

**STATE OF NEW JERSEY  
BOARD OF PUBLIC UTILITIES**

**In the Matter of the Petition of  
Public Service Electric and Gas Company  
for Approval of an Increase in Electric and Gas  
Rates and for Changes in the Tariffs for  
Electric and Gas Service, B.P.U.N.J.  
No. 17 Electric and B.P.U.N.J. No. 17  
Gas, and for Changes in Depreciation Rates,  
Pursuant to N.J.S.A. 48:2-18,  
N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, and  
for Other Appropriate Relief**

**BPU Docket Nos. ER23120924 and GR23120925**

**DIRECT TESTIMONY  
OF  
MICHAEL J. ADAMS**

**Submitted on Behalf  
of  
PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
d/b/a PSE&G**

**July 15, 2024**

**P-6 R-1**

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1                                   **PUBLIC SERVICE ELECTRIC AND GAS COMPANY**  
2                                   **DIRECT TESTIMONY**  
3                                   **OF**  
4                                   **MICHAEL J. ADAMS**  
5                                   **SENIOR VICE PRESIDENT, CONCENTRIC ENERGY ADVISORS, INC.**

6   **I.     INTRODUCTION**

7   **Q.     Please state your name and business address.**

8   A.     My name is Michael J. Adams. My business address is 293 Boston Post Road West,  
9   Suite 500, Marlborough, Massachusetts 01752.

10 **Q.    By whom are you employed?**

11 A.     I am a Senior Vice President with Concentric Energy Advisors, Inc. (“Concentric”).

12 **Q.    Please describe your educational background and experience.**

13 A.     A summary of my educational background and experience is set forth in Appendix A  
14 to my testimony.

15 **Q.    On whose behalf are you appearing in this proceeding?**

16 A.     I am submitting this direct testimony on behalf of Public Service Electric and Gas  
17 Company (“PSE&G” or “the Company”).

18 **Q.    What is the purpose of your direct testimony?**

19 A.     I was retained by the Company to prepare benchmarking analyses evaluating the  
20 financial and operational performance of PSE&G’s electric and gas business operations.

1 **Q. Please describe the nature of the analyses that you performed to assess PSE&G's**  
2 **performance.**

3 A. I benchmarked PSE&G's electric business performance related to cost control,  
4 reliability and customer satisfaction against four peer groups to assess the Company's  
5 performance. Similarly, PSE&G's gas business performance related to cost control and  
6 customer satisfaction was benchmarked against four peer groups of comparable companies.  
7 The peer group analyses evaluated PSE&G's performance against national, regional, and New  
8 Jersey regulated utilities, as well as the operating companies included in Company witness  
9 Bulkley's return on equity peer group.

10 **Q. Please generally summarize your findings and conclusions based upon the results**  
11 **of the benchmarking analyses.**

12 A. Overall, I found that both PSE&G's electric and gas businesses performed very well  
13 when compared to its peer groups, which indicates a well-managed company that is effectively  
14 focused on controlling costs while providing high levels of reliability and customer  
15 satisfaction.

16 **Q. How are you proposing that the results of your benchmarking analyses be used in**  
17 **this rate proceeding?**

18 A. I believe it is reasonable for the Board of Public Utilities (the "Board" or the "BPU")  
19 to consider the Company's performance in areas such as fiscal responsibility, operational  
20 performance, service quality and customer satisfaction when establishing the authorized rate  
21 of return for the Company. Given PSE&G's strong performance in each of these areas, in my  
22 opinion, it is appropriate for the BPU to set PSE&G's ROE at the upper end of the range of

1 return on equity in recognition of the Company's consistently strong cost control, operational  
2 performance, service quality and customer satisfaction.

3 **Q. Are you sponsoring any exhibits with your direct testimony?**

4 A. Yes. I am sponsoring PSE&G Schedules MJA-B-1 R-1 through MJA-B-25 R-1 which  
5 are identified below and discussed in my testimony.

Schedules	Description
MJA-B-1 R-1	Electric Peer Group Composition
MJA-B-2 R-1	Gas Peer Group Composition
MJA-B-3 R-1	Distribution Operations and Maintenance (“O&M”) expense per electric customer
MJA-B-4 R-1	Distribution O&M per MWh sold
MJA-B-5 R-1	Administrative and General (“A&G”) expense per electric customer
MJA-B-6 R-1	A&G expense per MWh sold
MJA-B-7 R-1	Salaries, Wages, Pensions, and Benefits expense per employee
MJA-B-8 R-1	Total O&M (excluding transmission and production) expense per electric customer
MJA-B-9 R-1	Total O&M (excluding transmission and production) expense per MWh sold
MJA-B-10 R-1	Distribution O&M expense per gas customer
MJA-B-11 R-1	Distribution O&M per Mcf sold
MJA-B-12 R-1	A&G expense per gas customer
MJA-B-13 R-1	A&G expense per Mcf sold
MJA-B-14 R-1	Total Non-Production O&M expense per gas customer
MJA-B-15 R-1	Total Non-Production O&M expense per Mcf sold
MJA-B-16 R-1	SAIDI – NJ Companies
MJA-B-17 R-1	SAIFI – NJ Companies
MJA-B-18 R-1	CAIDI – NJ Companies
MJA-B-19 R-1	SAIFI – IEEE
MJA-B-20 R-1	CAIDI – IEEE
MJA-B-21 R-1	SAIDI – IEEE
MJA-B-22 R-1	JD Power - Residential Electric Customers
MJA-B-23 R-1	JD Power - Business Electric Customers
MJA-B-24 R-1	JD Power - Residential Gas Customers
MJA-B-25 R-1	JD Power - Business Gas Customers

1 **II. SOURCE DATA**

2 **Q. What years were included in the benchmarking analyses?**

3 A. I used the most current publicly available information for PSE&G and the peer  
4 companies at the time the analyses were prepared in the first half of 2024. For the electric cost  
5 and customer satisfaction benchmarking, information for the calendar years 2014 through 2023  
6 was used. For the electric reliability and gas cost benchmarking, information for the calendar  
7 years 2013 through 2022 was used in the benchmarking analyses.

8 **Q. Against what peer groups did you benchmark PSE&G’s electric business**  
9 **operations?**

10 A. PSE&G was benchmarked against four separate peer groups. The “Electric Group”  
11 included all operating companies classified by S&P Capital IQ Pro as “Electric Utility” or  
12 “Diversified Utility” which owned no regulated generation, and had a customer count of more  
13 than 500,000. The “Electric Group” included 25 companies in each year of the analyses.<sup>1</sup>

14 The “Regional Group” included all companies in the “Electric Group” having electric  
15 distribution operations in Connecticut, Delaware, Maryland, New Jersey, New York, or  
16 Pennsylvania. The “Regional Group” included 16 companies for each year of the analyses.

17 The “New Jersey Group” included all companies with electric distribution operations in New  
18 Jersey. The “New Jersey Group” included four companies for each year of the analyses.

19 The Return on Equity (“ROE”) proxy group included all operating companies classified  
20 by S&P Capital IQ Pro as “Electric Utility” or “Diversified Utility” which owned no regulated

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<sup>1</sup> The number of companies benchmarked in the Salaries, Wages, Pensions, and Benefits expense per employee analysis is slightly lower for each proxy group due to lack of available data.

1 generation and were owned by the holding companies in the proxy group included in Company  
2 witness Bulkley’s cost of capital recommendation. The “ROE Proxy Group” included 11  
3 companies for each year of the analyses.

4 The companies included in each electric peer group are set forth on Schedule MJA-B-  
5 1 R-1.

6 **Q. What companies were included in the benchmarking of PSE&G’s gas business?**

7 A. PSE&G’s gas business was benchmarked against four separate peer groups. The “LDC  
8 Group” included all natural gas distribution companies with a customer count of more than  
9 500,000. The LDC Group included 41 companies.<sup>2</sup>

10 The “Regional Group” included all companies in the “LDC Group” having natural gas  
11 distribution operations in Connecticut, Delaware, Maryland, New Jersey, New York, or  
12 Pennsylvania. There were 11 companies in the Regional Group.

13 The “New Jersey Group” included all companies with natural gas distribution  
14 operations in New Jersey. The “New Jersey Group” included four companies for each year of  
15 the analyses.

16 The Return on Equity (“ROE”) proxy group included all natural gas distribution  
17 companies that were owned by the holding companies in the proxy group included in Company  
18 witness Bulkley’s cost of capital recommendation. The “ROE Proxy Group” included 44  
19 companies.<sup>3</sup>

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<sup>2</sup> The number of companies included in the analysis varied between 34 to 41 due to data availability for certain metrics in certain years.

<sup>3</sup> The number of companies included in the analysis varied between 27 to 46 due to data availability for certain metrics in certain years.



1           The companies included in the gas company peer groups are set forth in Schedule MJA-  
2 B-2 R-1.

3 **Q.    Is the information that you used to benchmark PSE&G’s electric and gas**  
4 **operations publicly available?**

5 A.     Yes. All of the information that was used in the benchmarking analyses was obtained  
6 from publicly available sources. The data relied upon for my analyses was obtained from the  
7 Federal Energy Regulatory Commission (“FERC”); the Energy Information Administration  
8 (“EIA”); the Institute of Electrical and Electronics Engineers (“IEEE”); and JD Power.

9 **Q.    What modifications were made to the data contained in the publicly available**  
10 **information to complete the benchmarking analyses?**

11 A.     Generally, no modifications were made to the data obtained from the referenced  
12 sources.<sup>4</sup> To ensure that the data was comparable across companies, each metric was compared  
13 on a cost per customer basis (i.e., the reported expense level was divided by the reported total  
14 number of customers) or a per unit sold basis (i.e., per mega-watt hour (“MWh”) sold for the  
15 electric business or per million cubic feet (“Mcf”) sold for the gas business).

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<sup>4</sup> The A&G benchmarking analysis excluded amounts booked to FERC Account 926 (Employee Pensions and Benefits) because of the volatile nature of this account and the balances reported oscillating between positive and negative values. In light of PSE&G’s pension and OPEB income in recent years, this adjustment is conservative.

1 **III. ELECTRIC BENCHMARKING ANALYSES**

2 **Q. What metrics did you use to evaluate PSE&G's operational performance against**  
3 **that of the peer companies?**

4 A. The following metrics were used to evaluate PSE&G's electric business cost  
5 performance against that of its peer companies:

- 6 1. Distribution Operations and Maintenance ("O&M") expense per electric customer;
- 7 2. Distribution O&M per MWh sold;
- 8 3. Administrative and General ("A&G") expense per electric customer;
- 9 4. A&G expense per MWh sold;
- 10 5. Salaries, Wages, Pensions, and Benefits expense per employee;
- 11 6. Total O&M (excluding transmission and production) expense per electric  
12 customer; and
- 13 7. Total O&M (excluding transmission and production) expense per MWh sold.

14 **Q. Please explain why it is appropriate to evaluate PSE&G's performance based**  
15 **upon the metrics set forth above.**

16 A. The items that most directly impact customers' perceptions and experiences with their  
17 utility company revolve around costs (which are a driver of rates), service reliability, and how  
18 well the utility responds when the customer has an issue pertaining to their service. For that  
19 reason, I chose the metrics that I believe best illustrate PSE&G's performance in each of the  
20 above areas. The cost metrics were evaluated both on a cost per customer basis and a cost per  
21 unit sold basis (i.e., per MWh for the electric business and per Mcf for the gas business). The  
22 service reliability and customer satisfaction metrics are discussed later in my testimony.

1 **Q. How did PSE&G perform when compared to its peer companies on a distribution**  
2 **O&M expense per electric customer basis?**

3 A. As shown on Schedule MJA-B-3 R-1, PSE&G's distribution O&M per customer  
4 ranged from a low of \$75.47 in 2017 to a high of \$87.26 in 2018. The Electric Group mean  
5 ranged from a low of \$117.23 in 2015 to a high of \$172.26 in 2022. The Regional Group mean  
6 ranged from a low of \$122.79 in 2015 to a high of \$186.82 in 2022. The New Jersey Group  
7 mean ranged from a low of \$122.08 in 2014 to a high of \$240.88 in 2023. The ROE Proxy  
8 Group mean ranged from a low of \$157.63 in 2014 to a high of \$193.53 in 2023. Therefore,  
9 PSE&G's electric distribution O&M expense per customer was consistently below (i.e.,  
10 performed better than) the group means for each of the four comparison groups.

11 The cumulative average growth rate ("CAGR") of PSE&G's electric distribution O&M  
12 expenses per customer over the 10-year period examined was 0.51 percent. The Electric  
13 Group's CAGR over the same period was 4.17 percent, while the Regional Group's was 3.76  
14 percent. The New Jersey Group's CAGR was 7.84 percent, while the ROE Proxy Group's was  
15 2.31 percent. Therefore, in each comparison, PSE&G's electric distribution O&M expenses  
16 increased at a significantly lower rate over the period examined than those of the peer groups.

17 In 2023, PSE&G's electric distribution O&M expense per customer of \$80.51 was  
18 approximately 53 percent lower than the Electric Group mean; 55 percent lower than the  
19 Regional Group mean; 67 percent lower than the New Jersey Group mean; and 58 percent  
20 lower than the ROE Proxy Group mean.

1 **Q. How did PSE&G perform when compared to the peer companies on a distribution**  
2 **expense per MWh basis?**

3 A. As shown on Schedule MJA-B-4 R-1, PSE&G's electric distribution O&M expense  
4 per MWh sold ranged from a low of \$4.05 in 2015 to a high of \$4.88 in 2023 over the ten-year  
5 period. The Electric Group mean ranged from a low of \$6.17 in 2014 to a high of \$11.36 in  
6 2023 over the same period. The Regional Group mean ranged from a low of \$6.41 in 2015 to  
7 a high of \$10.71 in 2022 over the ten-year period. The New Jersey Group mean ranged from  
8 a low of \$6.33 in 2014 to a high of \$14.05 in 2023. The ROE Proxy Group mean ranged from  
9 a low of \$7.73 in 2015 to a high of \$13.86 in 2023. Therefore, PSE&G's electric distribution  
10 O&M expense per megawatt-hour sold was consistently below (i.e., performed better than) the  
11 group means for each of the four comparison groups.

12 The CAGR of PSE&G's electric distribution O&M expenses per MWh sold over the  
13 10-year period examined was 1.81 percent. The Electric Group's CAGR over the same period  
14 was 7.02 percent, while the Regional Group's was 4.68 percent. The New Jersey Group's  
15 CAGR was 9.26 percent, while the ROE Proxy Group's was 6.52 percent. Therefore,  
16 PSE&G's electric distribution expense per MWh sold increased at a significantly lower rate  
17 over the years examined than that of the peer groups.

18 In 2023, PSE&G's distribution O&M expense per MWh sold of \$4.88 was  
19 approximately 57 percent lower than the Electric Group mean; 52 percent lower than the  
20 Regional Group mean; 65 percent lower than the New Jersey Group mean; and 65 percent  
21 lower than the ROE Proxy Group mean.

1 **Q. Did you compare PSE&G's A&G expense per customer to those of the peer group**  
2 **means?**

3 A. Yes. As shown on Schedule MJA-B-5 R-1, PSE&G's A&G expense per customer was  
4 well below the group means for each of the four comparison groups, for the time period  
5 examined.

6 PSE&G's A&G expense per customer ranged from a low of \$49.12 in 2014 to a high  
7 of \$71.69 in 2022. The Electric Group mean ranged from a low of \$103.25 in 2014 to a high  
8 of \$137.90 in 2023. The Regional Group mean ranged from a low of \$108.80 in 2014 to a  
9 high of \$133.55 in 2023. The New Jersey Group mean ranged from a low of \$96.02 in 2015  
10 to a high of \$164.93 in 2023. The ROE Proxy Group mean ranged from a low of \$133.23 in  
11 2018 to a high of \$156.16 in 2023. Therefore, PSE&G's A&G expense per customer was  
12 consistently below (i.e., performed better than) the group means for each of the four  
13 comparison groups.

14 The CAGR of PSE&G's A&G expense per customer over the 10-year period examined  
15 was 3.08 percent. The Electric Group's CAGR over the same period was 3.27 percent, while  
16 the Regional Group's was 2.30 percent. The New Jersey Group's CAGR was 5.92 percent,  
17 while the ROE Proxy Group's was 0.32 percent. Therefore, PSE&G's A&G expense per  
18 customer increased at a rate higher than those of the Regional and ROE groups, and lower than  
19 those of the Electric and New Jersey groups.

20 In 2023, PSE&G's A&G expense per customer of \$64.55 was approximately 53  
21 percent lower than the Electric Group mean; 52 percent lower than the Regional Group mean;

1 61 percent lower than the New Jersey Group mean; and 59 percent lower than the ROE proxy  
2 group mean.

3 **Q. How did PSE&G perform when compared to the peer companies on an A&G**  
4 **expense per MWh basis?**

5 A. As shown on Schedule MJA-B-6 R-1, PSE&G's electric A&G expense per MWh sold  
6 ranged from a low of \$2.65 in 2014 to a high of \$4.12 in 2022. The Electric Group mean  
7 ranged from a low of \$5.77 in 2014 to a high of \$9.62 in 2023. The Regional Group mean  
8 ranged from a low of \$5.97 in 2014 to a high of \$7.83 in 2023. The New Jersey Group mean  
9 ranged from a low of \$4.84 in 2015 to a high of \$9.58 in 2023. The ROE Proxy Group mean  
10 ranged from a low of \$7.04 in 2017 to a high of \$10.55 in 2023. Therefore, PSE&G's A&G  
11 expense per MWh sold was consistently below (i.e., performed better than) the group means  
12 for each of the four comparison groups.

13 The CAGR of PSE&G's A&G expense per MWh sold over the 10-year period  
14 examined was 4.41 percent. The Electric Group's CAGR over the same period was 5.85  
15 percent, while the Regional Group's was 3.08 percent. The New Jersey Group's CAGR was  
16 7.33 percent, while the ROE Proxy Group's was 3.49 percent. PSE&G's A&G expense per  
17 MWh sold increased at a rate higher than that of the Regional and ROE Proxy Groups, and  
18 lower than those of the Electric and New Jersey groups.

19 In 2023, PSE&G's A&G expense per MWh sold of \$3.91 was approximately 59  
20 percent lower than the Electric Group mean; 50 percent lower than the Regional Group mean;  
21 59 percent lower than the New Jersey Group mean; and 63 percent lower than the ROE Proxy  
22 Group mean.

1 **Q. Did you compare PSE&G's salaries, wages, pensions, and benefits expenses on a**  
2 **per employee basis to those of the peer companies?**

3 A. Yes. As shown on Schedule MJA-B-7 R-1, PSE&G's salaries, wages, pensions, and  
4 benefits expense per employee ranged from a low of \$117.95 in 2019 to a high of \$140.09 in  
5 2023. The Electric Group mean ranged from a low of \$128.56 in 2016 to a high of \$160.26 in  
6 2023. The Regional Group mean ranged from a low of \$113.77 in 2021 to a high of \$156.43  
7 in 2023. The New Jersey Group mean ranged from a low of \$80.79 in 2021 to a high of  
8 \$156.76 in 2014. The ROE Proxy Group mean ranged from a low of \$138.21 in 2014 to a high  
9 of \$200.90 in 2021.

10 The CAGR of PSE&G's salaries, wages, pensions and benefits expense per employee  
11 over the 10-year period examined was 1.90 percent. The Electric Group's CAGR over the  
12 same period was 1.93 percent, while the Regional Group's was 1.62 percent. The New Jersey  
13 Group's CAGR was negative 0.42 percent, while the ROE Proxy Group's was 3.71 percent.  
14 Therefore, PSE&G's salaries, wages, pensions and benefits expense per employee increased  
15 at a rate lower than those of the Electric and ROE groups, and higher than those of the Regional  
16 and New Jersey groups.

17 In 2023, PSE&G's salaries, wages, pensions, and benefits expense per employee of  
18 \$140.09 was approximately 13 percent lower than the Electric Group mean; 10 percent lower  
19 than the Regional Group mean; 7 percent lower than the New Jersey Group mean; and 27  
20 percent lower than the ROE Proxy Group mean.

1 **Q. Is it a notable accomplishment that PSE&G’s salaries, wages, pensions, and**  
2 **benefits expenses, on a per employee basis is less than those of its peer companies?**

3 A. Yes. Given that the Northeast traditionally has higher wages than most other parts of  
4 the country, I believe it is a notable accomplishment that PSE&G’s salaries, wages, pensions,  
5 and benefits expenses per employee are below not only that of the Regional and New Jersey  
6 group means, but also that of the Electric Group, which includes companies across the country.

7 **Q. How can you support the statement that wages in New Jersey are typically higher**  
8 **than those in most other regions of the country?**

9 A. The Consumer Price Index (“CPI”) for Urban Wage Earners and Clerical Workers, as  
10 reported by the United States Bureau of Labor Statistics (“BLS”) sets forth statistics for the  
11 Northeast, Midwest, South and West. The following table presents the reported information  
12 as of December 31, 2023 by region:

Region	CPI-Urban Wage Earners and Clerical Workers	Ratio to Northeast
Northeast	313.824	1.000
Midwest	278.477	0.887
South	293.791	0.936
West	317.689	1.012

13 **Q. Did you also compare PSE&G’s total electric O&M expense to that of the peer**  
14 **groups?**

15 A. Yes. Given that this is a distribution-only rate proceeding, for comparison purposes, I  
16 excluded both production and transmission O&M from the total O&M of each of the  
17 companies in the analyses.



1 **Q. How did PSE&G's total O&M (excluding transmission and production expenses)**  
2 **per customer compare to that of the peer companies?**

3 A. As shown on Schedule MJA-B-8 R-1, PSE&G's total O&M expense (excluding  
4 transmission and production) per customer ranged from a low of \$300.34 in 2020 to a high of  
5 \$378.98 in 2014. The Electric Group mean ranged from a low of \$395.02 in 2015 to a high of  
6 \$484.34 in 2023. The Regional Group mean ranged from a low of \$414.58 in 2017 to a high  
7 of \$486.10 in 2023. The New Jersey Group mean ranged from a low of \$488.64 in 2014 to a  
8 high of \$613.51 in 2020. The ROE Proxy Group mean ranged from a low of \$488.76 in 2018  
9 to a high of \$548.69 in 2015. Therefore, total O&M expense (excluding transmission and  
10 production) per customer was consistently below (i.e., performed better than) the group means  
11 for each of the four comparison groups in all years.

12 The CAGR of PSE&G's total O&M expense (excluding transmission and production)  
13 per customer over the 10-year period examined was a negative 0.58 percent. The Electric  
14 Group's CAGR over the same period was 2.26 percent, while the Regional Group's was 1.47  
15 percent. The New Jersey Group's CAGR was 2.39 percent, while the ROE Proxy Group's was  
16 negative 0.22 percent. Therefore, PSE&G's total O&M expense (excluding transmission and  
17 production) per customer decreased more than the ROE group's did, while those of the  
18 Electric, Regional, and New Jersey groups increased over the years examined.

19 In 2023, PSE&G's total electric O&M (excluding transmission and production) per  
20 customer of \$359.74 was approximately 26 percent lower than the Electric Group mean; 26  
21 percent lower than the Regional Group mean; 40 percent lower than the New Jersey Group  
22 mean; and 31 percent lower than the ROE Proxy Group mean.

1 **Q. Did the comparison of PSE&G's total O&M expenses (excluding transmission and**  
2 **production) per MWh sold basis produce similar results?**

3 A. Yes. As shown on Schedule MJA-B-9 R-1, PSE&G's total electric O&M expenses  
4 (excluding transmission and production) per MWh sold ranged from a low of \$17.33 in 2019  
5 to a high of \$21.81 in 2023. The Electric Group mean ranged from a low of \$21.83 in 2014  
6 to a high of \$34.31 in 2023. The Regional Group mean ranged from a low of \$22.54 in 2015  
7 to a high of \$28.45 in 2023. The New Jersey Group mean ranged from a low of \$25.12 in 2014  
8 to a high of \$35.37 in 2023. The ROE Proxy Group mean ranged from a low of \$25.94 in 2016  
9 to a high of \$35.87 in 2023. Therefore, PSE&G's total O&M expense (excluding transmission  
10 and production) per MWh sold was consistently below (i.e., performed better than) the group  
11 means for each of the four comparison groups in all years.

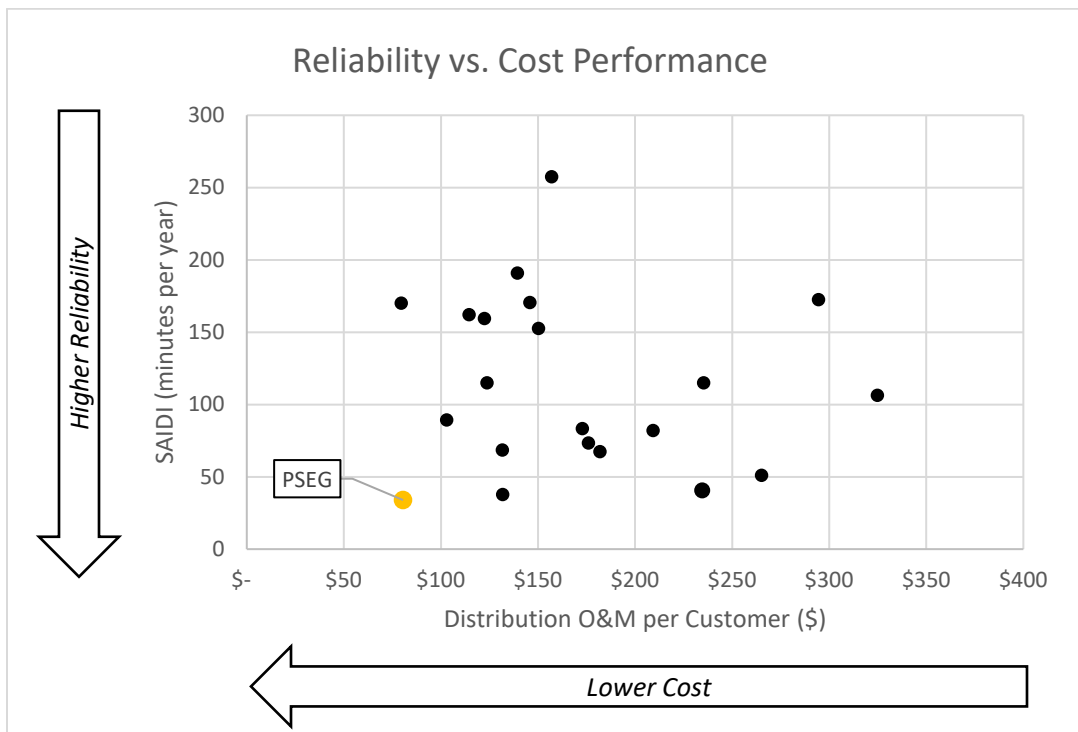
12 The CAGR of PSE&G's total electric O&M expenses (excluding transmission and  
13 production) per MWh over the 10-year period examined was 0.70 percent. The Electric  
14 Group's CAGR over the same period was 5.15 percent, while the Regional Group's was 2.33  
15 percent. The New Jersey Group's CAGR was 3.88 percent, while the ROE Proxy Group's was  
16 2.95 percent. Therefore, PSE&G's total O&M expense (excluding transmission and  
17 production) per MWh increased at a rate lower than those of the Electric, Regional, New  
18 Jersey, and ROE groups.

19 In 2023, PSE&G's total electric O&M expenses (excluding transmission and  
20 production) per MWh sold of \$21.81 was 36 percent lower than the Electric Group mean; 23  
21 percent lower than the Regional Group mean; 38 percent lower than the New Jersey Group  
22 mean; and 39 percent lower than the ROE Proxy Group mean.

1 **Q. Has the Company's reliability performance been negatively impacted as a result**  
2 **of the Company's cost control?**

3 A. No, the Company has been able to manage its cost extremely well without  
4 compromising the system reliability. The charts below demonstrate that the Company is able  
5 to manage its costs while maintaining high levels of reliability compared to its peers.<sup>5</sup> The  
6 reliability benchmarking is discussed in more detail later in my testimony.

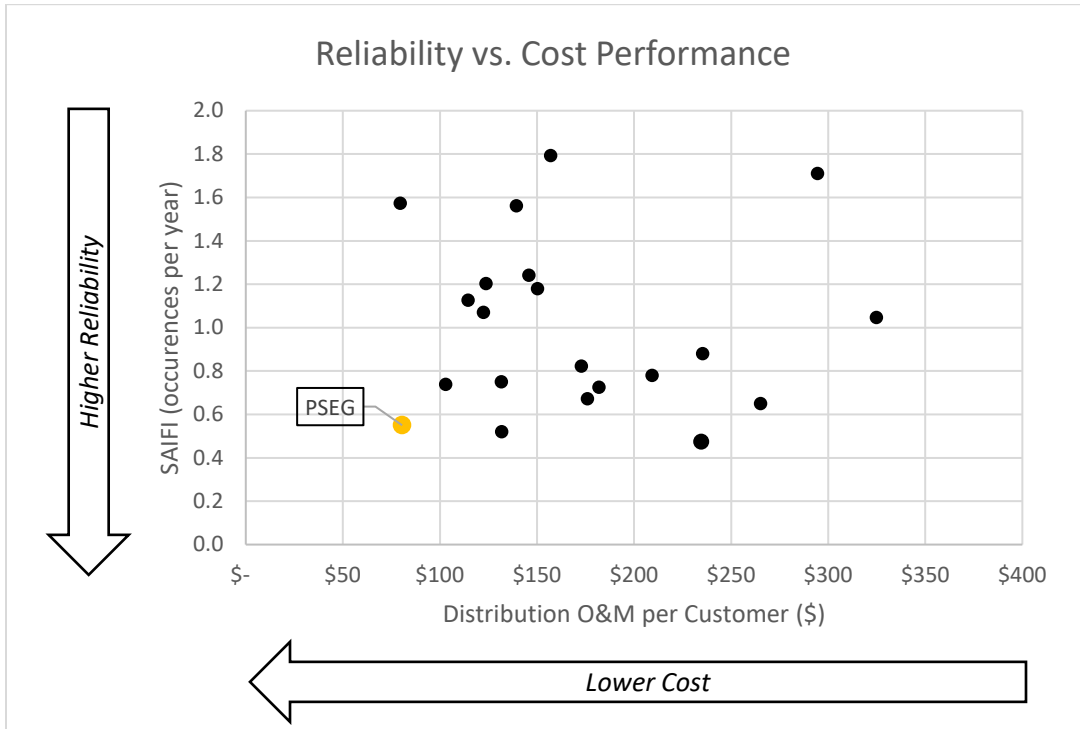
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<sup>5</sup> The cost is based on 2023 data, while reliability is based on 2022 data.



1

2 **IV. GAS BENCHMARKING ANALYSES**

3 **Q. Have you also benchmarked the performance of PSE&G's gas operations?**

4 **A.** Yes, I have.

5 **Q. What metrics did you use to evaluate the operational performance of PSE&G's**  
 6 **gas business against that of its peer companies?**

7 **A.** The following metrics were used to evaluate PSE&G's gas business performance  
 8 against that of the peer groups:

9 1. Distribution O&M expense per gas customer;

10 2. Distribution O&M per Mcf sold;

11 3. A&G expense per gas customer;

12 4. A&G expense per Mcf sold;

1 5. Total Non-Production O&M expense per gas customer; and

2 6. Total Non-Production O&M expense per Mcf Sold.

3 **Q. Prior to discussing the specific analyses that were prepared, can you discuss how**  
4 **PSE&G's gas business performed when benchmarked against its peer companies?**

5 A. PSE&G's gas business was benchmarked against an LDC Group, a Regional Group, a  
6 New Jersey Group, and an ROE Proxy Group. PSE&G and the peer groups were evaluated  
7 based upon their respective performance over the most recent 10-year period for which data  
8 was publicly available. As will be discussed below, PSE&G's gas business performed well  
9 against each of the peer groups.

10 **Q. For what years have you benchmarked PSE&G's gas business performance?**

11 A. PSE&G's gas business performance was benchmarked against its peer companies for  
12 the years 2013 through 2022.

13 **Q. How did PSE&G's gas business perform when compared to its peer companies on**  
14 **a distribution O&M expense per customer basis?**

15 A. As shown on Schedule MJA-B-10 R-1, PSE&G's gas distribution O&M expense per  
16 customer was below (i.e., better than) the group mean for the LDC Group, Regional Group,  
17 and the ROE Proxy Group, in each year of the analysis. PSE&G's gas distribution O&M  
18 expense per customer was lower than the New Jersey Group mean for all but two years (2018  
19 and 2019) of the ten years examined. PSE&G's gas distribution O&M per gas customer ranged  
20 from a low of \$43.12 in 2013 to a high of \$66.77 in 2018. The LDC Group mean ranged from  
21 a low of \$74.13 in 2013 to a high of \$99.88 in 2018. The Regional Group mean ranged from  
22 a low of \$85.68 in 2013 to a high of \$129.18 in 2018. The New Jersey Group mean for the

1 gas companies ranged from a low of \$48.86 in 2013 to a high of \$69.87 in 2021. The ROE  
2 Proxy Group mean for the gas companies ranged from a low of \$75.32 in 2013 to a high of  
3 \$89.12 in 2022.

4 The CAGR of PSE&G's gas distribution O&M expenses per customer over the 10-year  
5 period examined was 2.59 percent. The LDC Group's CAGR over the same period was 3.03  
6 percent, while the Regional Group's was 4.35 percent. The New Jersey Group's CAGR was  
7 2.84 percent, while the ROE Proxy Group's was 1.89 percent. Therefore, PSE&G's gas  
8 distribution O&M expense per customer increased at a lower rate over the years examined than  
9 that of the LDC, Regional, and New Jersey peer groups, and higher than that of the ROE group.

10 In 2022, PSE&G's gas distribution O&M expense per customer of \$54.29 was  
11 approximately 44 percent lower than the LDC Group mean; 57 percent lower than the Regional  
12 Group mean; 14 percent lower than the New Jersey Group mean; and 39 percent lower than  
13 the ROE Proxy Group mean.

14 **Q. How did PSE&G perform when compared to the peer groups on a gas distribution**  
15 **expense per Mcf sold basis?**

16 A. As shown on Schedule MJA-B-11 R-1, PSE&G's gas distribution O&M expense per  
17 Mcf sold was below (i.e., better than) the mean of each of the four comparison groups in every  
18 year of the analysis. PSE&G's gas distribution O&M expense per Mcf sold ranged from a low  
19 of \$0.25 in 2014 to a high of \$0.42 in 2019. The LDC Group mean ranged from a low of \$0.48  
20 in 2013 to a high of \$0.64 in 2018. The Regional Group mean ranged from a low of \$0.56 in  
21 2013 to a high of \$0.88 in 2021. The New Jersey Group mean ranged from a low of \$0.35 in

1 2013 to a high of \$0.62 in 2020. The ROE Proxy Group mean ranged from a low of \$0.45 in  
2 2013 to a high of \$0.54 in 2016.

3 The CAGR of PSE&G's total gas distribution O&M expenses per Mcf sold over the  
4 10-year period examined was 4.53 percent. The LDC Group's CAGR over the same period  
5 was 2.98 percent, while the Regional Group's was 4.71 percent. The New Jersey Group's  
6 CAGR was 4.67 percent, while the ROE Proxy Group's was 0.53 percent. Therefore,  
7 PSE&G's gas distribution O&M expense per Mcf increased at a higher rate than that of the  
8 LDC and ROE groups, and at a lower rate than that of the Regional and New Jersey groups.

9 In 2022, PSE&G's gas distribution O&M expense per Mcf sold of \$0.38 was  
10 approximately 39 percent lower than the LDC Group mean; 55 percent lower than the Regional  
11 Group mean; 28 percent lower than the New Jersey Group mean; and 19 percent lower than  
12 the ROE Proxy Group mean.

13 **Q. Did PSE&G compare well on an A&G expense per gas customer basis when**  
14 **compared to the peer groups?**

15 A. Yes. As shown on Schedule MJA-B-12 R-1, PSE&G's A&G expense per gas customer  
16 was below (i.e., better than) the group mean for each of the four comparison groups in every  
17 year of the analysis. PSE&G's A&G expense per gas customer ranged from a low of \$31.96  
18 in 2014 to a high of \$51.72 in 2022. The LDC Group mean ranged from a low of \$63.50 in  
19 2015 to a high of \$91.48 in 2022. The Regional Group mean ranged from a low of \$82.07 in  
20 2015 to a high of \$112.53 in 2022. The New Jersey Group mean ranged from a low of \$93.94  
21 in 2020 to a high of \$146.50 in 2022. The ROE Proxy Group mean ranged from a low of  
22 \$75.83 in 2015 to a high of \$99.26 in 2022.

1           The CAGR of PSE&G's A&G expenses per customer over the 10-year period  
2 examined was 3.93 percent. The LDC Group's CAGR over the same period was 3.89 percent,  
3 while the Regional Group's was 3.55 percent. The New Jersey Group's CAGR was 4.98  
4 percent, while the ROE Proxy Group's was 2.95 percent. Therefore, PSE&G's A&G expense  
5 per gas customer increased at a rate lower than that of the New Jersey group, and higher than  
6 that of the LDC, Regional, and ROE groups. In 2022, PSE&G's A&G expense per gas  
7 customer of \$51.72 was approximately 43 percent lower than the LDC Group mean; 54 percent  
8 lower than the Regional Group mean; 65 percent lower than the New Jersey Group mean; and  
9 48 percent lower than the ROE Proxy Group mean.

10 **Q.     How did PSE&G rank in the comparison of gas A&G expense per Mcf sold?**

11 A.     As shown on Schedule MJA-B-13 R-1, PSE&G's A&G expense per Mcf sold was  
12 below (i.e., better than) the group mean for each of the four comparison groups in every year  
13 of the analysis. PSE&G's A&G expense per Mcf sold ranged from a low of \$0.17 in 2014 to  
14 a high of \$0.37 in 2020. The LDC Group mean ranged from a low of \$0.43 in 2013 to a high  
15 of \$0.59 in 2020. The Regional Group mean ranged from a low of \$0.52 in 2015 to a high of  
16 \$0.76 in 2022. The New Jersey Group mean ranged from a low of \$0.65 in 2014 to a high of  
17 \$1.22 in 2022. The ROE Proxy Group mean ranged from \$0.45 in 2013 to a high of \$0.62 in  
18 2020.

19           The CAGR of PSE&G's A&G expenses per Mcf sold over the 10-year period examined  
20 was 5.89 percent. The LDC Group's CAGR over the same period was 3.68 percent, while the  
21 Regional Group's was 4.00 percent. The New Jersey Group's CAGR was 7.21 percent, while  
22 the ROE Proxy Group's was 1.98 percent. Therefore, PSE&G's A&G expense per Mcf sold



1 increased at a rate lower than that of the New Jersey group, and higher than that of the LDC,  
2 Regional, and ROE groups.

3 In 2022, PSE&G's A&G expense per Mcf sold of \$0.37 was approximately 38 percent  
4 lower than the LDC Group mean; 52 percent lower than the Regional Group mean; 70 percent  
5 lower than the New Jersey Group mean; and 32 percent lower than the ROE Proxy Group  
6 mean.

7 **Q. How did PSE&G's total non-production O&M per gas customer compare to that**  
8 **of the peer companies?**

9 A. As shown on Schedule MJA-B-14 R-1, PSE&G's total non-production O&M expense  
10 per gas customer ranged from a low of \$181.89 in 2021 to a high of \$277.07 in 2013. The  
11 LDC Group mean ranged from a low of \$261.55 in 2013 to a high of \$305.59 in 2022. The  
12 Regional Group mean ranged from a low of \$325.59 in 2013 to a high of \$385.67 in 2022. The  
13 New Jersey Group mean ranged from a low of \$290.71 in 2018 to a high of \$379.27 in 2022.  
14 The ROE Proxy Group mean ranged from a low of \$251.75 in 2018 to a high of \$278.15 in  
15 2022.

16 The CAGR of PSE&G's total non-production gas O&M expense per customer over the  
17 10-year period examined was negative 3.48 percent. The LDC Group's CAGR over the same  
18 period was 1.74 percent, while the Regional Group's was 1.90 percent. The New Jersey  
19 Group's CAGR was 2.49 percent, while the ROE Proxy Group's was 0.84 percent. Therefore,  
20 PSE&G's total non-production gas O&M expense per customer decreased over the years  
21 examined while the CAGR of each of the peer groups increased.

1 In 2022, PSE&G's total non-production O&M per gas customer of \$201.47 was  
2 approximately 34 percent lower than LDC Group mean; 48 percent lower than the Regional  
3 Group mean; 47 percent lower than the New Jersey Group mean; and 28 percent lower than  
4 the ROE Proxy Group mean.

5 **Q. Did the comparison of PSE&G's total non-production O&M expenses per Mcf**  
6 **sold bases produce similar results?**

7 A. Yes. As shown on Schedule MJA-B-15 R-1, PSE&G's total non-production O&M  
8 expenses per Mcf sold ranged from a low of \$1.29 in 2021 to a high of \$1.65 in 2013. The  
9 LDC Group mean ranged from a low of \$1.74 in 2013 to a high of \$2.05 in 2020. The Regional  
10 Group mean ranged from a low of \$2.17 in 2013 to a high of \$2.69 in 2020. The New Jersey  
11 Group mean ranged from a low of \$2.13 in 2013 to a high of \$3.17 in 2022. The ROE Proxy  
12 Group mean ranged from a low of \$1.47 in 2022 to a high of \$1.81 in 2020.

13 The CAGR of PSE&G's total non-production O&M expenses per Mcf over the 10-year  
14 period examined was negative 1.65 percent. The LDC Group's CAGR over the same period  
15 was 1.66 percent, while the Regional Group's was 2.16 percent. The New Jersey Group's  
16 CAGR was 4.53 percent, while the ROE Proxy Group's was negative 0.84 percent. Therefore,  
17 PSE&G's total non-production O&M expenses per Mcf decreased over the years examined.  
18 This decrease was greater than the ROE group decrease, while the CAGR for the LDC,  
19 Regional and New Jersey groups increased.

20 In 2022, PSE&G's total non-production O&M expenses per Mcf sold of \$1.42 was  
21 approximately 29 percent lower than the LDC Group mean; 46 percent lower than the Regional

1 Group mean; 55 percent lower than the New Jersey Group mean; and 3 percent lower than the  
2 ROE Proxy Group mean.

3 **V. RELIABILITY**

4 **Q. Beyond PSE&G's financial performance, did you compare PSE&G's operational**  
5 **performance to that of other electric companies?**

6 A. Yes. I reviewed PSE&G's reported System Average Interruption Duration Index  
7 ("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average  
8 Interruption Duration Index ("CAIDI") to those of the other New Jersey electric companies as  
9 reported to the EIA via Form 861 and reported to the IEEE via IEEE's annual benchmarking  
10 survey.

11 **Q. What does the SAIDI metric represent?**

12 A. SAIDI is the system average duration of interruptions that a customer would experience  
13 during a period, which in the case of the New Jersey data, reflects a calendar year.

14 **Q. How did PSE&G's SAIDI performance compare to that of the other New Jersey**  
15 **electric companies?**

16 A. As shown on Schedule MJA-B-16 R-1, for the years 2013 through 2022, PSE&G's  
17 reported SAIDI was consistently below (better than) that of the other New Jersey electric  
18 companies that reported comparable metrics. PSE&G's SAIDI ranged from 33.94 in 2022 to  
19 55.10 in 2018. Atlantic City Electric Company's ("ACE") SAIDI ranged from 51.00 in 2022  
20 to 135.00 in 2013 and Jersey Central Power & Light Company's ("JCP&L") SAIDI ranged  
21 from 101.70 in 2015 to 192.36 in 2021. Therefore, PSE&G's electric customers, on average,

1 experienced interruptions of service of shorter durations than did the customers of the other  
2 New Jersey utilities.

3 **Q. What does the SAIFI metric represent?**

4 A. SAIFI is the average number of interruptions (i.e. frequency) that a customer would  
5 experience during a period, which in the case of the New Jersey data, reflects a calendar year.

6 **Q. How did PSE&G's SAIFI performance compare to that of the other New Jersey**  
7 **electric companies?**

8 A. As shown on Schedule MJA-B-17 R-1, for the years 2013 through 2022, PSE&G's  
9 reported SAIFI was consistently below (i.e., better than) that of the other New Jersey electric  
10 companies that reported comparable metrics. PSE&G's SAIFI ranged from 0.55 in 2022 to  
11 0.79 in 2018. ACE's SAIFI ranged from 0.65 in 2022 to 1.45 in 2013 and JCP&L's SAIFI  
12 ranged from 1.09 in 2015 to 1.69 in 2020. Therefore, PSE&G's electric customers, on average,  
13 experienced interruptions of service less frequently than did the customers of the other New  
14 Jersey utilities.

15 **Q. What does the CAIDI metric represent?**

16 A. CAIDI measures the average restoration time during an outage for only customers who  
17 actually experienced an interruption and is most often reported in minutes.

18 **Q. How did PSE&G's CAIDI performance compare to that of the other New Jersey**  
19 **electric companies?**

20 A. As shown on Schedule MJA-B-18 R-1, for the years 2013 through 2022, PSE&G's  
21 reported CAIDI ranged from 60.39 in 2015 to 72.13 in 2020. ACE's CAIDI ranged from 75.69

1 in 2017 to 102.50 in 2014 and JCP&L's CAIDI ranged from 93.30 in 2015 to 122.12 in 2022.  
2 Based upon the reported figures, not only did PSE&G's customers experience fewer  
3 interruptions; if interruptions were experienced, PSE&G's customers' power was restored  
4 more quickly than the power of other companies' customers.

5 **Q. Does the IEEE also collect and report data for SAIDI, SAIFI, and CAIDI of**  
6 **electric utilities in the United States?**

7 A. Yes. The IEEE initiated a benchmarking study in 2003 and the study is conducted  
8 annually. Participants are anonymous and are identified by key identifier only, to retain  
9 anonymity. While the participation list is not revealed, each participant can choose to share its  
10 results.

11 **Q. Have you compared PSE&G's performance to the IEEE's 2022 study results?**

12 A. Yes.

13 **Q. Please describe how PSE&G's SAIFI performance for the years 2013 to 2022**  
14 **compared to data reported by the IEEE.**

15 A. As shown on Schedule MJA-B-19 R-1, PSE&G's reported SAIFI was in the first  
16 quartile of all utilities' SAIFI reported to the IEEE during each of the years 2013 to 2022,  
17 indicating that, at the very least, PSE&G was in the top 25% of all utilities surveyed. PSE&G's  
18 SAIFI ranged from 0.55 in 2022 to 0.78 in 2018.

19 **Q. Why are PSE&G's SAIFI figures reported in the IEEE study different than those**  
20 **reported to the EIA, as you discussed previously?**

21 A. It is my understanding that the EIA and IEEE have different definitions regarding major  
22 events and how they are established and as a result, the SAIFI figures are different.

1 **Q. Does the IEEE also report CAIDI figures?**

2 A. Yes. As shown on Schedule MJA-B-20 R-1, PSE&G's reported CAIDI was again  
3 solidly in the first quartile when compared to the companies participating in the IEEE study.  
4 PSE&G's CAIDI ranged from 60.53 in 2015 to 72.06 in 2020.

5 **Q. Does the IEEE study also benchmark utilities' System Average Interruption  
6 Duration Index ("SAIDI")?**

7 A. Yes, it does.

8 **Q. What is the difference between CAIDI and SAIDI?**

9 A. CAIDI reports duration on a customer basis and SAIDI reports duration on a system-  
10 wide basis.

11 **Q. How did PSE&G's SAIDI compare to the IEEE study participants?**

12 A. As shown on Schedule MJA-B-21 R-1, PSE&G's SAIDI was also in the first quartile  
13 of metrics reported in the IEEE study for all years examined. PSE&G's SAIDI ranged from  
14 33.94 in 2022 to 53.51 in 2018.

15 **VI. CUSTOMER SATISFACTION**

16 **Q. What customer satisfaction information did you review?**

17 A. JD Power conducts and reports the results of annual customer satisfaction surveys.  
18 PSE&G is included in JD Power's Customer Satisfaction Studies in the "Large Utility East"  
19 segment. JD Power conducts customer satisfaction surveys of (1) electric residential

1 customers; (2) electric business customers; (3) gas residential customers; and (4) gas business  
2 customers.

3 **Q. Based upon JD Power’s reported results for the years 2014 through 2023, where**  
4 **did PSE&G rank, based upon the feedback from electric residential customers?**

5 A. As shown on Schedule MJA-B-22 R-1, PSE&G was ranked in the first quartile in every  
6 year of the analysis, except for 2014, when it ranked in the second quartile. In the most recent  
7 results released by JD Power for the calendar year 2023, electric residential customers ranked  
8 PSEG in the first quartile (and first overall) with a rating of 759.

9 **Q. How did PSE&G rank based upon JD Power’s survey of its electric business**  
10 **customers during the years 2014 through 2023?**

11 A. As shown on Schedule MJA-B-23 R-1, PSE&G was ranked in the first or second  
12 quartile by its electric business customers during each of the years 2014 through 2023. PSE&G  
13 was ranked in the first quartile (and first overall) by its electric business customers in the most  
14 recent survey, i.e., 2023.

15 **Q. Based upon JD Power’s reported results for the years 2014 through 2023, where**  
16 **did PSE&G rank based upon the feedback from its gas residential customers?**

17 A. As shown on Schedule MJA-B-24 R-1, PSE&G was ranked in the first or second  
18 quartile by its gas residential customers in each of the years 2014 through 2023. It should also  
19 be noted that PSE&G’s gas residential customer satisfaction rating improved year-over-year  
20 for nine straight years, from 2014 to 2022. In the most recent results released by JD Power for  
21 the calendar year 2023, gas residential customers ranked PSEG in the first quartile (and second  
22 overall) with a rating of 761.

1 **Q. How did PSE&G rank based upon JD Power’s survey of its gas business**  
2 **customers during the years 2014 through 2023?**

3 A. As shown on Schedule MJA-B-25 R-1, PSE&G’s gas business customer satisfaction  
4 rating was ranked in the second quartile in 2023.

5 **VII. SUMMARY AND CONCLUSIONS**

6 **Q. What are your conclusions based upon the analyses that you prepared?**

7 A. PSE&G’s O&M costs of the gas and electric businesses compare favorably to those of  
8 peer group averages. PSEG’s ability to control costs, with some cost items having a negative  
9 CAGR over the period examined, is remarkable. Similarly, PSE&G’s reliability and customer  
10 satisfaction scores indicate strong performance and a focus on improvement.

11 Given PSE&G’s strong performance, as set forth in my testimony, I am recommending  
12 that the results of the benchmarking analyses be considered by Company witness Ann Bulkley  
13 when establishing her recommended range of return on equity values for PSE&G’s electric  
14 and gas businesses. In my opinion, it is appropriate for the BPU to set PSE&G’s ROE at the  
15 upper end of Ms. Bulkley’s range of return on equity in recognition of the Company’s  
16 consistently strong cost control, operational performance, service quality and customer  
17 satisfaction performance. Therefore, I recommend that PSE&G’s authorized return on equity  
18 be established at a level that reflects PSE&G’s strong performance and cost management in an  
19 operating environment where costs tend to be higher.

20 **Q. Does this conclude your direct testimony?**

21 A. Yes, it does.



**Companies Included in Electric Comparisons**

Operating Company	Electric Distribution	[1] Electric Group	[2] Regional Group	[3] New Jersey Group	[4] ROE Proxy Group	[5] ROE Proxy Company Parent Ticker
Ameren Illinois Company	IL	✓			✓	AEE
Atlantic City Electric Company	NJ	✓	✓	✓		
Baltimore Gas and Electric Company	MD	✓	✓			
Black Hills Colorado Electric, Inc.	CO				✓	BKH
CenterPoint Energy Houston Electric, LLC	TX	✓			✓	CNP
Commonwealth Edison Company	IL	✓				
Consolidated Edison Company of New York, Inc.	NY	✓	✓		✓	ED
Delmarva Power & Light Company	DE, MD	✓	✓			
Duquesne Light Company	PA	✓	✓			
Jersey Central Power & Light Company	NJ	✓	✓	✓		
Massachusetts Electric Company	MA	✓				
Metropolitan Edison Company	PA	✓	✓			
New York State Electric & Gas Corporation	NY	✓	✓			
Niagara Mohawk Power Corporation	NY	✓	✓			
NSTAR Electric Company	MA	✓			✓	ES
Ohio Edison Company	OH	✓				
Oncor Electric Delivery Company LLC	TX	✓				
Orange and Rockland Utilities, Inc.	NJ, NY				✓	ED
PECO Energy Company	PA	✓	✓			
Pennsylvania Electric Company	NY, PA	✓	✓			
Potomac Electric Power Company	DC, MD	✓	✓			
PPL Electric Utilities Corporation	PA	✓	✓			
Public Service Company of New Hampshire	NH	✓			✓	ES
Public Service Electric and Gas Company	NJ	✓	✓	✓	✓	PEG
Rockland Electric Company	NJ			✓	✓	ED
Sharyland Utilities, L.L.C.	TX				✓	SRE
The Cleveland Electric Illuminating Company	OH	✓				
The Connecticut Light and Power Company	CT	✓	✓		✓	ES
West Penn Power Company	PA	✓	✓			

[1] Electric Group includes all operating companies classified by SNL as “Electric Utility” or “Diversified Utility” which owned no regulated generation, and had a customer count of more than 500,000.

[2] Regional Group includes all companies in the “Electric Group” having electric distribution operations in Connecticut, Delaware, Maryland, New Jersey, New York, or Pennsylvania.

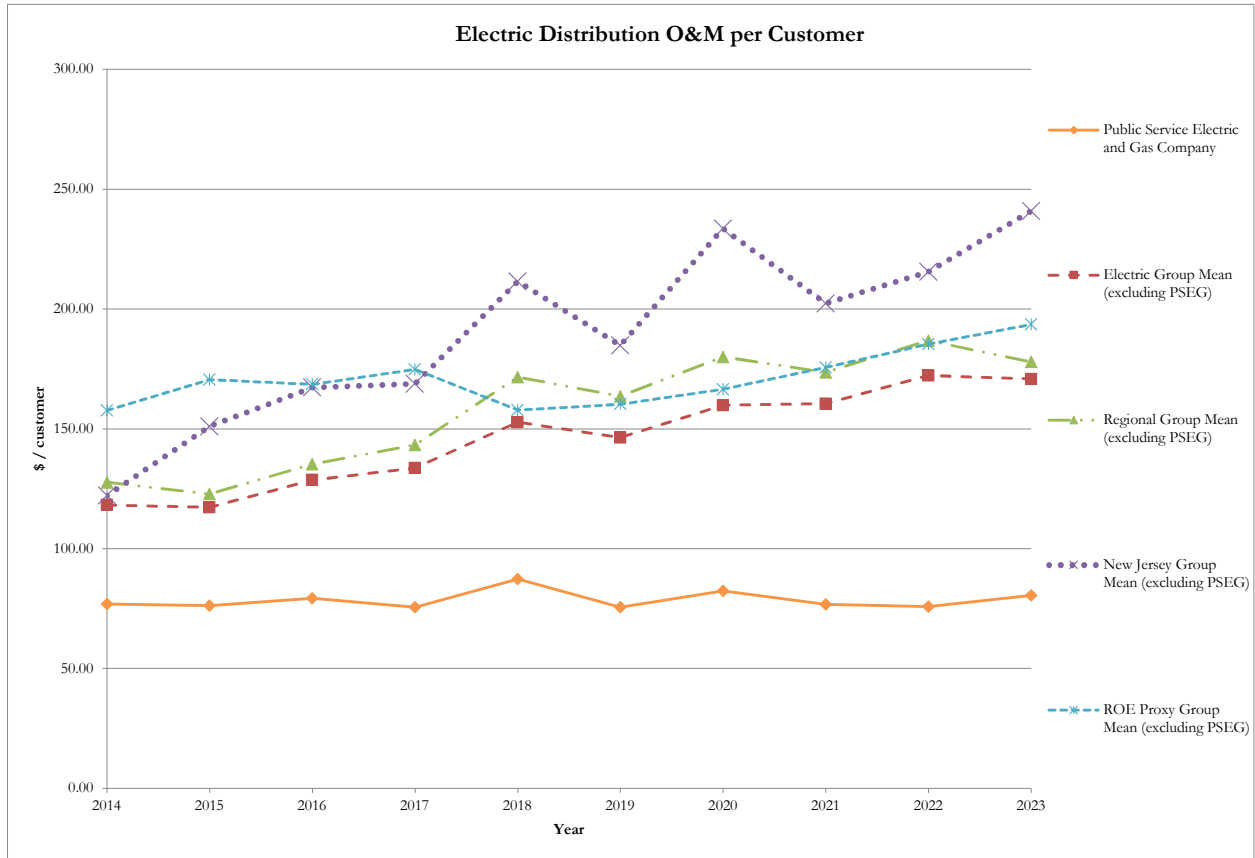
[3] New Jersey Group includes all companies with electric distribution operations in New Jersey.

[4] ROE Proxy Group includes all operating companies classified by SNL as “Electric Utility” or “Diversified Utility” which owned no regulated generation and are owned by the holding companies included in Company witness Bulkley’s cost of capital recommendation.

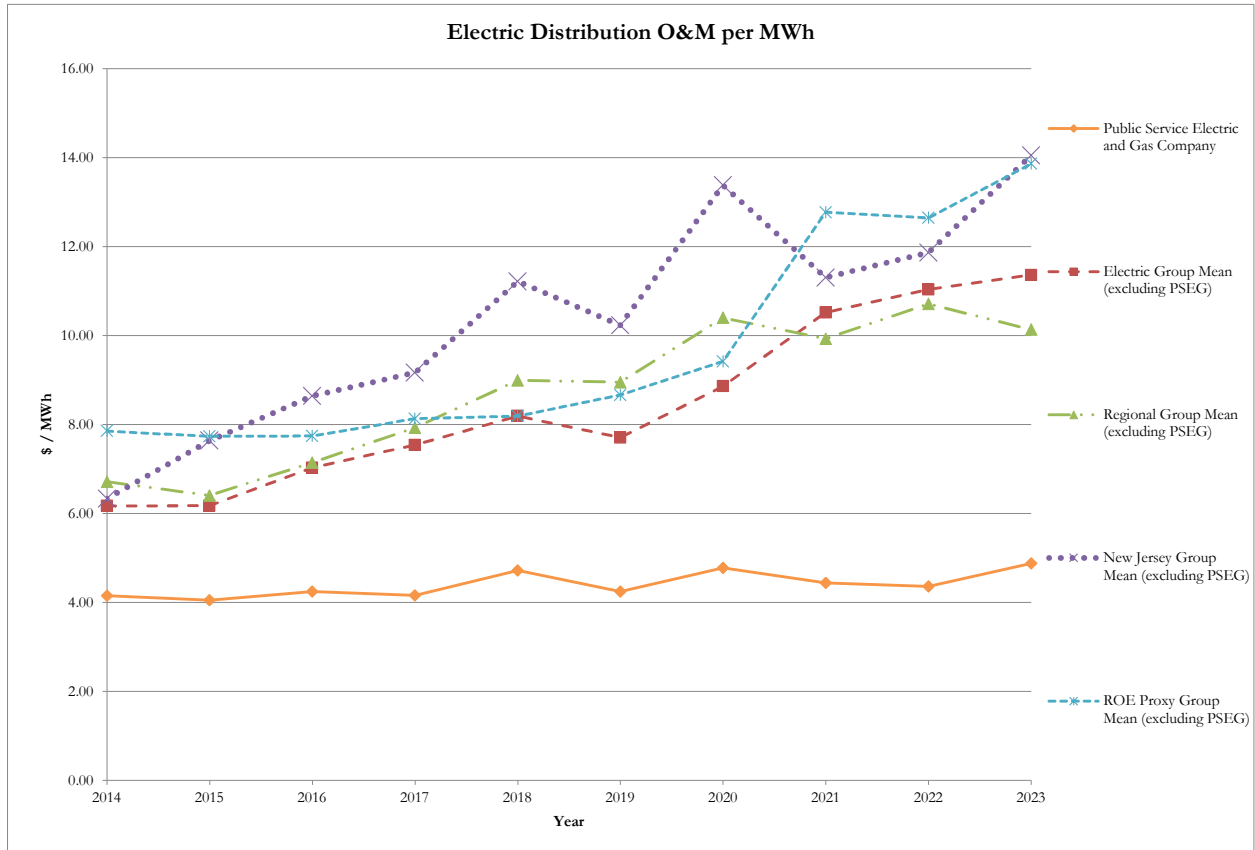
**Companies Included in Gas Comparisons**

Company	[1] LDC Group	[2] Regional Group	[3] New Jersey Group	[4] ROE Proxy Group	[5] ROE Proxy Company Parent Ticker
Ameren Illinois Company - IL	✓			✓	AEE
Atlanta Gas Light Company - GA	✓			✓	SO
Avista Corporation - ID				✓	AVA
Avista Corporation - OR				✓	AVA
Avista Corporation - WA				✓	AVA
Baltimore Gas and Electric Company - MD	✓	✓			
Black Hills Colorado Gas, Inc. - CO				✓	BKH
Black Hills Energy Arkansas, Inc. - AR				✓	BKH
Black Hills Gas Distribution LLC - WY				✓	BKH
Black Hills Iowa Gas Utility Company, LLC - IA				✓	BKH
Black Hills Kansas Gas Utility Company, LLC - KS				✓	BKH
Black Hills Nebraska Gas, LLC - NE				✓	BKH
Boston Gas Company - MA	✓				
Brooklyn Union Gas Company - NY	✓	✓			
CenterPoint Energy Resources Corp. - TX	✓			✓	CNP
CenterPoint Energy Resources Corp. - MN	✓			✓	CNP
CenterPoint Energy Resources Corp. - AR				✓	CNP
CenterPoint Energy Resources Corp. - LA				✓	CNP
CenterPoint Energy Resources Corp. - OK				✓	CNP
CenterPoint Energy Resources Corp. - TX				✓	CNP
CenterPoint Energy Resources Corp. - LA				✓	CNP
CenterPoint Energy Resources Corp. - MS				✓	CNP
Chattanooga Gas Company - TN				✓	SO
Cheyenne Light, Fuel and Power Company - WY				✓	BKH
Columbia Gas of Ohio, Inc. - OH	✓				
Consolidated Edison Company of New York, Inc. - NY	✓	✓		✓	ED
Consumers Energy Company - MI	✓			✓	CMS
Dominion Energy, Inc. - UT	✓				
DTE Gas Company - MI	✓				
Elizabethtown Gas Company - NJ			✓		
Eversource Gas Company of Massachusetts - MA				✓	ES
Indiana Gas Company, Inc. - IN	✓			✓	CNP
Kansas Gas Service Company, Inc. - KS	✓				
KeySpan Gas East Corporation - NY	✓	✓			
Madison Gas and Electric Company - WI				✓	MGEE
Michigan Gas Utilities Corporation - MI				✓	WEC
MidAmerican Energy Company - IA	✓				
Minnesota Energy Resources Corporation - MN				✓	WEC
National Fuel Gas Distribution Corporation - NY	✓	✓			
New Jersey Natural Gas Company - NJ	✓	✓	✓		
New Mexico Gas Company, Inc. - NM	✓				
Niagara Mohawk Power Corporation - NY	✓	✓			
North Shore Gas Company - IL				✓	WEC
Northern Illinois Gas Company - IL	✓			✓	SO
Philadelphia Gas Works Co. - PA	✓	✓			
Piedmont Natural Gas Company, Inc. - NC	✓				
Public Service Company of Colorado - CO	✓			✓	XEL
Public Service Company of North Carolina, Incorporated - NC	✓				
Public Service Electric and Gas Company - NJ	✓	✓	✓		
Puget Sound Energy, Inc. - WA	✓				
San Diego Gas & Electric Company - CA	✓			✓	SRE
South Jersey Gas Company - NJ			✓		
Southern California Gas Company - CA	✓			✓	SRE
Southern Indiana Gas and Electric Company - IN				✓	CNP
Southwest Gas Corporation - NV	✓				
Spire Missouri Inc. - MO	✓				
Texas Gas Service Company, Inc. - TX	✓				
The East Ohio Gas Company - OH	✓				
The Peoples Gas Light and Coke Company - IL	✓			✓	WEC
UGI Utilities, Inc. - PA	✓	✓			
Vectren Energy Delivery of Ohio, Inc. - OH				✓	CNP
Virginia Natural Gas, Inc. - VA				✓	SO
Wisconsin Electric Power Company - WI	✓			✓	WEC
Wisconsin Gas LLC - WI	✓			✓	WEC
Yankee Gas Services Company - CT				✓	ES

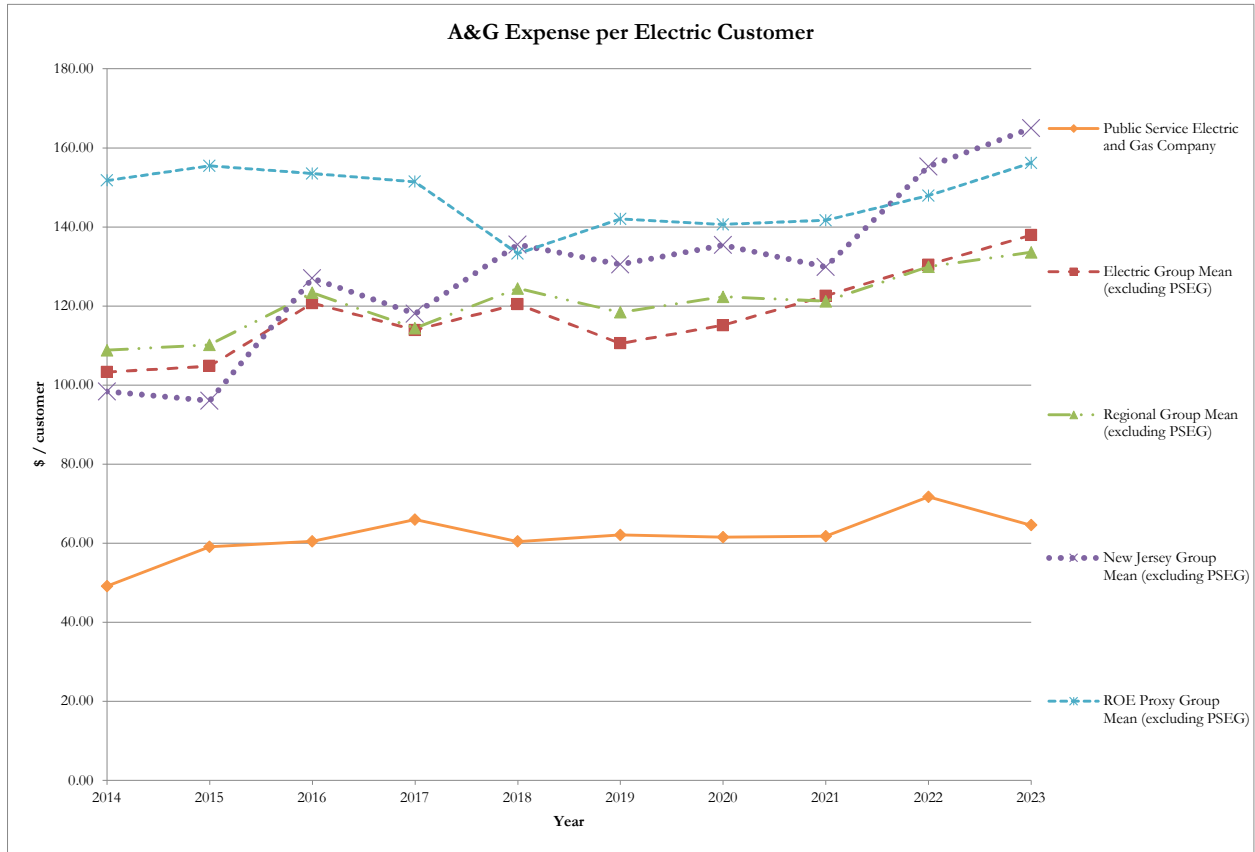
- [1] LDC Group includes all natural gas distribution companies with a customer count of more than 500,000.
- [2] Regional Group includes all companies in the "LDC Group" having natural gas distribution operations in Connecticut, Delaware, Maryland, New Jersey, New York, or Pennsylvania.
- [3] New Jersey Group includes all companies with natural gas distribution operations in New Jersey.
- [4] ROE Proxy Group includes all natural gas distribution companies that are owned by the holding companies included in Company witness Bulkeley's cost of capital recommendation.



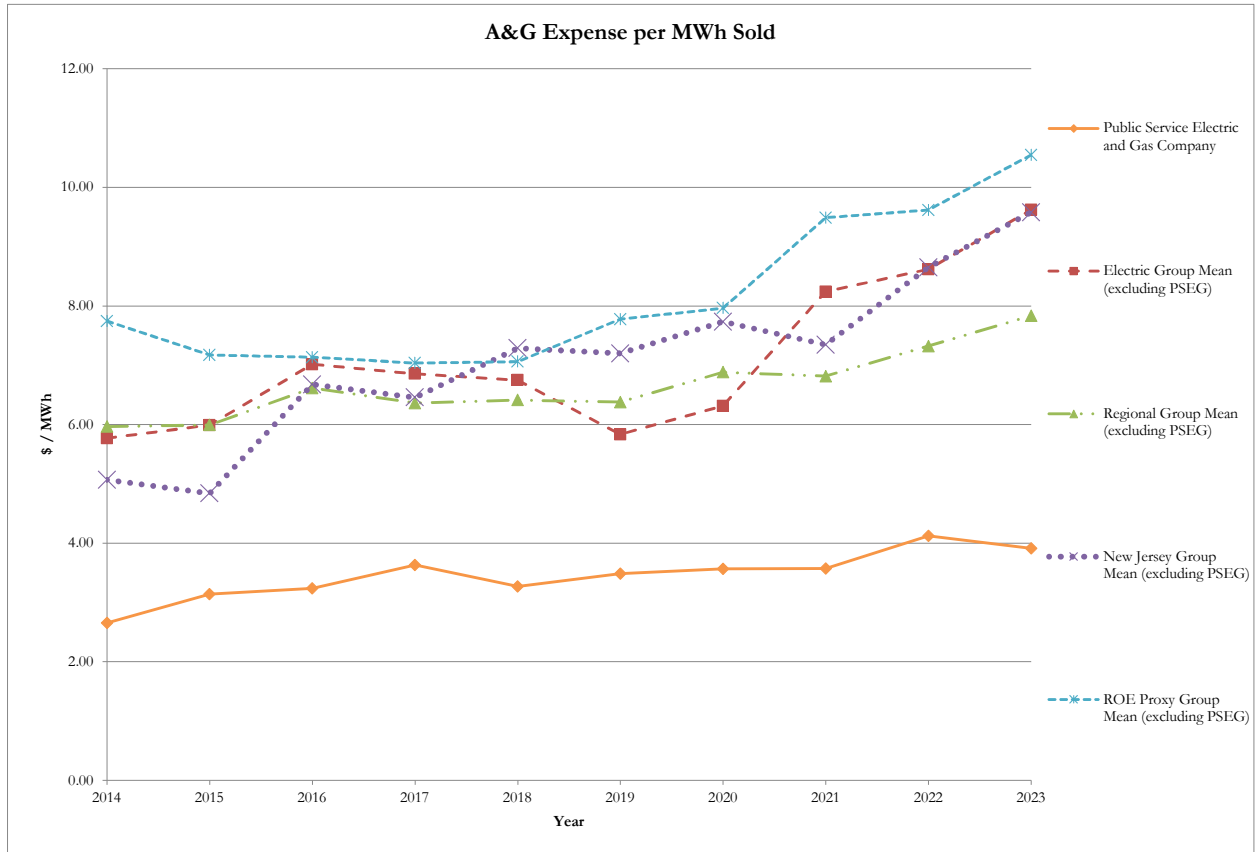
Electric Distribution O&M per Customer										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	76.89	76.25	79.27	75.47	87.26	75.59	82.40	76.76	75.86	80.51
Electric Group Mean (excluding PSEG)	118.21	117.23	128.62	133.59	152.70	146.33	159.77	160.49	172.26	170.76
Regional Group Mean (excluding PSEG)	127.67	122.79	135.29	143.23	171.54	163.53	179.97	173.59	186.82	177.92
New Jersey Group Mean (excluding PSEG)	122.08	151.05	167.24	168.73	211.53	184.79	202.33	215.55	240.88	240.88
ROE Proxy Group Mean (excluding PSEG)	157.63	170.47	168.58	174.74	157.86	160.29	166.52	175.54	185.36	193.53



<b>Electric Distribution O&amp;M per MWh</b>										
<i>Annual Values</i>										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	4.15	4.05	4.24	4.16	4.72	4.25	4.78	4.44	4.36	4.88
Electric Group Mean (excluding PSEG)	6.17	6.18	7.03	7.54	8.19	7.71	8.86	10.52	11.04	11.36
Regional Group Mean (excluding PSEG)	6.71	6.41	7.14	7.93	8.99	8.95	10.40	9.93	10.71	10.13
New Jersey Group Mean (excluding PSEG)	6.33	7.64	8.64	9.17	11.22	10.23	13.38	11.30	11.86	14.05
ROE Proxy Group Mean (excluding PSEG)	7.85	7.73	7.74	8.13	8.19	8.66	9.42	12.77	12.65	13.86



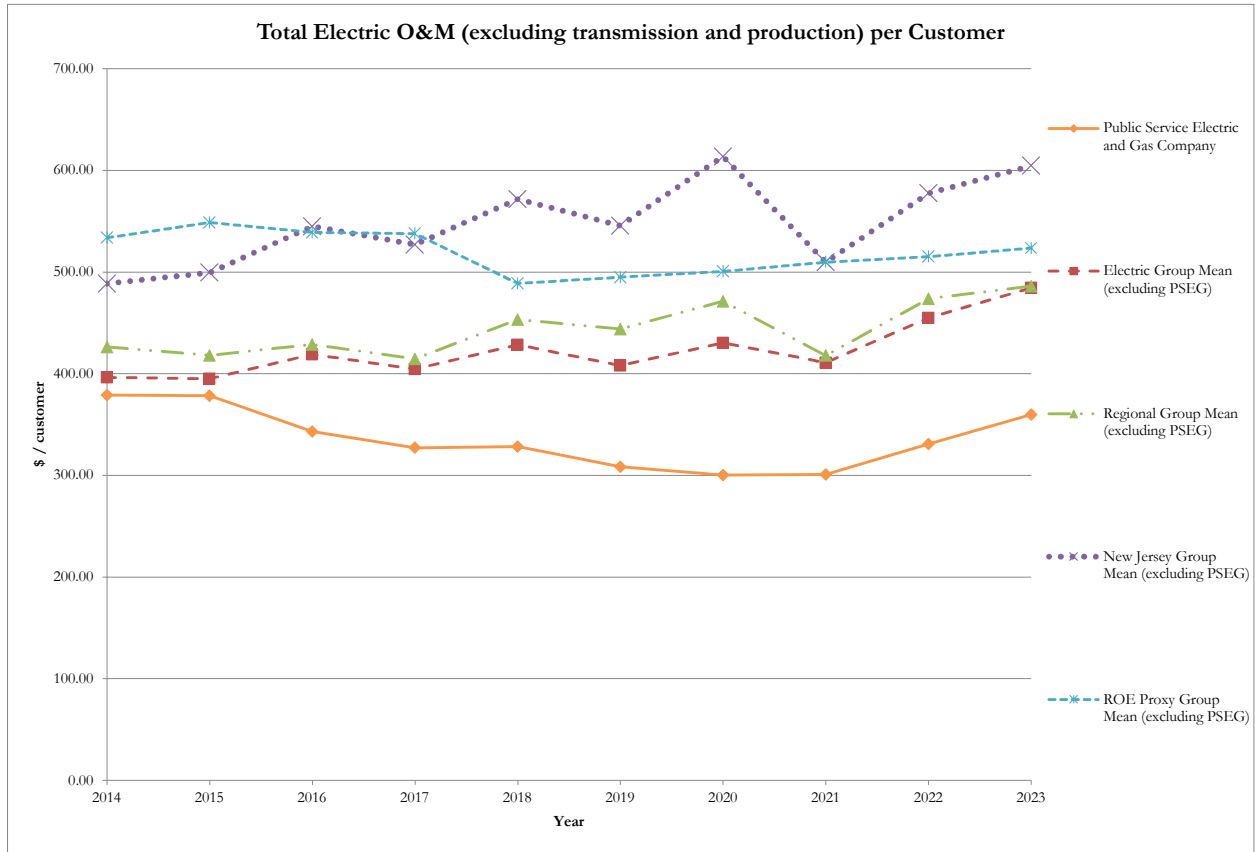
A&G Expense per Electric Customer										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	49.12	59.11	60.45	65.95	60.43	62.07	61.50	61.76	71.69	64.55
Electric Group Mean (excluding PSEG)	103.25	104.79	120.69	113.89	120.46	110.52	115.11	122.57	130.43	137.90
Regional Group Mean (excluding PSEG)	108.80	110.19	123.33	114.40	124.44	118.38	122.29	121.15	129.92	133.55
New Jersey Group Mean (excluding PSEG)	98.32	96.02	126.96	117.99	135.53	130.50	135.37	129.84	155.25	164.93
ROE Proxy Group Mean (excluding PSEG)	151.74	155.44	153.47	151.40	133.23	141.99	140.60	141.65	147.90	156.16



<b>A&amp;G Expense per MWh Sold</b>										
<i>Annual Values</i>										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	2.65	3.14	3.24	3.63	3.27	3.49	3.56	3.57	4.12	3.91
Electric Group Mean (excluding PSEG)	5.77	5.99	7.01	6.86	6.75	5.83	6.31	8.24	8.62	9.62
Regional Group Mean (excluding PSEG)	5.97	5.99	6.61	6.36	6.41	6.38	6.88	6.82	7.32	7.83
New Jersey Group Mean (excluding PSEG)	5.07	4.84	6.68	6.46	7.29	7.20	7.73	7.34	8.65	9.58
ROE Proxy Group Mean (excluding PSEG)	7.74	7.17	7.14	7.04	7.06	7.78	7.96	9.49	9.62	10.55

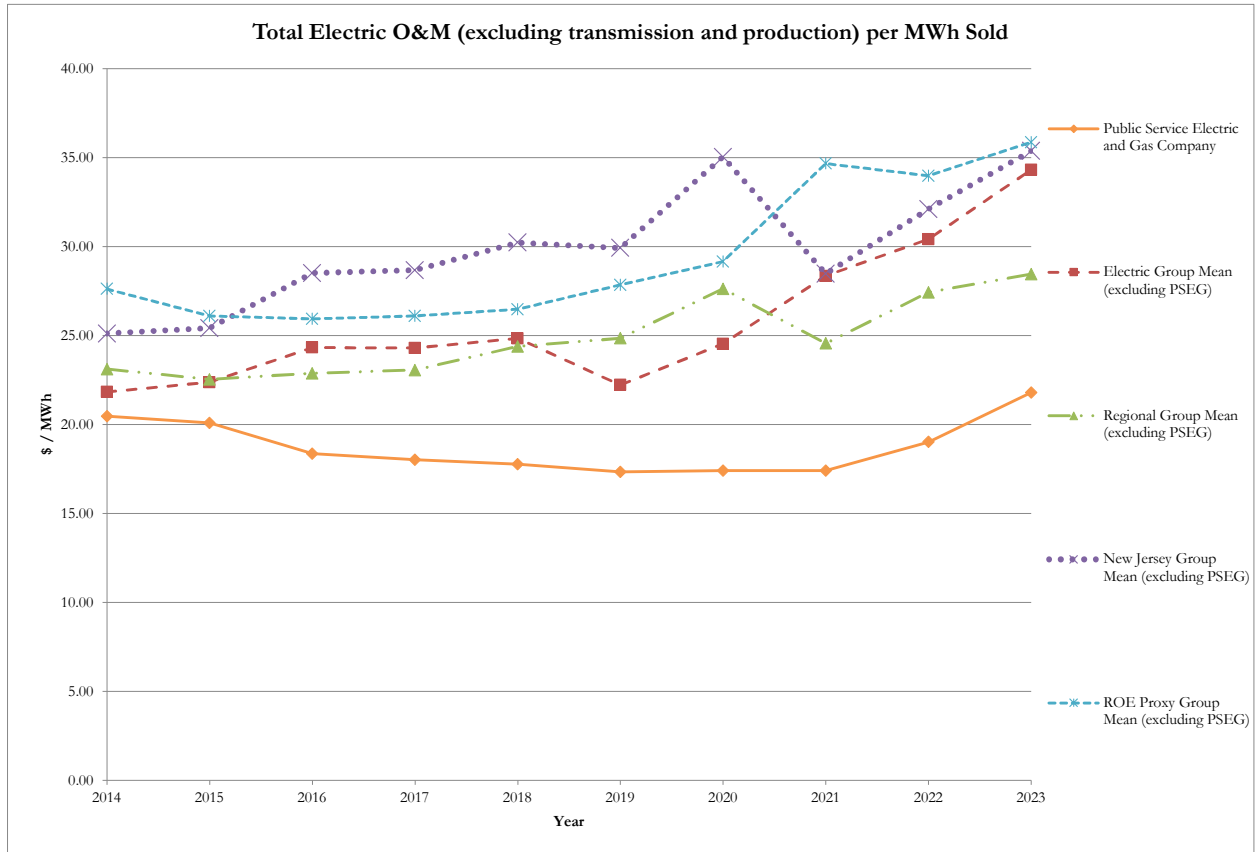


Salaries, Wages, Pensions, and Benefits Expense (\$000) per Employee										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	118.26	126.71	126.74	128.67	129.04	117.95	122.80	119.68	119.24	140.09
Electric Group Mean (excluding PSEG)	134.98	140.62	128.56	130.56	135.37	151.02	154.64	128.99	144.76	160.26
Regional Group Mean (excluding PSEG)	135.32	135.53	131.06	129.43	127.36	143.96	150.04	113.77	135.51	156.43
New Jersey Group Mean (excluding PSEG)	156.76	146.54	139.46	135.85	125.70	153.08	151.93	80.79	129.47	150.88
ROE Proxy Group Mean (excluding PSEG)	138.21	169.55	140.25	147.94	167.68	178.20	191.54	200.90	193.90	191.87

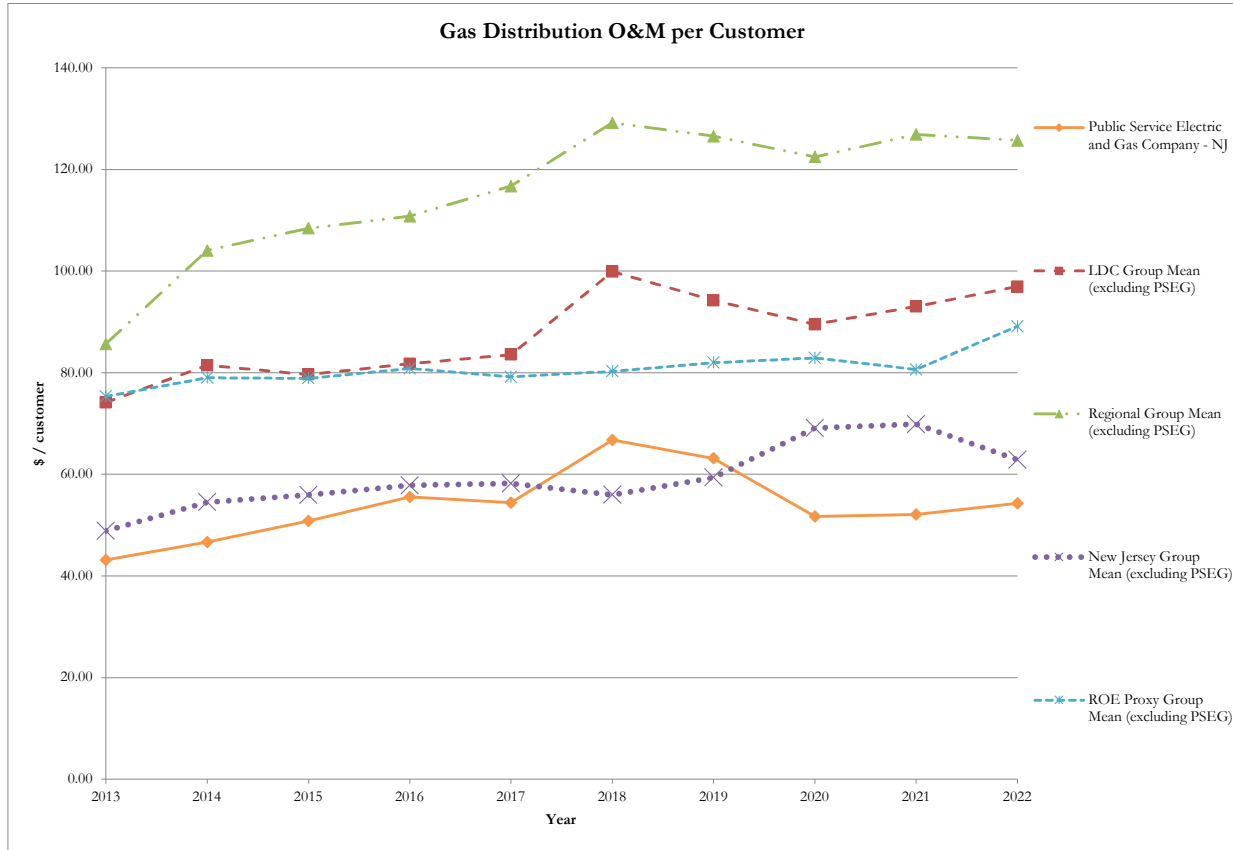


Total Electric O&M (excluding transmission and production) per Customer										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	378.98	378.28	343.01	327.24	328.36	308.52	300.34	300.88	330.89	359.74
Electric Group Mean (excluding PSEG)	396.26	395.02	419.04	404.50	428.40	407.89	430.41	410.70	454.89	484.34
Regional Group Mean (excluding PSEG)	426.11	418.01	428.80	414.58	453.27	443.95	471.23	417.86	473.73	486.10
New Jersey Group Mean (excluding PSEG)	488.64	499.38	544.98	526.98	571.57	545.58	613.51	509.54	577.53	604.52
ROE Proxy Group Mean (excluding PSEG)	533.70	548.69	538.93	537.78	488.76	494.91	500.67	509.78	515.19	523.42

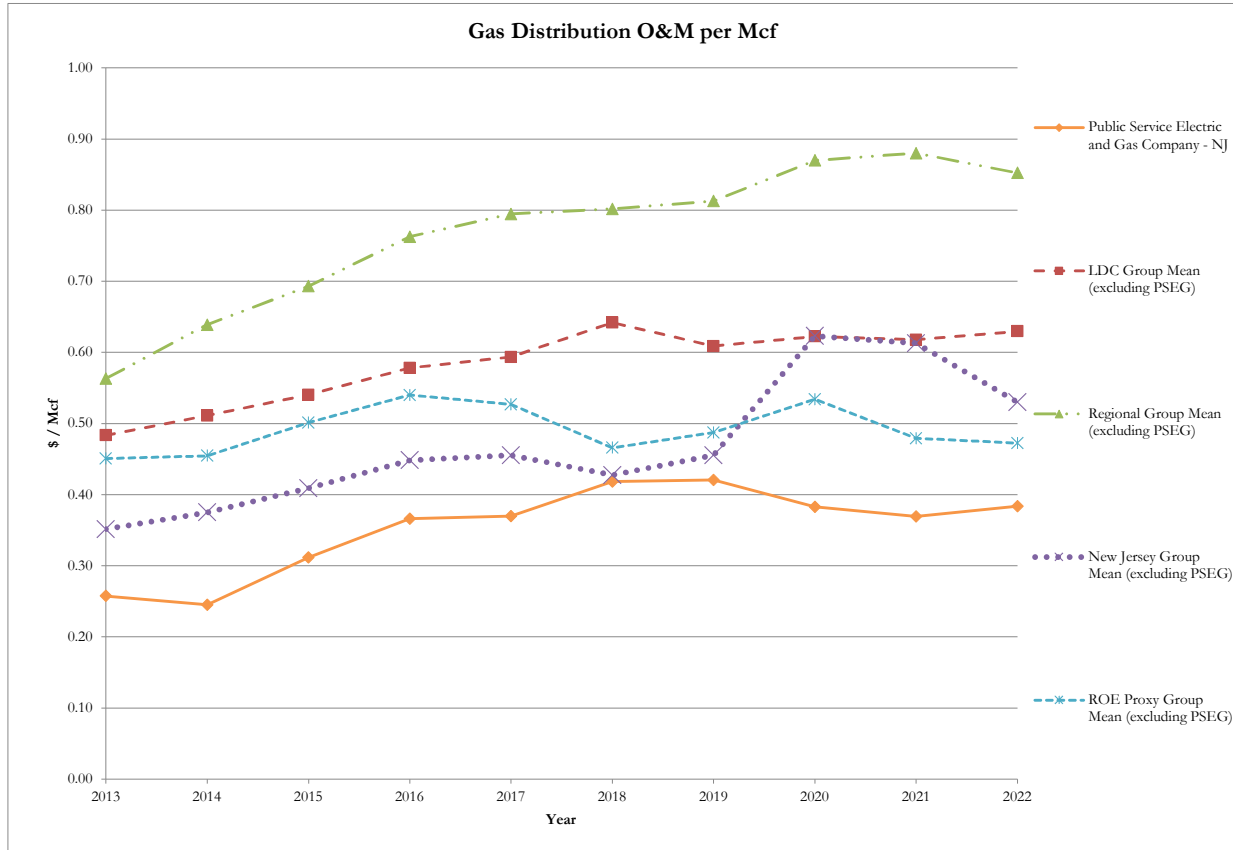




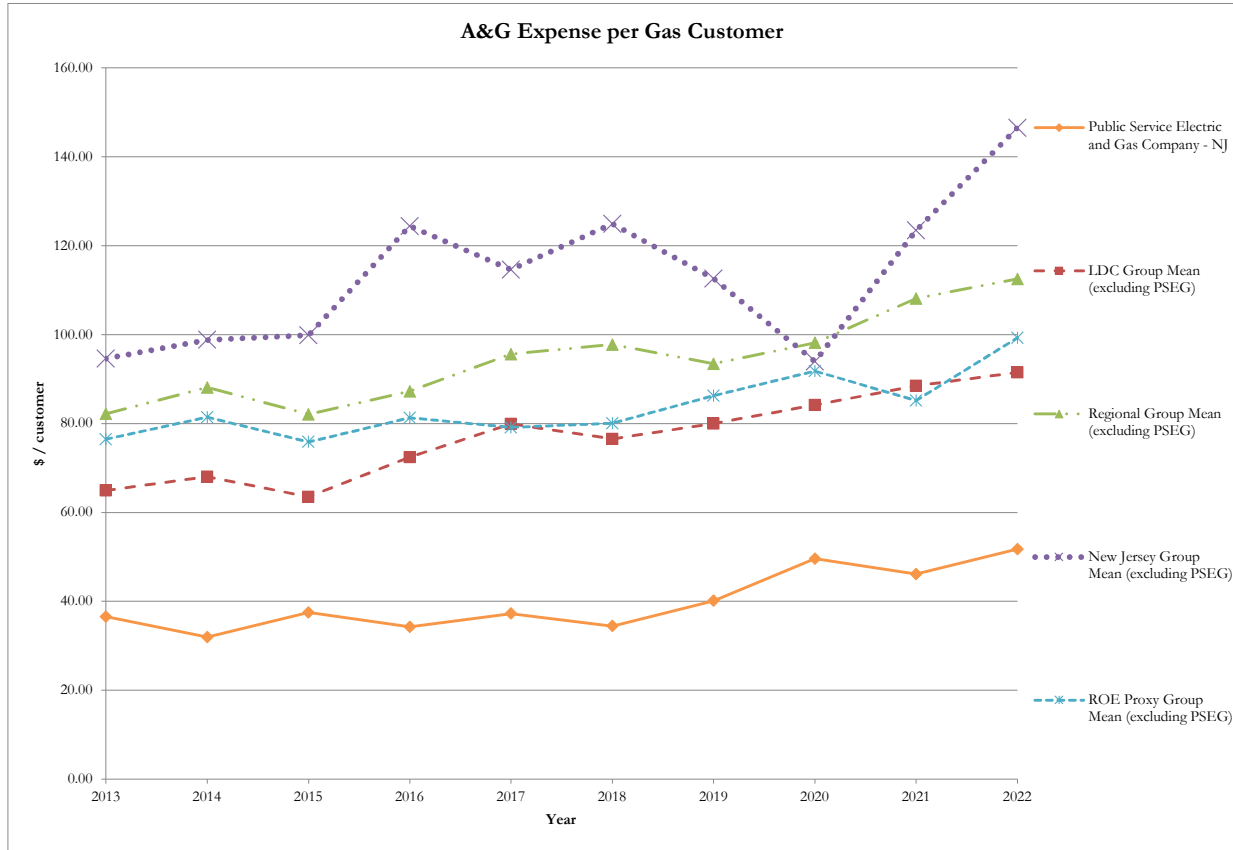
Total Electric O&M (excluding transmission and production) per MWh Sold										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	20.47	20.09	18.37	18.02	17.76	17.33	17.41	17.40	19.02	21.81
Electric Group Mean (excluding PSEG)	21.83	22.38	24.33	24.30	24.84	22.22	24.53	28.35	30.42	34.31
Regional Group Mean (excluding PSEG)	23.12	22.54	22.88	23.06	24.40	24.85	27.63	24.56	27.43	28.45
New Jersey Group Mean (excluding PSEG)	25.12	25.42	28.51	28.67	30.23	29.92	35.04	28.47	32.11	35.37
ROE Proxy Group Mean (excluding PSEG)	27.62	26.10	25.94	26.10	26.47	27.84	29.16	34.67	33.98	35.87



<b>Gas Distribution O&amp;M per Customer</b>										
<i>Annual Values</i>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	43.12	46.65	50.80	55.55	54.43	66.77	63.14	51.73	52.08	54.29
LDC Group Mean (excluding PSEG)	74.13	81.43	79.64	81.77	83.55	99.88	94.23	89.51	93.01	96.95
Regional Group Mean (excluding PSEG)	85.68	104.04	108.43	110.79	116.69	129.18	126.53	122.47	126.88	125.73
New Jersey Group Mean (excluding PSEG)	48.86	54.51	55.91	57.84	58.19	55.96	59.36	69.09	69.87	62.87
ROE Proxy Group Mean (excluding PSEG)	75.32	79.01	78.88	80.79	79.19	80.28	81.98	82.89	80.61	89.12



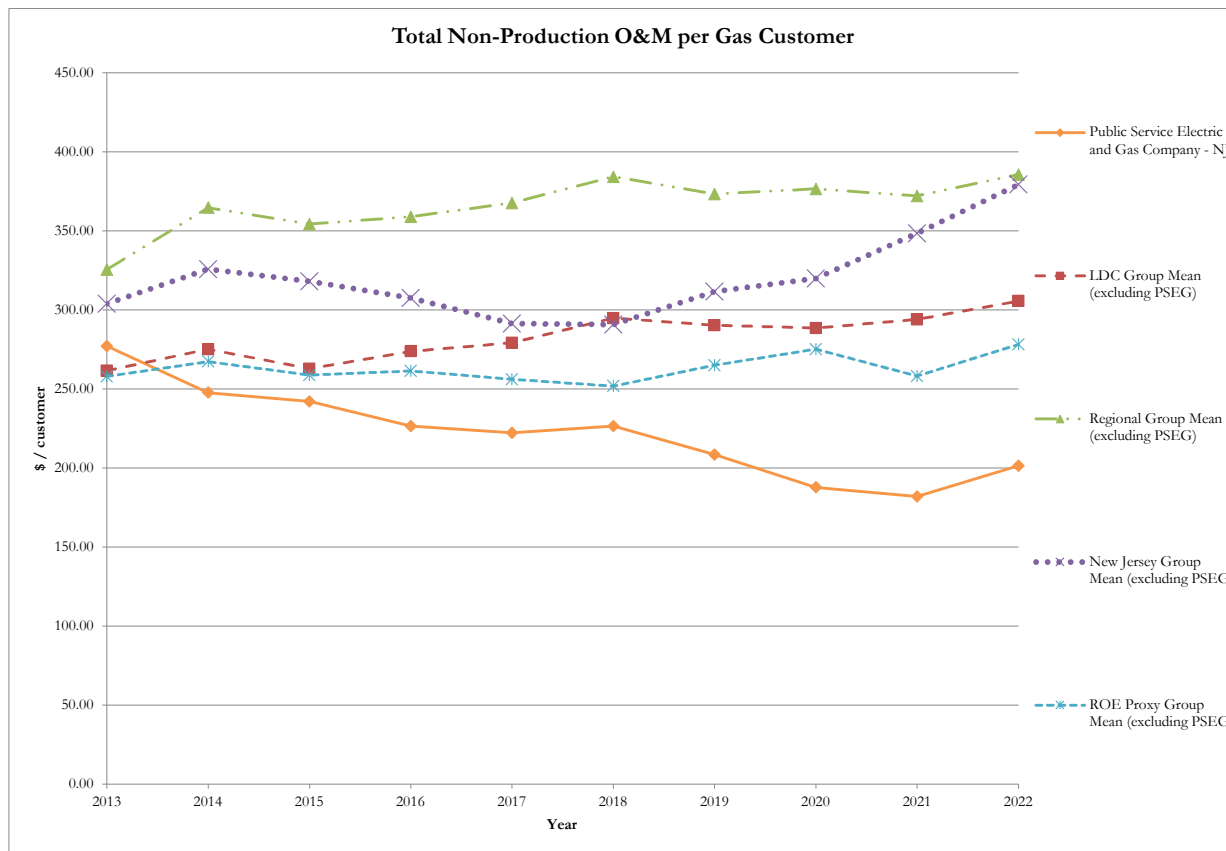
Gas Distribution O&M per Mcf										
Annual Values										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	0.26	0.25	0.31	0.37	0.37	0.42	0.42	0.38	0.37	0.38
LDC Group Mean (excluding PSEG)	0.48	0.51	0.54	0.58	0.59	0.64	0.61	0.62	0.62	0.63
Regional Group Mean (excluding PSEG)	0.56	0.64	0.69	0.76	0.79	0.80	0.81	0.87	0.88	0.85
New Jersey Group Mean (excluding PSEG)	0.35	0.37	0.41	0.45	0.46	0.43	0.46	0.62	0.61	0.53
ROE Proxy Group Mean (excluding PSEG)	0.45	0.45	0.50	0.54	0.53	0.47	0.49	0.53	0.48	0.47



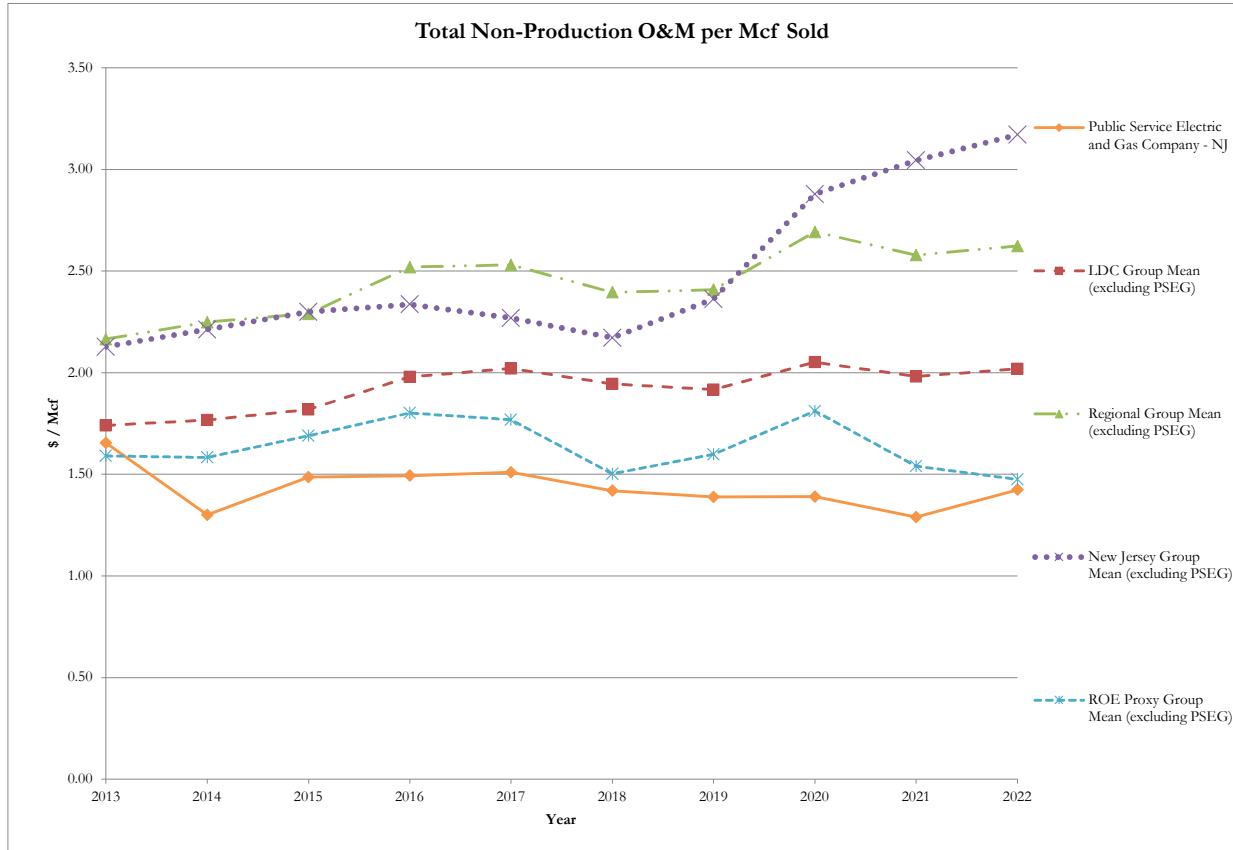
<b>A&amp;G Expense per Gas Customer</b>										
<i>Annual Values</i>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	36.57	31.96	37.47	34.28	37.25	34.45	40.13	49.59	46.16	51.72
LDC Group Mean (excluding PSEG)	64.91	68.02	63.50	72.40	79.90	76.54	79.99	84.16	88.45	91.48
Regional Group Mean (excluding PSEG)	82.17	88.10	82.07	87.25	95.61	97.73	93.45	98.14	108.13	112.53
New Jersey Group Mean (excluding PSEG)	94.56	98.79	99.84	124.39	114.61	124.87	112.57	93.94	123.42	146.50
ROE Proxy Group Mean (excluding PSEG)	76.43	81.39	75.83	81.28	79.13	80.02	86.22	91.76	85.16	99.26



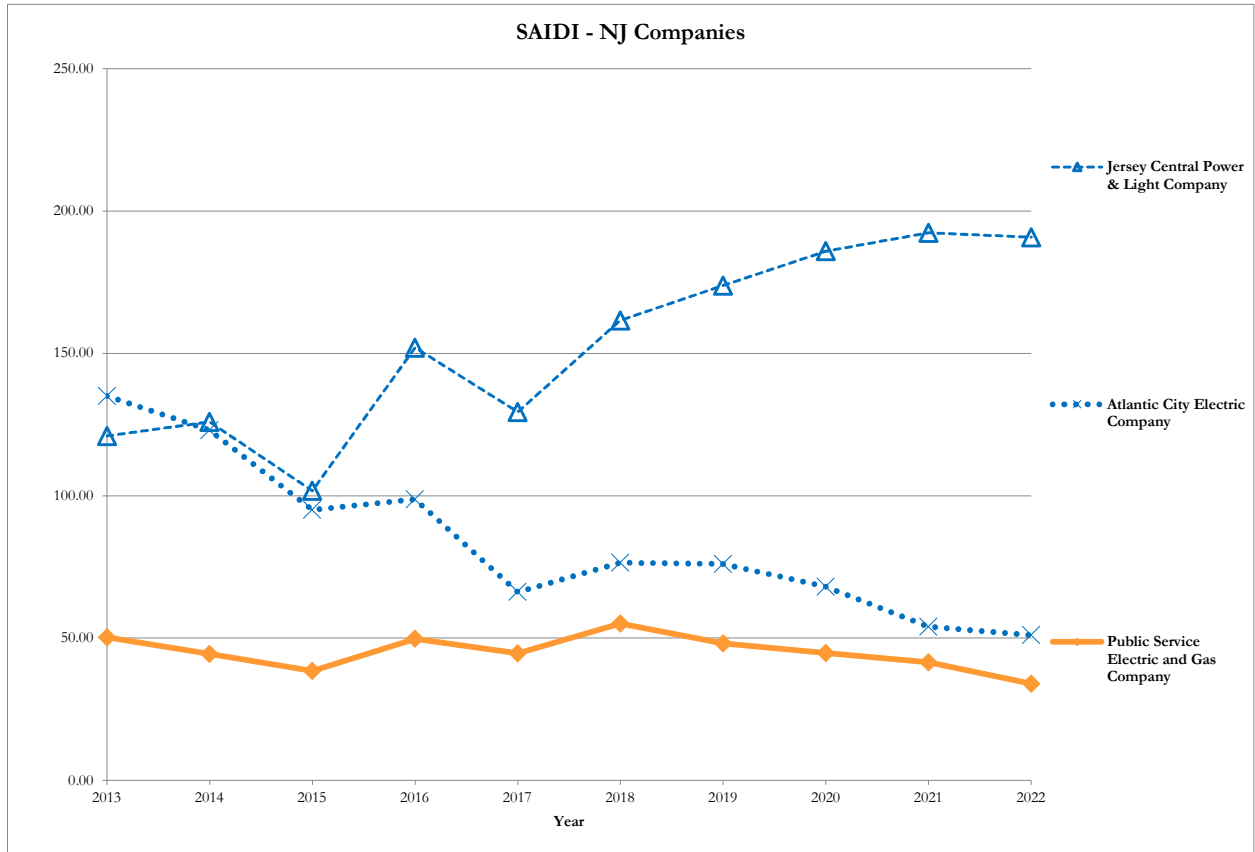
<b>A&amp;G Expense per Mcf Sold</b>										
<i>Annual Values</i>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	0.22	0.17	0.23	0.23	0.25	0.22	0.27	0.37	0.33	0.37
LDC Group Mean (excluding PSEG)	0.43	0.44	0.44	0.51	0.57	0.50	0.52	0.59	0.59	0.59
Regional Group Mean (excluding PSEG)	0.54	0.53	0.52	0.60	0.64	0.60	0.59	0.69	0.75	0.76
New Jersey Group Mean (excluding PSEG)	0.65	0.65	0.70	0.90	0.87	0.89	0.80	0.84	1.08	1.22
ROE Proxy Group Mean (excluding PSEG)	0.45	0.47	0.48	0.54	0.53	0.47	0.51	0.62	0.51	0.54



<b>Total Non-Production O&amp;M per Gas Customer</b>										
<i>Annual Values</i>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	277.07	247.70	242.08	226.49	222.23	226.54	208.58	187.78	181.89	201.47
LDC Group Mean (excluding PSEG)	261.55	275.07	262.81	273.81	279.21	294.70	290.28	288.49	293.90	305.59
Regional Group Mean (excluding PSEG)	325.59	364.70	354.32	358.91	367.65	384.25	373.38	376.61	372.16	385.67
New Jersey Group Mean (excluding PSEG)	303.88	325.69	318.01	307.57	291.34	290.71	311.52	319.82	348.45	379.27
ROE Proxy Group Mean (excluding PSEG)	257.98	267.34	258.66	261.39	256.06	251.75	265.06	275.20	258.15	278.15



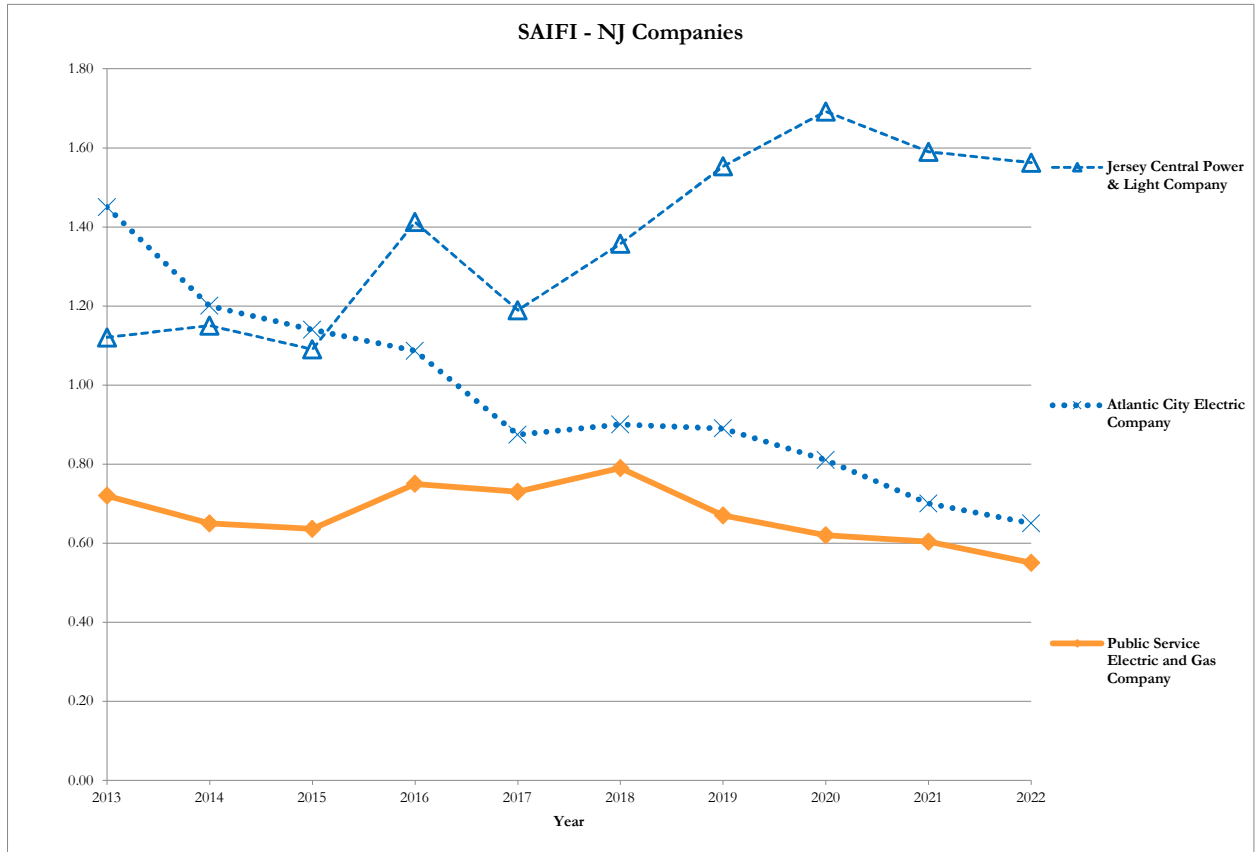
Total Non-Production O&M per Mcf Sold										
Annual Values										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company - NJ	1.65	1.30	1.49	1.49	1.51	1.42	1.39	1.39	1.29	1.42
LDC Group Mean (excluding PSEG)	1.74	1.77	1.82	1.98	2.02	1.94	1.92	2.05	1.98	2.02
Regional Group Mean (excluding PSEG)	2.17	2.25	2.29	2.52	2.53	2.40	2.41	2.69	2.58	2.62
New Jersey Group Mean (excluding PSEG)	2.13	2.21	2.30	2.34	2.27	2.17	2.36	2.88	3.04	3.17
ROE Proxy Group Mean (excluding PSEG)	1.59	1.58	1.69	1.80	1.77	1.50	1.60	1.81	1.54	1.47



SAIDI - NJ Companies										
	Annual Values									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	50.27	44.45	38.41	49.74	44.61	55.10	48.11	44.72	41.49	33.94
Atlantic City Electric Company	135.00	123.00	95.00	98.66	66.15	76.40	76.00	68.00	54.00	51.00
Jersey Central Power & Light Company	121.00	125.91	101.70	152.03	129.37	161.59	173.81	185.89	192.36	190.75
New Jersey Group Mean (excluding PSEG)	128.00	124.46	98.35	125.35	97.76	119.00	124.90	126.95	123.18	120.88

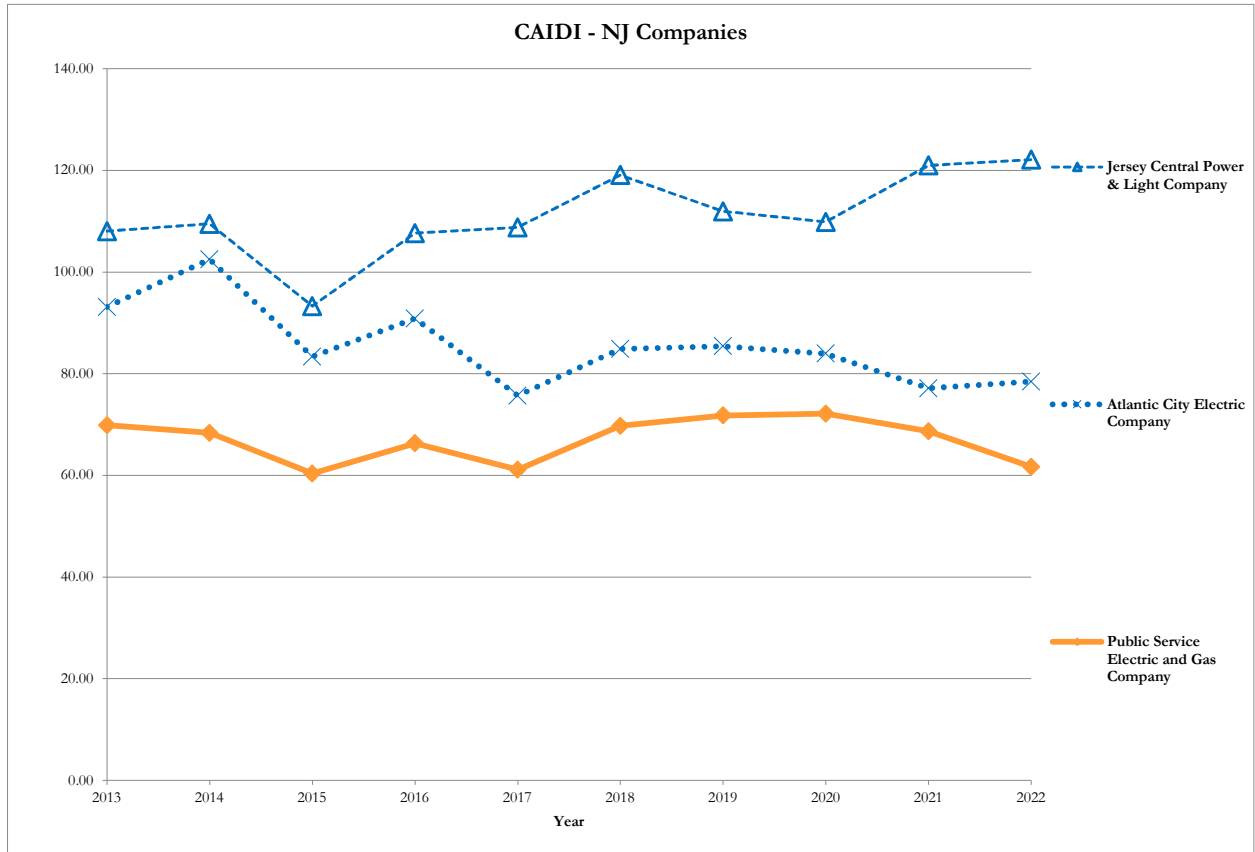
Source: EIA Form 861. 2013 PSEG data was provided by the Company.





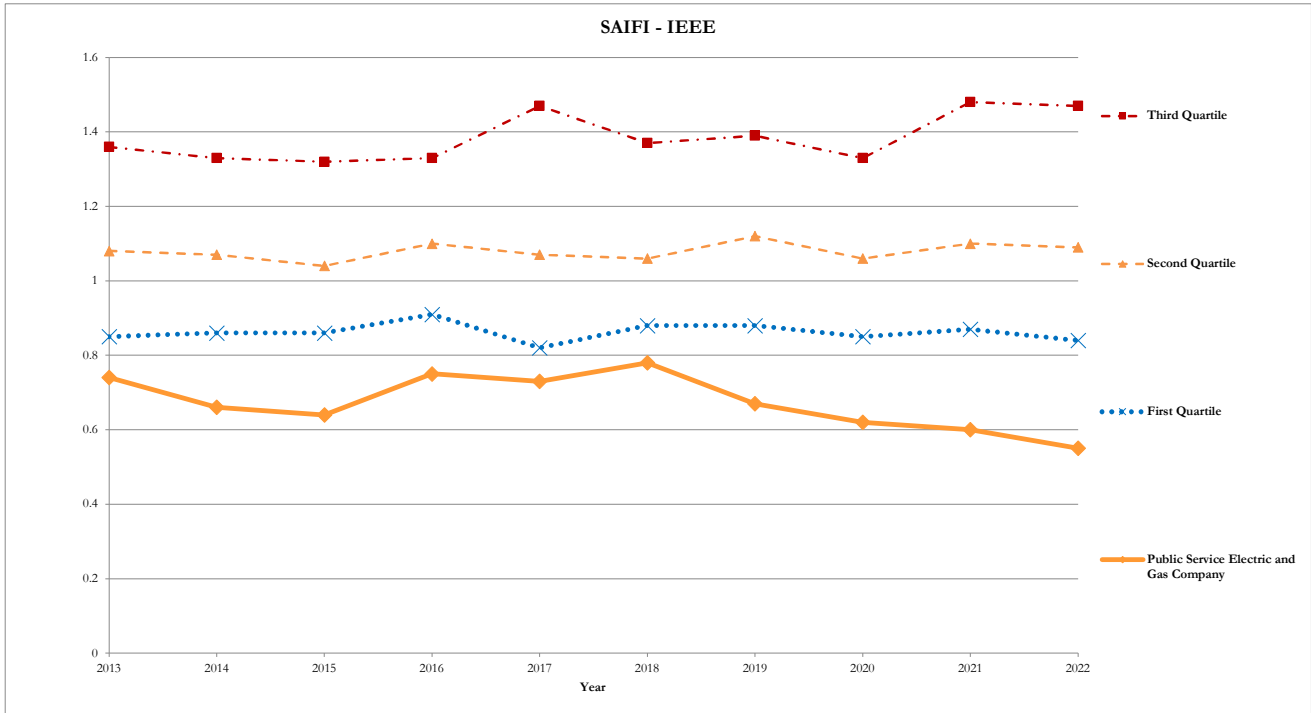
SAIFI - NJ Companies										
	Annual Values									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	0.72	0.65	0.64	0.75	0.73	0.79	0.67	0.62	0.60	0.55
Atlantic City Electric Company	1.45	1.20	1.14	1.09	0.87	0.90	0.89	0.81	0.70	0.65
Jersey Central Power & Light Company	1.12	1.15	1.09	1.41	1.19	1.36	1.55	1.69	1.59	1.56
New Jersey Group Mean (excluding PSEG)	1.29	1.18	1.12	1.25	1.03	1.13	1.22	1.25	1.15	1.11

Source: EIA Form 861. 2013 PSEG data was provided by the Company.



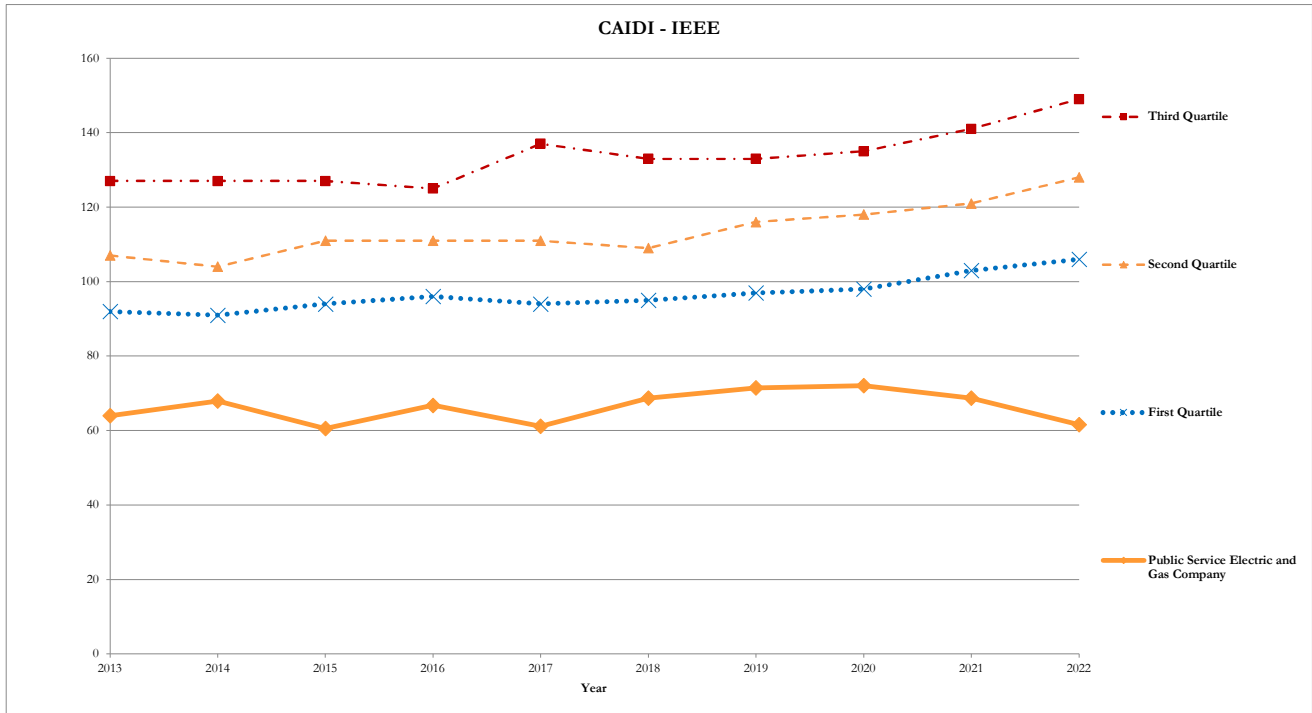
CAIDI - NJ Companies										
	Annual Values									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	69.89	68.38	60.39	66.32	61.11	69.75	71.81	72.13	68.69	61.71
Atlantic City Electric Company	93.10	102.50	83.33	90.85	75.69	84.89	85.39	83.95	77.14	78.46
Jersey Central Power & Light Company	108.04	109.49	93.30	107.67	108.80	119.08	111.92	109.86	120.98	122.12
New Jersey Group Mean (excluding PSEG)	100.57	105.99	88.32	99.26	92.25	101.98	98.66	96.91	99.06	100.29

Source: EIA Form 861. 2013 PSEG data was provided by the Company.



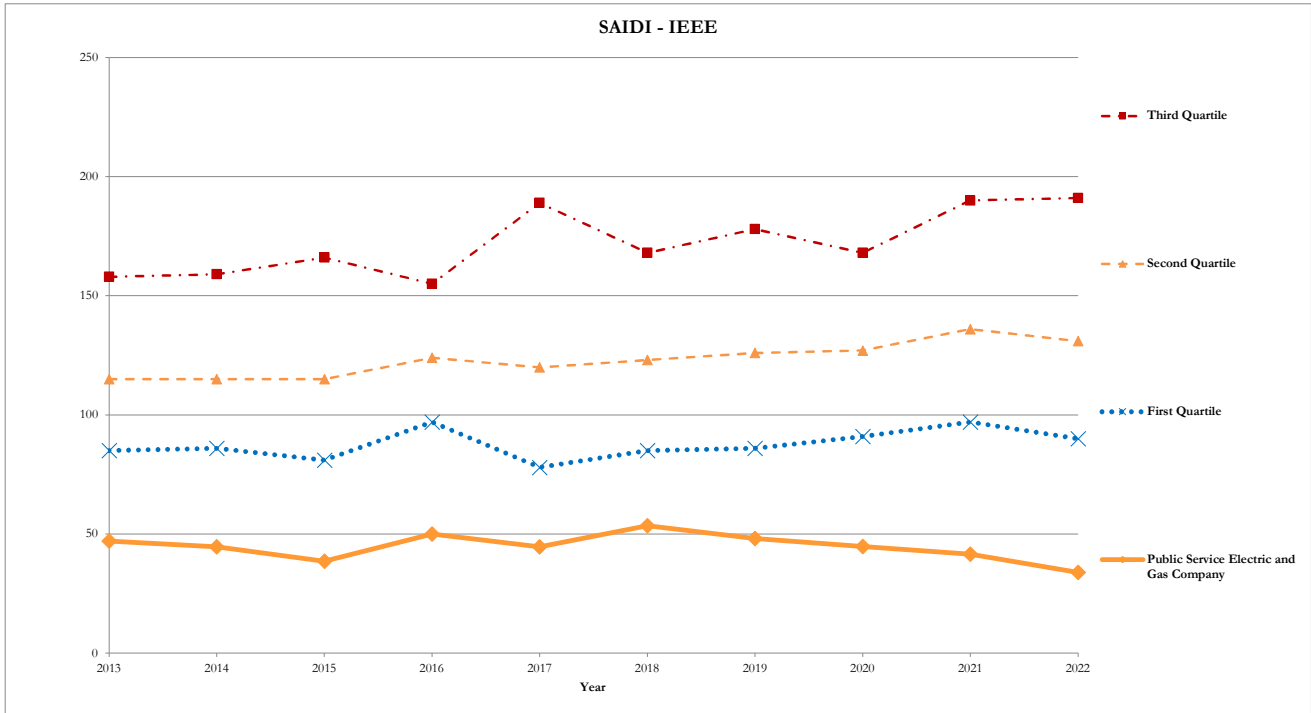
SAIFI - IEEA										
Annual Values										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	0.74	0.66	0.64	0.75	0.73	0.78	0.67	0.62	0.60	0.55
Third Quartile	1.36	1.33	1.32	1.33	1.47	1.37	1.39	1.33	1.48	1.47
Second Quartile	1.08	1.07	1.04	1.10	1.07	1.06	1.12	1.06	1.10	1.09
First Quartile	0.85	0.86	0.86	0.91	0.82	0.88	0.88	0.85	0.87	0.84

Source: IEEA



CAIDI - IEE										
Annual Values										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	64	68	61	67	61	69	71	72	69	62
Third Quartile	127	127	127	125	137	133	133	135	141	149
Second Quartile	107	104	111	111	111	109	116	118	121	128
First Quartile	92	91	94	96	94	95	97	98	103	106

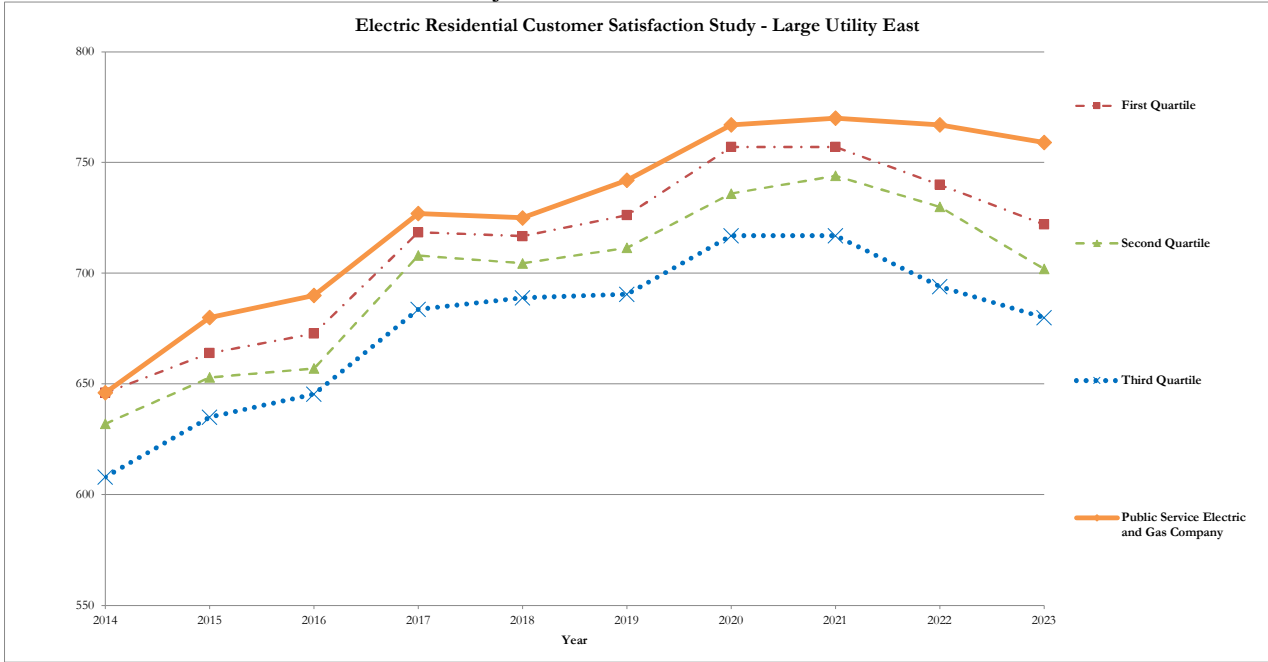
Source: IEE



SAIDI - IEE										
<i>Annual Values</i>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Public Service Electric and Gas Company	47	45	39	50	45	54	48	45	41	34
Third Quartile	158	159	166	155	189	168	178	168	190	191
Second Quartile	115	115	115	124	120	123	126	127	136	131
First Quartile	85	86	81	97	78	85	86	91	97	90

Source: IEE

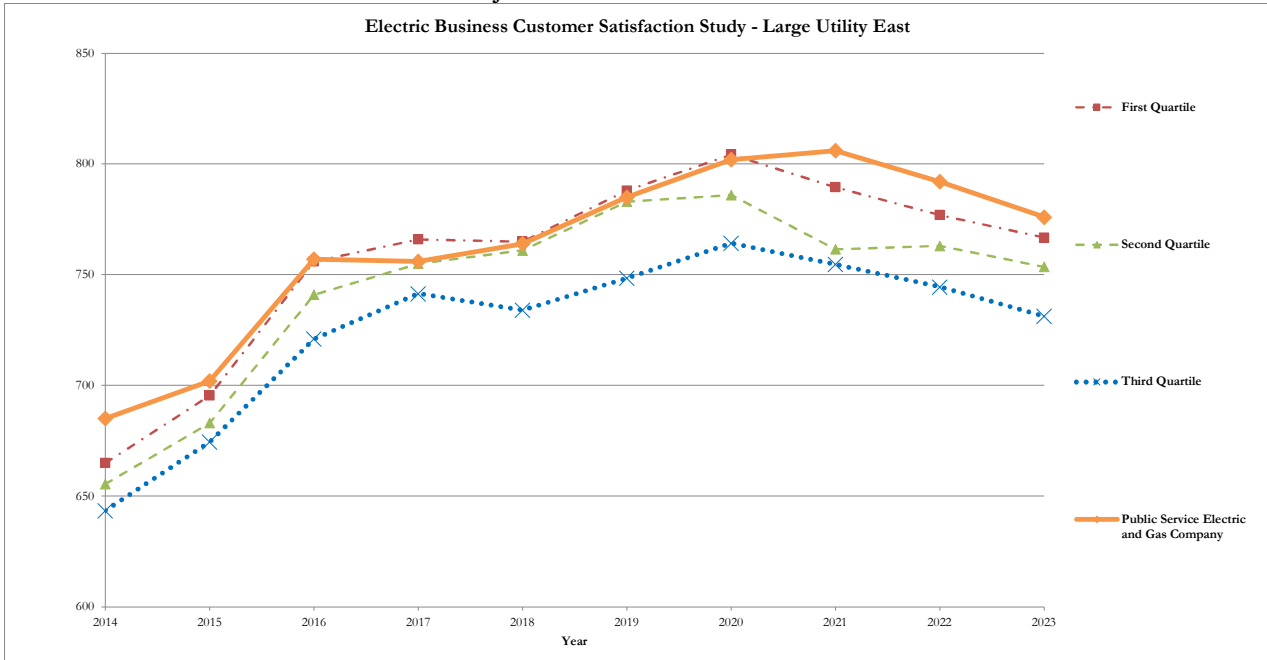
JD Power Customer Satisfaction



Electric Residential Customer Satisfaction Study - Large Utility East										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	646	680	690	727	725	742	767	770	767	759
First Quartile	646	664	673	719	717	726	757	757	740	722
Second Quartile	632	653	657	708	705	712	736	744	730	702
Third Quartile	608	635	646	684	689	691	717	717	694	680

Source: JD Power

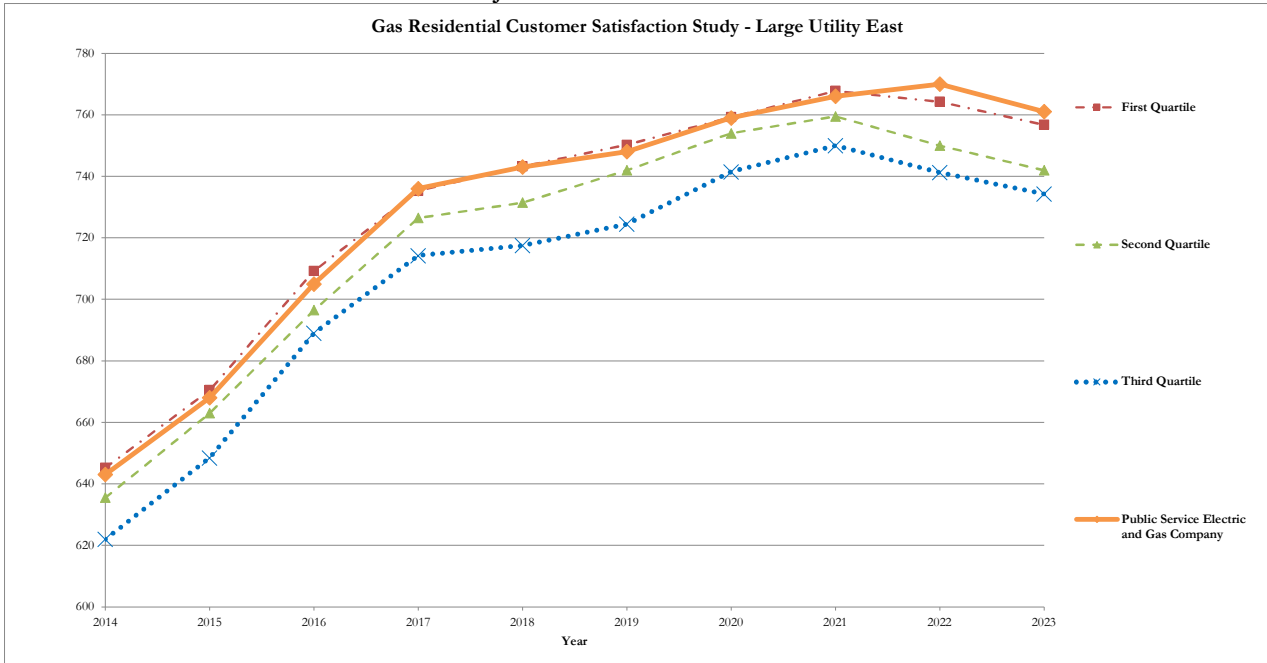
JD Power Customer Satisfaction



Electric Business Customer Satisfaction Study - Large Utility East										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	685	702	757	756	764	785	802	806	792	776
First Quartile	665	696	756	766	765	788	804	790	777	767
Second Quartile	656	683	741	755	761	783	786	762	763	754
Third Quartile	644	675	721	742	734	749	764	755	745	731

Source: JD Power

JD Power Customer Satisfaction

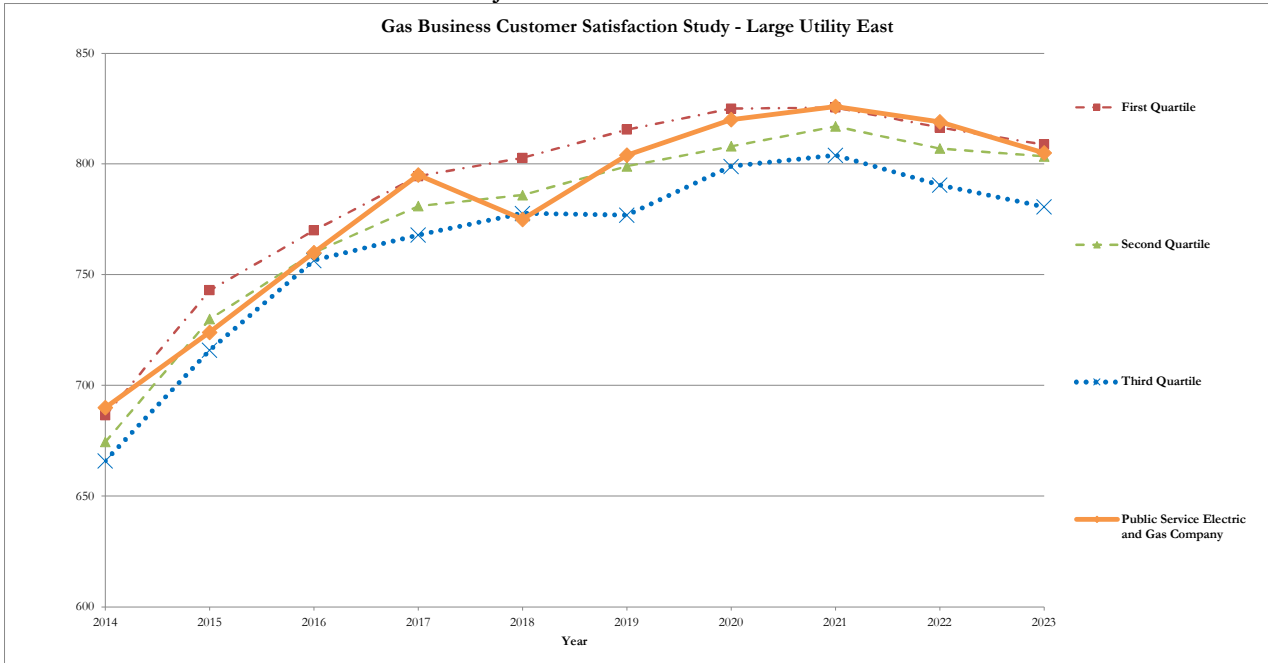


Gas Residential Customer Satisfaction Study - Large Utility East										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	643	668	705	736	743	748	759	766	770	761
First Quartile	645	671	709	735	743	750	759	768	764	757
Second Quartile	636	663	697	727	732	742	754	760	750	742
Third Quartile	622	649	689	714	718	725	742	750	741	734

Source: JD Power



JD Power Customer Satisfaction



Gas Business Customer Satisfaction Study - Large Utility East										
	Annual Values									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Service Electric and Gas Company	690	724	760	795	775	804	820	826	819	805
First Quartile	687	743	770	795	803	816	825	826	817	809
Second Quartile	675	730	760	781	786	799	808	817	807	804
Third Quartile	666	716	757	768	778	777	799	804	791	781

Source: JD Power