

KNOXVILLE UTILITIES BOARD

Executive Summary Report

Introduction

We are pleased to present a summary of the electric cost of service study for Knoxville Utilities Board (KUB). This report summarizes the Cost of Service Report that includes additional information, discussion on study results and the significant assumptions used in the development of the cost of service study. The purpose of a cost of service study is to identify the following:

- 1) Identify if cross-subsidies exist between rate classes
- 2) Identify the appropriate monthly customer charge for each customer class
- 3) Identify cost-based power supply and distribution rates
- 4) Identify future rate considerations for Knoxville Utilities Board

Cost of Service Summary Results

The cost of service study determines costs to provide service to each class of customer and assists in design of electric rates. The table below provides the cost of service summary results comparing projected costs to serve each customer class with projected revenues from each customer class. The “% change” column is the adjustment necessary to meet projected cost of service requirements. Negative adjustments suggest current rates are collecting more than cost of service and positive adjustments suggest current rates are short of recovering costs spent to serve that customer class.

Customer Class	Projected		% Change
	Cost of Service	Revenues	
Residential Service	\$ 285,410,595	\$ 261,608,765	9.1%
GSA - 1 (Commercial)	41,145,944	47,984,671	-14.3%
LS Outdoor (Lighting Service)	9,950,346	9,406,603	5.8%
GSA - 2 (Commercial)	129,376,255	141,662,949	-8.7%
GSA - 3 Secondary (Commercial)	23,041,056	26,814,929	-14.1%
GSA - 3 Primary (Commercial)	10,605,689	12,463,030	-14.9%
Non-Standard Customers (Commercial/Industrial)	58,374,612	57,945,256	0.7%
Total	\$ 557,904,496	\$ 557,886,204	0.00%

The study indicates the GSA – 1; GSA – 2 and GSA – 3 classes are paying rates exceeding their cost of providing service. The residential class is paying rates slightly below their cost of providing service.

Based on UFS experience, KUB’s study results are typical for many utilities around the nation including TVA distributors with results showing the GSA classes needing less increases and residential classes greater increases.

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Cost of Service Rates

The table below identifies the cost of service rates for each customer class and includes costs for power supply, distribution and direct customer related costs. Charging these rates would directly match the cost of providing service to customers identified in the study. The table also compares the current customer charges with the cost-based customer charges and identifies the cost-based demand and energy rates for each class. The rates exclude application of the TVA residential hydro credit. TVA provides a hydro credit to KUB in the amount of \$1.60 per month per residential customer. This results in the current effective monthly customer charge for residential ratepayers of \$17.50, and a cost-based charge of \$18.66 per month.

Total Costs by Customer Class

Customer Class	Current Customer		COS Customer	
	Charge		Charge	
Residential Service	\$ 19.10	\$ 20.26	\$ -	\$ 0.0975
GSA - 1	26.00	31.30	-	0.0865
GSA - 2	75.00	177.48	13.11	0.0574
GSA - 3 Secondary	200.00	342.16	12.96	0.0575
GSA - 3 Primary	200.00	438.98	12.71	0.0574

Residential Customer Charge

The customer charge consists of expenses related to 1) providing a minimum amount of electricity to the residential customer, and 2) expenses related to servicing a meter on the customer premise, in effect determining the cost to deliver a single kWh of electricity to the customer. The methodology used in this study is consistent with methodologies and practices used in the electric industry. The cost of service study identified minimum system charges of \$14.79 and direct costs of \$5.47 for a total monthly customer charge of \$20.26. The total monthly customer charge cost breakdown is listed in the table below and includes minimum system costs (blue) and direct costs (brown).

Monthly Customer Charge Cost Breakdown

	Residential
Distribution Customer Costs	\$ 11.60
Transformer Customer Costs	2.65
Substation Customer Costs	0.54
Meter O&M	1.86
Meter Reading	1.04
Billing	1.28
Services	0.40
Customer Service	0.89
Customer Charge	\$ 20.26

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Based on UFS experience with similar size utilities, KUB's residential customer charge, in total, is within a normal range. The direct costs to servicing the account are below similar size utilities due to shared costs (economies of scale) between electric, water, gas, and wastewater. The minimum level of service charges is above similar utilities. This is driven by KUB's Century II Program to continually invest in infrastructure to ensure customers are provided with reliable electric service.

Conclusions:

- 1) The cost of service study indicates that some customer classes are paying above cost of service and some below cost of service. The KUB Board may consider movement toward cost of service in a gradual manner to limit annual impacts on customers.
- 2) The cost of service study indicates that all customer classes are paying customer charges below cost of service. The Board may consider applying a portion of future rate adjustments to the monthly customer charge. KUB cost of service results are common and the residential cost-based customer charge is within a normal range.

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UFS Qualifications

Utility Financial Solutions (UFS) has provided cost of service and rate studies for electric utilities since 2001 and is one of the largest providers of electric rate studies in the country. UFS has provided services to some of the largest and smallest public power systems in the United States, Cooperatives and Investor-Owned Utilities. UFS is an international firm providing rate studies in over 38 states, Barbados, Bermuda and Guam. Example of some of the electric studies include; Nashville, TN; Naperville, IL; Lansing, MI; Rochester, MN; Barbados; and Keys Energy, FL. Mark Beauchamp the president of Utility Financial Solutions has been in the utility industry for 37 years and 29 years providing electric rate studies. Due to our reputation we are instructors for electric cost of service for the American Public Power Association and the National Association of Regulatory Utility Commissioners (CAMP NARUC Program) offered through Michigan State University. Mark is a frequent speaker at regional and national conferences around the nation on industry rate trends and cost of service.