



# Energy Analysis

POLICY ANALYSIS GROUP  
400 N. Capitol St., NW  
Washington, DC 20001  
[www.aga.org](http://www.aga.org)

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## 2015-2017 PERFORMANCE BENCHMARKS FOR NATURAL GAS UTILITIES

### I. INTRODUCTION

Summary data of gas utility financial profiles and performance appear in this Energy Analysis. The intent is to provide industry participants and observers with relative measures of financial returns and operational efficiencies of natural gas distribution companies. For this study, the American Gas Association (AGA) collected data from its members. The data source for these benchmarking metrics is the Uniform Statistical Report (USR), which is administered annually by AGA on behalf of its member companies. Results are presented for the years 2015 through 2017. Additional information, some of which is company specific, is included in an attachment to this analysis and available only to AGA member companies.

For study purposes, the gas utility industry is segmented into distinct groups: investor-owned gas-only utilities, investor-owned combination gas and electric utilities, and municipally-owned gas utilities. Summary results are segmented in this sample accordingly. Comprehensive details are provided in the appendices.

### II. BACKGROUND

*THE NATURAL GAS DISTRIBUTION INDUSTRY.* Approximately 1,400 utilities distribute natural gas to end-use consumers in the United States. For this analysis, a total of 82 utilities were included in the 2017 sample, 87 utilities were examined in 2016, and 87 companies were studied for 2015.<sup>1</sup> They are located across the United States, and each company has a unique combination of scale, load profile, and climatic attributes. In aggregate, the firms included in this study accounted for 70 percent of the residential and commercial natural gas customers in 2016, 87 percent in 2016, and 86 percent in 2015. *Given this sample size, any inferences about the sample's depiction of the entire industry are accordingly limited.*

Many AGA member companies are gas-only, investor-owned utilities, as are most companies in this analysis. These companies earn returns that accrue to their investors. State-level public utility commissions regulate their operations, finance, and capital investment activities.

<sup>1</sup> This set number was determined after eliminating member companies for whom data was either incomplete or not provided. Firms with zero net income are excluded from the analysis. This is not a scientific sample in that sample stratification by segment type does not reflect population stratification. See Appendix 9 for list of companies included.

Combination utilities have the franchise rights to transport and sell both gas and electric power commodities. These are also investor-owned firms with financial obligations to shareholders. Like the gas-only investor-owned firms, these companies are subject to various state and federal regulations.

Municipal utilities are publicly owned by the citizens of the jurisdictions that the utilities serve. Local governments enjoy tax-free bond-issuing capabilities, usually at interest rates lower than can be obtained by investor-owned utilities. Ultimately, such debt is usually collateralized by these utilities' abilities to secure tax revenue to back up debt commitments. What an investor-owned utility would pay out in dividends accrues instead to the municipal company's citizen-shareholders in the form of lower rates. Municipal utility regulation is performed primarily by local governments as opposed to state-level commissions.<sup>2</sup>

*DESCRIPTION OF DATA SOURCES.* Financial data about AGA member companies are drawn from the Uniform Statistical Report (USR). Member company staff prepares these standardized forms annually for collection by AGA, but companies may choose to withhold any or all of the requested data. Some of the USR duplicates the information found in audited end-of-year financial statements, but the USR requests additional information, such as heating degree-day profiles, type of sales by customer class, number of customers served, and various employment profile statistics. Data for miles of mains came from the U.S. Department of Transportation, Office of Pipeline Safety.

*DATA LIMITATIONS.* Since the data used for this analysis are annual figures only, a few inferential limitations should be noted. First, a single year's data for gas distribution operations are influenced by weather patterns for that year. The deviation between actual heating degree days (HDDs) versus historic normals will vary by location. This in turn suggests that utility benchmarks may slightly overstate or understate overall utility financial performance or efficiency of operations when impacted by weather.

Another limitation is that the ability to perform trend analysis is somewhat limited. While three years' worth of data are presented here, comparison of actual values (total revenues for example) from year to year can be distorted by changes in sample size. Also, variances in weather can affect these trends. Finally, the data set covers only three years and this limits the ability to compare longer-term trends.

Sample size and composition must also be considered as a potential limitation. The industry segment sample sizes used in this study are not consistently proportional to their respective populations. Additionally, the sample size—measured both in number of companies, and more importantly as percentage of total gas deliveries—has varied over time. Finally, specific company participation in the data collection changes from year to year. **This makes annual comparisons of absolute values, such as total number of therms sold, difficult and any resulting conclusions suspect.** However, the purpose of ratio analysis is to address this problem and facilitate annual comparisons.

### III. BENCHMARKING METRICS

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<sup>2</sup> Note that relatively few financial profiles were available for the municipal segment. The operations data used here considers only gas activities. The financial profiles of gas-only and combination municipal utilities are blended together for summary purposes.

Benchmarking metrics created for this study take several forms. Typical accounting ratios, based on income statements and balance sheets, serve as financial performance indicators. Financial statements are also recast in same-size formats, which present line items in percentage terms. Other benchmarks describe numbers of employees, meters, and volumes of gas throughput. All AGA data are summarized so that no individual company statistics are revealed. Additionally, summaries are created which divide the industry into type-of-company segments. These include gas utilities, combination gas and electric utilities, and municipally owned gas utilities.<sup>3</sup> Appendix 2 is a series of charts that display the range of observations for selected benchmarking metrics. Appendix 9 shows the list of companies that were included in this analysis.

- *Utility Operating Profiles - Absolute Values (Section IV-A and Appendix 3a).* System profiles are summarized here by type of company. This data includes information on gas volumes delivered as well as the number of customers by class.
- *Financial Statements - Absolute Values (Section IV-B and Appendix 3b).* Income statement and balance sheet data are summarized here by type of company.<sup>4</sup> Income statement amounts are expressed in absolute dollars in Appendix 3b. Note that these items represent gas operations only.
- *Financial Statements - Same-Size Analysis (Appendix 3c).* The financial statement data shown in absolute values are re-cast in percentage terms for a same-size analysis. Income statement line items are in percentages relative to operating revenue while balance sheet items are expressed as a percentage of total assets. This shows the disposition of a firm's revenue and composition of its asset base without respect to the size of an individual firm.
- *Financial Statements - Per Cost Driver (Section IV-B and Appendix 3d).* Income statements are shown in several formats: per therm delivered, per customer served, per dollar value of gas plant in service, and per mile of main in operation.
- *Financial Ratios (Section IV-D and Appendix 3e).* These are conventional financial analysis tools, and they compare a company's financial status to other firms or types of firms. Ratios are calculated from group totals or averages (explanations are provided in the Glossary, Appendix 1).
- *O&M Detail Analysis (Section IV-C and Appendix 4).* These cost elements represent major gas delivery activities, starting with purchase or production and continuing sequentially through transmission, distribution, customer service, sales activities, and administrative and general (A&G) accounting. These results are also arrayed by type of company. Benchmarks for these data are created by expressing each line item on a basis of annual costs per therm delivered. See Table 3 for more detail.
- *Debt Analysis - Ratios (Section IV-E).* Data are presented to highlight various measures of debt. These include debt as a percent of capitalization and interest coverage ratios. The data in this section necessarily include both gas and electric operations.
- *Wages and benefits: Ratios and Same-Size Analysis (Section IV-G and Appendix 5).* Data about utility employment and benefits profiles are included. These measures are

<sup>3</sup> See Glossary in Appendix 1 for a definition of these categories.

<sup>4</sup> Appendix 3a financial statements are in thousands of dollars.

intended to illustrate the norms for staffing levels and expenses as they vary by type of firm. Benchmark measures include:

- » Total salaries and wages per employee
  - » Total benefits and pensions per employee
  - » Ratio of total benefits to total compensation
  - » Annual therm throughput per employee
  - » Average annual customers served per employee
- *Profitability (Section IV-F and Appendix 6).* Profitability is expressed here in terms of return on assets (ROA) as well as return on common equity. Since ROA measures the returns attributable to operations (prior to finance costs), ROA is used to describe the relative economic efficiency of natural gas distribution by industry segment. This section will examine selected cost drivers-- numbers of therms sold, of customers served, dollars of gas plant utilized, and miles of pipe in service-- to evaluate each in terms of its impact on ROA. Additionally, return on equity indicates the rate of return that a firm earns on its equity base. See Table 6 for more detail.

## **IV. BENCHMARK DISCUSSION**

### **IV-A. OVERVIEW**

Benchmark summaries are presented here in order of accounting process: revenues are discussed first, followed by O&M costs, operating income, debt management, capitalized income values, and profitability. Finally, wage and benefit profiles are discussed. Table 1 summarizes the scope and scale of the companies studied. It is important to emphasize that the following data are meant to illustrate the typical company studied in this sample and absolute values should not be extrapolated to the industry as a whole. This is especially true of the average number of customers.

TABLE 1			
UTILITY PROFILES			
STATISTICAL SUMMARY, BY INDUSTRY SEGMENT			
DATA BASED ON SEGMENT AVERAGES			
	2015	2016	2017
<b>All Companies</b>	<b>87 Firms</b>	<b>87 Firms</b>	<b>82 Firms</b>
Number of gas customers	662,552	659,073	633,776
Annual therms delivered ('000)	1,249,229	1,609,325	1,143,604
Annual therms delivered per account	2,443	5,720	3,740
Therms delivered per \$1,000 of gas plant	666	1,542	1,109
Density of system <sup>2</sup>	79.1	61.3	56.7
Firm sales <sup>3</sup>	92.8%	93.6%	93.0%
<b>Gas utilities</b>	<b>55 Firms</b>	<b>54 Firms</b>	<b>54 Firms</b>
Number of gas customers	689,347	750,845	767,388
Annual therms delivered ('000)	1,295,680	1,452,743	1,309,351
Annual therms delivered per account	2,837	2,736	1,982
Therms delivered per \$1,000 of gas plant	695	618	546
Density of system <sup>2</sup>	84.3	58.8	52.7
Firm sales <sup>3</sup>	94.6%	94.9%	94.0%
<b>Comb. Gas &amp; Electric Utilities<sup>1</sup></b>	<b>23 Firms</b>	<b>23 Firms</b>	<b>19 Firms</b>
Number of gas customers	789,295	789,337	603,719
Annual therms delivered ('000)	1,523,908	1,525,057	1,158,474
18 Firms Annual therms delivered per account	1,900	1,901	1,800
Therms delivered per \$1,000 of gas plant	630	891	520
Density of system <sup>2</sup>	71.5	68.2	63.9
Firm sales <sup>3</sup>	93.7%	93.7%	93.8%
<b>Municipal Utilities</b>	<b>9 Firms</b>	<b>10 Firms</b>	<b>9 Firms</b>
Number of gas customers	174,906	159,761	166,612
Annual therms delivered ('000)	263,404	509,991	394,765
Annual therms delivered per account	1,423	14,265	17,410
Therms delivered per \$1,000 of gas plant	581	6,393	5,601
Density of system <sup>2</sup>	66.5	67.0	67.1
Firm sales <sup>3</sup>	79.5%	85.7%	85.9%

Source: AGA, USR and US Department of Transportation, Office of Pipeline Safety.

<sup>1</sup> Data for "Combination Gas & Electric Utilities is from gas operations only.

<sup>2</sup> "Density" refers to the number of customers per mile of pipe in service.

<sup>3</sup> "Firm Sales" is expressed as a percentage of total annual therm volume delivered.

#### IV-B. REVENUE PERFORMANCE

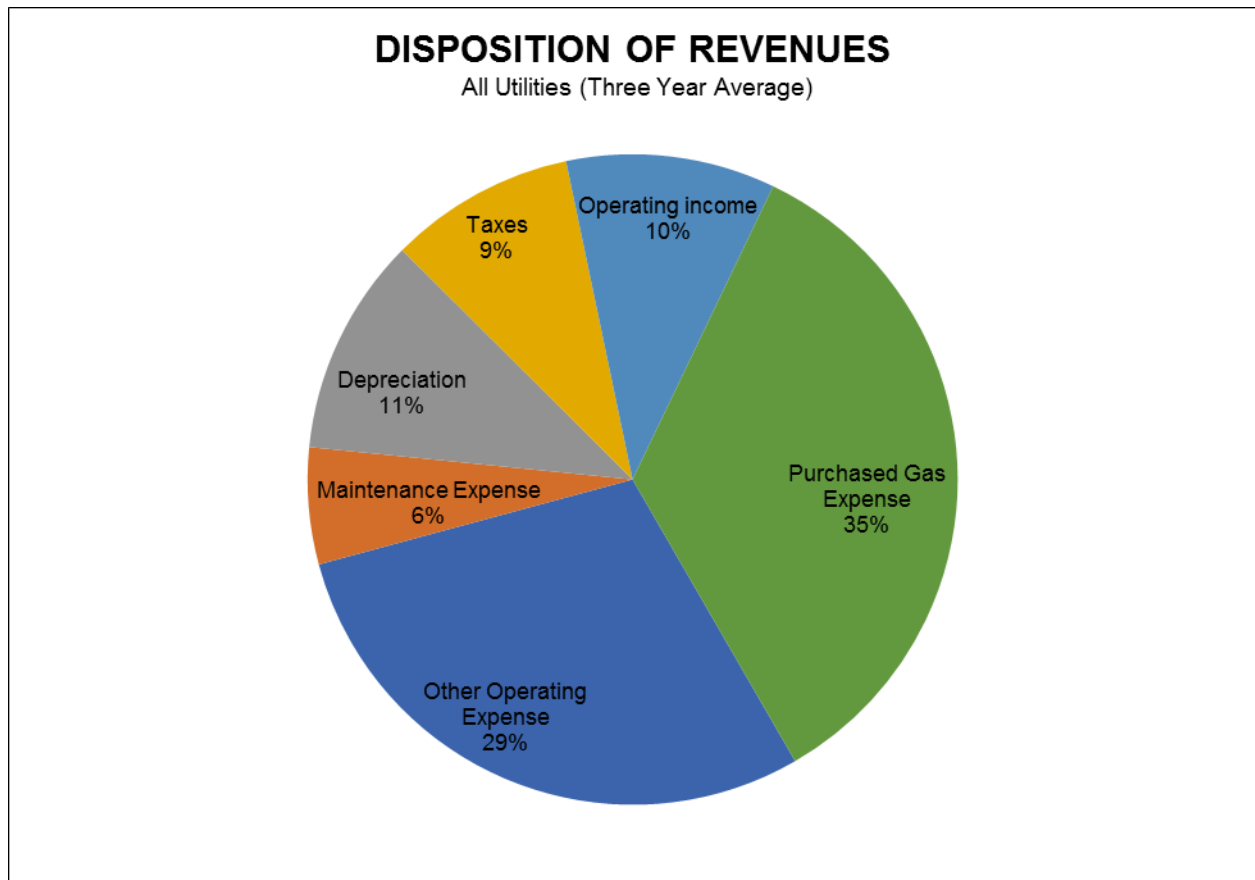
Figure 1 shows the allocation of average revenue for the three years studied. Table 2 summarizes average industry revenue performance by segment. Weather patterns impacted revenues per customer, while changing gas costs impacted both revenues per customer and per therm.

<b>TABLE 2</b> <b>UTILITY REVENUE PERFORMANCE</b> <b>Annual Average Values per Group</b> <b>Data Based on Segment Averages</b>			
	2015	2016	2017
<b>All Companies</b>			
Operating revenue ('000)	\$604,675	\$568,495	\$591,227
Per customer	\$1,210	\$1,137	\$1,152
Per therm	\$0.688	\$0.614	\$0.738
Gross sales margin (Rev. less Pur. Gas, '000)	\$372,279	\$391,229	\$380,734
Per customer	\$588	\$707	\$694
Per therm	\$0.328	\$0.366	\$0.468
Collection period (days)	28.6	36.9	38.2
<b>Gas Utilities</b>			
Operating revenue ('000)	\$604,335	\$598,832	\$670,981
Per customer	\$1,294	\$1,194	\$1,151
Per therm	\$0.633	\$0.606	\$0.747
Gross sales margin (Rev. less Pur. Gas, '000)	\$394,012	\$415,415	\$370,355
Per customer	\$658	\$827	\$666
Per therm	\$0.341	\$0.383	\$0.502
Collection period (days)	30.0	40.3	42.9
<b>Comb. Gas &amp; Electric Utilities<sup>1</sup></b>			
Operating revenue ('000)	\$771,151	\$760,765	\$664,056
Per customer	\$1,074	\$1,005	\$1,100
Per therm	\$0.795	\$0.744	\$0.831
Gross sales margin (Rev. less Pur. Gas, '000)	\$468,501	\$511,913	\$409,997
Per customer	\$463	\$564	\$820
Per therm	\$0.329	\$0.351	\$0.483
Collection period (days)	25.3	29.9	28.9
<b>Municipal Utilities</b>			
Operating revenue ('000)	\$181,314	\$147,723	\$165,340
Per customer	\$1,042	\$931	\$1,079
Per therm	\$0.755	\$0.539	\$0.678
Gross sales margin (Rev. less Pur. Gas, '000)	\$104,193	\$101,200	\$446,341
Per customer	\$442	\$495	\$599
Per therm	\$0.318	\$0.374	\$0.342
Collection period (days)	28.6	34.5	31.9

Source: AGA

<sup>1</sup> Figures for gas operations only.

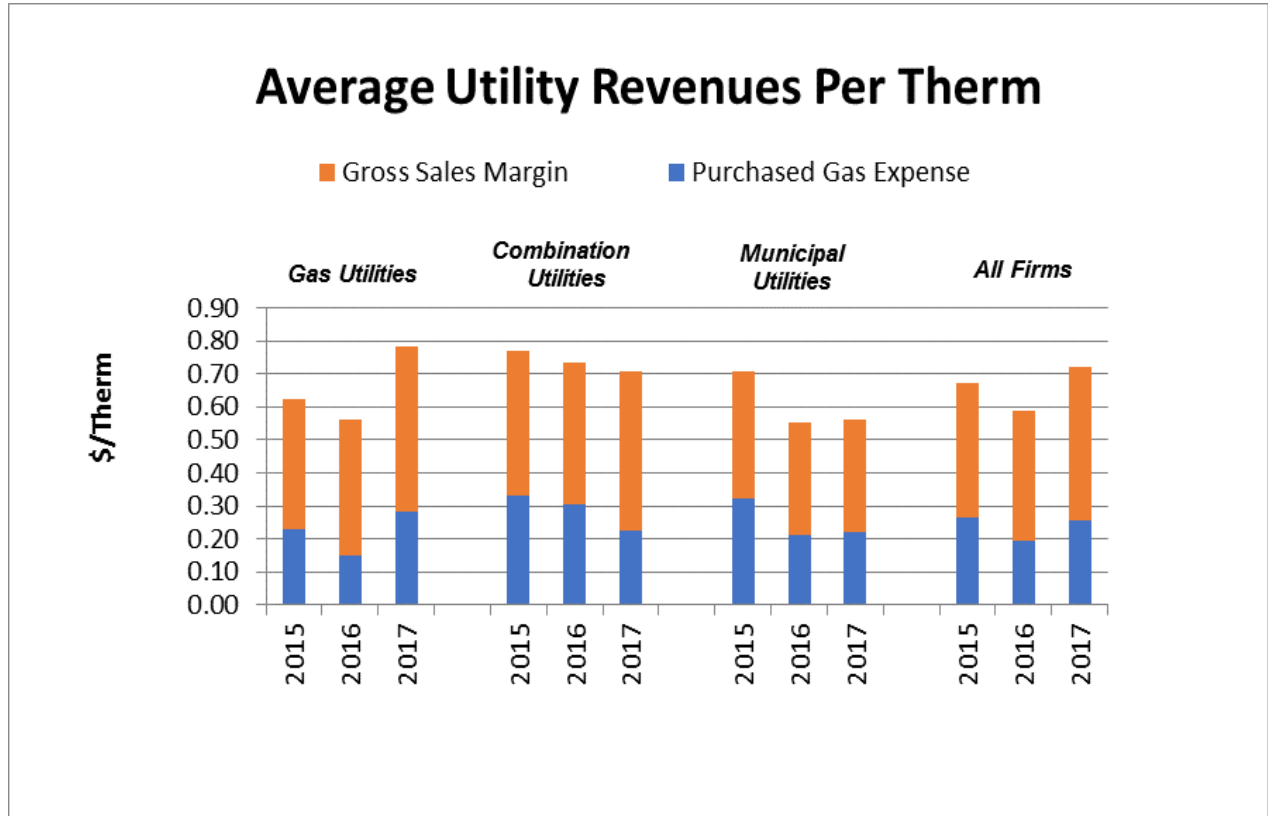
**FIGURE 1**



**IV-C. O&M ANALYSIS**

Operations and maintenance (O&M) expenses are those costs specifically attributable to current-year gas distribution activity. These are cost items that are incurred within an annual time period (as opposed to costs amortized over a period of years as is the case with finance costs and depreciation). A presentation of O&M costs on a per-therm basis will facilitate a comparison of cost efficiencies attained by the various industry segments. Table 3 shows average O&M expense detail for the years studied for the combination and gas utility segments.

FIGURE 2



Source: AGA, USR.



TABLE 3						
UTILITY O&M DETAIL ANALYSIS						
	GAS UTILITIES			COMBO UTILITIES <sup>1</sup>		
	2015	2016	2017	2015	2016	2017
<b>VALUES PER THERM</b>						
Gas-only revenues	\$0.6700	\$0.6068	\$0.8044	\$0.7777	\$0.7444	\$0.8313
Purchased-gas expense	\$0.2288	\$0.1499	\$0.2827	\$0.3316	\$0.3043	\$0.2249
Gross sales margin	\$0.3966	\$0.4105	\$0.5023	\$0.4378	\$0.4308	\$0.4834
Total production costs <sup>2</sup>	\$0.2734	\$0.1963	\$0.3021	\$0.3399	\$0.3136	\$0.2200
Storage & LNG	\$0.0045	\$0.0012	\$0.0032	\$0.0036	\$0.0037	\$0.0007
Transmission	\$0.0122	\$0.0115	\$0.0090	\$0.0135	\$0.0146	\$0.0197
Distribution	\$0.0673	\$0.0664	\$0.0765	\$0.0646	\$0.0749	\$0.0734
Customer accounts	\$0.0270	\$0.0266	\$0.0297	\$0.0340	\$0.0358	\$0.0311
Customer svc. & info.	\$0.0049	\$0.0054	\$0.0127	\$0.0137	\$0.0134	\$0.0059
Sales	\$0.0030	\$0.0030	\$0.0059	\$0.0032	\$0.0031	\$0.0154
<u>Admin. &amp; general</u>	\$0.0744	\$0.0819	\$0.1030	\$0.0751	\$0.0897	\$0.1218
Total O&M	\$0.4648	\$0.4062	\$0.5423	\$0.5475	\$0.4841	\$0.4879
<b>SAME-SIZE ANALYSIS</b>						
Gas-only revenues	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Purchased-gas expense	34.15%	24.71%	35.15%	42.64%	40.88%	27.05%
Gross sales margin	59.20%	67.66%	62.44%	56.29%	57.87%	58.15%
Total production costs <sup>2</sup>	40.80%	32.34%	37.56%	43.71%	42.13%	26.47%
Storage & LNG	0.67%	0.19%	0.40%	0.46%	0.50%	0.08%
Transmission	1.82%	1.90%	1.12%	1.73%	1.96%	2.37%
Distribution	10.05%	10.94%	9.51%	8.30%	10.06%	8.82%
Customer accounts	4.03%	4.38%	3.70%	4.38%	4.81%	3.74%
Customer svc. & info.	0.73%	0.89%	1.58%	1.76%	1.80%	0.71%
Sales	0.44%	0.49%	0.74%	0.41%	0.42%	1.85%
<u>Admin. &amp; general</u>	11.10%	13.50%	12.81%	9.65%	12.06%	14.65%
Total O&M	69.37%	66.94%	67.42%	70.41%	65.04%	58.69%

Source: AGA, USR.

<sup>1</sup> Figures for gas operations only.

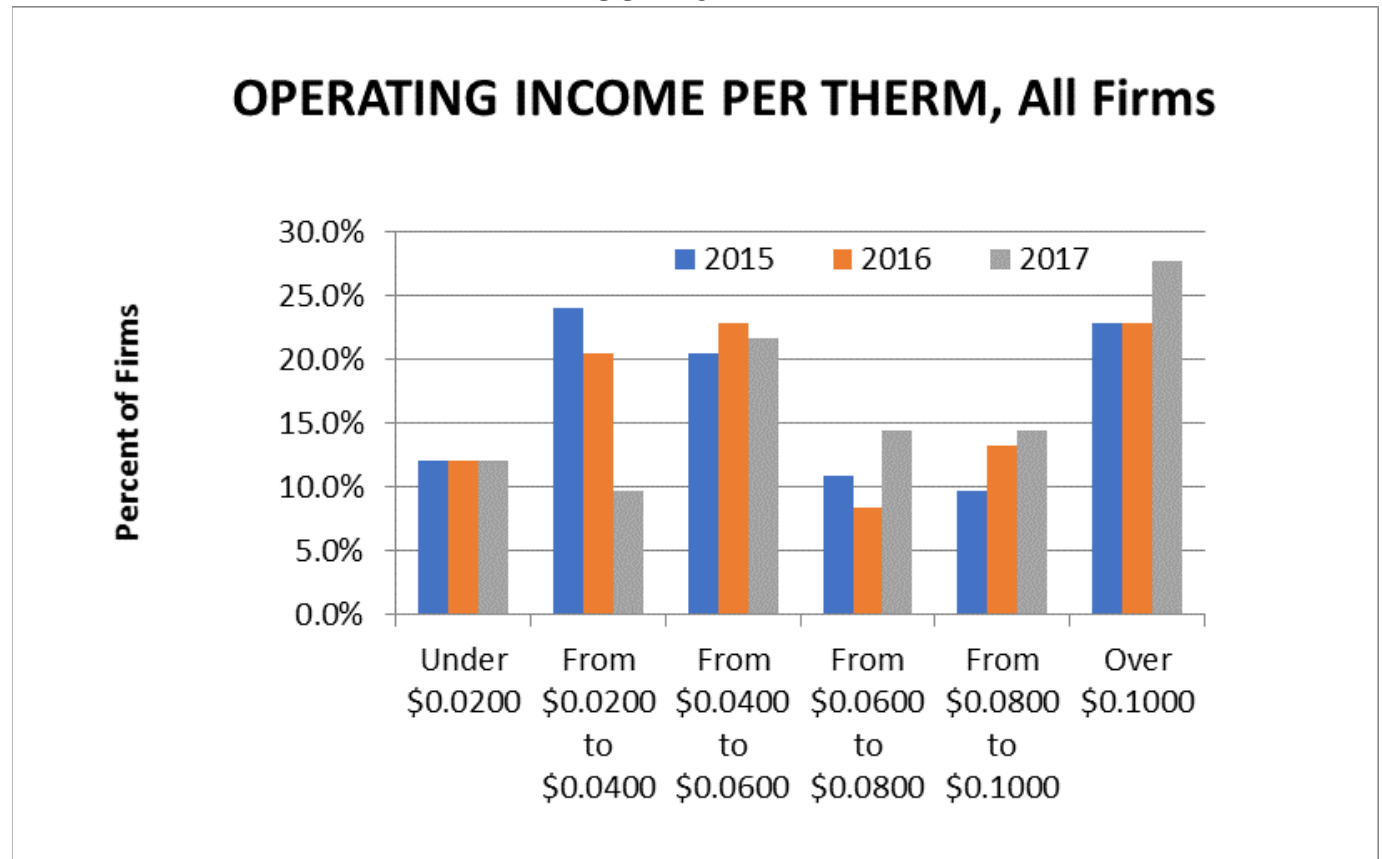
<sup>2</sup> Purchased-gas expense is subsumed within total production costs.

**NOTE:** Figures do not sum precisely due to independent rounding.

#### IV-D. INCOME ANALYSIS

Operating income, by accounting definition, represents revenues net of operations expenses. Operating income does not net out capital cost-related expenses such as interest and amortization. A summary of operating income, then, allows a comparison of efficiency in gas distribution. Figure 3 shows the dispersion of individual companies' operating income per therm. Table 4 shows average operating income results by type of firm.

**FIGURE 3**



Source: AGA, USR.

TABLE 4						
UTILITY INCOME STATEMENT HIGHLIGHTS						
AVERAGE VALUES PER GROUP, GAS OPERATIONS ONLY						
	GAS UTILITIES			COMBO UTILITIES <sup>1</sup>		
	2015	2016	2017	2015	2016	2017
Operating revenue, \$000	\$604,335	\$598,832	\$670,981	\$771,151	\$760,765	\$664,056
Total O&M, \$000	\$403,466	\$375,631	\$425,249	\$542,407	\$498,873	\$425,502
Operating income, \$000	\$74,794	\$83,713	\$98,678	\$88,922	\$117,790	\$97,385
<b>Percent of Revenue</b>						
Total O&M	66.76%	62.73%	63.38%	70.34%	65.58%	64.08%
Operating income	12.38%	13.98%	14.71%	11.53%	15.48%	14.67%
<b>Per Therm</b>						
Revenue	\$0.672	\$0.606	\$0.747	\$0.778	\$0.744	\$0.831
Total O&M	\$0.466	\$0.406	\$0.506	\$0.548	\$0.484	\$0.550
Operating income	\$0.071	\$0.069	\$0.069	\$0.085	\$0.107	\$0.109
<b>Per Customer</b>						
Revenue	\$1,292	\$1,194	\$1,151	\$1,068	\$1,005	\$1,100
Total O&M	\$1,013	\$899	\$811	\$756	\$657	\$721
Operating income	\$67	\$66	\$94	\$115	\$143	\$153
<b>Per Dollar of Gas Plant</b>						
Revenue	\$0.347	\$0.289	\$0.293	\$0.334	\$0.407	\$0.292
Total O&M	\$0.254	\$0.205	\$0.207	\$0.242	\$0.284	\$0.199
Operating income	\$0.033	\$0.029	\$0.029	\$0.033	\$0.053	\$0.036
<b>Per Mile of Main<sup>2</sup></b>						
Revenue	\$88,489	\$57,528	\$59,880	\$78,022	\$72,659	\$76,742
Total O&M	\$64,677	\$38,547	\$40,350	\$52,477	\$45,500	\$47,432
Operating income	\$8,926	\$6,694	\$6,815	10,425	\$12,205	\$12,728

Source: AGA, USR.

<sup>1</sup> Figures for gas operations only.

<sup>2</sup> Miles of main only.

#### IV-E. DEBT ANALYSIS

Historically, utilities have operated in a regulated environment. Therefore, debt instruments and their management have been prominent items on the utilities' financial agendas. Debt has traditionally represented a large share of utility capitalization. This is due to the historically regulated environment in which utilities have operated. The presence of regulatory oversight, from an investor's perspective, suggests less risk, more stable cash flow, and generally better debt ratings and interest coverage from cash flow. Historically, this made

the utility industries attractive to bond investors. As for utilities, the containment of interest and other debt-related carrying costs can have a decisive impact on the overall profitability of operations.

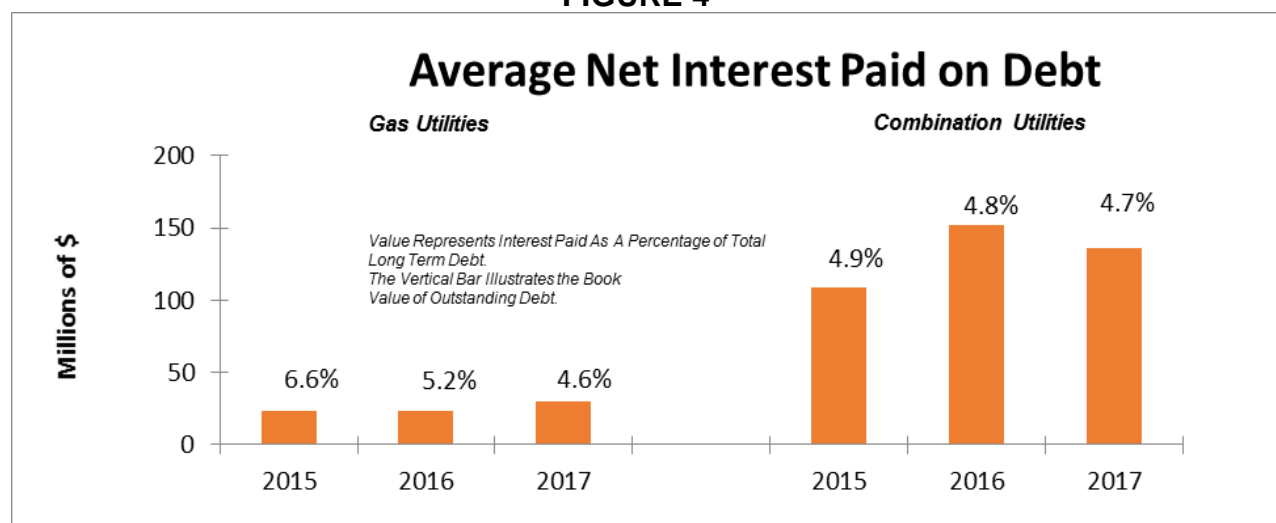
The total cost of capital for a utility reflects that of both debt and equity financing.<sup>5</sup> Table 5 shows summary descriptors of capital costs for utilities by industry segment.

<b>TABLE 5</b>			
<b>UTILITY DEBT AND DEBT COVERAGE</b>			
<b>AVERAGE VALUES</b>			
	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Gas utilities</b>			
Total LT Debt to Total Assets	21.84%	20.49%	22.45%
LT Debt to Total Capitalization	36.55%	34.55%	38.48%
EBITDA Interest Coverage	8.7x	19.5x	21.1x
<b>Combination Utilities<sup>1</sup></b>			
Total LT Debt to Total Assets	28.01%	28.32%	29.67%
LT Debt to Total Capitalization	45.03%	45.46%	46.92%
EBITDA Interest Coverage	6.3x	7.8x	8.3x

Source: AGA, USR.

<sup>1</sup>Figures represent combined gas and electric operations.

**FIGURE 4**



Note: Combination utility figures represent combined gas and electric operations.

Note again that the discussion of combination utility debt and capital structure cannot be limited to gas operations. Therefore, this portion of the analysis necessarily considers combined-commodity financial performance. The combination utilities feature a diversity of

<sup>5</sup> For combination utilities, such measures necessarily reflect combined gas and electric financials. Some municipal utilities in this study have similar combined activity financing.

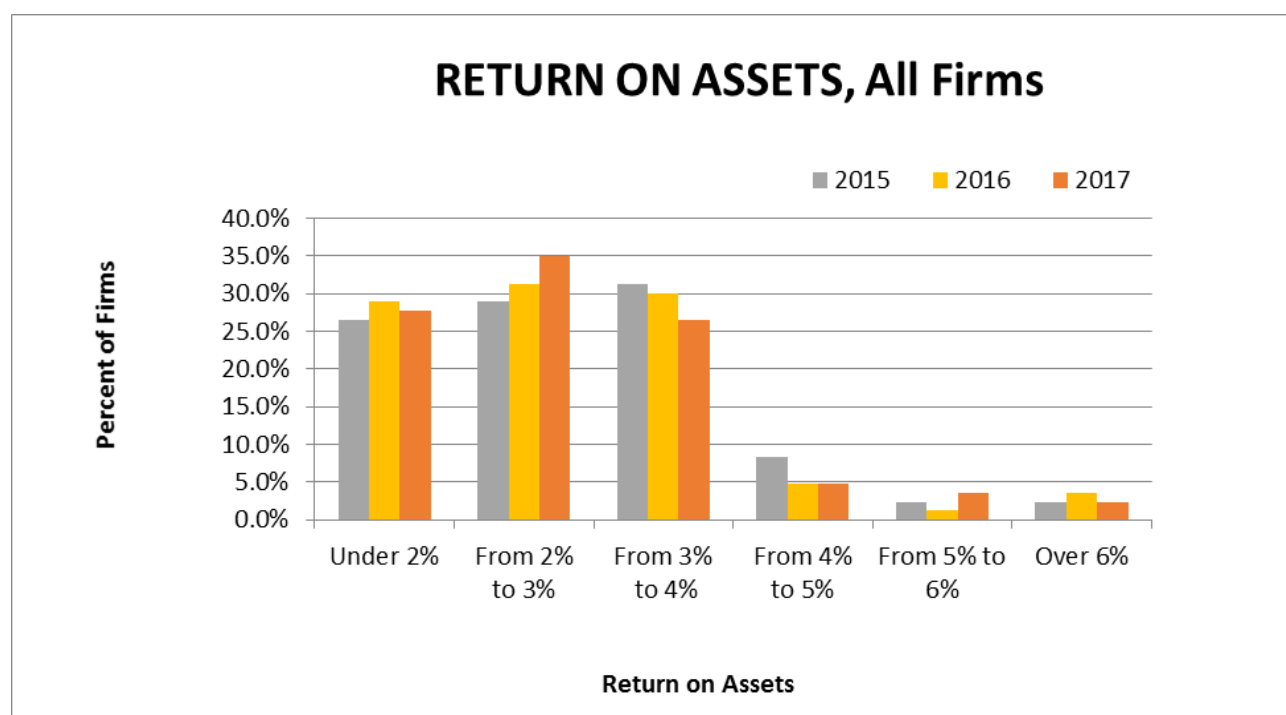
commodity sales and stabilized electric base-load operations attributable to base-load (i.e., not weather-driven) sales.

#### IV-F. PROFITABILITY ANALYSIS

For this study, profitability is expressed in terms of return on assets (ROA), which relates net income to the value of the asset base that generated that income. Stated differently, ROA measures how well a company's assets "work" to generate income from operations. As such, ROA is convenient for comparing the operating results across companies within an industry.

Figure 5 shows the dispersion of individual company ROA results. Table 6 shows profitability measures for both gas and combination utilities for the years studied.

**FIGURE 5**



<sup>1</sup> When referring to combined gas and electric operations, the balance sheet items (i.e., total end-of-year assets) refer to the total firm, which could include non-utility assets, gas transmission assets and "other" utility assets (e.g., water), while income statement items (i.e., total revenues) refer to only gas and electric utility distribution operations combined. As a result, these ratios may differ from other reports that consolidate income statement items for the total firm.

While ROA is typically measured as the ratio of net income to assets, it can also be expressed as asset turnover multiplied by profit margin. Asset turnover measures a firm's ability to generate sales from its fixed asset base. The second component of ROA is profit margin, or return on sales. This measures the operating profit per dollar of sales.

TABLE 6			
UTILITY PROFITABILITY INDICATORS			
AVERAGE VALUES			
	2015	2016	2017
<b>Gas Utilities</b>			
Asset Turnover	0.34X	0.27X	0.28X
Financial Leverage	67.84%	65.75%	68.21%
Equity Multiplier	3.00	3.02	3.17
Profit Margin	7.83%	8.01%	8.58%
ROA <sup>2</sup>	2.68%	2.41%	2.58%
ROE <sup>2</sup>	8.43%	7.10%	8.47%
Current Ratio	0.74	0.67	0.67
Current Assets/Total Assets	8.92%	8.82%	9.43%
<b>Combination Utilities<sup>1</sup></b>			
Asset Turnover	0.30X	0.28X	0.28X
Financial Leverage	68.58%	68.29%	68.30%
Equity Multiplier	3.22	3.20	3.26
Profit Margin	9.63%	10.26%	9.68%
ROA <sup>2</sup>	2.81%	2.85%	2.80%
ROE <sup>2</sup>	9.45%	9.79%	9.04%
Current Ratio	0.94	0.99	0.91
Current Assets/Total Assets	7.14%	7.11%	6.98%

Source: AGA, USR.

<sup>1</sup> Figures represent combined gas and electric operations.

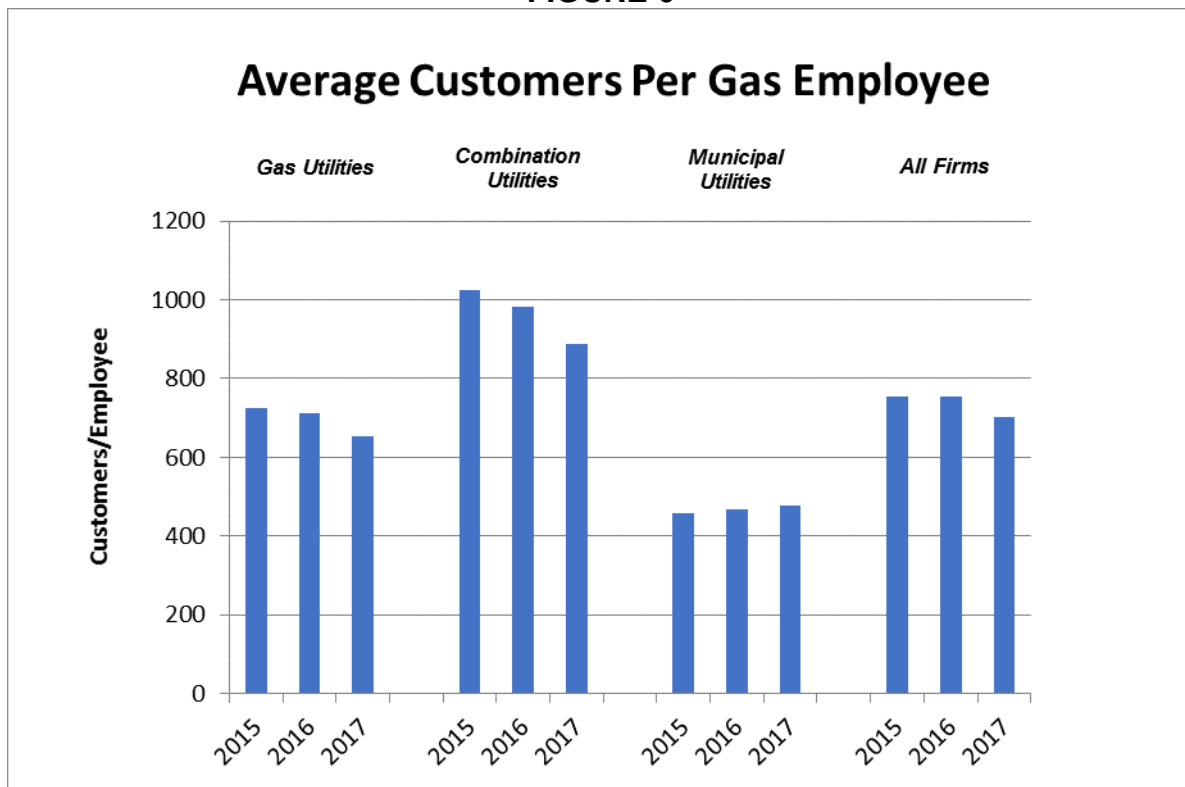
<sup>2</sup> When referring to combined gas and electric operations, the balance sheet items (i.e., total end-of-year assets) refer to the total firm, which could include non-utility assets, gas transmission assets and "other" utility assets (e.g., water), while income statement items (i.e., total revenues) refer to only gas and electric utility distribution operations combined. As a result, these ratios may differ from other reports that consolidate income statement items for the total firm.

Another measure of profitability is return on common equity (ROE). This differs from ROA in that it takes into account the impact of a firm's capital structure on its profitability. The capital structure of a firm can be examined in many different ways. ROE can be expressed as ROA multiplied by the equity multiplier. The equity multiplier (shown in Table 6) measures a firm's assets relative to its common stock equity. An increase in a firm's level debt financing (an increase in liabilities) will cause a reduction in stockholders' equity. This will cause the equity multiplier to rise and thereby increase total ROE. The rise in ROE compensates equity holders for the increased risk they must bear as the firm increases its level of debt.

#### IV-G. LABOR PRODUCTIVITY AND WAGE ANALYSIS

Current industry interest in restructuring, efficiency, and cost effectiveness often calls attention to staffing and wage profiles. Figure 6 and Table 7 summarize wage and benefit values by industry segment.

**FIGURE 6**



Source: AGA, USR.

<b>TABLE 7</b> <b>UTILITY WAGES AND BENEFITS</b> <b>AVERAGE VALUES PER EMPLOYEE AT YEAR-END</b>				
	2015	2016	2017	3-Year Average
<b>All Firms</b>				
Number of employees at year-end	887	983	848	906
Total salaries and wages	\$87,110	\$91,014	\$91,966	\$90,030
Total benefits and pensions	\$28,810	\$27,280	\$26,598	\$27,563
Total salaries, benefits, and pensions	\$115,919	\$118,294	\$118,565	\$117,593
Ratio of total benefits to total compensation	24.40%	24.6%	23.8%	24.3%
Therms sold per employee	1,455,922	2,754,260	2,430,797	2,213,659
Customers per employee	692	716	701	703
<b>Gas Utilities</b>				
Number of employees at year-end	917	1019	988	975
Total salaries and wages	\$77,849	\$82,218	\$83,098	\$81,055
Total benefits and pensions	\$20,218	\$23,286	\$21,951	\$21,818
Total salaries, benefits, and pensions	\$98,066	\$105,503	\$105,049	\$102,873
Ratio of total benefits to total compensation	21.08%	22.0%	21.7%	21.6%
Therms sold per employee	1,296,357	1,328,236	1,209,747	1,278,113
Customers per employee	624	667	653	648
<b>Combination Utilities<sup>1</sup></b>				
Number of employees at year-end	1,117	1,323	854	1,098
Total salaries and wages	\$121,134	\$124,202	\$129,791	\$125,042
Total benefits and pensions	\$45,744	\$29,290	\$32,914	\$35,983
Total salaries, benefits, and pensions	\$166,878	\$153,492	\$162,704	\$161,025
Ratio of total benefits to total compensation	24.04%	19.1%	22.0%	21.7%
Therms sold per employee	1,729,605	1,671,666	1,691,435	1,697,569
Customers per employee	914	877	888	893
<b>Municipal Utilities</b>				
Number of employees at year-end	392	354	354	366
Total salaries and wages	\$62,366	\$70,993	\$70,131	\$67,830
Total benefits and pensions	\$38,319	\$43,674	\$38,516	\$40,170
Total salaries, benefits, and pensions	\$100,685	\$114,667	\$108,647	\$108,000
Ratio of total benefits to total compensation	41.60%	47.2%	36.3%	41.7%
Therms sold per employee	693,274	12,547,591	10,583,830	7,941,565
Customers per employee	465	523	476	488

Source: AGA, USR.

<sup>1</sup> Figures for gas operations only.

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## APPENDIX1: GLOSSARY

**NOTE:** Immediately below some glossary items are references to the USR data field(s) which are the source for that item. The specific field reference is in the format (x,y) where x is the schedule and y is the line item on that schedule. For example, [(6, 21) divided by (2,1 / 365)] refers to Schedule VI, 21 divided by the result of Schedule II, line 1 divided by 365.

### **Absolute values; absolute dollars**

These numbers show the sum of the actual reported data of those companies responding to the survey.

### **Admin. and gen. expense (4,12)**

The overhead cost associated with office activities. Examples of such expenses include stationery, telephone service, office cleaning, heat and power, etc.

### **Asset turnover (2,1)/(6,36)**

A ratio which expresses sales revenue as a percentage of assets on-hand over corresponding accounting periods (usually one year). This ratio can be interpreted as the relative degree to which a company's assets "work" to generate sales revenue.

### **Assets (6,36)**

The total accounting value of a company's productive resources at a point in time (as on a balance sheet).

### **Average salaries, benefits, & pensions per employee [(13,6)+(13,10)]/(13,2)**

Total compensation to employees (wages, benefits, etc.) divided by number of employees.

### **Capitalization (6,51)**

The structure of a firm's long-term financing. "Capitalization" refers to the combination of debt and equity, which (in addition to retained earnings) is the monetary equivalent of the firm's assets.

### **Collection period (days) (6,21)/ [(2,1)/365]**

An accounting measure that indicates the efficiency of revenue collections. This measure expresses an accounts receivable total in terms of the number of days of normal revenue collections that would be accumulated to make a sum equivalent to the accounts receivable balance.

### **Combination gas and electric company**

A business entity that distributes both gas and electricity to customers within a franchise territory.

### **Common equity (6,42)**

The total value of wealth given by investors to a company in return for ownership of shares (common stock) of that company's assets and retained earnings.

### **Current ratio (6,29)/(6,61)**

Current assets divided by current liabilities. An indication of a company's ability to meet short-term debt obligations; the higher the ratio, the more liquid the company is.

### **Customer**

An entity which enters into an account with a utility in order to receive natural gas for heating, power, feedstock, and other uses. For current purposes, an individual gas meter functionally represents each customer account. As such the terms "customer," "meter," and "account" are used interchangeably in this study.

### **Customers per employee [20,15)+(20,18)]/(8,2)**

Total customers (including both sales and transportation) divided by total employees.

**Customer accounts expense (4,9)**

The expense attributable to serving a customer. For utility operations, this includes metering, billing, and fixed charges incurred by customer hook-ups. Includes FERC System of Accounts 901 (Supervision), 902 (Meter reading expenses), 903 (Customer records and collection expenses), 904 (Uncollectable accounts), and 905 (Misc. customer accounts expenses).

**Customer accounts expense per therm (4,9)/[(20,15+20,18)]**

Customer accounts expense divided by total therms (including both sales and transportation volumes).

**Customer service and information (4,10)**

The expense attributable to all customer assistance and information operations. Bill remediation, bill inserts, and other communication with existing customers is included in this category. Includes FERC System of Accounts 907 (Supervision), 908 (Customer assistance expenses), 909 (Informational and instructional advertising expenses), and 910 (Misc. customer and informational expense).

**Customer service and information expense per therm (4,10)/[(20,15+20,18)]**

Customer service and information expense divided by total therms (including both sales and transportation volumes)

**Debt (6,50) + (6,54) + (6,61)**

The summed monetary value of a company's short- and long-term obligations to repay money that it has borrowed from lenders.

**Depreciation (2,4)**

The operating expense that, as an accounting mechanism, represents the predetermined annual write-down of a durable capital asset. Depreciation, as an accounting item, impacts net income and taxes. It is not a cash expenditure, but is an annual recognition of long-lived asset costs which are spread over the years that these assets are expected to be in operation.

**Distribution expense (4,8)**

The operating expense that represents the cost of moving natural gas from a utility's city gate to all the meters along the franchise's system of gas mains. Includes FERC System of Accounts 871 (Distribution load dispatching), 872 Compressor station labor and expenses), 873 (Compressor station fuel and power (Major only), 874 (Mains and service expenses), 875 (Measuring and regulating station expenses 0 General), 876 (Measuring and regulating station expenses – Industrial), 877 (Measuring and regulating station expenses – City Gate Check Stations), 878 (Meter and house regulator expenses), 879 (Customer Installation expenses), 880 (Other expenses), 881 ((Rents), 885 (Maintenance supervision and engineering), 886 (Maintenance of structure and improvements), 887 (Maintenance of mains), 888 (Maintenance of mains), 888 (Maintenance of compressor station equipment), 889 (Maintenance of measuring and regulating stations equipment – General 890 (Maintenance of measuring and regulating station equipment – Industrial), 891 (Maintenance of measuring and regulating station equipment – City Gate Check Stations), 892 (Maintenance of services), 893 (Maintenance of meters and house regulators), and 894 (Maintenance of other equipment).

**EBIT (2,18)+(2,8)**

A measure which describes, for an accounting period, the total company income net of operations expense, but not yet net of interest and tax expenses. This measure facilitates comparisons of companies' economic output after operations, capital depletion, and depreciation conventions.

**EBITDA (2,18)+(2,6)+(2,8)**

A measure which describes, for an accounting period, the total company income net of operations expense, but not yet net of interest, tax, depreciation, and amortization expenses. This measure facilitates comparisons of companies' economic output from operations.

**Equity multiplier (4,36)/(4,42)**

Total assets divided by total common stock equity. Used as a measure of corporate profitability.

**Fuel (4,1)**

Includes FERC System of Accounts 501, 518 and 547.

**Field**

An element of database structure that holds the recorded values for a specific attribute of interest common to all observations. See also *Uniform Statistical Report (USR)*.

**Financial leverage**  $[(6,50)+(6,54) ]+(6,61) ]+(6,67)]/(6,36)$ 

Total debt divided by total assets. Measures the employment of funds obtained at a fixed cost.

**Firm, percent**  $((20,1+20,2+20,3+20,5+20,7+20,9)/20,15)$ 

Total sales volumes of gas sold under the firm tariff divided by total sales volumes.

**Gas plant (6,2)**

The undepreciated capital facilities directly related to gas distribution. See also "total plant in service."

**Gas plant per customer**  $(6,2)/[(20,15)+(20,18)]$ 

Gas plant divided by total customers (including both sales and transportation).

**Gas plant per mile of main**  $(6,2)/\text{miles of main}$ 

Gas plant divided by total miles of mains (from U.S. Dept. of Transportation).

**Gas utility**

A franchised gas distribution company, the equity value of which is held by shareholders in the form of stock. The earnings of such a company are distributed wholly or in part to shareholders in the form of dividends. Any earnings not distributed are retained by the company on its balance sheet.

**General & administrative costs per customer**  $(4,12)/[(20,15)+(20,18)]$ 

Expenses incurred by the utility not specifically assignable to operations or sales, such as overhead, general office, personnel, etc., divided by total customers (both sales and transportation).

**General & administrative costs per therm**  $(4,12)/[(20,15)+(20,18)]$ 

Expenses incurred by the utility not specifically assignable to operations or sales, such as overhead, general office, personnel, etc., divided by total therms (both sales and transportation volumes).

**Gross sales margin per customer or Gross margin per customer**  $[(2,1) - (4,5)]/[(20,15)+(20,18)]$ 

Defined as revenue, less total production costs, divided by total customers, both sales and transportation. An accounting measure that describes the per-unit dollar value that remains after the acquisition cost of the unit is subtracted from the retail revenue received for that unit.

**Gross sales margin per therm or Gross margin per therm**  $[(2,1) - (4,5)]/[(20,15)+(20,18)]$ 

Defined as revenue, less total production costs, divided by total delivered therms. An accounting measure that describes the per-unit dollar value that remains after the acquisition cost of the unit is subtracted from the retail revenue received for that unit. Includes both sales and transportation volumes.

**Heating Degree Days (HDD)**

A measure of the coldness of the weather experienced, based on the extent to which the daily mean temperature falls below a reference temperature, usually 65 degrees F.

**Implied long-term (LT) debt cost**  $(2,24)/(6,50)$ 

A proxy measure of the interest rate paid by utilities for long-term borrowing (obligations over one year). Data as collected on the USR did not request a breakout of short- versus long-term interest obligations. Therefore, a strict calculation of cost of long term debt (annual interest paid on long-term obligations divided by total long-term debt) was not possible. The implied cost relates net interest costs (interest of all types) to long-term debt. The result permits some distortion of true long-term debt costs.

**Interest coverage**  $[(2,18 + 2,4 + 2,6 + 2,8) \text{ divided by } (2,24)]$

The comparison of a company's financial returns to its interest payment obligations, for a specific accounting period. "EBITDA" is an income statement result; specifically, it means "earnings before interest, taxes, depreciation, and amortization." This ratio indicates the company's relative ability to generate the cash flow necessary to meet its interest payment obligations.

**Long-term debt** (6,50)

Financial instruments that become due on a date at least one year beyond the current accounting period. These include the mortgages and bonds, which represents a company's capital borrowings. By issuing debt, the company has an obligation to repay its lenders the amount borrowed plus regular increments of interest.

**Lower quartile (LQ)**

A statistical measure that describes a data value that is halfway between the median and the lowest value in the data set. Technically defined as the "first quartile." See "quartile" and "median."

**Mean** (Arithmetic – See Weighted Average.)

An average value; i.e., a single calculated value which is representative of a set of values. The mean is calculated by summing a set of observation values, then dividing that total by the number of observations that were used.

**Median (MED)**

A statistical measure describing the "middle position" for a sequence of observations, or the 50-percent position in a sequence of ordered observations (2<sup>nd</sup> quartile). See "quartile."

**Meter**

(See "customer")

**Miles of Main**

Length of utility system's distribution mains (excludes transmission and service lines) as reported by utilities to the US Department of Transportation, Office of Pipeline Safety.

**Municipal utility**

A type of gas distribution company that is owned by a local government entity and run on behalf of that entity's citizenry. Whereas investor-owned utilities usually pay out dividends to shareholders, the municipal utility's dividends accrue to the citizens in the form of a lower cost for energy.

**Net margin per customer**  $[(2,1)-(4,13)]/[(20,15)+(20,18)]$

Operating revenues less total O&M, with the result divided by total customers (includes both sales and transportation).

**Net margin per therm**  $[(2,1)-(4,13)]/[(20,15)+(20,18)]$

Operating revenues less total O&M, with the result divided by total therms (includes both sales and transportation volumes).

**Net worth**

The residual value of a company's assets after deducting liabilities.

**Operations and maintenance (O&M)** (20,13)

These are accounting summaries of expenditures attributable to company operations. Most importantly, these are expenses over which management has direction. These are distinct from (i.e., do not include) expenses imposed from outside of operations such as interest payments and amortization.

**Observation**

A single event for which an activity is recorded or measured. For a measurable event the unique record for any observation is that observation's value. For example, if the variable of interest is annual therms sold," then "1,000,000" may be the value of this variable for the single observation "ABC Company."

**Operating income (2,11)**

The financial outcome of a company that represents revenues earned less the expenses attributable to operations, including depreciation, amortization, and taxes (but not expenses such as interest payments, amortization, etc.).

**Operating revenue**

See revenue.

**Other production expenses (4,4)**

Includes FERC System of Accounts 805 (Other gas purchases and purchase gas adjustments), 806 (Exchange gas), 812 (Gas used for the utility operations), and 813 (Other gas supply expense).

**Profit margin (2,29)/(2,1)**

Net income available for common stockholders divided by total operating revenues (including electric for combination companies, since net income is not segmented by operational division).

**Purchased gas expense (4,3)**

The utility expenditure for the gas it buys on the market from producers, transmission companies, marketers, and other sources. Includes FERC System of Accounts 800 (wellhead purchases), 801 (field line purchases), 802 (plant outlet purchases), 803 (transmission line purchases), 804 (city gate purchases) LESS 804.1 (LNG), and 807 (Purchased or expense).

**Purchased gas cost per therm (4,5)/(20,15)**

Total production gas expense divided by total sales volumes

**Quartile**

A statistical tool that analyzes a set of values that are sequenced by order of magnitude. Any set of ordered values can be divided into four quartiles. The first quartile is the observation reached after counting off the first 25 percent of the sequenced values (counting from the lowest value). The second quartile is the observation at the 50 percent position in the sequence; the third quartile is at the 75 percent position; and the fourth quartile is at the 100 percent position, which is also the highest value for the entire data set.

**Return on Assets (ROA) (2,29)/(6,36)**

A financial ratio that expresses net income as a percentage of assets. This ratio measures how well a company uses its assets to generate operating income.

**Return on Equity (ROE) (2,29)/(6,42)**

A financial ratio that expresses net income as a percentage of total common stock equity. This ratio measures how well investors in a firm are doing relative to other investments.

**Revenue (2,1)**

The receipts from utility operations and sales of gas, excluding non-utility and other income, before expenses are considered.

**Revenue per customer (2,1)/[(20,15)+(20,18)]**

Operating revenues divided by total meters, including transportation customers.

**Revenue per therm (2,1)/[(20,15)+(20,18)]**

Operating revenues divided by total therms, including transportation volumes.

**Sales expense (4,11)**

The cost of sales administration, including commissions overhead, materials, etc. Includes FERC System of Accounts 911 (Supervision), 912 (Demonstrating and selling expenses), 913 (Advertising expenses), and 916 (Misc. sales expenses).

**Same-size financial statement**

This is an alternative method of displaying income statement and balance sheet summaries. It is intended to facilitate comparisons across company types. As opposed to displaying absolute dollar values, the same-size statement presents each line item as a percentage of its aggregate total. The same-size income statement sets revenues at 100.0 and all other items are a percent of that total. The same-size balance sheet similarly sets total assets (as well as total liabilities and owners' equity) to 100.0.

**System density**  $[(20,15)+(20,18)]/\text{Miles of Main}$ 

Total customers (both sales and transportation) divided by total miles of mains (from the U.S. Dept. of Transportation). A ratio that describes the degree to which meters are "packed" onto a distribution system.

**Tax expense** (2,8)

The amount representing the utility's obligation to pay taxes, including sale, gross receipts, income, and property taxes. This total includes pass-through taxes collected by the utility on behalf of local government jurisdictions.

**Therm**

A unit of measurement for energy, equivalent to 100,000 British thermal units.

**Therms per customer**  $[(20,15)+(20,18)]/[(20,15)+(20,18)]$ 

Total therms (both sales and transportation) divided by total customers (both sales and transportation).

**Therms delivered per employee**  $[(20,15)+(20,18)]/(8,2)$ 

Total therms (both sales and transportation) divided by total employees.

**Total benefits** (13,10)

The annual compensation accruing to utility employees in the form of pensions, health care, insurance, and other non-payroll items.

**Total compensation** (13,6 + 13,10)

The total annual compensation accruing to utility employees, both as payroll and non-payroll compensation, as well as benefits.

**Total production expense** (4,5)

Combination of fuel (4,1), purchased gas (4,3), and other production expenses (4,4).

**Total O&M per customer**  $(4,13)/[(20,15)+(20,18)]$ 

All operations and maintenance expenses divided by total customers (includes both sales and transportation).

**Total O&M per therm**  $(4,13)/[(20,15)+(20,18)]$ 

All operations and maintenance expenses divided by total therms (includes both sales and transportation volumes).

**Total plant in service** (6,5)

The total value of utility plant as shown on the balance sheet. In the case of combination utilities, this will include gas and electric plant used for the purpose of power distribution.

**Transmission** (4,7)

The cost to a utility for moving natural gas purchases from its source to its city gate. Includes FERC System of Accounts 850 (Operations, supervision and engineering), 851 (System control and load dispatching), 852 (Communication system expenses), 853 (Compressor station labor and expenses), 854 (Gas for compressor station fuel), 855 (Other fuel and power for compressor stations), 856 (Main expenses), 857 (Measuring and regulating station expenses), 858 (Transmission and compression of gas by others), 859 (Other expenses), 860 (Rents), 861 (Maintenance supervision and engineering), 862 (Maintenance of structures and improvements), 863 (Maintenance of mains), 864 (Maintenance of compressor station equipment), 865 (Maintenance of measuring and regulating station equipment), 866

(Maintenance of communication equipment), 867 (Maintenance of other equipment), and 870 (Operation supervision and engineering).

**Transmission and distribution costs per customer**  $[(4,7)+(4,8)]/[ (20,15)+(20,18)]$

Cost of transporting gas to the customer, divided by total customers (both sales and transportation).

**Transmission and distribution costs per therm**  $[(4,7+4,8)/(20,15+20,18)]$

Cost of transporting gas to the customer, divided by total therms (both sales and transportation).

### **Uniform Statistical Report (USR)**

The standardized reporting form used by the American Gas Association to collect financial and operating information from its individual member companies. The USR data is the source for information presented in this study.

### **Upper quartile (UQ)**

A statistical measure, which describes a data value that, is halfway between the median and the highest value in the data set. Technically defined as the "third quartile." See "Quartile" and "Median."

### **Value**

In statistics, a "value" is the recorded measurement for an individual observation. For example, if the variable of interest is "annual therms sold," then "1,000,000" may be the value of this variable for the single observation "ABC Company."

### **Variable**

An attribute, more or less common to a set of observations, which is subject to measurement. For example, if the variable of interest is "annual therms sold," then "1,000,000" may be the value of this variable for the single observation "ABC Company."

### **Weighted average**

A statistical measure for describing the mean or "central tendency" of a set of numeric observations. Weighted averages are used in this study to provide benchmark ratios per group or per industry segment. For these benchmark ratios and arithmetic (simple) average would be the mean value of the ratios calculated individually for each company. Instead, the weighted average ratio has as its numerator the sum of observations for that variable divided by the sum of observations for the denominator variable. For example, the density of distribution system metric for gas utilities relates the sum of all gas utility meters divided by the sum of all gas utility miles of pipe.

## **APPENDIX 2: MULTI-YEAR CHARTS FOR ALL COMPANIES**

Explanation of factors influencing results:

**REVENUE:** Impacted by weather, rate design, customer growth, the economy, allowed rates of return, taxes, depreciation expense, total O&M expense, and subsidiary operations.

**REVENUE PER CUSTOMER:** Determined by revenue and customer base (predominantly higher-consuming customer population yields larger results).

**REVENUE PER THERM:** Determined by revenue and customer base (predominantly smaller-consuming customer base yields larger results).

**THERMS DELIVERED PER CUSTOMER:** Influenced by weather and customer base (predominantly higher-consuming customer population yields larger results).

**PERCENT FIRM SALES:** Determined by customer base. Utilities with predominantly residential and small commercial customers tend to have higher values here. Large customers switching from sales to transportation tariffs also influence results.

**PURCHASED GAS COST PER SALES THERM:** Impacted by proximity to supplies (closer leads to lower transportation costs), interstate pipeline access (more competition leads to lower costs), volumes purchased (economies of scale), and purchasing strategies (spot versus contracts, storage refill, hedging, etc.).

**GROSS SALES MARGIN:** Influenced by revenue, O&M, and company size (economies of scale).

**TRANSMISSION AND DISTRIBUTION COST PER THERM/CUSTOMER:** Determined by age of system, throughput, customer base, system density, and size of company (economies of scale).

**CUSTOMER ACCOUNT EXPENSE PER THERM:** Impacted by customer base (concentration of smaller customers leads to higher costs per therm), types of administrative (e.g., billing) systems, and throughput.

**CUSTOMER SERVICE AND INFORMATION EXPENSE PER THERM:** Influenced by types of administrative systems (e.g., database software and hardware), customer base, and throughput.

**SALES EXPENSE PER THERM:** Determined by level of marketing effort put forth by company and throughput.

**GENERAL AND ADMINISTRATIVE EXPENSE PER THERM/CUSTOMER:** Impacted by employee base/compensation, overhead expenses, customer base, and throughput.

**TOTAL OPERATION AND MAINTENANCE EXPENSE PER THERM/CUSTOMER:** Combination of purchased gas expense, other production costs, T&D, customer accounts, service, & information expenses, sales, and G&A. See those factors for explanation.

**NET MARGIN PER THERM/CUSTOMER:** Influenced by allowed rates of return, taxes, depreciation, weather, customer base, and throughput.

**AVERAGE SALARIES, BENEFITS, AND PENSIONS PER EMPLOYEE:** Impacted by union contracts, experience/tenure of average employee, age of employees and retirees, local economic competition for employees, proportion of upper management relative to employee base (higher for companies outsourcing significant workload), and special offers to employees (early retirement, severance packages due to downsizing, etc.).

**CUSTOMERS PER EMPLOYEE:** Determined by the customer base (companies with predominately small-use customers tend to have a higher value) as well as the employee base (more efficient companies and those outsourcing significant workload tend to have a higher value).



**THERMS DELIVERED PER EMPLOYEE:** Primarily determined by the customer base (companies with predominately large-use customers tend to have a higher value).

**GAS PLANT PER CUSTOMER:** Influenced by the customer base (companies with predominately large-use customers tend to have a higher value).

**RETURN ON ASSETS:** Impacted by allowed rate of return, weather, sales growth, subsidiary performance, and one-time charges (e.g., asset reevaluation, merger expense, etc.).

**RETURN ON EQUITY:** Impacted by allowed rate of return, weather, sales growth, subsidiary performance, and one-time charges (e.g., asset reevaluation, merger expense, etc.).

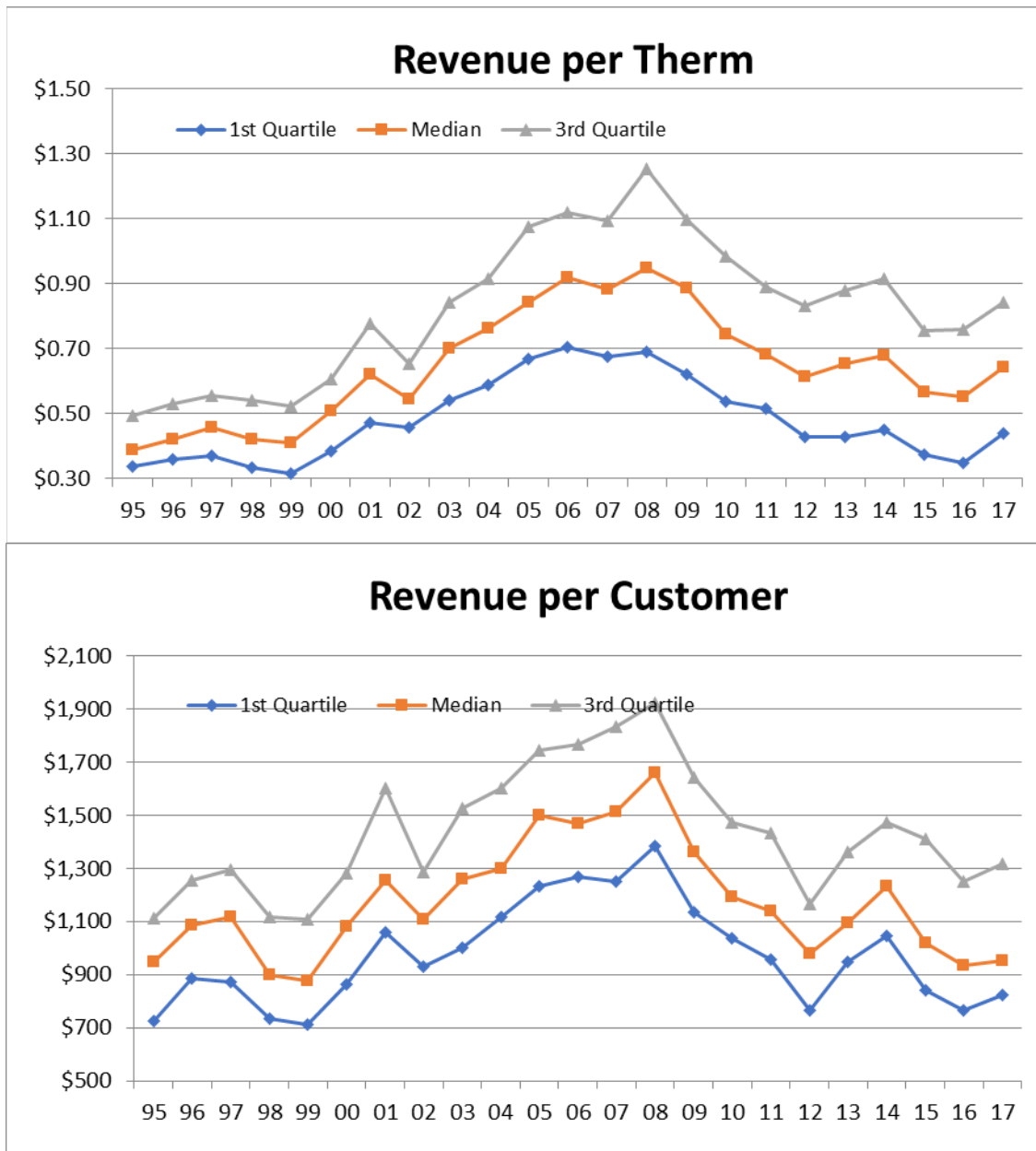
**ASSET TURNOVER:** Influenced by revenue and composition/age of gas plant.

**PROFIT MARGIN:** Impacted by allowed rate of return, income taxes, interest expense, and weather.

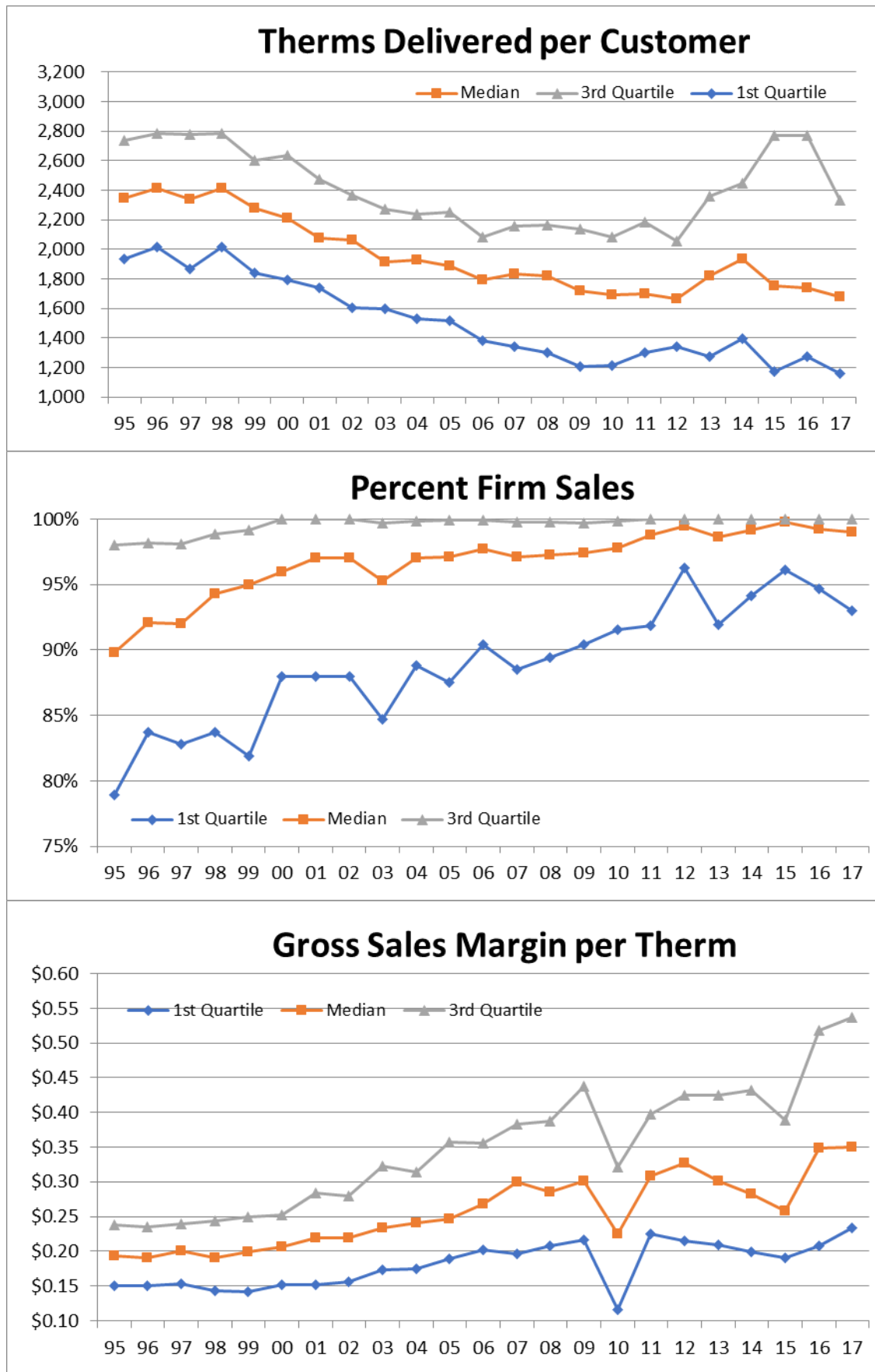
**FINANCIAL LEVERAGE:** Influenced by the proportion of debt and the amount of gas plant for a company.

**NOTE:** Recent results of metrics involving miles of main are not comparable for years prior to 2004 because of changes in the definition of miles of main changed (no longer includes services) and in the data source (now derived from the US Department of Transportation, Office of Pipeline Safety database).

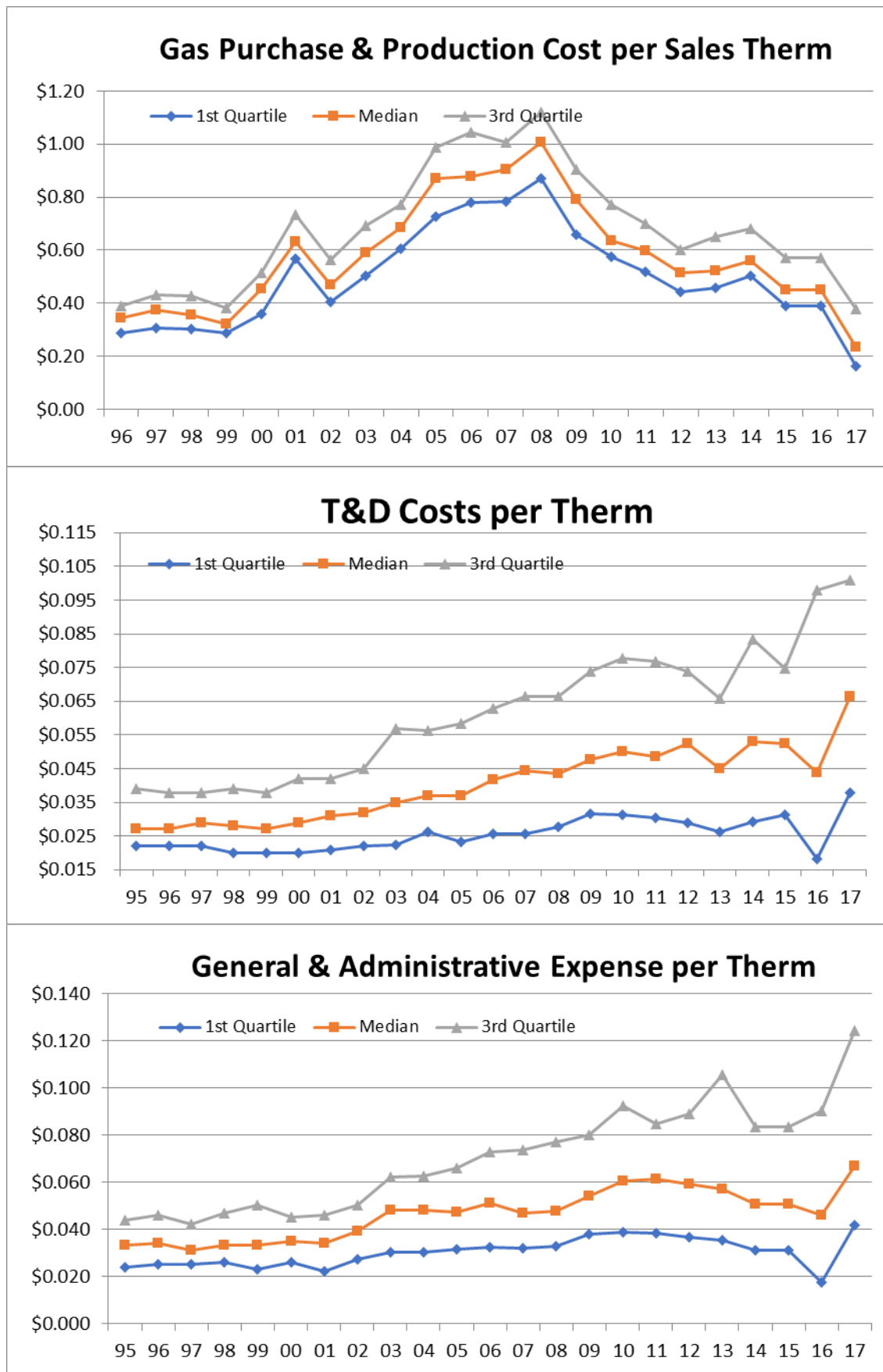
## Appendix 2: Multi-year Charts for All Companies



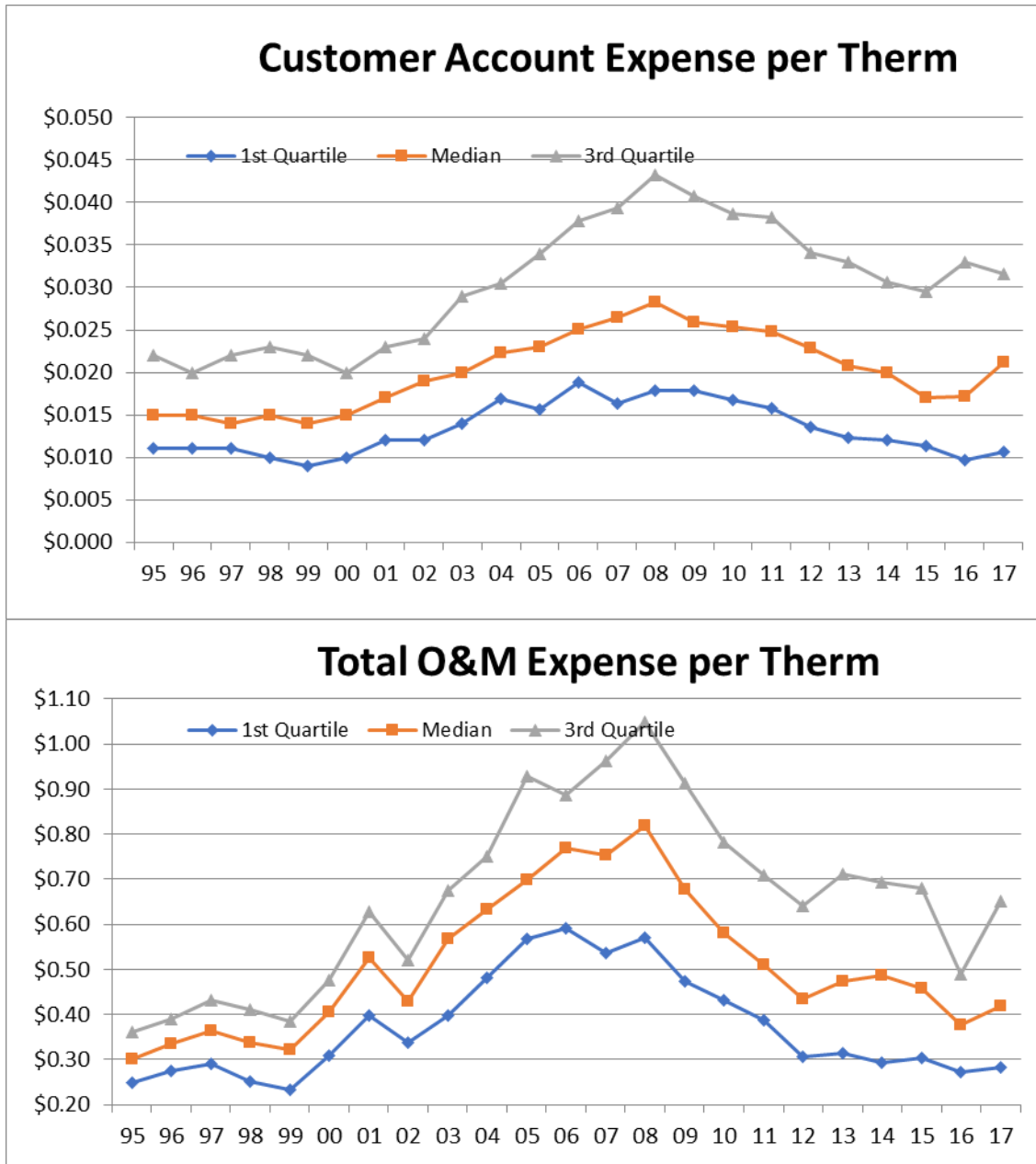
**Note:** Sample size and individual company participation vary by year, impairing trend analysis



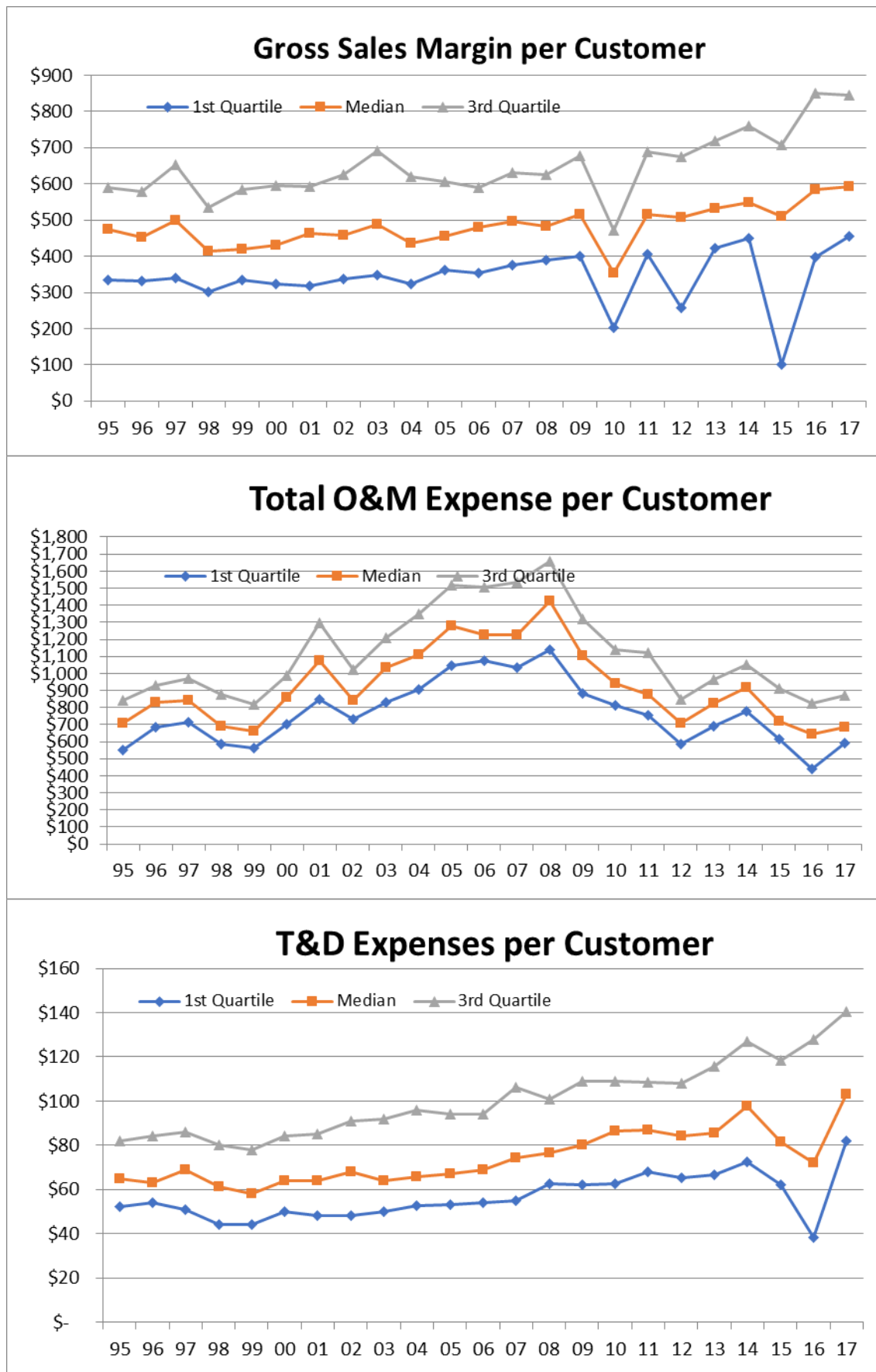
**Note:** Sample size and individual company participation vary by year, impairing trend analysis



**Note:** Sample size and individual company participation vary by year, impairing trend analysis

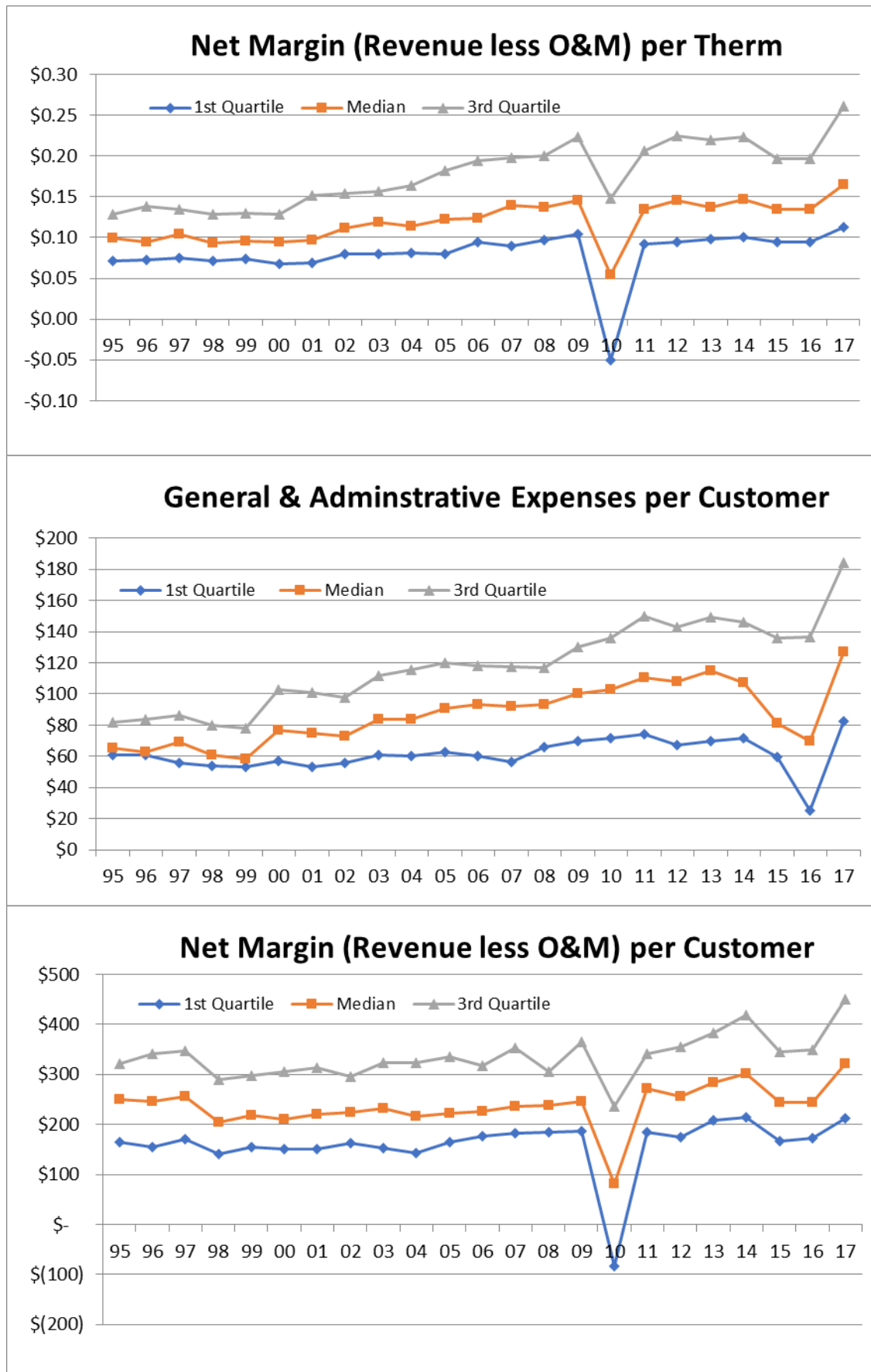


## Appendix 2: Multi-year Charts for All Companies



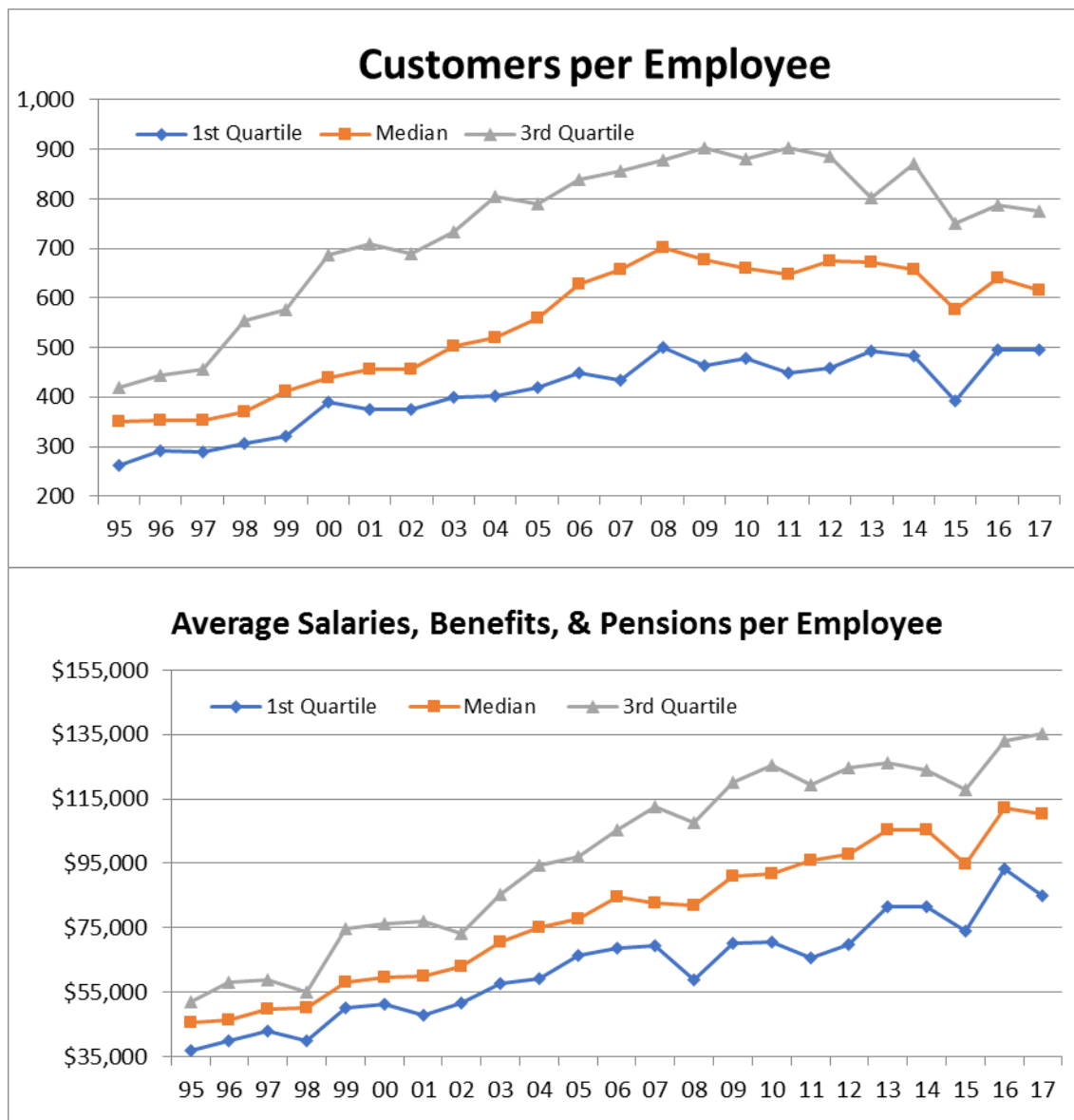
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

## Appendix 2: Multi-year Charts for All Companies



**Note:** Sample size and individual company participation vary by year, impairing trend analysis

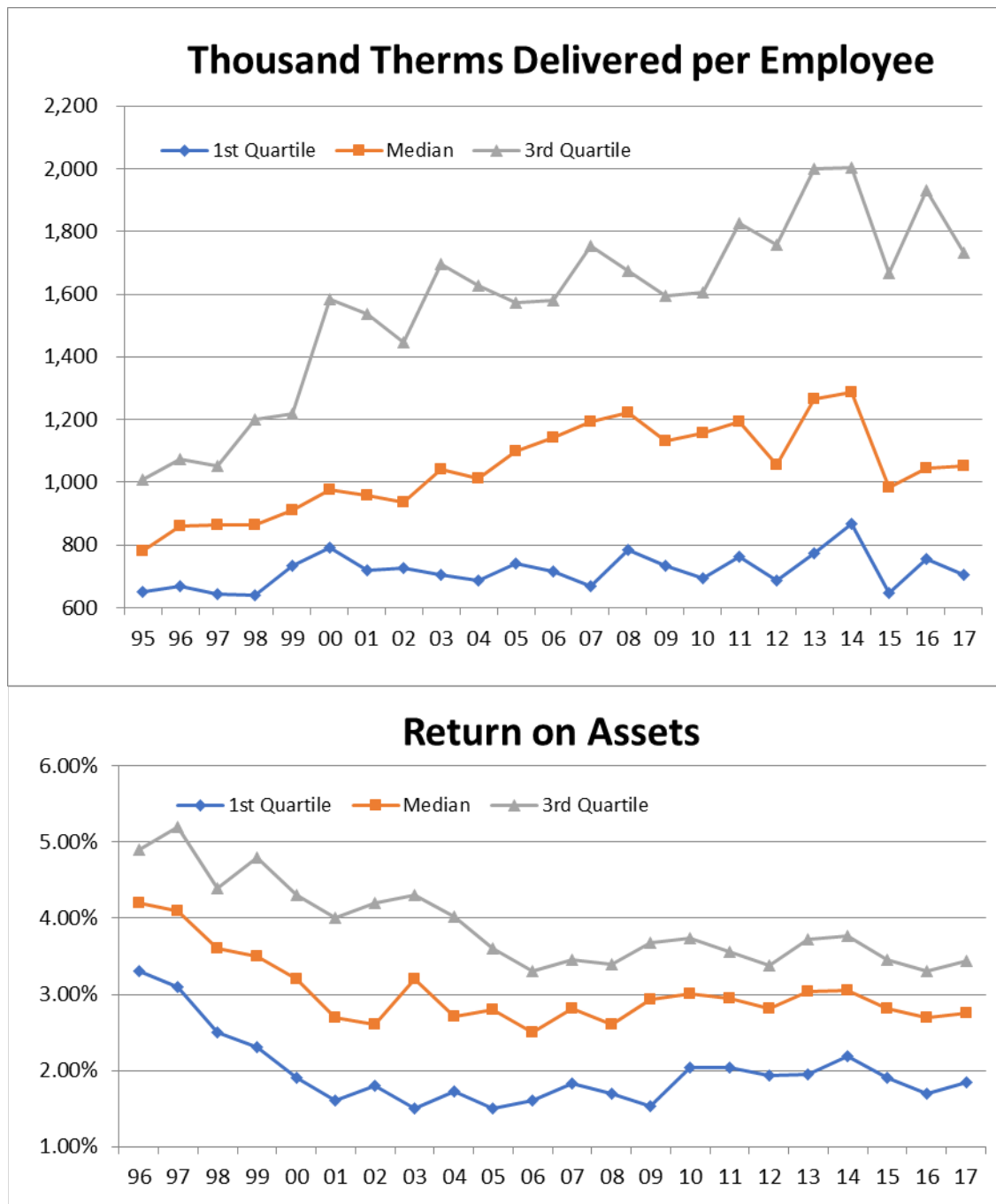
## Appendix 2: Multi-year Charts for All Companies



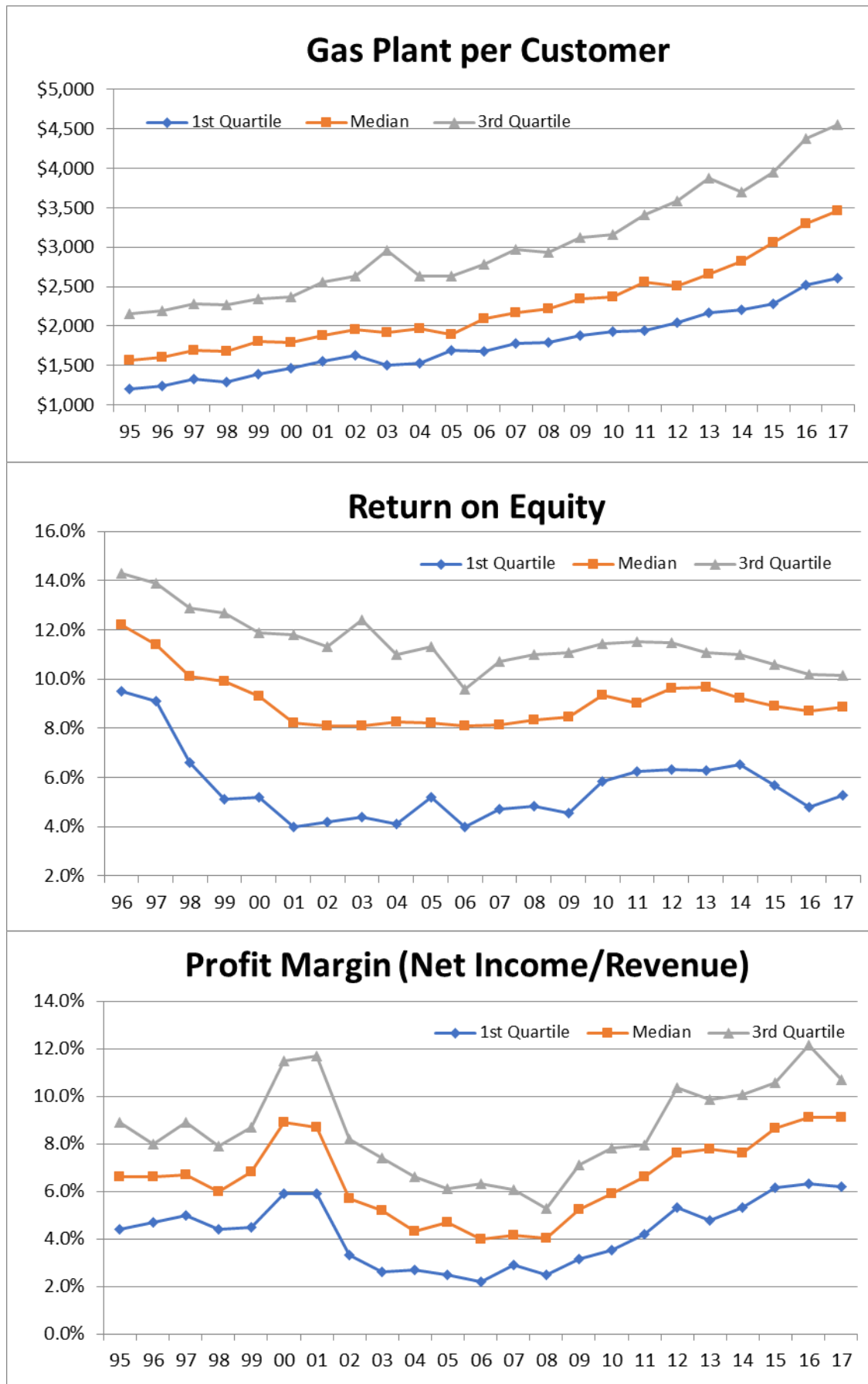
**Note:** Sample size and individual company participation vary by year, impairing trend analysis



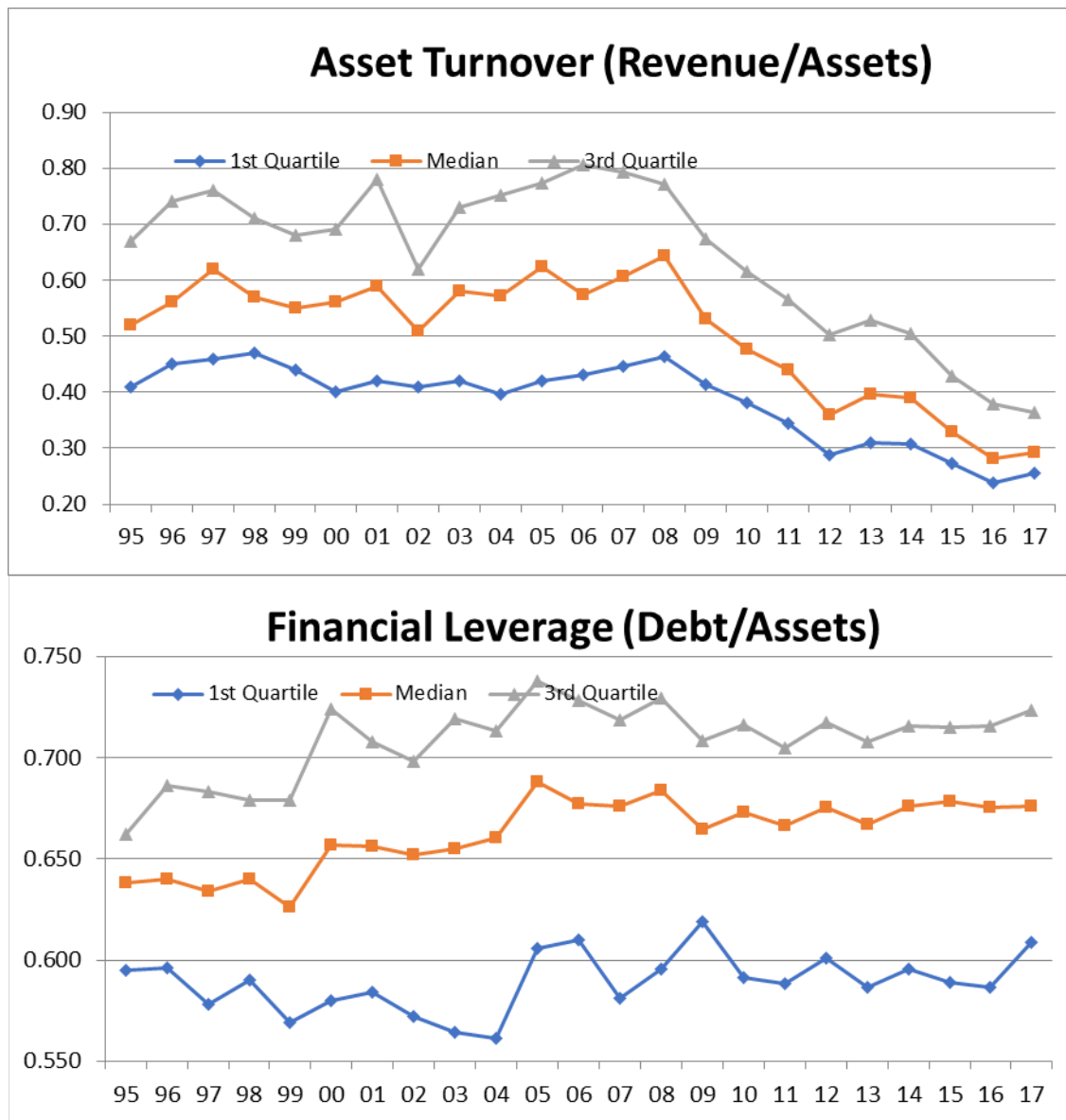
## Appendix 2: Multi-year Charts for All Companies



**Note:** Sample size and individual company participation vary by year, impairing trend analysis



**Note:** Sample size and individual company participation vary by year, impairing trend analysis



## APPENDIX 3a: GAS UTILITY SYSTEM PROFILES AND DELIVERY VOLUMES

2016 Data, 87 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
Stratified by Type of Company	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
<b>SYSTEM PROFILE 1/</b>																
Total Therms delivered (000)	65,757	643,259	1,506,501	1,309,351	327,884	782,327	1,546,509	1,158,474	94,800	213,014	526,268	394,765	82,604	618,643	1,443,064	1,143,604
Total Sales Volume (000)	29,734	260,380	842,474	627,869	248,341	419,052	889,039	613,183	90,964	200,936	294,975	332,183	45,773	319,753	757,612	571,273
Transportation Volume (000)	8,191	242,244	627,185	681,482	-	191,780	833,767	545,292	-	3,836	12,078	62,582	2,138	232,872	646,348	572,331
Gas customers	45,391	398,752	1,023,365	767,388	220,504	523,178	851,902	603,719	43,350	110,404	230,295	166,612	61,483	317,891	822,396	633,776
Miles of main in use	1,201	6,271	13,726	12,866	3,792	7,824	14,930	10,090	1,376	2,544	3,040	2,305	1,913	5,528	13,098	10,645
Density (meters/mile of main)	31.6	47.6	60.8	52.7	44.0	53.0	59.7	63.9	49.9	57.2	78.5	67.1	37.1	50.7	63.9	56.7
<b>THERM VOLUME BY CUSTOMER CLASS (000)</b>																
Residential heating	14,822	135,689	481,995	354,220	140,157	271,162	522,026	386,570	31,244	112,851	158,248	163,343	24,673	181,927	485,418	332,559
Residential non-heating	-	-	260	2,409	-	-	3,176	7,004	-	-	325	3,182	-	-	809	3,417
Commercial, firm	7,772	67,721	170,618	150,594	68,016	143,299	216,004	170,345	16,049	62,929	87,792	122,631	14,047	77,346	154,493	146,549
Commercial, interruptible	-	-	-	5,984	-	-	2,178	4,757	-	-	3,201	5,330	-	-	24	5,190
Industrial, firm	-	1,328	14,628	85,253	1,763	4,681	29,018	21,691	3,783	9,110	10,702	15,436	54	3,006	14,374	56,749
Industrial, interruptible	-	-	-	3,519	-	-	1,294	1,767	-	-	1,793	4,631	-	-	392	2,980
Electric utility generation, firm	-	-	-	120	-	-	-	27	-	-	-	67	-	-	-	84
Electric utility generation, interup.	-	-	-	10,431	-	-	-	-	-	-	-	1,619	-	-	-	6,284
Non-utility generation, firm	-	-	-	42	-	-	-	-	-	-	-	-	-	-	-	24
Non-utility generation, interup.	-	-	-	(0)	-	-	-	-	-	-	-	-	-	-	-	(0)
NGV	-	-	-	3,395	-	-	-	0	-	-	-	659	-	-	-	2,060
Municipal & public	-	-	4	3,795	-	-	-	4,768	-	-	4,889	7,769	-	-	6	6,086
Interdepartmental	-	-	-	-	-	-	370	2,115	-	-	446	508	-	-	-	546
Other	-	-	-	8,107	-	-	-	14,138	-	-	-	7,007	-	-	-	8,745

1/ Includes transportation only customers

2/ Quartile figures for each column do not sum. The quartile arrangements do not yield the same sequence of firms for each variable.

**Key:** LQ = Lower Quartile, MED = Median, UQ = Upper Quartile, AVG = Average

**APPENDIX 3a: GAS UTILITY SYSTEM PROFILES AND DELIVERY VOLUMES (Cont'd)**

## NUMBER OF CUSTOMERS BY CUSTOMER CLASS (000)

2016 Data, 87 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
Stratified by Type of Company	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Residential heating	27,240	271,409	629,015	600,265	190,545	483,049	716,725	519,639	39,934	99,852	211,093	150,733	54,804	256,135	631,381	510,880
Residential non-heating	-	-	180	17,668	-	-	8,307	11,236	-	-	1,124	2,381	-	-	1,526	13,281
Commercial, firm	1,222	19,616	47,085	40,533	21,724	34,978	57,645	52,023	3,407	10,192	20,285	11,877	4,381	21,095	47,867	38,871
Commercial, interruptible	-	-	-	1,410	-	-	58	53	-	-	-	4	-	-	-	838
Industrial, firm	-	23	332	897	37	253	1,405	943	21	88	286	170	0	48	427	776
Industrial, interruptible	-	-	-	45	-	-	8	8	-	-	6	7	-	-	3	29
Electric utility generation, firm	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	0
Electric utility generation, interup.	-	-	-	1	-	-	-	-	-	-	-	0	-	-	-	1
Non-utility generation, firm	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0
Non-utility generation, interup.	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0
NGV	-	-	-	8	-	-	-	103	-	-	-	361	-	-	-	68
Municipal & public	-	-	1	400	-	-	-	166	-	-	47	459	-	-	1	323
Interdepartmental	-	-	-	-	-	-	1	7	-	-	3	3	-	-	-	2
Other	-	-	-	2	-	-	-	59	-	-	-	3	-	-	-	19

## APPENDIX 3b: GAS UTILITY FINANCIAL STATEMENTS (000\$)

2017 Data, 82 Utilities Reporting  
Stratified by Type of Company

	Gas Utilities 54 firms				Combination Utilities 19 firms				Municipal Utilities 9 firms				All Companies 82 firms			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
<b>GAS-ONLY INCOME STATEMENT</b>																
Operating revenue	43,383	376,044	916,211	670,981	209,653	557,449	932,046	664,056	32,210	135,237	203,680	165,340	79,789	339,187	749,782	591,227
Operating expense	26,509	218,466	564,237	398,645	131,203	343,560	521,939	397,802	23,176	94,310	146,664	121,704	48,613	216,554	479,025	357,066
Maintenance expense	1,975	11,046	30,046	26,603	7,256	18,253	40,684	27,700	1,430	3,786	9,722	9,559	2,904	11,046	28,959	23,604
Total O&M	28,883	236,319	623,455	425,249	136,820	395,814	551,958	425,502	24,772	103,176	163,072	131,264	49,863	228,442	515,732	380,670
Depreciation	5,606	38,372	80,502	69,284	11,236	44,934	65,579	55,948	3,477	7,407	18,121	13,232	7,211	26,808	66,792	57,204
Depletion	-	-	-	167	-	-	72	834	-	-	-	-	-	-	-	291
Amortization	-	200	2,374	3,707	-	3,263	12,297	7,008	-	-	-	15	-	38	3,133	3,815
Prop. loss charged to operations	-	-	-	157	-	-	-	(4)	-	-	-	-	-	-	-	91
Total taxes	4,773	28,690	97,269	73,740	20,267	51,535	97,534	77,384	-	8	3,324	3,714	5,214	27,601	82,716	63,735
Other operating income	-	-	-	(2,203)	-	-	-	(192)	(1)	-	-	(97)	-	-	-	(1,165)
Total operating income	5,608	48,080	134,282	98,678	13,450	51,151	123,542	97,385	2,023	7,827	22,311	17,115	7,787	42,901	113,881	85,420

<b>BALANCE SHEET</b>																
Gas plant	253,604	1,439,096	3,561,944	2,647,391	536,403	2,368,516	3,139,858	2,394,254	111,620	393,789	641,541	545,851	303,518	1,115,622	2,790,567	2,248,108
Common plant	-	-	-	24,750	83,590	271,715	624,117	503,433	-	-	-	14,714	-	-	23,177	133,089
Other plant	-	-	-	4,460	-	-	-	134,647	-	-	21,600	424,633	-	-	-	82,877
Total plant in service	253,604	1,439,096	3,617,472	2,691,463	3,140,791	10,629,004	15,154,295	10,820,598	111,620	597,112	2,244,731	1,452,799	397,028	2,092,448	5,145,103	4,328,694
Accumulated depreciation	62,337	464,241	1,170,305	874,507	1,296,957	3,537,753	5,257,926	3,600,701	58,402	190,885	1,042,764	590,613	126,023	728,885	1,710,491	1,443,899
Construction work-in-progress	915	18,971	94,933	89,659	126,732	290,003	453,766	417,032	2,076	10,860	135,854	64,701	2,189	42,814	160,631	158,037
Net utility plant	169,740	978,244	2,600,135	1,914,010	2,156,171	5,755,487	10,226,054	7,663,875	90,501	412,148	1,341,436	928,636	269,695	1,319,913	3,860,215	3,052,881
Gas storage (non-current)	-	-	44	5,955	-	-	5,885	6,189	-	-	98	5,016	-	-	700	5,573
Customer accts. receivable	2,226	27,866	103,283	89,049	56,812	190,135	262,586	210,931	4,563	11,070	95,062	43,621	5,474	42,530	146,902	109,418
Total current & accrued assets	12,830	127,712	276,323	259,775	220,900	521,822	911,437	731,531	60,472	89,970	411,902	229,029	60,494	157,489	474,245	357,183
Total deferred debits	6,936	123,750	464,519	496,808	438,374	840,297	1,336,698	1,264,932	1,776	9,438	77,719	48,686	12,648	188,995	592,889	594,521
Total assets	218,397	1,246,535	3,765,260	2,824,005	3,619,347	7,172,953	12,521,364	9,968,267	161,231	523,037	2,001,936	1,247,167	365,733	1,969,840	5,218,369	4,172,964
Common stock	1	1,810	46,622	106,468	38,804	195,843	488,190	315,319	-	-	-	-	-	1,960	112,039	136,226
Retained earnings	15,177	110,367	537,547	342,289	496,264	1,040,748	1,491,143	1,492,278	89,060	179,232	359,277	538,933	31,380	273,809	733,939	613,349
Total common stock equity	45,469	598,100	1,177,780	920,613	1,258,919	2,511,769	3,800,671	3,117,950	89,060	179,232	400,545	543,518	138,420	626,668	1,661,252	1,345,125
Total long-term (LT) debt	26,176	255,649	892,942	657,626	1,094,788	1,906,900	3,352,412	2,876,238	22,301	104,907	326,220	478,667	77,227	397,475	1,405,750	1,120,101
Total capitalization	105,542	802,448	2,136,071	1,580,070	2,574,389	4,286,118	7,256,300	6,014,047	93,896	458,357	1,494,103	1,027,050	211,673	1,095,604	3,024,932	2,470,636
Total non-current other liabilities	-	369	30,816	70,521	70,672	236,656	566,919	491,168	-	4,022	23,897	68,668	-	5,090	95,315	164,037
Current & accrued liabilities	20,659	175,802	522,628	428,492	304,553	685,258	1,102,548	838,657	7,935	24,660	180,986	125,320	40,807	225,432	627,509	473,436
Total deferred credits	12,936	239,278	1,040,883	720,955	793,215	1,380,546	3,541,078	2,595,799	1,466	1,614	39,206	19,232	14,811	326,910	1,203,277	1,041,689
Total capitalization & liabilities	218,397	1,246,535	3,765,260	2,824,005	3,619,347	7,172,953	12,521,364	9,968,267	161,231	523,037	2,001,936	1,247,167	365,733	1,969,840	5,218,369	4,172,964

1/ Figures for combination utilities are necessarily based on combined gas and electric operations. Some municipal utilities are also combined utilities.

2/ Reflects gas and non-gas assets, also includes regulatory assets. 3/ Total capitalization figure in this display includes preferred stock.

**Key:** LQ = Lower Quartile, MED = Median, UQ = Upper Quartile, AVG = Average

## APPENDIX 3c: GAS UTILITY SAME-SIZE FINANCIAL STATEMENTS

2017 Data,82 Utilities Reporting						
Stratified by Type of Company	<b>Gas Utilities</b>	<b>Combination Utilities</b>	<b>Municipal Utilities</b>	<b>All Companies</b>		
	<b>54 firms</b>	<b>19 firms</b>	<b>9 firms</b>	<b>82 firms</b>		
<b>GAS-ONLY INCOME STATEMENT - Based on average values</b>						
Operating revenue	100.0	100.0	100.0	100.0		
Operating expense	61.0	61.5	76.0	62.9		
Maintenance expense	6.8	4.6	4.9	5.8		
Total O&M	67.8	66.1	81.0	68.7		
Depreciation	12.3	9.1	8.1	10.9		
Depletion	0.1	0.2	-	0.1		
Amortization	0.8	0.7	0.1	0.7		
Prop. loss charged to operations	0.0	(0.0)	-	0.0		
Total taxes	9.9	10.7	2.0	9.3		
Other operating income	(0.2)	(0.0)	(0.0)	(0.1)		
Total operating income	9.2	13.1	8.9	10.4		
<b>BALANCE SHEET - Based on average values</b>						
Gas plant	93.7	24.0	43.8	53.9		
Common plant	0.9	5.1	1.2	3.2		
Other plant	0.2	1.4	34.0	2.0		
Total plant in service	95.3	108.6	116.5	103.7		
Accumulated depreciation	31.0	36.1	47.4	34.6		
Construction work-in-progress	3.2	4.2	5.2	3.8		
Net utility plant	67.8	76.9	74.5	73.2		
Gas storage (non-current)	0.2	0.1	0.4	0.1		
Customer accts. receivable	3.2	2.1	3.5	2.6		
Total current & accrued assets	9.2	7.3	18.4	8.6		
Total deferred debits	17.6	12.7	3.9	14.2		
Total assets	100.0	100.0	100.0	100.0		
Common stock	3.8	3.2	-	3.3		
Retained earnings	12.1	15.0	43.2	14.7		
Total common stock equity	32.6	31.3	43.6	32.2		
Total long-term (LT) debt	23.3	28.9	38.4	26.8		
Total capitalization	56.0	60.3	82.4	59.2		
Total non-current other liabilities	2.5	4.9	5.5	3.9		
Current & accrued liabilities	15.2	8.4	10.0	11.3		
Total deferred credits	25.5	26.8	0.9	25.9		
Total capitalization & liabilities	100.0	100.0	100.0	100.0		

1/ Figures for combination utilities are necessarily based on combined gas and electric operations. Some municipal utilities are also combined utilities.

2/ Reflects gas and non-gas assets, also includes regulatory assets. 3/ Total capitalization figure in this display includes preferred stock.

#### APPENDIX 3d: GAS UTILITY INCOME STATEMENTS – Per Cost Driver

**GAS-ONLY INCOME STATEMENT - Per Annual Therm Delivered**

2017 Data, 82 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Operating revenue	\$0.4500	\$0.6378	\$0.8585	\$0.7467	\$0.4273	\$0.6207	\$0.9644	\$0.8313	\$0.6750	\$0.7425	\$0.8189	\$0.6784	\$0.4366	\$0.6407	\$0.8432	\$0.7377
Operating expense	\$0.2758	\$0.3723	\$0.6220	\$0.4555	\$0.2671	\$0.4234	\$0.6098	\$0.5116	\$0.4972	\$0.5711	\$0.6401	\$0.5159	\$0.2680	\$0.3989	\$0.6203	\$0.4642
Maintenance expense	\$0.0092	\$0.0214	\$0.0384	\$0.0505	\$0.0154	\$0.0233	\$0.0467	\$0.0380	\$0.0178	\$0.0274	\$0.0537	\$0.0335	\$0.0103	\$0.0195	\$0.0427	\$0.0428
Total O&M	\$0.2857	\$0.3960	\$0.6597	\$0.5060	\$0.2895	\$0.4455	\$0.6522	\$0.5496	\$0.5525	\$0.5995	\$0.7019	\$0.5494	\$0.2832	\$0.4196	\$0.6519	\$0.5070
Depreciation	\$0.0348	\$0.0566	\$0.0754	\$0.0915	\$0.0351	\$0.0633	\$0.0856	\$0.0755	\$0.0344	\$0.0400	\$0.0707	\$0.0553	\$0.0348	\$0.0544	\$0.0756	\$0.0802
Depletion	\$0.0000	\$0.0000	\$0.0000	\$0.0004	\$0.0000	\$0.0000	\$0.0001	\$0.0019	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0007
Amortization	\$0.0000	\$0.0003	\$0.0080	\$0.0058	\$0.0000	\$0.0020	\$0.0095	\$0.0059	\$0.0000	\$0.0000	\$0.0000	\$0.0004	\$0.0000	\$0.0000	\$0.0051	\$0.0049
Prop. loss charged to operations	\$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	\$0.0000	\$0.0000	\$0.0000
Total taxes	\$0.0365	\$0.0537	\$0.0846	\$0.0739	\$0.0399	\$0.0655	\$0.1436	\$0.0894	\$0.0000	\$0.0000	\$0.0119	\$0.0133	\$0.0286	\$0.0492	\$0.0874	\$0.0683
Other operating income	\$0.0000	\$0.0000	\$0.0000	-\$0.0018	\$0.0000	\$0.0000	\$0.0000	-\$0.0001	\$0.0000	\$0.0000	\$0.0000	-\$0.0001	\$0.0000	\$0.0000	\$0.0000	-\$0.0008
Total operating income	\$0.0444	\$0.0677	\$0.1053	\$0.0690	\$0.0449	\$0.0814	\$0.1600	\$0.1090	\$0.0203	\$0.0700	\$0.0826	\$0.0601	\$0.0440	\$0.0690	\$0.1068	\$0.0768

**GAS-ONLY INCOME STATEMENT - Per Average Annual Customer Served**

2017 Data, 82 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Operating revenue	\$806	\$949	\$1,312	\$1,151	\$909	\$965	\$1,284	\$1,100	\$792	\$904	\$1,245	\$1,079	\$823	\$952	\$1,318	\$1,152
Operating expense	\$483	\$628	\$805	\$729	\$575	\$627	\$750	\$671	\$620	\$720	\$864	\$821	\$547	\$633	\$807	\$744
Maintenance expense	\$22	\$39	\$53	\$82	\$30	\$43	\$52	\$49	\$31	\$47	\$80	\$56	\$21	\$39	\$54	\$68
Total O&M	\$536	\$680	\$858	\$811	\$609	\$660	\$782	\$721	\$639	\$740	\$947	\$877	\$592	\$688	\$873	\$812
Depreciation	\$69	\$89	\$118	\$155	\$62	\$97	\$112	\$94	\$54	\$65	\$95	\$87	\$66	\$89	\$118	\$130
Depletion	\$0	\$0	\$0	\$1	\$0	\$0	\$0	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1
Amortization	\$0	\$1	\$10	\$7	\$0	\$5	\$15	\$7	\$0	\$0	\$0	\$1	\$0	\$0	\$10	\$6
Prop. loss charged to operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total taxes	\$61	\$94	\$155	\$83	\$60	\$121	\$169	\$122	\$0	\$0	\$16	\$15	\$51	\$91	\$152	\$88
Other operating income	\$0	\$0	\$0	-\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	-\$7	\$0	\$0	\$0	-\$1
Total operating income	\$79	\$130	\$172	\$94	\$78	\$132	\$183	\$153	\$47	\$105	\$115	\$99	\$81	\$125	\$173	\$114

**APPENDIX 3d: GAS UTILITY INCOME STATEMENTS – Per Cost Driver (cont'd)**



**GAS-ONLY INCOME STATEMENT - Per Dollar of Gas Plant**

2017 Data, 82 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Operating revenue	\$0.2372	\$0.2723	\$0.3241	\$0.2931	\$0.2544	\$0.2698	\$0.2868	\$0.2924	\$0.2886	\$0.3411	\$0.4016	\$0.3785	\$0.2427	\$0.2797	\$0.3349	\$0.3047
Operating expense	\$0.1330	\$0.1649	\$0.2153	\$0.1959	\$0.1467	\$0.1633	\$0.1977	\$0.1860	\$0.2076	\$0.2456	\$0.3147	\$0.2944	\$0.1445	\$0.1766	\$0.2268	\$0.2068
Maintenance expense	\$0.0062	\$0.0109	\$0.0134	\$0.0110	\$0.0084	\$0.0108	\$0.0151	\$0.0125	\$0.0138	\$0.0149	\$0.0229	\$0.0183	\$0.0072	\$0.0109	\$0.0147	\$0.0118
Total O&M	\$0.1457	\$0.1768	\$0.2273	\$0.2069	\$0.1576	\$0.1718	\$0.2086	\$0.1985	\$0.2219	\$0.2731	\$0.3243	\$0.3127	\$0.1552	\$0.1850	\$0.2314	\$0.2187
Depreciation	\$0.0223	\$0.0261	\$0.0298	\$0.0263	\$0.0215	\$0.0241	\$0.0268	\$0.0247	\$0.0217	\$0.0255	\$0.0312	\$0.0277	\$0.0219	\$0.0258	\$0.0297	\$0.0261
Depletion	\$0.0000	\$0.0000	\$0.0000	\$0.0002	\$0.0000	\$0.0000	\$0.0000	\$0.0008	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0003
Amortization	\$0.0000	\$0.0002	\$0.0029	\$0.0026	\$0.0000	\$0.0012	\$0.0046	\$0.0021	\$0.0000	\$0.0000	\$0.0000	\$0.0002	\$0.0000	\$0.0000	\$0.0029	\$0.0020
Prop. loss charged to operations	\$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	\$0.0000	\$0.0000	\$0.0000
Total taxes	\$0.0206	\$0.0254	\$0.0373	\$0.0280	\$0.0250	\$0.0286	\$0.0391	\$0.0304	\$0.0000	\$0.0000	\$0.0056	\$0.0063	\$0.0190	\$0.0259	\$0.0359	\$0.0260
Other operating income	\$0.0000	\$0.0000	\$0.0000	-\$0.0007	\$0.0000	\$0.0000	\$0.0000	-\$0.0001	\$0.0000	\$0.0000	\$0.0000	-\$0.0024	\$0.0000	\$0.0000	\$0.0000	-\$0.0004
Total operating income	\$0.0293	\$0.0342	\$0.0419	\$0.0291	\$0.0275	\$0.0363	\$0.0468	\$0.0359	\$0.0180	\$0.0358	\$0.0424	\$0.0316	\$0.0270	\$0.0357	\$0.0423	\$0.0316

**GAS-ONLY INCOME STATEMENT - Per Mile of Distribution Pipe**

2017 Data, 82 Utilities Reporting	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Operating revenue	\$30,790	\$42,792	\$65,396	\$59,880	\$40,690	\$52,351	\$71,099	\$76,742	\$49,741	\$69,861	\$72,048	\$73,735	\$34,256	\$47,389	\$71,559	\$66,244
Operating expense	\$18,969	\$24,968	\$42,471	\$37,247	\$26,680	\$38,862	\$43,284	\$43,701	\$41,543	\$48,859	\$62,901	\$54,962	\$20,879	\$32,329	\$45,719	\$41,587
Maintenance expense	\$816	\$1,676	\$2,836	\$3,103	\$1,281	\$2,230	\$2,580	\$3,730	\$1,488	\$2,435	\$5,724	\$4,187	\$1,006	\$1,849	\$3,017	\$3,257
Total O&M	\$19,566	\$26,398	\$45,204	\$40,350	\$29,028	\$40,850	\$45,864	\$47,432	\$43,679	\$53,452	\$65,336	\$59,149	\$21,484	\$33,314	\$49,259	\$44,844
Depreciation	\$2,986	\$4,200	\$5,948	\$6,029	\$3,205	\$4,172	\$6,765	\$6,705	\$2,721	\$3,981	\$7,821	\$5,868	\$3,116	\$4,148	\$6,289	\$6,146
Depletion	\$0	\$0	\$0	\$29	\$0	\$0	\$4	\$148	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51
Amortization	\$0	\$30	\$552	\$396	\$0	\$271	\$1,064	\$575	\$0	\$0	\$0	\$28	\$0	\$8	\$518	\$374
Prop. loss charged to operations	\$0	\$0	\$0	\$8	\$0	\$0	\$0	-\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4
Total taxes	\$2,767	\$4,322	\$6,107	\$6,253	\$3,899	\$6,030	\$7,917	\$9,155	\$0	\$3	\$1,334	\$1,069	\$2,305	\$4,252	\$6,202	\$6,384
Other operating income	\$0	\$0	\$0	-\$158	\$0	\$0	\$0	-\$9	\$0	\$0	\$0	-\$368	\$0	\$0	\$0	-\$83
Total operating income	\$3,106	\$5,913	\$9,354	\$6,815	\$3,563	\$5,804	\$10,897	\$12,728	\$1,804	\$5,991	\$9,057	\$7,622	\$3,034	\$5,865	\$9,802	\$8,440

### APPENDIX 3e: GAS UTILITY FINANCIAL RATIOS

2017 Data, 82 Utilities Reporting Stratified by Type of Company	Gas Utilities 54 firms				Combination Utilities 19 firms				Municipal Utilities 9 firms				All Companies 82 firms			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Therms delivered (avg.) per acct.	1,082	1,702	2,299	1,982	1,110	1,627	2,489	1,800	1,281	1,350	1,676	17,410	1,161	1,678	2,332	3,740
Therms per \$1,000 of gas plant	0.302	0.467	0.800	0.546	0.285	0.437	0.653	0.520	0.307	0.494	0.809	5.601	0.304	0.495	0.810	1.109
Value of gas plant per customer	\$2,666	\$3,608	\$4,700	\$6,457	\$3,101	\$3,632	\$4,503	\$3,866	\$2,076	\$2,593	\$3,144	\$3,082	\$2,603	\$3,463	\$4,548	\$5,370
%Sales firm (not interruptible)	93.4%	99.5%	100.0%	94.0%	95.5%	98.2%	100.0%	93.8%	82.7%	89.7%	95.9%	85.9%	93.0%	99.0%	100.0%	93.0%
Collection period (days) 1/	27.0	33.5	57.3	42.9	22.1	25.1	38.4	28.9	21.0	29.1	35.3	31.9	24.0	31.0	43.5	38.2
Gas O&M expense as pct. of revenue	61.2%	67.0%	71.6%	67.7%	61.8%	64.6%	71.7%	67.1%	76.9%	80.1%	81.8%	81.3%	62.5%	67.7%	76.2%	69.1%
Gas operating income as pct. of revenue	9.2%	12.8%	15.6%	11.1%	8.9%	13.0%	16.8%	12.6%	6.3%	11.0%	12.5%	8.7%	9.0%	12.8%	15.6%	11.3%
Gas operating revenue per customer	\$806	\$949	\$1,312	\$1,151	\$909	\$965	\$1,284	\$1,100	\$792	\$904	\$1,245	\$1,079	\$823	\$952	\$1,318	\$1,152
Gas O&M expense per customer	\$536	\$680	\$858	\$811	\$609	\$660	\$782	\$721	\$639	\$740	\$947	\$877	\$592	\$688	\$873	\$812
Gas operating income per customer	\$79	\$130	\$172	\$94	\$78	\$132	\$183	\$153	\$47	\$105	\$115	\$99	\$81	\$125	\$173	\$114
Gas revenue per dollar of gas plant	\$0.237	\$0.272	\$0.324	\$0.293	\$0.254	\$0.270	\$0.287	\$0.292	\$0.289	\$0.341	\$0.402	\$0.378	\$0.243	\$0.280	\$0.335	\$0.305
Gas O&M expense per dollar of gas plant	\$0.146	\$0.177	\$0.227	\$0.207	\$0.158	\$0.172	\$0.209	\$0.199	\$0.222	\$0.273	\$0.324	\$0.313	\$0.155	\$0.185	\$0.231	\$0.219
Gas operating income per \$ of gas plant	\$0.029	\$0.034	\$0.042	\$0.029	\$0.027	\$0.036	\$0.047	\$0.036	\$0.018	\$0.036	\$0.042	\$0.032	\$0.027	\$0.036	\$0.042	\$0.032
Gas revenue per mile of pipe 2/	\$30,790	\$42,792	\$65,396	\$59,880	\$40,690	\$52,351	\$71,099	\$76,742	\$49,741	\$69,861	\$72,048	\$73,735	\$34,256	\$47,389	\$71,559	\$66,244
Gas O&M expense per mile of pipe 2/	\$19,566	\$26,398	\$45,204	\$40,350	\$29,028	\$40,850	\$45,864	\$47,432	\$43,679	\$53,452	\$65,336	\$59,149	\$21,484	\$33,314	\$49,259	\$44,844
Gas operating income per mile of pipe 2/	\$3,106	\$5,913	\$9,354	\$6,815	\$3,563	\$5,804	\$10,897	\$12,728	\$1,804	\$5,991	\$9,057	\$7,622	\$3,034	\$5,865	\$9,802	\$8,440
Long-term debt - total assets ratio 1/	15.3%	25.6%	27.8%	22.5%	25.5%	28.0%	30.3%	29.7%	11.6%	28.1%	48.4%	29.4%	17.8%	26.1%	29.2%	25.1%
Long-term debt - total capitalization ratio 1/3/	36.8%	40.1%	48.4%	38.5%	44.4%	46.9%	49.1%	46.9%	14.4%	34.7%	58.5%	37.9%	37.0%	43.7%	48.8%	40.8%
Net interest - long-term debt ratio 1/	4.4%	5.2%	5.8%	7.8%	4.6%	5.0%	5.2%	4.7%	0.1%	2.5%	3.7%	1.9%	4.1%	4.9%	5.5%	6.2%
EBITDA interest coverage 1/	5.8x	8.2x	10.6x	21.1x	7.3x	8.0x	9.0x	8.3x	3.6x	9.3x	24.9x	83.4x	6.4x	8.0x	10.4x	23.5x
Return on assets	1.4%	2.6%	3.2%	2.1%	2.5%	2.8%	3.1%	3.1%	1.5%	2.6%	3.8%	2.4%	1.8%	2.8%	3.4%	2.4%
Gross sales margin per therm 4/	\$0.229	\$0.396	\$0.685	\$0.502	\$0.221	\$0.333	\$0.525	\$0.483	\$0.258	\$0.274	\$0.469	\$0.342	\$0.234	\$0.349	\$0.537	\$0.468
Gross sales margin per customer 4/	\$307	\$592	\$861	\$666	\$465	\$646	\$763	\$820	\$417	\$521	\$791	\$599	\$456	\$593	\$844	\$694

**Key:** LQ = Lower Quartile, MED = Median, UQ = Upper Quartile, AVG = Average

1/ Figures for combination utilities are necessarily based on combined gas and electric operations. Four municipal utilities are also combined gas-electric utilities.

2/ Miles of distribution pipes from US Department of Transportation.

3/ Total capitalization figure in this display includes preferred stock.

4/ Gross sales margin = operating revenues less total production costs

**NOTE:** Some ratios are not always normally distributed. Therefore, average ratio values may be subject to distortion by a few observations that are outliers.

**APPENDIX 4: GAS UTILITY O&M Detail**  
**Based on Segment Averages**

	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
VALUES PER THERM	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Gas-only revenues	\$0.6700	\$0.6068	\$0.8044	\$0.7777	\$0.7444	\$0.8313	\$0.7552	\$0.5390	\$0.6784	\$0.7087	\$0.6144	\$0.7377
Purchased-gas expense	\$0.2288	\$0.1499	\$0.2827	\$0.3316	\$0.3043	\$0.2249	\$0.3213	\$0.2110	\$0.2196	\$0.2656	\$0.1951	\$0.2549
Gross sales margin	\$0.3966	\$0.4105	\$0.5023	\$0.4378	\$0.4308	\$0.4834	\$0.3881	\$0.3408	\$0.3419	\$0.4066	\$0.3922	\$0.4682
Total production costs <sup>1</sup>	\$0.2734	\$0.1963	\$0.3021	\$0.3399	\$0.3136	\$0.2200	\$0.3671	\$0.2571	\$0.2390	\$0.3006	\$0.2298	\$0.2695
Storage & LNG	\$0.0045	\$0.0012	\$0.0032	\$0.0036	\$0.0037	\$0.0007	\$0.0012	\$0.0005	\$0.0005	\$0.0039	\$0.0019	\$0.0023
Transmission	\$0.0122	\$0.0115	\$0.0090	\$0.0135	\$0.0146	\$0.0197	\$0.0036	\$0.0040	\$0.0028	\$0.0116	\$0.0109	\$0.0104
Distribution	\$0.0673	\$0.0664	\$0.0765	\$0.0646	\$0.0749	\$0.0734	\$0.0635	\$0.0651	\$0.0781	\$0.0662	\$0.0656	\$0.0764
Customer accounts	\$0.0270	\$0.0266	\$0.0297	\$0.0340	\$0.0358	\$0.0311	\$0.0266	\$0.0232	\$0.0202	\$0.0288	\$0.0275	\$0.0288
Customer svc. & info.	\$0.0049	\$0.0054	\$0.0127	\$0.0137	\$0.0134	\$0.0059	\$0.0161	\$0.0141	\$0.0072	\$0.0084	\$0.0082	\$0.0098
Sales	\$0.0030	\$0.0030	\$0.0059	\$0.0032	\$0.0031	\$0.0154	\$0.0065	\$0.0068	\$0.0007	\$0.0034	\$0.0032	\$0.0074
Admin. & general	\$0.0744	\$0.0819	\$0.1030	\$0.0751	\$0.0897	\$0.1218	\$0.1079	\$0.1067	\$0.0837	\$0.0780	\$0.0835	\$0.1024
Total O&M	\$0.4648	\$0.4062	\$0.5423	\$0.5475	\$0.4841	\$0.4879	\$0.5925	\$0.4776	\$0.4323	\$0.4999	\$0.4208	\$0.5070
PERCENT OF REVENUE												
Gas-only revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Purchased-gas expense	34.2%	24.7%	35.1%	42.6%	40.9%	27.0%	42.6%	39.1%	32.4%	37.5%	31.8%	34.5%
Gross sales margin	59.2%	67.7%	62.4%	56.3%	57.9%	58.2%	51.4%	63.2%	50.4%	57.4%	63.8%	63.5%
Total production costs <sup>1</sup>	40.8%	32.3%	37.6%	43.7%	42.1%	26.5%	48.6%	47.7%	35.2%	42.4%	37.4%	36.5%
Storage & LNG	0.7%	0.2%	0.4%	0.5%	0.5%	0.1%	0.2%	0.1%	0.1%	0.6%	0.3%	0.3%
Transmission	1.8%	1.9%	1.1%	1.7%	2.0%	2.4%	0.5%	0.8%	0.4%	1.6%	1.8%	1.4%
Distribution	10.0%	10.9%	9.5%	8.3%	10.1%	8.8%	8.4%	12.1%	11.5%	9.3%	10.7%	10.4%
Customer accounts	4.0%	4.4%	3.7%	4.4%	4.8%	3.7%	3.5%	4.3%	3.0%	4.1%	4.5%	3.9%
Customer svc. & info.	0.7%	0.9%	1.6%	1.8%	1.8%	0.7%	2.1%	2.6%	1.1%	1.2%	1.3%	1.3%
Sales	0.4%	0.5%	0.7%	0.4%	0.4%	1.9%	0.9%	1.3%	0.1%	0.5%	0.5%	1.0%
Admin. & general	11.1%	13.5%	12.8%	9.7%	12.1%	14.7%	14.3%	19.8%	12.3%	11.0%	13.6%	13.9%
Total O&M	69.4%	66.9%	67.4%	70.4%	65.0%	58.7%	78.5%	88.6%	63.7%	70.5%	68.5%	68.7%
VALUES PER CUSTOMER												
Gas-only revenues	\$ 1,017	\$ 947	\$ 993	\$ 968	\$ 906	\$ 923	\$ 948	\$ 794	\$ 928	\$ 990	\$ 927	\$ 952
Purchased-gas expense	\$ 408	\$ 230	\$ 390	\$ 445	\$ 378	\$ 343	\$ 424	\$ 297	\$ 380	\$ 438	\$ 298	\$ 384
Gross sales margin	\$ 571	\$ 599	\$ 592	\$ 548	\$ 586	\$ 646	\$ 487	\$ 478	\$ 521	\$ 548	\$ 570	\$ 593
Total production costs <sup>1</sup>	\$ 462	\$ 354	\$ 419	\$ 454	\$ 388	\$ 315	\$ 470	\$ 417	\$ 394	\$ 462	\$ 370	\$ 394
Storage & LNG	\$ -	\$ -	\$ -	\$ 0	\$ 0	\$ -	\$ -	\$ -	\$ 0	\$ -	\$ -	\$ -
Transmission	\$ 7	\$ 6	\$ 6	\$ 2	\$ 2	\$ 10	\$ -	\$ -	\$ 0	\$ 4	\$ 4	\$ 5
Distribution	\$ 81	\$ 87	\$ 92	\$ 79	\$ 80	\$ 82	\$ 102	\$ 85	\$ 81	\$ 81	\$ 85	\$ 89
Customer accounts	\$ 34	\$ 34	\$ 32	\$ 37	\$ 38	\$ 33	\$ 30	\$ 30	\$ 36	\$ 36	\$ 34	\$ 32
Customer svc. & info.	\$ 2	\$ 2	\$ 8	\$ 20	\$ 24	\$ 3	\$ 12	\$ 13	\$ 8	\$ 4	\$ 5	\$ 5
Sales	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1
Admin. & general	\$ 123	\$ 123	\$ 129	\$ 91	\$ 104	\$ 102	\$ 114	\$ 83	\$ 138	\$ 109	\$ 110	\$ 127
Total O&M	\$ 729	\$ 671	\$ 736	\$ 756	\$ 657	\$ 893	\$ 718	\$ 633	\$ 754	\$ 718	\$ 637	\$ 688

1/ Purchased cost expense is subsumed within total production costs. **NOTE:** Figures may not add precisely due to independent rounding.

**APPENDIX 5: WAGES & BENEFITS**  
**2017 Data, 82 Utilities Reporting**

	Gas Utilities				Combination Utilities				Municipal Utilities				All Companies			
	54 firms				19 firms				9 firms				82 firms			
	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.
Average number of employees	168	667	1,179	974	185	432	1,004	738	21	153	462	360	148	460	1,112	815
Number of Employees at year-end	147	671	1,200	988	234	491	1,218	854	21	157	393	354	156	473	1,154	848
O&M wages ('000)	\$2,868	\$30,644	\$74,375	\$63,632	\$17,595	\$53,541	\$71,215	\$58,579	\$2,101	\$10,532	\$22,858	\$23,758	\$6,465	\$29,660	\$66,974	\$55,010
Construction wages ('000)	\$284	\$5,419	\$35,270	\$24,571	\$6,873	\$21,824	\$40,109	\$41,388	\$0	\$75	\$1,191	\$2,034	\$667	\$5,834	\$33,322	\$24,075
Total pensions ('000)	\$866	\$10,740	\$27,945	\$25,603	\$7,292	\$25,227	\$28,275	\$23,436	\$3,284	\$4,630	\$19,771	\$19,924	\$2,432	\$10,740	\$26,738	\$23,696
PER YEAR END EMPLOYEE:																
Total salary & wages	\$70,451	\$81,744	\$89,913	\$83,098	\$90,603	\$112,310	\$133,771	\$129,791	\$50,502	\$75,149	\$82,022	\$70,131	\$71,040	\$84,825	\$100,107	\$91,966
Tot. benefits & pension	\$14,675	\$23,089	\$30,958	\$21,951	\$20,192	\$30,431	\$34,437	\$32,914	\$24,297	\$30,625	\$51,026	\$38,516	\$18,270	\$24,810	\$33,504	\$26,598
Total salary, benefits, and pension	\$82,717	\$104,776	\$115,993	\$105,049	\$120,953	\$132,697	\$169,049	\$162,704	\$78,147	\$103,667	\$143,755	\$108,647	\$84,915	\$110,308	\$135,274	\$118,565
Ratio: avg. benefits to avg. compensation	18%	22%	29%	22%	17%	24%	26%	22%	30%	34%	49%	36%	18%	24%	30%	24%
Therms delivered per year-end employee	648,423	1,065,197	1,479,433	1,209,747	733,287	1,046,521	1,773,984	1,691,435	419,171	750,573	854,331	10,583,830	704,980	1,051,557	1,733,522	2,430,797
Customers per year-end employee	492	636	779	653	584	674	1,176	888	450	521	548	476	496	615	774	701

**NOTE:** Some ratios are not always normally distributed. Therefore, average ratio values may be subject to distortion by a few observations that are outliers.

Key: LQ = Lower Quartile, MED = Median, UQ = Upper Quartile, AVG = Average

## APPENDIX 6: GAS UTILITY FINANCIAL PERFORMANCE

<i>Based on Segment Medians</i>	<b>Gas Utilities</b>			<b>Combination Utilities</b>			<b>Municipal Utilities</b>			<b>All Companies</b>		
	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Asset Turnover	0.34X	0.27X	0.28X	0.30X	0.28X	0.28X	0.35X	0.33X	0.36X	0.33X	0.28X	0.29X
Financial Leverage	67.8%	65.8%	68.2%	68.6%	68.3%	68.3%	42.9%	41.6%	41.7%	67.9%	67.6%	67.6%
Debt/Equity Ratio	71.1%	74.6%	67.0%	87.6%	87.4%	89.0%	56.9%	42.0%	53.0%	76.5%	75.7%	79.2%
Equity Multiplier	3.00	3.02	3.17	3.22	3.20	3.26	1.66	1.73	1.73	3.05	3.10	3.15
Profit Margin	7.8%	8.0%	8.6%	9.6%	10.3%	9.7%	10.4%	8.2%	8.8%	8.7%	9.1%	9.1%
ROA	2.7%	2.4%	2.6%	2.8%	2.8%	2.8%	3.4%	2.9%	2.6%	2.8%	2.7%	2.8%
ROE	8.4%	7.1%	8.5%	9.4%	9.8%	9.0%	5.1%	5.3%	4.2%	8.9%	8.7%	8.9%
Current Ratio	0.74	0.67	0.67	0.94	0.99	0.91	2.66	2.25	3.65	0.83	0.84	0.78
Current Assets/Total Assets	8.9%	8.8%	9.4%	7.1%	7.1%	7.0%	26.4%	25.1%	25.1%	8.9%	8.8%	9.3%

<i>Based on Segment Averages</i>	<b>Gas Utilities</b>			<b>Combination Utilities</b>			<b>Municipal Utilities</b>			<b>All Companies</b>		
	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Asset Turnover	0.39X	0.32X	0.33X	0.30X	0.28X	0.27X	0.39X	0.37X	0.38X	0.36X	0.32X	0.33X
Financial Leverage	64.7%	62.7%	64.8%	67.2%	67.2%	66.8%	43.5%	44.7%	46.6%	63.1%	62.2%	63.4%
Debt/Equity Ratio	69.1%	66.7%	76.2%	96.3%	97.0%	103.8%	103.1%	85.5%	105.0%	79.8%	77.3%	85.8%
Equity Multiplier	3.04	3.41	4.67	3.24	3.25	3.26	2.43	2.58	2.69	3.03	3.25	4.01
Profit Margin	5.8%	5.7%	6.1%	4.4%	11.0%	12.2%	9.7%	8.9%	7.6%	5.8%	7.7%	7.9%
ROA	2.4%	2.0%	2.1%	2.1%	3.1%	3.1%	3.2%	2.7%	2.4%	2.4%	2.4%	2.4%
ROE	7.1%	4.7%	0.4%	8.0%	9.8%	9.6%	6.6%	7.5%	6.9%	7.3%	6.7%	4.0%
Current Ratio	0.84	0.71	0.71	1.15	1.15	1.03	3.59	3.25	3.65	1.20	1.15	1.13
Current Assets/Total Assets	11.7%	10.5%	10.5%	7.8%	7.5%	7.2%	22.5%	23.6%	26.1%	11.8%	11.7%	12.0%

## APPENDIX 7a: GAS UTILITY INCOME STATEMENTS

### Based on Segment Averages

#### GAS-ONLY INCOME STATEMENT - Per Annual Therm Delivered

	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Operating revenue	\$ 0.6716	\$ 0.6056	\$ 0.7467	\$ 0.7777	\$ 0.7444	\$ 0.8313	\$ 0.7552	\$ 0.5390	\$ 0.6784	\$ 0.7087	\$ 0.6144	\$ 0.7377
Operating expense	\$ 0.4429	\$ 0.3818	\$ 0.4555	\$ 0.5167	\$ 0.4380	\$ 0.5116	\$ 0.5631	\$ 0.4042	\$ 0.5159	\$ 0.4752	\$ 0.3871	\$ 0.4642
Maintenance expense	\$ 0.0233	\$ 0.0245	\$ 0.0505	\$ 0.0309	\$ 0.0462	\$ 0.0380	\$ 0.0293	\$ 0.0264	\$ 0.0335	\$ 0.0260	\$ 0.0292	\$ 0.0428
Total O&M	\$ 0.4663	\$ 0.4064	\$ 0.5060	\$ 0.5475	\$ 0.4841	\$ 0.5496	\$ 0.5925	\$ 0.4307	\$ 0.5494	\$ 0.5012	\$ 0.4163	\$ 0.5070
Depreciation	\$ 0.0603	\$ 0.0643	\$ 0.0915	\$ 0.0637	\$ 0.0686	\$ 0.0755	\$ 0.0579	\$ 0.0502	\$ 0.0553	\$ 0.0610	\$ 0.0614	\$ 0.0802
Depletion	\$ 0.0007	\$ 0.0006	\$ 0.0004	\$ 0.0028	\$ 0.0016	\$ 0.0019	\$ -	\$ -	\$ -	\$ 0.0012	\$ 0.0008	\$ 0.0007
Amortization	\$ 0.0048	\$ 0.0042	\$ 0.0058	\$ 0.0033	\$ 0.0051	\$ 0.0059	\$ 0.0007	\$ 0.0004	\$ 0.0004	\$ 0.0040	\$ 0.0037	\$ 0.0049
Prop. loss charged to operations	\$ (0.0000)	\$ 0.0001	\$ 0.0000	\$ 0.0001	\$ 0.0001	\$ (0.0000)	\$ -	\$ 0.0000	\$ -	\$ 0.0000	\$ 0.0001	\$ 0.0000
Total taxes	\$ 0.0688	\$ 0.0615	\$ 0.0739	\$ 0.0755	\$ 0.0776	\$ 0.0894	\$ 0.0253	\$ 0.0175	\$ 0.0133	\$ 0.0660	\$ 0.0583	\$ 0.0683
Other operating income	\$ 0.0005	\$ 0.0000	\$ (0.0018)	\$ 0.0079	\$ (0.0000)	\$ (0.0001)	\$ 0.0022	\$ 0.0000	\$ (0.0001)	\$ 0.0026	\$ 0.0000	\$ (0.0008)
Total operating income	\$ 0.0707	\$ 0.0686	\$ 0.0690	\$ 0.0847	\$ 0.1073	\$ 0.1090	\$ 0.0788	\$ 0.0403	\$ 0.0601	\$ 0.0753	\$ 0.0740	\$ 0.0768

NOTE: "\$0.0000" indicates a value which, on a per-therm basis, is too small to be expressed within four significant digits.

#### GAS-ONLY INCOME STATEMENT - Per Average Customer Served

	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Operating revenue	\$ 1,292	\$ 1,194	\$ 1,151	\$ 1,068	\$ 1,005	\$ 1,100	\$ 1,042	\$ 931	\$ 1,079	\$ 1,206	\$ 1,137	\$ 1,152
Operating expense	\$ 899	\$ 841	\$ 729	\$ 712	\$ 605	\$ 671	\$ 781	\$ 714	\$ 821	\$ 837	\$ 772	\$ 744
Maintenance expense	\$ 114	\$ 58	\$ 82	\$ 43	\$ 52	\$ 49	\$ 41	\$ 45	\$ 56	\$ 87	\$ 53	\$ 68
Total O&M	\$ 1,013	\$ 899	\$ 811	\$ 756	\$ 657	\$ 721	\$ 822	\$ 760	\$ 877	\$ 924	\$ 825	\$ 812
Depreciation	\$ 163	\$ 197	\$ 155	\$ 81	\$ 86	\$ 94	\$ 77	\$ 83	\$ 87	\$ 132	\$ 149	\$ 130
Depletion	\$ 3	\$ 3	\$ 1	\$ 4	\$ 3	\$ 3	\$ -	\$ -	\$ -	\$ 3	\$ 3	\$ 1
Amortization	\$ 6	\$ 7	\$ 7	\$ 5	\$ 7	\$ 7	\$ 1	\$ 0	\$ 1	\$ 5	\$ 6	\$ 6
Prop. loss charged to operations	\$ (0)	\$ 0	\$ 0	\$ 0	\$ 0	\$ (0)	\$ -	\$ 0	\$ -	\$ 0	\$ 0	\$ 0
Total taxes	\$ 41	\$ 23	\$ 83	\$ 108	\$ 109	\$ 122	\$ 33	\$ 21	\$ 15	\$ 58	\$ 54	\$ 88
Other operating income	\$ 1	\$ 0	\$ (3)	\$ 10	\$ (0)	\$ (0)	\$ 3	\$ 3	\$ (7)	\$ 3	\$ 0	\$ (1)
Total operating income	\$ 67	\$ 66	\$ 94	\$ 115	\$ 143	\$ 153	\$ 109	\$ 67	\$ 99	\$ 84	\$ 100	\$ 114

**APPENDIX 7a: GAS UTILITY INCOME STATEMENTS – Per Cost Driver (cont'd)**  
**Based on Segment Averages**

**GAS-ONLY INCOME STATEMENT - Per Dollar of Gas Plant**

	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Operating revenue	\$ 0.3465	\$ 0.2893	\$ 0.2931	\$ 0.3338	\$ 0.4075	\$ 0.2924	\$ 0.4007	\$ 0.3466	\$ 0.3785	\$ 0.3488	\$ 0.3281	\$ 0.3047
Operating expense	\$ 0.2433	\$ 0.1944	\$ 0.1959	\$ 0.2299	\$ 0.2667	\$ 0.1860	\$ 0.2997	\$ 0.2679	\$ 0.2944	\$ 0.2456	\$ 0.2225	\$ 0.2068
Maintenance expense	\$ 0.0103	\$ 0.0102	\$ 0.0110	\$ 0.0123	\$ 0.0176	\$ 0.0125	\$ 0.0160	\$ 0.0164	\$ 0.0183	\$ 0.0114	\$ 0.0126	\$ 0.0118
Total O&M	\$ 0.2536	\$ 0.2046	\$ 0.2069	\$ 0.2422	\$ 0.2843	\$ 0.1985	\$ 0.3158	\$ 0.2844	\$ 0.3127	\$ 0.2570	\$ 0.2351	\$ 0.2187
Depreciation	\$ 0.0271	\$ 0.0261	\$ 0.0263	\$ 0.0249	\$ 0.0325	\$ 0.0247	\$ 0.0259	\$ 0.0278	\$ 0.0277	\$ 0.0264	\$ 0.0281	\$ 0.0261
Depletion	\$ 0.0003	\$ 0.0002	\$ 0.0002	\$ 0.0011	\$ 0.0008	\$ 0.0008	\$ -	\$ -	\$ -	\$ 0.0005	\$ 0.0004	\$ 0.0003
Amortization	\$ 0.0024	\$ 0.0025	\$ 0.0026	\$ 0.0017	\$ 0.0021	\$ 0.0021	\$ 0.0002	\$ 0.0001	\$ 0.0002	\$ 0.0020	\$ 0.0019	\$ 0.0020
Prop. loss charged to operations	\$ (0.0000)	\$ 0.0000	\$ 0.0000	\$ 0.0001	\$ 0.0001	\$ (0.0000)	\$ -	\$ 0.0001	\$ -	\$ 0.0000	\$ 0.0001	\$ 0.0000
Total taxes	\$ 0.0298	\$ 0.0267	\$ 0.0280	\$ 0.0306	\$ 0.0352	\$ 0.0304	\$ 0.0111	\$ 0.0081	\$ 0.0063	\$ 0.0280	\$ 0.0265	\$ 0.0260
Other operating income	\$ 0.0002	\$ 0.0000	\$ (0.0007)	\$ 0.0034	\$ (0.0000)	\$ (0.0001)	\$ 0.0012	\$ 0.0012	\$ (0.0024)	\$ 0.0012	\$ 0.0001	\$ (0.0004)
Total operating income	\$ 0.0335	\$ 0.0292	\$ 0.0291	\$ 0.0333	\$ 0.0525	\$ 0.0359	\$ 0.0477	\$ 0.0261	\$ 0.0316	\$ 0.0349	\$ 0.0361	\$ 0.0316

**NOTE:** "\$0.0000" indicates a value which, on a per \$gas plant basis, is too small to be expressed within four significant digits.

**GAS-ONLY INCOME STATEMENT - Per Mile of Distribution Pipe**

	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Operating revenue	\$ 88,489	\$ 57,528	\$ 59,880	\$ 78,022	\$ 72,659	\$ 76,742	\$ 71,906	\$ 65,717	\$ 73,735	\$ 83,954	\$ 63,372	\$ 66,244
Operating expense	\$ 61,466	\$ 36,040	\$ 37,247	\$ 48,770	\$ 41,296	\$ 43,701	\$ 53,673	\$ 49,490	\$ 54,962	\$ 57,255	\$ 39,656	\$ 41,587
Maintenance expense	\$ 3,210	\$ 2,508	\$ 3,103	\$ 3,707	\$ 4,204	\$ 3,730	\$ 3,328	\$ 3,635	\$ 4,187	\$ 3,356	\$ 3,022	\$ 3,257
Total O&M	\$ 64,677	\$ 38,547	\$ 40,350	\$ 52,477	\$ 45,500	\$ 47,432	\$ 57,001	\$ 53,125	\$ 59,149	\$ 60,611	\$ 42,679	\$ 44,844
Depreciation	\$ 7,040	\$ 6,057	\$ 6,029	\$ 6,127	\$ 6,383	\$ 6,705	\$ 5,111	\$ 5,528	\$ 5,868	\$ 6,594	\$ 6,088	\$ 6,146
Depletion	\$ 68	\$ 52	\$ 29	\$ 269	\$ 152	\$ 148	\$ -	\$ -	\$ -	\$ 114	\$ 75	\$ 51
Amortization	\$ 306	\$ 384	\$ 396	\$ 389	\$ 556	\$ 575	\$ 18	\$ 10	\$ 28	\$ 298	\$ 356	\$ 374
Prop. loss charged to operations	\$ (1)	\$ 10	\$ 8	\$ 30	\$ 31	\$ (1)	\$ -	\$ 18	\$ -	\$ 7	\$ 15	\$ 4
Total taxes	\$ 7,474	\$ 5,784	\$ 6,253	\$ 8,305	\$ 7,832	\$ 9,155	\$ 1,921	\$ 1,237	\$ 1,069	\$ 7,115	\$ 5,795	\$ 6,384
Other operating income	\$ 55	\$ 2	\$ (158)	\$ 427	\$ (4)	\$ (9)	\$ 230	\$ 185	\$ (368)	\$ 172	\$ 21	\$ (83)
Total operating income	\$ 8,926	\$ 6,694	\$ 6,815	\$ 10,425	\$ 12,205	\$ 12,728	\$ 7,855	\$ 5,800	\$ 7,622	\$ 9,214	\$ 8,364	\$ 8,440

**APPENDIX 7b: GAS UTILITY FINANCIAL RATIOS**  
Based on Segment Averages

Stratified by Type of Company

		Gas Utilities				Combination Utilities				Municipal Utilities				All Companies		
		2015	2016	2017		2015	2016	2017		2015	2016	2017		2015	2016	2017
Therms delivered (avg.) per acct.		2,369	2,736	1,982		1,900	1,901	1,800		1,423	14,265	17,410		2,144	5,720	3,740
Therms per \$1,000 of gas plant		0.695	0.618	0.546		0.630	0.891	0.520		0.581	6.393	5.601		0.666	1.542	1.109
Value of gas plant per customer		\$ 3,604	\$ 3,934	\$ 6,457		\$ 3,298	\$ 3,474	\$ 3,866		\$ 2,919	\$ 2,954	\$ 3,082		\$ 3,451	\$ 3,833	\$ 5,370
%Sales firm (not interruptible)		95%	95%	94%		94%	94%	94%		79%	86%	86%		93%	94%	93%
Collection period (days)	1/	30.0	40.3	42.9		25.3	29.9	28.9		28.6	34.5	31.9		28.6	36.9	38.2
Gas O&M expense as pct. of revenue		71%	68%	68%		71%	67%	67%		79%	82%	81%		72%	69%	69%
Gas oper. income as pct. of revenue		10%	11%	11%		11%	14%	13%		11%	7%	9%		11%	12%	11%
Gas operating revenue per customer		\$ 1,279	\$ 1,183	\$ 1,151		\$ 1,068	\$ 1,005	\$ 1,100		\$ 1,042	\$ 931	\$ 1,079		\$ 1,199	\$ 1,132	\$ 1,152
Gas O&M expense per customer		\$ 1,002	\$ 889	\$ 811		\$ 756	\$ 657	\$ 721		\$ 822	\$ 760	\$ 877		\$ 918	\$ 820	\$ 812
Gas operating income per customer		\$ 67	\$ 66	\$ 94		\$ 115	\$ 143	\$ 153		\$ 109	\$ 67	\$ 99		\$ 84	\$ 100	\$ 114
Gas revenue per dollar of gas plant		\$ 0.3453	\$ 0.2877	\$ 0.2931		\$ 0.3338	\$ 0.4075	\$ 0.2924		\$ 0.4007	\$ 0.3466	\$ 0.3785		\$ 0.3480	\$ 0.3267	\$ 0.3047
Gas O&M expense per \$ of gas plant		\$ 0.2523	\$ 0.2030	\$ 0.2069		\$ 0.2422	\$ 0.2843	\$ 0.1985		\$ 0.3158	\$ 0.2844	\$ 0.3127		\$ 0.2562	\$ 0.2339	\$ 0.2187
Gas oper. income per \$ of gas plant		\$ 0.0336	\$ 0.0292	\$ 0.0291		\$ 0.0333	\$ 0.0525	\$ 0.0359		\$ 0.0477	\$ 0.0261	\$ 0.0316		\$ 0.0349	\$ 0.0360	\$ 0.0316
Gas revenue per mile of pipe	2/	\$ 88,144	\$ 57,748	\$ 59,880		\$ 78,022	\$ 72,659	\$ 76,742		\$ 71,906	\$ 65,717	\$ 73,735		\$ 83,788	\$ 63,424	\$ 66,244
Gas O&M expense per mile of pipe	2/	\$ 64,328	\$ 38,600	\$ 40,350		\$ 52,477	\$ 45,500	\$ 47,432		\$ 57,001	\$ 53,125	\$ 59,149		\$ 60,437	\$ 42,660	\$ 44,844
Gas oper. income per mile of pipe	2/	\$ 8,934	\$ 6,747	\$ 6,815		\$ 10,425	\$ 12,205	\$ 12,728		\$ 7,855	\$ 5,800	\$ 7,622		\$ 9,216	\$ 8,374	\$ 8,440
LT debt - total assets ratio	1/	21.8%	20.5%	22.5%		28.0%	28.3%	29.7%		31.3%	27.4%	29.4%		24.4%	23.5%	25.1%
LT debt - total capitalization ratio	1/3/	36.6%	34.5%	38.5%		45.0%	45.5%	46.9%		36.7%	33.5%	37.9%		38.8%	37.8%	40.8%
Net interest - long-term debt ratio	1/	5.5%	444.6%	7.8%		6.6%	6.1%	4.7%		2.3%	2.6%	1.9%		5.5%	226.7%	6.2%
EBITDA interest coverage	1/	8.7x	19.5x	21.1x		6.3x	7.8x	8.3x		11.8x	51.5x	83.4x		8.3x	18.9x	23.5x
Return on assets		2.4%	2.0%	2.1%		2.1%	3.1%	3.1%		3.2%	2.7%	2.4%		2.4%	2.4%	2.4%

1/ Figures for combination utilities are necessarily based on combined gas and electric operations.

2/ Miles of distribution pipes and services combined. Starting in 2004, services are excluded from the pipe calculation

3/ Total capitalization figure in this display includes preferred stock.

**NOTE:** Some ratios are not always normally distributed. Therefore, average ratio values may be subject to distortion by a few observations that are outliers.



## APPENDIX 8: GAS UTILITY WAGES AND BENEFITS

Based on Segment Averages

Stratified by Type of Company

		Gas Utilities				Combination Utilities				Municipal Utilities				All Companies		
		2015	2016	2017		2015	2016	2017		2015	2016	2017		2015	2016	2017
Average number of employees		897	1006	974		996	1,239	738		397	360	360		845	955	815
Number of Employees at year-end		917	1019	988		1,117	1,323	854		392	354	354		887	983	848
O&M wages ('000)		\$57,987	\$63,902	\$63,632		\$86,940	\$90,080	\$58,579		\$24,081	\$22,852	\$23,758		\$59,617	\$63,074	\$55,010
Construction wages ('000)		\$21,392	\$24,159	\$24,571		\$47,935	\$54,269	\$41,388		\$3,483	\$2,841	\$2,034		\$25,022	\$27,996	\$24,075
Total pensions ('000)		\$22,127	\$26,583	\$25,603		\$42,377	\$18,956	\$23,436		\$21,756	\$694,987	\$19,924		\$26,877	\$102,893	\$23,696
Per Employee (1/):																
Total salary & wages		\$77,849	\$82,218	\$83,098		\$121,134	\$124,202	\$129,791		\$62,366	\$70,993	\$70,131		\$87,110	\$91,014	\$91,966
Tot. benefits & pension		\$20,218	\$23,286	\$21,951		\$45,744	\$29,290	\$32,914		\$38,319	\$43,674	\$38,516		\$28,810	\$27,280	\$26,598
Total salary, benefits, and pension		\$98,066	\$105,503	\$105,049		\$166,878	\$153,492	\$162,704		\$100,685	\$114,667	\$108,647		\$115,919	\$118,294	\$118,565
Ratio: avg. benefits to avg. compensation		21.1%	22.0%	21.7%		24.0%	19.1%	22.0%		41.6%	47.2%	36.3%		24.4%	24.6%	23.8%
Therms sold per year-end employee		1,296,357	1,328,236	1,209,747		1,729,605	1,671,666	1,691,435		693,274	12,547,591	10,583,830		1,455,922	2,754,260	2,430,797
Customers per year-end employee		624	667	653		914	877	888		465	523	476		692	716	701

1/ year-end employees

## APPENDIX 9: Companies Studied

Consolidations are limited to LDC business units.

<b>GAS IOUs</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>GAS IOUs (cont.)</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Southern Company Gas	X	X	X	Summit Natural Gas of Missouri, Inc.	X	X	X
Arkansas Oklahoma Gas Corp	X	X	X	TECO Peoples Gas	X	X	X
Atmos Energy Corporation	X	X	X	Texas Gas Service	X	X	X
Centerpointe Energy Corp.	X	X	X	Union Oil & Gas Co.	X	X	X
Chesapeake Utilities Corp	X	X	X	Vectren Energy Delivery	X	X	X
Citizens Gas & Coke Utility	X	X	X	Vermont Gas	X	X	X
Colorado Natural Gas	X	X	X	Washington Gas Light Company	X	X	X
Columbia Gas of Kentucky	X	X	X				
Columbia Gas of Massachusetts	X	X	X				
Columbia Gas of Maryland	X	X	X	<b>COMBINATION IOUs</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Columbia Gas of Ohio	X	X	X	Avista Corp	X	X	X
Columbia Gas of Pennsylvania	X	X	X	Ameren Illinois Corp.	X	X	X
Columbia Gas of Virginia	X	X	X	Ameren Missouri	X	X	X
Corning Natural Gas Corp	X	X	X	Baltimore Gas & Electric Co.	X	X	X
Delta Natural Gas Company	X	X	X	Black Hills Corporation	X	X	X
Dominion East Ohio Gas Company	X	X	X	Central Hudson Gas & Electric Corp.	X	X	X
DTE Gas Company	X	X	X	Cheyenne Light, Fuel, & Power	X		
Eastern Natural Gas Company	X	X	X	Consolidated Edison of New York	X	X	X
Enstar Natural Gas Company	X	X	X	Consumers Energy	X	X	X
Hope Gas, Inc.	X	X		Florida Public Utilities Company	X	X	X
Illinois Gas Company	X	X	X	Gainesville Regional Utilities	X	X	X
Indiana Gas Company, Inc.		X		Madison Gas & Electric Company	X	X	X
Kansas Gas Service	X	X	X	National Grid - Niagara Mohawk	X		X
KeySpan Energy Delivery - NYC	X	X	X	Northern Indiana Public Service Co.		X	X
KeySpan Energy Delivery New England	X	X	X	Pacific Gas & Electric	X	X	
KeySpan Gas East - LILCO	X	X	X	Public Service Enterprises	X	X	
Laclede Gas Company	X	X		Puget Sound Energy	X	X	X
MDU Resources Corporation	X		X	San Diego Gas & Electric	X	X	X
Spire Gulf	X		X	UGI Utilities, Inc.	X	X	X
Mountaineer Gas	X	X		WE Energies	X	X	X
Mt. Carmel Public Utility	X	X					
Narragansett Gas Co.		X					
National Fuel Gas Company	X	X	X	<b>MUNICIPALS</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
National Grid - Rhode Island		X	X	Colorado Springs Utilities	X	X	X
New Jersey Natural Gas Company	X	X	X	Knoxville Utilities Board	X	X	
New Mexico Gas Company	X	X	X	Memphis Light, Gas & Water Div	X	X	X
Northwest Natural Gas Company	X		X	Metropolitan Util Dist-Omaha	X	X	X
Ohio Gas Company	X	X	X	Middle Tenn Nat Gas Util Dist	X	X	X
Oklahoma Natural Gas	X	X	X	Okaloosa County Gas District	X	X	X
Peoples Natural Gas	X	X	X	Owatonna Public Utilities	X	X	X
Piedmont Natural Gas Company	X	X	X	Philadelphia Gas Works	X	X	X
Pike Natural Gas Company	X	X	X	Richmond Dept. of Pub. Util., City of	X	X	X
Dominion Energy - Questar Gas	X	X	X	Westfield Gas & Electric		X	X
Semco Energy (S.E. Michigan)	X	X	X				
Southeastern Natural Gas Co	X						
Southern California Gas	X	X	X				
Southwest Gas Corporation	X	X	X				
Southwestern Virginia Gas Co.	X	X	X				