

# Energy Analysis

ENERGY ANALYSIS AND STANDARDS  
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## 2016-2018 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 79 utilities were included in the 2018 sample, 82 utilities were examined in 2017, and 87 companies were studied for 2016.<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 2018, 70 percent in 2017, and 87 percent in 2016. *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.

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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.

### III. BENCHMARKING METRICS

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			
	2016	2017	2018
<b>All Companies</b>	<b>87 Firms</b>	<b>82 Firms</b>	<b>79 Firms</b>
Number of gas customers	659,073	633,776	687,244
Annual therms delivered ('000)	1,609,325	1,143,604	1,372,367
Annual therms delivered per account	5,720	3,740	4,223
Therms delivered per \$1,000 of gas plant	1,542	1,109	1,234
Density of system <sup>2</sup>	61.3	56.7	62.1
Firm sales <sup>3</sup>	93.6%	93.0%	92.9%
<b>Gas utilities</b>	<b>54 Firms</b>	<b>54 Firms</b>	<b>50 Firms</b>
Number of gas customers	750,845	767,388	836,826
Annual therms delivered ('000)	1,452,743	1,309,351	1,602,230
Annual therms delivered per account	2,736	1,982	2,268
Therms delivered per \$1,000 of gas plant	618	546	627
Density of system <sup>2</sup>	58.8	52.7	57.2
Firm sales <sup>3</sup>	94.9%	94.0%	94.0%
<b>Comb. Gas &amp; Electric Utilities<sup>1</sup></b>	<b>23 Firms</b>	<b>19 Firms</b>	<b>20 Firms</b>
Number of gas customers	789,337	603,719	669,329
Annual therms delivered ('000)	1,525,057	1,158,474	1,311,524
18 Firms Annual therms delivered per account	1,901	1,800	1,852
Therms delivered per \$1,000 of gas plant	891	520	458
Density of system <sup>2</sup>	68.2	63.9	75.0
Firm sales <sup>3</sup>	93.7%	93.8%	93.5%
<b>Municipal Utilities</b>	<b>10 Firms</b>	<b>9 Firms</b>	<b>9 Firms</b>
Number of gas customers	159,761	166,612	152,161
Annual therms delivered ('000)	509,991	394,765	552,338
Annual therms delivered per account	14,265	17,410	21,436
Therms delivered per \$1,000 of gas plant	6,393	5,601	6,885
Density of system <sup>2</sup>	67.0	67.1	66.4
Firm sales <sup>3</sup>	85.7%	85.9%	84.7%

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

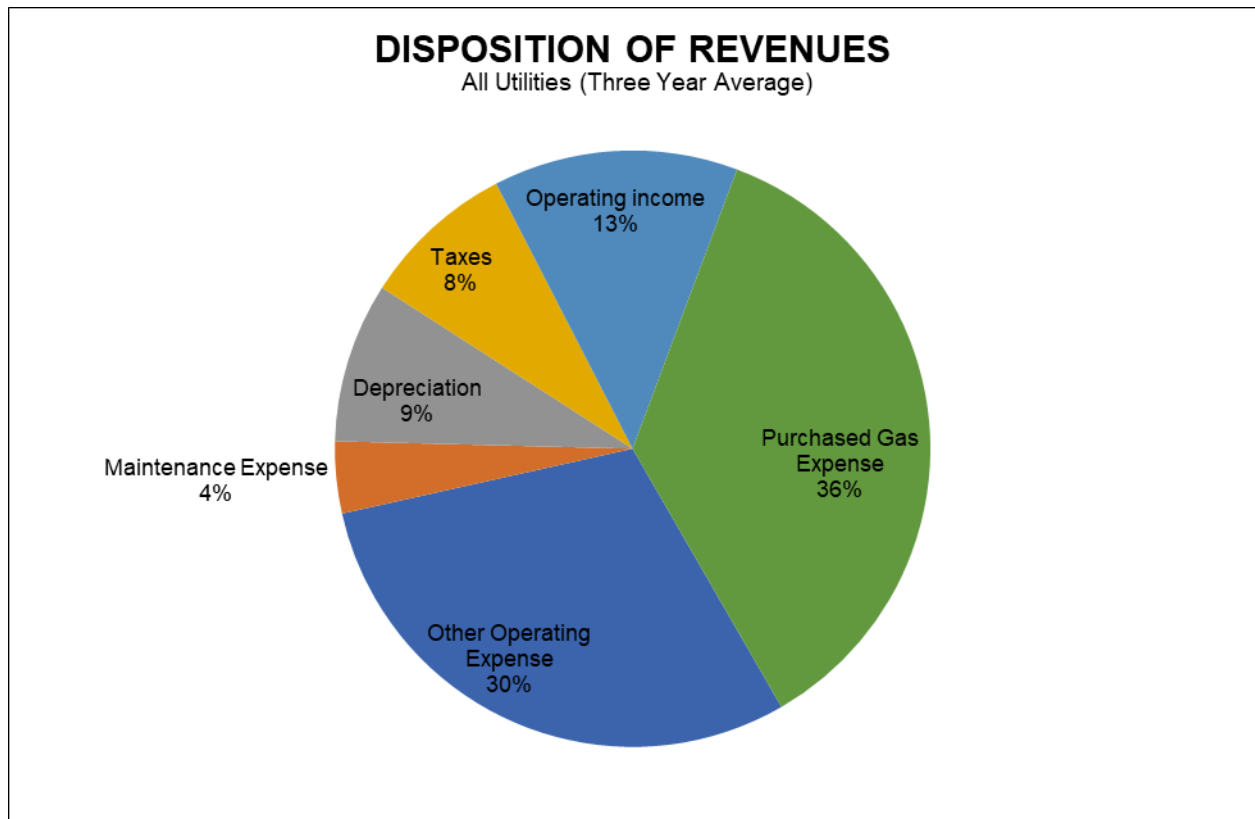
Figure 1 shows the allocation of average revenue for the three years studied. Table 2 summarizes average industry revenue performance by segment. Weather patterns impacted revenues per customer, while changing gas costs impacted both revenues per customer and per therm.

<b>TABLE 2</b> <b>UTILITY REVENUE PERFORMANCE</b> <b>Annual Average Values per Group</b> <b>Data Based on Segment Averages</b>			
	2016	2017	2018
<b>All Companies</b>			
Operating revenue ('000)	\$568,495	\$591,227	\$675,601
Per customer	\$1,137	\$1,152	\$1,175
Per therm	\$0.614	\$0.738	\$0.686
Gross sales margin (Rev. less Pur. Gas, '000)	\$391,229	\$380,734	\$410,256
Per customer	\$707	\$694	\$694
Per therm	\$0.366	\$0.468	\$0.468
Collection period (days)	36.9	38.2	37.7
<b>Gas Utilities</b>			
Operating revenue ('000)	\$598,832	\$670,981	\$766,827
Per customer	\$1,194	\$1,151	\$1,127
Per therm	\$0.606	\$0.747	\$0.624
Gross sales margin (Rev. less Pur. Gas, '000)	\$415,415	\$370,355	\$323,444
Per customer	\$827	\$666	\$666
Per therm	\$0.383	\$0.502	\$0.502
Collection period (days)	40.3	42.9	41.1
<b>Comb. Gas &amp; Electric Utilities<sup>1</sup></b>			
Operating revenue ('000)	\$760,765	\$664,056	\$766,805
Per customer	\$1,005	\$1,100	\$1,181
Per therm	\$0.744	\$0.831	\$0.857
Gross sales margin (Rev. less Pur. Gas, '000)	\$511,913	\$409,997	\$655,988
Per customer	\$564	\$820	\$820
Per therm	\$0.351	\$0.483	\$0.483
Collection period (days)	29.9	28.9	32.7
<b>Municipal Utilities</b>			
Operating revenue ('000)	\$147,723	\$165,340	\$167,485
Per customer	\$931	\$1,079	\$1,176
Per therm	\$0.539	\$0.678	\$0.670
Gross sales margin (Rev. less Pur. Gas, '000)	\$101,200	\$446,341	\$346,508
Per customer	\$495	\$599	\$599
Per therm	\$0.374	\$0.342	\$0.342
Collection period (days)	34.5	31.9	32.7

Source: AGA

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

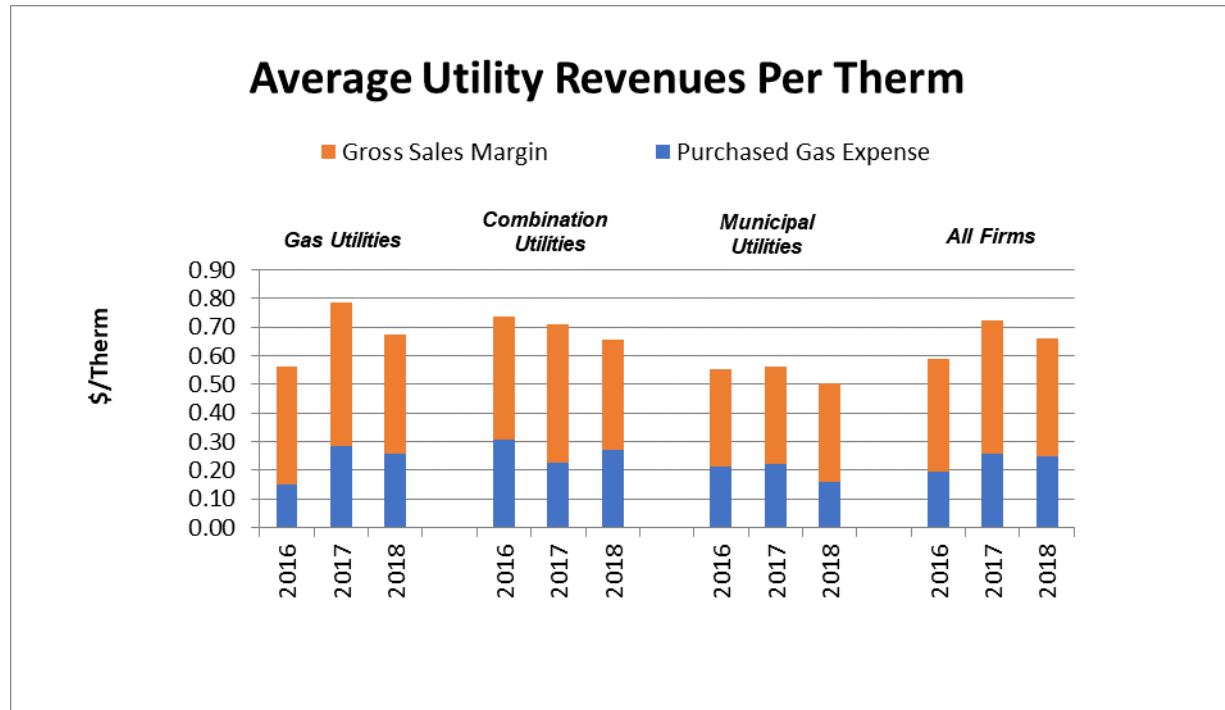
**FIGURE 1**



**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>		
	2016	2017	2018	2016	2017	2018
<b>VALUES PER THERM</b>						
Gas-only revenues	\$0.6068	\$0.8044	\$0.7018	\$0.7444	\$0.8313	\$0.8572
Purchased-gas expense	\$0.1499	\$0.2827	\$0.2581	\$0.3043	\$0.2249	\$0.2687
Gross sales margin	\$0.4105	\$0.5023	\$0.4153	\$0.4308	\$0.4834	\$0.3882
	\$0.1963	\$0.3021	\$0.2866	\$0.3136	\$0.2200	\$0.2785
Total production costs <sup>2</sup>						
Storage & LNG	\$0.0012	\$0.0032	\$0.0037	\$0.0037	\$0.0007	\$0.0028
Transmission	\$0.0115	\$0.0090	\$0.0099	\$0.0146	\$0.0197	\$0.0157
Distribution	\$0.0664	\$0.0765	\$0.0661	\$0.0749	\$0.0734	\$0.0763
Customer accounts	\$0.0266	\$0.0297	\$0.0242	\$0.0358	\$0.0311	\$0.0212
Customer svc. & info.	\$0.0054	\$0.0127	\$0.0073	\$0.0134	\$0.0059	\$0.0142
Sales	\$0.0030	\$0.0059	\$0.0021	\$0.0031	\$0.0154	\$0.0036
<u>Admin. &amp; general</u>	\$0.0819	\$0.1030	\$0.0746	\$0.0897	\$0.1218	\$0.0601
Total O&M	\$0.4062	\$0.5423	\$0.4748	\$0.4841	\$0.4879	\$0.4725
<b>SAME-SIZE ANALYSIS</b>						
Gas-only revenues	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Purchased-gas expense	24.71%	35.15%	36.78%	40.88%	27.05%	31.35%
Gross sales margin	67.66%	62.44%	59.17%	57.87%	58.15%	45.29%
	32.34%	37.56%	40.83%	42.13%	26.47%	32.50%
Total production costs <sup>2</sup>						
Storage & LNG	0.19%	0.40%	0.52%	0.50%	0.08%	0.32%
Transmission	1.90%	1.12%	1.41%	1.96%	2.37%	1.84%
Distribution	10.94%	9.51%	9.42%	10.06%	8.82%	8.91%
Customer accounts	4.38%	3.70%	3.45%	4.81%	3.74%	2.47%
Customer svc. & info.	0.89%	1.58%	1.04%	1.80%	0.71%	1.66%
Sales	0.49%	0.74%	0.30%	0.42%	1.85%	0.42%
<u>Admin. &amp; general</u>	13.50%	12.81%	10.63%	12.06%	14.65%	7.01%
Total O&M	66.94%	67.42%	67.65%	65.04%	58.69%	55.13%

Source: AGA, USR.

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

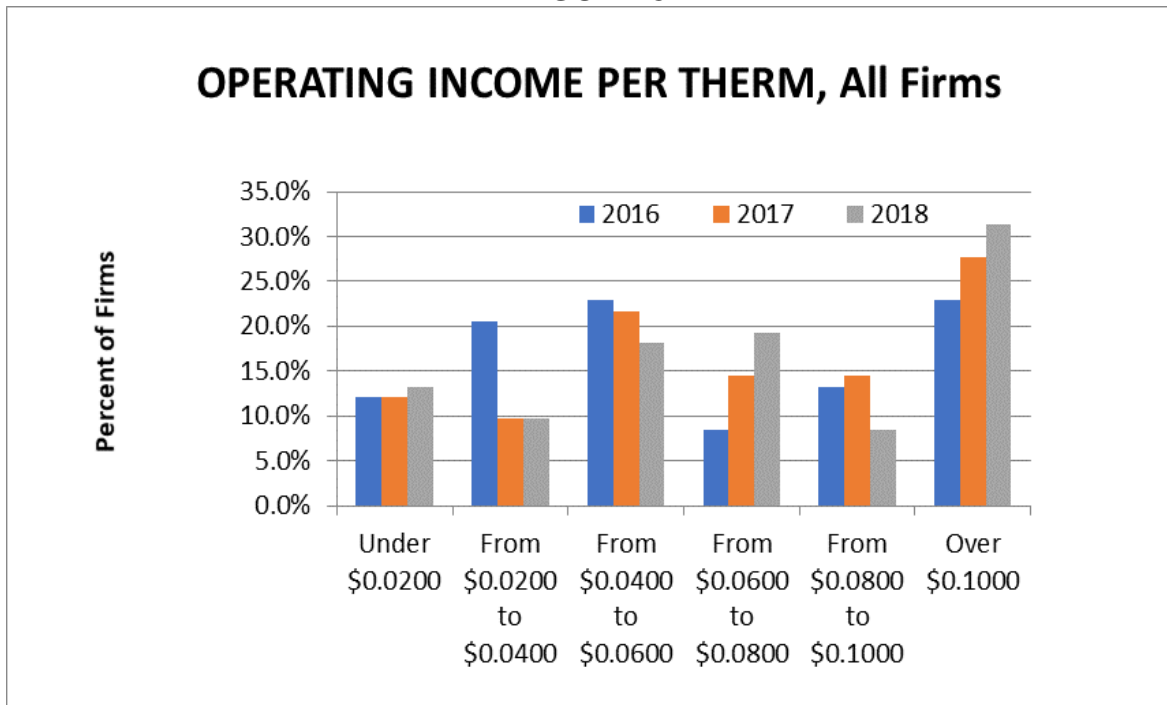
<sup>2</sup> Purchased-gas expense is subsumed within total production costs.

**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>		
	2016	2017	2018	2016	2017	2018
Operating revenue, \$000	\$598,832	\$670,981	\$766,827	\$760,765	\$664,056	\$766,805
Total O&M, \$000	\$375,631	\$425,249	\$508,574	\$498,873	\$425,502	\$508,280
Operating income, \$000	\$83,713	\$98,678	\$103,981	\$117,790	\$97,385	\$115,551
<b>Percent of Revenue</b>						
Total O&M	62.73%	63.38%	66.32%	65.58%	64.08%	66.29%
Operating income	13.98%	14.71%	13.56%	15.48%	14.67%	15.07%
<b>Per Therm</b>						
Revenue	\$0.606	\$0.747	\$0.624	\$0.744	\$0.831	\$0.857
Total O&M	\$0.406	\$0.506	\$0.422	\$0.484	\$0.550	\$0.578
Operating income	\$0.069	\$0.069	\$0.081	\$0.107	\$0.109	\$0.119
<b>Per Customer</b>						
Revenue	\$1,194	\$1,151	\$1,127	\$1,005	\$1,100	\$1,181
Total O&M	\$899	\$811	\$783	\$657	\$721	\$789
Operating income	\$66	\$94	\$140	\$143	\$153	\$172
<b>Per Dollar of Gas Plant</b>						
Revenue	\$0.289	\$0.293	\$0.318	\$0.407	\$0.292	\$0.274
Total O&M	\$0.205	\$0.207	\$0.229	\$0.284	\$0.199	\$0.186
Operating income	\$0.029	\$0.029	\$0.035	\$0.053	\$0.036	\$0.039
<b>Per Mile of Main<sup>2</sup></b>						
Revenue	\$57,528	\$59,880	\$67,507	\$72,659	\$76,742	\$95,871
Total O&M	\$38,547	\$40,350	\$46,927	\$45,500	\$47,432	\$61,616
Operating income	\$6,694	\$6,815	\$7,979	12,205	\$12,728	\$15,359

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.

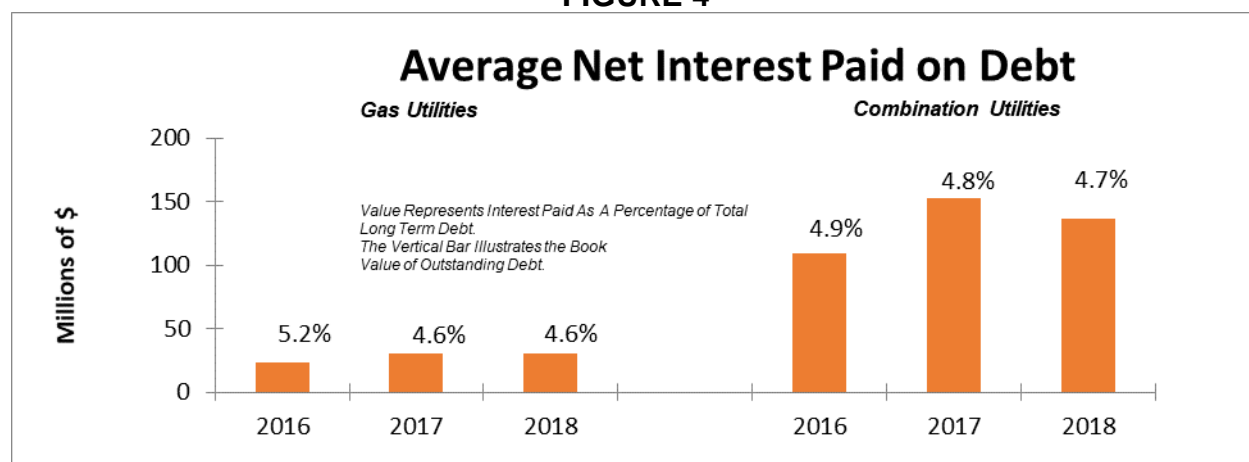
The total cost of capital for a utility reflects that of both debt and equity financing.<sup>5</sup> Table 5 shows summary descriptors of capital costs for utilities by industry segment.

<b>TABLE 5</b>			
<b>UTILITY DEBT AND DEBT COVERAGE</b>			
<b>AVERAGE VALUES</b>			
	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Gas utilities</b>			
Total LT Debt to Total Assets	20.49%	22.45%	21.87%
LT Debt to Total Capitalization	34.55%	38.48%	37.10%
EBITDA Interest Coverage	19.5x	21.1x	8.3x
<b>Combination Utilities<sup>1</sup></b>			
Total LT Debt to Total Assets	28.32%	29.67%	31.04%
LT Debt to Total Capitalization	45.46%	46.92%	48.37%
EBITDA Interest Coverage	7.8x	8.3x	7.7x

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

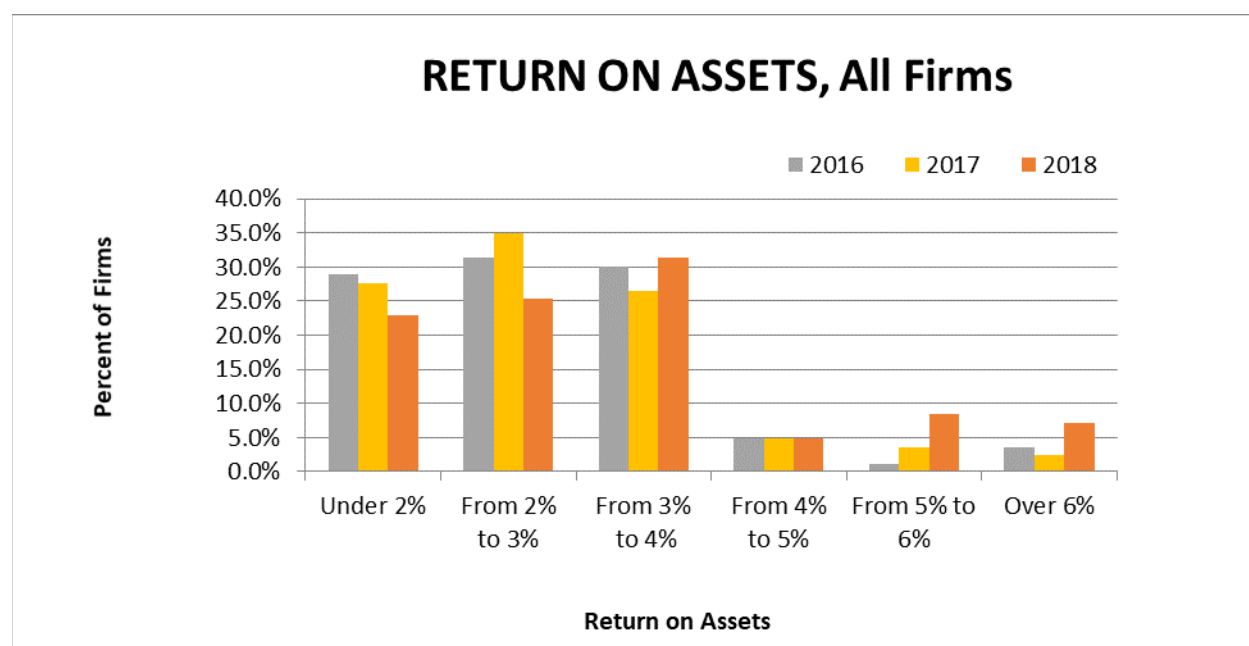
<sup>5</sup> For combination utilities, such measures necessarily reflect combined gas and electric financials. Some municipal utilities in this study have similar combined activity financing.

#### 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			
	2016	2017	2018
<b>Gas Utilities</b>			
Asset Turnover	0.27X	0.28X	0.28X
Financial Leverage	65.75%	68.21%	68.21%
Equity Multiplier	3.02	3.17	3.17
Profit Margin	8.01%	8.58%	8.58%
ROA <sup>2</sup>	2.41%	2.58%	2.58%
ROE <sup>2</sup>	7.10%	8.47%	8.47%
Current Ratio	0.67	0.67	0.67
Current Assets/Total Assets	8.82%	9.43%	9.43%
<b>Combination Utilities<sup>1</sup></b>			
Asset Turnover	0.28X	0.28X	0.28X
Financial Leverage	68.29%	68.30%	68.30%
Equity Multiplier	3.20	3.26	3.26
Profit Margin	10.26%	9.68%	9.68%
ROA <sup>2</sup>	2.85%	2.80%	2.80%
ROE <sup>2</sup>	9.79%	9.04%	9.04%
Current Ratio	0.99	0.91	0.91
Current Assets/Total Assets	7.11%	6.98%	6.98%

Source: AGA, USR.

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

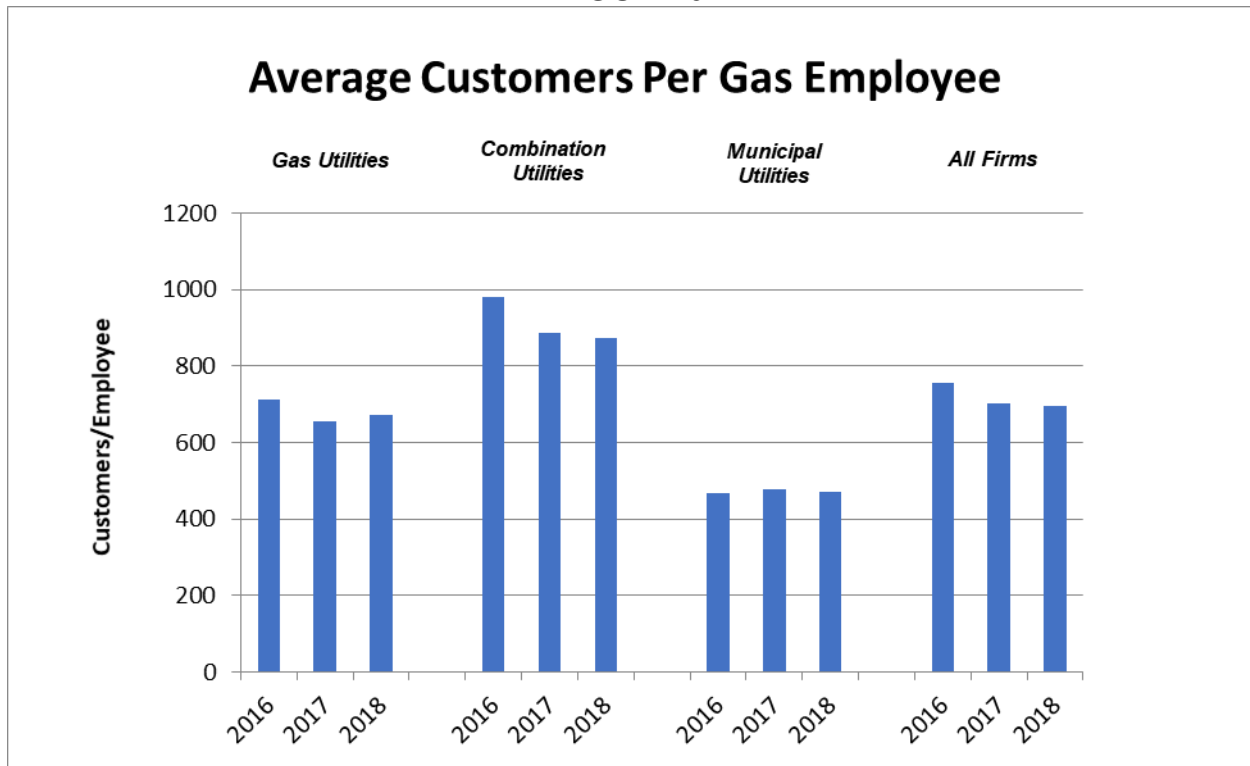
<sup>2</sup> When referring to combined gas and electric operations, the balance sheet items (i.e., total end-of-year assets) refer to the total firm, which could include non-utility assets, gas transmission assets and "other" utility assets (e.g., water), while income statement items (i.e., total revenues) 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>				
	2016	2017	2018	3-Year Average
<b>All Firms</b>				
Number of employees at year-end				
Total salaries and wages	983	848	867	899
Total benefits and pensions	\$91,014	\$91,966	\$99,645	\$94,208
Total salaries, benefits, and pensions	\$27,280	\$26,598	\$25,705	\$26,528
Ratio of total benefits to total compensation	\$118,294	\$118,565	\$125,350	\$120,736
Therms sold per employee	24.57%	23.8%	21.1%	23.2%
Customers per employee	2,754,260	2,430,797	2,619,901	2,601,653
	716	701	695	704
<b>Gas Utilities</b>				
Number of employees at year-end				
Total salaries and wages	1019	988	985	997
Total benefits and pensions	\$82,218	\$83,098	\$90,749	\$85,355
Total salaries, benefits, and pensions	\$23,286	\$21,951	\$20,607	\$21,948
Ratio of total benefits to total compensation	\$105,503	\$105,049	\$111,356	\$107,303
Therms sold per employee	22.04%	21.7%	18.2%	20.7%
Customers per employee	1,328,236	1,209,747	1,471,925	1,336,636
	667	653	671	664
<b>Combination Utilities<sup>1</sup></b>				
Number of employees at year-end				
Total salaries and wages	1,323	854	933	1,037
Total benefits and pensions	\$124,202	\$129,791	\$131,261	\$128,418
Total salaries, benefits, and pensions	\$29,290	\$32,914	\$30,532	\$30,912
Ratio of total benefits to total compensation	\$153,492	\$162,704	\$161,793	\$159,330
Therms sold per employee	19.12%	22.0%	19.7%	20.3%
Customers per employee	1,671,666	1,691,435	1,525,284	1,629,462
	877	888	874	880
<b>Municipal Utilities</b>				
Number of employees at year-end				
Total salaries and wages	354	354	320	342
Total benefits and pensions	\$70,993	\$70,131	\$74,464	\$71,863
Total salaries, benefits, and pensions	\$43,674	\$38,516	\$45,639	\$42,610
Ratio of total benefits to total compensation	\$114,667	\$108,647	\$120,104	\$114,473
Therms sold per employee	47.24%	36.3%	38.5%	40.7%
Customers per employee	12,547,591	10,583,830	12,670,372	11,933,931

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.).

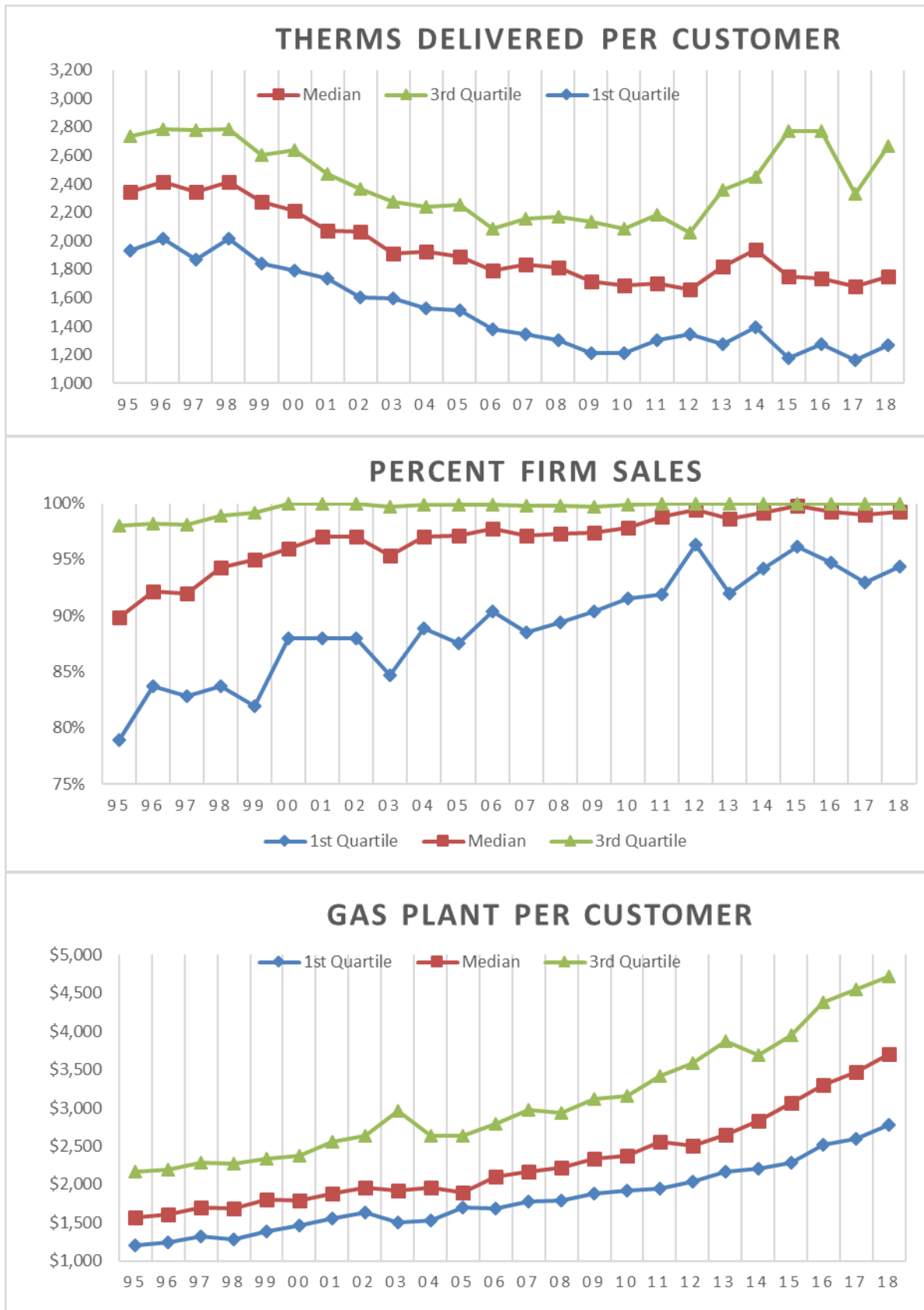
**ASSET TURNOVER:** Influenced by revenue and composition/age of gas plant.

**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.

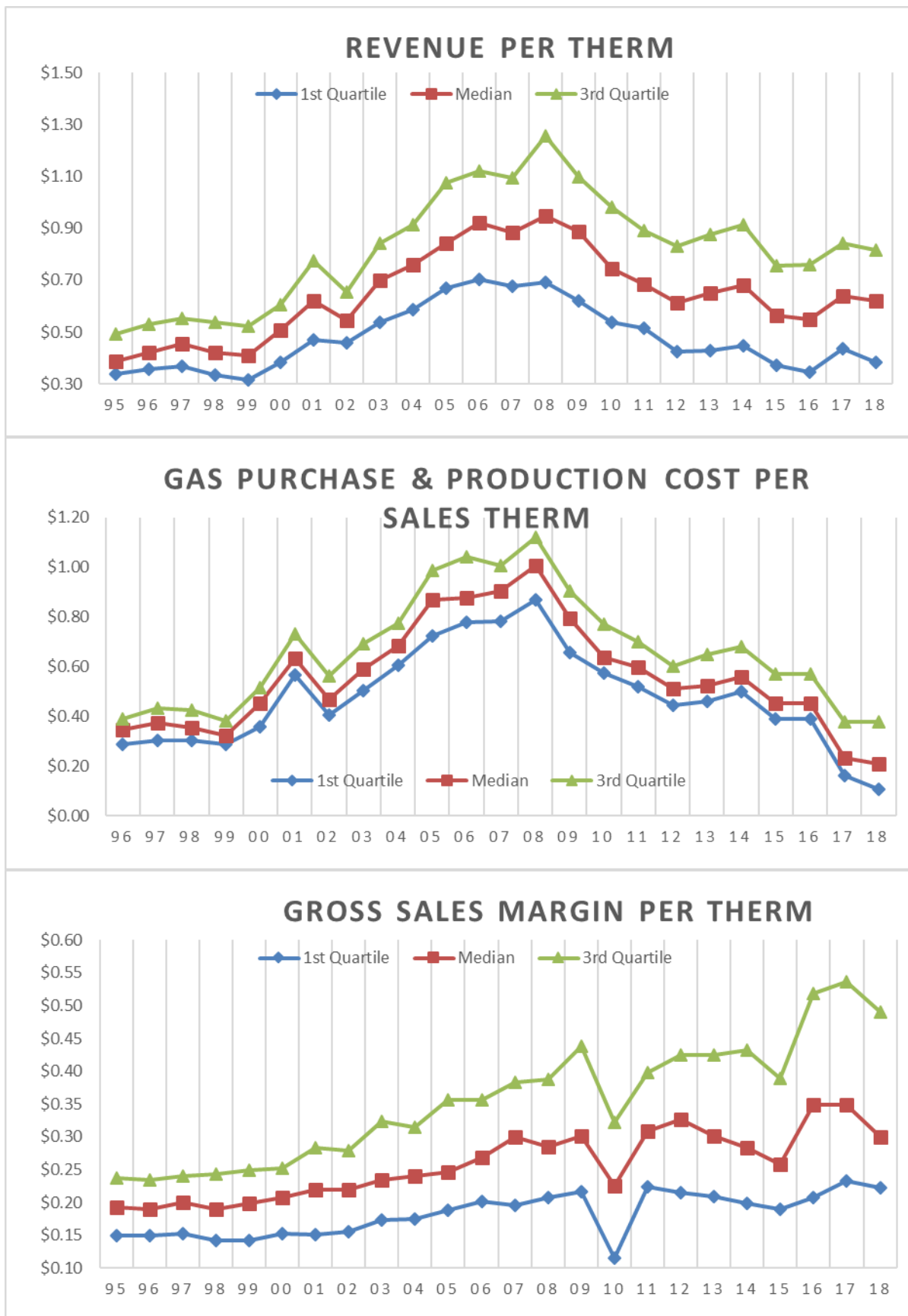
**NOTE:** Recent results of metrics involving miles of main are not comparable for years prior to 2004 because of changes in the definition of miles of main changed (no longer includes services) and in the data source (now derived from the US Department of Transportation, Office of Pipeline Safety database).

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



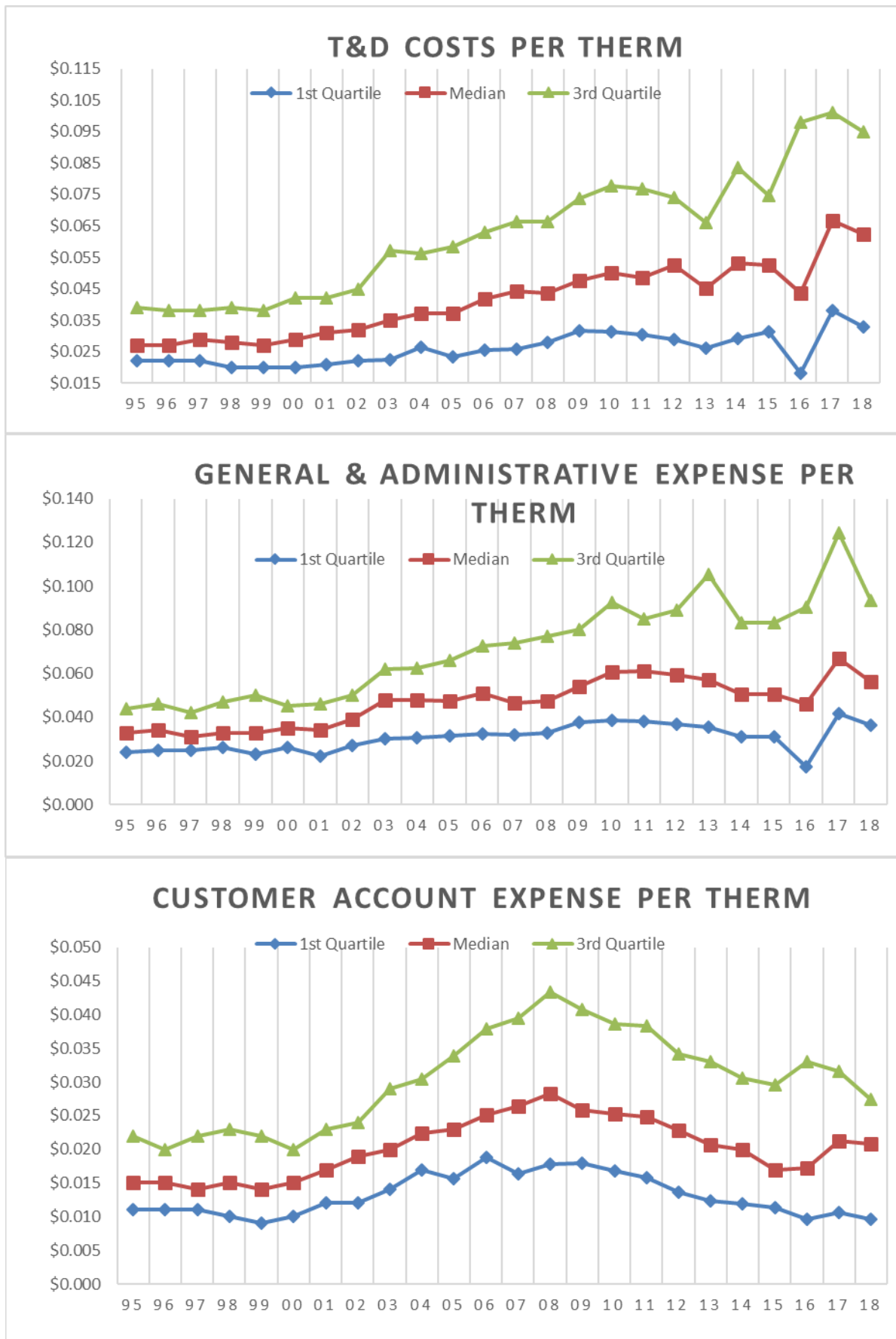
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

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



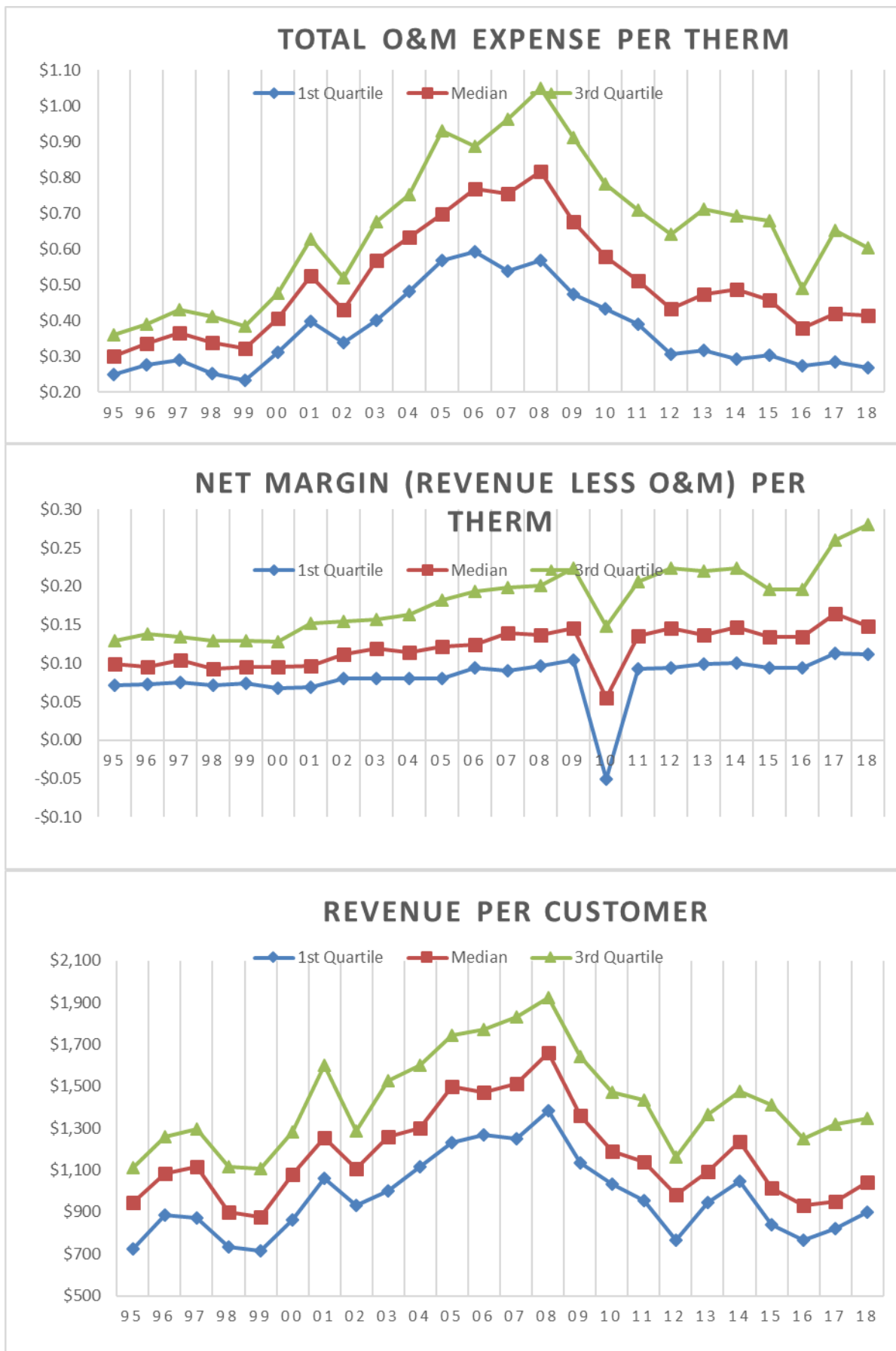
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

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



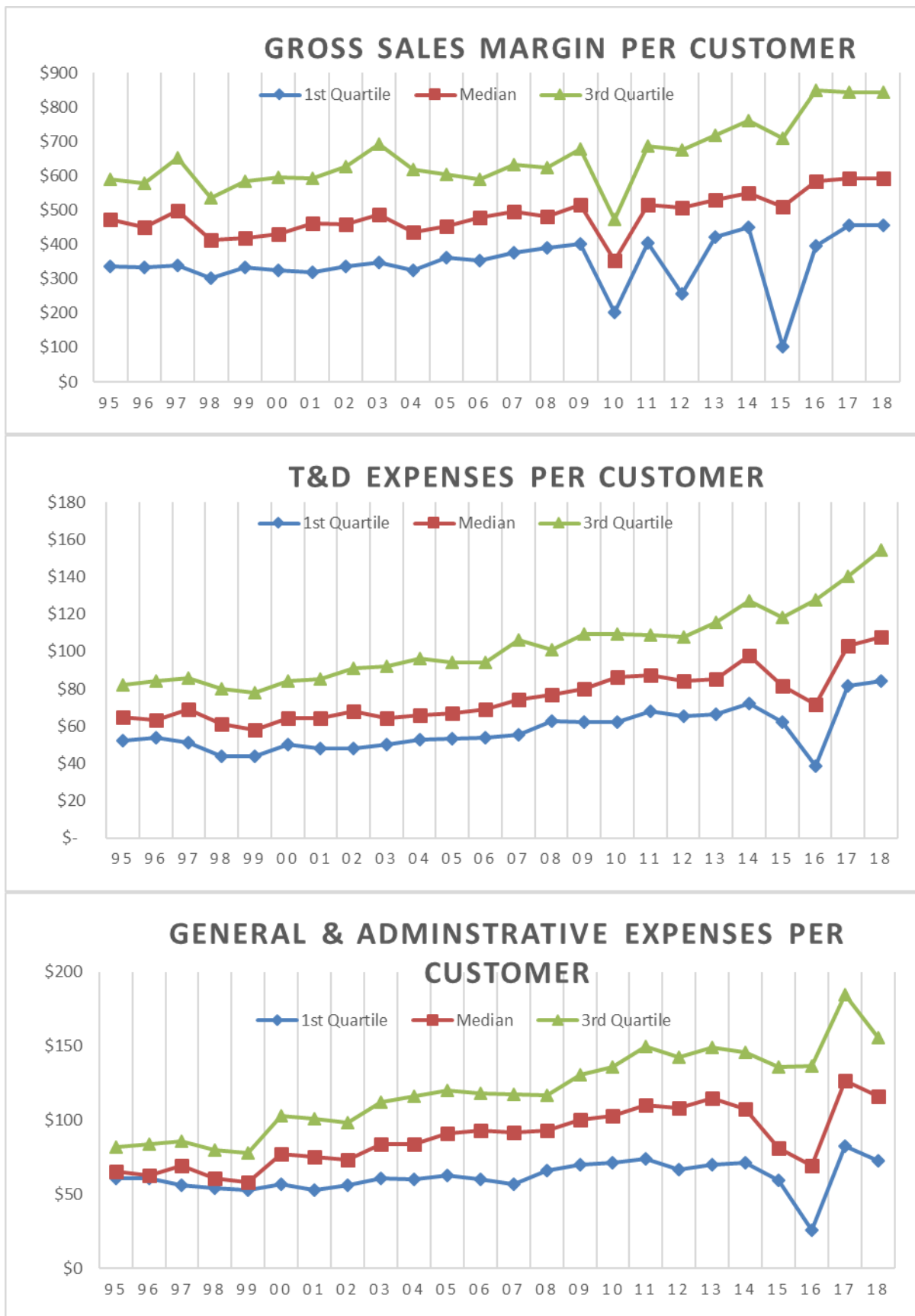
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

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



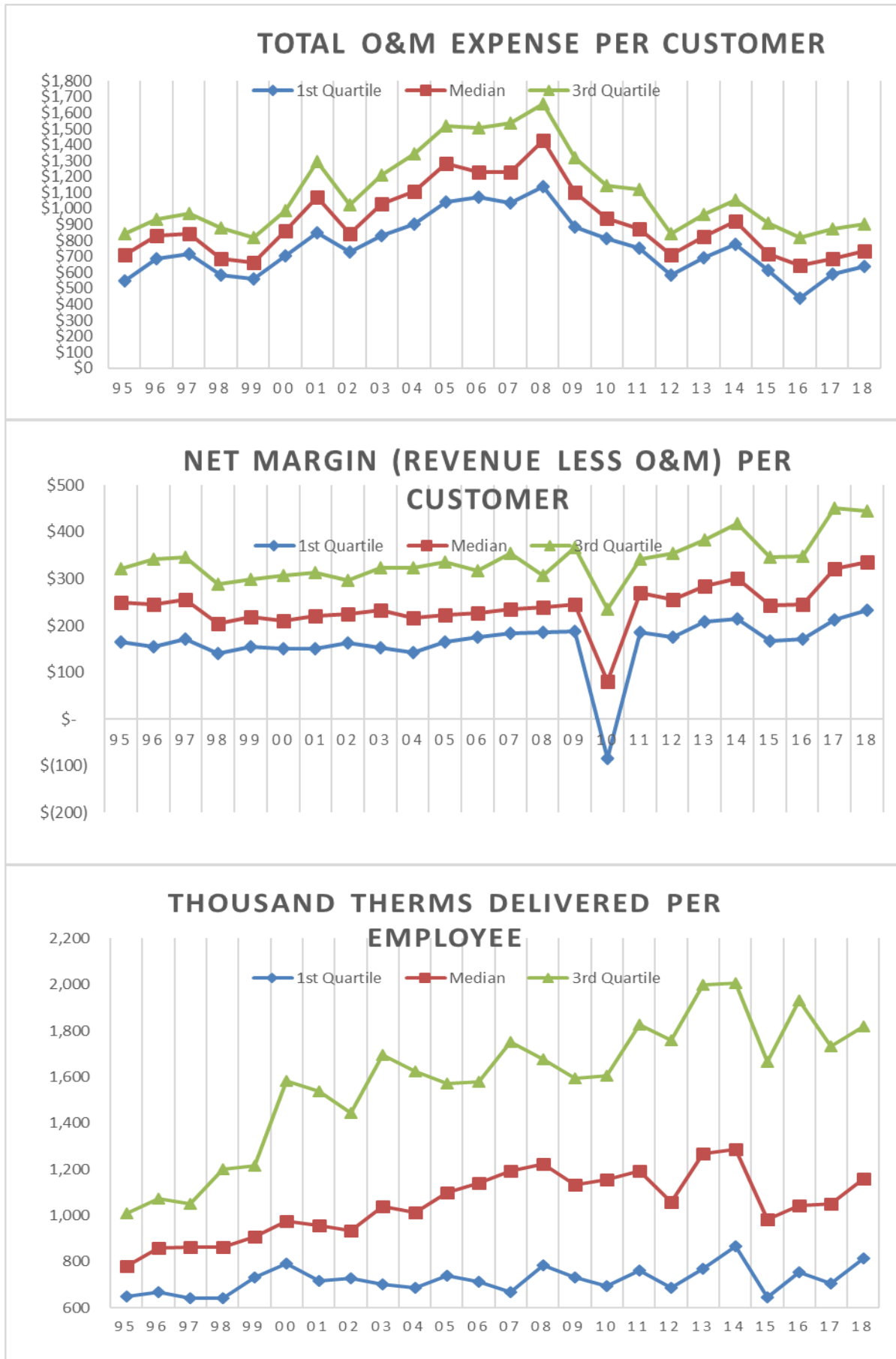
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

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



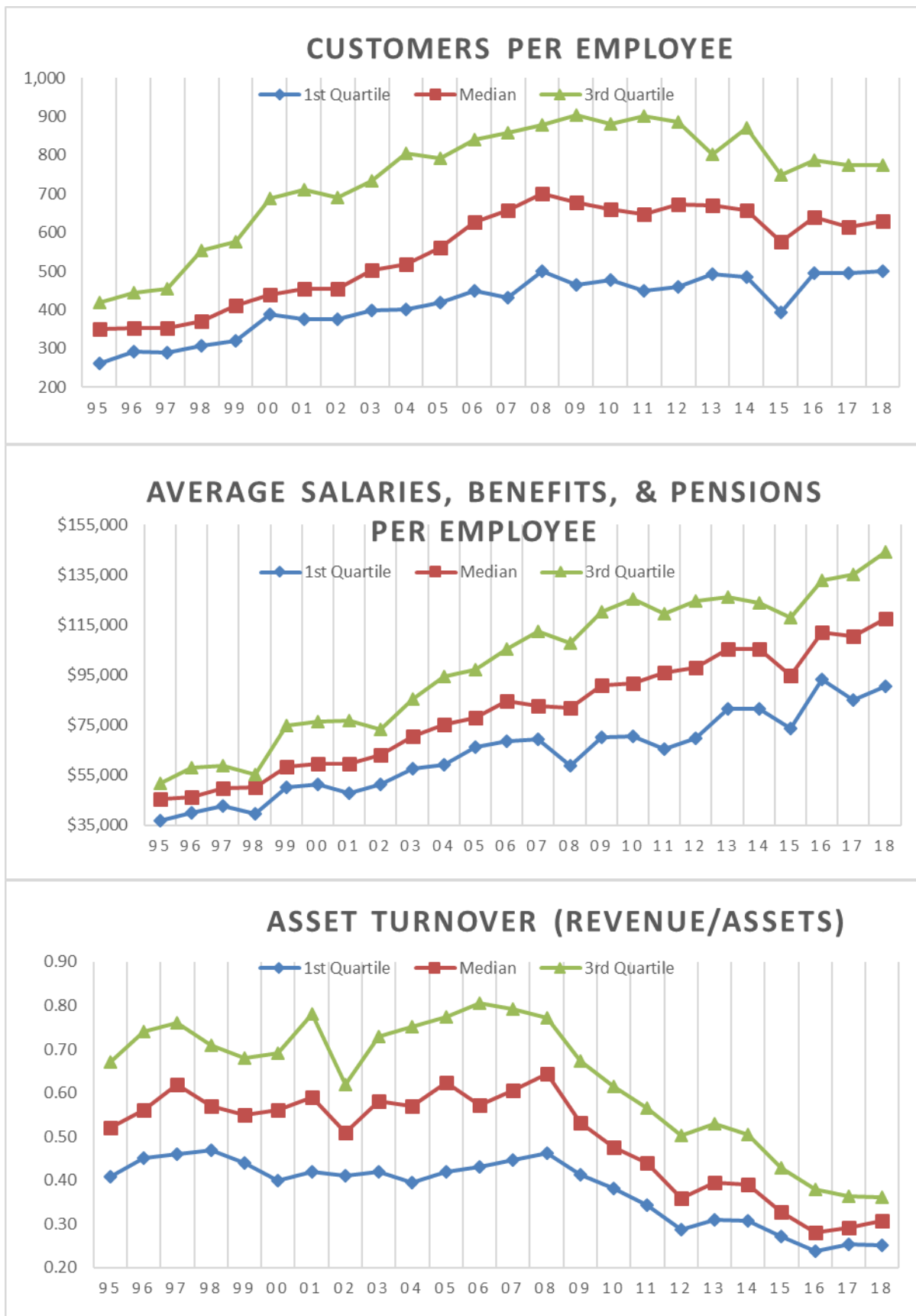
**Note:** Sample size and individual company participation vary by year, impairing trend analysis

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



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

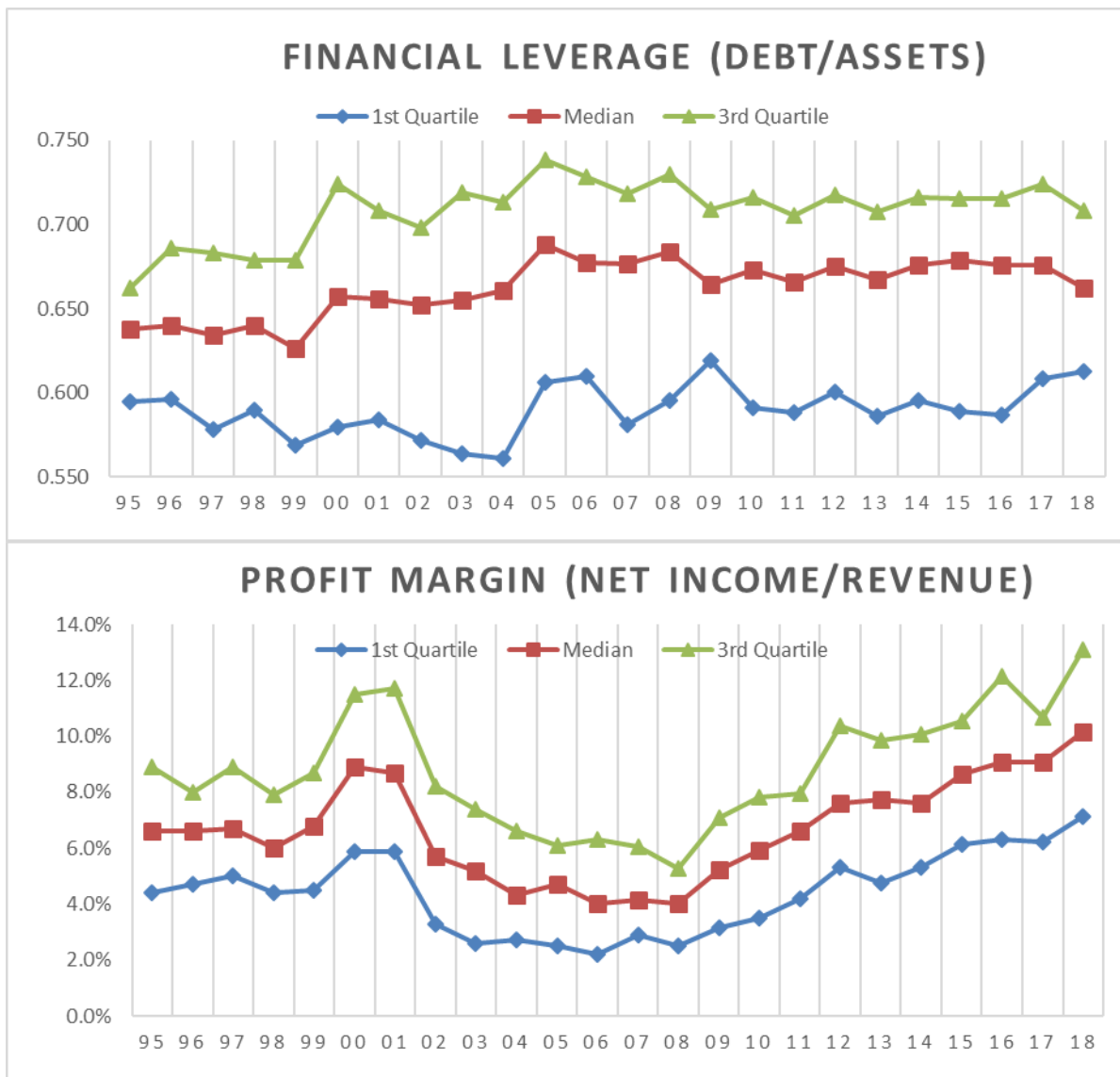
## Appendix 2: Multi-year Charts for All Companies



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

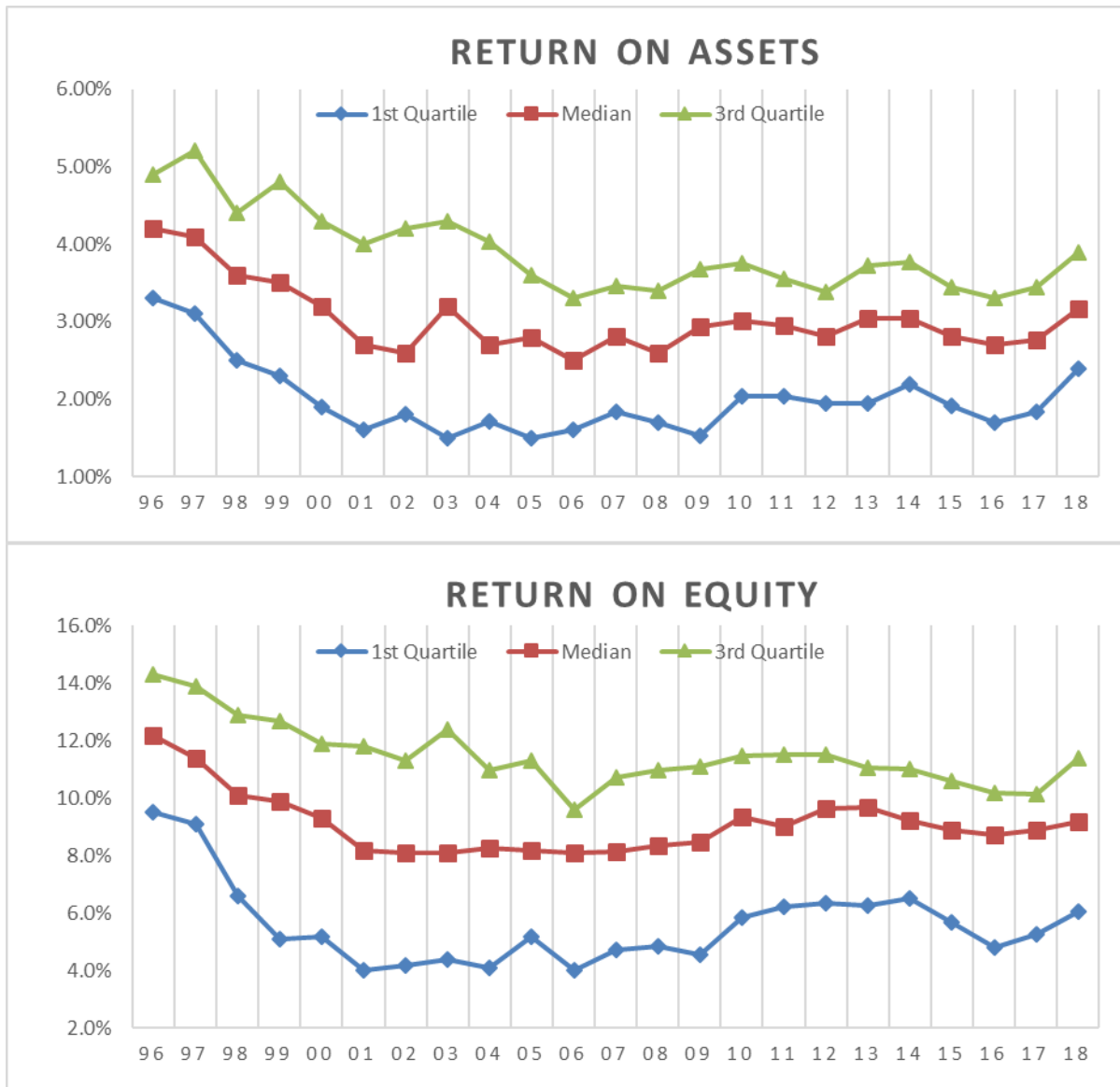


## Appendix 2: Multi-year Charts for All Companies



**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

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

2018 Data, 79 Utilities Reporting  
Stratified by Type of Company

2018 Data, 79 Utilities Reporting Stratified by Type of Company	Gas Utilities 50 firms				Combination Utilities 20 firms				Municipal Utilities 9 firms				All Companies 79 firms			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
<b>SYSTEM PROFILE 1/</b>																
Total Therms delivered	90,048	911,775	1,819,409	1,602,230	284,065	855,606	1,887,038	1,311,524	84,562	166,634	687,084	552,338	112,114	798,348	1,695,068	1,372,367
Total Sales Volume	42,778	346,136	985,774	737,169	266,746	554,872	973,026	766,474	73,430	155,664	687,084	543,427	87,869	372,300	917,548	699,352
Transportation Volume	31,762	368,629	904,985	865,061	-	54,801	857,888	545,050	-	3,626	14,287	8,911	434	229,613	805,418	673,015
Gas customers	55,948	479,647	1,052,393	836,826	241,077	590,467	935,313	669,329	36,208	85,065	213,546	152,161	74,852	392,223	884,865	687,244
Miles of main in use	1,561	7,447	13,612	13,591	3,175	7,777	17,279	9,939	1,099	2,512	2,894	2,104	2,003	6,071	13,331	11,011
Density (meters/mile of distrib. system)	35.0	49.0	61.6	57.2	47.1	54.8	74.7	75.0	39.0	50.4	80.7	66.4	38.4	51.3	64.8	62.1

### THERM VOLUME BY CUSTOMER CLASS 2/

Residential heating	25,791	207,837	614,805	431,919	99,323	297,919	682,851	467,431	28,174	38,705	142,155	143,732	34,438	205,314	605,859	400,105
Residential non-heating	-	-	852	2,360	-	165	10,086	34,882	-	-	6,939	58,830	-	-	2,247	16,351
Commercial, firm	15,113	83,114	216,529	182,255	64,273	143,914	239,769	207,693	11,697	29,362	73,559	132,291	17,772	92,468	204,500	176,203
Commercial, interruptible	-	-	-	3,079	-	83	1,045	5,029	-	-	8,601	23,579	-	-	94	5,445
Industrial, firm	-	1,853	17,017	89,107	1,682	5,800	35,986	23,878	6,230	9,763	33,611	80,783	103	4,147	20,767	64,856
Industrial, interruptible	-	-	665	5,053	-	-	763	1,230	-	-	1,306	5,294	-	-	568	3,712
Electric utility generation, firm	-	-	-	198	-	-	-	-	-	-	6	81	-	-	-	120
Electric utility generation, interup.	-	-	-	9,774	-	-	-	-	-	-	-	1,657	-	-	-	5,683
Non-utility generation, firm	-	-	-	108	-	-	-	-	-	-	-	-	-	-	-	61
Non-utility generation, interup.	-	-	-	0	-	-	-	329	-	-	-	-	-	-	-	84
NGV	-	-	-	3,831	-	-	-	122	-	-	-	3	-	-	-	2,192
Municipal & public	-	-	47	4,537	-	-	-	9,695	-	174	20,806	96,616	-	-	81	17,641
Interdepartmental	-	-	-	-	-	-	377	483	-	-	281	561	-	-	-	181
Other	-	-	-	4,949	-	-	-	15,702	-	-	-	-	-	-	-	6,717

### NUMBER OF CUSTOMERS BY CUSTOMER CLASS

Residential heating	41,364	340,546	690,494	649,068	132,792	487,191	827,475	547,107	33,549	76,251	192,674	137,695	56,090	247,498	692,280	544,666
Residential non-heating	-	-	3,366	25,620	-	1,534	20,685	49,603	-	-	1,153	2,758	-	-	4,964	27,531
Commercial, firm	3,775	24,596	54,065	45,037	20,984	35,443	61,605	55,824	2,659	8,617	18,907	10,971	5,939	24,573	51,772	42,751
Commercial, interruptible	-	-	-	51	-	-	9	40	-	-	-	3	-	-	-	39
Industrial, firm	-	34	406	964	44	274	2,139	1,162	18	78	141	157	2	59	461	872
Industrial, interruptible	-	-	2	51	-	-	3	4	-	-	4	7	-	-	2	30
Electric utility generation, firm	-	-	-	0	-	-	-	-	-	-	0	0	-	-	-	0
Electric utility generation, interup.	-	-	-	1	-	-	-	-	-	-	-	0	-	-	-	0
Non-utility generation, firm	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0
Non-utility generation, interup.	-	-	-	0	-	-	-	0	-	-	-	-	-	-	-	0
NGV	-	-	-	8	-	-	-	53	-	-	-	0	-	-	-	18
Municipal & public	-	-	2	438	-	-	-	215	-	4	49	568	-	-	2	360
Interdepartmental	-	-	-	-	-	-	-	7	-	-	2	2	-	-	-	2
Other	-	-	-	1	-	-	-	56	-	-	-	-	-	-	-	17

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

2018 Data, 79 Utilities Reporting  
Stratified by Type of Company

	Gas Utilities 50 firms				Combination Utilities 20 firms				Municipal Utilities 9 firms				All Companies 79 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	77,176	484,972	1,033,150	766,827	244,945	682,971	1,016,655	766,805	35,471	88,954	172,684	167,485	104,331	436,105	897,326	675,601
Operating expense	40,235	279,300	668,893	474,999	143,297	415,248	685,597	477,169	24,004	61,378	138,017	115,201	69,033	282,739	547,308	422,553
Maintenance expense	1,594	11,953	40,699	33,575	8,321	25,340	38,792	31,110	977	1,858	6,899	8,913	2,483	12,164	38,349	28,406
Total O&M	42,798	290,738	683,773	508,574	150,088	452,688	719,090	508,280	25,940	62,135	144,916	124,114	72,845	290,637	582,393	450,959
Depreciation	6,677	49,714	88,103	79,222	20,863	50,977	84,868	66,100	3,118	5,728	13,488	13,294	8,342	35,323	75,735	65,336
Depletion	-	-	-	185	-	-	406	1,742	-	-	-	-	-	-	-	570
Amortization	-	238	3,153	3,642	-	2,828	13,560	7,897	-	-	10	14	-	42	5,531	4,166
Prop. loss charged to operations	-	-	-	(0)	-	-	-	2,733	-	-	-	-	-	-	-	701
Total taxes	4,670	23,695	70,956	71,225	19,587	46,209	76,858	64,503	-	1,066	4,752	2,766	3,922	23,244	63,689	58,850
Other operating income	-	-	-	279	-	-	-	(369)	-	-	-	(135)	-	-	-	53
Total operating income	8,171	49,635	175,168	103,981	40,802	70,121	178,718	115,551	4,759	9,677	24,736	27,297	11,365	49,635	138,494	95,020
<b>BALANCE SHEET</b>																
Gas plant	272,769	1,782,477	4,229,208	3,051,756	906,960	2,556,219	3,790,403	2,955,987	95,677	312,007	461,741	528,032	394,388	1,280,401	3,350,148	2,627,159
Common plant	-	-	-	24,484	104,463	335,080	774,273	576,971	-	-	-	-	-	-	-	161,753
Other plant	-	-	-	5,099	-	-	24	131,743	-	-	5,699	428,410	-	-	-	80,596
Total plant in service	274,807	1,782,477	4,249,245	3,097,963	4,282,805	#####	#####	#####	115,628	312,007	1,062,166	1,285,735	430,359	2,386,001	6,026,885	5,188,781
Accumulated depreciation	100,918	543,846	1,275,873	971,159	1,549,408	3,667,605	5,387,627	3,851,972	58,544	112,447	415,868	512,347	145,053	808,797	2,060,719	1,623,159
Construction work-in-progress	4,287	33,543	170,211	111,244	129,235	257,710	466,773	432,797	2,778	12,960	37,252	47,477	10,269	47,726	203,100	180,159
Net utility plant	191,074	1,139,316	3,457,294	2,248,713	3,280,104	7,401,640	#####	9,152,700	90,297	217,062	676,735	820,865	290,802	1,715,591	4,145,559	3,759,635
Gas storage (non-current)	-	-	50	5,273	-	-	5,331	5,799	-	-	15	5,251	-	-	148	5,108
Customer accts. receivable	3,301	29,181	118,198	102,276	82,590	208,191	288,966	258,248	4,819	6,081	41,919	33,223	5,559	61,659	194,993	131,150
Total current & accrued assets	29,208	110,199	332,899	274,220	293,930	561,592	991,336	828,299	44,784	70,629	234,042	160,172	69,998	182,728	444,083	393,231
Total deferred debits	17,845	168,104	474,502	542,441	650,577	829,552	1,440,230	1,603,755	1,667	5,047	51,114	45,968	22,385	223,474	802,260	726,347
Total assets	242,213	1,513,177	4,675,806	3,221,428	4,653,503	8,924,994	#####	#####	158,086	280,155	1,018,878	1,067,652	417,106	2,204,207	5,699,003	5,027,071
Common stock	-	1,142	46,622	104,737	46,805	239,412	530,144	343,267	-	-	-	-	-	4,740	112,039	147,985
Retained earnings	25,087	127,719	606,109	416,428	613,663	1,075,982	1,712,705	1,922,198	83,082	158,966	254,804	366,751	50,049	350,847	788,049	774,805
Total common stock equity	61,208	684,298	1,353,144	1,057,471	1,535,658	3,062,227	4,188,042	3,670,158	83,082	158,966	265,117	371,908	141,340	720,047	1,836,484	1,602,054
Total long-term (LT) debt	29,764	316,724	1,006,910	755,108	1,456,809	2,519,324	3,787,342	3,504,664	19,754	66,666	414,441	473,446	101,324	583,647	1,775,370	1,392,408
Total capitalization	113,602	1,029,949	2,541,989	1,814,027	2,951,124	5,581,550	7,697,400	7,193,645	91,714	263,659	752,042	845,354	240,288	1,242,154	3,589,443	2,999,433
Total non-current other liabilities	-	759	30,725	71,276	112,212	263,863	634,280	539,440	-	1,557	8,530	55,260	-	6,621	112,212	184,857
Current & accrued liabilities	41,391	210,610	571,407	489,652	358,832	702,053	1,215,277	899,807	8,137	16,061	93,764	141,128	54,603	222,617	718,930	535,830
Total deferred credits	55,342	276,963	1,118,186	804,333	1,024,961	2,059,071	4,443,386	3,129,667	1,155	2,876	46,887	25,640	55,258	413,665	1,506,243	1,274,991
Total capitalization & liabilities	242,213	1,513,177	4,675,806	3,221,428	4,653,503	8,924,994	#####	#####	158,086	280,155	1,018,878	1,067,652	417,106	2,204,207	5,699,003	5,027,071

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

2018 Data, 79 Utilities Reporting Stratified by Type of Company	Gas Utilities 50 firms	Combination Utilities 20 firms	Municipal Utilities 9 firms	All Companies 79 firms
<b>GAS-ONLY INCOME STATEMENT - Based on average values</b>				
Operating revenue	100.0	100.0	100.0	100.0
Operating expense	63.5	63.4	73.0	64.6
Maintenance expense	4.1	4.0	3.5	3.9
Total O&M	67.6	67.5	76.5	68.5
Depreciation	9.2	9.2	7.5	8.7
Depletion	0.1	0.3	-	0.1
Amortization	0.8	0.8	0.0	1.1
Prop. loss charged to operations	0.0	0.1	-	0.0
Total taxes	9.4	8.4	2.7	8.3
Other operating income	(0.1)	(0.2)	(0.0)	(0.2)
Total operating income	12.9	13.8	13.2	13.3
<b>BALANCE SHEET - Based on average values</b>				
Gas plant	94.7	25.1	49.5	52.3
Common plant	0.8	4.9	-	3.2
Other plant	0.2	1.1	40.1	1.6
Total plant in service	96.2	106.3	120.4	103.2
Accumulated depreciation	30.1	32.7	48.0	32.3
Construction work-in-progress	3.5	3.7	4.4	3.6
Net utility plant	69.8	77.6	76.9	74.8
Gas storage (non-current)	0.2	0.0	0.5	0.1
Customer accts. receivable	3.2	2.2	3.1	2.6
Total current & accrued assets	8.5	7.0	15.0	7.8
Total deferred debits	16.8	13.6	4.3	14.4
Total assets	100.0	100.0	100.0	100.0
Common stock	3.3	2.9	-	2.9
Retained earnings	12.9	16.3	34.4	15.4
Total common stock equity	32.8	31.1	34.8	31.9
Total long-term (LT) debt	23.4	29.7	44.3	27.7
Total capitalization	56.3	61.0	79.2	59.7
Total non-current other liabilities	2.2	4.6	5.2	3.7
Current & accrued liabilities	15.2	7.6	13.2	10.7
Total deferred credits	25.0	26.5	2.4	25.4
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

2018 Data, 79 Utilities Reporting Stratified by Type of Company	Gas Utilities 50 firms				Combination Utilities 20 firms				Municipal Utilities 9 firms				All Companies 79 firms			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
GAS-ONLY INCOME STATEMENT - Per Annual Therms Delivered																
Operating revenue	\$0.3786	\$0.5843	\$0.7362	\$0.6239	\$0.4514	\$0.7082	\$1.0494	\$0.8572	\$0.5646	\$0.6677	\$0.8897	\$0.6696	\$0.3817	\$0.6219	\$0.8150	\$0.6861
Operating expense	\$0.2565	\$0.3525	\$0.5085	\$0.3959	\$0.2969	\$0.4293	\$0.6471	\$0.5436	\$0.4140	\$0.5320	\$0.6872	\$0.4887	\$0.2478	\$0.3892	\$0.5852	\$0.4431
Maintenance expense	\$0.0077	\$0.0170	\$0.0301	\$0.0258	\$0.0125	\$0.0249	\$0.0420	\$0.0347	\$0.0114	\$0.0203	\$0.0319	\$0.0238	\$0.0081	\$0.0177	\$0.0334	\$0.0267
Total O&M	\$0.2705	\$0.3756	\$0.5373	\$0.4218	\$0.3115	\$0.4436	\$0.6914	\$0.5783	\$0.4514	\$0.5500	\$0.6939	\$0.5125	\$0.2684	\$0.4139	\$0.6045	\$0.4698
Depreciation	\$0.0324	\$0.0486	\$0.0679	\$0.0571	\$0.0383	\$0.0627	\$0.1005	\$0.0790	\$0.0322	\$0.0367	\$0.0580	\$0.0502	\$0.0323	\$0.0466	\$0.0687	\$0.0595
Depletion	\$0.0000	\$0.0000	\$0.0000	\$0.0004	\$0.0000	\$0.0000	\$0.0007	\$0.0024	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0009
Amortization	\$0.0000	\$0.0002	\$0.0070	\$0.0051	\$0.0000	\$0.0013	\$0.0106	\$0.0065	\$0.0000	\$0.0000	\$0.0000	\$0.0002	\$0.0000	\$0.0001	\$0.0056	\$0.0072
Prop. loss charged to operations	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0007	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0002
Total taxes	\$0.0237	\$0.0363	\$0.0616	\$0.0587	\$0.0241	\$0.0599	\$0.1096	\$0.0716	\$0.0000	\$0.0023	\$0.0226	\$0.0181	\$0.0179	\$0.0360	\$0.0717	\$0.0573
Other operating income	\$0.0000	\$0.0000	\$0.0000	-\$0.0009	\$0.0000	\$0.0000	\$0.0000	-\$0.0021	\$0.0000	\$0.0000	\$0.0000	-\$0.0001	\$0.0000	\$0.0000	\$0.0000	-\$0.0010
Total operating income	\$0.0403	\$0.0620	\$0.1059	\$0.0807	\$0.0626	\$0.0920	\$0.1689	\$0.1186	\$0.0620	\$0.0725	\$0.1075	\$0.0885	\$0.0440	\$0.0677	\$0.1318	\$0.0911
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
GAS-ONLY INCOME STATEMENT - Per Average Annual Customers Served																
Operating revenue	\$875	\$1,045	\$1,301	\$1,127	\$944	\$1,038	\$1,327	\$1,181	\$912	\$1,075	\$1,325	\$1,176	\$898	\$1,045	\$1,348	\$1,175
Operating expense	\$534	\$682	\$850	\$741	\$623	\$681	\$818	\$742	\$693	\$722	\$926	\$855	\$606	\$692	\$842	\$775
Maintenance expense	\$20	\$37	\$50	\$41	\$28	\$40	\$51	\$47	\$21	\$48	\$74	\$50	\$20	\$38	\$50	\$43
Total O&M	\$555	\$716	\$875	\$783	\$668	\$729	\$875	\$789	\$702	\$768	\$1,001	\$905	\$640	\$736	\$905	\$818
Depreciation	\$71	\$88	\$120	\$97	\$80	\$102	\$122	\$102	\$59	\$74	\$115	\$88	\$70	\$90	\$120	\$97
Depletion	\$0	\$0	\$0	\$1	\$0	\$0	\$1	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2
Amortization	\$0	\$1	\$11	\$9	\$0	\$4	\$14	\$8	\$0	\$0	\$0	\$1	\$0	\$0	\$11	\$10
Prop. loss charged to operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total taxes	\$46	\$67	\$128	\$97	\$47	\$97	\$137	\$104	\$0	\$8	\$24	\$19	\$38	\$67	\$127	\$91
Other operating income	\$0	\$0	\$0	-\$1	\$0	\$0	\$0	-\$3	\$0	\$0	\$0	-\$13	\$0	\$0	\$0	-\$3
Total operating income	\$87	\$153	\$200	\$140	\$121	\$146	\$204	\$172	\$112	\$131	\$223	\$164	\$96	\$150	\$205	\$156
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
GAS-ONLY INCOME STATEMENT - Per Dollar of Gas Plant																
Operating revenue	\$0.2427	\$0.2823	\$0.3357	\$0.3182	\$0.2498	\$0.2649	\$0.2866	\$0.2738	\$0.2896	\$0.3568	\$0.4491	\$0.4095	\$0.2516	\$0.2815	\$0.3406	\$0.3166
Operating expense	\$0.1451	\$0.1792	\$0.2289	\$0.2188	\$0.1499	\$0.1642	\$0.1949	\$0.1758	\$0.2131	\$0.2524	\$0.3466	\$0.3045	\$0.1496	\$0.1825	\$0.2302	\$0.2173
Maintenance expense	\$0.0056	\$0.0098	\$0.0124	\$0.0105	\$0.0077	\$0.0101	\$0.0121	\$0.0101	\$0.0084	\$0.0190	\$0.0234	\$0.0172	\$0.0056	\$0.0098	\$0.0135	\$0.0108
Total O&M	\$0.1549	\$0.1873	\$0.2514	\$0.2294	\$0.1553	\$0.1773	\$0.2060	\$0.1859	\$0.2229	\$0.2752	\$0.3620	\$0.3216	\$0.1560	\$0.1908	\$0.2480	\$0.2281
Depreciation	\$0.0225	\$0.0266	\$0.0302	\$0.0266	\$0.0208	\$0.0237	\$0.0268	\$0.0241	\$0.0234	\$0.0262	\$0.0310	\$0.0286	\$0.0214	\$0.0257	\$0.0289	\$0.0257
Depletion	\$0.0000	\$0.0000	\$0.0000	\$0.0002	\$0.0000	\$0.0000	\$0.0003	\$0.0010	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0004
Amortization	\$0.0000	\$0.0002	\$0.0028	\$0.0028	\$0.0000	\$0.0008	\$0.0040	\$0.0020	\$0.0000	\$0.0000	\$0.0002	\$0.0002	\$0.0000	\$0.0001	\$0.0028	\$0.0024
Prop. loss charged to operations	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0003	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0000	\$0.0001
Total taxes	\$0.0142	\$0.0224	\$0.0345	\$0.0244	\$0.0167	\$0.0252	\$0.0304	\$0.0221	\$0.0000	\$0.0018	\$0.0092	\$0.0059	\$0.0131	\$0.0200	\$0.0298	\$0.0214
Other operating income	\$0.0000	\$0.0000	\$0.0000	-\$0.0012	\$0.0000	\$0.0000	\$0.0000	-\$0.0011	\$0.0000	\$0.0000	\$0.0000	-\$0.0041	\$0.0000	\$0.0000	\$0.0000	-\$0.0014
Total operating income	\$0.0311	\$0.0387	\$0.0472	\$0.0350	\$0.0280	\$0.0404	\$0.0484	\$0.0386	\$0.0421	\$0.0541	\$0.0551	\$0.0531	\$0.0305	\$0.0407	\$0.0494	\$0.0384
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
GAS-ONLY INCOME STATEMENT - Per Mile of Distribution Pipe																
Operating revenue	\$36,338	\$45,513	\$67,082	\$67,507	\$46,492	\$68,884	\$99,951	\$95,871	\$42,374	\$65,854	\$87,360	\$79,313	\$37,352	\$48,074	\$77,670	\$76,609
Operating expense	\$23,074	\$27,773	\$44,756	\$43,609	\$31,047	\$44,166	\$60,506	\$57,477	\$27,096	\$54,309	\$64,047	\$56,163	\$23,803	\$34,039	\$52,719	\$49,072
Maintenance expense	\$830	\$1,592	\$2,588	\$3,318	\$1,265	\$2,253	\$3,545	\$4,139	\$1,169	\$1,986	\$5,488	\$4,001	\$900	\$1,825	\$3,094	\$3,464
Total O&M	\$23,631	\$29,146	\$47,875	\$46,927	\$33,312	\$46,852	\$66,972	\$61,616	\$27,491	\$57,804	\$67,368	\$60,164	\$25,315	\$35,172	\$54,994	\$52,536
Depreciation	\$3,248	\$4,338	\$6,611	\$5,768	\$3,634	\$6,045	\$8,868	\$8,388	\$2,776	\$4,041	\$6,203	\$6,011	\$3,254	\$4,876	\$7,238	\$6,434
Depletion	\$0	\$0	\$0	\$32	\$0	\$0	\$137	\$366	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$118
Amortization	\$0	\$36	\$624	\$525	\$0	\$179	\$1,053	\$654	\$0	\$0	\$13	\$29	\$0	\$14	\$610	\$512
Prop. loss charged to operations	\$0	\$0	\$0	\$1	\$0	\$0	\$0	\$152	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40
Total taxes	\$2,160	\$3,356	\$6,270	\$6,274	\$3,489	\$5,246	\$9,248	\$9,336	\$0	\$669	\$1,847	\$1,100	\$1,980	\$3,349	\$6,492	\$6,421
Other operating income	\$0	\$0	\$0	-\$25	\$0	\$0	\$0	-\$240	\$0	\$0	\$0	-\$636	\$0	\$0	\$0	-\$141
Total operating income	\$3,973	\$6,944	\$9,992	\$7,979	\$6,108	\$7,866	\$14,153	\$15,359	\$4,399	\$7,326	\$12,743	\$12,010	\$4,381	\$7,534	\$11,776	\$10,549

## APPENDIX 3e: GAS UTILITY FINANCIAL RATIOS

2018 Data, 79 Utilities Reporting  
Stratified by Type of Company

	Gas IOUs 50 firms				Combination IOUs 20 firms				Municipal LDCs 9 firms				All Companies 79 firms			
	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG	LQ	MED	UQ	AVG
Therms delivered (avg.) per acct.	1,376	1,848	2,578	2,268	1,066	1,501	2,287	1,852	1,087	1,485	2,173	21,436	1,268	1,749	2,664	4,223
Therms per \$1,000 of gas plant	0.364	0.585	0.821	0.627	0.258	0.403	0.600	0.458	0.411	0.565	0.796	6.885	0.326	0.546	0.804	1.234
Value of gas plant per customer	\$2,724	\$3,569	\$4,510	\$3,831	\$3,505	\$4,219	\$4,840	\$4,340	\$2,480	\$2,877	\$3,441	\$3,013	\$2,784	\$3,699	\$4,720	\$3,982
%Sales firm (not interruptible)	94.6%	99.7%	100.0%	94.0%	95.7%	98.5%	99.9%	93.5%	78.6%	91.2%	97.2%	84.7%	94.4%	99.2%	100.0%	92.9%
Collection period (days)	24.5	34.1	48.4	41.1	23.6	29.0	40.2	32.7	21.7	30.5	34.9	32.7	23.7	32.1	46.2	37.7
Gas O&M expense as pct. of revenue	62.1%	67.7%	73.2%	68.1%	65.7%	68.6%	70.2%	67.4%	72.2%	76.8%	83.1%	77.2%	63.3%	68.9%	74.0%	69.0%
Gas operating income as pct. of revenue	7.8%	14.2%	18.0%	13.4%	11.1%	13.6%	16.3%	14.2%	10.8%	13.6%	16.4%	13.6%	10.1%	14.1%	17.9%	13.7%
Gas operating revenue per customer	\$875	\$1,045	\$1,301	\$1,127	\$944	\$1,038	\$1,327	\$1,181	\$912	\$1,075	\$1,325	\$1,176	\$898	\$1,045	\$1,348	\$1,175
Gas O&M expense per customer	\$555	\$716	\$875	\$783	\$668	\$729	\$875	\$789	\$702	\$768	\$1,001	\$905	\$640	\$736	\$905	\$818
Gas operating income per customer	\$87	\$153	\$200	\$140	\$121	\$146	\$204	\$172	\$112	\$131	\$223	\$164	\$96	\$150	\$205	\$156
Gas revenue per dollar of gas plant	\$0.243	\$0.282	\$0.336	\$0.318	\$0.250	\$0.265	\$0.287	\$0.274	\$0.290	\$0.357	\$0.449	\$0.409	\$0.252	\$0.282	\$0.341	\$0.317
Gas O&M expense per dollar of gas plant	\$0.155	\$0.187	\$0.251	\$0.229	\$0.155	\$0.177	\$0.206	\$0.186	\$0.223	\$0.275	\$0.362	\$0.322	\$0.156	\$0.191	\$0.248	\$0.228
Gas operating income per \$ of gas plant	\$0.031	\$0.039	\$0.047	\$0.035	\$0.028	\$0.040	\$0.048	\$0.039	\$0.042	\$0.054	\$0.055	\$0.053	\$0.030	\$0.041	\$0.049	\$0.038
Gas revenue per mile of pipe	\$36,338	\$45,513	\$67,082	\$67,507	\$46,492	\$68,884	\$99,951	\$95,871	\$42,374	\$65,854	\$87,360	\$79,313	\$37,352	\$48,074	\$77,670	\$76,609
Gas O&M expense per mile of pipe	\$23,631	\$29,146	\$47,875	\$46,927	\$33,312	\$46,852	\$66,972	\$61,616	\$27,491	\$57,804	\$67,368	\$60,164	\$25,315	\$35,172	\$54,994	\$52,536
Gas operating income per mile of pipe	\$3,973	\$6,944	\$9,992	\$7,979	\$6,108	\$7,866	\$14,153	\$15,359	\$4,399	\$7,326	\$12,743	\$12,010	\$4,381	\$7,534	\$11,776	\$10,549
Long-term debt - total assets ratio	20.5%	24.7%	26.4%	21.9%	27.0%	29.5%	32.0%	31.0%	11.3%	27.7%	35.6%	26.4%	22.3%	26.0%	29.4%	25.1%
Long-term debt - total capitalization ratio	34.1%	42.6%	45.7%	37.1%	43.3%	47.6%	50.2%	48.4%	23.5%	32.1%	39.3%	35.5%	36.2%	43.4%	48.7%	40.5%
Net interest - long-term debt ratio	4.4%	4.9%	5.4%	5.8%	4.2%	4.5%	4.8%	4.3%	0.2%	3.3%	3.8%	2.4%	4.1%	4.7%	5.3%	5.0%
EBITDA interest coverage	6.3x	7.3x	9.6x	8.3x	6.8x	7.5x	8.5x	7.7x	3.9x	7.2x	12.6x	9.6x	6.4x	7.4x	9.4x	8.2x
Return on assets	1.9%	2.9%	3.9%	3.0%	2.6%	3.1%	3.3%	3.0%	3.2%	4.2%	5.1%	4.1%	2.4%	3.2%	3.9%	3.2%
Gross sales margin per therm	\$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	\$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)

VALUES PER THERM	Gas Utilites			Combination Utilites			Municipal Utilities			All Companies		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Gas-only revenues	\$0.6068	\$0.8044	\$0.7018	\$0.7444	\$0.8313	\$0.8572	\$0.5390	\$0.6784	\$0.6696	\$0.6144	\$0.7377	\$0.6861
Purchased-gas expense	\$0.1499	\$0.2827	\$0.2581	\$0.3043	\$0.2249	\$0.2687	\$0.2110	\$0.2196	\$0.1592	\$0.1951	\$0.2549	\$0.2467
Gross sales margin	\$0.4105	\$0.5023	\$0.4153	\$0.4308	\$0.4834	\$0.3882	\$0.3408	\$0.3419	\$0.3450	\$0.3922	\$0.4682	\$0.4118
Total production costs <sup>1</sup>	\$0.1963	\$0.3021	\$0.2866	\$0.3136	\$0.2200	\$0.2785	\$0.2571	\$0.2390	\$0.2051	\$0.2298	\$0.2695	\$0.2742
Storage & LNG	\$0.0012	\$0.0032	\$0.0037	\$0.0037	\$0.0007	\$0.0028	\$0.0005	\$0.0005	\$0.0042	\$0.0019	\$0.0023	\$0.0033
Transmission	\$0.0115	\$0.0090	\$0.0099	\$0.0146	\$0.0197	\$0.0157	\$0.0040	\$0.0028	\$0.0110	\$0.0109	\$0.0104	\$0.0113
Distribution	\$0.0664	\$0.0765	\$0.0661	\$0.0749	\$0.0734	\$0.0763	\$0.0651	\$0.0781	\$0.0478	\$0.0656	\$0.0764	\$0.0710
Customer accounts	\$0.0266	\$0.0297	\$0.0242	\$0.0358	\$0.0311	\$0.0212	\$0.0232	\$0.0202	\$0.0215	\$0.0275	\$0.0288	\$0.0249
Customer svc. & info.	\$0.0054	\$0.0127	\$0.0073	\$0.0134	\$0.0059	\$0.0142	\$0.0141	\$0.0072	\$0.0060	\$0.0082	\$0.0098	\$0.0099
Sales	\$0.0030	\$0.0059	\$0.0021	\$0.0031	\$0.0154	\$0.0036	\$0.0068	\$0.0007	\$0.0002	\$0.0032	\$0.0074	\$0.0032
Admin. & general	<u>\$0.0819</u>	<u>\$0.1030</u>	<u>\$0.0746</u>	<u>\$0.0897</u>	<u>\$0.1218</u>	<u>\$0.0601</u>	<u>\$0.1067</u>	<u>\$0.0837</u>	<u>\$0.0577</u>	<u>\$0.0835</u>	<u>\$0.1024</u>	<u>\$0.0718</u>
Total O&M	\$0.4062	\$0.5423	\$0.4748	\$0.4841	\$0.4879	\$0.4725	\$0.4776	\$0.4323	\$0.3535	\$0.4208	\$0.5070	\$0.4698
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	24.7%	35.1%	36.8%	40.9%	27.0%	31.3%	39.1%	32.4%	23.8%	31.8%	34.5%	36.0%
Gross sales margin	67.7%	62.4%	59.2%	57.9%	58.2%	45.3%	63.2%	50.4%	51.5%	63.8%	63.5%	60.0%
Total production costs <sup>1</sup>	32.3%	37.6%	40.8%	42.1%	26.5%	32.5%	47.7%	35.2%	30.6%	37.4%	36.5%	40.0%
Storage & LNG	0.2%	0.4%	0.5%	0.5%	0.1%	0.3%	0.1%	0.1%	0.6%	0.3%	0.3%	0.5%
Transmission	1.9%	1.1%	1.4%	2.0%	2.4%	1.8%	0.8%	0.4%	1.6%	1.8%	1.4%	1.7%
Distribution	10.9%	9.5%	9.4%	10.1%	8.8%	8.9%	12.1%	11.5%	7.1%	10.7%	10.4%	10.4%
Customer accounts	4.4%	3.7%	3.5%	4.8%	3.7%	2.5%	4.3%	3.0%	3.2%	4.5%	3.9%	3.6%
Customer svc. & info.	0.9%	1.6%	1.0%	1.8%	0.7%	1.7%	2.6%	1.1%	0.9%	1.3%	1.3%	1.4%
Sales	0.5%	0.7%	0.3%	0.4%	1.9%	0.4%	1.3%	0.1%	0.0%	0.5%	1.0%	0.5%
Admin. & general	<u>13.5%</u>	<u>12.8%</u>	<u>10.6%</u>	<u>12.1%</u>	<u>14.7%</u>	<u>7.0%</u>	<u>19.8%</u>	<u>12.3%</u>	<u>8.6%</u>	<u>13.6%</u>	<u>13.9%</u>	<u>10.5%</u>
Total O&M	66.9%	67.4%	67.7%	65.0%	58.7%	55.1%	88.6%	63.7%	52.8%	68.5%	68.7%	68.5%
VALUES PER CUSTOMER												
Gas-only revenues	\$ 947	\$ 993	\$ 1,053	\$ 906	\$ 923	\$ 941	\$ 794	\$ 928	\$ 1,024	\$ 927	\$ 952	\$ 1,045
Purchased-gas expense	\$ 230	\$ 390	\$ 433	\$ 378	\$ 343	\$ 424	\$ 297	\$ 380	\$ 302	\$ 298	\$ 384	\$ 423
Gross sales margin	\$ 599	\$ 592	\$ 621	\$ 586	\$ 646	\$ 525	\$ 478	\$ 521	\$ 657	\$ 570	\$ 593	\$ 615
Total production costs <sup>1</sup>	\$ 354	\$ 419	\$ 462	\$ 388	\$ 315	\$ 421	\$ 417	\$ 394	\$ 432	\$ 370	\$ 394	\$ 446
Storage & LNG	\$ -	\$ -	\$ -	\$ 0	\$ -	\$ 0	\$ -	\$ 0	\$ 3	\$ -	\$ -	\$ 0
Transmission	\$ 6	\$ 6	\$ 3	\$ 2	\$ 10	\$ 12	\$ -	\$ 0	\$ 7	\$ 4	\$ 5	\$ 6
Distribution	\$ 87	\$ 92	\$ 94	\$ 80	\$ 82	\$ 86	\$ 85	\$ 81	\$ 80	\$ 85	\$ 89	\$ 89
Customer accounts	\$ 34	\$ 32	\$ 37	\$ 38	\$ 33	\$ 31	\$ 30	\$ 36	\$ 36	\$ 34	\$ 32	\$ 35
Customer svc. & info.	\$ 2	\$ 8	\$ 5	\$ 24	\$ 3	\$ 2	\$ 13	\$ 8	\$ 8	\$ 5	\$ 5	\$ 5
Sales	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 0	\$ 1	\$ 1	\$ 1
Admin. & general	<u>\$ 123</u>	<u>\$ 129</u>	<u>\$ 121</u>	<u>\$ 104</u>	<u>\$ 102</u>	<u>\$ 103</u>	<u>\$ 83</u>	<u>\$ 138</u>	<u>\$ 122</u>	<u>\$ 110</u>	<u>\$ 127</u>	<u>\$ 116</u>
Total O&M	\$ 671	\$ 736	\$ 749	\$ 657	\$ 893	\$ 790	\$ 633	\$ 754	\$ 709	\$ 637	\$ 688	\$ 736

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



## APPENDIX 5: WAGES & BENEFITS

### 2018 Data, 79 Utilities Reportir

Stratified by Type of Company

	Gas Utilities 50 firms				Combination Utilities 20 firms				Municipal Utilities 9 firms				All Companies 79 firms			
	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.	LQ	MED	UQ	AVG.
Average number of employees	128	675	1,259	972	219	453	1,040	810	21	151	243	326	129	457	1,157	830
Number of Employees at year-end	125	675	1,258	985	246	483	1,325	933	21	157	230	320	137	463	1,182	867
O&M wages ('000)	\$2,842	\$31,670	\$79,181	\$68,455	\$20,570	\$51,010	\$76,915	\$62,513	\$1,950	\$4,524	\$20,768	\$21,300	\$4,468	\$30,606	\$73,920	\$58,909
Construction wages ('000)	\$566	\$7,825	\$36,119	\$25,772	\$8,106	\$27,319	\$40,884	\$47,079	\$0	\$43	\$2,039	\$2,315	\$704	\$7,825	\$34,604	\$27,219
Total pensions ('000)	\$152	\$7,505	\$26,119	\$23,841	\$6,312	\$19,986	\$28,296	\$19,841	\$751	\$3,899	\$10,395	\$21,856	\$1,373	\$8,602	\$27,598	\$21,964
PER YEAR END EMPLOYEE:																
Total salary & wages	\$68,268	\$84,355	\$93,502	\$90,749	\$96,545	\$115,822	\$143,792	\$131,261	\$43,909	\$77,399	\$88,459	\$74,464	\$74,766	\$89,793	\$113,137	\$99,645
Tot. benefits & pension	\$9,063	\$21,123	\$32,472	\$20,607	\$16,587	\$26,242	\$32,548	\$30,532	\$25,192	\$30,286	\$56,065	\$45,639	\$16,084	\$24,007	\$36,560	\$25,705
Total salary, benefits, and pension	\$77,971	\$101,417	\$117,807	\$111,356	\$125,473	\$136,524	\$168,898	\$161,793	\$69,101	\$114,905	\$151,268	\$120,104	\$90,415	\$117,622	\$144,267	\$125,350
Ratio: avg. benefits to avg. compensation	15%	19%	26%	18%	12%	20%	24%	20%	27%	33%	51%	38%	16%	22%	28%	21%
Therms delivered per year-end employee	759,730	1,157,898	1,698,612	1,471,925	669,764	1,151,666	1,706,549	1,525,284	497,027	796,505	985,580	12,670,372	814,544	1,157,898	1,820,116	2,619,901
Customers per year-end employee	496	640	773	671	598	656	1,128	874	412	505	545	470	501	629	773	695

**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>		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Asset Turnover	0.27X	0.28X	0.28X	0.28X	0.28X	0.28X	0.33X	0.36X	0.36X	0.28X	0.29X	0.29X
Financial Leverage	65.8%	68.2%	68.2%	68.3%	68.3%	68.3%	41.6%	41.7%	41.7%	67.6%	67.6%	67.6%
Debt/Equity Ratio	74.6%	67.0%	67.0%	87.4%	89.0%	89.0%	42.0%	53.0%	53.0%	75.7%	79.2%	79.2%
Equity Multiplier	3.02	3.17	3.17	3.20	3.26	3.26	1.73	1.73	1.73	3.10	3.15	3.15
Profit Margin	8.0%	8.6%	8.6%	10.3%	9.7%	9.7%	8.2%	8.8%	8.8%	9.1%	9.1%	9.1%
ROA	2.4%	2.6%	2.6%	2.8%	2.8%	2.8%	2.9%	2.6%	2.6%	2.7%	2.8%	2.8%
ROE	7.1%	8.5%	8.5%	9.8%	9.0%	9.0%	5.3%	4.2%	4.2%	8.7%	8.9%	8.9%
Current Ratio	0.67	0.67	0.67	0.99	0.91	0.91	2.25	3.65	3.65	0.84	0.78	0.78
Current Assets/Total Assets	8.8%	9.4%	9.4%	7.1%	7.0%	7.0%	25.1%	25.1%	25.1%	8.8%	9.3%	9.3%

<i>Based on Segment Averages</i>	<b>Gas Utilities</b>			<b>Combination Utilities</b>			<b>Municipal Utilities</b>			<b>All Companies</b>		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Asset Turnover	0.32X	0.33X	0.33X	0.28X	0.27X	0.27X	0.37X	0.38X	0.38X	0.32X	0.33X	0.33X
Financial Leverage	62.7%	64.8%	64.8%	67.2%	66.8%	66.8%	44.7%	46.6%	46.6%	62.2%	63.4%	63.4%
Debt/Equity Ratio	66.7%	76.2%	76.2%	97.0%	103.8%	103.8%	85.5%	105.0%	105.0%	77.3%	85.8%	85.8%
Equity Multiplier	3.41	4.67	4.67	3.25	3.26	3.26	2.58	2.69	2.69	3.25	4.01	4.01
Profit Margin	5.7%	6.1%	6.1%	11.0%	12.2%	12.2%	8.9%	7.6%	7.6%	7.7%	7.9%	7.9%
ROA	2.0%	2.1%	2.1%	3.1%	3.1%	3.1%	2.7%	2.4%	2.4%	2.4%	2.4%	2.4%
ROE	4.7%	0.4%	0.4%	9.8%	9.6%	9.6%	7.5%	6.9%	6.9%	6.7%	4.0%	4.0%
Current Ratio	0.71	0.71	0.71	1.15	1.03	1.03	3.25	3.65	3.65	1.15	1.13	1.13
Current Assets/Total Assets	10.5%	10.5%	10.5%	7.5%	7.2%	7.2%	23.6%	26.1%	26.1%	11.7%	12.0%	12.0%

# APPENDIX 7a: GAS UTILITY INCOME STATEMENTS (Based on Segment Averages)

		Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	Units	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
GAS-ONLY INCOME STATEMENT - Per Annual Therms Delivered													
Operating revenue	\$/THERM	\$ 0.6056	\$ 0.7467	\$ 0.6239	\$ 0.7444	\$ 0.8313	\$ 0.8572	\$ 0.5390	\$ 0.6784	\$ 0.6696	\$ 0.6144	\$ 0.7377	\$ 0.6861
Operating expense	\$/THERM	\$ 0.3818	\$ 0.4555	\$ 0.3959	\$ 0.4380	\$ 0.5116	\$ 0.5436	\$ 0.4042	\$ 0.5159	\$ 0.4887	\$ 0.3871	\$ 0.4642	\$ 0.4431
Maintenance expense	\$/THERM	\$ 0.0245	\$ 0.0505	\$ 0.0258	\$ 0.0462	\$ 0.0380	\$ 0.0347	\$ 0.0264	\$ 0.0335	\$ 0.0238	\$ 0.0292	\$ 0.0428	\$ 0.0267
Total O&M	\$/THERM	\$ 0.4064	\$ 0.5060	\$ 0.4218	\$ 0.4841	\$ 0.5496	\$ 0.5783	\$ 0.4307	\$ 0.5494	\$ 0.5125	\$ 0.4163	\$ 0.5070	\$ 0.4698
Depreciation	\$/THERM	\$ 0.0643	\$ 0.0915	\$ 0.0571	\$ 0.0686	\$ 0.0755	\$ 0.0790	\$ 0.0502	\$ 0.0553	\$ 0.0502	\$ 0.0614	\$ 0.0802	\$ 0.0595
Depletion	\$/THERM	\$ 0.0006	\$ 0.0004	\$ 0.0004	\$ 0.0016	\$ 0.0019	\$ 0.0024	\$ -	\$ -	\$ -	\$ 0.0008	\$ 0.0007	\$ 0.0009
Amortization	\$/THERM	\$ 0.0042	\$ 0.0058	\$ 0.0051	\$ 0.0051	\$ 0.0059	\$ 0.0065	\$ 0.0004	\$ 0.0004	\$ 0.0002	\$ 0.0037	\$ 0.0049	\$ 0.0072
Prop. loss charged to operations	\$/THERM	\$ 0.0001	\$ 0.0000	\$ 0.0000	\$ 0.0001	\$ (0.0000)	\$ 0.0007	\$ 0.0000	\$ -	\$ -	\$ 0.0001	\$ 0.0000	\$ 0.0002
Total taxes	\$/THERM	\$ 0.0615	\$ 0.0739	\$ 0.0587	\$ 0.0776	\$ 0.0894	\$ 0.0716	\$ 0.0175	\$ 0.0133	\$ 0.0181	\$ 0.0583	\$ 0.0683	\$ 0.0573
Other operating income	\$/THERM	\$ 0.0000	\$ (0.0018)	\$ (0.0009)	\$ (0.0000)	\$ (0.0001)	\$ (0.0021)	\$ 0.0000	\$ (0.0001)	\$ (0.0001)	\$ 0.0000	\$ (0.0008)	\$ (0.0010)
Total operating income	\$/THERM	\$ 0.0686	\$ 0.0690	\$ 0.0807	\$ 0.1073	\$ 0.1090	\$ 0.1186	\$ 0.0403	\$ 0.0601	\$ 0.0885	\$ 0.0740	\$ 0.0768	\$ 0.0911

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

	Units	2016	2017	2017	2016	2017	2017	2016	2017	2017	2016	2017	2017
GAS-ONLY INCOME STATEMENT - Per Average Annual Customers Served													
Operating revenue	\$/CUSTOMER	\$ 1,194	\$ 1,151	\$ 1,127	\$ 1,005	\$ 1,100	\$ 1,181	\$ 931	\$ 1,079	\$ 1,176	\$ 1,137	\$ 1,152	\$ 1,175
Operating expense	\$/CUSTOMER	\$ 841	\$ 729	\$ 741	\$ 605	\$ 671	\$ 742	\$ 714	\$ 821	\$ 855	\$ 772	\$ 744	\$ 775
Maintenance expense	\$/CUSTOMER	\$ 58	\$ 82	\$ 41	\$ 52	\$ 49	\$ 47	\$ 45	\$ 56	\$ 50	\$ 53	\$ 68	\$ 43
Total O&M	\$/CUSTOMER	\$ 899	\$ 811	\$ 783	\$ 657	\$ 721	\$ 789	\$ 760	\$ 877	\$ 905	\$ 825	\$ 812	\$ 818
Depreciation	\$/CUSTOMER	\$ 197	\$ 155	\$ 97	\$ 86	\$ 94	\$ 102	\$ 83	\$ 87	\$ 88	\$ 149	\$ 130	\$ 97
Depletion	\$/CUSTOMER	\$ 3	\$ 1	\$ 1	\$ 3	\$ 3	\$ 4	\$ -	\$ -	\$ -	\$ 3	\$ 1	\$ 2
Amortization	\$/CUSTOMER	\$ 7	\$ 7	\$ 9	\$ 7	\$ 7	\$ 8	\$ 0	\$ 1	\$ 1	\$ 6	\$ 6	\$ 10
Prop. loss charged to operations	\$/CUSTOMER	\$ 0	\$ 0	\$ 0	\$ 0	\$ (0)	\$ 1	\$ 0	\$ -	\$ -	\$ 0	\$ 0	\$ 0
Total taxes	\$/CUSTOMER	\$ 23	\$ 83	\$ 97	\$ 109	\$ 122	\$ 104	\$ 21	\$ 15	\$ 19	\$ 54	\$ 88	\$ 91
Other operating income	\$/CUSTOMER	\$ 0	\$ (3)	\$ (1)	\$ (0)	\$ (0)	\$ (3)	\$ 3	\$ (7)	\$ (13)	\$ 0	\$ (1)	\$ (3)
Total operating income	\$/CUSTOMER	\$ 66	\$ 94	\$ 140	\$ 143	\$ 153	\$ 172	\$ 67	\$ 99	\$ 164	\$ 100	\$ 114	\$ 156

	Units	2016	2017	2017	2016	2017	2017	2016	2017	2017	2016	2017	2017
GAS-ONLY INCOME STATEMENT - Per Dollar of Gas Plant													
Operating revenue	per \$GAS PLANT	\$ 0.2893	\$ 0.2931	\$ 0.3182	\$ 0.4075	\$ 0.2924	\$ 0.2738	\$ 0.3466	\$ 0.3785	\$ 0.4095	\$ 0.3281	\$ 0.3047	\$ 0.3166
Operating expense	per \$GAS PLANT	\$ 0.1944	\$ 0.1959	\$ 0.2188	\$ 0.2667	\$ 0.1860	\$ 0.1758	\$ 0.2679	\$ 0.2944	\$ 0.3045	\$ 0.2225	\$ 0.2068	\$ 0.2173
Maintenance expense	per \$GAS PLANT	\$ 0.0102	\$ 0.0110	\$ 0.0105	\$ 0.0176	\$ 0.0125	\$ 0.0101	\$ 0.0164	\$ 0.0183	\$ 0.0172	\$ 0.0126	\$ 0.0118	\$ 0.0108
Total O&M	per \$GAS PLANT	\$ 0.2046	\$ 0.2069	\$ 0.2294	\$ 0.2843	\$ 0.1985	\$ 0.1859	\$ 0.2844	\$ 0.3127	\$ 0.3216	\$ 0.2351	\$ 0.2187	\$ 0.2281
Depreciation	per \$GAS PLANT	\$ 0.0261	\$ 0.0263	\$ 0.0266	\$ 0.0325	\$ 0.0247	\$ 0.0241	\$ 0.0278	\$ 0.0277	\$ 0.0286	\$ 0.0281	\$ 0.0261	\$ 0.0257
Depletion	per \$GAS PLANT	\$ 0.0002	\$ 0.0002	\$ 0.0002	\$ 0.0008	\$ 0.0008	\$ 0.0010	\$ -	\$ -	\$ -	\$ 0.0004	\$ 0.0003	\$ 0.0004
Amortization	per \$GAS PLANT	\$ 0.0025	\$ 0.0026	\$ 0.0028	\$ 0.0021	\$ 0.0021	\$ 0.0020	\$ 0.0001	\$ 0.0002	\$ 0.0002	\$ 0.0019	\$ 0.0020	\$ 0.0024
Prop. loss charged to operations	per \$GAS PLANT	\$ 0.0000	\$ 0.0000	\$ 0.0000	\$ 0.0001	\$ (0.0000)	\$ 0.0003	\$ 0.0001	\$ -	\$ -	\$ 0.0001	\$ 0.0000	\$ 0.0001
Total taxes	per \$GAS PLANT	\$ 0.0267	\$ 0.0280	\$ 0.0244	\$ 0.0352	\$ 0.0304	\$ 0.0221	\$ 0.0081	\$ 0.0063	\$ 0.0059	\$ 0.0265	\$ 0.0260	\$ 0.0214
Other operating income	per \$GAS PLANT	\$ 0.0000	\$ (0.0007)	\$ (0.0012)	\$ (0.0000)	\$ (0.0001)	\$ (0.0011)	\$ 0.0012	\$ (0.0024)	\$ (0.0041)	\$ 0.0001	\$ (0.0004)	\$ (0.0014)
Total operating income	per \$GAS PLANT	\$ 0.0292	\$ 0.0291	\$ 0.0350	\$ 0.0525	\$ 0.0359	\$ 0.0386	\$ 0.0261	\$ 0.0316	\$ 0.0531	\$ 0.0361	\$ 0.0316	\$ 0.0384

## APPENDIX 7a: GAS UTILITY INCOME STATEMENTS Cont'd (Based on Segment Averages)

	Units	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
		2016	2017	2017	2016	2017	2017	2016	2017	2017	2016	2017	2017
GAS-ONLY INCOME STATEMENT - Per Mile of Distribution Pipe													
Operating revenue	per mile of pipe	\$ 57,528	\$ 59,880	\$ 67,507	\$ 72,659	\$ 76,742	\$ 95,871	\$ 65,717	\$ 73,735	\$ 79,313	\$ 63,372	\$ 66,244	\$ 76,609
Operating expense	per mile of pipe	\$ 36,040	\$ 37,247	\$ 43,609	\$ 41,296	\$ 43,701	\$ 57,477	\$ 49,490	\$ 54,962	\$ 56,163	\$ 39,656	\$ 41,587	\$ 49,072
Maintenance expense	per mile of pipe	\$ 2,508	\$ 3,103	\$ 3,318	\$ 4,204	\$ 3,730	\$ 4,139	\$ 3,635	\$ 4,187	\$ 4,001	\$ 3,022	\$ 3,257	\$ 3,464
Total O&M	per mile of pipe	\$ 38,547	\$ 40,350	\$ 46,927	\$ 45,500	\$ 47,432	\$ 61,616	\$ 53,125	\$ 59,149	\$ 60,164	\$ 42,679	\$ 44,844	\$ 52,536
Depreciation	per mile of pipe	\$ 6,057	\$ 6,029	\$ 5,768	\$ 6,383	\$ 6,705	\$ 8,388	\$ 5,528	\$ 5,868	\$ 6,011	\$ 6,088	\$ 6,146	\$ 6,434
Depletion	per mile of pipe	\$ 52	\$ 29	\$ 32	\$ 152	\$ 148	\$ 366	\$ -	\$ -	\$ -	\$ 75	\$ 51	\$ 118
Amortization	per mile of pipe	\$ 384	\$ 396	\$ 525	\$ 556	\$ 575	\$ 654	\$ 10	\$ 28	\$ 29	\$ 356	\$ 374	\$ 512
Prop. loss charged to operations	per mile of pipe	\$ 10	\$ 8	\$ 1	\$ 31	\$ (1)	\$ 152	\$ 18	\$ -	\$ -	\$ 15	\$ 4	\$ 40
Total taxes	per mile of pipe	\$ 5,784	\$ 6,253	\$ 6,274	\$ 7,832	\$ 9,155	\$ 9,336	\$ 1,237	\$ 1,069	\$ 1,100	\$ 5,795	\$ 6,384	\$ 6,421
Other operating income	per mile of pipe	\$ 2	\$ (158)	\$ (25)	\$ (4)	\$ (9)	\$ (240)	\$ 185	\$ (368)	\$ (636)	\$ 21	\$ (83)	\$ (141)
Total operating income	per mile of pipe	\$ 6,694	\$ 6,815	\$ 7,979	\$ 12,205	\$ 12,728	\$ 15,359	\$ 5,800	\$ 7,622	\$ 12,010	\$ 8,364	\$ 8,440	\$ 10,549

## APPENDIX 7b: GAS UTILITY FINANCIAL RATIOS (Based on Segment Averages)

		2016	2017	2017	2016	2017	2017	2016	2017	2017	2016	2017	2017
Therms delivered (avg.) per acct.		2,736	1,982	2,268	1,901	1,800	1,852	14,265	17,410	21,436	5,720	3,740	4,223
Therms per \$1,000 of gas plant		0.618	0.546	0.627	0.891	0.520	0.458	6.393	5.601	6.885	1.542	1.109	1.234
Value of gas plant per customer		\$ 3,934	\$ 6,457	\$ 3,831	\$ 3,474	\$ 3,866	\$ 4,340	\$ 2,954	\$ 3,082	\$ 3,013	\$ 3,833	\$ 5,370	\$ 3,982
%Sales firm (not interruptible)		95%	94%	94%	94%	94%	94%	86%	86%	85%	94%	93%	93%
Collection period (days)	1/	40.3	42.9	41.1	29.9	28.9	32.7	34.5	31.9	32.7	36.9	38.2	37.7
Gas O&M expense as pct. of revenue		68%	68%	68%	67%	67%	67%	82%	81%	77%	69%	69%	69%
Gas oper. income as pct. of revenue		11%	11%	13%	14%	13%	14%	7%	9%	14%	12%	11%	14%
Gas operating revenue per customer		\$ 1,183	\$ 1,151	\$ 1,127	\$ 1,005	\$ 1,100	\$ 1,181	\$ 931	\$ 1,079	\$ 1,176	\$ 1,132	\$ 1,152	\$ 1,175
Gas O&M expense per customer		\$ 889	\$ 811	\$ 783	\$ 657	\$ 721	\$ 789	\$ 760	\$ 877	\$ 905	\$ 820	\$ 812	\$ 818
Gas operating income per customer		\$ 66	\$ 94	\$ 140	\$ 143	\$ 153	\$ 172	\$ 67	\$ 99	\$ 164	\$ 100	\$ 114	\$ 156
Gas revenue per dollar of gas plant		\$ 0.2877	\$ 0.2931	\$ 0.3182	\$ 0.4075	\$ 0.2924	\$ 0.2738	\$ 0.3466	\$ 0.3785	\$ 0.4095	\$ 0.3267	\$ 0.3047	\$ 0.3166
Gas O&M expense per \$ of gas plant		\$ 0.2030	\$ 0.2069	\$ 0.2294	\$ 0.2843	\$ 0.1985	\$ 0.1859	\$ 0.2844	\$ 0.3127	\$ 0.3216	\$ 0.2339	\$ 0.2187	\$ 0.2281
Gas oper. income per \$ of gas plant		\$ 0.0292	\$ 0.0291	\$ 0.0350	\$ 0.0525	\$ 0.0359	\$ 0.0386	\$ 0.0261	\$ 0.0316	\$ 0.0531	\$ 0.0360	\$ 0.0316	\$ 0.0384
Gas revenue per mile of pipe		\$ 57,748	\$ 59,880	\$ 67,507	\$ 72,659	\$ 76,742	\$ 95,871	\$ 65,717	\$ 73,735	\$ 79,313	\$ 63,424	\$ 66,244	\$ 76,609
Gas O&M expense per mile of pipe		\$ 38,600	\$ 40,350	\$ 46,927	\$ 45,500	\$ 47,432	\$ 61,616	\$ 53,125	\$ 59,149	\$ 60,164	\$ 42,660	\$ 44,844	\$ 52,536
Gas oper. income per mile of pipe		\$ 6,747	\$ 6,815	\$ 7,979	\$ 12,205	\$ 12,728	\$ 15,359	\$ 5,800	\$ 7,622	\$ 12,010	\$ 8,374	\$ 8,440	\$ 10,549
LT debt - total assets ratio		20.5%	22.5%	21.9%	28.3%	29.7%	31.0%	27.4%	29.4%	26.4%	23.5%	25.1%	25.1%
LT debt - total capitalization ratio		34.5%	38.5%	37.1%	45.5%	46.9%	48.4%	33.5%	37.9%	35.5%	37.8%	40.8%	40.5%
Net interest - long-term debt ratio		444.6%	7.8%	5.8%	6.1%	4.7%	4.3%	2.6%	1.9%	2.4%	226.7%	6.2%	5.0%
EBITDA interest coverage		19.5x	21.1x	8.3x	7.8x	8.3x	7.7x	51.5x	83.4x	9.6x	18.9x	23.5x	8.2x
Return on assets		2.0%	2.1%	3.0%	3.1%	3.1%	3.0%	2.7%	2.4%	4.1%	2.4%	2.4%	3.2%

## APPENDIX 8: GAS UTILITY WAGES AND BENEFITS (Based on Segment Averages)

Stratified by Type of Company	Gas Utilities			Combination Utilities			Municipal Utilities			All Companies		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Average number of employees	1006	974	972	1,239	738	810	360	360	326	955	815	830
Number of Employees at year-end	1019	988	985	1,323	854	933	354	354	320	983	848	867
O&M wages ('000)	\$63,902	\$63,632	\$68,455	\$90,080	\$58,579	\$62,513	\$22,852	\$23,758	\$21,300	\$63,074	\$55,010	\$58,909
Construction wages ('000)	\$24,159	\$24,571	\$25,772	\$54,269	\$41,388	\$47,079	\$2,841	\$2,034	\$2,315	\$27,996	\$24,075	\$27,219
Total pensions ('000)	\$26,583	\$25,603	\$23,841	\$18,956	\$23,436	\$19,841	\$694,987	\$19,924	\$21,856	\$102,893	\$23,696	\$21,964
PER EMPLOYEE(1/):												
Total salary & wages	\$82,218	\$83,098	\$90,749	\$124,202	\$129,791	\$131,261	\$70,993	\$70,131	\$74,464	\$91,014	\$91,966	\$99,645
Tot. benefits & pension	\$23,286	\$21,951	\$20,607	\$29,290	\$32,914	\$30,532	\$43,674	\$38,516	\$45,639	\$27,280	\$26,598	\$25,705
Total salary, benefits, and pension	\$105,503	\$105,049	\$111,356	\$153,492	\$162,704	\$161,793	\$114,667	\$108,647	\$120,104	\$118,294	\$118,565	\$125,350
Ratio: avg. benefits to avg. compensation	22.0%	21.7%	18.2%	19.1%	22.0%	19.7%	47.2%	36.3%	38.5%	24.6%	23.8%	21.1%
Therms sold per year-end employee	1,328,236	1,209,747	1,471,925	1,671,666	1,691,435	1,525,284	12,547,591	10,583,830	12,670,372	2,754,260	2,430,797	2,619,901
Customers per year-end employee	667	653	671	877	888	874	523	476	470	716	701	695

## 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
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				