

**COMMISSION STAFF
2016 NATURAL GAS ATTRITION STUDY**

**Washington - Natural Gas System
Twelve Months Ended December 31, 2014
(000's of Dollars)**

Line No.	Description	(a) Attrition Balances	(b) Revenue Growth Factor	(c) Attrition Study Results	
1	2016 Rate Base	\$299,015	1.011566	\$295,596	
2	Settlement Rate of Return			7.29%	
3	Net Operating Income Requirement			\$21,549	
4	2016 Net Operating Income (at 2015 rates)	\$ 16,127	1.01157	\$15,942	
5	2016 Rate of Return (at 2015 rates)			5.39%	
6	2016 Net Operating Income Deficiency (Surplus)			\$5,607	[Line 3 - Line 4]
7	Gross-up Conversion Factor			0.62032	
8	2016 Attrition Revenue Deficiency (Surplus)			\$9,040	
9	2016 Total General Business Revenues (at 2015 rates)			\$ 170,914	[CRM-3, pg. 4, col. H, Lines 1-2, plus col. I, Line 12]
10	Attrition-based 2016 revenue requirement			\$ 179,954	[Line 8 + Line 9]
11	Percent Revenue Requirement Change (vs. 2015)			5.29%	
12	Staff Pro Forma 2016 Revenue Requirement			\$174,519	[CHS-3]
13	Attrition Allowance			\$ 5,435	[Line 10 - Line 12]

Multiparty Settlement - Cost of Capital
Washington - Natural Gas System

Proposed Cap Structure			
<u>Component</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Total Debt	51.50%	5.20%	2.68%
Common	48.50%	9.50%	4.61%
Total	<u>100.00%</u>		<u>7.29%</u>

**Revenue Conversion Factor
Washington -Natural Gas System
Twelve Months Ended December 31, 2014**

<u>Line No.</u>	<u>Description</u>	<u>Factor</u>
1	Revenues	<i>1.000000</i>
	Expense:	
2	Uncollectibles	0.005354
3	Commission Fees	0.002000
4	Washington Excise Tax	0.038314
5	Total Expense	<u>0.045668</u>
6	Net Operating Income Before FIT	<i>0.954332</i>
7	Federal Income Tax @ 35%	<u>0.334016</u>
8	REVENUE CONVERSION FACTOR	<u><u>0.62032</u></u>

2016 NATURAL GAS ATTRITION REVENUE REQUIREMENT

S000s		Determine Base Cost and Revenue to Escalate					Escalate Non-Energy Cost			Other Cost & Revenue Adjustments				
CBR Line No.	DESCRIPTION	12.2014	Pro Forma	Exclude	December	Escalation Factor	Escalation Amount [E] * [F] = [G]	Trended 2016	(plus) 12.2014	(plus) Revenue Growth	After Attrition Adj - Project Compass	After Attrition Adj - Atmos Testing	2016 Revenue and Cost [H]+[I]+[J]+ [PCOMP]=[K]	
		Commission Basis Report Restated Totals	Regulatory Amorts Adj	Revenue Normalization Adjustment	Gas Costs and Revenue			2014 Escalation Base						Non-Energy Cost [E]+[G]=[H]
		[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]
REVENUES														
1	Total General Business	\$ 154,546	\$ -	\$ 12,185	\$ (92,072)	\$ 74,659	1.19%		74,659	\$ 92,072	\$ 1,983			\$ 168,714
2	Total Transportation	\$ 3,960	\$ -	\$ 223		\$ 4,183	-0.14%		4,183		\$ (6)			4,177
3	Other Revenues	\$ 332	\$ -	\$ -		\$ 332	0.00%		332		\$ -			332
4	Total Gas Revenues	\$ 158,838	\$ -	\$ 12,408	\$ (92,072)	\$ 79,174		\$ -	\$ 79,174	\$ 92,072	\$ 1,977			\$ 173,223
EXPENSES														
Production Expenses														
5	City Gate Purchases	\$ 84,187	\$ -	\$ 3,680	\$ (87,867)	\$ -			-	\$ 87,867	(429)			87,438
6	Purchased Gas Expense	\$ 779	\$ -	\$ 3		\$ 782	4.34%	34	816					816
7	Net Nat Gas Storage Trans	\$ -	\$ -	\$ -		\$ -			-					-
8	Total Production	\$ 84,966	\$ -	\$ 3,683	\$ (87,867)	\$ 782		\$ 34	\$ 816	\$ 87,867	\$ (429)			\$ 88,254
Underground Storage														
9	Operating Expenses	\$ 893	\$ -	\$ -		\$ 893	4.34%	39	932					932
10	Depreciation/Amortization	\$ 402	\$ -	\$ -		\$ 402	22.27%	90	492					492
11	Taxes	\$ 184	\$ -	\$ -		\$ 184	18.94%	35	219					219
12	Total Underground Storage	\$ 1,479	\$ -	\$ -	\$ -	\$ 1,479		\$ 163	\$ 1,642	\$ -	\$ -			\$ 1,642
Distribution														
13	Operating Expenses	\$ 10,704	\$ -	\$ -		\$ 10,704	4.34%	464	11,168					11,168
14	Depreciation/Amortization	\$ 8,513	\$ -	\$ -		\$ 8,513	22.27%	1,896	10,409					10,409
15	Taxes	\$ 8,719	\$ -	\$ 475	\$ (3,528)	\$ 5,666	18.94%	1,073	6,740	\$ 3,528	\$ 76			10,344
16	Total Distribution	\$ 27,936	\$ -	\$ 475	\$ (3,528)	\$ 24,883		\$ 3,434	\$ 28,317	\$ 3,528	\$ 76			\$ 31,921
17	Customer Accounting	\$ 6,108	\$ -	\$ 66	\$ (493)	\$ 5,681	4.34%	246	5,928	\$ 493	\$ 11			6,432
18	Customer Service & Information	\$ 865	\$ -	\$ -		\$ 865	4.34%	38	903					903
19	Sales Expenses	\$ -	\$ -	\$ -		\$ -	4.34%	-	-					-
Administrative & General														
20	Operating Expenses	\$ 12,777	\$ -	\$ 25	\$ (184)	\$ 12,618	4.34%	547	13,165	\$ 184	\$ 4			13,353
21	Depreciation/Amortization	\$ 4,389	\$ -	\$ -		\$ 4,389	22.27%	978	5,367			903		6,270
22	Regulatory Amortizations	\$ (91)	\$ 1,143	\$ 91		\$ 1,143	0.00%	-	1,143					1,143
23	Taxes	\$ -	\$ -	\$ -		\$ -	18.94%	-	-					-
24	Total Admin. & General	\$ 17,075	\$ 1,143	\$ 116	\$ (184)	\$ 18,150		\$ 1,525	\$ 19,675	\$ 184	\$ 4	\$ 903		\$ 20,766
25	Total Gas Expense	\$ 138,429	\$ 1,143	\$ 4,341	\$ (92,072)	\$ 51,841		\$ 5,439	\$ 57,280	\$ 92,072	\$ (338)	\$ 903		\$ 149,917
26	OPERATING INCOME BEFORE FIT	\$ 20,409	\$ (1,143)	\$ 8,067	\$ -	\$ 27,333		\$ (5,439)	\$ 21,894	\$ -	\$ 2,315	\$ (903)		\$ 23,306

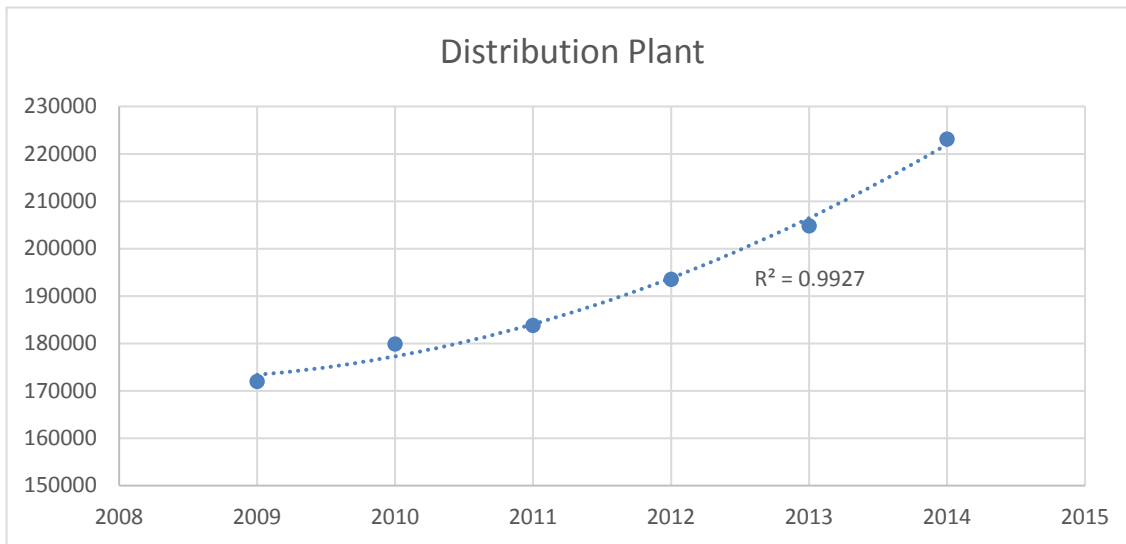
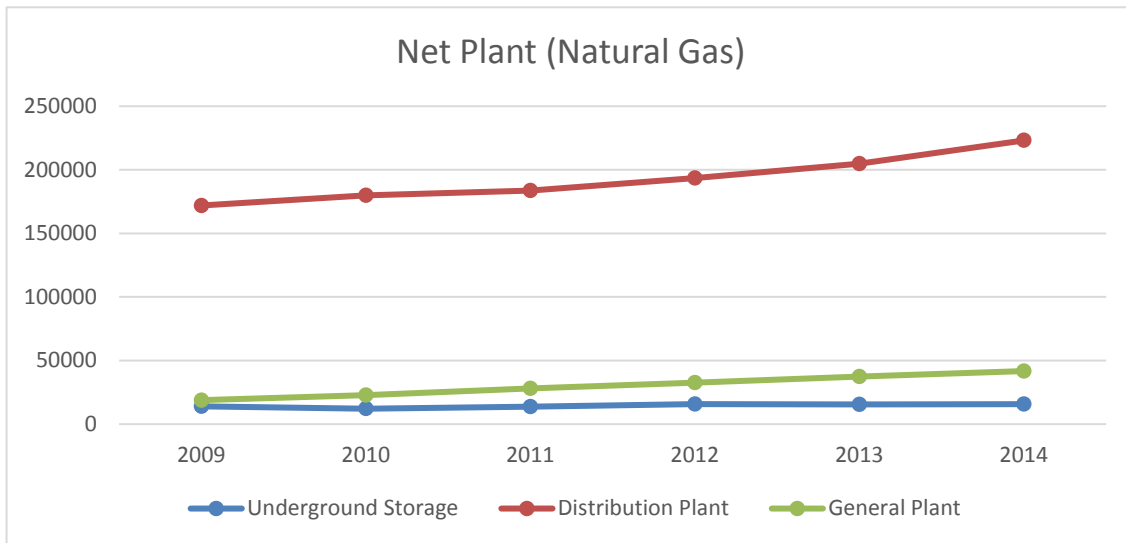
2016 NATURAL GAS ATTRITION REVENUE REQUIREMENT

\$000s		Determine Base Cost and Revenue to Escalate					Escalate Non-Energy Cost		Other Cost & Revenue Adjustment					
CBR Line No.	DESCRIPTION	12.2014 Commission Basis Report	Regulatory Amortiz Adj	Pro Forma Revenue Normalization Adjustment	Exclude Normalized Gas Costs and Revenue	December 2014 Escalation Base	Escalation Factor	Escalation Amount [E]	Trended 2016 Non-Energy Cost [H]	(plus) 12.2014 Pro-Formed Gas Cost/Revenue	(plus) Revenue Growth	After Attrition Adj - Project Compass	After Attrition Adj - Atmos Testing	2016 Revenue and Cost [H]+[I]+[J]+ [PCOMP]=[K]
		[A]	[B]	[C]	[D]	[E]	[F]	*[F]=[G]	[E]+[G]=[H]	[I]	[J]			[M]
FEDERAL INCOME TAX														
27	Current Accrual	\$ (6,945)	\$ (400)	2,824	-	\$ (4,521)		(1,904)	(6,425)	-	810	(316)		(5,931)
28	Debt Interest	\$ (137)	\$ -	\$ -	\$ -	\$ (137)		(298)	(435)					(435)
29	Deferred FIT	\$ 13,105	\$ -	\$ -	\$ -	\$ 13,105			13,105					13,105
30	Amort ITC	\$ (20)	\$ -	\$ -	\$ -	\$ (20)			(20)					(20)
31	NET OPERATING INCOME	\$ 14,406	\$ (743)	\$ 5,244	\$ -	\$ 18,907		\$ (3,238)	\$ 15,669	\$ -	\$ 1,505	\$ (587)	\$ (460)	\$ 16,127
RATE BASE														
PLANT IN SERVICE														
32	Underground Storage	\$ 25,235	\$ -	\$ -	\$ -	\$ 25,235	16.86%	\$ 4,255	29,490					\$ 29,490
33	Distribution Plant	\$ 337,894	\$ -	\$ -	\$ -	\$ 337,894	16.86%	56,968	394,862					394,862
34	General Plant	\$ 59,169	\$ -	\$ -	\$ -	\$ 59,169	16.86%	9,976	69,145		\$11,668			80,813
35	Total Plant in Service	\$ 422,298	\$ -	\$ -	\$ -	\$ 422,298		71,198	493,496					505,164
ACCUMULATED DEPR/AMORT														
36	Underground Storage	\$ (9,521)	\$ -	\$ -	\$ -	\$ (9,521)	16.86%	(1,605)	(11,126)					(11,126)
37	Distribution Plant	\$ (114,795)	\$ -	\$ -	\$ -	\$ (114,795)	16.86%	(19,354)	(134,149)					(134,149)
38	General Plant	\$ (17,429)	\$ -	\$ -	\$ -	\$ (17,429)	16.86%	(2,938)	(20,367)		(452)			(20,819)
39	Total Accumulated Depr/Amort	\$ (141,745)	\$ -	\$ -	\$ -	\$ (141,745)		(23,898)	(165,643)					(166,095)
40	NET PLANT	\$ 280,553	\$ -	\$ -	\$ -	\$ 280,553		\$ 47,300	\$ 327,853					339,069
41	DEFERRED TAXES	\$ (54,652)	\$ -	\$ -	\$ -	\$ (54,652)	16.86%	(9,214)	(63,866)		(544)			(64,410)
42	Net Plant After DFIT	\$ 225,901	\$ -	\$ -	\$ -	\$ 225,901		38,086	263,987					274,659
43	GAS INVENTORY	\$ 14,762	\$ -	\$ -	\$ -	\$ 14,762	0.00%	-	14,762					14,762
44	GAIN ON SALE OF BUILDING	\$ -	\$ -	\$ -	\$ -	\$ -	0.00%	-	-					-
45	OTHER	\$ (479)	\$ -	\$ -	\$ -	\$ (479)	0.00%	-	(479)					(479)
46	WORKING CAPITAL	\$ 10,073	\$ -	\$ -	\$ -	\$ 10,073	0.00%	-	10,073					10,073
47	TOTAL RATE BASE	\$ 250,257	\$ -	\$ -	\$ -	\$ 250,257		\$ 38,086	\$ 288,343					\$ 299,015
48	RATE OF RETURN	5.76%												5.39%
ATTRITION ADJUSTED REVENUE REQUIREMENT														
49	Proposed Rate of Return	7.29%												7.29%
50	Net Operating Income Requirement	\$ 18,244												\$ 21,798
51	Net Operating Income per Above	14,406												16,127
52	Net Operating Income Deficiency	\$ 3,838												\$ 5,672
53	Conversion Factor	0.62032												0.62032
54	Revenue Requirement	\$ 6,187												\$ 9,143
55	Revenue Growth Factor													1.01157
56	Attrition Adjusted Revenue Requirement													\$ 9,039

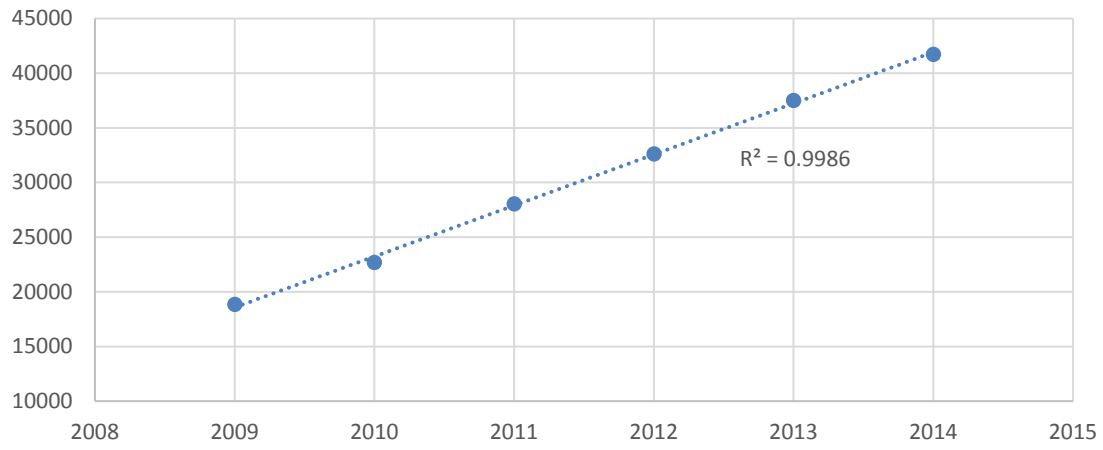
*Note: Adjustment in Column [B] includes the Regulatory Amortization associated with the deferral of the Natural Gas portion of the Project Compass Customer Information System (CIS) project as this amount is not included in the 12.2014 Commission Basis. This amount is not escalated as shown in column [F].

NET PLANT	2009	2010	2011	2012	2013	2014
Underground Storage	13991	12135	13722	15688	15623	15714
Distribution Plant	171955	179849	183790	193474	204807	223099
General Plant	18865	22679	28045	32623	37499	41740

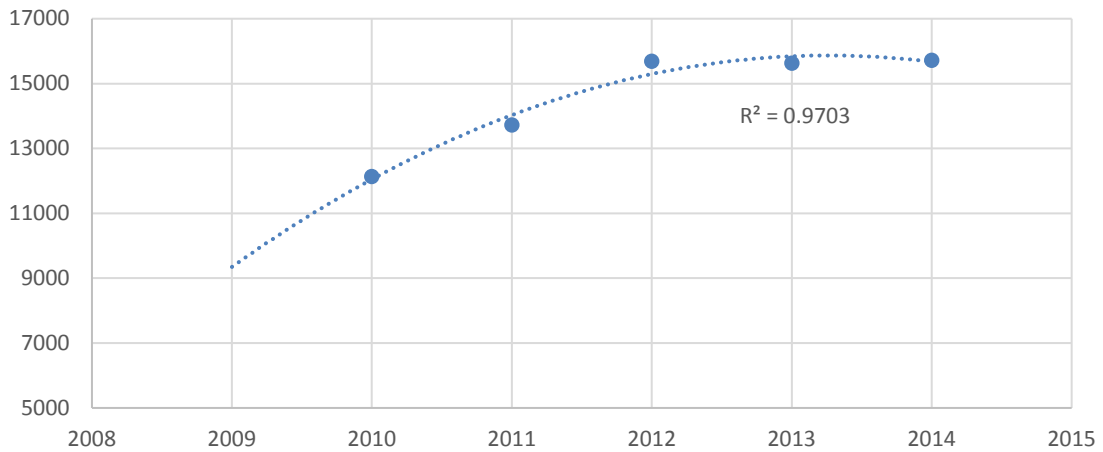
NET PLANT	2009	2010	2011	2012	2013	2014
Distribution Plant	171955	179849	183790	193474	204807	223099
General Plant	18865	22679	28045	32623	37499	41740
Underground Storage		12135	13722	15688	15623	15714



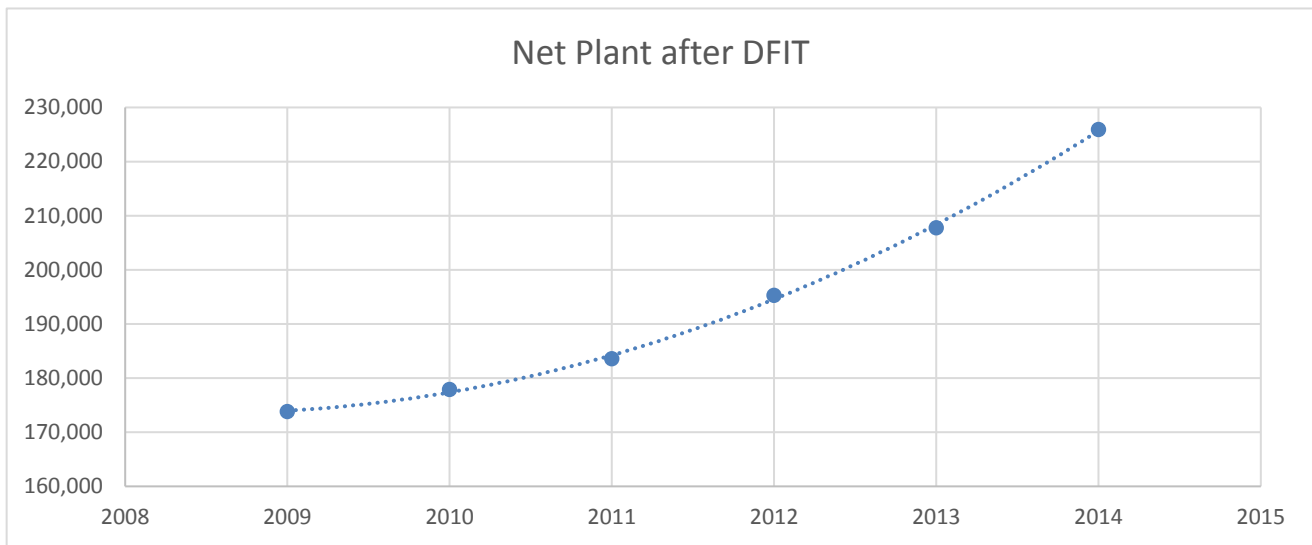
General Plant



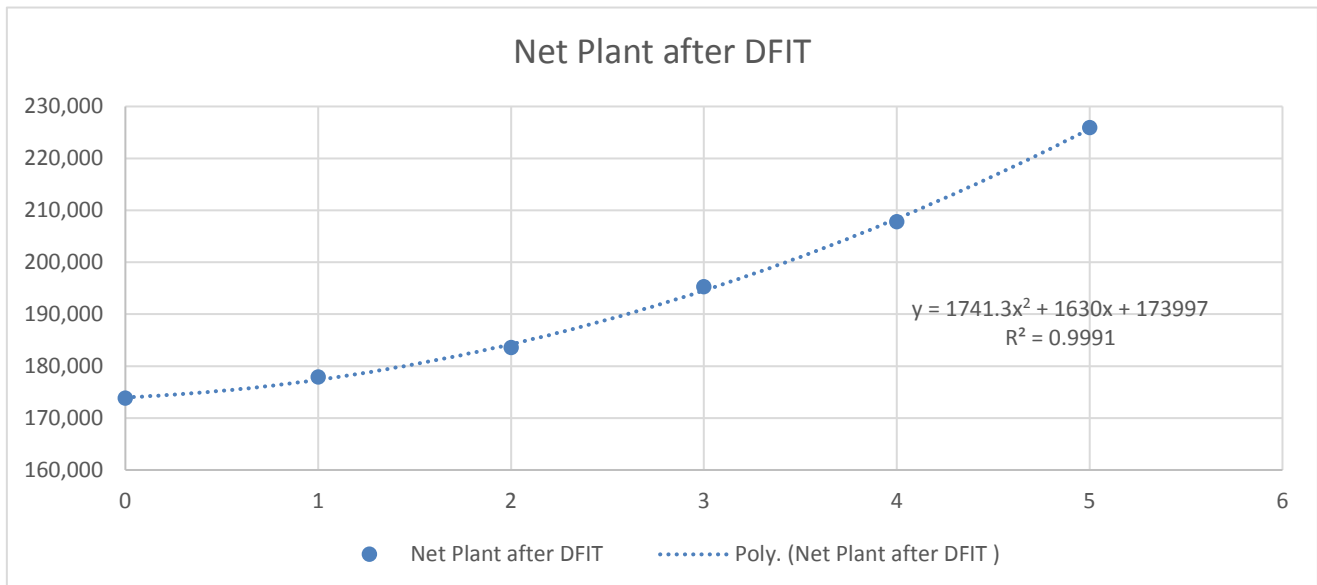
Underground Storage



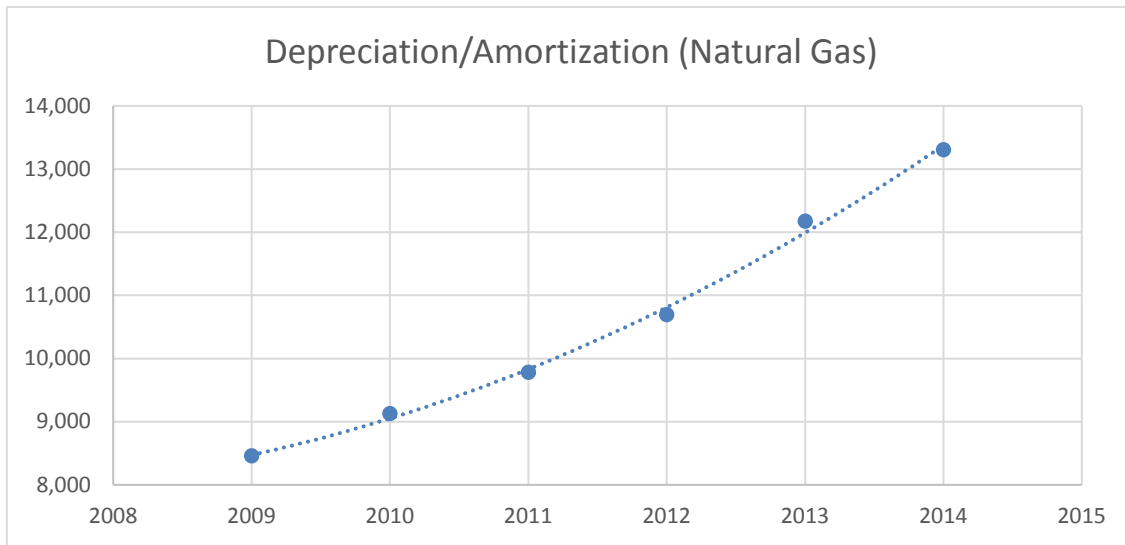
	2009	2010	2011	2012	2013	2014
Net Plant after DFIT	173,806	177,901	183,553	195,287	207,759	225,901
	0	1	2	3	4	5
Net Plant after DFIT	173,806	177,901	183,553	195,287	207,759	225,901



	<u>x</u>	<u>C</u>	
Derivative of Quadratic (below)	3482.6	1630	
x = 5 (2014 is year 5)	17413		
Sum (x and C)		19043	
rate (1-year)		8.43%	
rate (2-year)		16.86%	Escalation factor (to 2016)

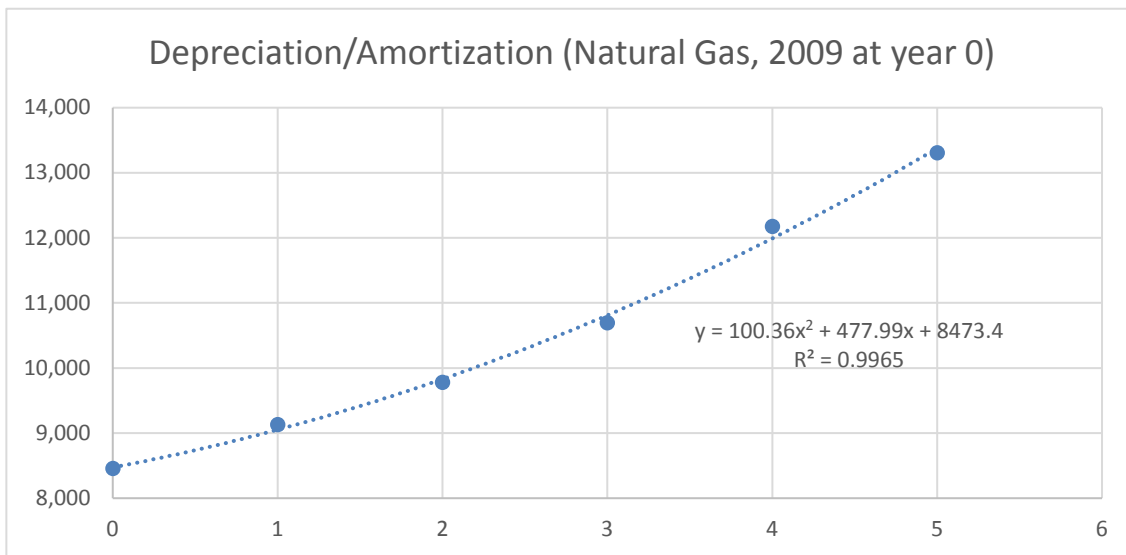


	2009	2010	2011	2012	2013	2014
Depreciation/Amortization	8,456	9,127	9,778	10,692	12,173	13,304
	0	1	2	3	4	5
Depreciation/Amortization	8,456	9,127	9,778	10,692	12,173	13,304

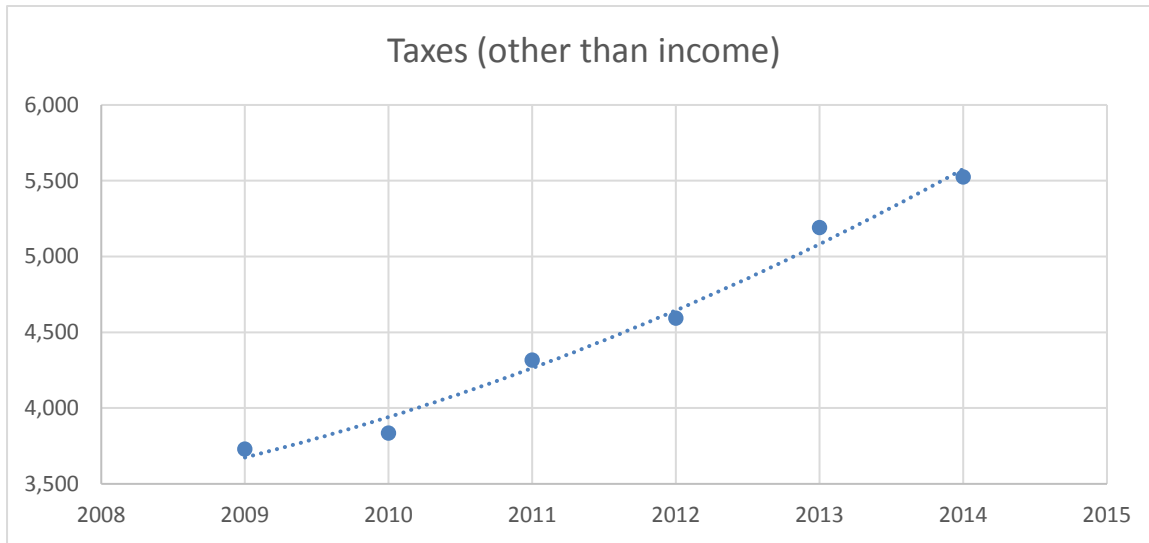


	x	C
Derivative of Quadratic (below)	200.72	477.99
x = 5 (2014 is year 5)	1003.6	
Sum (x and C)		1481.59
rate (1-year)		0.111364
rate (2-year)		22.27%

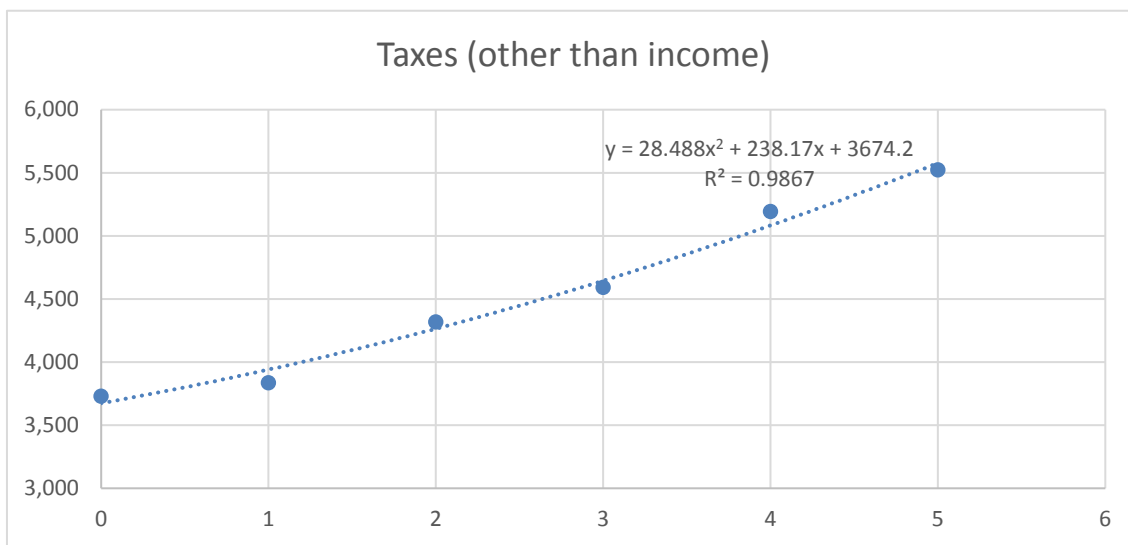
Escalation factor (to 2016)



	2009	2010	2011	2012	2013	2014
Taxes (other than income)	3,728	3,834	4,317	4,592	5,191	5,523
	0	1	2	3	4	5
Taxes (other than income)	3,728	3,834	4,317	4,592	5,191	5,523

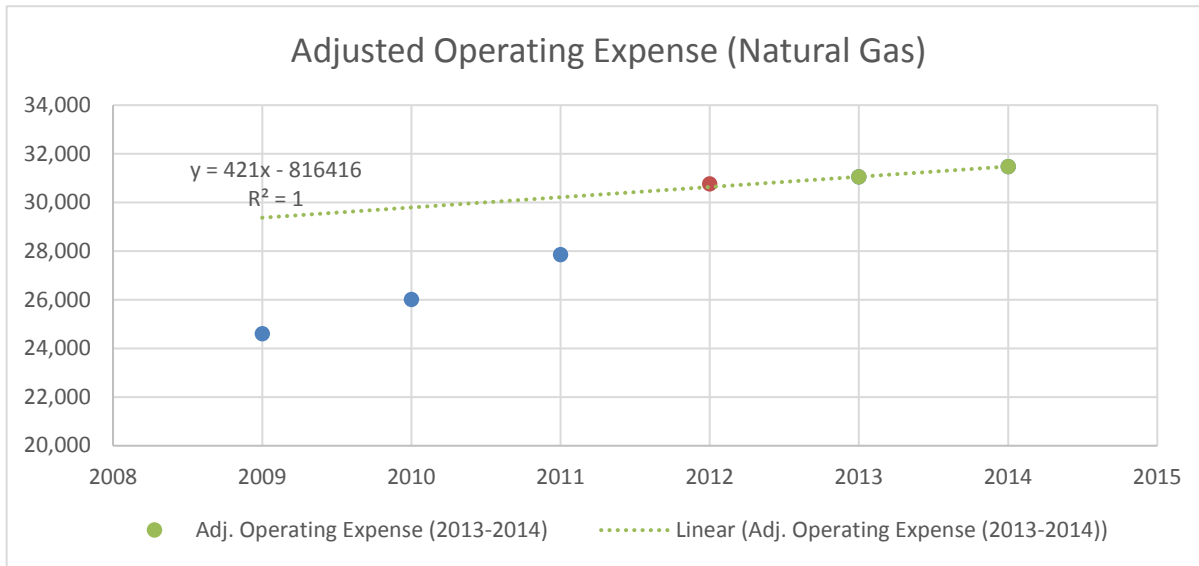


	x	C
Derivative of Quadratic (below)	56.976	238.17
x = 5 (2014 is year 5)	284.88	
Sum (x and C)		523.05
rate (1-year)		0.094704
rate (2-year)		18.94% Escalation factor (to 2016)



	2009	2010	2011	2012	2013	2014
Adj. Operating Expense (2009-2014, excl. 2012)	24,600	26,009	27,852		31,057	31,478
Adj. Operating Expense (2012)				30,759		
Adj. Operating Expense (2013-2014)					31,057	31,478

	Slope	Rate (1yr)	Escalation
Rate (2013-2014, linear)	421.0	1.34%	2.67%
Company-proposed (2007-2014, linear)	944.3	3.00%	6.00%
Average		2.17%	4.34%



**BILLING DETERMINANT INDEX
09.2014 TO 2016 WEIGHTED REVENUE GROWTH**

Line No.	Description	Schedule	Billing Determinant	Revenue Model Sept 2014	Forecast 2016	Billing Determinant Growth F=(E-D)/D	Revenue Sept 2014	Weight H=G/SUM G	Weighted Growth I=FxH	Net of Gas Costs	
	A	B	C	D	E		G				
1	General Svc	101	Basic/Min	1,787,943	1,828,182	2.25%	\$16,091,487	9.65%	0.22%	\$362,147	\$362,147
2	Lrg Gen Svc	111/112	Basic/Min	30,697	31,374	2.20%	\$2,671,867	1.60%	0.04%	\$58,902	\$58,902
3	Ex Lrg Gen Svc	121/122	Basic/Min	336	339	0.83%	\$72,321	0.04%	0.00%	\$598	\$598
4	Interruptible Svc	131/132	Basic/Min	24	24	0.00%	\$0	0.00%	0.00%	\$0	\$0
5	General Svc	101	Volumes	120,721,607	119,462,331	0.88%	\$107,498,749	64.47%	0.57%	\$945,989	\$1,579,745
6	Lrg Gen Svc	111/112	Volumes	47,537,282	47,624,382	1.03%	\$35,598,366	21.35%	0.22%	\$366,663	\$323,022
7	Ex Lrg Gen Svc	121/122	Volumes	5,735,037	5,939,604	3.90%	\$4,064,021	2.44%	0.09%	\$158,294	\$59,529
8	Interruptible Svc	131/132	Volumes	1,115,704	1,252,783	12.29%	\$733,819	0.44%	0.05%	\$90,159	\$27,798
9	Total			175,109,630	174,279,099		\$166,730,631	100.00%	1.19%	\$1,982,752	\$2,411,742
10	Transportation Svc	146	Basic/Min	456	516	13.12%	\$255,207	6.10%	0.80%	\$33,473	\$33,473
11	Special Contract	148	Basic/Min	60	66	9.50%	\$325,584	7.78%	0.74%	\$30,941	\$30,941
12	Transportation Svc	146	Volumes	30,580,202	30,484,401	-0.31%	\$2,321,589	55.50%	-0.17%	-\$7,273	-\$7,221
13	Special Contract	148	Volumes	49,497,099	47,057,044	-4.93%	\$1,280,992	30.62%	-1.51%	-\$63,149	-\$63,149
14	Total			80,077,301	77,541,445		\$4,183,371	100.00%	-0.14%	-\$6,008	-\$5,956
15	General Svc	101	Total Revenue				\$123,590,236				
16	Lrg Gen Svc	111/112	Total Revenue				\$38,270,233				
17	Ex Lrg Gen Svc	121/122	Total Revenue				\$4,136,342				
18	Interruptible Svc	131/132	Total Revenue				\$733,819				
19	Transportation Svc	146	Total Revenue				\$2,576,796				
20	Special Contract	148	Total Revenue				\$1,606,576				
21	Total						\$170,914,002				

Change in Purchased Gas Cost				Sept 2014	2016	Increase (Decrease)	Gas Costs Per Therm	
22	General Svc	101	Volumes	120,721,607	119,462,331	-1,259,276	\$0.50327	-\$633,756
23	Lrg Gen Svc	111/112	Volumes	47,537,282	47,624,382	87,100	\$0.50104	\$43,641
24	Ex Lrg Gen Svc	121/122	Volumes	5,735,037	5,939,604	204,567	\$0.48280	\$98,765
25	Interruptible Svc	131/132	Volumes	1,115,704	1,252,783	137,079	\$0.45493	\$62,361
26	Total			175,109,630	174,279,099	-830,531		
27	Transp	146	Volumes	30,580,202	30,484,401	-95,801	\$0.00054	-\$52
28	Spec Cont Trans	148	Volumes	49,497,099	47,057,044	-2,440,055	\$0.00000	
29	Total			80,077,301	77,541,445	-2,535,856		-\$429,041
				255,186,931	251,820,544	-3,366,387		