COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Application of Kentucky Power Company for: (1) A General Adjustment of Its Rates for Electric Service; (2) An Order Approving Its 2014 Environmental Compliance Plan; (3) An Order Approving Its Tariffs and Riders; and (4) An Order Granting All Other Required Approvals and Relief	)	Case No. 2014-00396

POST-HEARING BRIEF EXHIBIT 3

KENTUCKY PUBLIC SERVICE COMMISSION

Case No. 2014-00372

LOUISVILLE GAS & ELECTRIC COMPANY

COST OF CAPITAL

DIRECT TESTIMONY

OF

J. RANDALL WOOLRIDGE, PH.D.

ON BEHALF OF
KENTUCKY OFFICE OF ATTORNEY GENERAL
March 6, 2015

LOUISVILLE GAS & ELECTRIC COMPANY
Case No. 2014-00372

Summary of Direct Testimony of
J. Randall Woolridge, Ph. D.

Dr. Woolridge is testifying as to the appropriate cost of capital for Louisville Gas & Electric ("LGE") Company. He has also evaluated the testimony and rate of return recommendation, and testimony of LGE witnesses Mr. Kent W. Blake, Dr. William E. Avera and Mr. Adrien McKenzie.

KU has proposed a capital structure that includes 4.46% short-term debt, 42.97% long-term debt and 52.75% common equity. Their cost of capital recommendation also includes short-term and long-term debt cost rates of 0.89% and 4.16% and a common equity cost rate or return on equity ("ROE") of 10.50%. Dr. Woolridge has adjusted the capital structure ratios of LGE to be more reflective of the capital structures of electric utility and gas distribution companies and LGE's company, PPL Corporation ("PPL"). This capital structure includes 50.0% debt and 50.0% common equity. He has used the Company's proposed debt cost rates. Dr. Woolridge has applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to a proxy group of publicly-held electric utility ("Electric Proxy Group") and gas distribution companies ("Gas Proxy Group") as well as the group developed by the Dr. Avera and Mr. McKenzie ("Avera/McKenzie Proxy Group"). Based primarily on his DCF equity cost rate results, he recommends an equity cost rate of 8.75% for LGE's electric utility operations and 8.60% for LGE's gas distribution operations. Using his capital structure and senior capital cost rates, he recommends an overall fair rate of return or cost of capital of 6.31% for electric operations and 6.23% for gas distribution operations..

Dr. Woolridge also provides a critique of the ROE testimony of Dr. Avera and Mr. McKenzie. One major point of difference is the opposing views about the state of capital markets and capital costs. Dr. Avera and Mr. McKenzie note that while interest rates and capital costs are at historically low levels due to the financial crisis and the monetary stimulus, they point to forecasts of higher interest rates to indicate that capital costs are about to increase. Dr. Woolridge notes that (1) the economy has been growing for over four years and unemployment is down to 5.6%; (2) inflationary expectations and interest rates remain at historically low levels and are likely to stay there for some time; (3) reflective of the improved economic conditions, corporate earnings growth, and low interest rates, the stock market is at an all-time high; and (4) economists' forecasts of higher interest rates cited by Dr. Avera and Mr. McKenzie have consistently been incorrect in the past.

Dr. Woolridge also highlights several issues with Dr. Avera and Mr. McKenzie's equity cost rate studies. In particular, he notes that (1) they have ignored their low-end DCF results, (2) they have used inflated base interest rates and risk premiums in their CAPM and Utility Risk Premium studies; and (3) they have included adjustments for size and flotation costs.

Dr. Woolridge concludes whereas his 8.75% and 8.60% ROE recommendations are below the average authorized ROEs for electric utilities and gas companies, he notes that state-level authorized ROEs tend to lag behind interest rates and capital costs, and that the trend is lower ROEs and the norm is below 10.0%.

then estimate the equity cost rate for the Company. Finally, I critique LGE's rate of return analysis and testimony. A table of contents is provided just after the title page.

Q. PLEASE REVIEW THE ALTERNATIVE RECOMMENDATIONS REGARDING THE APPROPRIATE RATE OF RETURN FOR THE COMPANY.

A. The Company's proposed capital structure and senior capital cost rates are provided by Mr. Kent W. Blake. I have adjusted the capital structure ratios of LGE to be more reflective of the capital structures of electric utility companies and LGE's parent company, PPL Corporation ("PPL"). This capital structure includes 50.0% debt and 50.0% common equity. I have employed the Company's proposed debt cost rates. Dr. William E. Avera and Mr. Adrien M. McKenzie have recommended a common equity cost rate of 10.64% for the Company. I have applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to a proxy group of publicly-held electric utility companies ("Electric Proxy Group"), gas distribution companies ("Gas Proxy Group"), as well as the group developed by Dr. Avera and Mr. McKenzie ("Avera/McKenzie Proxy Group"). My analysis indicates an equity cost rate of 8.75% is appropriate for the LGE's electric utility operations and 8.60% for LGE's gas distribution operations. These figures represent the upper end of my equity cost rate range for the proxy groups. With my proposed capital structure and senior capital cost rates, I am recommending an overall fair rate of return or cost of capital of 6.30% for the electric utility operations and 6.23% for the gas distribution operations. These are summarized in Exhibit JRW-1.

D. EQUITY COST RATE SUMMARY

Q. PLEASE SUMMARIZE YOUR EQUITY COST RATE STUDY.

A. My DCF analyses for the Electric, Avera/McKenzie and Gas Proxy Groups indicate equity cost rates of 8.6%, 8.8%, and 8.6%, respectively. My CAPM analyses for the three proxy groups indicate equity cost rates of 7.9%, 8.0%, and 8.4%

	DCF	CAPM
Electric Proxy Group	**8.6%**	**7.9%**
Avera/McKenzie Proxy Group	**8.8%**	**8.0%**
Gas Proxy Group	**8.6%**	**8.4%**

Q. GIVEN THESE RESULTS, WHAT IS YOUR ESTIMATED EQUITY COST RATE FOR THE GROUPS?

A. Given these results, I conclude that the appropriate equity cost rate for companies in my Electric Group and the Avera/McKenzie Proxy Group is in the 7.8% to 8.8% range. However, since I rely primarily on the DCF model, I am using the upper end of the range as the equity cost rate. Therefore, I conclude that the appropriate equity cost rate for the Company's electric utility operations is 8.75%. For the Gas Proxy Group, these results indicate an equity cost rate of 8.6% and 8.4%. Since my previous analysis suggests that the gas group is less risky than the other two groups, and again relying primarily on the DCF results, I conclude that an equity cost rate of 8.6% is appropriate for LGE's gas distribution operations.

Q. PLEASE INDICATE WHY RETURNS OF 8.75% AND 8.6% ARE APPROPRIATE FOR THE COMPANY AT THIS TIME.

A. There are a number of reasons these ROEs are appropriate and fair for the Company in this case:

1. As shown in Exhibit JRW-8, the electric utility and gas distribution industries are among the lowest risk industries in the U.S. as measured by beta. As such, the cost of equity capital for these industries is amongst the lowest in the U.S., according to the CAPM.

2. As shown in Exhibits JRW-2 and JRW-3, capital costs for utilities, as indicated by long-term bond yields, are still at historically low levels. In addition, given the low inflationary expectations and the slow global economic growth, interest rates are likely to remain at low levels for some time.

3. As highlighted by Mr. McKenzie and Dr. Avera, LGE has a number of rate adjustment mechanisms for environmental costs and demand side management that serve to reduce the riskiness of LGE.

4. As previously indicated, the authorized ROEs for electric utilities have gradually decreased in recent years. These authorized ROEs have declined from 10.01% in 2012, to 9.8% in 2013, to 9.76% in 2014, according to Regulatory Research Associates. In my opinion, these authorized ROEs have lagged behind capital market cost rates. This has been especially true in recent years as some state commissions have been reluctant to authorize ROEs below 10%. However, the <u>trend</u> has been towards lower ROEs, and the <u>norm</u> now is below ten percent. Hence, I believe that my recommended ROEs reflect our present historically low capital cost

rates, and these low capital cost rates are finally being recognized by state utility commissions.

Q. DO YOU BELIEVE THAT YOUR ROE RECOMMENDATIONS MEET *HOPE* AND *BLUEFIELD* STANDARDS?

A. Yes. As previously noted, according to the *Hope* and *Bluefield* decisions, returns on capital should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital. LGE's average earned ROE over the past three years (2011-2013) is 9.49%.[32] LGE has been able to raise capital on attractive terms and its credit rating has been upgraded. The Company issued $250 million in first mortgage, 30-year bonds in November of 2013 at 4.65%. In addition, on January 31, 2014, Moody's upgraded LGE to an issuer rating of A3 and in July of 2014 S&P put LGE on CreditWatch with positive implications. Therefore, I do believe that my ROE recommendation meets the criteria established in the *Hope* and *Bluefield* decisions.

VI. CRITIQUE OF LGE'S RATE OF RETURN TESTIMONY

Q. PLEASE SUMMARIZE THE COMPANY'S COST OF CAPITAL RECOMMENDATION.

A. LGE witness Mr. Kent W. Blake provides the recommended capital structure and debt cost rates, and Dr. Avera and Mr. McKenzie recommend a common equity cost

[32] Attachment_to_LGE_AG_1-185_-__1 (1).