BOOK IV

UGI UTILITIES, INC. – ELECTRIC DIVISION

BEFORE

THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Information Submitted Pursuant to

Section 53.51 et seq of the Commission's Regulations

UGI ELECTRIC STATEMENT NO. 6 – JOHN D. TAYLOR
UGI ELECTRIC STATEMENT NO. 7 – JOHN F. WIEDMAYER
UGI ELECTRIC STATEMENT NO. 8 – SHERRY A. EPLER
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UGI UTILITIES, INC. – ELECTRIC DIVISION
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DOCKET NO. R-2021-3023618

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UGI ELECTRIC STATEMENT NO. 6

JOHN D. TAYLOR

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3023618

UGI Utilities, Inc. – Electric Division

Statement No. 6

Direct Testimony

of

John D. Taylor, Managing Partner
Atrium Economics, LLC

Topics Addressed: **Cost of Service, Revenue Allocation, Rate Design, Electric Vehicle Program, Battery Storage**

Dated: February 8, 2021

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Direct Testimony of John D. Taylor

I. INTRODUCTION

Q. Please state your name, affiliation, and business address.

A. My name is John D. Taylor, and I am employed by Atrium Economics, LLC ("Atrium") as a Managing Partner. My business address is 10 Hospital Center Commons, Suite 400 Hilton Head Island SC 29926.

Q. Please describe your professional background and education.

A. As a utility pricing and policy expert, I am involved in a variety of energy and utility related projects regarding matters pertaining to economics, finance, and public policy. Part of my role within these projects is to conduct various analyses which take into account both accounting and financial considerations and the particular operational configuration of a company's assets. I have presented expert testimony in state public utility regulatory proceedings in Indiana, Maine, Minnesota, Illinois, Delaware, Pennsylvania, Washington, West Virginia, British Columbia, and the Federal Energy Regulatory Commission ("FERC"). I began my education studying electrical and mechanical engineering and worked for an industrial inspection company, which provided me with hands-on experience with electric utility assets and equipment. I received an undergraduate degree in Environmental Economics, with an emphasis in econometrics and regulatory policy. I also earned a Masters in Economics from American University in Washington, DC. A copy of my resume is provided as Exhibit JDT-1.

Q. What is the purpose of your testimony in this proceeding?

A. I prepared and am sponsoring UGI Utilities, Inc. – Electric Division's ("UGI Electric" or the "Company") fully allocated cost of service study used in this case to develop the allocated costs of service study ("ACOSS"), which is found in UGI Electric Exhibit D. The ACOSS allocates the Company's cost of service associated with Pennsylvania Public Utility Commission ("Commission") jurisdictional operations to the Company's retail customer classes. I am also supporting the apportionment of the class revenue increase and the Company's rate design proposal. Lastly, my testimony addresses the Company's investments in projects to enhance its distribution service: (1) tariff provisions supporting Electric Vehicle ("EV") charging infrastructure development in the Company's service territory through Company-owned charging stations and supportive service extension provisions for EV charging installations; and (2) a battery storage project to provide targeted reliability improvements with the use of storage technology.

Q. Please summarize the content of your testimony.

A. First, I will discuss various principles of cost allocation and factors that influence the cost allocation framework as well as general methods and approaches used to allocate costs to customer classes. Second, I will discuss the underlying methodology and basis used in the ACOSS studies I conducted and am sponsoring. I describe the studies of relative costs and other analyses employed to apportion the various categories of plant and operation and maintenance ("O&M") expenses to the respective customer classes. I will present the class-by-class rate of return results and corresponding revenue surpluses or deficiencies from the ACOSS. I will discuss the apportionment of the rate increase to the various rate classes and the customer related costs and support for customer charges. Finally, as noted above, I present aspects of the Company's proposals for EV charging infrastructure development and a battery storage project.

Q. Mr. Taylor, are you sponsoring any exhibits in this proceeding?

A. Yes. I am sponsoring Book IX labeled as UGI Electric Exhibit D – Cost of Service Study ("Exhibit D"). Exhibit D contains five sections for which an index is provided on page 2 of Exhibit D. I also am sponsoring portions of Exhibit Regs., Part IV-Rate Structure and Cost Allocation. Lastly, I am sponsoring portions of UGI Electric Exhibit F – Proposed Tariff, specifically the Company's proposed changes to the service extension regulations as well as the proposed Rate EV-C ("Electric Vehicle Company Owned Charging").

Q. Would you briefly describe the contents of Exhibit D?

A. Exhibit D provides the information required under 52 Pa. Code § 53.53(a)(3), and in particular Exhibit C, Part IV, Section E (1), by providing a cost of service study that fully distributes the Pennsylvania jurisdictional costs of providing retail distribution service to the various rate classes at both present and proposed rates.

The studies contained in UGI Electric Exhibit D are based on costs and operating conditions for the fully projected future test year ("FPFTY") ending September 30, 2022. The exhibit provides a summary of the results, cost assignment and allocation detail, and supporting schedules showing functionalization of the costs and support for the cost allocation factors used. UGI Electric Exhibit D provides the results of studies used to functionalize and classify UGI Electric's distribution plant and support for the allocation factors. The results of these studies were applied to distribution plant data for the FPFTY period.

II. OVERVIEW OF ACOSS

Q. Please describe the general approach used to develop the ACOSS.

A. The purpose of the ACOSS is to allocate UGI Electric's Commission-jurisdictional overall adjusted FPFTY revenues and costs to the various classes of service in a manner that reflects the relative costs of providing service to each class. This is accomplished through analyzing costs and assigning each rate class its proportionate share of the utility's total revenues and costs within the FPFTY. The results of these studies can be utilized to determine the relative cost of service for each customer class and to help determine the individual class revenue responsibility.

To allocate costs to the various classes, I reviewed UGI Electric's expense and plant accounts and developed studies of the relative costs of providing facilities and services for each rate class and analyzed the key factors that cause the costs to vary.

Q. Please describe the Atrium Model that was used in conducting the ACOSS filed in this proceeding.

A. UGI Electric has selected the Atrium excel based model ("Atrium ACOSS Model") for purposes of conducting the ACOSS in this general base rate case. The Atrium ACOSS Model was developed by Atrium on a proprietary basis for use in its consulting engagements and has been used in multiple jurisdictions. There are no material differences, in output and format, between the Atrium ACOSS Model and the past ACOSS model that UGI Electric presented, and I sponsored, in UGI Electric's 2018 base rate case at Docket No. R-2017-2640058.

Q. Does the methodology utilized in the current cost allocation study and supporting analyses match the method used in UGI Electric's 2018 base rate case at Docket No. R-2017-2640058?

A. Yes. The current ACOSS presented with this filing and proposed for use for decisions on the apportionment of the class revenue increases and the Company's rate design proposals reflects the same methods that were utilized in UGI Electric's last base rate case.

Q. Did the Commission opine on the appropriateness of these ACOSS methods in that proceeding?

A. Yes. In the UGI Electric 2018 base rate case (Docket No. R-2017-2640058), the Commission explicitly adopted UGI Electric's ACOSS and rejected the alternative proposed by the Office of Consumer Advocate ("OCA"), stating the following in the final order:

> Additionally, as UGI and the OSBA both highlighted, the Commission has affirmed the use of the "minimum system method" as the accepted approach to classify and allocate distribution system costs in several proceedings. See 2012 PPL Order, supra; see also, Pa. PUC v. PPL Electric Utilities Corp., Docket No. R-2010-2161694, (Order entered December 21, 2010) (2010 PPL Order). Further, we find that UGI's ACOSS is consistent with the NARUC Manual and more accurately reflects cost-causation principles than the ACOSS methodology proposed by the OCA.[1]

Q. Is the preparation of a cost allocation study an exact science?

A. No, it is not. The fundamental purpose of a cost allocation study is to aid in the design of rates to be charged by identifying all of the capital and operating costs incurred by a utility to provide service to all of its customers, and then assigning or allocating those costs to individual rate classes based on how those rate classes cause the costs to be incurred. This process inherently requires a substantial level of judgment. Although there may be not be single methodology for allocating costs, there are certain fundamental and foundational principles, i.e., cost causation and consistency, which should be followed to produce more

[1] *Pa. PUC v. UGI Utilities, Inc. – Electric Division*, Docket Nos. R-2017-2640058, *et al.*, p. 160 (Order entered Oct. 25, 2018).

accurate, reasonable, and consistent results. As described in further detail below, the cost allocation studies I developed follow these principles.

Q. What is the guiding principle that should be followed when performing an ACOSS?

A. The ACOSS analysis is intended to establish cost responsibility among the various customer classes the utility serves. The analysis should result in an appropriate allocation of the utility's total revenue requirement among the various customer classes. The most important theoretical principle underlying an ACOSS is that cost incurrence should follow cost causation. In other words, the costs assigned or allocated to particular customers should be those costs that the particular customers caused the utility to incur because of the characteristics of the customers' usage of utility service.

Q. What are the steps to performing an ACOSS?

A. To establish the cost responsibility of each customer class, initially a three-step analysis of the utility's total operating costs must be undertaken. The three steps that are the predicate for an ACOSS are: (1) cost functionalization; (2) cost classification; and (3) cost allocation.

Q. Please describe cost functionalization.

A. The first step, cost functionalization, identifies and separates plant and expenses into specific categories based on the various characteristics of utility operation. UGI Electric's primary functional cost categories associated with electric distribution service include: Primary Distribution, Secondary Distribution, and Customer Accounts and Services. In addition, various categories of costs within the distribution function are assigned to separate sub-functions to the extent their costs vary in response to different customer class characteristics. Indirect costs that support these functions, such as General Plant and Administrative and General Expenses, are allocated to functions using allocation factors related to plant and/or labor ratios.

Q. Please describe cost classification.

A. The second step, classification of costs, further separates the functionalized plant and expenses according to the primary factors that determine the amount of costs incurred. These factors are: (1) the number of customers; (2) the need to meet the peak demand requirements that customers place on the system; and (3) the amount of electricity consumed by customers. These classification categories have been identified for purposes of the ACOSS as (1) Customer Costs, (2) Demand Costs, and (3) Energy Costs, respectively.

Q. Please describe the types of costs contained in the Customer Costs, Demand Costs, and Energy Costs categories.

A. ***Customer Costs*** are incurred to extend service to and attach a customer to the distribution system, meter electric usage, and maintain the customer's account. Customer Costs are largely a function of the number of customers served and continue to be incurred whether or not the customer uses any electricity. They also include capital costs associated with minimum size distribution systems, services, meters, and customer billing and accounting expenses.

Demand Costs are capacity-related costs associated with plant that is designed, installed, and operated to meet maximum hourly or daily electric usage requirements, such as generating plants, transmission lines, transformers and substations, or more localized distribution facilities that are designed to satisfy individual customer maximum demands.

Energy Costs are those costs that vary with the amount of kilowatt hours ("kWh") sold to customers. However, UGI Electric's distribution costs are fixed with respect to energy usage, and none of the remaining delivery service cost structure is energy-related.

Q. What is required to appropriately classify costs as Customer, Demand, and Energy?

A. Usually, a determination on the classification of costs can be made simply by knowing the type of activities or assets that reside in a particular FERC account.

In these instances, the account as a whole can be classified. However, for some FERC account functions, it is beneficial to conduct classification studies to determine the portion of an account that is associated with each classification.

Q. Are there generally accepted methods for preparing classification studies?

A. The generally accepted methods are set forth in the National Association of Regulatory Utility Commissioners ("NARUC") Cost Allocation Manual.[2] My ACOSS adheres to these cost allocation principles to classify the Company's distribution capital and operating costs. The NARUC Manual (pg. 96-98) specifically states that an electric utility's distribution-related facilities are, from a design and operational basis, sized to meet the maximum kW load (demand) requirements of customers. Moreover, the NARUC Manual (pg. 89) also states that all distribution costs should be classified as either customer-related or demand-related, or a combination of these two factors. To achieve this classification result, UGI Electric's distribution capital and operating costs are functionalized into their primary and secondary voltage level components. These primary and secondary voltage level capital and operating costs are then classified based on a "minimum size system" study, which identifies the portion of those costs required to serve a customer with minimum or no load, and that portion of the costs is allocated on a customer basis. The remaining portion of the

[2] National Association of Regulatory Utility Commissioners, "Electric Utility Cost Allocation Manual", 1992

costs is allocated on a demand basis, *i.e.*, based on each rate class's average monthly contribution to the sum of the average monthly maximum demands for all classes. The average monthly demand is computed by averaging a class's maximum non-coincident peak ("NCP") demand across all twelve months (i.e., the class's maximum energy demand during each month in a given hour; an hour of time that may not correspond to the system peak).

Q. Do all experts accept this classification approach?

A. No, they do not. Some experts take issue with the "minimum size system" study approach. They assert that the demand allocators produced by this type of study reflect certain equipment that may have some load-carrying capability; they suggest that the zero intercept method may produce a better result. Others contend that some portion of the fixed components (*e.g.*, poles, conductors, services) of the distribution system should be classified on an energy basis. They also assert that the customer component is overstated and that the demand component is understated.

Q. Why do you support the use of the minimum size system approach?

A. The cost allocation methodology utilized in the minimum system studies is based on the specific design and operating characteristics of the Company's distribution system and provides a more accurate and consistent measure of class cost responsibility than other approaches for the provision of distribution service to its customers. In other electric distribution cases for which I have developed and/or testified on an ACOSS, a similar method was employed to develop a minimum system study, notably in UGI Electric's last base rate case at Docket No. R-2017-2640058 and PPL Electric Utilities Corporation's ("PPL") base rate case at Docket No. R-2015-2469275. Further, the proposed "minimum size system" study, which is set forth in UGI Electric Exhibit D, is based on the same methodology and criteria that were accepted by this Commission in both of those fully-litigated proceedings. As mentioned above, this method was explicitly approved and cited in the final order by this Commission in those proceedings.

Q. Please describe cost allocation portion of the ACOSS.

A. The final step, cost allocation, is the allocation of each functionalized and classified cost element to the rate class (or classes) that benefits from the cost. Customers generally are divided into customer classes based on the type and character of services that they require. Costs typically are allocated to these customer classes based on the number of customers and the amount of capacity required to serve the customer class. For example, much of the plant and equipment cost is related to the peak demand of the customers in each class, and these costs were accordingly allocated based on the average NCP demands of the rate class. Other portions of the cost depend upon the number of customers on the system, and these costs were allocated on a customer, or weighted-customer, basis.

Q. How does the cost analyst establish the fully-allocated costs related to various utility services?

A. To establish these relationships, the cost analyst must analyze a utility's electric system design, physical configuration and operations, its accounting records, and its system and customer load data. From the results of those analyses, methods of direct assignment and common cost allocation methodologies can be chosen for all of the utility's plant and expense elements.

Q. Please explain the term "direct assignment."

A. The term "direct assignment" means the assignment of costs to a specific customer or class of customers based on that customer's or class's exclusive identification with the particular plant or expense at issue. Usually, costs that are directly assigned relate to costs incurred exclusively to serve a specific customer or classes of customers. For example, FERC Account 371.5 - Installations on Customer Premises - is solely related to area lighting and, as such, is directly assigned in full to that service class. Direct assignments best reflect the cost causative characteristics of serving individual customers or classes of customers. Therefore, in performing a cost of service study, the cost analyst seeks to maximize the amount of plant and expense directly assigned to a particular customer or customer classes to avoid the need to rely upon other more generalized allocation methods. An alternative to direct assignment is an allocation methodology based on an analysis of factors that affect the relative costs of serving particular customer classes.

Q. What prompts the cost analyst to elect to perform a study of the relative costs?

A. When direct assignment is not readily apparent from the description of the costs recorded in the various utility plant and expense accounts, then further analysis may be conducted to derive an appropriate basis for cost allocation. For example, in this proceeding I developed a relative cost study for meter investment costs and services.

Q. Is it realistic to assume that a large portion of the plant and expenses of a utility can be directly assigned to a specific customer or certain customer classes?

A. No. The nature of utility operations is characterized by the existence of facilities used jointly or commonly by multiple customers and classes. To the extent that a utility's plant and expenses cannot be directly assigned to customer classes, allocation methods must be derived to assign or allocate the remaining costs to the customer classes. The analyses discussed above facilitate the derivation of reasonable allocation factors for cost allocation purposes.

Q. Please explain the considerations relied upon in determining the cost allocation methodologies that are used to perform an ACOSS.

A. As stated above, to allocate costs within any cost of service study, the factors that cause the costs to be incurred must be identified and understood. The availability of data for use in developing alternative cost allocation factors is also a consideration. In evaluating any cost allocation methodology, appropriate consideration should be given to whether it provides a sound rationale or theoretical basis, whether the results reflect cost causation and are representative of the costs of serving different types of customers, as well as the stability of the results over time.

III. UGI ELECTRIC'S ALLOCATED COST OF SERVICE STUDY

Q. What is the source of the cost data analyzed in UGI Electric's ACOSS?

A. All cost of service data have been extracted from the Company's total cost of service (*i.e.*, basic rate revenue requirement) contained in this general rate case filing for the FPFTY ending September 30, 2022. Where more detailed information was required to perform various analyses related to certain plant and expense elements, the data were derived from the historical books and records of the Company and from information provided by Company personnel.

Q. Please explain how UGI Electric's Pennsylvania jurisdictional costs are derived.

A. This filing is based on the investment and expense incurred to provide distribution service to UGI Electric's Pennsylvania jurisdictional customers. Certain costs associated with UGI Electric's provision of transmission service under an open access transmission tariff administered by PJM Interconnection, LLC ("PJM") are recoverable from PJM through an annual formulary revenue requirement filing approved by the FERC. The costs subject to recovery through this FERC-jurisdictional rate mechanism were excluded to identify UGI Electric's Commission-jurisdictional distribution costs. Once this assignment was completed by UGI Electric, I utilized UGI Electric's cost of service specific to its Pennsylvania-jurisdictional retail customers.

Q. How did you functionalize and classify UGI Electric's Pennsylvania-jurisdictional distribution costs?

A. The process started with each of the Company's FERC accounts, which were assigned to a specific function. In some instances, the costs in an account were first split into separate functions or classifications if the costs in the account were incurred to perform more than one function, or the costs in an account varied significantly with respect to more than one factor. For example, the accounts for distribution system poles, towers and fixtures, and conductors and conduits have been separated into two functions: primary distribution and secondary distribution.

In addition, these costs have been further separated into demand and customer classifications. The functionalization and classification studies are provided as Section I of UGI Electric Exhibit D. It should be noted that the functionalization and classification of distribution plant investment and expense is based on a detailed analysis of specific UGI Electric plant records and cost data.

Q. What cost assignment and allocation method was utilized in your studies?

A. I utilized the class average monthly maximum NCP demand to allocate demand-related distribution costs. Section II of UGI Electric Exhibit D presents the results of studies using other demand allocation methods, as required under the Commission's regulations. Further, the various customer-based allocation factors were developed utilizing Company records and data, including a meter investment allocation study and a services investment allocation study. Both are described in further detail and provided within Section II of UGI Electric Exhibit D.

IV. RESULTS OF THE COMPANY'S COST OF SERVICE STUDY

Q. Please summarize the results of the Company's ACOSS.

A. Table 1 below presents a summary of the results of the Company's ACOSS that can be reviewed in detail Schedule 1 of Book IV, UGI Electric Exhibit D. The ACOSS shows an overall revenue deficiency to the Company of $8.709 million.

Table 1 – Summary Results of the Company's ACOSS ($000)[3]

Rate Class	Class Revenue (Deficiency)/ Excess	Rate of Return on Net Rate Base	Relative Rate of Return
Residential	(10,743)	-1.28%	(0.39)
General Service-1	(689)	1.16%	0.36
General Service-4	1,239	19.90%	6.14
Large Power	1,110	17.60%	5.43
Lighting	375	27.22%	8.40
Total Company	(8,709)	3.24%	1.00

Table 1 presents the revenue deficiency/excess for each rate class and the class rate of return on net rate base at present rates. Regarding rate class revenue levels, the rate of return results show that the Residential and General Service-1 rate classes are being charged rates that recover less than their indicated costs of service. As a result, rates for other rate classes provide for recovery of more than the indicated costs of serving these other rate classes. Next, I explain how these ACOSS results were used to guide the Company's determination of the revenues by rate class and the proposed rate levels.

V. PRINCIPLES OF SOUND RATE DESIGN

Q. Please identify the principles of rate design utilized in development of the Company's rate design proposals.

A. The overall rate design process, which includes both the apportionment of the revenues to be recovered among rate classes and the determination of rate structures and rate levels within rate classes, rely upon principles that have broad

[3] See Book IV, Schedule 1 lines 48, line 24, and line 64.

acceptance in the recognized literature on utility ratemaking and regulatory policy and include:

1. Cost of Service;
2. Efficiency;
3. Value of Service;
4. Stability/Gradualism;
5. Non-Discrimination;
6. Administrative Simplicity; and
7. Balanced Budget.

These rate design principles draw heavily upon the "Attributes of a Sound Rate Structure" developed by James Bonbright in Principles of Public Utility Rates.[4] Each of these principles plays an important role in analyzing the rate design proposals of UGI Electric. In addition, these principles are consistent with Pennsylvania practice and precedent, including the *Lloyd* decision,[5] where the Commonwealth Court indicated that cost of service is the "polestar" of ratemaking but that other factors, including those listed above can be considered as well.

VI. ALLOCATION OF THE REVENUE INCREASE

Q. Please describe the approach generally followed to allocate UGI Electric's proposed revenue increase of $8.709 million to its various rate classes.

[4] James Bonbright et al. Principles of Public Utility Rates, Public Utilities Reports, Inc. 2nd Edition, 1988.

[5] *Lloyd v. Pa. P.U.C.*, 904 A.2d 1010 (Pa. Cmwlth. 2006), *appeal denied*, 591 Pa. 676, 916 A.2d 1104 (2007).

A. To reflect the results of the class cost-of-service study, the Company is proposing to move all rate classes closer to the overall system rate of return. This movement of classes towards the overall system rate of return is consistent with regulatory practice and precedent, including the *Lloyd* decision and the Commission's Order on remand approving settlement of that case, as described in further detail below.

Q. Did you consider various alternatives in conjunction with your evaluation and determination of the Company's interclass revenue proposal?

A. Yes. Using UGI Electric's proposed revenue increase, and the results from its ACOSS, I evaluated various alternatives for the assignment of that increase among its rate classes and, in conjunction with Company management, ultimately decided upon the preferred resolution of the interclass revenue issue. Book IV Section VI presents details of the computations supporting the Company's class revenue apportionment process.

The first alternative evaluated was to adjust the revenue level for each rate class so that the relative rate of return for each class was equal to 1.00 (i.e., a strict adherence to the ACOSS results moving all classes to their full cost to serve). Book IV Section VI, Schedule 1 line 32-48 provides these results. This alternative resulted in increases to Residential and General Service-1 and rate decreases to the other classes; and all classes' percentage movement in relative rate of return toward unity is 100%. The second alternative considered was assigning the increase in revenues to the Company's rate classes based on an equal percentage basis of its current distribution revenues (i.e., ignoring the

ACOSS model and the prevailing guidance provided through the *Lloyd* decision). This alternative resulted in each rate class receiving an increase in revenues and the percentage movement in relative rate of return toward unity varied from 56% to 59%. While ultimately neither alternative was the preferred solution, together they define a general range of results that provide guidance to help develop the Company's class revenue proposal.

Q. What is the Company's interclass revenue proposal?

A. After discussions with the Company, the increase proposed in this case (approximately $8.709 million) was allocated to the Residential and General Service-1 classes by an amount which moves each class by an equivalent percentage towards the system average rate of return. This results in all classes moving towards unity, with Residential and General Service-1 moving 79% in relative rate of return toward unity, and 79% for General Service-4, 81% for Large Power, and 75% for Lighting, as can be seen on Book IV Section VI, Schedule 3. This approach resulted in reasonable movement of the class relative rates of return on net rate base towards unity for all classes; a near midpoint between the two alternatives evaluated and discussed above. That result is reflected on Book IV Section VI, UGI Electric Exhibit D, Schedule 1 page 2 of 2 and in Table 2 below, wherein the relative rates of return on net rate base are shown to converge towards unity or 1.00 compared to the same measure calculated under present rates. In addition, the amounts of the existing rate subsidies and excesses among the Company's rate classes were generally reduced. From a class cost of service standpoint, this type of class movement, and reduction in class rate subsidies, is desirable to move class revenues and rates closer to the indicated cost of service for each rate class.

Table 2 below presents a comparison of the rate of return and relative rate of return under current and proposed class revenue levels.

Table 2 – Comparison of Relative Rate of Return by Rate Class ($000)

Rate Class	Current Rate of Return	Relative Rate of Return	Proposed Rate of	Relative Rate of	Percent Change
Residential	-1.28%	(0.39)	5.36%	0.71	79%
General Service-1	1.16%	0.36	6.55%	0.87	79%
General Service-4	19.90%	6.14	15.92%	2.10	79%
Large Power	17.60%	5.43	14.04%	1.85	81%
Lighting	27.22%	8.40	21.83%	2.88	75%
Total Company	3.24%	1.00	7.57%	1.00	

Q. What are the percentage changes in revenues by rate class resulting from the Company's proposed revenue apportionment?

A. Table 3 below summarizes the proposed revenue change for each rate class and the percent change in total revenues resulting from the above-described process.

Table 3 – Proposed Class Revenue Apportionment ($000)

Rate Class	Revenues at Current Rates	Revenues at Proposed Rates	Proposed Revenue Change	Percent Change
Residential	63,036	71,156	8,120	12.88%
General Service-1	3,771	4,360	589	15.61%
General Service-4	10,115	10,115	0	0.00%
Large Power	7,682	7,682	0	0.00%
Lighting	1,431	1,431	0	0.00%
Other Revenue	1,030	1,030	0	0.00%
Total Company	87,065	95,774	8,709	10.00%

Further, the Company's percentage changes of non-default service distribution revenues associated with its proposed revenue apportionment by rate class are summarized in Table 4 below. As can be seen in this table, the proposed increase to the Residential class is 1.43 times the overall system increase of 20.53%, and for General Service-1, the proposed increase is 1.39 the overall system increase.

Table 4 – Proposed Change in Distribution Operating Revenues by Rate Class ($000)

Rate Class	Operating Revenues at Current Rates	Proposed Revenue Change	Percent Change	Increase Relative to System Increase
Residential	27,713	8,120	29.30%	1.43
General Service-1	2,070	589	28.43%	1.39
General Service-4	5,100	0	0.00%	
Large Power	6,374	0	0.00%	
Lighting	1,169	0	0.00%	
Total Company	42,426	8,709	20.53%	

VII. UGI ELECTRIC'S RATE DESIGN PROPOSALS

Q. Please summarize the rate design changes UGI Electric has proposed in this rate proceeding.

A. In general, UGI Electric's rate design strategy is to make incremental movements towards reflecting the Company's relative cost of serving each rate class to provide electric distribution service to those customers. UGI Electric has proposed the following rate design changes to its current tariff schedules:

Residential – Increase in the Monthly Customer Charge from $8.74 to $13.00, with the remaining proposed increase to be recovered in the Volumetric Charge.

General Service-1 – Increase in the Monthly Customer Charge from $10.50 to $14.00, with the remaining proposed increase to be recovered in the Volumetric Charge.

General Service-4 – No changes proposed.

Large Power – No changes proposed.

Lighting – No changes proposed.

Q. Has the Company prepared a detailed comparison of the Company's present and proposed rates and resulting revenues by rate class?

A. Yes. UGI Exhibit E – Proof of Revenue, sponsored by Company Witness Epler, presents a detailed comparison of present and proposed revenues for each of UGI Electric's rate classes.

Q. What insight does the ACOSS provide concerning the development of the residential customer charge?

A. Atrium's ACOSS model allows for the development of the total revenue requirement by functions and classifications. As such, we can see directly the revenue requirement associated with the customer classification and the respective functions that form this revenue requirement. Table 2 below provides this information for the Residential class at the proposed rate increase.

Table 5—Components of Residential Customer Related Revenue Requirement

Customer Portion of Residential Revenue Requirement		
Function	**Amount**	**Includes**
Total Customer Related Costs	**$ 27,144,223**	Distribution Facilities -
Annual Bills (Customer Count *	660,460	Customer Portion & PA
Unit Costs	**$ 41.10**	PUC Direct Customer Costs
Function	**Amount**	**Includes**
Distribution Facilities - Customer Portion	**$ 12,930,304**	
Annual Bills (Customer Count *	660,460	Distribution Primary
Unit Costs	**$ 19.58**	Distribution Secondary
Function	**Amount**	**Includes**
PA PUC Direct Customer Costs	**$ 14,213,918**	Meters and Services Meter Reading
Annual Bills (Customer Count *	660,460	Customer Service
Unit Costs	**$ 21.52**	Billing and Collections

As can be seen in the above table, the total customer related costs of $27.1M result in a monthly residential customer cost of $41.10. These costs are fixed with respect to the number of customers and do not vary with the amount of energy used or the amount of demand. The total of $27.1M of residential customer related costs is broken down between the customer portion of distribution facilities and costs relating to customer service and billing.

Q. Can you please discuss the results in Table 5 above within the context of the Company's proposed residential customer charge of $8.74 and past Commission precedent?

A. Yes, past Commission precedent defines customer related costs for inclusion in a customer charge as costs associated with meters and services and related O&M expenses, meter reading and billing and collection expenses, and meter data management systems, and related employee benefits, administrative and general expenses. The Company is proposing a customer charge of $13.00, which is below the $19.58 within Table 5 above, which represents meter reading, customer service, and billing and collection expenses. These are all costs historically allowed by the Commission in a customer charge. Taking in consideration past precedent in Pennsylvania and given the results of the ACOSS as shown in Table 5 above, the Company is proposing to move the Rate R customer charge to $13.00.

Q. What criteria was utilized to determine that a $14.00 customer charge for the General Service-1 rate class is appropriate?

A. The General Service-1 rate class does not have a demand charge, so all distribution margin revenues are recovered either through the monthly customer charge or the volumetric charge. There were 3 options to recover the demand related costs and the costs associated with the minimum distribution system (1) introduce a demand charge, (2) put all of the increase in the volumetric charge, or

(3) recover the demand and costs associated with the minimum distribution system within the monthly customer charge. Introducing a demand charge was not viable given current metering technology and concerns relating to administrative complexity and recovering the demand costs and minimum distribution facilities fully through the customer charge or the volumetric charge did not balance the principles of rate design earlier discussed (e.g., fairness, stability, and consumer rationing/economic efficiency). After reviewing the current level of the customer charge for General Service-4 at $15.00 and the proposed level of Residential at $13.00 it was determined a reasonable middle ground would be to propose a $14.00 monthly customer charge for General Service-1. This allows some of these fixed demand and minimum distribution costs to be recovered through a fixed monthly customer charge rather than only through a volumetric charge, without the need to introduce a demand charge for the General Service-1 class. This proposed increase to the customer charge results in approximately 36% of the total non-default service revenue for General Service-1 will be recovered through the customer charge; which is comparable to the 36% recovered from both the customer charge and the first block of the demand charge for General Service-4.

Q. Please describe why an increase to the customer charge is important.

A. This becomes particularly important when a customer considers different options for the generation portion of the customer's bill, the purchase of an EV, and investments in conservation and energy efficiency, as these decisions are fundamentally functions of usage. All of these decisions can be distorted when non-usage-related fixed costs are being collected on a usage basis. Further, without proper price signals, the economic markets that comprise materials, goods, and services that are inputs and outputs to energy products and services are distorted, and companies and people cannot make the proper decision to maximize their preferences on allocating their limited resources of time and money. It is economically inefficient when fixed distribution costs are recovered on a usage basis and customers implement energy efficiency measures reducing their contribution to fixed costs with no corresponding reduction in the fixed costs to provide service.

VIII. ELECTRIC VEHICLE PROGRAM

Q. Please summarize the purpose of this portion of your testimony.

A. UGI Electric requested Atrium's support with the exploration and development of an EV Program (the "UGI EV Program"). The purpose of this portion of my testimony is to: (1) provide EV market context, including market trends that are driving increased EV adoption; and (2) present an overview of the proposed UGI EV Program.

Q. What does the proposed UGI EV Program consist of?

A. The UGI EV Program consists of three components: (1) EV and Electric Vehicle Supply Equipment ("EVSE") Infrastructure; (2) EV education; and (3) cost recovery mechanisms. These programs will be implemented, in part, through revised service extension regulations in the Company's proposed tariff to encourage make-ready EV infrastructure, and an EV-C Rate that will be applied to three Company-owned charging stations.

Q. Why is UGI proposing the UGI EV Program?

A. EV adoption generally has accelerated in recent years due to technological, economic and policy developments at the national, state, and local levels. As the market expands and adoption increases, the way that these vehicles utilize the distribution grid needs to be understood to plan for and provide safe and reliable "refueling" service. An EV program would seek to encourage EV deployment in UGI Electric's service territory by expanding access to EV charging infrastructure, increasing awareness regarding the benefits of EVs, and evaluating the impact of new charging infrastructure on the distribution grid. Further, there has been increased interest by, and support from, this Commission for electric distribution utilities' proposals that can help support the electrification of the transportation industry through various programs. In 2012, the Commission held a forum related to supporting alternative fuel vehicles, viewed as a first step in ongoing discussions on alternative fuel vehicles issues under the Commission's jurisdiction and a foundation for possible future action.[6] Since that forum, both Duquesne Light Company ("DLC") and PECO Energy Company ("PECO") proposed and are implementing EV programs. The Commission has been supportive of these programs, as illustrated by Commission Chairman Brown Dutrieuille's statements in support of both of these programs. Specifically, for PECO, Chairman Brown Dutrieuille stated:

> This milestone exemplifies the enthusiasm and momentum around the EV marketplace. Nonetheless, there is still a lot of work to be done to facilitate charging station access in an economic manner. With that said, I wish to highlight my support for PECO's EV Fast Charger Rider. This pilot is designed to support the buildout of publicly available and workplace fast charging through reduced demand charges.[7]

And for DLC, Chairman Brown Dutrieuille remarked:

> This milestone exemplifies the enthusiasm and momentum around the EV marketplace. Nonetheless, there is still work to be done to facilitate charging station access in an economic manner. The EV Pilot supports the buildout of two types of EV chargers. First, it provides for investment in DC fast charging and associated make ready infrastructure for Duquesne itself and the Port Authority of Allegheny County. Second, the EV Pilot supports investment in Level 2 charging stations and associated make-ready infrastructure for third-party entities. Duquesne will utilize information gathered from the EV Pilot to inform itself and th.is Commission in future rate designs. This proposal aligns with the Commission's recently approved Policy Statement facilitating regulatory clarity for third-party charging.[8]

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[6] "Pennsylvania Public Utility Commission Annual Report 201-2012", pp. 19-20.

[7] Statement of Chairman Gladys M. Brown, Dated December 20, 2018 - Pennsylvania Public Utility Commission, Public Meeting held December 20, 2018 3000164-OSA - Docket Nos. R-2018-3000164, et al.

[8] Statement of Chairman Gladys M. Brown, Dated December 20, 2018 - Pennsylvania Public Utility Commission, Public Meeting held December 20, 2018 3000124-OSA Docket Nos. R-2018-3000124, et al.

Q. What trends have you observed in the EV market that are relevant to the Company's decision to propose the UGI EV Program?

A. Relevant developments and trends fall into these categories:

1) Increased EV availability across multiple vehicle classes,
2) Expansion of nationwide EV charging infrastructure; and
3) Federal incentives to consumers and self-imposed mandates by auto manufacturers to electrify their fleets in coming years.

Q. Please describe the general trends related to EV availability.

A. The last decade has seen immense increases, not just in the total volume of EVs sold, but in the models, manufacturers, and vehicle classes. Whereas 2011 saw fewer than 18,000 plug-in EVs sold in the United States, the annual sales rose to over 325,000 in 2019, according to data from Argonne National Lab.[9]

Data from the Energy Information Administration's ("EIA") Annual Energy Outlook 2020[10] indicates total electric vehicle sales (cars and light trucks) are expected to grow from 362,00 in 2020 to 782,000 in 2030. In 2020, those sales broke down as 307,000 cars (85%) and 55,000 light trucks (15%). Over the ensuing decade, EIA projects electric car sales to increase 9% per year to reach 680,000 (87% of total electric vehicle sales), while electric truck sales increase 6% per year to reach 102,000 (13% of electric vehicle sales). These trends are

[9] Assessment of Light-duty Plug-in Electric Vehicles in the United States, 2010-2019: https://publications.anl.gov/anlpubs/2020/06/158307.pdf
[10] Light-Duty Vehicle Sales, U.S. EIA: https://www.eia.gov/outlooks/aeo/data/browser/#/?id=48-AEO2020&cases=ref2020&sourcekey=0

enabled by the continued release of new models being made available across the whole range of vehicle classes and increases in access to charging infrastructure.

Q. What charging infrastructure exists across the United States?

A. The installation of charging infrastructure across the United States has been progressing in a piecemeal fashion, as individual utilities, state governments, private charging companies, and other independent entities are spearheading the implementation of such projects. Across the entire United States, the U.S. Department of Energy ("U.S. DOE") tracks over 28,000 public charging stations available. Yet, there are large stretches of land across the country where public EV chargers are unavailable. In comparison to the number of public EV charging stations, according to the National Association of Convenience Stores, there are approximately 122,000 convenience stores in the U.S. that sell motor fuels, which accounts for 80% of all motor fuels purchased in the U.S. In addition to these public gas stations with convenience stores, there are other fueling stations for private fleet use or gas stations without convenience stores. The lack of visible and available public EV charging stations creates a significant barrier towards many car-buyers investing in an EV of their own. Consequently, many stakeholders in the EV space have been looking to make a push to a more comprehensive national charging network. As one example, automaker General Motors recently teamed with EV charging operator EVgo to build out nearly 3,000 fast chargers in targeted cities and regions that lacked sufficient infrastructure in an effort to bolster public confidence in availability of public EV charging.[11] Politically, the push for nationwide EV charging infrastructure to be built out is growing. In February of 2020, H.R.5770 'EV Freedom Act' was introduced to the U.S. House of Representatives that would create a network of fast chargers within five years along the U.S. highway systems.[12] Looking forward, President-elect Joe Biden's energy and transportation plan called for a significant increase in access to electric charging stations across the country as a boost to the EV market.[13]

Based on these types of initiatives and the growing demand in the EV market, Guidehouse Insights projects that North America will be home to 66,000 DC fast chargers by 2025 and that total will increase to 144,000 by 2030.[14]

Q. What public charging infrastructure specifically exists within the UGI Electric service territory?

A review of publicly-available EV chargers on several of the more comprehensive charging station locating apps, PlugShare (www.plugshare.com), EVgo (www.evgo.com), ChargePoint (www.chargepoint.com) and ChargeHub (www.chargehub.com) shows that the UGI Electric service territory has no

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[11] GM to Build Nationwide EV Charging Network: https://www.ttnews.com/articles/gm-build-nationwide-ev-charging-network

[12] U.S. House of Representative H.R. 5770 – EV Freedom Act https://www.congress.gov/bill/116th-congress/house-bill/5770/text

[13] EV industry optimistic for expanded tax credits, other policy wins under 'car guy' Biden: https://www.utilitydive.com/news/ev-industry-optimistic-for-expanded-tax-credits-other-policy-wins-under-c/589437/

[14] GM to add 2,700 EVgo chargers in 5 years, a bet on fast-charging while shopping: https://thecargossip.com/2020/07/31/gm-to-add-2700-evgo-chargers-in-5-years-a-bet-on-fast-charging-while-shopping/

publicly-available EV charging stations, either current DC Fast Charge (“DCFC”) charging stations or Level 2 charging stations. This clearly shows that the Company’s service territory lacks the charging infrastructure that would directly support EV adoption and, all else being equal, serves as a barrier to expanding EV use within the Company’s service territory. UGI Electric’s service territory has seen much lower adoption of EVs than the rest of the Commonwealth. The vast majority of EV registrations and EVSE are in the major metropolitan regions in Pennsylvania (Philadelphia and Pittsburgh in particular), while smaller metropolitan regions and rural parts of the Commonwealth have lower adoption rates. As is the case with all technological change, adoption curves are geographically specific, reflecting the particular economic markets and consumer preferences that can be consistent in specific areas. As such, EV adoption is occurring at a faster pace in more densely populated metropolitan areas.

Q. Has the need for EV charging infrastructure been recognized in Pennsylvania at the state level?

A. Yes. The Pennsylvania Department of Environmental Protection (“PA DEP”) has published a report on its website, *Pennsylvania Electric Vehicle Roadmap* (“EV Roadmap”), which includes numerous elements related to EV charging infrastructure.[15] Among that report is the identified need for EV charging

[15] http://files.dep.state.pa.us/Energy/OfficeofPollutionPrevention/StateEnergyProgram/PAEVRoadmap.pdf

infrastructure and a number of barriers to EV charging infrastructure development along with recommendations to address these barriers.

Q. Can UGI Electric use the report to plan how it, as an electric distribution company in Pennsylvania, may target supportive actions and offerings?

A. Yes. Specifically, the EV Roadmap identifies strategy 3.2.2 Strategy – Utility Transportation Electrification Directive, with relevant details as quoted directly below:

- "Barriers addressed: Lack of sufficient, sustainable funding for EV/EVSE incentives; Low-cost effectiveness of public EVSE investments at low EV adoption levels, lack of available electricity rate options designed for EV charging."
- "Objective: Enable and encourage utilities to leverage their expertise and relationship to customers to jumpstart the EV market in a way that maximizes benefits to ratepayers and society."
- "Description: This strategy could enable and encourage utilities to invest in transportation electrification. This strategy is designed as a precursor to several of the following strategies (e.g. EVSE investment, EV rates, and marketing and outreach), serving as a foundation to encourage utility participation in advancing the EV market in a manner that complements and supports the competitive EV charging market. As an example, the legislature could direct the Pennsylvania Public Utility Commission (PUC)

to open a proceeding asking utilities to submit proposals to increase adoption of EVs in their service area."

- "Best practices: Nearly all EV experts interviewed for this roadmap expressed that it is essential to grant utilities latitude to invest in transportation electrification to help jumpstart the EV market. Interviewees provided multiple reasons for giving utilities a strong role in transportation electrification, including: their existing role in serving public interests; knowledge of installing and maintaining electricity infrastructure; stable business structure that continues to be involved in electric distribution for the long-term; and cost recovery mechanisms that allow for the installation of chargers where there is the greatest demand rather than where there is greatest profit. Interviewees also noted utilities' unique ability to reach customers for marketing and awareness."

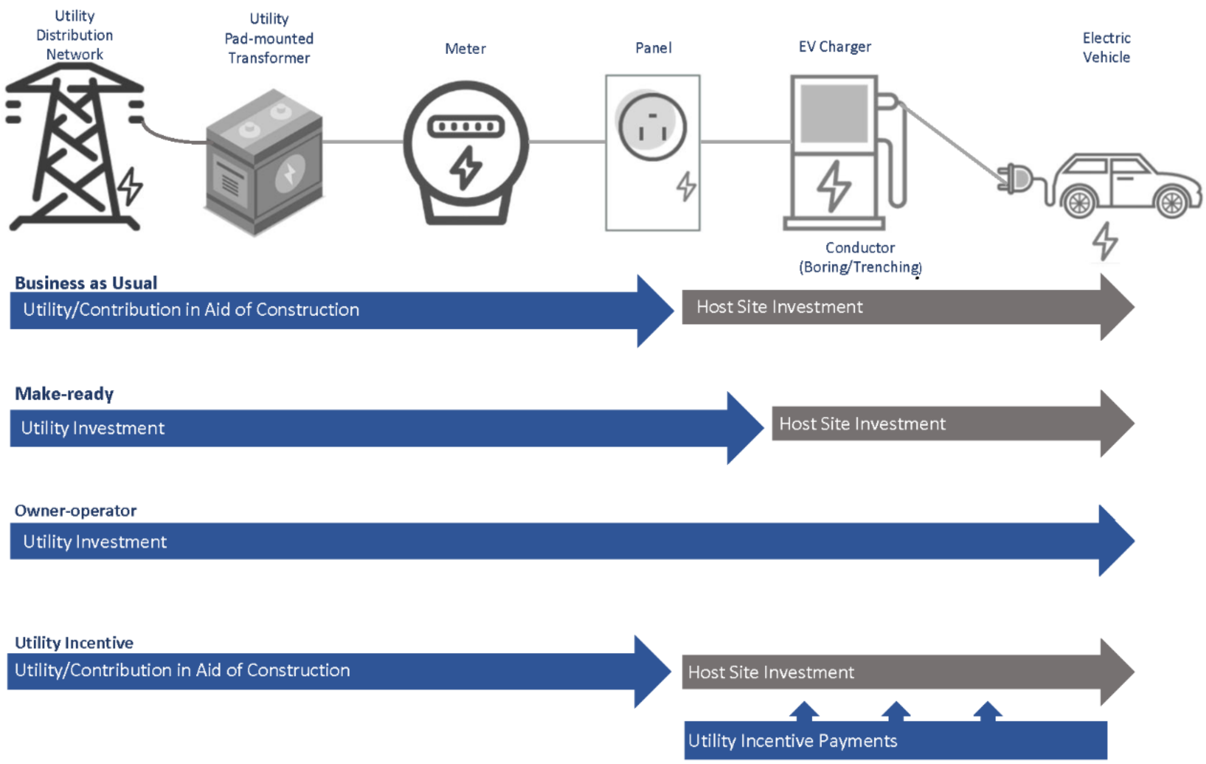
Q. How does UGI Electric's EV Program support the strategy discussed above?

A. As I testified earlier, the Company's EV Program contains three components: (1) EV and EVSE infrastructure that will consist of facilities owned and operated by the Company as well as the development of infrastructure to be used by third-party EV charging station operators; (2) EV education; and (3) cost recovery mechanisms. The components of UGI Electric's EV Program were selected after consideration of the available infrastructure options.

Q. What infrastructure options did UGI Electric consider for its program?

Figure 1 characterizes the infrastructure options that the Company considered for its UGI EV Program.

Figure 1 EVSE Infrastructure Options



This figure demonstrates the range of options:

Business as Usual – the extension of service for a charging station falls within the utility's line extension policy, and the owner of the charging station pays for any portion of the required utility infrastructure not covered by the utility's allowances.

Make-ready – the utility provides investment at its cost for the required utility infrastructure, including undergrounding of the conductor, pad mounted transformer, meter, and panel, such that the charging station owner is only responsible for the charging equipment.

Owner-operator – the utility installs all required utility infrastructure and the charging equipment, so the utility fully owns and operates the charging equipment.

Utility Incentive – the extension of service for a charging station falls within the utility's line extension policy, but the utility provides rebates, payments, and/or other incentives for the charging station owner's initial costs.

Q. What EVSE infrastructure components did UGI Electric choose to include in its UGI EV Program proposal?

UGI Electric is proposing (a) "Owner-operator" EV charging stations which will be owned and operated by UGI Electric and available for public use at a tariffed rate, as well as, (b) "Make-ready" charging infrastructure that will be facilitated through changes to the Company's service extension regulations. In UGI Electric Statement No. 3, Company witness Eric Sorber addresses the operational aspects and construction of the charging station assets proposed for owner-operator status.

Q. Please further describe the UGI Electric-Owned Charging Infrastructure proposal.

A. UGI Electric is proposing to install, own, and operate three EV charging stations. These EV charging stations will, at minimum, include DC fast charging facilities, but may also include Level 2 chargers. DC Fast charging stations have higher initial equipment costs and lower development than Level 2 EV chargers but provide charging convenience to station users due to their ability to rapidly charge an EV. As noted earlier, there are no known public EV charging stations currently in Company's service territory, and UGI Electric has yet to be approached by an interested party in developing any EV charging stations located within its service territory. Due to this lack of third-party interest, and in furtherance of EV deployment within the Commonwealth and specifically within UGI Electric's service territory, UGI Electric is proposing to own and operate the infrastructure and the charging equipment associated with these EV charging stations. As explained in Company witness Eric Sorber's testimony, UGI Electric proposes installing the EV charging stations to include DC Fast charging stations with 2-3 plugs at each location along transit corridors with good access to the grid and no significant upstream reinforcement costs. The Company may also locate an additional one or two Level 2 chargers, which have much lower installation costs, at these same locations depending on total project costs as well as space availability considerations. The equipment costs for these chargers is specifically discussed by Company witness Eric Sorber in UGI Electric Statement No. 3.

Q. What is the Company proposing to better address EV make-ready infrastructure in support of EV charging station development?

A. UGI Electric is proposing to modify the service extension provisions in its tariff in order to specifically provide for Company investment allowance related to the installation of any make-ready infrastructure associated with Level 2 or DCFC charging stations installed within the UGI Electric service territory that will be open to the public for use. UGI Electric proposes to invest, own, and maintain the supporting “make-ready” infrastructure needed to serve the charging stations that the customer will own. This investment may include:

- New transformer or transformer upgrades, as necessary to serve the new charging station load;
- Electric distribution service drop;
- Separate utility service meter for the charging station;
- New electric service panel; and
- Associated conduit and conductor and ancillary equipment necessary to connect the EV charging stations to the electric grid.

The customer will purchase, install, and operate/maintain the charging stations.

Q. Please describe the "EV Education" component of UGI Electric's UGI EV Program proposal.

A. The EV Education component of the UGI EV Program is designed to support the success of the program by providing customers education and information regarding EVs (e.g., how to connect EV charging equipment, cost of EV charging from the grid, and differences in EV charging levels). Elements of the EV Education component may include:

(a) A UGI Electric EV webpage, providing information and details on the program, Frequently Asked Questions ("FAQs"), contact details, and links to other informative sites.

(b) Communication through non-website channels (e.g., bill inserts, television campaigns, social media, digital, and print media).

(c) Program collateral including overview, UGI Electric and customer roles and requirements, program costs and benefits, customer applications, FAQs, etc.

(d) Collaboration with government and non-governmental organizations on sharing details on the UGI EV Program and general EV education for communities across UGI Electric's territory.

Q. How are the costs of the UGI EV Program allocated in the ACOSS Model?

A. As explained in Company witness Eric Sorber's testimony, UGI Electric is proposing to include the capital costs for the Company-owned charging stations within its FPFTY ending September 30, 2022. These costs are allocated in the ACOSS based on the total customers in each rate class as a proportion of total customers.

Q. Have other electric utilities in Pennsylvania implemented programs in response to the increased adoption of EVs?

A. Yes. As mentioned previously, both DLC and PECO are implementing Commission-approved EV programs. DLC is implementing its EV ChargeUp Pilot; a program designed to (1) evaluate EV charging infrastructure, (2) facilitate EV education & outreach, and (3) provide customer EV registration Incentives.

PECO is implementing its Pilot Electric Vehicle Direct Current Fast Charger ("EV DCFC") Rider, or "Pilot EV-FC" to support transportation electrification by encouraging the buildout of publicly-available (or workplace fleet) fast charging stations through reduced demand charges.

Of the two EV programs approved by the Commission, the DLC program, which includes facilities owned and operated by the utility, is most akin to the program that UGI Electric is promoting in this proceeding.

Q. What principles did the Commission identify as the justification for approving DLC's ChargeUp Pilot?

A. The Commission's order adopted the ALJ's recommendation to approve DLC's settlement agreement.[16] The ALJ determined that the costs of the EV pilot program should be approved as just and reasonable without any definitive class allocation. The ALJ reasoned that the impact will be relatively small and, because these costs relate to a pilot, some expenditures are needed before the parties and the Commission can determine whether the EV incentives and provisions will create a larger public benefit. The ALJ pointed out that while the use of EVs within DLC's service territory is statistically small, the benefits of a population that drives EVs cannot be realized if public charging stations are not easily available.

Q. Given the Commission's approval of the DLC and PECO programs focused on EV development, do you believe that the Company's proposals should be approved by the Commission?

A. Yes, I do. The Company is proposing modest program elements that will support the development of EV charging and EV utilization within the Company's service territory and will importantly provide access for EV owners to publicly accessible charging alternatives. Importantly, the elements proposed by the Company comport with defined strategy outlined in the EV Roadmap for Pennsylvania. With

[16] "JOINT PETITION FOR APPROVAL OF SETTLEMENT STIPULATION" in Pennsylvania Public Utility Commission, et al. v. Duquesne Light Company Docket Nos. R-2018-300124, etc.

no publicly-available charging stations located within the Company's service territory, the time is right for UGI Electric to step forward and fill the void that currently exists and remove an identified barrier to EV adoption across its service territory.

Q. Is the Company proposing a new rate schedule related to the UGI EV Program?

A. Yes. UGI Electric is proposing Rate EV-C (Electric Vehicle – Company Owned Charging). As stated on Second Revised Page 82 of the Company's proposed tariff supplement, the rate schedule is available to EV operators for EV battery charging from Company-owned DCFC public EV charging stations with output power of 50kW or greater, or Level 2 public EV charging stations, where the Company provides charging service and direct or network billing to the station user. EV operators who reside either within the Company's service territory or outside the Company's service territory are eligible to charge their EV at a Company-owned public EV charging station. The Company plans to have its charging network provider administer the charging stations in a manner that would have charging available at market-based rates, with energy usage charges to public EV station users not to exceed $0.50/kWh.

IX. UGI ELECTRIC'S BATTERY STORAGE PROJECT

Q. What is UGI Electric proposing for its Battery Storage Project?

A. As described in detail by Company Witness Sorber (UGI Electric Statement No. 3), UGI Electric's battery storage project is first and foremost a project designed to improve reliability of the distribution system. UGI Electric is proposing to include within its FPFTY ending September 30, 2022, the capital costs associated with this project. There is an opportunity for this battery storage project to participate in PJM's frequency regulation market (Market D) and for UGI Electric to receive revenues for providing frequency response to PJM with the use of this asset.

Q. What is the PJM frequency regulation market?

A. PJM has developed a market for regulation resources that can help correct for short-term changes in electricity use and generation that might affect the stability of the power system due to the system frequency being out of acceptable bounds. When the system frequency is out of sync, resources are required to bring it back in sync to ensure stability of the overall system. There are different methods available for "frequency regulation," including (1) generator inertia, (2) adding and subtracting generation assets, (3) dedicated demand response, and (4) electricity storage. To utilize these resources, PJM provides market-based compensation to resources that have the ability to adjust output or consumption in response to an automated signal. The Regulation D signal is a fast and dynamic signal that requires resources to respond instantaneously. If the resource responds, it is compensated for that response through the multiplication of PJM's hourly Market D clearing price and the MWh of response provided.

Q. What expected revenue can the Company anticipate from participation in PJM's frequency regulation market?

A. At this point, the level of revenues from participation in the PJM frequency regulation market is unknown. The Market D clearing price is fairly volatile as the price reflects the intersection of supply and demand; with supply being a function of resources electing to participate and demand a function of how volatile the demand is across the system (i.e., how often there is a short-term mismatch between electricity use and generation that impacts the system frequency).

Q. How are the capital costs associated with the battery storage project allocated in the ACOSS Model?

A. The capital costs associated with this project and included in the FPFTY ending September 30, 2022 are allocated to the rate classes based on each class's contribution to the non-coincidental peak demand, similar to other demand related costs on UGI Electric's distribution system.

X. <u>CONCLUSION</u>

Q. Please summarize your conclusions and recommendations for UGI Electric's ACOSS, class revenues, rate design, EV Program, and Battery Storage Project.

A. My conclusions and recommendations are as follows:

- The results of the Company's ACOSS should be accepted by the Commission as a realistic reflection of cost causation and the design and operating characteristics of the Company's distribution system.
- The results from the Company's ACOSS should be accepted by the Commission as a guide to evaluate and set UGI Electric's class revenues and rate design in this proceeding. As noted above the methods employed were previously approved by the Commission in UGI Electric's most recent base rate proceeding.
- The Commission should accept the Company's proposed apportionment of revenues to its rate classes (see Table 2, Table 3, and Table 4) because it reasonably balances the various criteria that were considered by the Company in the revenue apportionment process, which included: (1) cost of service; (2) class contribution to present revenue levels; (3) customer impact considerations (including rate shock and stability) and (4) fairness.
- The Commission should approve the rate design proposed by the Company because it reasonably satisfies the key rate design objectives I presented earlier in my testimony, including: (1) achieve fair and equitable rate levels that are reflective of the cost to serve; (2) avoid undue discrimination between and within rate classes; (3) rates should be stable, understandable, and provide customer choices; (4) create economically efficient pricing for delivery service; (5) rates should encourage energy conservation and energy efficiency; and (6) rates should allow a utility to recover its revenue requirement in a manner that

maintains revenue stability and minimizes year-to-year under- or over-collections.

- The Commission should approve the UGI EV Program allowing the Company to support the development of EV charging infrastructure and adoption of EV technology within its service territory.
- The Commission should approve UGI Electric’s Battery Storage Project as it is an important step in the Company’s ability to demonstrate and evaluate storage as a useful distribution system operational asset.

Q. Does this conclude your direct testimony?

A. Yes, it does.

UGI ELECTRIC

EXHIBIT JDT-1

ATRIUM ECONOMICS

Centered on Energy

John D. Taylor

Managing Partner

Mr. Taylor is a utility pricing expert with experience developing cost of service studies for both electric and gas utilities and transmission companies. He has deep experience with developing residential and commercial rates, analyzing midstream transportation and storage capacity resources, and assessing the relationship between price signals and the adoption of distributed generation assets.

He has filed testimony as an expert witness on class cost of service studies for both electric and natural gas utilities, return on equity, and on the appropriate use of statistical analysis during audit testing. Mr. Taylor has supported projects involving financial analysis, regulatory support and strategy, market assessment, litigation support, and organizational and operations reviews. He has an expert knowledge of cost allocation principles for utility cost of service studies and for affiliate transaction and service agreements. Mr. Taylor's work often involves providing support for regulatory proceedings by conducting various studies and analyses related to revenue requirements, affiliate transactions, class cost of service, and cash working capital studies. He has also been involved in the sale of generating assets as sell side advisors, supporting due diligence efforts, financial analyses, and regulatory approval processes.

EDUCATION

M.A., Economics, American University

B.A., Environmental Economics, University of North Carolina at Asheville

YEARS EXPERIENCE

15

RELEVANT EXPERTISE

Utility Costing and Pricing, Expert Witness Testimony, Transaction Facilitation, Revenue Requirements, Statistics, Valuation, Market Studies, Rate Case Management, New Product and Service Development, Strategic Business Planning, Marketing and Sales

RECENT PROJECT EXPERIENCE

Puget Sound Energy (2019-2020)

Expert witness for gas class cost of service study and rate design. Rebuttal filing will be made on January 15th. Also supported attrition analysis and testimony of another witness.

Fitchburg Gas and Electric Light Company – MA Electric Division (2019-2020)

Expert witness for gas class cost of service study and rate design. Direct testimony filed on December 17, 2019.

EPCOR Distribution & Transmission Inc. (2019-2020, ongoing)

Conducted a minimum distribution system study for EPCOR. Project may continue with a full class cost of service study and rate design. Also, provided a review of EPCOR's affiliate cost allocation, specifically their master overhead pool allocation, that was filed with their 2020-2022 TFO Tariff Application.

Dominion Energy West Virginia (2019-2020)

Setup gas class cost of service study in fall of 2019 and will be updating that study for an upcoming June filing where I will support expert testimony.

Dominion Energy East Ohio (2018-2019)

Setup gas class cost of service study in the 2018/2019 winter. Project on hold while Dominion is preparing for West Virginia filing.

Chesapeake Utilities Corporation (Delaware, Florida) (2015-2018)

Various rate analyses for Florida Public Utilities a company wholly owned by Chesapeake utilities. Conducted gas cost of service study for their Delaware division in 2015 and a Weather Normalization Adjustment filing in 2019. The WNA was put on hold for a full rate case in early 2020.

CenterPoint Energy / Vectren Ohio (2018-2020)

Supported class cost of service and rate design testimony for Vectren Ohio in 2018 and supported their internal coincident peak study in 2019. This engagement will likely continue in 2020 with supporting Vectren Energy Indiana with cost of service and rate design testimony.

Liberty Utilities / Enbridge Gas New Brunswick (2018-2020)

Reviewed line extension policies and economic development rates in 2018, supported revenue mitigation/apportionment in 2019, and will likely support cost of service and rate design realignment in 2020.

Western Export Group (2019)

Supporting the Western Export Group with the review and response to NOVA Gas Transmission's System Rate Design and Services Application before the National Energy Board.

Central Nebraska Public Power and Irrigation District (2017)

Provide cost of service testimony for Central Nebraska Public Power and Irrigation District before the FERC.

PREPA Bondholders (2018-2019)

Provide ongoing support to PREPA bondholders relating to various restructuring efforts occurring in Puerto Rico. Review draft rules, provide comments, and work with outside counsel to draft responses.

LG&E and KU (2018-2019)

Retained by LGE and KU to work with stakeholder in the development of a report summarizing the current rates and rate options relating to the electrification of bus fleet for the local transit authorities.

Gaz Metro / Energir (2018)

Comprehensive line extension review and analyses supported with expert report and testimony (provided by another witness) before the The Régie de l'énergie. I was the project manager and provided subject matter expertise but was not the witness.

BY Hydro (2016-2017)

Line extension review and analyses. Study focused on 10 other peer electric utilities sand line extension policies were compared and contrasted with a focus on several characteristics including upstream reinforcements.

FortisBC (2016 – 2018)

Report relating to review of 'Transportation Service Model' - midstream transportation and storage capacity resources used in providing balancing of transportation customers' loads. Resulted in expert report and oral testimony before the British Columbia Utilities Commission.

Tacoma Public Utilities (2017-2019)

Reviewed and supported their 2017 – 2018 Rate Case Filing and developed specific proposals for that filing including cost allocation assumptions and methodologies. Updated streetlighting rates to incorporate LED lighting technologies.

CPS Energy (2018)

Class cost of service study review, rate design review, and line extension review for both gas and electric operations. Completed report on geographically differentiated rates for CEO's office.

NIPSCO Gas Rate Case (2017 – 2018)

Supported the development of NIPSCO's gas cost of service study and rate design for the first filing that allowed for a forecasted test year and the roll in of TDISC costs into base rates. I was the project manager and provided subject matter expertise but was not the witness.

Homer Electric Association / Alaska Electric Cooperatives (2015)

Supported the review of ENSTAR's cost of service study, revenue allocation, and rate design relating to various large power and industrial customers.

Habersham Electric Cooperative (2019)

Conducted 5 year financial forecast and class cost of service study accompanied with report. Also, developed line extension report with suggested modifications.

Brownsville Public Utilities Commission (2019)

Updated streetlight rates based on pervious 2015 cost of service study using unit costs, replacement costs, and carrying costs for new installations of LED lights.

REPRESENTATIVE EXPERIENCE

Management and Development

- Able to quickly grasp new material, thoroughly analyze data, and synthesize ideas and a skilled communicator with ability to effectively explain complex concepts to peers and stakeholders.
- Enthusiastic leader with the ability to bridge gaps between team collaboration and independent focus while being passionate about developing and empowering employees by appropriately leveraging their skills.
- Annually responsible for managing six to ten active consulting engagements with total annual revenues of $1.5M. Also, work as the single subject matter expert or with other experts on these engagements and am able to bill $525k for my time spent on these engagements.
- Participated in all phases of business development and marketing: research, cold calling, client relationship management, marketing materials, proposals, and negotiating terms and budgets.
- Authored and provided educational presentations for internal and external training on various topics. Updated essential Excel workbooks used for delivering consulting engagements.
- Responsible for workload management of all associates, analyst, assistant consultants, and consultants: ensuring projects are fully staffed and individuals are utilized effectively.

Rate Design and Regulatory Proceedings

Mr. Taylor has worked on dozens of electric and gas rate cases including the development of revenue requirements, class cost of service studies, and projects related to utility rate design issues. Specifically, he has:

- Lead expert and witness for class costs of service studies across North America and worked on dozens of other class cost of service and rate design projects for other lead witnesses.
- Developed WNA mechanism for a gas utility including back casting results and supporting expert witness testimony and exhibits.

- Developed revenue requirement model to comply with a new performance based formula ratemaking process for a Midwest electric utility.
- Supported the developed of time of use rates, demand rates, economic development rates, load retention rates, and line extension policies.
- Analyzed and summarized allocation methodology for a shared services company.
- Assessed the reasonableness of costs through various benchmarking efforts.
- Led the effort to collect and organize plant addition documentation for six Midwest utilities associated with the state commission's audit of rate base.
- Supported lead-lag analyses and testimonies.
- Analyzed customer usage profiles to support reclassification of rate classes for a gas utility.
- Helped conduct a marginal cost analysis to support rate design testimony.

Litigation Support and Expert Testimony

Mr. Taylor has testified in several cases on class cost of service studies and statistical audit methods. He has also supported numerous other expert testimonies. Specifically, he has:

- Filed testimony as an expert witness on allocated class cost of service studies for both electric and gas utilities.
- Filed testimony as an expert witness on the application of statistical analysis.
- Filed testimony before FERC on the rate of return for an Annual Transmission Revenue Requirement and participated in FERC settlement conferences.
- Part of two person expert witness team that provided an expert report to the British Columbia Utilities Commission on the use of facilities for transportation balancing services for Fortis BC.
- Part of two person expert witness team that provided an expert report on affiliate transactions and capitalized overhead allocations for Hydro One on three separate occasions.
- Sole expert for expert report on affiliate allocations for Alectra utilities, the second largest publicly owned electric utility in North America. This was conducted shortly after the merger of four distinct utilities.
- Sole expert for expert report on the allocation of overhead costs between transmission and distribution businesses for EPCOR.

Transaction Experience

Mr. Taylor has been involved with several generating asset transactions supporting both buy side and sell side analysis and due diligence. His work has included:

- Worked as buy side advisor for a large water utility in the mid-Atlantic region including supporting the review of revenue requirements, rates, and forecasts.

- Helped facilitate and manage processes for a nuclear plant auction by processing Q&A, collecting relevant documentation and managing the virtual data room for auction participants.
- Supported the auction process for steam and chilled water distribution and generation assets in the Midwest.
- Supported the development of a financial model to ascertain the net present value of several competing wholesale power purchase agreements and guided the client with a decision matrix for the qualitative aspects of the offers.
- Provided research on comparable transactions, previous mergers and acquisitions, and potential transaction opportunities for several clients.

Financial Analysis and Market Research

Other financial analysis and market research Mr. Taylor has conducted include:

- Estimated the rate impact and costs associated with moving California energy market to 100% renewable.
- Assessed the consequences of a divestiture on the cost of service model for a New England gas distribution company.
- Developed distributed CNG/LNG market studies for two separate utilities and two separate competitive market participants.
- Modeling alternative mechanisms for the allocation of overhead costs to a nuclear plant.

EXPERT WITNESS TESTIMONY PRESENTATION

United States

- Delaware Public Service Commission
- Federal Energy Regulatory Commission
- Illinois Commerce Commission
- Indiana Utility Regulatory Commission
- Maine Public Service Commission
- Massachusetts Department of Public Utilities
- Minnesota Public Utilities Commission
- Oregon Public Utility Commission
- Pennsylvania Public Utility Commission
- Washington Utilities and Transportation Commission
- Public Service Commission of West Virginia

Canada

- Alberta Utilities Commission
- British Columbia Utilities Commission
- Ontario Energy Board

UGI ELECTRIC STATEMENT NO. 7

JOHN F. WIEDMAYER

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3023618

UGI Utilities, Inc. - Electric Division

Statement No. 7

Direct Testimony of
John F. Wiedmayer, C.D.P.

Topics Addressed: Depreciation

Date: February 8, 2021

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I. <u>INTRODUCTION</u>

Q. Please state your name and address.

A. My name is John F. Wiedmayer. My business address is 1010 Adams Avenue, Audubon, Pennsylvania 19403.

Q. Are you associated with any firm and in what capacity?

A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") as Project Manager, Depreciation and Valuation Studies.

Q. How long have you been associated with Gannett Fleming?

A. I have been associated with the firm since I graduated from college in June 1986.

Q. What is your educational background?

A. I have an AB Engineering degree from Lafayette College and a Master of Business Administration from the Pennsylvania State University.

Q. Do you belong to any professional societies?

A. Yes. I am a member of the National and Pennsylvania Societies of Professional Engineers and the Society of Depreciation Professionals ("SDP"). In 2005, I served as President of the SDP and was a member of the SDP's Executive Board for the years 2003 through 2007.

Q. Do you hold any special certification as a depreciation expert?

A. Yes. The SDP has established national standards for depreciation professionals. The SDP administers an examination to become certified in this field. I passed the certification exam in September 1997 and have fulfilled the requirements necessary to remain a Certified Depreciation Professional.

Q. Please outline your experience in the field of depreciation.

A. I have over 34 years of depreciation experience, which includes expert testimony in numerous cases before 14 regulatory commissions, including the Pennsylvania Public Utility Commission ("PA PUC" or the "Commission").

In June 1986, I was employed by Gannett Fleming as a Depreciation Engineer. I held that position from June 1986 through December 1995. In January 1996, I was assigned to the position of Supervisor of Depreciation Studies. In August 2004, I was promoted to my present position as Project Manager of Depreciation Studies. I am responsible for conducting depreciation and valuation studies, including the preparation of testimony, exhibits, and responses to data requests for submission to the appropriate regulatory bodies. My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

During the course of my employment with Gannett Fleming I have assisted in the preparation of numerous depreciation studies for utility companies in various industries. I assisted in the preparation of depreciation studies for the following telephone companies: Alberta Government Telephone, Commonwealth Telephone Company, Telus, United Telephone Company of New Jersey and United Telephone of

Pennsylvania. I assisted in the preparation of depreciation studies for the following companies in the railroad industry: CSX Transportation, Union Pacific Railroad, Burlington Northern Railroad, Burlington Northern Santa Fe Railway, Amtrak, Kansas City Southern Railroad, Norfolk & Western, Southern Railway, and Norfolk Southern Corporation.

I also assisted in the preparation of depreciation studies for the following organizations in the electric industry: AmerenUE, Arizona Public Service Company, UGI Utilities, Inc. - Electric Division, Penelec, Metropolitan Edison, Orlando Utilities Commission, the City of Red Deer, Nova Scotia Power, Newfoundland Power, Owen Electric Cooperative, Bangor Hydro Electric Company, Maine Public Service Company, Michigan Electric Transmission Company, PECO, Jackson Electric Cooperative Corporation, Houston Lighting and Power, TXU Energy, Maritime Electric, Nolin Rural Electric Cooperative, AmerenCIPS, AmerenCILCO, AmerenIP, ComEd, Con Edison Company of New York, Orange and Rockland, Rockland Electric ("RECO"), Baltimore Gas and Electric Company ("BGE"), Exelon Generation and the City of Calgary - Electric System.

Further, I assisted in the preparation of depreciation studies for the following natural gas companies: BGE, PECO, UGI Utilities, Inc., North Penn Gas, PFG Gas, UGI Central Penn Gas, Inc., Equitable Gas, Centra Gas Alberta, Questar Gas, Orange and Rockland, Con Edison, Dominion East Ohio, AmerenUE, AmerenCILCO, AmerenCIPS, AmerenIP, Southern Connecticut Gas and Connecticut Natural Gas.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service lives and net salvage, calculated annual depreciation, and prepared reports for submission to state public utility commissions or federal regulatory agencies.

Q. Have you previously testified on the subject of utility plant depreciation?

A. Yes. I have submitted testimony to the Kentucky Public Service Commission, the Newfoundland and Labrador Board of Commissioners of Public Utilities, the Nova Scotia Utility and Review Board, the Federal Energy Regulatory Commission, the Utah Public Service Commission, the Arizona Corporation Commission, the Missouri Public Service Commission, the Illinois Commerce Commission, the Maine Public Utilities Commission, the Maryland Public Service Commission, the New York Public Service Commission, the New Jersey Board of Public Utilities, Public Utilities Regulatory Authority (for Connecticut) and the PA PUC.

Q. Have you received any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: "Techniques of Life Analysis," "Techniques of Salvage and Depreciation Analysis," "Forecasting Life and Salvage," "Modeling and Life Analysis Using Simulation" and "Managing a Depreciation Study." In 1999, I became an instructor at the SDP's annual conference lecturing on "Salvage Concepts," "Depreciation Models," "Analyzing the Life of Real-World Utility Property – Actuarial Analysis," "Theoretical Reserve" and "Data Requirements for a Depreciation Study." I am a faculty member of the Society of Depreciation ("Society") and since 1999 have been responsible for preparing and presenting courses on depreciation matters each year at the Society's annual conference.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. My testimony is in support of the depreciation studies conducted under my direction and supervision for the electric plant of UGI Utilities, Inc. - Electric Division ("UGI Electric" or the "Company") in this proceeding. I have been retained by the Company as a depreciation consultant. UGI Electric retained me to determine the book depreciation reserve as of September 30, 2022, to determine the annual depreciation expense to be included as an element of the cost of service, and to testify in support of those two determinations in this proceeding.

I am also a sponsoring witness for UGI Electric's depreciated original cost of electric plant in service included in rate base. My testimony will address my depreciation study, the appropriate depreciation reserve for ratemaking purposes, the original cost measure of value, and the appropriate annual depreciation expense to be included in the ratemaking cost of service as of September 30, 2022.

Q. Were you responsible for the preparation of any of the Company's responses to the Commission's filing regulations that were filed in support of the Company's general rate filing?

A. Yes. I am the responsible witness for the following items in UGI Electric Books I and II:

Item No.	Subject
II-D-13	Experienced and Estimated Net Salvage
V-A-1	Electric Plant in Service
V-A-2	Comparison of Calculated Reserve vs. Book Reserve

V-A-3	Projected Plant and Reserve Balances
V-B-1	Comparison of Calculated vs. Book Accruals
V-B-2	Survivor Curves and Surviving Original Cost Including Related Annual and Accrued Depreciation
V-C-1	Retirement Rate Actuarial Method of Life Analysis
V-D-1	Summary Depreciation Calculations by Account
V-D-2	Detailed Depreciation Calculations by Account and Vintage Year
V-E-1	Description of Depreciation Methods and Factors Considered in Arriving at Estimates of Service Life and Dispersion by Account

Q. Have you previously prepared comparable studies for UGI Electric?

A. Yes. I provided testimony on depreciation matters for the Company in the prior UGI Electric base rate case at Docket No. R-2017-2640058. Also, I provided testimony on depreciation matters for the Company in the prior two UGI Penn Natural Gas ("PNG") base rate cases at Docket No. R-2016-2580030 and Docket No. R-2008-2079660, the prior two UGI Central Penn Gas ("CPG") base rate cases at Docket No. R-2010-2214415 and Docket No. R-2008-2079675, and the prior three UGI Utilities, Inc. – Gas Division ("UGI Gas") base rate cases at Docket No. R-2019-3015162, Docket No. R-2018-3006814 and Docket No. R-2015-2518438. Prior to those rate filings, I prepared exhibits for the depreciation study in UGI Gas's previous base rate case filed in 1995 at Docket No. R-00953297 and UGI Electric's prior two base rate cases at Docket Nos. R-00973975 and R-00953534.

III. <u>OUTLINE OF EXHIBITS C (FULLY PROJECTED), C (FUTURE) AND C (HISTORIC)</u>

Q. Will you be sponsoring any exhibits with your direct testimony?

A. Yes, I am attaching and sponsoring the following exhibits: UGI Electric Exhibit C (Fully Projected), UGI Electric Exhibit C (Future) and UGI Electric Exhibit C (Historic). UGI Electric Exhibit C (Fully Projected) presents the summarized depreciation calculations and supporting tables related to the fully projected future test year ending September 30, 2022 ("FPFTY"). UGI Electric Exhibit C (Future) presents summarized depreciation calculations and supporting charts and tables related to the depreciation study for the future test year ending September 30, 2021 ("FTY"). UGI Electric Exhibit C (Historic) presents the summarized depreciation calculations and supporting tables related to the historic test year ended September 30, 2020 ("HTY"). Each of the three exhibits is organized in a similar manner and each contains information and schedules supporting the amounts applicable to each test year period. UGI Electric Exhibit C (Future) contains additional information including the supporting charts and life tables related to the service life estimates.

Q. Does UGI Electric Exhibit C (Fully Projected) accurately portray the results of your depreciation study as of September 30, 2022?

A. Yes.

Q. In preparing the depreciation study (contained in Exhibit C (Future)), did you follow generally accepted practices in the field of depreciation?

A. Yes.

Q. Please describe the contents of the depreciation study reports, UGI Electric Exhibit C (Future) and UGI Electric Exhibit C (Fully Projected).

A. The depreciation study report in UGI Electric Exhibit C (Future) consists of eight parts, including charts and tables filed in the Company's most recent service life study report submitted to the PA PUC in March 2017 based on electric plant in service as of September 30, 2016. Part I, Introduction, includes statements related to the scope of and basis for the depreciation study. Part II, Estimation of Survivor Curves, presents detailed discussions of: (1) survivor curves; and (2) methods of life analysis including an example of the retirement rate method. Part III, Service Life Considerations, presents the relevant factors considered for estimating service lives. Part IV, Calculation of Annual and Accrued Depreciation, sets forth a description of: (1) the group depreciation procedures used for calculating annual and accrued depreciation; and (2) an explanation of the manner in which net salvage was incorporated in the calculations. Part V, Results of Study, includes a description of the results and summaries of the detailed depreciation calculations as of September 30, 2021. Part VI, Service Life Statistics, presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. Part VII sets forth the detailed depreciation calculations related to surviving original cost as of September 30, 2021. The detailed depreciation calculations present the annual and accrued depreciation amounts by account and vintage year. The remaining life annual accrual rate is also set forth in the tables of Part VII. Part VIII, Experienced and Estimated Net Salvage, contains the net salvage amortization of experienced and estimated net salvage for the years 2017 through 2021.

UGI Electric Exhibit C (Fully Projected) includes: a description of the scope, basis and results of the studies; summaries of the depreciation calculations; and the detailed depreciation calculations as of September 30, 2022. The descriptions and explanations presented in UGI Electric Exhibit C (Future) are also applicable to the depreciation calculations presented in UGI Electric Exhibit C (Fully Projected). The graphs and tables related to service life presented in UGI Electric Exhibit C (Future) also support the service life estimates used in UGI Electric Exhibit C (Fully Projected) and UGI Electric Exhibit C (Historic), since the estimates are the same for all three test years.

The results of the study are set forth in Part II in UGI Electric Exhibit C (Fully Projected). Table 1, pages II-3 through II-5 of UGI Electric Exhibit C (Fully Projected), presents the estimated survivor curve, the original cost and depreciation reserve at September 30, 2022, and the calculated annual depreciation rate and amount for each account or subaccount of Electric Plant in Service. Table 2, pages II-6 through II-7 of UGI Electric Exhibit C (Fully Projected), presents the bringforward to September 30, 2022, of the depreciation reserve as of September 30, 2021. Table 3, pages II-8 through II-10 of UGI Electric Exhibit C (Fully Projected), presents the calculation of the book depreciation amounts for the FPFTY. Table 4, pages II-11 and II-12 of UGI Electric Exhibit C (Fully Projected), presents the experienced and estimated net salvage for fiscal years 2018 through 2022. The amortization of net salvage is based on experienced and estimated net salvage during the period October 1, 2017 through September 30, 2022. The summary tables and detailed depreciation calculations set forth in UGI Electric Exhibit C (Fully Projected) as of September 30, 2022, are organized and presented in the same manner as those presented in UGI Electric Exhibit C (Future) as of September 30, 2021.

Q. Please outline the contents of Exhibit C (Historic).

A. UGI Electric Exhibit C (Historic) is organized like UGI Electric Exhibit C (Fully Projected). UGI Electric Exhibit C (Historic) includes: a description of the scope, basis and results of the studies; summaries of the depreciation calculations; and the detailed depreciation calculations as of September 30, 2020. The descriptions and explanations presented in UGI Electric Exhibit C (Future) are also applicable to the depreciation calculations presented in UGI Electric Exhibit C (Historic). The same depreciation methods and procedures used to calculate depreciation were used in all three test year periods. The summary tables and detailed depreciation calculations as of September 30, 2020, are organized and presented in the same manner as those as of September 30, 2022 with two exceptions. Tables 2 and 3 presented in UGI Electric Exhibit C (Fully Projected) are not necessary and, therefore, are not presented in UGI Electric Exhibit C (Historic).

IV. THE DEPRECIATION STUDY - OVERVIEW

Q. Please describe what you mean by the term "depreciation".

A. My use of the term "depreciation" is in accord with the definition set forth in the Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. "Depreciation" refers to the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation, against which the company is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.

In the study that I performed, which is the basis for my testimony, I used the straight line remaining life method of depreciation, with the average service life and equal life group procedures. The annual depreciation is based on a system of depreciation accounting that aims to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of the unit, or group of assets, in a systematic and rational manner.

Q. Is the Company's claim for annual depreciation in the current proceeding based on the same methods of depreciation as were used in its most recent Annual Depreciation and Service Life Study Report filed in March 2017?

A. Yes, it is. For most plant accounts, the current claim for annual depreciation is based on the straight line remaining life method of depreciation, which has been used by the Company for many years. The depreciation methods and procedures are described further in Part II of UGI Electric Exhibit C (Future).

For General Plant Accounts 391, 393, 394, 395, 397 and 398, I used the straight line remaining life method of amortization. The annual amortization is based on amortization accounting, which distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account.

V. ORIGINAL COST MEASURE OF VALUE

Q. What is the original cost of electric plant to be included in rate base in this proceeding?

A. As of September 30, 2022, the original cost of electric plant in service is $226,945,390 as shown in column 4 of Table 1 on pages II-3 through II-5 of UGI Electric Exhibit C (Fully Projected). This amount includes $208,174,064 of Electric Plant and $18,771,326 of Other Utility Plant allocated to UGI Electric. Other Utility Plant is primarily comprised of plant assets included in Common Plant and Information Services ("IS"). The assets included in Common Plant and IS are assets that are shared and jointly used among the gas and electric divisions at UGI Corporation. The costs related to Common Plant and IS are allocated to UGI Electric using specific allocation factors.

In addition, the building that houses most of the IS assets, *i.e.*, the Reading Office and Service Center located on 225 Morgantown Road, is included in Account 390.1, Structures and Improvements in Gas Division. Since a portion of the building on Morgantown Road relates to IS, a portion, i.e., 9.31 percent, of the cost of the building was assigned to UGI Electric. Also, the Empire Office and Service Center in Wilkes Barre, PA is a facility jointly used by both UGI utility divisions; however, the cost of the facility is currently included in the gas division for book accounting purposes. For ratemaking purposes, a portion of the Empire facility has been allocated to the electric division.

Also, 26.1612 percent of the UGI Electric Division's Intangible, General and Common Plant were excluded from the Company's current proceeding based on the transmission factor from UGI Electric's most recent transmission rate filing before

FERC. The amounts allocated to Transmission Plant and excluded from electric distribution operations are shown on Table 1 of Exhibit C (Fully Projected).

VI. THE ACCRUED DEPRECIATION CLAIM

Q. Have you determined UGI Electric's accrued depreciation for ratemaking purposes as of September 30, 2022?

A. Yes. I have determined the allocated book depreciation reserve as of September 30, 2022, to be $74,794,872.

Q. Is the Company's claim for accrued depreciation in the current proceeding made on the same basis as has been used for over thirty years?

A. Yes. The current claim for accrued depreciation is the book reserve brought forward from the book reserve approved by the Commission in the last proceeding.

Q. How did you determine UGI Electric's allocated book depreciation reserve as of September 30, 2021?

A. The book depreciation reserve allocated to UGI Electric as of September 30, 2021, is set forth in column 5 of Table 1 of UGI Electric Exhibit C (Future). Table 2 of UGI Electric Exhibit C (Future) presents an annual bringforward of the book depreciation reserve as of September 30, 2020, using estimated accruals, retirements, salvage and cost of removal for the twelve months October 2020 through September 2021. The table sets forth, by plant account, the beginning book reserve balance as of September 30, 2020, the estimated reserve activity, and the ending reserve balance as of September 30, 2021. The estimated reserve activity consists of depreciation accruals (column 3), amortization of net salvage (column 4), projected retirements (column 5), projected salvage (column 6) and projected cost of removal (column 7). Table 3 of UGI Electric Exhibit C (Future) sets forth the calculation of the estimated depreciation accruals by plant account, which is carried forward to column 3 of Table 2. The book reserve as of September 30, 2020, by plant account, shown in column 2 of Table 2 was obtained from UGI Electric's books and records. The book depreciation reserve as of September 30, 2021 is the sum of the book reserve at the beginning of the fiscal year, September 30, 2020, and the projected 2021 reserve activity.

Q. Please explain the manner in which you projected the depreciation accruals for the twelve months ended September 30, 2021.

A. The depreciation accruals for the twelve months ended September 30, 2021, by plant account, were estimated by applying the annual depreciation accrual rates calculated as of September 30, 2020, to the projected average 2021 plant balance. The average balance for the twelve months ended September 30, 2021, is computed in columns 2 through 6 of Table 3 and is based on the projected additions and retirements in columns 3 and 4.

Q. With reference to Exhibit C (Future) Table 2, column 4, please explain what you mean by "the amortization of net salvage" and explain the manner in which you projected it.

A. The amortization of net salvage is the annual provision for recovering experienced negative net salvage. This process for recognizing net salvage in the cost of service is in accordance with Pennsylvania ratemaking practice. The amortization of net salvage is based on experienced net salvage during the preceding five-year period, October 1, 2016 through September 30, 2021.

Q. Please explain the manner in which you projected retirements, salvage and removal costs that are shown in columns 4, 5 and 6 of Table 2.

A. Retirements were projected, by plant account, by applying the average retirement ratio, expressed as a percent of additions, i.e., 2016 through 2020, to future test year (FTY) additions for most plant accounts. For certain General Plant accounts subject to amortization accounting, retirements are recorded when a vintage is fully amortized. All units are retired per books when the age of the vintage reaches the amortization period. Therefore, all vintages that reached or exceeded the amortization period were retired during the FTY for certain General Plant accounts subject to amortization accounting. Salvage and removal costs were projected by plant account by applying the average salvage and cost of removal, expressed as a percent of retirement amounts for the five years 2016 through 2020, to the projected retirement amounts.

Q. Was the book reserve at September 30, 2022, estimated using the same methodology?

A. Yes, essentially the same methodology was used with one minor exception. The book depreciation accruals for fiscal year 2022 were calculated by applying depreciation rates established as of September 30, 2021 to average monthly plant balances for purposes of calculating the book reserve as of September 30, 2022.

VII. THE ANNUAL DEPRECIATION EXPENSE CLAIM

Q. Have you determined UGI Electric's annual depreciation expense to be included as an element in the cost of service for purposes of this proceeding?

A. Yes, I have. The annual depreciation expense is $7,387,301 and consists of $6,822,612 of annual accruals to recover original cost and $564,689 of net salvage amortization. The $6,822,612 related to original cost recovery is comprised of two parts, $5,504,181 related to electric plant and $1,318,431 related to Other Utility Plant allocated to UGI Electric. These amounts are set forth in column 8 of Table 1 in UGI Electric Exhibit C (Fully Projected).

Q. How did you determine the annual accruals of $6,822,612?

A. The determination of annual depreciation accruals consists of two phases. In the first phase, survivor curves are estimated for each plant account or subaccount. In the second phase, the composite remaining lives and annual depreciation accruals are calculated based on the service life estimates determined in the first phase.

The determination of annual amortization amounts consists of the selection of amortization periods and the calculation of amortization amounts based on the remaining amortization period and the unrecovered cost for each vintage.

Q. Please describe the manner in which you estimated the service life characteristics for each depreciable group in the first phase of the study.

A. The service life study consisted of: compiling historical data from records related to UGI Electric's electric plant; analyzing these data to obtain historical trends of survivor characteristics; obtaining supplementary information from management and operating personnel concerning UGI Electric's practices and plans as they relate to plant operations; and interpreting the above data to form judgments of average service life characteristics.

Q. What historical data did you analyze to estimate the service life characteristics of UGI Electric's electric plant?

A. The data consisted of the entries made by UGI Electric to record electric plant transactions during the period 1960 through 2016. The transactions included additions, retirements, transfers, acquisitions, and the related balances. I classified the data by depreciable group, type of transaction, the year in which the transaction took place, and the year in which the plant was installed.

Q. What method did you use to analyze these service life data?

A. I used the retirement rate method of life analysis. The retirement rate method is the most appropriate when aged retirement data are available because it develops the average rates of retirement actually experienced during the period of study. Other methods of life analysis infer the rates of retirement based on a selected type survivor curve.

Q. Please describe the results of your use of the retirement rate method.

A. Each retirement rate analysis resulted in a life table, which, when plotted, formed an original survivor curve. Each original survivor curve, as plotted from the life table, represents the average survivor pattern experienced by the several vintage groups during the experience band studied. Inasmuch as this survivor pattern does not necessarily describe the life characteristics of the property group, interpretation of the original curves is required in order to use them as valid considerations in service life estimation. Iowa type survivor curves were used in these interpretations. The results of the retirement rate analyses are presented in Part VI of UGI Electric Exhibit C (Future).

Q. Please explain briefly what an "Iowa type survivor curve" is and how you used it in estimating service life characteristics for each depreciable group.

A. The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type survivor curves. The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. Iowa curves are the accepted survivor curves for Pennsylvania, and the remaining 49 other states, and have been for many years.

Iowa type curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The Iowa curves were used in this study to describe the forecasted rates of retirement based on the observed rates of retirement and the qualitative outlook for future retirements.

The estimated survivor curve designations for each depreciable group indicate the average service life, the family within the Iowa system and the relative height of the mode. For example, the Iowa 36-R2.5 curve indicates an average service life of thirty-six years; a Right-skewed, or R2.5, type curve (the mode occurs after average life for right modal curves); and a relatively medium height, 2.5, for the mode (possible modes for R type curves range from 0.5 to 5).

Q. Did you physically observe plant and equipment in the field?

A. Yes. Field trips are conducted periodically in order to be familiar with the operation of the Company and observe representative portions of the plant. Field trips are conducted each time a service life study is performed. Service life study reports are submitted to the PA PUC every five years, at minimum. UGI Electric's most recent service life study report was submitted in March 2017 based on electric plant in service as of September 30, 2016. Facilities visited during field trips, generally include representative substations, service centers, warehouses, and office buildings. The most recent field trip was conducted in January 2017. The specific dates and locations visited during recent field trips are listed in Exhibit C (Future) in Part III. A general understanding of the function of the plant and information with respect to the reasons for past retirements and expected causes of retirements are obtained during these field trips. This knowledge and information was incorporated in the interpretation and extrapolation of the statistical life analyses.

Q. Please describe the second phase of the process that you used to determine annual depreciation for ratemaking purposes.

A. After I estimated the service life characteristics for each depreciable group, I calculated annual depreciation accruals for each group in accordance with the straight line remaining life method, using remaining lives consistent with the average service life procedure for plant installed prior to 1982 and remaining lives consistent with the equal life group procedure for plant installed in 1982 and subsequent years. Summary tabulations of the survivor curve estimates and the annual accrual rates and amounts are set forth on Table 1 of UGI Electric Exhibit C (Historic), UGI Electric Exhibit C (Future) and UGI Electric Exhibit C (Fully Projected). The detailed tabulations of the depreciation calculations are presented in Part III of UGI Electric Exhibit C (Historic) and UGI Electric Exhibit C (Fully Projected) and Part VII of UGI Electric Exhibit C (Future).

Q. Please describe briefly the straight line remaining life method of depreciation that you used for depreciable property.

A. The straight line remaining life method of depreciation allocates the original cost less accumulated depreciation in equal amounts to each year of remaining service life for each vintage.

Q. Please describe briefly the average service life procedure that you used in conjunction with the straight line remaining life method for plant installed prior to 1982.

A. In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated survivor curve.

Q. Please describe briefly the equal life group procedure that you used in conjunction with the straight line remaining life method for plant installed in 1982 and in later years.

A. In the equal life group procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the composite remaining life for the surviving original cost of that vintage. The composite remaining life for the vintage is derived by weighting the individual equal life group remaining lives. In the equal life group procedure, the property group is subdivided according to service life. That is, each equal life group includes the portion of the property that experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve.

Q. Please describe briefly the amortization of certain General Plant accounts.

A. General Plant Accounts 391, 393, 394, 395, 397 and 398 include a very large number of units but represent a small percent of depreciable electric plant. Depreciation accounting is difficult for these assets, inasmuch as periodic inventories are required to properly reflect plant in service. Many utilities have changed to amortization accounting for general plant as a practical and reasonable solution that avoids significant accounting expenditures for such a small percent of plant.

In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. However, retirements are recorded when a vintage is fully amortized, rather than as the units are removed from service. That is, there is no dispersion of retirement for accounts being amortized. All units are retired per books when the age of the vintage reaches the amortization period. Amortization accounting was initiated for UGI Electric in Docket No. R-00932862.

VIII. ILLUSTRATION OF DEPRECIATION STUDY PROCEDURE

Q. Please illustrate the procedure followed in your depreciation study and the manner in which it is presented in UGI Electric Exhibit C (Future) using an account as an example.

A. I will use Account 368.1, Transformers, to illustrate the manner in which the study was conducted. Account 368.1 represents approximately 9.5 percent of the total depreciable distribution plant. As the initial step of the service life study phase, aged plant accounting data were compiled for the years 1960 through 2016. These data were coded in the course of UGI Electric's normal recordkeeping according to account or property group, type of transaction, year in which the transaction took place, and year in which the electric plant was placed in service. The plant additions, retirements, and other plant transactions were analyzed by the retirement rate method of life analysis.

This account includes equipment used to reduce electric voltages, primarily pole-top or pad mounted line transformers. Retirements of line transformers are primarily caused by storm damage, deterioration, fire or third-party damage, capacity or loading issues, etc. Most of the pre-1983 line transformers that contained PCBs are removed. Discussions with operating and management personnel indicated that the life characteristics of transformers will be similar in the future as they were in the past. Typical service lives for line transformers of other electric companies range from 30 to 45 years.

The life analysis was performed, and the Iowa 43-S1 survivor curve was judged most appropriate for this account and is the survivor curve used for this filing. The survivor curve estimate used in the previous service life study was the Iowa 40-S1 survivor curve. The Iowa 43-S1 survivor curve is a good fit for the original curve based on the Company's retirement experience for the period 1960-2016. The proposed 43-S1 survivor curve is within the range of estimates used by other electric companies and is consistent with the outlook of Company management. The original and smooth survivor curves are plotted in Part VI on page VI-21 of UGI Electric Exhibit C (Future). The original life table for the 1960-2016 experience band is set forth on pages VI-22 through VI-25.

The calculation of annual depreciation, the second phase, for the original cost of line transformers in service at September 30, 2021, is presented by vintage in Part VII on pages VII-16 through VII-17 of UGI Electric Exhibit C (Future) for Electric Plant in Service. The detailed depreciation calculations at September 30, 2022 are presented in Part III of Exhibit C (Fully Projected). The tabular presentations of the detailed depreciation calculations in Part VII of Exhibit C (Future) are similar in kind to those set forth in Part III of Exhibit C (Fully Projected). The expectancy and average life derived from the estimated survivor curve for each vintage were used to calculate the accrued depreciation by the average service life procedure for 1981 and prior vintages.

The accrued depreciation for vintages subsequent to 1981 was calculated by the equal life group procedure using the Iowa 43-S1 survivor curve. In the calculation, the surviving cost in each vintage was further subdivided, through the use of a computer program, into depreciable groups according to the expected service lives as defined by the Iowa 43-S1 survivor curve. The accrued depreciation was derived for each equal life group, based on its service life, and the totals shown for the vintages are the summations of the individually derived amounts.

The book reserve was allocated to vintages based on the calculated accrued depreciation. The remaining lives of the vintages were based on the Iowa 43-S1 survivor curve, the attained age, and the same group procedures as were used to calculate accrued depreciation. The future book accruals (original cost less allocated book reserve) were divided by the remaining lives to derive the annual depreciation accruals by vintage.

The total depreciation accrual on page VII-17 of UGI Electric Exhibit C (Future) was brought forward to column 8 of Table 1 on page V-4 of the exhibit and divided by the total original cost in column 4 to calculate the annual depreciation accrual rate in column 7. A similar process was used for the fully projected future test year (FPFTY).

Q. Is the procedure you described for Account 368.1 typical of that followed for most of the plant investment?

A. Yes, it is, since the straight-line method and the average service life and the equal life group procedures were used for most of the depreciable plant.

Q. Please illustrate the procedure followed for the amortization of certain General Plant accounts and the manner in which it is presented in UGI Electric Exhibit C (Future) using an account as an example.

A. I will use Account 394, Tools, Shop and Garage Equipment, to illustrate the amortization procedure. As the initial step of the amortization procedure, an amortization period of 20 years was selected based on the period during which such equipment renders most of its service, the amortization periods used by other utilities, and the service life estimate previously used for depreciation accounting.

The calculation of the annual amortization as of September 30, 2021, is presented by vintage in Part VII on page VII-44 of UGI Electric Exhibit C (Future). The calculated accrued amortization is based on the ratio of the vintage's age to the amortization period. The book reserve for vintages older than the amortization period was set equal to the original cost. The remaining book reserve was allocated to vintages based on the calculated accrued depreciation. The future book accruals or amortizations (original cost less assigned or allocated book reserve) were divided by the remaining amortization period to derive the annual amortizations by vintage.

The total amortization on page VII-44 of UGI Electric Exhibit C (Future) was brought forward to column 8 of Table 1 on page V-4 of UGI Electric Exhibit C (Future). A similar process was performed for UGI Electric Exhibit C (Fully Projected) and UGI Electric Exhibit C (Historic). That is, the calculation of the annual amortization related to the original cost of Tools, Shop and Garage Equipment in service at September 30, 2022, is presented by vintage on page III-46 of UGI Electric Exhibit C (Fully Projected) and summarized in Table 1 on page II-3.

Q. Briefly explain the methods used for the remaining portion of the depreciable plant.

A. The life span procedure was applied to major structures in Account 390. The life span procedure was used for groups such as buildings in which concurrent retirement of all property in the group is expected. The life span of both the original installation and subsequent additions is the number of years between installation and final retirement of the group. The complete details, by vintage, of the accrued depreciation and remaining life accrual calculations are set forth for each structure in Part III of UGI Electric Exhibit C (Historic) and UGI Electric Exhibit C (Fully Projected) and in Part VII of UGI Electric Exhibit C (Future).

IX. THE NET SALVAGE AMORTIZATION CLAIM

Q. Please briefly describe the accounting treatment regarding net salvage for public utilities operating in Pennsylvania.

A. In accordance with the Uniform System of Accounts and the rules for recovery of net salvage established by the Pennsylvania Superior Court in *Penn Sheraton Hotel v. Pa. P.U.C.*, 198 Pa. Super. 618, 184 A.2d 324 (1962) ("*Penn Sheraton*"), net salvage is charged to the depreciation reserve and is amortized over a five-year period beginning with the year after net salvage is actually incurred. These accounting procedures were affirmed by the Commission in PPL Gas Utilities Corporation's ("PPL Gas") most recent rate filing (Docket No. R-00061398). This procedure is consistent with how other Pennsylvania public utilities account for net salvage and is the method used in preparing the Company's Annual Depreciation Reports submitted each year to the Commission.

Q. Earlier in your testimony you indicated that UGI Electric's annual depreciation expense consists, in part, of $564,689 of net salvage amortization. How did you determine that amount?

A. The $564,689 is the result of determining the five-year average of net salvage experienced and estimated during the period of October 1, 2017 through September 30,

2022. Net salvage is defined in the Uniform System of Accounts as gross salvage less cost of removal. For most electric utilities, including UGI Electric, cost of removal exceeds gross salvage resulting in negative net salvage. Negative net salvage is recorded to the depreciation reserve as a debit, which reduces the depreciation reserve. Charges related to the negative net salvage amortization are recorded to the depreciation reserve as a credit in the five years subsequent to the initial recording of the negative net salvage amount. Therefore, the negative net salvage amount will have been fully amortized after five years and the net effect on the depreciation reserve is zero. Detailed data related to the experienced and estimated cost of removal and salvage are presented in Part VIII of UGI Electric Exhibit C (Future) and Part IV of UGI Electric Exhibit C (Fully Projected).

Q. Do you have any other comments on the other items which you are sponsoring in this proceeding?

A. Yes. The above testimony does not describe the responses to filing requirements set forth in Items V-A-2, V-B-1 and V-B-2. In general, these responses are self-explanatory. The response to V-A-2 is a comparison of the actual and projected book depreciation reserves with the calculated accrued depreciation as of the end of the test years. The response to V-B-1 is a comparison of the calculated depreciation accruals and the book depreciation accruals related to the future and fully projected future test years. The response to V-B-2 presents the survivor curves used in the most recent prior general rate proceeding and the annual accrual rates that resulted from the use of these curves.

Q. Does this conclude your direct testimony?

A. Yes, it does.

UGI ELECTRIC STATEMENT NO. 8

SHERRY A. EPLER

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3023618

UGI Utilities, Inc. – Electric Division

Statement No. 8

Direct Testimony of
Sherry A. Epler

Topics Addressed:	**Sales and Revenues** **Tariff Changes**

Dated: February 8, 2021

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Sherry A. Epler. My business address is 1 UGI Drive, Denver, PA 17517.

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

A. I am employed as Senior Manager, Tariff & Supplier Administration, by UGI Utilities, Inc. ("UGI"). UGI has both a Gas Division ("UGI Gas"), which is a certificated natural gas distribution company ("NGDC"), and an Electric Division ("UGI Electric"), a certificated electric distribution company ("EDC").

Q. What are your responsibilities as Senior Manager, Tariff & Supplier Administration with respect to UGI Electric?

A. My current responsibilities related to UGI Electric include: (1) all aspects of tariff and rate administration for UGI Electric, including interactions with electric retail suppliers under UGI Electric's electric supplier tariff; and (2) revenue analysis.

Q. Please provide your educational background.

A. Please see my resume, UGI Electric Exhibit SAE-1, which is attached to my testimony.

Q. Please provide your professional experience.

A. I have worked for UGI since 1986, supporting the Accounting and Rates groups in varying capacities. Please see my resume, UGI Electric Exhibit SAE-1, for my full employment history.

Q. Please describe the purpose of your testimony.

A. I will address: (1) the development of sales and revenue for the historic test year ended September 30, 2020 ("HTY"), future test year ending September 30, 2021 ("FTY"), and fully projected future test year ending September 30, 2022 ("FPFTY"); and (2) and certain proposed tariff modifications.

Q. Are any other witnesses providing testimony on the areas you identified above?

A. Yes. Company witness John Taylor, Managing Partner of Atrium Economics, LLC (UGI Electric Statement No. 6) is sponsoring allocation of the revenue increase and rate design in addition to his testimony supporting class cost of service, using the projected sales and revenue figures discussed in my testimony. Mr. Taylor is also sponsoring certain tariff changes related to the Company's proposed Electric Vehicle ("EV") charging tariff and service extension provisions.

Q. Are you sponsoring any exhibits or filing requirements in this proceeding?

A. Yes, I am sponsoring the following Exhibits: UGI Electric Exhibit SAE-1 (Resume), UGI Electric Exhibit SAE-2 (15 year Normal Heating and Cooling Degree Days 2005-2019), UGI Electric Exhibit SAE-3 (UGI Electric Customer Counts), UGI Electric Exhibit SAE-4 (Fully Projected Future Test Year Sales and Revenue Adjustments), UGI Electric Exhibit SAE-5 (Future Test Year Sales and Revenue Adjustments), UGI Electric Exhibit SAE-6 (Historic Test Year Sales and Revenue Adjustments), certain portions of UGI Electric Exhibit F (Proposed Tariff), and UGI Electric Exhibit E (Proof of Revenue).

II. TEST YEARS' SALES AND REVENUES

A. DEVELOPMENT OF FPFTY SALES AND REVENUES

Q. Please explain how the Company's FPFTY sales and revenues were developed.

A. FPFTY sales and revenues were developed by annualizing and normalizing the Company's 2021 fiscal year planned sales and revenue budget. Annualized sales were determined by developing sales and revenue adjustments reflective of annual expected use per customer and projected customer counts as of the end of the FPFTY, or September 30, 2022. UGI Electric Exhibit SAE-2 provides the development of the Company's normal degree day values which are based on the 15-year period 2005-2019. This data was used in normalizing use per customer for degree days. The Company's 15-year normal is updated every 5 years, with the most recent being that related to the 15-year period of 2005-2019.

Q. Please explain the process for developing the Company's fiscal year 2021 planned sales and revenue budget.

A. The planned sales and revenue budget was developed by the Financial Planning and Analysis ("FP&A") group with input from various UGI Electric personnel. The FY2021 planned sales and revenue budget utilizes historical trends in developing a forecast of the number of customers, sales and revenue. One of the primary drivers of the customer count forecast is the nature of the UGI Electric service territory. The service territory is very static with little to no growth in the number of customers from year to year. UGI Electric Exhibit SAE-3 provides the actual historical customer count and illustrates the relatively static nature of the service territory.

Because of the static nature of the Company's customer base, the Company developed the budgeted number of customers for both the FTY and FPFTY by using the actual average customer count for fiscal year 2019. The budgeted sales in kilowatt hours ("kWh") were developed using a two-year average of the sales-kWh for each month for a two-year period.

The complete budget process is described in the Direct Testimony of Company witness Stephen F. Anzaldo (UGI Electric Statement No. 2).

Q. Please describe the adjustments made to FPFTY sales and revenues for the twelve months ending September 30, 2022.

A. A summary of all adjustments made to the 2022 planned budget in order to develop FPFTY sales is shown on UGI Electric Exhibit SAE-4(a). In total, these adjustments reflect an increase to sales of 15,715,000 kWh, or 1.61%, with a net upward adjustment to margin of $449,000, and a net decrease to revenues of $337,000.

Q. Please explain the "Adjustment for Customer Changes" shown on UGI Electric Exhibit SAE-4(b).

A. The "Adjustment for Customer Changes" annualizes customer counts for certain rate classes to anticipated end-of-test-year levels. The Company projects customer growth forward from September 2020 actual levels based on a two-year average growth pattern from year end September 2018 to September 2019 and from September 2019 to September 2020, as shown in the presented customer rate categories.

Q. How is this adjustment quantified?

A. UGI Electric Exhibit SAE-4(b) provides the calculation of the associated sales and revenue adjustments related to customer count changes and reflects customer count increases for default service customers taking service under Rate R-General, Rate R-Heating, Rate GS1-Commercial General, and a decrease for Rate GS4-Commercial General. Adjustments were made to these four rate class categories as they comprise the majority of customer counts and the largest total margin dollars for the Company. In total, as reflected on UGI Electric Exhibit SAE-4(a), this adjustment increases sales by 6,604,000 kWh and increases projected revenues by $801,000. The impact to margin is an increase of $301,000.

Q. Please explain the adjustment for "Normalized Use/Customer."

A. As noted earlier, the sales-kWh values for the budget were developed using a two-year average of the sales-kWh for each month for a two-year period. As the associated average degree days for these periods differ from the Company's 15-year period used to define normal degree days for ratemaking purposes, or normal weather, an adjustment is necessary in order to normalize usage to the Company's stated 15-year normal weather. This adjustment utilizes the variance between the calculated average degree days for the periods utilized for budget development and the Company's 15-year normal degree days in order to calculate the normalizing adjustments. *See* UGI Electric Exhibit SAE-2. UGI Electric Exhibit SAE-4(c) shows the calculation of the adjustment of the use per default service customer taking service under Rate R-General and Rate R-Heating, Rate GS1-Commercial General, and Rate GS4-Commercial General, respectively. As shown in this exhibit, this adjustment is calculated by applying the heating and cooling sensitivity per degree day to the difference between the calculated average degree days for the periods utilized for budget development and the Company's 15-year normal degree days. In total, as reflected on UGI Electric Exhibit SAE-4(a), this adjustment increases sales by 9,111,000 kWh and increases projected revenues by $912,000. The impact to margin is an increase of $253,000.

Q Please explain the adjustment on UGI Electric Exhibit SAE-4(d) "Adjustment for GSR-1."

A. The "Adjustment for GSR-1" annualizes the revenue from the default service GSR-1 rate based on the December 1, 2020 GSR-1 rate of $0.06354/kWh versus its budgeted level of $0.06812/kWh. This GSR-1 adjustment decreases projected revenues by $3,022,000 with no impact to margin.

Q Please explain the adjustment on UGI Electric Exhibit SAE-4(e) "Adjustment for USP."

A. The Adjustment for USP annualizes the revenue from the UGI Electric Rider C – Universal Service Program ("USP") Rider based on the December 1, 2020 USP Rider rate of $0.00606/kWh versus its budgeted level of $0.00460/kWh and corrects for the base budget volumes to which the $0.00460/kWh rate applied. This USP adjustment increases projected revenues by $981,000 with no impact to margin.

Q Please explain the adjustment on UGI Electric Exhibit SAE-4(f) "Adjustment for STAS."

A. The "Adjustment for STAS" annualizes the revenue from the UGI Electric State Tax Adjustment Surcharge ("STAS") based on the September 20, 2020 rate of (0.02)% versus its budgeted level of (0.01)%. This STAS adjustment decreases projected revenues by $9,000 with no impact to margin.

Q. Please explain the adjustment on UGI Electric Exhibit SAE-4(g) "Adjustment for GRT."

A. The "Adjustment for GRT" corrects an error in how the Gross Receipts Tax ("GRT") was subtracted from projected revenues in the budgeting process to arrive at the calculation of projected margin. This GRT adjustment decreases projected margins by $105,000.

B. DEVELOPMENT OF SALES AND REVENUE FOR THE FTY AND HTY

Q. How were normalized and annualized sales and revenue determined for the FTY ending September 30, 2021?

A. Budgeted sales and revenues served as the starting point for the development of the normalized and annualized FTY sales and revenues summarized on UGI Electric Exhibit SAE-5(a). All of the adjustments that were made in the development of the FPFTY were also made in the development of the FTY. These detailed adjustments are contained in Exhibits SAE-5(b)-(g).

Q. How were normalized and annualized sales and revenue determined for the HTY ended September 30, 2020?

A. Historic sales and revenues served as the starting point for the development of the normalized and annualized HTY sales and revenues shown in summary on UGI Electric Exhibit SAE-6(a). All of the adjustments that were made in the development of the FPFTY were also made in the development of the HTY, except for the "Adjustment for GRT". In addition, an additional adjustment "Adjustment for EEC" is included to annualize historic Energy Efficiency and Conservation ("EEC") Rider rates to the September 1, 2020 rate of $0.00152/kWh for Class 1, $0.00124 for Class 2, and $0.00445 for Class 3 customers. These detailed adjustments are contained in Exhibits SAE-6(b)-(g).

III. <u>TARIFF MODIFICATIONS</u>

Q. Is the Company proposing any new rate schedules in this filing?

A. Yes. The Company is proposing a new tariff, Rate EV-C (Electric Vehicle – Company Owned Charging). Rate EV-C will be available to EV operators, who reside either within or outside the Company's service territory, who utilize EV battery charging from a Company-owned charging station. Mr. Taylor presents the details related to the development of this tariff offering, which is designed to promote and support the development of the electric vehicle market within the Company's service territory through the creation of three charging stations. As discussed by Mr. Taylor, the Company is currently aware of no publicly-available EV charging stations (either current DC Fast Charge stations or Level 2 charging stations) within the Company's service territory.

Q. What other changes have been incorporated in the tariff in support of the electric vehicle charging station development?

A. The Company is also proposing changes to its service and supply system extension rules found in Section 5 of UGI Electric Exhibit F – Proposed Tariff. Under this proposal, the Company will invest in, own, and maintain the infrastructure to serve charging stations that will be owned and operated by third parties. As explained in Mr. Taylor's testimony, these changes to UGI Electric's service and supply system extension rules will help to create a foundation for facilitating needed charging infrastructure across the UGI Electric service territory.

Q. Are there changes to other rate schedules being proposed in this filing by the Company?

A. Yes. While the Company currently is not providing service to any customers under Rate HTP, the Company is proposing that this very large power rate schedule be restructured into one that will permit fully negotiated rates. As there are no customers on this rate, there are no firm cost elements of rate base or other costs upon which to appropriately create a cost of service rate. Accordingly, the Company is proposing to eliminate minimum billing demand criteria. The Company also proposes to eliminate the prescriptive, but not cost of service-based, Rate HTP rate table and eliminate riders which would not be applicable under a fully negotiated rate structure (specifically: Rider E - EEC Rider; Rider F - Power Factor Surcharge ("PFS")). Lastly, the Company has proposed tariff changes that would permit it to reduce or eliminate Rider G - Distribution System and Improvement Charge

("DSIC") for any customer with competitive alternatives who have negotiated contracts with the Company, if it is reasonably necessary to do so.

Q. Why is the Company proposing to update Rate HTP and Rider G - DSIC at this time?

A. The Company's proposed changes to Rate HTP and Rider G - DSIC are designed to accommodate and facilitate any future development related to very large power customers by providing a negotiated rate class. By implementing these changes, Rate HTP will become analogous to Rate XD, which is available to customers with competitive alternatives who take service from UGI Gas.

Q. Are there any associated revenue impacts with this proposed Rate HTP change?

A. No. With no customers currently taking service under Rate HTP, and no known customers through the FPFTY period, no costs or revenue are associated with Rate HTP.

Q. Is the Company proposing any other changes to its Service Tariff Riders?

A. Yes. The Company is proposing changes to the annual reconciliation provisions of Rider G - USP to update the number of customers enrolled in the Customer Assistance Program ("CAP") that is used in the calculation of the offset applied to recoverable CAP costs. This offset reduces the Company's recovery of CAP spending above projected enrollment to account for write-offs of bad debt that would arguably have occurred if not for CAP. The Company proposes to set the number of CAP enrollees as of September 30, 2021 to provide an enrollee figure that reflect the actual ongoing impacts on CAP enrollment caused by the COVID-19 Pandemic. This proposal is consistent with the establishment of the CAP enrollee figure in the UGI Gas tariff in the last UGI Gas rate case at Docket No. R-2019-3015162.

Q. Are any other changes proposed to the Service Tariff?

A. The Company has proposed other, less substantive, changes to the service tariff that are listed on page 2 of Proposed Supplement No. 26 to UGI Electric Tariff No. 6 which is found in Book XI - UGI Electric Exhibit F – Proposed Tariff.

Q. Is the Company proposing any changes to its Choice Supplier Tariff?

A. Yes. The proposed changes to the Company's Choice Supplier Tariff have been incorporated into Proposed Supplement No. 2 to UGI Electric Tariff No. 2S and are identified in the List of Changes section. These changes can also be found in Book XI - UGI Electric Exhibit F – Proposed Tariff.

Q. Does this conclude your testimony?

A. Yes.

UGI ELECTRIC

EXHIBIT SAE-1

Sherry Epler

Senior Manager, Tariff & Supplier Administration

Work Experience

UGI Utilities, Inc., Denver, PA

November 2019 – Present	Senior Manager, Tariff & Supplier Administration
2018 – November 2019	Manager, Revenue/Sales & Choice Administration

UGI Utilities, Inc., Reading, PA

2000 – 2018	Rates Analyst – I/II/Sr/Principal (Progressive Positions)
1997 – 2000	Data and Expense Analyst – Residential Marketing
1990 – 1997	Staff Accountant – Supply Accounting
1989 – 1990	Accounting Assistant, Supply – Accounting
1988 – 1989	Accounting Assistant, Rates & Budgets – Accounting
1986 - 1988	Accounting Assistant B – Accounting

Education

Bachelor of Science, Accounting, Albright College, 1995

Associate of Science, Business Administration, Pennsylvania State University, 1986

UGI ELECTRIC

EXHIBIT SAE-2

UGI Utilities Inc. - Electric Division
15 Year Normal Heating Degree Days (2005-2019)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	15 Year Average
Jan	1,282	932	1,034	1,084	1,347	1,217	1,285	1,042	1,086	1,336	1,268	1,140	992	1,210	1,188	1,163
Feb	989	979	1,226	1,008	949	1,046	1,008	851	1,013	1,136	1,309	924	757	824	953	998
Mar	1,027	862	899	891	800	685	905	514	940	1,039	996	623	938	955	872	863
Apr	402	437	598	383	429	348	463	496	462	500	446	495	289	628	371	450
May	296	221	167	309	193	171	148	85	201	157	94	236	225	87	145	182
Jun	16	66	25	25	47	28	29	50	25	10	25	26	41	26	26	31
Jul	0	0	16	0	9	6	0	0	2	1	0	0	0	0	0	2
Aug	0	7	25	15	9	6	6	3	11	9	0	0	19	0	3	8
Sep	33	148	80	98	140	83	81	126	158	106	38	60	94	82	49	92
Oct	397	466	236	499	491	406	419	350	334	302	390	352	224	413	302	372
Nov	626	581	751	731	591	695	567	805	789	761	509	623	701	812	798	689
Dec	1,163	819	1,047	1,034	1,094	1,192	886	898	1,037	909	638	996	1,108	933	961	981
Totals	6,231	5,518	6,104	6,077	6,099	5,883	5,797	5,220	6,058	6,266	5,713	5,475	5,388	5,970	5,668	5,831

UGI Utilities Inc. - Electric Division
15 Year Normal Cooling Degree Days (2005-2019)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	15 Year Average
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	6	0	4	5	41	15	14	7	4	6	0	1	15	4	7	9
May	10	32	54	9	19	80	61	72	56	30	143	69	35	77	32	52
Jun	230	92	129	154	60	183	116	127	133	152	153	151	161	117	113	138
Jul	312	264	177	224	97	305	304	308	311	214	244	326	244	261	320	261
Aug	306	175	205	86	157	209	133	194	147	139	210	290	140	262	196	190
Sep	119	8	94	71	9	91	71	61	60	71	134	117	102	119	79	80
Oct	6	0	41	0	0	0	0	2	14	9	0	9	37	28	14	11
Nov	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	989	571	704	549	383	883	699	771	725	621	885	963	734	868	761	740

UGI ELECTRIC

EXHIBIT SAE-3

UGI Utilities Inc. - Electric Division
Customer Counts at Year End September

Rate	Sept 1995	Sept 2017	Sept 2018	Sept 2019	Sept 2020	Sept 2021	Sept 2022
Res-General	42,920	44,014	44,024	44,104	44,301	44,469	44,597
Res-Heating	10,389	10,341	10,372	10,347	10,415	10,425	10,439
Com-General	5,872	7,142	7,179	7,239	7,294	7,455	7,534
Com-Heating	585	336	338	337	331	340	340
Ind-General	136	118	118	115	117	117	117
Ind-Heating	45	35	35	35	35	35	35
Public St & Hwy Lighting	51	54	53	54	53	54	54
Other	5	7	7	7	7	7	7
Sales for Resale	2	3	3	3	3	3	3
Total	60,005	62,050	62,129	62,241	62,556	62,905	63,126

Note: Excludes unmetered Lighting

UGI ELECTRIC

EXHIBIT SAE-4(a) – SAE-4(g)

UGI Utilities, Inc.- Electric Division
Fully Projected Future Test Year 2022 Sales and Revenues
Summary of Adjustments

	Sales (000's) kWh	Revenues ($000's)	Margin ($000's)	Reference
Budget 2022	977,169	86,371	33,766	
Adjustment for Customer Changes	6,604	801	301	UGI Electric Exhibit SAE-4(b)
Adjustment for Normalized Use/Customer	9,111	912	253	UGI Electric Exhibit SAE-4(c)
Adjustment for GSR-1		(3,022)	0	UGI Electric Exhibit SAE-4(d)
Adjustment for USP		981	0	UGI Electric Exhibit SAE-4(e)
Adjustment for STAS		(9)	0	UGI Electric Exhibit SAE-4(f)
Adjustment for GRT		0	(105)	UGI Electric Exhibit SAE-4(g)
Fully Projected Future Test Year 2022	992,884	86,034	34,216	

Adjustment for Customer Changes
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #	Description	[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Total Test Year 2022 Revenues (Unadjusted)	$ 43,498	$ 19,396	$ 3,125	$ 8,036	$ 74,056
2	Costs (GSR, STAS, EEC, USP, GRT)	(28,372)	(13,365)	(1,627)	(5,073)	(48,436)
3	Revenues Net of Costs - Margin (Unadjusted) (L1 + L2)	$ 15,127	$ 6,032	$ 1,499	$ 2,963	$ 25,620
4	Customers in Test Year 2022 (Unadjusted)	43,720	10,264	4,637	1,731	60,352
5	Average Annual Margin Per Customer (L 3 / L 4)	$ 0.346	$ 0.588	$ 0.323	$ 1.712	$ 0.425
6	Future Test Year 2022 Customers (Fully Adjusted)	44,189	10,340	4,964	1,724	61,217
7	Change in Customers during Future Test Year 2022 (L 6 - L 4)	469	76	327	(7)	865
8	Annualization of Margin (L 5 * L 7)	$ 162	$ 45	$ 106	$ (11)	$ 301
9	Average Annual Revenue Per Customer (L 1 / L 4)	$ 0.995	$ 1.890	$ 0.674	$ 4.644	$ 1.227
10	Annualization of Total Revenue (L 7 * L9)	$ 466	$ 144	$ 220	$ (30)	$ 801
11	Annualization of Cost Revenues (L 10 - L8)	$ 304	$ 99	$ 115	$ (19)	$ 499
12	Total UPC (Unadjusted)-kWh	8,562	17,102	4,797	43,249	73,710
13	Annualization Adjustment for Sales-MWh (L12 * L7)/1000	4,013	1,305	1,567	(281)	6,604

UGI Utilities, Inc.- Electric Division
Fully Projected Future Period- 12 Months Ended September 30, 2022
($ in Thousands)

Adjustment for Usage per Customer
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #		[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Heating Sensitivity/HDD/cust (kWh/DD/cust)	0.9838	0.4275	1.1384	(0.0588)	
2	DD Variance (to 15 Year normal)	203	203	203	203	
3	kWh/customer adjustment (L1 * L2)	200	87	231	(12)	
4	Customers FY22 (fully adjusted)	44,189	10,340	4,964	1,724	
5	Normalizing Adj (MWh) (L3 * L4)/1000	8,828	898	1,148	(21)	10,853
6	Total Revenue unit rate (L7+L8+L9+L10+L11)	0.09924	0.09924	0.10789	0.08707	
7	USP unit rate	0.00606	0.00606	0.00000	0.00000	
8	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
9	GSR-1 unit rate	0.06354	0.06354	0.06354	0.06354	
10	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
11	Revenue Adjustment (L5 * L6)	$ 876	$ 89	$ 124	$ (2)	$ 1,087
12	USP Adjustment (L5 * L7)	$ 53	$ 5	$ -	$ -	$ 59
13	EEC Adjustment (L5 * L8)	$ 13	$ 1	$ 1	$ (0)	$ 16
14	GSR Adjustment (L5 * L9)	$ 561	$ 57	$ 73	$ (1)	$ 690
15	Distribution Adjustment (L5 * L10)	$ 248	$ 25	$ 49	$ (0)	$ 322
16	Margin Adjustment (L15 less GRT)	$ 234	$ 24	$ 47	$ (0)	$ 303
17	Cooling Sensitivity/CDD/cust (kWh/DD/cust)	0.5600	0.5709	1.4311	0.1727	
18	DD Variance (to 15 Year normal)	(46)	(46)	(46)	(46)	
19	kWh/customer adjustment (L17 * L18)	(26)	(26)	(65)	(8)	
20	Customers FY22 (fully adjusted)	44,189	10,340	4,964	1,724	
21	Normalizing Adj (MWh) (L19 * L20)/1000	(1,133)	(270)	(325)	(14)	(1,741)
22	Total Revenue unit rate (L23+L24+L25+L26)	0.09924	0.09924	0.10789	0.08707	
23	USP unit rate	0.00606	0.00606	0.00000	0.00000	
24	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
25	GSR-1 unit rate	0.06354	0.06354	0.06354	0.06354	
26	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
27	Revenue Adjustment (L21 * L22)	$ (112)	$ (27)	$ (35)	$ (1)	$ (175)
28	USP Adjustment (L21 * L23)	$ (7)	$ (2)	$ -	$ -	$ (9)
29	EEC Adjustment (L21 * L24)	$ (2)	$ (0)	$ (0)	$ (0)	$ (3)
30	GSR Adjustment (L21 * L25)	$ (72)	$ (17)	$ (21)	$ (1)	$ (111)
31	Distribution Adjustment (L21 * L26)	$ (32)	$ (8)	$ (14)	$ (0)	$ (54)
32	Margin Adjustment (L31 less GRT)	$ (30)	$ (7)	$ (13)	$ (0)	$ (51)
33	Total Adjustment Summary-FY22					
34	Normalizing Adj (MWh) (L5+L21)	7,695	627	822	(34)	9,111
35	Total Revenue Adjustment (L11+L27)	$ 764	$ 62	$ 89	$ (3)	$ 912
36	Total USP Adjustment (L12+L28)	$ 47	$ 4	$ -	$ -	$ 50
37	Total EEC Adjustment (L13+L29)	$ 12	$ 1	$ 1	$ (0)	$ 14
38	Total GSR Adjustment(L14+L30)	$ 489	$ 40	$ 52	$ (2)	$ 579
39	Total Distribution Adjustment(L15+L31)	$ 216	$ 18	$ 35	$ (1)	$ 269
40	Total Margin Adjustment (L16+L32)	$ 204	$ 17	$ 33	$ (1)	$ 253

UGI Utilities, Inc.- Electric Division
Fully Projected Future Period- 12 Months Ended September 30, 2022
($ in Thousands)

Adjustment for GSR-1

	OCT 2021	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	TOTAL
Original Budget GSR-1 Rate FY 22	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	
FPFTY 2022 GSR-1 Dec 1 Rate	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	
GSR-1 Rate Variance	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	
Total GSR-1 Volumes-MWh	48,050	59,435	60,197	71,671	58,186	62,010	49,052	43,812	45,211	64,234	56,660	41,246	659,764
GSR-1 Revenue Adjustment	($220)	($272)	($276)	($328)	($266)	($284)	($225)	($201)	($207)	($294)	($260)	($189)	($3,022)

UGI Utilities, Inc.- Electric Division
Fully Projected Future Period- 12 Months Ended September 30, 2022
($ in Thousands)

Adjustment for USP

	OCT 2021	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	TOTAL
Original Budget USP Calculation	$164	$213	$217	$260	$207	$223	$171	$146	$152	$221	$191	$136	$2,298
Correct Budget USP Calculation	$178	$229	$232	$278	$221	$239	$185	$159	$166	$243	$210	$149	$2,490
Variance to correct Original Budget Calculation	$15	$16	$15	$18	$14	$16	$14	$13	$15	$22	$19	$13	$191
Original Budget USP Rate FY 22	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	
FPFTY 2022 USP Dec 1 Rate	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	
USP Rate Variance	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	
Total Rate R Volumes-MWh	39,753	50,977	51,712	61,886	49,354	53,213	41,302	35,521	37,111	54,181	46,808	33,258	555,076
Total Rate R excl CAP Volumes-MWh	38,760	49,703	50,419	60,338	48,121	51,882	40,270	34,633	36,183	52,827	45,638	32,427	541,200
USP Rate Revenue Variance	$57	$73	$74	$88	$70	$76	$59	$51	$53	$77	$67	$47	$790
Total Revenue Variance	$71	$88	$89	$106	$84	$92	$73	$64	$68	$99	$86	$61	$981

UGI Utilities, Inc.- Electric Division
Fully Projected Future Period- 12 Months Ended September 30, 2022
($ in Thousands)

Adjustment for STAS

	Unadjusted Budget Revenue Excluding STAS	Customer Adj	UPC Adj	GSR-1 Adj	USP Adj	Revised Revenue Excluding STAS	STAS Revenue @ Dec 1 Rate	STAS Revenue @ Budget Rate	STAS Adjustment
							-0.02%	-0.01%	
Residential	$ 63,325	$ 611	$ 826	$ (2,521)	$ 981	$ 63,221	$ (13)	$ (6)	$ (6)
Commercial & Industrial	$ 22,347	$ 190	$ 86	$ (494)	$ -	$ 22,128	$ (4)	$ (2)	$ (2)
Public Streets & Highway Lighting	$ 677	$ -		$ (6)	$ -	$ 672	$ (0)	$ (0)	$ (0)
Other Sales to Public Authorities	$ 17	$ -		$ -	$ -	$ 17	$ (0)	$ (0)	$ (0)
Sales for Resale	$ 13	$ -		$ (0)	$ -	$ 13	$ (0)	$ (0)	$ (0)
Total	$ 86,380	$ 801	$ 912	$ (3,022)	$981	$86,051	$ (17)	$ (8)	$ (9)

UGI Utilities, Inc.- Electric Division
Fully Projected Future Period- 12 Months Ended September 30, 2022
($ in Thousands)

Adjustment for GRT

	[1] Unadjusted Budget	[2] Unadjusted Budget	[3]=[1] * .941 Corrected Budget	[4]=[3]-[2] Corrected Budget
	Distribution/Customer/ Demand Revenues	Distribution/Customer/Demand Margin (Revenues less incorrrect GRT)	Distribution/Customer/Demand Margin (Revenues less correct GRT)	Adjustment to Margin
Residential	$21,451	$20,256	$20,185	($71)
Commercial & Industrial	$11,709	$11,050	$11,018	($32)
Public Streets & Highway Lighting	$559	$528	$526	($2)
Other Sales to Public Authorities	$16	$15	$15	($0)
Sales for Resale	$4	$4	$4	($0)
Total	$33,739	$31,853	$31,748	($105)

UGI ELECTRIC

EXHIBIT SAE-5(a) – SAE-5(g)

UGI Utilities, Inc.- Electric Division
Future Test Year 2021 Sales and Revenues
Summary of Adjustments

	Sales (000's) kWh	Revenues ($000's)	Margin ($000's)	Reference
Budget 2021	980,112	85,840	33,290	
Adjustment for Customer Changes	4,954	597	223	UGI Electric Exhibit SAE-5(b)
Adjustment for Normalized Use/Customer	9,705	970	269	UGI Electric Exhibit SAE-5(c)
Adjustment for GSR-1		(3,017)	0	UGI Electric Exhibit SAE-5(d)
Adjustment for USP		978	0	UGI Electric Exhibit SAE-5(e)
Adjustment for STAS		(9)	0	UGI Electric Exhibit SAE-5(f)
Adjustment for GRT		0	(105)	UGI Electric Exhibit SAE-5(g)
Fully Projected Future Test Year 2021	994,771	85,360	33,677	

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for Customer Changes
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #	Description	[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Total Test Year 2021 Revenues (Unadjusted)	$ 43,120	$ 19,483	$ 3,095	$ 8,006	$ 73,703
2	Costs (GSR, STAS, EEC, USP, GRT)	(28,202)	(13,455)	(1,624)	(5,067)	(48,348)
3	Revenues Net of Costs - Margin (Unadjusted) (L1 + L2)	$ 14,917	$ 6,028	$ 1,471	$ 2,939	$ 25,355
4	Customers in Test Year 2021 (Unadjusted)	43,720	10,264	4,637	1,731	60,352
5	Average Annual Margin Per Customer (L 3 / L 4)	$ 0.341	$ 0.587	$ 0.317	$ 1.698	$ 0.420
6	Future Test Year 2021 Customers (Fully Adjusted)	44,061	10,326	4,883	1,726	60,996
7	Change in Customers during Future Test Year 2021 (L 6 - L 4)	341	62	246	(5)	644
8	Annualization of Margin (L 5 * L 7)	$ 116	$ 37	$ 78	$ (8)	$ 223
9	Average Annual Revenue Per Customer (L 1 / L 4)	$ 0.986	$ 1.898	$ 0.667	$ 4.626	$ 1.221
10	Annualization of Total Revenue (L 7 * L9)	$ 336	$ 118	$ 164	$ (21)	$ 597
11	Annualization of Cost Revenues (L 10 - L8)	$ 220	$ 82	$ 86	$ (13)	$ 374
12	Total UPC (Unadjusted)-kWh	8,510	17,218	4,789	43,197	73,714
13	Annualization Adjustment for Sales-MWh (L12 * L7)/1000	2,899	1,073	1,176	(194)	4,954

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for Usage per Customer
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #		[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Heating Sensitivity/HDD/cust (kWh/DD/cust)	1.0442	0.3993	1.1670	0.1162	
2	DD Variance (to 15 Year normal)	203	203	203	203	
3	kWh/customer adjustment (L1 * L2)	212	81	237	24	
4	Customers FY22 (fully adjusted)	44,061	10,326	4,883	1,726	
5	Normalizing Adj (MWh) (L3 * L4)/1000	9,343	837	1,157	41	11,378
6	Total Revenue unit rate (L7+L8+L9+L10+L11)	0.09924	0.09924	0.10789	0.08707	
7	USP unit rate	0.00606	0.00606	0.00000	0.00000	
8	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
9	GSR-1 unit rate	0.06354	0.06354	0.06354	0.06354	
10	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
11	Revenue Adjustment (L5 * L6)	$ 927	$ 83	$ 125	$ 4	$ 1,139
12	USP Adjustment (L5 * L7)	$ 57	$ 5	$ -	$ -	$ 62
13	EEC Adjustment (L5 * L8)	$ 14	$ 1	$ 1	$ 0	$ 17
14	GSR Adjustment (L5 * L9)	$ 594	$ 53	$ 74	$ 3	$ 723
15	Distribution Adjustment (L5 * L10)	$ 263	$ 24	$ 50	$ 1	$ 337
16	Margin Adjustment (L15 less GRT)	$ 247	$ 22	$ 47	$ 1	$ 317
17	Cooling Sensitivity/CDD/cust (kWh/DD/cust)	0.5405	0.5530	1.3804	0.1667	
18	DD Variance (to 15 Year normal)	(46)	(46)	(46)	(46)	
19	kWh/customer adjustment (L17 * L18)	(25)	(25)	(63)	(8)	
20	Customers FY22 (fully adjusted)	44,061	10,326	4,883	1,726	
21	Normalizing Adj (MWh) (L19 * L20)/1000	(1,090)	(261)	(308)	(13)	(1,673)
22	Total Revenue unit rate (L23+L24+L25+L26)	0.09924	0.09924	0.10789	0.08707	
23	USP unit rate	0.00606	0.00606	0.00000	0.00000	
24	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
25	GSR-1 unit rate	0.06354	0.06354	0.06354	0.06354	
26	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
27	Revenue Adjustment (L21 * L22)	$ (108)	$ (26)	$ (33)	$ (1)	$ (169)
28	USP Adjustment (L21 * L23)	$ (7)	$ (2)	$ -	$ -	$ (8)
29	EEC Adjustment (L21 * L24)	$ (2)	$ (0)	$ (0)	$ (0)	$ (2)
30	GSR Adjustment (L21 * L25)	$ (69)	$ (17)	$ (20)	$ (1)	$ (106)
31	Distribution Adjustment (L21 * L26)	$ (31)	$ (7)	$ (13)	$ (0)	$ (52)
32	Margin Adjustment (L31 less GRT)	$ (29)	$ (7)	$ (13)	$ (0)	$ (49)
33	Total Adjustment Summary-FY22					
34	Normalizing Adj (MWh) (L5+L21)	8,253	576	849	28	9,705
35	Total Revenue Adjustment (L11+L27)	$ 819	$ 57	$ 92	$ 2	$ 970
36	Total USP Adjustment (L12+L28)	$ 50	$ 3	$ -	$ -	$ 54
37	Total EEC Adjustment (L13+L29)	$ 13	$ 1	$ 1	$ 0	$ 15
38	Total GSR Adjustment(L14+L30)	$ 524	$ 37	$ 54	$ 2	$ 617
39	Total Distribution Adjustment(L15+L31)	$ 232	$ 16	$ 37	$ 1	$ 285
40	Total Margin Adjustment (L16+L32)	$ 218	$ 15	$ 34	$ 1	$ 269

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for GSR-1

	OCT 2020	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	TOTAL
Original Budget GSR-1 Rate FY 21	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	
FTY 2021 GSR-1 Dec 1 Rate	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	$0.06354	
GSR-1 Rate Variance	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	($0.00458)	
Total GSR-1 Volumes-MWh	47,304	58,987	62,337	72,944	58,344	62,940	46,914	43,175	45,044	64,670	56,148	39,920	658,727
GSR-1 Revenue Adjustment	($217)	($270)	($286)	($334)	($267)	($288)	($215)	($198)	($206)	($296)	($257)	($183)	($3,017)

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for USP

	OCT 2020	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	TOTAL
Original Budget USP Calculation	$160	$212	$225	$264	$208	$227	$163	$143	$151	$222	$189	$131	$2,295
Correct Budget USP Calculation	$174	$227	$240	$283	$222	$243	$176	$157	$166	$245	$208	$144	$2,485
Variance to correct Original Budget Calculation	$14	$16	$16	$18	$14	$16	$13	$13	$15	$23	$19	$13	$190
Original Budget USP Rate FY 21	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	
FTY 2021 USP Dec 1 Rate	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	$0.00606	
USP Rate Variance	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	$0.00146	
Total Rate R Volumes-MWh	38,849	50,718	53,562	63,002	49,504	54,110	39,331	34,917	36,999	54,603	46,431	32,035	554,061
Total Rate R excl CAP Volumes-MWh	37,878	49,450	52,223	61,427	48,267	52,757	38,347	34,044	36,074	53,238	45,270	31,234	540,209
USP Rate Revenue Variance	$55	$72	$76	$90	$70	$77	$56	$50	$53	$78	$66	$46	$789
Total Revenue Variance	$70	$88	$92	$108	$85	$93	$69	$63	$67	$100	$85	$59	$978

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for STAS

	Unadjusted Budget Revenue Excluding STAS	Customer Adj	UPC Adj	GSR-1 Adj	USP Adj	Revised Revenue Excluding STAS	STAS Revenue @ Dec 1 Rate	STAS Revenue @ Budget Rate	STAS Adjustment
							-0.02%	-0.01%	
Residential	$ 63,023	$ 454	$ 876	$ (2,516)	$ 978	$ 62,815	$ (13)	$ (6)	$ (6)
Commercial & Industrial	$ 22,136	$ 143	$ 94	$ (494)	$ -	$ 21,879	$ (4)	$ (2)	$ (2)
Public Streets & Highway Lighting	$ 660	$ -		$ (6)	$ -	$ 654	$ (0)	$ (0)	$ (0)
Other Sales to Public Authorities	$ 17	$ -		$ -	$ -	$ 17	$ (0)	$ (0)	$ (0)
Sales for Resale	$ 13	$ -		$ (0)	$ -	$ 12	$ (0)	$ (0)	$ (0)
Total	$ 85,848	$ 597	$ 970	$ (3,017)	$978	$85,377	$ (17)	$ (8)	$ (9)

UGI Utilities, Inc.- Electric Division
Future Period- 12 Months Ended September 30, 2021
($ in Thousands)

Adjustment for GRT

	[1] Unadjusted Budget Distribution/Customer/ Demand Revenues	[2] Unadjusted Budget Distribution/Customer/Demand Margin (Revenues less incorrrect GRT)	[3]=[1] * .941 Corrected Budget Distribution/Customer/Demand Margin (Revenues less correct GRT)	[4]=[3]-[2] Corrected Budget Adjustment to Margin
Residential	$21,422	$20,229	$20,158	($70)
Commercial & Industrial	$11,769	$11,108	$11,075	($33)
Public Streets & Highway Lighting	$559	$528	$526	($2)
Other Sales to Public Authorities	$15	$15	$15	($0)
Sales for Resale	$4	$4	$4	($0)
Total	$33,771	$31,883	$31,778	($105)

UGI ELECTRIC

EXHIBIT SAE-6(a) – SAE-6(g)

UGI Utilities, Inc.- Electric Division
Historic Test Year 2020 Sales and Revenues
Summary of Adjustments

	Sales (000's) kWh	Revenues ($000's)	Margin ($000's)	Reference
Actual 2020	978,484	83,911	31,940	
Adjustment for Customer Changes	1,073	126	47	UGI Electric Exhibit SAE-6(b)
Adjustment for Normalized Use/Customer	331	27	1	UGI Electric Exhibit SAE-6(c)
Adjustment for GSR-1		3,150	0	UGI Electric Exhibit SAE-6(d)
Adjustment for USP		548	0	UGI Electric Exhibit SAE-6(e)
Adjustment for STAS		(10)	0	UGI Electric Exhibit SAE-6(f)
Adjustment for EEC		640	0	UGI Electric Exhibit SAE-6(g)
Adjusted Historic Test Year 2020	979,888	88,392	31,988	

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for Customer Changes
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #	Description	[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Total Historic Test Year 2020 Revenues (Unadjusted)	$ 42,241	$ 18,223	$ 3,059	$ 7,272	$ 70,796
2	Costs (GSR, STAS, EEC, USP, GRT)	(27,672)	(12,495)	(1,646)	(4,632)	(46,444)
			-			
3	Revenues Net of Costs - Margin (Unadjusted) (L1 + L2)	$ 14,569	$ 5,728	$ 1,414	$ 2,640	$ 24,351
4	Average Effective Customers in Historic Year	43,841	10,305	4,745	1,724	60,615
5	Average Annual Margin Per Customer (L 3 / L 4)	$ 0.332	$ 0.556	$ 0.298	$ 1.531	$ 0.402
6	Number of Customers at End of Year	43,932	10,312	4,798	1,722	60,764
7	Change in Customers during Historic Year 2020 (L 6 - L 4)	91	7	53	(2)	149
8	Annualization of Margin (L 5 * L 7)	$ 30	$ 4	$ 16	$ (3)	$ 47
9	Average Annual Revenue Per Customer (L 1 / L 4)	$ 0.963	$ 1.768	$ 0.645	$ 4.218	$ 1.168
10	Annualization of Total Revenue (L 7 * L9)	$ 88	$ 12	$ 34	$ (8)	$ 126
11	Annualization of Cost Revenues (L 10 - L8)	$ 57	$ 8	$ 18	$ (5)	$ 79
12	Total UPC (Unadjusted)-kWh	8,724	17,161	4,525	40,507	70,918
13	Annualization Adjustment for Sales-MWh (L12 * L7)/1000	794	120	240	(81)	1,073

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for Usage per Customer
Rate R General, Rate R Heating, Rate GS-1 Com-Gen, Rate GS-4 Com-Gen
GSR subgroups only

Line #		[1] Rate R General	[2] Rate R Heating	[3] Rate GS-1 Com-Gen	[4] Rate GS-4 Com-Gen	[5] Total
1	Heating Sensitivity/HDD/cust (kWh/DD/cust)	0.1415	0.2633	0.0983	0.4235	
2	DD Variance (to 15 Year normal)	470	470	470	470	
3	kWh/customer adjustment (L1 * L2)	67	124	46	199	
4	Customers FY22 (fully adjusted)	43,932	10,312	4,798	1,722	
5	Normalizing Adj (MWh) (L3 * L4)/1000	2,922	1,276	222	343	4,763
6	Total Revenue unit rate (L7+L8+L9+L10+L11)	0.1036	0.1036	0.11247	0.09165	
7	USP unit rate	0.00584	0.00584	0.00000	0.00000	
8	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
9	GSR-1 unit rate	0.06812	0.06812	0.06812	0.06812	
10	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
11	Revenue Adjustment (L5 * L6)	$ 303	$ 132	$ 25	$ 31	$ 491
12	USP Adjustment (L5 * L7)	$ 17	$ 7	$ -	$ -	$ 25
13	EEC Adjustment (L5 * L8)	$ 4	$ 2	$ 0	$ 0	$ 7
14	GSR Adjustment (L5 * L9)	$ 199	$ 87	$ 15	$ 23	$ 324
15	Distribution Adjustment (L5 * L10)	$ 82	$ 36	$ 10	$ 8	$ 135
16	Margin Adjustment (L15 less GRT)	$ 77	$ 34	$ 9	$ 7	$ 127
17	Cooling Sensitivity/CDD/cust (kWh/DD/cust)	0.2947	0.2903	0.5808	0.0656	
18	DD Variance (to 15 Year normal)	(235)	(235)	(235)	(235)	
19	kWh/customer adjustment (L17 * L18)	(69)	(68)	(137)	(15)	
20	Customers FY22 (fully adjusted)	43,932	10,312	4,798	1,722	
21	Normalizing Adj (MWh) (L19 * L20)/1000	(3,046)	(704)	(656)	(27)	(4,432)
22	Total Revenue unit rate (L23+L24+L25+L26)	0.1036	0.1036	0.11247	0.09165	
23	USP unit rate	0.00584	0.00584	0.00000	0.00000	
24	EEC-Class 1 & Class 2 unit rate	0.00152	0.00152	0.00124	0.00124	
25	GSR-1 unit rate	0.06812	0.06812	0.06812	0.06812	
26	Distribution unit rate (margin plus GRT)	0.02812	0.02812	0.04311	0.02229	
27	Revenue Adjustment (L21 * L22)	$ (316)	$ (73)	$ (74)	$ (2)	$ (465)
28	USP Adjustment (L21 * L23)	$ (18)	$ (4)	$ -	$ -	$ (22)
29	EEC Adjustment (L21 * L24)	$ (5)	$ (1)	$ (1)	$ (0)	$ (7)
30	GSR Adjustment (L21 * L25)	$ (207)	$ (48)	$ (45)	$ (2)	$ (302)
31	Distribution Adjustment (L21 * L26)	$ (86)	$ (20)	$ (28)	$ (1)	$ (134)
32	Margin Adjustment (L31 less GRT)	$ (81)	$ (19)	$ (27)	$ (1)	$ (126)
33	Total Adjustment Summary-FY22					
34	Normalizing Adj (MWh) (L5+L21)	(124)	572	(434)	316	331
35	Total Revenue Adjustment (L11+L27)	$ (13)	$ 59	$ (49)	$ 29	$ 27
36	Total USP Adjustment (L12+L28)	$ (1)	$ 3	$ -	$ -	$ 3
37	Total EEC Adjustment (L13+L29)	$ (0)	$ 1	$ (1)	$ 0	$ 1
38	Total GSR Adjustment(L14+L30)	$ (8)	$ 39	$ (30)	$ 22	$ 23
39	Total Distribution Adjustment(L15+L31)	$ (3)	$ 16	$ (19)	$ 7	$ 1
40	Total Margin Adjustment (L16+L32)	$ (3)	$ 15	$ (18)	$ 7	$ 1

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for GSR-1

	OCT 2019	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	TOTAL
Actual GSR-1 Rate FY 20	$0.06449	$0.06449	$0.06042	$0.06042	$0.06042	$0.06042	$0.06042	$0.06042	$0.06812	$0.06812	$0.06812	$0.06812	
HTY 2020 GSR-1 Sep 1 Rate	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	$0.06812	
GSR-1 Rate Variance	$0.00363	$0.00363	$0.00770	$0.00770	$0.00770	$0.00770	$0.00770	$0.00770	$0.00000	$0.00000	$0.00000	$0.00000	
Total GSR-1 Volumes-MWh	49,340	60,360	57,750	77,191	0	62,070	51,340	50,641	33,596	73,864	66,696	32,689	673,980
GSR-1 Revenue Adjustment	$179	$219	$445	$594	$450	$478	$395	$390	$0	$0	$0	$0	$3,150

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for USP

	OCT 2019	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	TOTAL
Historic Period FY20 USP Rate	$0.00372	$0.00372	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00460	$0.00584	$0.00584	$0.00584	$0.00584	
HTY 2020 USP Sep 1 Rate	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	$0.00584	
USP Rate Variance	$0.00212	$0.00212	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00000	$0.00000	$0.00000	$0.00000	
Total Rate R Volumes-MWh	40,658	51,236	49,861	60,769	49,204	52,316	43,274	40,959	30,119	63,278	55,801	27,891	565,367
Total Rate R excl CAP Volumes-MWh	39,641	49,955	48,615	59,250	47,974	51,008	42,192	39,935	29,366	61,696	54,406	27,194	551,233
USP Rate Revenue Variance	$84	$106	$60	$73	$59	$63	$52	$50	$0	$0	$0	$0	$548

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for STAS

	Actual Revenue Excluding STAS	Customer Adj	UPC Adj	GSR-1 Adj	USP Adj	EEC Adj	Revised Revenue Excluding STAS	STAS Revenue @ Sep 1 Rate	STAS Revenue @ FY 20	STAS Adjustment
								-0.01%	-0.01%	
Residential	$ 60,852	$ 100	$ 46	$ 2,596	$ 548	$ 161	$ 64,304	$ (13)	$ (6)	$ (7)
Commercial & Industrial	$ 22,243	$ 26	$ (20)	$ 548	$ -	$ 466	$ 23,263	$ (5)	$ (2)	$ (3)
Public Streets & Highway Lighting	$ 797	$ -		$ 7	$ -	$ 10	$ 814	$ (0)	$ 0	$ (0)
Other Sales to Public Authorities	$ 14	$ -		$ -	$ -	$ 3	$ 16	$ (0)	$ (0)	$ (0)
Sales for Resale	$ 12	$ -		$ 1	$ -	$ 0	$ 13	$ (0)	$ (0)	$ (0)
Total	$ 83,918	$ 126	$ 27	$ 3,150	$548	$640	$88,410	$ (18)	$ (7)	$ (10)

UGI Utilities, Inc.- Electric Division
Historic Period- 12 Months Ended September 30, 2020
($ in Thousands)

Adjustment for EEC

	OCT 2019	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	TOTAL
Historic EEC-Class 1 Actual Rates FY 20	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00122	$0.00152	
Historic Year 2020 EEC-Class 1 Rate Effective Sept 1	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	$0.00152	
EEC-Class 1 Rate Variance	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00030	$0.00000	
Total EEC-Class 1 Volumes	40,808	51,403	50,005	60,933	0	52,471	43,422	41,079	30,198	63,439	55,955	27,993	567,053
Total EEC-Class 1 Revenue Adjustment	$12	$15	$15	$18	$15	$16	$13	$12	$9	$19	$17	$0	$162
Historic EEC-Class 2 Actual Rates FY 20	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	($0.00287)	$0.00124	
Historic Year 2020 EEC-Class 2 Rate Effective Sept 1	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	$0.00124	
EEC-Class 2 Rate Variance	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00411	$0.00000	
Total EEC-Class 2 Volumes	12,020	12,720	11,309	12,990	13,099	13,193	11,035	10,779	7,125	15,927	14,268	8,350	142,815
Total EEC-Class 2 Revenue Adjustment	$49	$52	$46	$53	$54	$54	$45	$44	$29	$65	$59	$0	$553
Historic EEC-Class 3 Actual Rates FY 20	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00476	$0.00445	
Historic Year 2020 EEC-Class 3 Rate Effective Sept 1	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	$0.00445	
EEC-Class 3 Rate Variance	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	($0.00031)	$0.00000	
Total EEC-Class 3 Volumes	16,975	17,807	32,544	19,942	23,054	14,018	17,546	17,530	40,671	18,626	20,140	29,763	268,616
Total EEC-Class 3 Revenue Adjustment	($5)	($6)	($10)	($6)	($7)	($4)	($5)	($5)	($13)	($6)	($6)	$0	($74)
Total EEC Revenue Adjustment	$56	$62	$51	$65	$61	$66	$53	$51	$26	$79	$69	$0	$640

UGI ELECTRIC STATEMENT NO. 9

NICOLE M. MCKINNEY

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2021-3023618

UGI Utilities, Inc. – Electric Division

Statement No. 9

Direct Testimony of
Nicole M. McKinney

Topics Addressed: **Taxes and Tax Adjustments**

Dated: February 8, 2021

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your full name and business address.

A. My name is Nicole M. McKinney. My business address is One UGI Drive, Denver, Pennsylvania 17517.

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

A. I am employed by UGI Corporation ("UGI Corp.") as Senior Manager Natural Gas Tax Accounting. UGI Corp. is the parent company of UGI Utilities, Inc. ("UGI"). UGI operates through a Gas Division ("UGI Gas"), which is a certificated natural gas distribution company ("NGDC"), and an Electric Division ("UGI Electric" or the "Company"), which is a certificated electric distribution company ("EDC"). Both UGI Gas and UGI Electric are regulated by the Pennsylvania Public Utility Commission ("Commission" or "PUC").

Q. What are your principal duties and responsibilities as Senior Manager Natural Gas Tax Accounting for UGI Corporation?

A. My primary duties as Senior Manager Natural Gas Tax Accounting include the preparation of tax data to be reported in UGI's various United States Securities and Exchange Commission and regulatory filings, as well as its various federal and state income and non-income tax return related filings. Additionally, I maintain the current and deferred income tax accrual and expense accounts, perform tax research, and assist UGI with tax matters as they arise. Additionally, I manage the reporting of the Company's various tax filings with its local, state, and federal jurisdictions.

Q. Please describe your educational background and work experience.

A. They are set forth in my resume attached as UGI Electric Exhibit NMM-1.

Q. Have you testified previously before this Commission?

A. Yes. UGI Electric Exhibit NMM-1 contains a list of those proceedings.

Q. Please describe the purpose of your testimony.

A. I am providing testimony on behalf of UGI Electric. I will explain the Company's *pro forma* tax adjustments to its principal accounting exhibits for the fully projected future test year ending September 30, 2022 ("FPFTY"). I will also explain the tax adjustments made to the results of UGI Electric's historic test year ended September 30, 2020 ("HTY") and future test year ending September 30, 2021 ("FTY").

Q. Ms. McKinney, are you sponsoring any exhibits in this proceeding?

A. Yes. I am sponsoring the following UGI Electric Exhibits: NMM-1, NMM-2, and NMM-3. Together with other Company witnesses, I am sponsoring portions of UGI Electric Exhibit A (Fully Projected), UGI Electric Exhibit A (Future) and UGI Electric Exhibit A (Historic) that pertain to tax-related issues. These exhibits comprise UGI Electric's principal accounting exhibits for the HTY, FTY, and FPFTY. I am also sponsoring certain responses to the Commission's filing requirements and standard data requests. Each response identifies the witness sponsoring it.

II. TAX ADJUSTMENTS

Q. Please provide an overview of UGI Electric's principal accounting exhibits relative to the proposed tax adjustments.

A. As explained in the direct testimony of Stephen F. Anzaldo (UGI Electric Statement No. 2), UGI Electric's principal accounting exhibit is UGI Electric Exhibit A (Fully Projected), which includes a presentation for the FPFTY ending September 30, 2022. Section D of UGI Electric Exhibit A (Fully Projected) presents necessary adjustments to budgeted levels of expense items and revenues. The *pro forma* adjustments related to taxes are summarized in Schedules D-31 through D-34. These tax adjustments are used to derive UGI Electric's *pro forma* income at present and proposed rates as set forth in Schedule A-1 of the same exhibit.

UGI Electric Exhibit A (Future) and UGI Electric Exhibit A (Historic) follow the format of UGI Electric Exhibit A (Fully Projected), but reflect data for the HTY ended September 30, 2020, and the FTY ending September 30, 2021. This information is provided in accordance with the Commission's filing requirements and provides a basis for comparing UGI Electric's FPFTY claims with actual book results from the HTY and adjusted FTY results. Section D to UGI Electric Exhibit A (Historic), Schedule D-31, and UGI Electric Exhibit A (Future), Schedule D-31 include adjustments that share the same methodology as used in Schedule D-31 of UGI Electric Exhibit A (Fully Projected).

A. TAXES OTHER THAN INCOME TAXES

Q. How was the provision for taxes-other-than-income taxes ("TOTI") determined for the FPFTY?

A. TOTI consists of the Pennsylvania Utility Realty Tax (“PURTA”), the Pennsylvania Gross Receipts Tax, Pennsylvania and Local Use taxes, Social Security taxes, Federal Unemployment tax (“FUTA”), State Unemployment tax (“SUTA”) and the Company’s assessed contribution to the Pennsylvania Public Utility Commission. TOTI amounts were based on the plan year budget, as adjusted for reasonably known and measurable changes as explained by the direct testimony of Mr. Anzaldo (UGI Electric Statement No. 2). The net adjustment of $314 is brought forward to Schedule D-3, page 2.

B. INCOME TAXES

Q. Please discuss the Company's claim for income taxes.

A. Income tax expense for the FPFTY at present and proposed rates is set forth in UGI Electric Exhibit A (Fully Projected), Schedule D-33. Income taxes are calculated using the procedures normally followed by the Commission, including the use of debt interest synchronization, the normalization method for accelerated depreciation used in the calculation of Federal income taxes, and the flow through of accelerated depreciation benefits for state tax purposes. UGI Electric is continuing its practice of normalizing the tax repairs expense deduction for federal tax purposes. For state tax purposes, UGI Electric continues to flow-through the repairs tax benefit over the tax useful lives of the asset that generated the benefit, which is generally 20 years. The fully adjusted claim for the FPFTY income tax expense is shown on UGI Electric Exhibit A (Fully Projected), Schedule D-1.

Q. Please describe the claim for income taxes shown on Schedule D-1, lines 18 and 19.

A. The calculation of federal and state income taxes shown on Schedule D-1 lines 18 and 19 can be found on Schedule D-33. Schedule D-33 shows the calculation of *pro forma* income taxes for the FPFTY at present and proposed rates. Line 1 shows the revenue at present and proposed rates, while line 2 shows the operating expenses at present and proposed rates from Schedule D-1. Line 3 reflects operating income before debt interest is deducted, by netting line 1 from line 2. Debt interest expense is synchronized using the rate base claim from Schedule C-1, with the cost of debt and the debt component of UGI Electric's capital structure recommended in the direct testimony of Paul R. Moul (UGI Electric Statement No. 5) and shown on Schedule B-7. The resulting interest expense on line 6 is subtracted from net income before debt interest to calculate base taxable income on line 7.

In accordance with established Commission practice, lines 8 through 11 of Schedule D-33 reduce the base taxable income, for state tax purposes, by the total difference between accelerated tax depreciation shown on line 8 and the *pro forma* book depreciation shown on line 9. The statutory state corporate net income tax rate (9.99%) was then applied to determine the *pro forma* state income tax expense shown on line 13. Lines 14 through 19 show the federal income tax expense calculation at current and proposed rates, while line 20 sums the state and federal tax expense amounts before application of Deferred Federal and State Income Taxes. At lines 21 through 28, Deferred Federal and State Income Taxes are used to increase the *pro forma* income tax expense at present and proposed rates with the total calculated amount for income taxes before the application of other adjustments shown on line 29. The amounts of accelerated depreciation, cost of removal, repairs tax deduction, tax basis adjustments to plant, straight line depreciation and book depreciation used in the determination of income taxes used in this calculation are summarized on Schedule D-34.

Q. What is the total FPFTY income tax expense for UGI Electric?

A. As shown on Schedule D-33 at line 31, the *pro forma* tax expense at present rates is $0.056 million and the *pro forma* tax expense at proposed rates for the FPFTY is $2.375 million. As explained below in Section II.E, this figure is not reduced by a consolidated income tax adjustment.

Q. Has the Company reflected the amortization of Excess Deferred Federal Income Taxes ("EDFIT"), as a result of the 2017 Tax Cuts and Jobs Act ("TCJA"), on its income tax expense claim?

A. Yes, the Company has calculated the amount of the EDFIT that would be amortized and flowed back to ratepayers in its FPFTY. This amount is included in the overall federal deferred tax expense calculated on Line 25 of Schedule D-33. The total amortization was approximately $0.35 million, calculated using the Average Rate Assumption Method ("ARAM") as required by tax normalization rules.

C. ACCUMULATED DEFERRED INCOME TAXES

Q. How are Accumulated Deferred Income Taxes ("ADIT") calculated?

A. Schedule C-6 shows the FPFTY ending balance for federal ADIT at September 30, 2022. This amount is deducted from rate base. The total shown on line 8 reflects the difference in income tax expense for book and tax purposes attributable to the difference between the accelerated tax depreciation and straight-line book depreciation on test year plant balances, net of offsets associated with contributions in aid of construction. Rate base has been further reduced by the state regulatory liability associated with our repairs tax method shown on line 6. As the state tax consequence of accelerated depreciation is flowed through, there is no associated state ADIT balance.

Q. What is the amount of the ADIT offset to rate base?

A. As shown on line 8 of Schedule C-6 and on line 5 of Schedule A-1, the ADIT offset is $28.088 million, which includes an amount related to the repairs tax method explained below in Section D.

Q. Does the Company's reduction to rate base include EDFIT?

A. Yes, the Company has reduced its rate base by the unamortized EDFIT, which is incorporated in the ADIT balance on Line 8 of Schedule C-6.

Q. Has the calculation of the Company's ADIT rate base deduction been calculated in compliance with the normalization requirements of the Internal Revenue Code?

A. Yes. The Company's calculation properly reflects the pro-rationing concept in accordance with Treasury Regulation 1.167(l)-1(h)(6)(ii) that it must follow for ratemaking purposes to comply with IRS normalization requirements. To qualify for normalization, the IRS requires utilities to pro-rate rate base deductions for ADIT to account for the fact that the Company accrues ADIT for plant additions throughout the year. The Company's approach is consistent with that of Pennsylvania public utilities, including UGI Gas, Columbia Gas of Pennsylvania and PPL Electric Utilities Corporation as well as UGI Electric's base rate filing at Docket No. R-2017-2640058. See UGI Electric Exhibit NMM-2 for the calculation of the pro-rata adjustment.

D. REPAIRS TAX METHOD

Q. Please explain UGI Electric's accounting treatment of the Repairs Tax Method.

A. In its tax return for the year ended September 30, 2009, UGI Electric adopted a tax accounting method to expense as repairs certain items capitalized for book purposes in accordance with federal tax regulations.

As it did in the Company's previous base rate case at Docket No. R-2017-2640058, UGI Electric has chosen to normalize its federal income tax expense claim, inclusive of the repairs tax deduction. This difference between accelerated tax depreciation versus book depreciation in the calculation of federal tax expense creates accumulated deferred income taxes. For state income tax purposes, solely with respect to the repairs tax deduction, UGI Electric has chosen to flow-through the repairs tax benefit over the tax useful lives of the assets generating the tax deduction. The state ADIT balance associated with the repairs tax deduction is classified as a regulatory liability, as it represents the repairs tax benefit that ratepayers have not yet received. In both the federal and state instances, the ADIT balance amortizes or unwinds over the remaining life of the asset.

As noted previously, the Company reduces rate base by the sum of the federal ADIT balance and the state repair regulatory liability.

E. CONSOLIDATED TAX BENEFITS

Q. Does the Company's proposed revenue requirement reflect a consolidated tax expense adjustment?

A. No, it does not. It is my understanding that Act 40 of 2016, which added 66 Pa. C.S § 1301.1 to the Public Utility Code, prohibits the use of a consolidated tax adjustment for ratemaking purposes. However, Section 1301.1(b) requires a public utility seeking to change rates to demonstrate that it shall use at least 50 percent of what would have been a consolidated tax expense adjustment under the law prior to Act 40 for reliability or infrastructure related capital investment and the other 50 percent shall be used for general corporate purposes.

A calculation of such an adjustment, using the modified effective tax rate methodology traditionally used by the Commission prior to the enactment of Act 40, is included in the Company's filing as UGI Electric Exhibit NMM-3. Company witness Mr. Anzaldo (UGI Electric Statement No. 2) discusses how this demonstrates the Company has satisfied the requirements of Act 40 in the manner approved by the Commonwealth Court in UGI's Electric's base rate case filing.

Q. Does this conclude your direct testimony?

A. Yes, it does.

UGI ELECTRIC

EXHIBIT NMM-1

Nicole M. McKinney, CPA

1 UGI Drive
Denver, PA 17517

PROFESSIONAL EXPERIENCE:

UGI Utilities, Inc. Denver, PA
Sr. Manager of Natural Gas Tax Accounting. March 2015 – Present

- Supervise 2 reports
- Manage the accounting for income taxes in accordance with ASC 740 for Natural Gas business segment
- Provide technical accounting guidance and expertise on tax accounting, planning and compliance matters
- Oversee and review the preparation of various tax related filings

DENTSPLY International. York, PA
Manager. August 2012 –April 2014

- Supervised staff of 3
- Responsible for identifying deficiencies and areas of improvement for current tax and accounting processes
- Managed completion of domestic federal tax returns and income tax provision
- Performed periodic presentations to senior management regarding tax implications of various business transactions and changes in tax law
- Supervised special tax projects such as research & development tax credit study, domestic production activities deduction, and accounting method changes

ParenteBeard, LLC. Lancaster, PA
Manager. December 2010 – July 2012

- Supervised staff of 5
- Managed client relationships for middle-market businesses to ensure satisfaction of tax and accounting needs
- Assisted in the standardization of accounting processes and working papers
- Served as the liaison between external auditors and clients to achieve efficiency and successful results in year- end audits
- Reviewed complex individual, partnership, corporate, and international federal and state tax returns
- Served as manager on the strategic tax initiative team

WTAS, LLC. Philadelphia, PA
Manager. August 2006 – November 2010

- Supervised staff of 3+
- Managed successful consulting engagements resulting in substantial cash savings
- Developed various complex financial models for client budgetary and forecasting needs
- Prepared and reviewed various international, domestic, and state corporate and partnership tax returns

EDUCATION:
Villanova University, Villanova, PA
Master of Accountancy - May 2007
Bachelor of Science - International Business/Management & Accounting - May 2006
Summa cum Laude
Bartley Medallion of Honor

Previous Testimony:

UGI Gas Base Rate Case:	Docket No. R-2018-3006814
UGI Electric Base Rate Case:	Docket No. R-2017-2640058
UGI Penn Natural Gas, Inc. Rate Case:	Docket No. R-2016-2580030
UGI Utilities, Inc. – Gas Division Rate Case:	Docket No. R-2015-2518438

UGI ELECTRIC

EXHIBIT NMM-2

UGI - Electric Division
Calculation of Pro-Rata Accumulated Deferred Income Tax
(In Thousands)

Month	A Increase to Deferred Taxes	B # of Days	C = B/365 Pro-Rata %	D = C*A Pro-Rata Incr to Deferred Taxes	Per Treas. Reg.1.167(l)-1(h)(6)(ii) Accumulated Deferred Income Tax Balance
9/30/2021					$ 27,718
10/31/2021	38	335	91.78%	35	27,753
11/30/2021	65	305	83.56%	55	27,807
12/31/2021	107	274	75.07%	80	27,888
1/31/2022	102	243	66.58%	68	27,956
2/28/2022	50	215	58.90%	30	27,985
3/31/2022	53	184	50.41%	27	28,012
4/30/2022	56	154	42.19%	24	28,035
5/31/2022	59	123	33.70%	20	28,055
6/30/2022	58	93	25.48%	15	28,070
7/31/2022	55	62	16.99%	9	28,079
8/31/2022	88	31	8.49%	7	28,087
9/30/2022	278	1	0.27%	1	**$ 28,088**

UGI ELECTRIC

EXHIBIT NMM-3

UGI Utilities, Inc. - Electric Division
Calculation of Consolidated Tax Adjustment
In Thousands (000)

	Taxable Income 2017	Taxable Income 2018	Taxable Income 2019	Average	
Tax Loss Entities					
Ashtola Production Company	(1)	(1)	(1)	(1)	
Hellertown Pipeline	0	0	0	0	
Homestead Holding	(199)	(155)	(273)	(209)	
UGI Hunlock Dev	0	(90)	0	(30)	
UGI HVAC Enterprises	(541)	(893)	(305)	(579)	
UGID Holding Company	(8)	(7)	(8)	(7)	
United Valley Insurance	0	(239)	(751)	(330)	
UGI Corporation	(8,138)	0	0	(2,713)	
AmeriGas Inc	(32)	(26)	(26)	(28)	
UGI China Inc	0	0	0	0	
UGI International China. Inc	(199)	0	0	(66)	
UGI Penn HVAC Services	(226)	(16)	0	(81)	
UGI Properties, Inc.	0	(99)	0	(33)	
UGI Development Company	0	0	(5,924)	(1,975)	
UGI Enterprises Inc	(18,583)	0	0	(6,194)	
Subtotal Taxable Loss	**(27,926)**	**(1,525)**	**(7,286)**	**(12,246)**	
Tax Positive Entities					% of Total
AmeriGas Propane Inc.	50,831	61,224	93,880	68,645	38.4%
AmeriGas Propane Holdings, Inc.	0	0	90	30	0.0%
AmeriGas Inc.	0	0	0	0	0.0%
Amerigas Technology Group Inc.	0	0	0	0	0.0%
Energy Service Funding	3,730	4,782	5,062	4,525	2.5%
Newberry Holding	1,450	2,660	3,253	2,454	1.4%
Petrolane Incorporated	0	0	0	0	0.0%
UGI China, Inc.	967	0	0	322	0.2%
UGI Corporation	0	27,142	44,119	23,754	13.3%
UGI Development Company	259	1,259	0	506	0.3%
UGI Enterprises, Inc.	0	0	0	0	0.0%
UGI Europe, Inc.	101,813	5,218	35,767	47,599	26.6%
UGI LNG	4,941	4,792	5,530	5,088	2.8%
UGI Penn HVAC Services	0	0	3	1	0.0%
UGI Properties, Inc.	347	0	245	197	0.1%
UGI Storage Company	5,646	5,903	4,465	5,338	3.0%
UGI Utilities, Inc.	0	0	57,929	19,310	10.8%
UGI International Enterprises, Inc.	0	0	0	0	0.0%
United Valley Insurance	2,415	0	0	805	0.5%
Eliminations	213	0	0	71	0.0%
Subtotal Taxable Income	**172,611**	**112,979**	**250,343**	**178,644**	100.0%
Total Taxable Income	**144,685**	**111,454**	**243,056**	**166,398**	

Tax Savings Applicable to UGI Utilities, Inc.	(1,324)
MWF Allocation % for UGI Utilities - Electric Division	9.35%
Federal Tax Rate	21%
Total Consolidated Tax Adjustment	**(26)**