supply Forest City with natural gas from the Uniondale gate station. As a result an alternate supply source for Forest City is required.

Q. What are the estimated natural gas supply requirements for Forest City during the summer?

A. Forest City consumes approximately 250 dth per day or 50,000 dth during the months of April through October.

Q. Has PNG identified an alternate supply solution for Forest City?

A. Yes, PNG has identified temporary LNG storage and vaporization as a supply solution for Forest City.

Q. Has PNG selected an LNG supplier?

A. Yes, On January 28, 2016, PNG sent an RFP for LNG Service to a list of potential suppliers. A copy of the RFP is included as Exhibit PNG-AMB-5. Responses were received from three suppliers from which Prometheus Energy was selected.

Q. How will the PGC customers be impacted by the LNG supply costs?

A. The LNG supply will ensure no disruption of service to the customers in Forest City for the duration of PNG's work on its distribution system. PNG proposed to include the costs incurred for the LNG supply service in its PGC rate.

Q. Does this conclude your testimony?

A. Yes.

EXHIBIT PNG-AMB-1

(Resume and Educational Background)

Angelina M. Borelli
Director – Gas and Electric Supply

Work Experience

2015 – current	Director – Gas and Electric Supply UGI Utilities, Inc., Reading, PA
2014 – 2015	Director – Gas Supply UGI Energy Services, LLC. Wyomissing, PA
2009 – 2014	Manager – Gas Supply and Transportation UGI Energy Services, LLC. Wyomissing, PA
2006 – 2009	Administrator – Assets & Wholesale Services UGI Energy Services, LLC. Wyomissing, PA
2000 – 2006	Analyst – Gas Supply UGI Utilities, Inc., Reading, PA

Previous Testimony

Default Service Plan:	Docket Nos. P-2016-2543523, G-2016-2543527
Base Rate Case:	Docket-2015-2518438

Education

M.S Finance from Penn State University, 2008
B.S. in Business Administration from Albright College, 2006
A.A.S in Law Enforcement Administration from RACC, 2000

EXHIBIT PNG-AMB-2

(Pipeline Restriction Notices)

You have requested email notification of notices from Columbia Gas Transmission, LLC. Please see the following notice which has also been posted on our Infopost site:

Subject: Transport Critical Day for Monday, January 11, 2016

Body:

Pursuant to the General Terms & Conditions of TCO's FERC Gas Tariff, Section 19.7, shippers are advised that based on weather forecasts and markets a Transport Critical Day(s) is necessary in Operating Areas 1, 4 and 10 (Market Areas listed below). Please note the following:

Transport Critical Days: Monday, January 11, 2016 and until further notice

Applicable Market Areas: All Market Areas in Operating Areas 1, 4 and 10 (Market Areas listed below)

Applicable Penalty: TFE – If Shipper's takes on any Day exceed the greater of 103 percent of or 1,000 Dths more than its Total Firm Entitlement (TFE), Shipper shall be assessed and pay a penalty based on the higher of: (i) a price per Dth equal to three times the midpoint of the range of prices reported for "Columbia Gas, Appalachia" as published in Platts Gas Daily price survey for all such quantities in excess of its TFE, or (ii) a price per Dth equal to 150 percent of the highest midpoint posting for either: Mich Con City-gate, Transco, Zone 6 Non-N.Y., or Texas Eastern, M-2 Receipts as published in Platts Gas Daily price survey for all such quantities in excess of its TFE. Section 19.1(ii) penalties will only be assessed on days in which the daily spot price of gas exceeds three times the midpoint of the range of prices reported for "Columbia Gas, Appalachia.

NOTE: Takes in excess of Total Firm Entitlements ("TFE") are penalized on Critical Days based on takes exceeding the aggregate daily amount of gas that **TCO is obligated to deliver** to a shipper under the shipper's applicable rate schedule. Each applicable rate schedule outlines this delivery obligation and, consequently, a shipper's TFE. (Notice ID 25678425 posted on December 1, 2015 explains in detail)

Columbia will be evaluating whether shippers have exceeded their TFE within the specific Market Areas affected by the Critical Day. Firm entitlements in other Market Areas will not be included in determining whether a shipper's flows are within their TFE in any Market Area subject to the Critical Day.

TCO is evaluating the need for Critical Days for transport beyond Monday, January 11, 2016, and will notify customers as soon as possible. If you have questions, please contact your Customer Services Representative.

MARKET AREAS:

Operating Area 1 – MA33 and 34

Operating Area 4 – MA 21, 22, 23, 24, 25 and 29

Operating Area 10 – MA 28, 30 and 31

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

Critical:	Y
Notice Eff Date:	02/09/2016
Notice Eff Time:	09:00:00 CST
Notice End Date:	
Notice End Time:	
Notice ID:	7068999
Notice Stat Desc:	Initiate
Notice Type Desc:	OFO
Post Date:	02/08/2016
Post Time:	06:36:16 CST
Prior Notice:	0
Reqrd Rsp Desc:	No response required
Rsp Date:	
Rsp Time:	
TSP:	007933021
TSP Name:	TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

Notice Text:

Subject: Imbalance Operation Flow Order (OFO)

Transco recently provided notice of limited flexibility to manage imbalances and recommended shippers maintain a concurrent balance of receipts and deliveries. In order to ensure system integrity, maintain safe operations, manage imbalances, and handle within-the-day volatility, Transco is issuing an Imbalance Operational Flow Order (OFO).

Beginning Gas Day:	Tuesday, February 09, 2016
OFO Area(s):	Zones 4, 5 & 6
Type of OFO:	Imbalance
Type of Imbalance:	Due From Shipper
Transactions Include:	Deliveries*
Beginning Cycle:	Timely
Duration:	Until further notice
Tolerance % Allowed (or 1000 dth, whichever is greater):	5%
Affected Shipper(s) (DUNS #):***	
Affected Location(s) (DRN #/Loc ID):****	All
OBA Subject to OFO:	No
If Yes, OBA Parties (DUNS #):***	

* OFO based on all transactions with deliveries in affected OFO area.

**OFO based on all transactions with receipts in affected OFO area.

*** If specific DUNS #s have been identified, only imbalances created by those shippers/OBA parties will be subject to the OFO provisions.

****If specific DRN #/Loc ID's have been identified, only imbalances created at those location(s) will be subject to the OFO provisions.

This OFO is directed to shippers consistent with Section 52 of Transco's FERC Gas Tariff General Terms and Conditions with a minimum of $50 per dt per day penalty. This OFO will continue until further notice. Buyers with imbalances greater than the allowed tolerance will be subject to penalties specified in Section 52 of Transco's FERC Gas Tariff General Terms and Conditions.

Additional information on Operational Flow Orders is available at this link:

http://www.1line.williams.com/Transco/files/Training/critical day.pdf

Please contact your Transportation Services Representative if you have any questions.

EXHIBIT PNG-AMB-3

(Revised Attachment 14-1)

Attachment 14-1

UGI Penn Natural Gas, Inc
Peak Day Capacity Requirements and Supply Options
(Dth/D)

Pipeline/Supplier	Upstream Pipeline	Rate Schedule	2016-2017 (Projected)
Transco		FT	12,279
Transco		FT	500
Transco		PS-FT	3,416
Transco		GSS	56,532
Transco		SS-2	25,875
Transco		LSS	7,518
Transco to UGI Utilities		Sale	(7,000)
Transco to UGI CPG		Sale	(4,049)
Transco Release from UGI CPG			2,837
Tennessee		FT	2,885
Tennessee		FT	34,000
Columbia		FTS	12,825
Columbia	Columbia Gulf	FTS / FTS-1	5,707
Columbia		SST / FSS	500
Columbia Release to UGI Utilities			(13,800)
Columbia Release to UGI CPG			(2,679)
UGI Energy Services		Delivered Supply	99,525
UGI Energy Services		Peaking I	47,500
TBD		Delivered Supply/Peaking Service	11,230
Subtotal			**295,601**
Third Party Capacity - Large Customers			**339,009**
Total Firm Capacity			**634,610**

PGC Requirements	256,268
CHOICE Requirements	30,640
Subtotal	**286,908**
Firm Transportation Requirements	**347,702**
Total Requirements	**634,610**

Long/(Short)	**0**

EXHIBIT PNG-AMB-4

(Revised Attachment 14-2)

Load Duration Analysis

Firm Equation Under Design Conditions for the Winter of 2016-2017
UGI Utilities. Inc.

	HAZ °F	PRIM °F	Total Demand	3rd Party FT 78.986	UGIES Del. Supply 10.000	TETCO FT 158.866	Columbia FT 117.470	Transco FTF 22.770	Transco FT 14.153	Transco PS-FT 1.346	Dominion FTS-7 5.880	Transco SS-2 7.245	Dominion FTS-5 6.667	Transco GSS 1.744	ANR FSS 46.713	Columbia FSS 114.649	Peaking III 82.658	Peaking I 25.000	Peaking II 118.197	Delivered Supply 14.977
1	-8.00	-3.60	827.320	78.986	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	82.658	25.000	118.196	14.977
2	-2.53	5.94	686.384	74.177	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	35.936	10.869	51.387	6.511
3	-0.32	7.86	669.710	73.212	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	30.545	9.238	43.678	5.535
4	1.65	9.52	655.197	72.373	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	25.852	7.819	36.967	4.684
5	3.48	10.66	645.123	71.799	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	22.591	6.833	32.304	4.093
6	5.00	11.57	637.049	71.340	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	19.977	6.042	28.567	3.620
7	5.51	12.68	627.591	70.779	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	16.924	5.119	24.200	3.066
8	6.41	13.28	622.364	70.480	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	15.232	4.607	21.781	2.760
9	7.47	13.79	617.727	70.220	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	13.730	4.153	19.633	2.488
10	8.19	14.56	611.119	69.835	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	11.594	3.507	16.579	2.101
11	8.64	15.16	605.981	69.533	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	9.935	3.005	14.206	1.800
12	9.09	15.45	603.420	69.387	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	9.106	2.754	13.021	1.650
13	9.64	15.98	598.773	69.117	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	7.603	2.300	10.873	1.378
14	10.08	16.57	593.771	68.823	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	5.987	1.811	8.562	1.085
15	10.97	16.99	589.968	68.610	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	4.755	1.438	6.800	0.862
16	11.44	17.75	583.423	68.224	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	2.642	0.799	3.777	0.479
17	11.99	18.14	580.050	68.030	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.649	1.550	0.469	2.217	0.281
18	12.35	18.71	575.163	67.742	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	114.567	0.000	0.000	0.000	0.000
19	12.95	18.95	573.001	67.623	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	112.524	0.000	0.000	0.000	0.000
20	13.16	19.31	569.872	67.438	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	109.580	0.000	0.000	0.000	0.000
21	13.24	19.82	565.651	67.184	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	105.612	0.000	0.000	0.000	0.000
22	13.78	20.10	563.095	67.040	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	103.201	0.000	0.000	0.000	0.000
23	14.19	20.62	558.665	66.781	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	99.031	0.000	0.000	0.000	0.000
24	14.71	20.98	555.482	66.598	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	96.030	0.000	0.000	0.000	0.000
25	15.00	21.24	553.225	66.467	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	93.904	0.000	0.000	0.000	0.000
26	15.39	21.71	549.197	66.232	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	90.112	0.000	0.000	0.000	0.000
27	15.70	21.95	547.036	66.107	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	88.075	0.000	0.000	0.000	0.000
28	16.14	22.13	545.406	66.017	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	86.535	0.000	0.000	0.000	0.000
29	16.48	22.49	542.339	65.838	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	83.647	0.000	0.000	0.000	0.000
30	16.88	22.84	539.294	65.662	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	80.778	0.000	0.000	0.000	0.000
31	17.13	23.13	536.799	65.516	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	78.429	0.000	0.000	0.000	0.000
32	17.59	23.60	532.712	65.278	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	74.581	0.000	0.000	0.000	0.000
33	17.68	24.03	529.072	65.060	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	71.159	0.000	0.000	0.000	0.000
34	17.97	24.23	527.349	64.961	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	69.534	0.000	0.000	0.000	0.000
35	18.10	24.52	524.840	64.812	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	67.175	0.000	0.000	0.000	0.000
36	18.43	24.86	521.946	64.643	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	64.449	0.000	0.000	0.000	0.000
37	18.91	24.98	520.734	64.579	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	63.301	0.000	0.000	0.000	0.000
38	19.34	25.14	519.334	64.503	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	61.977	0.000	0.000	0.000	0.000
39	19.35	25.46	516.623	64.339	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.744	46.713	59.430	0.000	0.000	0.000	0.000
40	19.56	25.76	514.094	64.190	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	57.067	0.000	0.000	0.000	0.000
41	19.83	26.12	510.961	64.007	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	54.118	0.000	0.000	0.000	0.000
42	20.18	26.36	508.821	63.884	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	52.100	0.000	0.000	0.000	0.000
43	20.38	26.65	506.343	63.738	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	49.769	0.000	0.000	0.000	0.000
44	20.61	26.99	503.451	63.568	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	47.047	0.000	0.000	0.000	0.000
45	20.92	27.09	502.506	63.516	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	46.153	0.000	0.000	0.000	0.000
46	21.03	27.26	501.084	63.433	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	44.814	0.000	0.000	0.000	0.000
47	21.53	27.56	498.407	63.281	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.727	46.713	42.290	0.000	0.000	0.000	0.000
48	21.67	27.75	496.767	63.184	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	41.182	0.000	0.000	0.000	0.000
49	21.96	27.94	495.125	63.090	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	39.634	0.000	0.000	0.000	0.000
50	22.14	28.18	493.019	62.967	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	37.652	0.000	0.000	0.000	0.000
51	22.37	28.32	491.834	62.900	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	36.534	0.000	0.000	0.000	0.000
52	22.50	28.50	490.307	62.810	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	35.097	0.000	0.000	0.000	0.000
53	23.01	28.75	488.029	62.682	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	32.947	0.000	0.000	0.000	0.000
54	23.13	29.01	485.848	62.552	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	30.895	0.000	0.000	0.000	0.000
55	23.47	29.13	484.681	62.488	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	29.792	0.000	0.000	0.000	0.000
56	23.86	29.33	482.947	62.391	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	28.156	0.000	0.000	0.000	0.000
57	23.97	29.56	480.948	62.272	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	26.274	0.000	0.000	0.000	0.000
58	24.32	29.72	479.499	62.192	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	1.291	46.713	24.907	0.000	0.000	0.000	0.000
59	24.42	29.90	478.020	62.104	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	46.713	23.846	0.000	0.000	0.000	0.000
60	24.55	30.05	476.676	62.025	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	15.842	53.452	0.000	0.000	0.000	0.000
61	24.76	30.33	474.268	61.884	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	0.000	67.028	0.000	0.000	0.000	0.000
62	25.23	30.45	473.133	61.824	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	0.000	65.952	0.000	0.000	0.000	0.000
63	25.25	30.55	472.287	61.774	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	0.000	65.157	0.000	0.000	0.000	0.000
64	25.37	30.84	469.884	61.631	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.959	0.000	62.897	0.000	0.000	0.000	0.000
65	25.60	31.13	467.341	61.482	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.667	0.342	0.000	61.120	0.000	0.000	0.000	0.000
66	25.66	31.30	465.883	61.395	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	60.625	0.000	0.000	0.000	0.000
67	26.15	31.46	464.431	61.316	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	59.251	0.000	0.000	0.000	0.000
68	26.45	31.63	462.870	61.228	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	57.779	0.000	0.000	0.000	0.000
69	26.61	31.94	460.305	61.076	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	55.366	0.000	0.000	0.000	0.000
70	26.91	32.07	459.061	61.006	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	54.191	0.000	0.000	0.000	0.000
71	27.23	32.13	458.518	60.980	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	53.674	0.000	0.000	0.000	0.000
72	27.17	32.39	456.337	60.847	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	51.626	0.000	0.000	0.000	0.000
73	27.48	32.58	454.667	60.752	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	50.052	0.000	0.000	0.000	0.000
74	27.61	32.77	453.002	60.654	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	48.485	0.000	0.000	0.000	0.000
75	27.68	32.87	452.169	60.605	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	47.700	0.000	0.000	0.000	0.000
76	27.88	32.87	452.106	60.605	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	47.638	0.000	0.000	0.000	0.000
77	27.99	33.03	450.720	60.523	10.000	158.866	117.470	22.770	14.153	1.346	5.880	7.245	6.134	0.000	0.000	46.333	0.000	0.000	0.000	0.000

Load Duration Analysis

Firm Equation Under Design Conditions for the Winter of 2016-2017

UGI Utilities. Inc.

	HAZ °F	PRIM °F	Total Demand	3rd Party FT 78.986	UGIES Del. Supply 10.000	TETCO FT 158.866	Columbia FT 117.470	Transco FTF 22.770	Transco FT 14.153	Transco PS-FT 1.346	Dominion FTS-7 5.880	Transco SS-2 7.245	Dominion FTS-5 6.667	Transco GSS 1.744	ANR FSS 46.713	Columbia FSS 114.649	Peaking III 82.658	Peaking I 25.000	Peaking II 118.197	Delivered Supply 14.977
78	28.39	33.14	449.676	60.468	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	45.949	0.000	0.000	0.000	0.000
79	28.48	33.28	448.524	60.400	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	44.865	0.000	0.000	0.000	0.000
80	28.55	33.44	447.154	60.318	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	43.576	0.000	0.000	0.000	0.000
81	28.56	33.55	446.241	60.263	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	17.421	8.683	2.626	12.416	1.573
82	28.74	33.64	445.442	60.219	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	0.000	14.403	4.356	20.595	2.610
83	29.13	33.86	443.440	60.105	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	0.000	14.538	4.397	18.507	2.634
84	29.26	34.16	440.903	59.954	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	0.000	14.881	4.501	15.612	2.696
85	29.27	34.38	439.079	59.844	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	0.000	15.348	4.642	13.204	2.781
86	29.41	34.51	437.912	59.777	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	6.134	0.000	0.000	0.000	15.968	4.829	11.186	2.893
87	29.49	34.74	435.963	59.660	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	4.667	0.000	0.000	0.000	16.844	5.094	9.520	3.052
88	30.02	35.01	433.560	59.525	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	4.667	0.000	0.000	0.000	16.674	5.043	7.504	3.021
89	30.15	35.14	432.453	59.461	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	4.667	0.000	0.000	0.000	16.929	5.120	6.082	3.067
90	30.24	35.25	431.511	59.406	10.000	158.866	117.470	22.770	14.153	1.346	5.880	6.641	4.667	0.000	0.000	0.000	17.133	5.182	4.894	3.104
91	30.31	35.41	430.192	59.327	10.000	158.866	117.470	22.770	14.153	0.000	5.880	6.641	4.667	0.000	0.000	0.000	17.787	5.380	4.028	3.223
92	30.50	35.54	429.033	59.261	10.000	158.866	117.470	22.770	14.153	0.000	5.880	6.641	4.667	0.000	0.000	0.000	17.651	5.339	3.137	3.198
93	30.68	35.80	426.800	59.129	10.000	158.866	117.470	22.770	14.153	0.000	5.880	6.641	4.667	0.000	0.000	0.000	16.769	5.072	2.344	3.038
94	30.71	35.95	425.509	59.052	10.000	158.866	117.470	22.770	14.153	0.000	5.880	6.641	4.667	0.000	0.000	0.000	16.307	4.932	1.817	2.955
95	31.00	36.14	423.815	58.955	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.667	0.000	0.000	0.000	15.988	4.836	1.430	2.897
96	31.14	36.33	422.181	58.859	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	15.477	4.681	1.116	2.804
97	31.40	36.44	421.210	58.806	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	15.018	4.542	0.880	2.721
98	31.46	36.54	420.383	58.757	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	14.615	4.420	0.701	2.648
99	31.57	36.69	419.108	58.682	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	13.908	4.206	0.549	2.520
100	32.02	36.93	416.891	58.556	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	12.590	3.808	0.414	2.281
101	32.29	37.13	415.152	58.456	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.903	4.200	0.000	0.000	0.000	11.547	3.492	0.322	2.092
102	32.44	37.31	413.635	58.368	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	11.021	3.333	0.264	1.997
103	32.58	37.53	411.737	58.256	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	9.857	2.981	0.205	1.786
104	32.86	37.63	410.791	58.204	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	9.278	2.806	0.170	1.681
105	32.97	37.73	409.987	58.157	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	8.785	2.657	0.143	1.592
106	33.08	37.90	408.469	58.068	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	7.842	2.372	0.114	1.421
107	33.32	38.13	406.497	57.953	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	6.609	1.999	0.087	1.197
108	33.49	38.30	405.048	57.869	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	5.701	1.724	0.069	1.033
109	33.67	38.46	403.613	57.786	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	4.200	0.000	0.000	0.000	4.799	1.452	0.054	0.870
110	33.75	38.56	402.776	57.737	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	3.701	0.000	0.000	0.000	4.609	1.394	0.049	0.835
111	34.04	38.73	401.317	57.654	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	0.000	0.000	0.000	0.000	6.167	1.865	0.062	1.117
112	34.11	38.86	400.167	57.586	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	0.000	0.000	0.000	0.000	5.445	1.647	0.050	0.987
113	34.16	39.15	397.774	57.442	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	0.000	0.000	0.000	0.000	3.940	1.192	0.034	0.714
114	34.60	39.33	396.114	57.351	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	0.000	0.000	0.000	0.000	2.890	0.874	0.024	0.524
115	34.66	39.56	394.114	57.231	10.000	158.866	117.470	22.770	14.153	0.000	5.880	5.313	0.000	0.000	0.000	0.000	1.630	0.493	0.013	0.295
116	34.78	39.75	392.507	57.136	10.000	158.866	117.470	22.770	14.153	0.000	5.880	0.769	0.000	0.000	0.000	0.000	3.663	1.108	0.029	0.664
117	35.02	40.03	390.110	56.996	10.000	158.866	117.470	22.770	14.153	0.000	5.880	0.000	0.000	0.000	0.000	0.000	2.666	0.806	0.020	0.483
118	35.09	40.12	389.321	56.949	10.000	158.866	117.470	22.770	14.153	0.000	5.880	0.000	0.000	0.000	0.000	0.000	2.169	0.656	0.016	0.393
119	35.43	40.26	388.079	56.881	10.000	158.866	117.470	22.770	14.153	0.000	5.880	0.000	0.000	0.000	0.000	0.000	1.381	0.418	0.010	0.250
120	35.70	40.53	385.756	56.746	10.000	158.866	117.470	22.770	14.153	0.000	5.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
121	35.79	40.66	384.618	56.679	10.000	158.866	117.470	22.770	14.153	0.000	4.681	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122	35.96	40.95	382.149	56.533	10.000	158.866	117.470	22.770	14.153	0.000	2.357	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
123	36.04	41.12	380.677	56.445	10.000	158.866	117.470	22.770	14.153	0.000	0.972	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
124	36.22	41.19	380.063	56.412	10.000	158.866	117.470	22.770	14.153	0.000	0.392	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125	36.38	41.42	378.077	56.295	10.000	158.866	117.470	22.770	12.676	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
126	36.49	41.59	376.638	56.210	10.000	158.866	117.470	22.770	11.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127	36.66	41.89	374.119	56.061	10.000	158.866	117.470	22.770	8.952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
128	37.00	42.03	372.849	55.991	10.000	158.866	117.470	22.770	7.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
129	37.23	42.07	372.401	55.968	10.000	158.866	117.470	22.770	7.327	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130	37.32	42.21	371.199	55.897	10.000	158.866	117.470	22.770	6.196	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
131	37.48	42.37	369.801	55.816	10.000	158.866	117.470	22.770	4.879	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132	37.54	42.59	367.964	55.706	10.000	158.866	117.470	22.770	3.152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
133	37.75	42.82	365.947	55.588	10.000	158.866	117.470	22.770	1.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
134	37.90	43.00	364.407	55.498	10.000	158.866	117.470	22.573	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	37.98	43.15	363.124	55.422	10.000	158.866	117.470	21.366	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
136	38.17	43.24	362.369	55.380	10.000	158.866	117.470	20.653	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137	38.44	43.50	360.076	55.247	10.000	158.866	117.470	18.493	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
138	38.49	43.66	358.764	55.169	10.000	158.866	117.470	17.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
139	38.63	43.78	357.694	55.107	10.000	158.866	117.470	16.251	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140	38.75	43.89	356.696	55.049	10.000	158.866	117.470	15.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
141	38.88	44.06	355.274	54.965	10.000	158.866	117.470	13.973	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142	39.04	44.28	353.383	54.854	10.000	158.866	117.470	12.194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
143	39.18	44.37	352.585	54.808	10.000	158.866	117.470	11.440	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
144	39.30	44.51	351.430	54.741	10.000	158.866	117.470	10.353	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145	39.58	44.66	350.011	54.661	10.000	158.866	117.470	9.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
146	39.82	44.87	348.204	54.556	10.000	158.866	117.470	7.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147	40.03	45.00	347.066	54.491	10.000	158.866	117.470	6.239	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
148	40.17	45.12	346.041	54.432	10.000	158.866	117.470	5.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
149	40.49	45.26	344.770	54.361	10.000	158.866	117.470	4.073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150	40.72	45.51	342.634	54.237	10.000	158.866	117.470	2.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
151	40.91	45.72	340.814	54.130	10.000	158.866	117.470	0.348	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UGI Utilities, Inc.
LOAD DURATION ANALYSIS
Firm Design Conditions for the Winter of 2016-2017

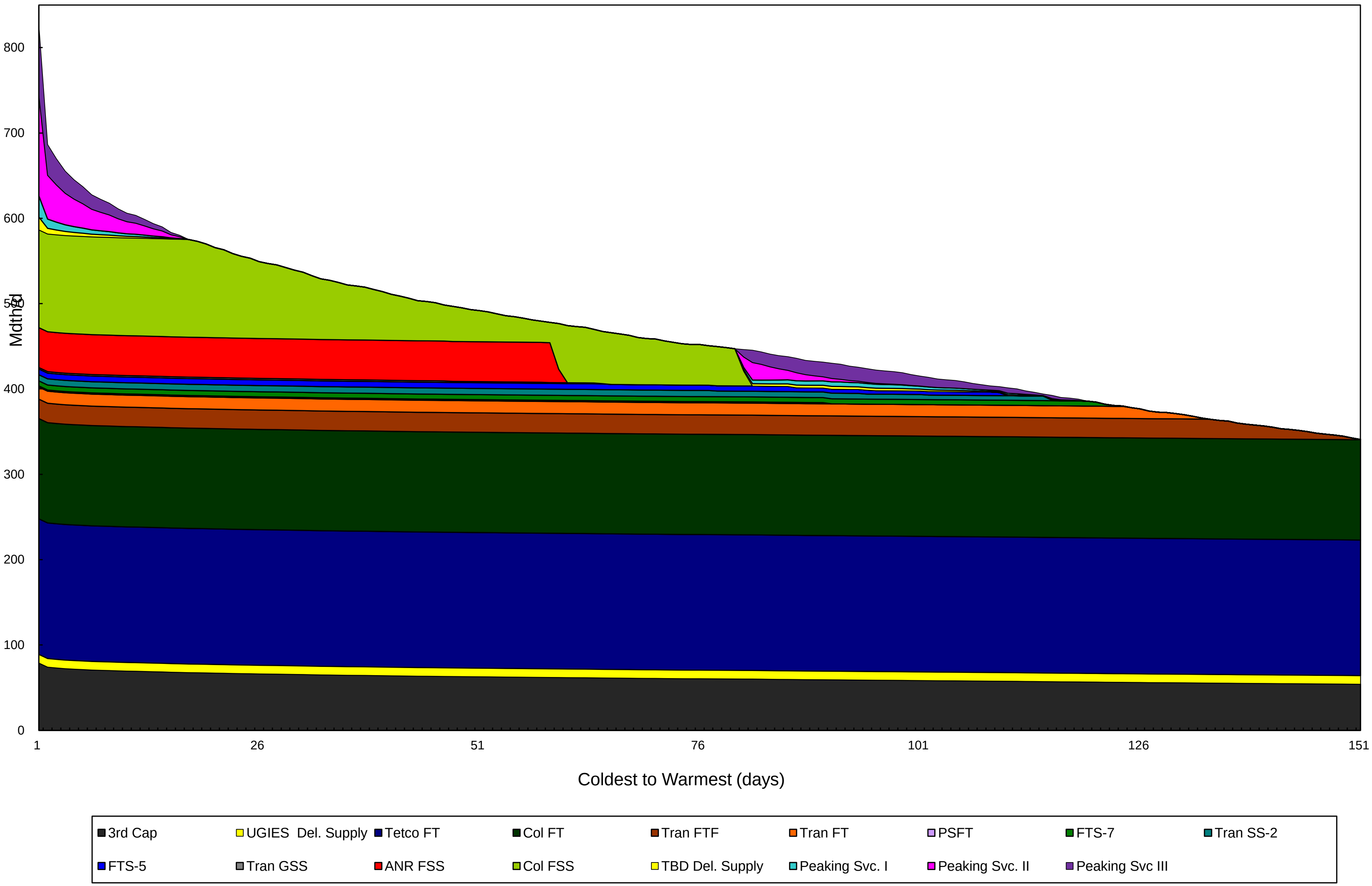


EXHIBIT PNG-AMB-5

(LNG RFP)

UGI Penn Natural Gas, Inc.
Request for Proposal
LNG Supply Service

UGI Penn Natural Gas, Inc. ("PNG") is announcing a request for proposal ("RFP") for a firm liquefied natural gas ("LNG") supply service meeting the specifications set forth below. Bidders will be required to provide and operate a temporary LNG storage and vaporization facility ("LNG Facility") to provide pressure support for PNG's natural gas distribution system in Forest City, Pennsylvania as well as the associated LNG supply.

The information contained herein has been prepared to assist interested bidders in developing their bids for this service, and does not purport to contain all of the information that may be relevant to or desired by a prospective bidder. PNG makes no representation or warranty (expressed or implied) as to the accuracy or completeness of the information in this RFP, nor shall PNG have any liability for any representations or admissions (expressed or implied) contained in this RFP, or any other associated written or oral communications during the course of this bidding process.

Unless otherwise mutually agreed, PNG will require the winning bidder to have a master North American Energy Standards Board ("NAESB") contract with PNG, and to agree to the enhanced force majeure provisions set forth below to ensure the reliability of supply. The enhanced force majeure provisions will supersede any inconsistent provisions set forth in any master NAESB contract between the bidder and PNG, and will be incorporated in the Confirmation Agreement exchanged with the winning bidder. PNG will also require the winning bidder to agree to the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank") provisions set forth below, which will be incorporated in the Confirmation Agreement.

Responses must include the following information:

1. Description of the vendor
2. Relevant qualifications
3. Technical and physical description of the proposed LNG facility, including:
    a. Facility layout
    b. Description of equipment being used, orientation, and process
    c. Demonstration that the proposed LNG Facility satisfies all of the technical specifications set forth in this RFP.
4. Operational documentation including:
    a. Operations and safety manual
    b. Draft delivery procedures – scheduling, notification of arrival of each load
    c. Primary and alternate LNG supply source details
5. Compensation and fees

Responses are to be submitted electronically via email to Edward L. Farber by the close of business Friday, February 19, 2016. By submitting a proposal to PNG, you, as a bidder, are agreeing to accept an award of service. PNG will respond to all submitted responses in a timely manner. PNG reserves the right to reject any and all proposals.

LNG Supply Service – Forest City, PA

Initial Term:
April 1, 2016 through October 31, 2016

Contract Renewal:
PNG shall have a contractual right to renew the supply service upon expiration of the Initial Term. PNG prefers renewal pricing for any proposed demand charges linked to a government inflator such as the gross domestic product, producer price index or consumer price index.

Specifications
The LNG Facility must be capable of providing natural gas under the following conditions:

Maximum Daily Quantity: 330 dth
Maximum Hourly Quantity: 17 mscfh
Delivery Pressure: 90 psig or regulated to 58 psig

PNG requires the vendor to meet its Gas Quality specifications defined in Exhibit A.

PNG requires that the LNG Facility be directly controlled, operated and maintained by the vendor. Control of the LNG system's natural gas flow and final pressure shall be via control valve and final pressure regulation valves provided by PNG at the point of connection to the PNG distribution system.

The LNG Facility is expected to have peak usage in the morning hours and is expected to use on average 100-330 dth per day over approximately 214 days. The total anticipated seasonal quantity of LNG is estimated to be 30,000 to 64,000 dth. The LNG Facility should have a minimum of 10,000 gallons of LNG storage on-site at all times. The vendor must have LNG firmly secured for a quantity up to 775,000 gallons over the 1 year term.

Pricing:
PNG will consider all pricing options including but not limited to a demand charge based on the Maximum Daily Quantity and commodity charges based on an index price such as one listed in Platts' *Gas Daily*, which could also include an offset.

Scope of Services:
PNG responsibilities:

- PNG shall provide adequate property for the LNG Facility.
- PNG shall provide a 4" diameter pipe flange ready to accept natural gas from the LNG Facility.
- PNG shall provide SCADA measurement equipment.
- PNG shall provide regulation equipment, if not provided by the vendor.
- PNG shall provide odorization equipment, if not provided by the vendor.

Vendor responsibilities:

- The vendor shall provide all vaporized LNG supply necessary to support PNG's distribution system in Forest City during the term specified, on a full requirements basis. The vendor must demonstrate through ownership or control of physical assets or contracts the ability to deliver firm LNG supplies to the LNG Facility over the specified term. Copies of firm supply contracts or an affidavit from an LNG supplier verifying the quantity of the firm supply commitment will be required.
- The vendor shall prepare the site to ensure full compliance of all applicable codes and regulations, including but not limited to LNG site spill containment, security fencing, natural gas monitoring and fire detection equipment.
- The vendor shall provide a minimum of 10,000 gallons of LNG storage on-site at all times throughout the term.
- The vendor ensures all equipment complies with national fire protection codes (NFPA 59A).
- The vendor has the option to provide its own regulation equipment.
- The vendor has the option to provide its own odorization equipment.
- The vendor shall provide all consumables, on-site power, lighting, and employee facilities.
- The vendor shall use fully trained personnel in the operation of the LNG Facility.
- For security purposes, the vendor shall monitor the facility on a 24/7 basis.
- The vendor shall be responsible for all grounds maintenance, snow plowing, and trash removal at and around the site.
- At the end of each season, the vendor shall be responsible for removing all unused LNG from the site.

Force Majeure Provisions

11.2 Force Majeure shall include, but not be limited to, the following: (i) physical events such as acts of God, landslides, lightning, earthquakes, fires, storms or storm warnings, such as hurricanes, which result in evacuation of the affected area, floods, washouts, explosions, breakage or accident or necessity of repairs to machinery or equipment or lines of pipe, except as provided in Section 11.3; (ii) acts of others such as strikes, lockouts or other industrial disturbances, riots, sabotage, terrorist actions, insurrections or wars; and (iii) governmental actions such as necessity for compliance with any court order, law, statute, ordinance, regulation, or policy having the effect of law promulgated by a governmental authority having jurisdiction. Seller and Buyer shall make reasonable efforts to avoid the adverse impacts of a Force Majeure and to resolve the event or occurrence once it has occurred in order to resume performance.

11.3 Neither party shall be entitled to the benefit of the provisions of Force Majeure to the extent performance is affected by any or all of the following circumstances: (i) the curtailment of interruptible or secondary Firm transportation; (ii) the contractual non-performance or negligence of any affiliate, independent contractor, agent or employee of Seller in operating or maintaining any upstream pipeline facilities utilized by Seller; (iii) the party claiming excuse failed to remedy the condition and to resume the performance of such covenants or obligations with reasonable dispatch; (iv) economic hardship, to include, without limitation, Seller's ability to sell Gas at a higher or more advantageous price than the Contract Price, Buyer's ability to purchase Gas at a lower or more advantageous price than the Contract Price, or a regulatory agency disallowing, in whole or in part, the pass through of costs resulting from this Agreement; (v) the loss of Buyer's market(s) or Buyer's inability to use or resell Gas purchased hereunder, except, in either case, as provided in Section 11.2; or (vi) the loss or failure of Seller's gas supply, including but not limited to the failure of the Seller's gas supply to be delivered to an upstream receipt point on Seller's pipeline capacity, or depletion of reserves, except, in either case, as provided in Section 11.2. In addition to the foregoing, for supplies sourced from local Marcellus production wells, Seller shall not be entitled to the benefit of the provisions of Force Majeure to the extent performance is affected by any or all of the following circumstances: (x) any well failures or freeze-offs; and (y) any failure of conditioning equipment such as regulation, compression or dehydration equipment.

Dodd-Frank Provisions

12.1. The terms set forth below shall have the meanings ascribed to them below:

"*CFTC*" means the U.S. Commodity Futures Trading Commission.

"*CFTC Regulations*" means the rules, regulations, orders, supplementary information, guidance, questions and answers, staff letters and interpretations published or issued by the CFTC, in each applicable case as amended, and when used herein may also include specific citations to Titles, Parts or Sections of Title 17 of the Code of Federal Regulations without otherwise limiting the applicability of other rules, regulations, orders, supplementary information, guidance, questions and answers, staff letters and interpretations."*Commodity Exchange Act*" means the U.S. Commodity Exchange Act, as amended, 7 USC Section 1, et seq.

"*Commodity Option*" means a "commodity option" within the meaning of CFTC Regulations.

"*SEC*" means the U.S. Securities and Exchange Commission

"*Swap*" means a "swap" as defined in Section 1a(47) of the Commodity Exchange Act and CFTC Regulations.
"*Trade Option*" means a Commodity Option between the Parties under the Contract that meets the conditions contained in CFTC Regulation 32.3(a).

12.2. The Parties shall seek to agree at the time a transaction is executed whether the transaction is a Trade Option or a contract excluded from the defined term "Swap" or otherwise exempt from reporting. If the transaction is a Trade Option, each Party shall report the transaction in accordance with CFTC Regulations. If the Parties cannot agree as to whether a transaction is a Trade Option or otherwise exempt from reporting, then each Party shall make its own determination.

12.3. Each Party warrants and represents as of the effective date of the Contract and on each date that it enters into a transaction subject to the Contract, that:

(i) It regularly makes or takes delivery of the commodity that is the subject of the transactions that are entered into subject to this Contract in the ordinary course of its business and any transaction it enters into subject to this Contract is entered into in connection with such business;

(ii) To the extent any transaction entered into subject to this Contract contains an embedded option, then *either* the factors determining the exercise of such option are beyond the control of the exercising Party, *or* if it is the offeree, i.e., buyer, of such option, it is a producer, processor, commercial user of, or a merchant handling the commodity, or the products or byproducts thereof, that is/are the subject of the transaction (a "Commercial Party") and it is entering into the transaction solely for purposes related to its business as such, and if it is the offeror, i.e., seller, of such option, it is either a Commercial Party and it is entering into the transaction solely for purposes related to its business as such or it is an "eligible contract participant" as defined in Section 1a(18) of the Commodity Exchange Act and the rules, regulations, orders and interpretations of the CFTC and, as applicable, the SEC; and

(iii) It intends to make or take physical delivery of the commodity that is the subject of any transaction it enters into subject to this Contract in accordance with the terms and provisions of the applicable Confirmation Agreement and this Contract.

12.4. Each Party will promptly notify the other Party, if any representation made by such Party with respect to the Dodd-Frank Provisions becomes incorrect or misleading in any material respect, and will promptly update such representation.

Exhibit A – Gas Quality

The gas delivered through the measuring station shall not have or contain in excess of:

- Seven (7) pounds of water vapor per million cubic feet of gas at the base pressure and temperature of fourteen and seventy-three hundredths (14.73) pounds per square inch absolute (psia) and sixty degrees Fahrenheit (60º F). The water vapor will be determined by the use of a Bureau of Mines type dew point apparatus or in accordance with the latest approved methods in use in the industry generally;
- A hydrocarbon dew point of greater than twenty-five degrees Fahrenheit (25º F) at any operating pressure;
- Four percent (4%) by volume of a combined total of carbon dioxide and nitrogen components; provided, however, that the total carbon dioxide content shall not exceed one and twenty-five one hundredths percent (1.25%) by volume;
- Twenty-five hundredths (0.25) grains of hydrogen sulfide per one hundred (100) standard cubic feet of gas or 4 ppm;
- Two (2) grains of total sulfur per one hundred (100) standard cubic feet;
- 0.02% oxygen; and the shipper will make every reasonable effort to keep the gas free of oxygen.
- Shall not contain substances such as polychlorinated biphenyl's (PCBs), or other environmentally unacceptable substances.
- One and one half percent (1.5%) by volume of any one butane.
- A temperature of not more than one hundred twenty degrees Fahrenheit (120° F).

The gas delivered through the measuring station shall have a gross heating value between 967 and 1,110 Btu (British Thermal Units).

The gas delivered through the measuring station shall have a Wobbe number between one thousand two hundred sixty-seven (1267) and one thousand four hundred (1400). The Wobbe number is defined as that number obtained by dividing the dry heating value of the gas by the square root of its specific gravity

The gas shall be free of objectionable odors, dust, gum, dirt, impurities, bacterial agents and other solid or liquid or hazardous matter which might interfere with its merchantability or cause injury to or interfere with proper operation of the facilities, lines, regulators, meters or other appliances through which it flows.

PNG may refuse to accept gas or may impose additional gas quality specifications and restrictions if PNG, in its reasonable judgment, determines that harm to PNG's facilities or operations could reasonably be expected to occur if it receives gas that fails to meet such additional specifications and restrictions. PNG reserves the right to refuse to accept or continue to accept gas that fails to meet such additional specifications and restrictions.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	
	:	
v.	:	
	:	
UGI PENN NATURAL GAS, INC.	:	Docket No. R-2016-2543314

DIRECT TESTIMONY
OF
DAVID C. BEASTEN

PNG STATEMENT NO. 3

Dated: June 1, 2016

Q. Please state your name, title and business address.

A. David C. Beasten. I am Manager – Electric Supply and Contracts for UGI Utilities, Inc. ("UGI") and my business address is 2525 N. 12th Street, Reading, PA 19612-2677.

Q. What are your current responsibilities?

A. As Manager – Electric Supply and Contracts, I am responsible for, amongst other things, long-term supply planning and acquisition for the electric default service program of UGI and gas supply related contracting activities of UGI, UGI Penn Natural Gas, Inc. ("PNG") and UGI Central Penn Gas, Inc. ("CPG").

Q. Please describe your educational background and work experience.

A. I have been employed by UGI since 1997. Prior to my current position, I was Manager – Supply Planning and Procurement. I have also been Director – Rates, Director – Electric Power Supply and Rates, Manager – Rates and Strategic Planning and Manager – Federal Regulatory Affairs and Contract Administration.

From 1980 – 1997, I was employed by Baltimore Gas and Electric Company in numerous rate, regulatory and gas supply positions. I was employed by Potomac Electric Power Company from 1977 – 1980. I hold a BA in Economics from the University of Maryland – Baltimore County and an MBA from the University of Maryland.

Q. Have you previously testified as a witness before the Pennsylvania Public Utility Commission ("Commission") or the Federal Energy Regulatory Commission ("FERC")?

A. Yes. I have presented testimony before the Commission supporting UGI's gas customer choice filing in October, 1999 at Docket No. R-00994786. I also provided testimony before the Commission in support of UGI's (a) provider-of-last-resort filing at Docket No. P-

00062212, (b) default service procurement, implementation and contingency plan petition at Docket No. P-2008-2022931, (c) Default Service Rates and AEPS petition at Docket Nos. P-2008-2063006 and G-2008-2063688, (d) Default Service Rates at Docket Nos. P-2009-2135496 and G-2009-2135510, (e) default service procurement, petition at Docket No. P-2012-2332010 and (f) default service procurement, petition at Docket No. P-2013-2357013 / G-2013-2357003. I submitted testimony in the 2011 UGI, PNG and CPG PGC proceedings at Docket No. R-2011-2238953, R-2011-2238943 and R-2011-2238949, the 2012 UGI, PNG and CPG PGC proceedings at Docket No. R-2012-2302220, R-2012-2302221 and R-2012-2302219, the 2013 UGI, PNG and CPG PGC proceedings at Docket No. R-2013-2361771, R-2013-2361763 and R-2013-2361764, the 2014 UGI, PNG and CPG PGC proceedings at Docket No. R-2014-2420276, R-2014-2420273 and R-2014-2420279 and the 2015 UGI, PNG and CPG PGC proceedings at Docket No. R-2015-2480950, R-2015-2480934 and R-2015-2480937, respectively. I have also submitted testimony in the following cases before the Federal Energy Regulatory Commission: *Tennessee Gas Pipeline Company*, Docket No. RP86-119; *Columbia Gas Transmission Company*, Docket No. TA87-4-21; and *Columbia Gas Transmission Company*, Docket No. RP91-161.

Q. Were portions of the information filed by UGI in this proceeding prepared by you or persons under your direct supervision and control?

A. Yes. I prepared or supervised the preparation of portions of the May 1, 2016, "Book 1" supporting information shown on the Table of Contents and Witness Index.

Q. Is the information in these sections true and correct to the best of your knowledge and belief?

A. Yes.

Q. **What is the subject matter of your testimony in this proceeding?**

A. I will address:

- Upcoming Contract Renewals;
- Intercompany Releases;
- A Peaking RFP; and
- An Update on a Tennessee Open Season.

Upcoming Contract Renewals

Q. Please summarize the contracts PNG is currently holding that expire in the next year.

A. Shown below are the salient features of the contracts that expire this year.

	UGI Energy Services, LLC Peaking Service I	UGI Energy Services, LLC Peaking Service II
Term	11/1/2007 – 3/31/2017	12/1/2011 – 2/29/2016
Rollover	Five (5) Year Rollover subject to agreement on pricing	Year to year subject to agreement on pricing
MDQ	18,500 dth per day	29,000 dth per day
Seasonal Quantity	185,000 dth	290,000 dth
Demand Charge	$220.00 per dth / year	$125.27 per dth / year
Commodity Charge	Platts' Gas Daily Average for Transco Zone 3 * 1.06	Platts' Gas Daily Average for Transco Zone 3 * 1.06
Nomination	Intra-day	Intra-day

The UGI Energy Services, LLC ("UGIES") Peaking Service I contract has a one year notice period and entered the rollover period on March 31, 2016. The Peaking Service II contract is currently in the rollover period of the contract. The current rollover expired on February 29, 2016.

Q. Does PNG intend to exercise the rollover provisions for these two UGIES Peaking Service contracts?

A. Yes. Both contracts are needed to meet PNG's peak day entitlements and PNG is not aware of an equivalent lower cost service. The Peaking Service I contract will be rolled over for the contractual five year term through March 31, 2022. Pricing for this service will remain unchanged from the current price for the five year rollover term. Regarding the Peaking Service II contract, pursuant to my testimony in PNG's 2015 PGC proceeding, "if PNG is not aware of an equivalent lower cost service, PNG will roll-over the Peaking Service II contract". Since this contract is also needed, PNG has exercised the roll-over provision of this contract for a three year term resulting in a termination date of February 28, 2019. Consistent with the terms of the contract, the demand charges will be adjusted by the GDP Price Deflator, or 1%.

<u>Intercompany Releases</u>

Q. Section 14.1 of PNG's Book 1 filing shows capacity releases among companies. Please explain the reason for these releases.

A. Generally, supply portfolios are never perfectly in balance with peak day requirements. Since UGI's acquisition of PNG and CPG, when one company found itself in need of capacity and another company had some excess capacity, an annual release of capacity has been made to balance the supply portfolios in lieu of issuing multiple RFP's and contracting with third party suppliers. For the 2016-2017 winter, PNG will release 13,800 dth and 2,679 dth of Columbia capacity to UGI and CPG respectively. Additionally, PNG will receive 2,837 dth of Transco capacity from CPG. These releases help to make both Companies' supply portfolio more efficient and bring them in balance with the peak day requirements and help to avoid issuing multiple RFP's.

A Peaking RFP

Q. Is PNG's peak day supply and demand in balance for Winter 2016-2017?

A. No. As described in Ms. Borelli's direct testimony, PNG's peak day capacity for Winter 2016-2017 is 11,230 dth per day short of peak day requirements. This shortage is also projected to increase in subsequent years by 2,754 dth per day beginning with Winter 2016-2017 through Winter 2019-2020 and then 2,596 dth per day through Winter 2020-2021.

Q. How does PNG plan on meeting the peak day requirements?

A. PNG will issue a RFP seeking a multi-year 5-day, day-ahead winter peaking service delivered to various points on the PNG system.

Q. Please describe the RFP?

A. The RFP will be sent to 73 suppliers. For additional circulation, the RFP will be posted on PNG's website. The RFP will request proposals for a peaking service that provides PNG the option to call upon the service for up to 5 days on a 100% load factor basis during the winter (November through March) period. This gas would be scheduled on a day-ahead basis and would be subject to the ICE trading schedule.

Q. What other provisions will be specified in the RFP?

A. The RFP will state PNG will entertain pricing provisions for the commodity portion of the service that are based on either NYMEX or an index such as Gas Daily. In either case, the pricing provision should include a link to a transparent pricing point. Further, consistent with PNG's reliability obligations and consistent past practice, the RFP will specify the:

- Supply must be backed with physical assets;
- Assets must have a primary firm delivery point into PNG's distribution system;
- Service must include a roll-over provision to extend the contract;
- Supplier(s) must agree to a partial awards; and
- Supplier(s) must agree to enhanced force majeure provisions.

Q. Why must the supplies be asset-backed?

A. Having the supplies backed by an asset ensures the security of supply. Simply saying the deliveries are firm is not sufficient because flowing supplies not backed by an asset do not meet PNG's, or any natural gas distribution company's, obligation as a supplier of last resort to core market customers. PNG must verify that a supplier has an asset, the details of which will be verified to ensure delivery. These verifications include the sourcing of supply, primary receipt points, primary delivery points and associated Maximum Daily Delivery Obligations ("MDDO"). Without the appropriate contract attributes, a supplier does not have the contractual rights with an interstate pipeline to fulfill its firm obligations under peak or design conditions.

Q. Why must the assets have a primary firm delivery point of PNG?

A. The delivery point must be primary firm because pipelines rank other nominations, including secondary firm deliveries, as interruptible which means they are subject to being cut during peak periods. In recent years, including this past winter, secondary deliveries, including what would be considered secondary "in-path", have been restricted by some pipelines. Further, pipeline contracts with primary firm delivery points carry MDDOs which allocate capacity at specific meters or gate stations. Without these MDDOs, pipelines can restrict deliveries at specific meters. Therefore, the use of any capacity that is not primary firm, such as so-called "firm" capacity with secondary delivery points, won't provide security of supply, especially under peak day conditions.

Q. Why will PNG include enhanced force majeure provisions in the contact?

A. PNG requires enhanced force majeure provisions because there are many different definitions of firm service throughout the industry. PNG wants to ensure the replacement service is as reliable as the existing peaking contracts and no less reliable than a no-notice service from an interstate pipeline. For example, PNG has found some wholesale suppliers or marketers who cite a weather related event such as cold weather leading to well freeze-offs in one geographic region of the country (i.e. Oklahoma) as a reason to interrupt or cut supplies delivered in a separate geographic region of the country (i.e. Pennsylvania). This extremely broad interpretation could be used by a supplier to price arbitrage by cutting a supply on the basis of an alleged weather related force majeure event and then selling the gas that would have been delivered in another market at a higher price.

Q. Is there any reason why enhanced force majeure provisions are particularly appropriate for peaking services?

A. Yes. When PNG reserves pipeline capacity to an upstream location with liquid trading, it still makes every effort to limit the possibility of price arbitrages in the standard NAESB contracts it uses, but in the event of non-performance it knows it may be able to obtain replacement supplies. Delivered services, however, are delivered to PNG's city gates, and without making appropriate arrangements well in advance of the winter it is unlikely that PNG would be able to purchase replacement supplies during design cold conditions in the event of a failure to deliver. By including the enhanced force majeure provision in the RFP, PNG can be assured that potential bidders have been provided with a clear expectation of the required level of service.

Q. Why is the contract extension important for this RFP?

A. Having the right to extend or roll-over the contract provides supply certainty beyond the initial term of the contract. This provision is similar to the Right of First Refusal ("ROFR") provisions and simple roll-over provisions in pipeline contracts. These provisions ensure that the capacity will be available to PNG once the primary term of the contract expires.

Q. How will PNG analyze the responses received?

A. First, the offers will be examined to determine if they met the requirements of the RFP. UGI examined the offers to determine if the proposed services (1) were firm and backed by assets, (2) that the assets had a primary firm delivery point into Transco's Leidy line, (3) the supplier would agree to the enhance force majeure provisions and (4) provides for an extension of the contracts. Once PNG determines if the offer meets these requirements, then it will determine the least cost offer(s) and then award bid(s).

Q. Prior to issuing the RFP, did PNG consider any other pipeline capacity as an option to meet these peaking requirements?

A. Yes. PNG monitors the pipelines for open seasons where they are seeking to sell capacity that may become available. They have been no recent open seasons that would provide capacity to PNG for at least twelve months and contain a rollover provisions that would allow PNG to retain the capacity.

<u>Tennessee Triad Open Season Update</u>

Q. Please update your testimony from last year where PNG offered to turn back capacity to Tennessee and replace it with a less expensive service.

A. In summary, Tennessee proposed an expansion to construct 180,000 dth per day of additional capacity that would be delivered to PNG's interconnection with Tennessee at the Union Dale gate station for a potential end use customer of PNG. On March 25, 2015, PNG submitted a binding offer to turn back 30,000 dth per day of firm transportation capacity. The path of this capacity is from Tennessee Station 219 to the primary delivery point of the Union Dale gate station. This is a portion of the new capacity PNG acquired from Tennessee effective November 1, 2014. PNG made this offer knowing there was an equivalent service available that would provide a savings of approximately 10% from the Tennessee service after checking to determine that there were not even lower cost alternatives available. Tennessee rejected PNG's turn-back offer saying the capacity being turned back did not meet its requirements for turned-back capacity.

Q. What was UGI's response to Tennessee's rejection of the turn-back offer?

A. UGI unsuccessfully tried to convince Tennessee to reconsider their position. On July 27, 2015, PNG protested Tennessee's application with FERC (Docket No. CP15-580) arguing that Tennessee should accept PNG's turn back offer in lieu of constructing a portion of their proposed expansion project.

Q. Has the FERC issued an order on Tennessee expansion application?

A. No, the Tennessee's request and PNG's protest is still pending, however PNG has responded to FERC data requests concerning how PNG calculated the potential reduction in expansion facilities that could be warranted if Tennessee were required to accept PNG's turn-back offer, and feels confident that its position on this issue is consistent with FERC policy.

Q. Is the equivalent, lower cost service still available?

A. Yes, and if FERC orders Tennessee's to accept the turn-back offer on terms which make the turn-back a least cost option compared to the alternative available service offering, PNG will enter into a contract for this alternative service unless PNG can secure and even lower cost service.

Q. Does this conclude your testimony?

A. Yes.