

**FILED**  
JAN 16 2018

**BEFORE THE CORPORATION COMMISSION OF OKLAHOMA**

CLERK'S OFFICE - OKC  
CORPORATION COMMISSION  
OF OKLAHOMA

IN THE MATTER OF THE APPLICATION OF )  
OKLAHOMA GAS AND ELECTRIC COMPANY )  
FOR AN ORDER OF THE COMMISSION )  
AUTHORIZING APPLICANT TO MODIFY ITS )  
RATES, CHARGES, AND TARIFFS FOR RETAIL )  
ELECTRIC SERVICE IN OKLAHOMA )

CAUSE NO. PUD 201700496

Direct Testimony

of

Shawna J. Satterwhite

on behalf of

Oklahoma Gas and Electric Company

January 16, 2018

Shawna Satterwhite  
*Direct Testimony*

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

2    A.    My name is Shawna Satterwhite. My business address is 321 N. Harvey, Oklahoma City,  
3           Oklahoma 73102.

4  
5    **Q.    By whom are you employed and in what capacity?**

6    A.    I am employed by Oklahoma Gas and Electric Company (“OG&E” or “Company”) as Lead  
7           Costing Analyst.

8  
9    **Q.    What is your educational background and professional experience?**

10   A.    I graduated from Oklahoma City University with an MBA in 2006. I have been with  
11          OG&E since 2000. I worked in Property Accounting, Business Unit Finance working with  
12          Power Supply and Power Delivery budgets and reporting, Regulatory Accounting and  
13          finally the Cost of Service group as Lead Costing Analyst. In my current role I am  
14          responsible for operating and maintaining the Cost of Service model. Additionally, I  
15          provide analysis and report results to management. I have also attended the Financial  
16          Accounting Institute for Utility Finance & Accounting Seminar in November 2010, the  
17          National Association of Regulatory Utility Commissioners (“NARUC”) Utility Rate  
18          School in May 2012, the New Mexico State University Practical Regulatory Training for  
19          the Electric Industry in October 2015, and the Electric Utility Consultants, Inc. (“EUCI”)   
20          workshops for Introduction to Cost-Of-Service Concepts in July 2017.

21  
22   **Q.    Have you previously testified before the Oklahoma Corporation Commission or any**  
23          **other regulatory commission?**

24   A.    No, I request that my credentials be accepted at this time.

25  
26   **Q.    What is the purpose of your testimony?**

27   A.    My testimony presents and supports OG&E’s jurisdictional and class cost of service studies  
28          (“COSS”), the development of the jurisdictional and class allocations, and related

1 schedules. The Company's cost of service studies are based upon a test year ending  
2 September 30, 2017.

## 4 I. COST OF SERVICE STUDIES

### 5 General Explanation of a Cost of Service Study

6 Q. **What is a cost of service study?**

7 A. A COSS is the fundamental tool used to determine the revenue requirement to be recovered  
8 from the Company's jurisdictional and/or customer classes. In a COSS, costs are either  
9 allocated or directly assigned to jurisdictions and/or customer classes. This type of analysis  
10 is typically referred to as an embedded COSS, which is based on historical costs and the  
11 operating experience of the utility during the *pro forma* test year.

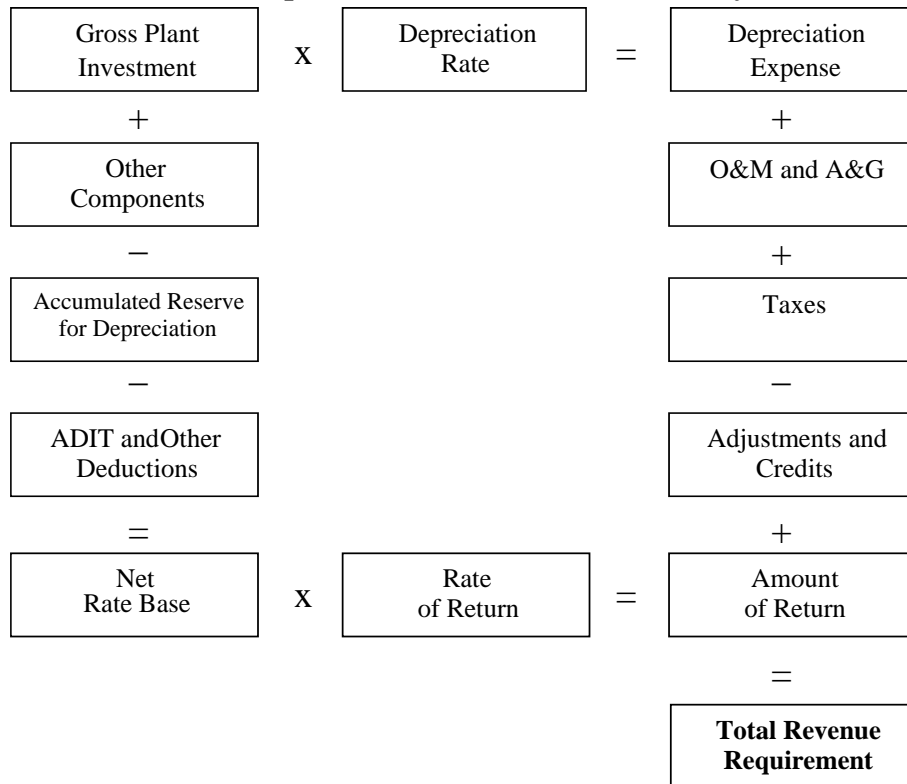
13 Q. **What sources are used for the historical costs used in a cost of service study?**

14 A. Cost of service studies rely on the utility company's historic, or embedded, statements of  
15 revenue, number of customers, energy sales, accounting reports, engineering records,  
16 customer billing records and load survey data. Investor-owned electric utilities in  
17 Oklahoma are required by the Federal Energy Regulatory Commission ("FERC") to keep  
18 their accounting records according to the "Uniform System of Accounts for Public Utilities  
19 and Licensees" ("USOA"), CFR Title 18, Subchapter C, Part 101. The OCC adopted the  
20 USOA requirements as well (see OAC 165:35-27-4(a)). The USOA sets the guidelines for  
21 recording assets, liabilities, income, and expenses into various accounts. Embedded costs  
22 are used as the basis for FERC Form 1 annual reports prescribed by FERC.

24 Q. **Please describe how a cost of service study is structured.**

25 A. The cost of service study is designed to determine a revenue requirement. The components  
26 of the revenue requirement within the COSS model are summarized in Chart 1.

**Chart 1**  
**Components of a Cost of Service Study**



1    Q.    **What type of costs and cost components are included in the cost of service studies you**  
2           **are sponsoring?**

3    A.    Fixed costs and variable costs are two types of broad cost categories included in cost of  
4           service studies. Fixed costs are costs that do not vary with output, remain constant in the  
5           short run and include capital costs, return, depreciation expense, income taxes, property  
6           taxes, and some operation and maintenance (“O&M”) expense. Variable costs are costs  
7           that vary with output which include fuel costs, purchased power and some O&M expense.

8           Additionally, there are sub components of the fixed and variable costs. These  
9           include directly assigned costs that are incurred to serve a particular customer or class of  
10          service (street lighting, dedicated substation circuits, etc.) and what are called joint or  
11          common costs. Joint or common costs are those costs that are shared by all customers  
12          because they are incurred to produce jointly beneficial products. These costs are allocated  
13          either on the basis of the overall ratios of those costs that have been directly assigned, or

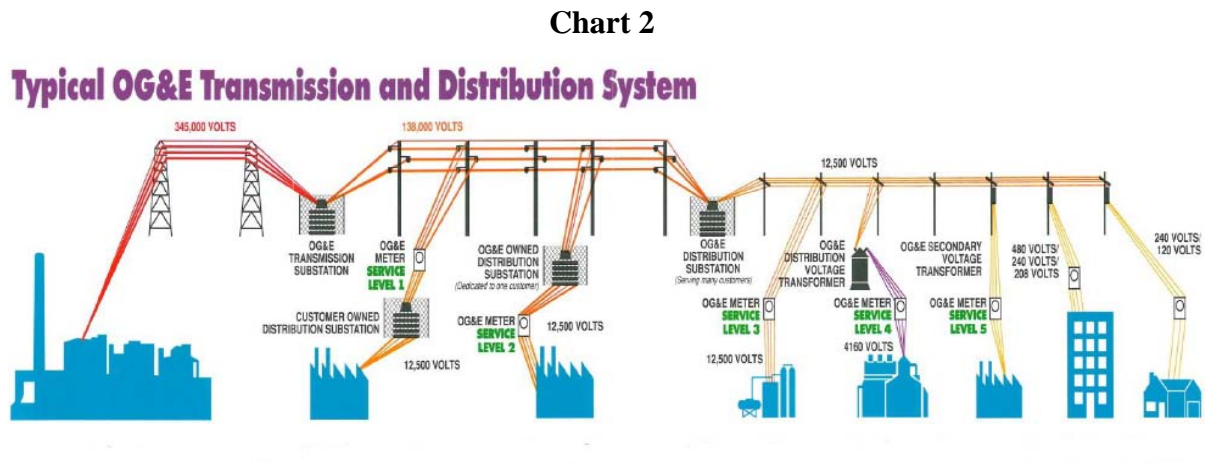
by a series of allocators that best reflect “cost causation” principles such as labor, wages or plant ratios, or by a detailed analysis of each account to determine whether it is beneficial.

Q. **Please define cost causation?**

A. Cost causation is the determination as to what, or who, is causing costs to be incurred by the utility in providing service to its customers. Examples of cost causation may include: a customer’s request for service at a new location causes the Company to incur costs such as investment in line transformation, a service drop, metering facilities and establishes a commitment on the part of the Company to provide, among other things, answers to questions and a monthly billing; or a customer’s energy use or usage, usually expressed in kilowatt-hours (“kWh”).

Q. **Please describe the physical characteristics of the electric industry that cause costs to be incurred.**

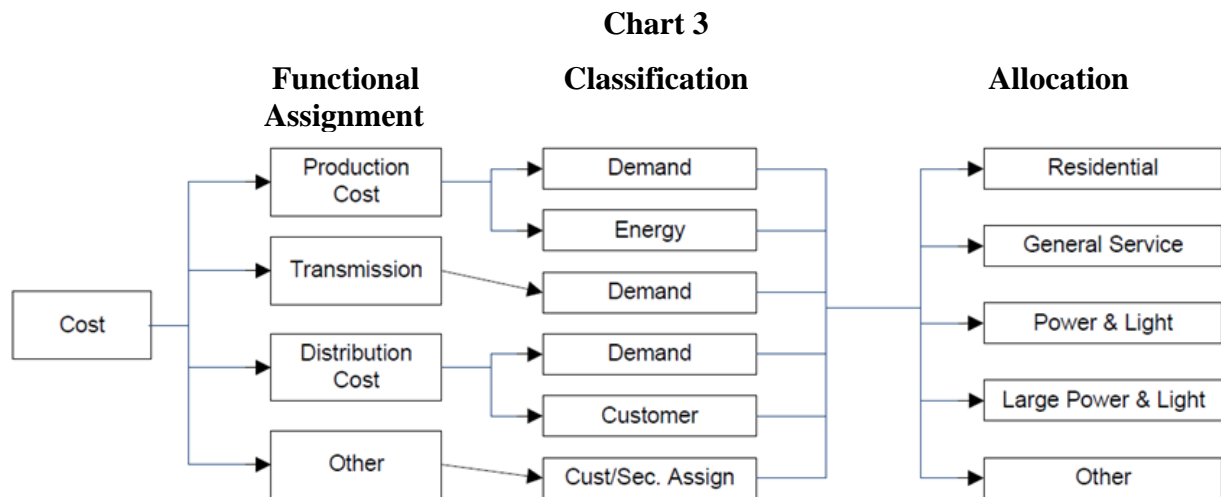
A. Generation, transmission and distribution are the three main components of a vertically integrated utility.<sup>1</sup> Chart 2 illustrates how power flows from the power plant to ultimate consumers on the OG&E system.



<sup>1</sup> NARUC Manual, page 4

Q. How is this information separated to determine the cost of serving the various classes of utility customers?

A. Costs are allocated to customer classes using a three-step method including functionalization, classification, and allocation. This methodology is shown in Chart 3.



Functionalization Process

Q. Please describe the functionalization process?

A. Once the relevant data is gathered, the costs are separated by function. Typically, functions in a fully integrated electric utility are:

1. Production
2. Transmission
3. Distribution
4. Customer Service
5. Administrative and General (“A&G”)

The production function captures the costs associated with power generating facilities. The transmission function captures the costs associated with the high voltage lines and substations that deliver power to the distribution system and connects with other utilities, generators, and some large customers. The distribution function includes facilities and costs associated with distribution substations, primary and secondary lines, transformers, service drops and meters that connect most customers to the utility network. The customer service function encompasses the services and costs associated with providing billing,

collection, customer information and related services. The A&G function is a general service category that captures the costs associated with management of the business and general services such as staffing, accounting, legal, regulatory, communications, general purpose buildings, maintenance of such facilities, and other costs that may not be directly assignable to the other functions.

#### Classification Process

**Q. Please describe the classification process.**

A. Classification is a refinement of functionalized costs. Functionalized costs are further separated into three classifications:

1. Demand costs – costs associated with the maximum rate of energy used by the customer
2. Energy costs – cost that vary with the amount of energy used by customers
3. Customer costs – costs related to billing, metering, payment collections, and customer service

Typical cost classifications used in cost studies are shown in Chart 4.

**Chart 4**

<b>FUNCTION</b>	<b>CLASSIFICATION</b>
Production	Demand, Energy
Transmission	Demand
Distribution	Demand, Customer
Customer Service	Customer

As seen above, production plant costs, such as depreciation expense and return on investment, are generally considered to be demand costs. Fuel costs and certain production O&M expenses are energy costs because they vary with the quantity of energy produced. Transmission costs are typically considered as demand because they are mainly fixed and do not vary with energy usage. Distribution system costs are driven by the need to deliver the peak demand of customers served from each facility and by the number of customers served. Distribution costs for substations, primary lines and transformers tend to vary with

1 the size of the load served. Customer service costs vary with the number of customers and  
2 the complexity of meeting their needs. The classification process provides a basis on which  
3 to allocate different categories of costs (demand, energy, or customer) to the Company's  
4 jurisdictions, and ultimately to the customer classes through the allocation process.

#### 6 Allocation Processes

7 **Q. Please describe the allocation processes.**

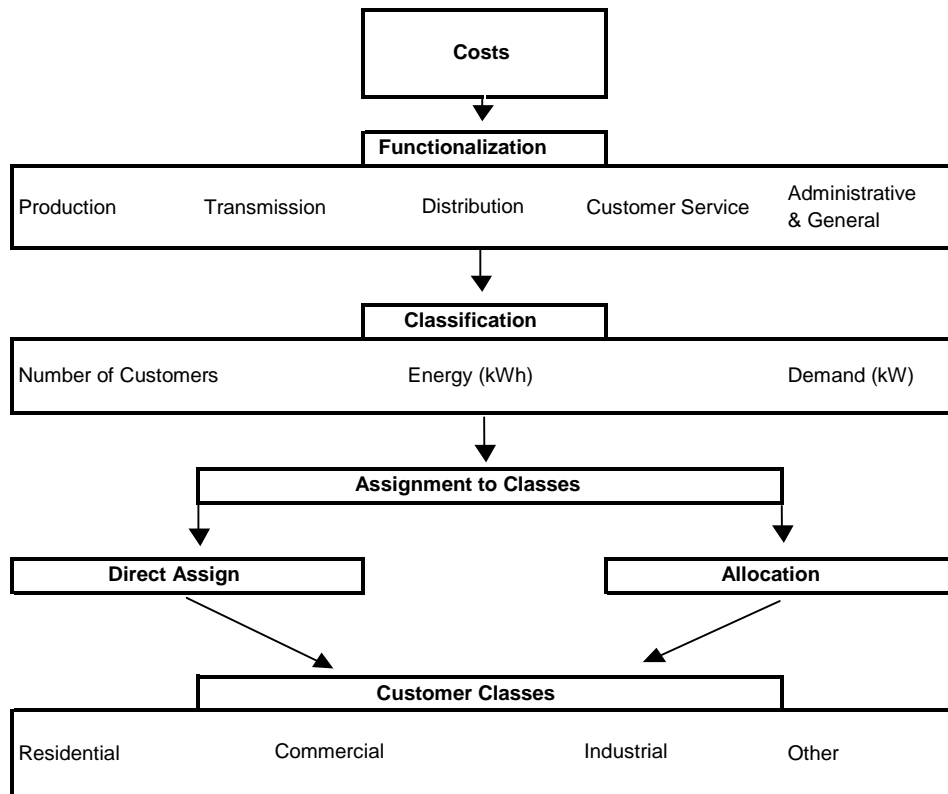
8 **A.** After costs are functionalized and classified, they are either allocated or directly assigned  
9 among jurisdictions. Within the Oklahoma retail jurisdiction, the functionally classified  
10 costs are then further allocated or assigned among classes of customers, based on cost  
11 causation. OG&E's customer classes have been determined and grouped according to the  
12 nature of service provided and the load characteristics. OG&E's major customer classes  
13 are generally grouped as Residential, General Service, Power and Light, Large Power and  
14 Light, and Other.

15 The objective of this process is to assign costs in a reasonable and understandable  
16 way. As discussed earlier, some costs are directly assigned and others are allocated among  
17 the classes; directly assigned costs are costs that can be readily identified as belonging to a  
18 jurisdiction, a single class or even a single customer. For example, customer meters are  
19 directly assigned to their respective customer class. Similarly, the costs associated with  
20 the poles and luminaries used for street lighting in Oklahoma are directly assigned to the  
21 Oklahoma jurisdiction and then to the street lighting class in that jurisdiction. Most costs,  
22 however, are attributable to more than one type of customer. These joint costs must be  
23 allocated to jurisdictions and then to the Oklahoma jurisdictional retail customer classes by  
24 an allocation methodology that recognizes each class's contribution to the cost driver that  
25 ultimately determines the overall level of cost for each sub-category of utility service.  
26 Chart 5 is a flowchart that provides an overview of the steps used to assign/allocate costs  
27 to jurisdictional customer classes.



**Chart 5**

**Cost Allocation Flowchart**



The process described above is applied to each cost category in the cost of service study.

**Q. What is the end result of the functionalization, classification and assignment/allocation process?**

**A.** When the process is completed and all of the costs are allocated to the jurisdictions and customer classes, the result is a fully allocated embedded cost of service study that establishes the cost responsibility for each jurisdiction and customer class of service.

## **II. OG&E'S JURISDICTIONAL COST OF SERVICE STUDY**

**Q. Did OG&E submit a jurisdictional cost of service study as described in the Commission's minimum filing requirements?**

**A.** Yes. The Company submitted its COSS.

1 Q. **What does the Company do to ensure that the fully allocated costs are reasonable?**

2 A. The Company uses the following criteria to judge the appropriateness of its allocation  
3 methodology:

- 4 1. The method should reflect the planning and operating characteristics of the  
5 utility's system.
- 6 2. The method should recognize individual customer class characteristics such as  
7 energy use, peak demand on the relevant portion of the system, service diversity  
8 characteristics or the number of customers.
- 9 3. The method should produce reliable results that are relatively stable from year-  
10 to-year.
- 11 4. Customers who benefit from the use of the system should also bear appropriate  
12 cost responsibility for the system.

13  
14 Q. **Briefly describe the contents of Section K.**

15 A. Section K sets forth the Company's Cost of Service and jurisdictional calculations. The  
16 schedules in Section K and supporting work papers in the supplemental package provide  
17 the support for those calculations.

18 Schedule K-1, shows the pro forma adjusted Total Company cost of service.  
19 Each of the supporting schedules details, by account, the associated allocation basis for the  
20 amounts shown on Schedule K-1. Chart 6 lists such supporting schedules.

**Chart 6**

<b>Schedule Name</b>	<b>Description</b>
Schedule K-2.1	Pro forma electric revenues based on current rates
Schedule K-2.2	Operation and maintenance expenses
Schedule K-2.3	Depreciation expense
Schedule K-2.4	Taxes other than income
Schedule K-2.5	Plant in service
Schedule K-2.6	Accumulated depreciation
Schedule K-2.7	Construction work in progress
Schedule K-2.8	Plant held for future use

Schedule K-2.9	Working capital
Schedule K-2.10	Other rate base adjustments

### III. CHANGES TO THE COST OF SERVICE STUDY

**Q. Is the Company proposing any transmission demand allocation changes in this rate case that are different than what was approved in Cause No. PUD 201500273?**

A. Yes. This change is reflected in the load data for the partial requirements customers. Partial requirement customers are those customers whose energy needs are not completely met by the Company. In Cause No. PUD 201500273, the load data used for the Transmission Demand allocator was the same data used for the Production Demand allocator. The transmission system serves total customer demand regardless of who serves that demand. In this Cause, the Company is using total customer demand to create a Transmission Demand allocator for these partial requirement customers. This change is necessary in order to match costs with customer use of the transmission system, whether they are partial requirement customers or not.

**Q. Did OG&E update the Zero-Intercept Study and apply it to the COSS?**

A. Yes, in the last Cause OG&E relied on a Zero-Intercept Study that was performed in 2008. The Zero-Intercept Study essentially allocates distribution assets in FERC accounts 364-368 between customer costs and demand costs. OG&E completed a new Zero-Intercept Study and has incorporated this new study into the COSS. The Study results are below in Chart 7.

**Chart 7**

#### **Zero Intercept Cost Analysis Summary**

Item	FERC	Customer Percent	Demand Percent
Poles	364	27.13%	72.87%
Overhead Conductor	365	27.13%	72.87%
Underground Conductor	367	64.70%	35.30%
Transformers	368	75.12%	24.90%

1 IV. CLASS COST OF SERVICE STUDY

2 Q. **Please describe the Section L as it relates to the class cost of service study you are**  
3 **sponsoring.**

4 A. Section L identifies the revenue, revenue deductions, income taxes, rate base components  
5 and return on rate base for each Oklahoma customer class, allocating those costs in a  
6 manner consistent with OG&E's previous filings before the Commission.

7  
8 Q. **Please generally describe the contents and organization of Section L.**

9 A. Schedule L-1 is the Rate Design Cost of Service for the *pro forma* test year. It shows the  
10 Oklahoma jurisdictional pro forma adjusted cost of service by customer class under rates  
11 placed in effect as of May 1, 2017. Revenue, revenue deductions and rate base are  
12 organized in the same manner as on Schedule K-1. Line 31 shows the percentage rates of  
13 return earned from each class under current rates.

14 Supporting Schedules, L-2.1 through L-2.10, show in detail the revenue, allocation  
15 of costs and rate base components to each Oklahoma customer class. These schedules  
16 provide the same information as the schedules in Section K, except that the information is  
17 provided by Oklahoma customer class.

18 Schedule L-3 presents the change in sales revenue for each class if a rate of return  
19 on rate base was to be applied equally to all classes of service. Line 13 is the total class  
20 revenue requirement needed to achieve the Company's proposed return on rate base. Line  
21 14 is the pro forma class revenue based on existing rates for the test year. Line 15 is the  
22 difference between the class revenue requirement and the current tariff revenue. This  
23 deficiency or excess represents the class change needed in current tariffs for rate design.  
24 Line 16 shows the class revenues received from current tariffs.

25 Schedule L-4 indicates the percent increases necessary to recover the revenue  
26 deficiency through sales revenue for each class. Line 12 indicates the return on rate base  
27 by class of service adjusted for the deficiency at these levels of revenue.

1 Q. **How are the results of the class cost of service study used in this proceeding?**

2 A. The results of the class cost of service submitted in this proceeding are used for two  
3 reasons.

- 4 1. Provide embedded cost information that is used as a tool in developing the  
5 pricing structures for each customer class; and
- 6 2. Provide information with which present and proposed relative rates of return by  
7 customer class can be compared and reviewed.

8  
9 V. CONCLUSION

10 Q. **Would you please summarize your testimony regarding the cost of service studies you  
11 are supporting?**

12 A. The jurisdictional cost of service study identifies the embedded cost of service for the  
13 Oklahoma retail, Arkansas retail and FERC jurisdictions. This embedded cost of service  
14 study is based upon sound cost allocation principles, reflects all of the test year  
15 adjustments, and establishes the cost responsibility for the provision of electric service to  
16 each jurisdiction.

17 The class cost of service study quantifies the embedded cost of service for each  
18 Oklahoma retail jurisdictional class. In addition, the class cost of service study provides  
19 information necessary to develop cost based rates for OG&E's retail customers.  
20

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

22 A. Yes.