Exhibit No.:	
Issue(s):	Capital Structure
Witness:	Ryan J. Martin
Type of Exhibit:	Direct Testimony
Sponsoring Party:	Union Electric Company
File No.:	ER-2016-0179
Date Testimony Prepared:	July 1, 2016

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2016-0179

DIRECT TESTIMONY

OF

RYAN J. MARTIN

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

St. Louis, Missouri
July 2016

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DIRECT TESTIMONY

OF

RYAN J. MARTIN

FILE NO. ER-2016-0179

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ryan J. Martin. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, MO 63103.

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

A. I am employed by Ameren Services Company, a wholly-owned subsidiary of Ameren Corporation ("Ameren"), as Assistant Vice President and Treasurer. I also serve as Vice President and Treasurer of Union Electric Company d/b/a/ Ameren Missouri ("Ameren Missouri" or "Company"). Ameren Services Company provides various corporate support services to Ameren's subsidiaries, including Ameren Missouri, such as accounting, legal, financial, and treasury services.

Q. What are your current job duties and responsibilities?

A. As Treasurer, I am responsible for all areas of the treasury function, including corporate finance, cash and investment management, insurance, credit risk management, and investor services. Within the area of corporate finance, I am responsible for, among other things, managing Ameren's and its subsidiaries' capital, including their short-term and long-term financing activities, such as debt and equity issuances and credit facility arrangements. I am also responsible for monitoring Ameren's and its subsidiaries' liquidity positions, key credit metrics, and debt agreement compliance, managing relationships with credit rating agencies and banks, and monitoring capital markets for key developments, emerging risks, and opportunities, among other corporate finance-related activities.

Q. Please provide your educational background and relevant work experience.

A. See my Statement of Qualifications, attached as Appendix A to my direct testimony.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to recommend a reasonable capital structure for Ameren Missouri for ratemaking purposes and an appropriate overall fair rate of return for the Company's electric utility business. The capital structure that I recommend is based on Ameren Missouri's forecasted debt, preferred stock, and common stock balances as of December 31, 2016. The actual balances as of December 31, 2016, will be provided with the true-up data. My direct testimony also reflects, for informational purposes, Ameren Missouri's actual capital structure as of March 31, 2016, the end of the test year. In recommending a fair overall rate of return, I consider Ameren Missouri's embedded cost of long-term debt, its embedded cost of preferred stock, and the fair return on equity recommended by Ameren Missouri witness Robert B. Hevert in this case.

Q. Are you sponsoring any schedules in connection with your direct testimony?

A. Yes, I am sponsoring and have attached to my testimony the following schedules, which have been prepared as of or for the twelve months ending December 31, 2016, as appropriate:

- Schedule RJM-1 – Capital Structure/Weighted Average Cost of Capital
- Schedule RJM-2 – Embedded Cost of Long-Term Debt
- Schedule RJM-3 – Cost of Short-Term Debt
- Schedule RJM-4 – Embedded Cost of Preferred Stock

III. RATE OF RETURN AND COST OF CAPITAL CONSIDERATIONS

Q. What is the relationship between allowed rate of return and cost of capital in the context of utility ratemaking?

A. Under a traditional regulatory model, the interests of customers and a utility's shareholders may be considered "balanced" when the Commission authorizes a rate of return on rate base equal to the utility's cost of capital. If the authorized rate of return is less than the utility's overall cost of capital, the financial strength and stability of the utility could degrade, making it difficult for the utility to raise necessary capital on a timely basis, at a reasonable cost, and under reasonable terms. Ultimately, the utility's inability to raise sufficient capital would impair service quality, or the increased cost of capital incurred by a financially-weakened utility would result in increased rates. Customer interests are best served when the Commission-authorized rate of return is set equal to the utility's overall cost of capital.

Q. Please define weighted average cost of capital.

A. Weighted average cost of capital equals the sum of the costs of the components of an entity's capital structure, weighted by the relative contribution of each capital source to the entity's total capitalization.

Q. How did you calculate the weighted average cost of capital for Ameren Missouri?

A. As reflected in Schedule RJM-1, I calculated Ameren Missouri's weighted average cost of capital by (1) multiplying the relative weighting or proportion of each component of Ameren Missouri's capital structure by the cost of that component and then (2) summing the weighted cost of each capital component.

Q. What is the primary standard for determining a fair rate of return?

A. According to the landmark *Bluefield* and *Hope* U.S. Supreme Court decisions,[1] a utility's rates must be set at a level that allows the utility to generate revenues sufficient to (1) maintain the financial integrity of its existing invested capital, (2) maintain its creditworthiness, and (3) attract sufficient capital on competitive terms to continue to provide a source of funds for continued investment and enable the company to meet the needs of its customers. When a utility is allowed to earn its cost of capital, it is generally afforded a reasonable opportunity to accomplish these objectives.

Q. From a finance perspective, why is it important that the Commission allow Ameren Missouri the opportunity to earn its cost of capital?

A. By earning its cost of capital, Ameren Missouri will generate strong cash flows and maintain the financial strength and stability necessary to, among other things,

[1] *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) and *Federal Power Commission v. Hope Natural Gas Company,* 320 U.S. 391 (1944).

attract investment to finance the business and provide reliable, high quality service to its customers at a reasonable cost. Strong cash flows and overall financial health allow the Company to offer an attractive and competitive, risk-adjusted return to equity investors and also maintain strong credit metrics and investment grade credit ratings that, as discussed further below, afford the Company on-going access to debt capital at a reasonable cost and under reasonable terms and conditions.

IV. CAPITAL STRUCTURE AND CREDIT RATINGS, GENERALLY

Q. What is a utility capital structure?

A. Capital structure refers to the mix of debt and equity capital that a utility, such as Ameren Missouri, uses to finance its assets. Because they must support long-lived assets, utility capital structures tend to include long-term securities, generally a combination of common equity and long-term debt. Although there are other forms of capital, such as preferred equity (which has both equity-like and debt-like elements), that also may be a component of a utility's capital structure.

Q. How do you believe the reasonableness of a public utility's capital structure should be evaluated?

A. In evaluating the reasonableness of a public utility's capital structure, one should determine whether the capital structure is consistent with the financial strength necessary for the utility to access the capital markets under reasonable terms under most economic conditions, and, if so, whether the cost of capital resulting from such a structure is reasonable. While debt, relative to equity, is generally a less expensive form of capital due in part to the tax deductibility of interest expense, incremental debt increases a firm's probability of default and the related costs of financial distress.

Beyond a certain point, dependence on debt as a source of capital increases the risk associated with a utility's cash flow, which correspondingly increases a utility's overall cost of capital.

Q. Does Ameren Missouri seek to maintain a certain capital structure?

A. Yes. Ameren Missouri's capital structure is composed of debt, preferred stock, and common equity. Ameren Missouri specifically and continuously maintains the balance of debt and equity in its capital structure to minimize its overall cost of capital and, at the same time, maintain financial strength and stability. Maintaining financial strength and stability includes maintaining strong credit metrics and secure investment grade credit ratings that will allow the Company to attract new capital at a reasonable cost and on reasonable terms, and ensure that Ameren Missouri has access to the capital markets under varying economic conditions.

Q. Why is it necessary for Ameren Missouri to attract new capital?

A. As a public utility, Ameren Missouri is required to continuously provide safe, adequate, and reliable service to its customers. Ameren Missouri needs substantial capital to do this. It is essential that Ameren Missouri be able to attract the capital necessary to meet these significant service and investment commitments.

Q. Why is it necessary that Ameren Missouri be able to access the capital markets during all economic conditions?

A. Ameren Missouri's service commitments to its customers do not cease in an economic downturn. Ameren Missouri must be able to attract the capital necessary to meet those commitments under varying economic conditions, including periods of market distress, when access to the capital markets may be severely limited for weaker-rated issuers.

Q. How does a balanced capital structure help ensure Ameren Missouri access to the capital it needs at a reasonable cost and during market fluctuations?

A. Capital structure is one metric that credit rating agencies evaluate when assessing an issuer's credit profile and assigning a credit rating. A balanced capital structure signals a certain degree of financial health and mitigates the risk of financial distress. Capital structure also influences other credit metrics on which credit ratings are based. Credit ratings, in turn, are used by investors to evaluate the creditworthiness of an issuer and make investment decisions.

Q. What is a credit rating?

A. A credit rating is an evaluation by a credit rating agency of a company's ability to meet its financial obligations in a timely manner. It reflects the opinion of the rating agency of the overall creditworthiness of the company based on the company's relevant business and financial risks. A credit rating can be specific to a particular security or to a particular securities issuer.

Q. Why do credit ratings matter?

A. Credit ratings have a significant effect on a company's ability to attract debt capital, and, in extreme cases, whether the company can access debt capital at all. Credit ratings also impact the pricing and contractual terms at which a company may issue debt securities. This affects the cost of capital and, in Ameren Missouri's case, the rates customers must pay for utility service. In general, a stronger credit rating typically enables a utility to obtain debt capital at a lower cost, to the benefit of customers.

Q. How are credit ratings determined?

A. The two primary credit rating agencies are Standard and Poor's Ratings Services ("S&P") and Moody's Investor Services ("Moody's"). In assessing a company's ability to meet its financial obligations, S&P and Moody's generally - but each to varying degrees - consider both qualitative factors affecting the company's business risk and quantitative factors affecting its financial risk.

Q. How do a company's credit metrics affect its credit ratings?

A. Credit metrics factor significantly into the credit rating agencies' evaluations of a company's credit profile and the rating agencies' assignment of credit ratings. The credit rating agencies generally deem strong credit metrics necessary to maintain investment grade credit ratings.

Q. What is an "investment grade" credit rating?

A. An investment grade credit rating is a rating of BBB- or stronger from S&P or a rating of Baa3 or stronger from Moody's. An investment grade credit rating implies a certain degree of financial strength and stability and reasonable assurance of an issuer's ability to satisfy its debt obligations. Investment grade credit ratings, therefore, tend to attract capital to a company. For Ameren Missouri, investment grade credit ratings provide reasonable assurance that it will be able to access the capital markets on a timely basis, at a reasonable cost, and under reasonable terms and conditions. Again, for Ameren Missouri, on-going access to the debt capital markets benefits its customers by supporting reliable service, and lower debt costs achievable with investment grade credit ratings contribute to lower utility rates.

Q. Does Ameren Missouri target investment grade issuer credit ratings when it maintains its capital structure?

A. Yes. As explained, access to sufficient capital is critical to Ameren Missouri's financial health and stability and, in turn, to the service that its customers receive and the rates customers pay for that service. Therefore, in my opinion, Ameren Missouri's issuer credit ratings should be securely investment grade (at least two notches stronger than S&P's and Moody's weakest investment grade issuer credit rating) to continue to support the financial integrity of the utility and ensure it access to necessary capital at a reasonable cost and on reasonable terms in both strong and weak markets.

Q. What are Ameren Missouri's current issuer credit ratings?

A. Currently, Ameren Missouri's issuer credit ratings at Moody's and S&P are Baa1 and BBB+, respectively. Both credit rating agencies report stable outlooks for Ameren Missouri's credit ratings.

Q. Do you consider Ameren Missouri's current issuer credit ratings to be securely investment grade?

A. Yes.

V. AMEREN MISSOURI'S ACTUAL AND FORECASTED CAPITAL STRUCTURE

Q. What was Ameren Missouri's capital structure as of March 31, 2016, the end of the proposed test year in this case?

A. The table below shows Ameren Missouri's actual capital structure as of March 31, 2016:

		Balance	%
Long-term debt	$	3,495,023,533	46.90%
Short-term debt	$	-	0.00%
Preferred Stock	$	81,827,509	1.10%
Common equity	$	3,875,406,203	52.00%
Total	$	7,452,257,245	100.00%

Q. How does Ameren Missouri's capital structure as of March 31, 2016, compare to the capital structure approved for Ameren Missouri by the Commission pursuant to the Commission's most recent rate order?

A. A comparison of Ameren Missouri's capital structure as of March 31, 2016, to the capital structure most recently approved by the Commission, which was based on actual balances as of December 31, 2014, is as follows:

	As of March 31, 2016			As of December 31, 2014		
		Balance	%		Balance	%
Long-term debt	$	3,495,023,533	46.90%	$	3,614,494,332	47.18%
Short-term debt	$	-	0.00%	$	-	0.00%
Preferred Stock	$	81,827,509	1.10%	$	81,827,509	1.07%
Common equity	$	3,875,406,203	52.00%	$	3,965,439,766	51.76%
Total	$	7,452,257,245	100.00%	$	7,661,761,607	100.00%

The approximately $119 million decrease in long-term debt from December 31, 2014, to March 31, 2016, is attributable primarily to the re-payment of a total of $374 million of senior secured notes that matured in April of 2015 and February of 2016, net of an issuance of $250 million of senior secured notes in April of 2015. The approximately $90 million decrease in common equity from December 31, 2014, to March 31, 2016, is primarily attributable to dividends paid during the period, net of net income generated.

Q. What capital structure are you recommending in this case?

A. I recommend that Ameren Missouri's actual capital structure as of the recommended true-up date of December 31, 2016, be used in this case.

Q. How do you expect Ameren Missouri's capital structure to change when the balances are trued-up through December 31, 2016?

A. Based on current projections, I expect Ameren Missouri's capital structure as of the December 31, 2016, true-up date to be as follows:

	As of December 31, 2016			As of March 31, 2016		
	Balance		%	Balance		%
Long-term debt	$	3,647,651,680	47.14%	$	3,495,023,533	46.90%
Short-term debt	$	-	0.00%	$	-	0.00%
Preferred Stock	$	81,827,509	1.06%	$	81,827,509	1.10%
Common equity	$	4,008,376,639	51.80%	$	3,875,406,203	52.00%
Total	$	7,737,855,828	100.00%	$	7,452,257,245	100.00%

Note that the equity percentage as of December 31, 2016, is expected to be 51.80%, nearly identical to the equity percentage of 51.76% approved by the Commission in the most recently decided rate case. The anticipated increase in long-term debt of approximately $153 million from March 31, 2016, to December 31, 2016, is primarily attributable to the issuance of $150 million of senior secured notes in June 2016. The expected common equity increase of approximately $133 million from March 31, 2016, to December 31, 2016, is attributable primarily to net income expected to be earned during the period, offset by dividends forecasted to be paid.

Q. What constitutes a healthy capital structure for a regulated utility?

A. Again, a healthy capital structure for a regulated utility is one that results in a reasonable balance between the overall cost of capital and the expected costs of financial distress.

Q. Why do you believe that the capital structure recommended in your testimony is appropriate?

A. The capital structure recommended in my testimony reflects a reasonable balance between cost of capital and financial strength and stability. It allows Ameren Missouri to take advantage of the lower costs of debt financing without elevating the risk of default and the related costs of financial distress to an unreasonable level that would impair the creditworthiness and financial integrity of the Company.

VI. BALANCE AND EMBEDDED COST OF LONG-TERM DEBT

Q. How was the balance of long-term debt determined?

A. The long-term debt balance of $3,647,651,680 reflected in the proposed Ameren Missouri capital structure represents the projected total carrying value of the Company's long-term debt as of December 31, 2016. As detailed in Schedule RJM-2, the carrying value of long-term debt was computed using the net proceeds method, which adjusts the face amount of long-term debt to properly account for unamortized discounts and premiums, long-term debt issuance expenses, and any gains or losses incurred in connection with long-term debt redemptions.

Q. Did you make any adjustments to Ameren Missouri's actual long-term debt balance in determining the long-term debt balance proposed in this proceeding?

A. I did not include in the proposed long-term debt balance the Company's obligations under capital leases related to the Chapter 100 financing of its Peno Creek (City of Bowling Green) and Audrain County gas-fired generating facilities. These transactions and related capital leases did not generate any proceeds, nor were they a source of new capital for the Company. This treatment is consistent with that reflected in the Company's most recent rate case order.

Q. How was the embedded cost of long-term debt determined?

A. As reflected in Schedule RJM-2, the embedded cost of long-term debt of 5.391% was computed by dividing forecasted annualized interest expense as of December 31, 2016, by the forecasted long-term debt carrying value as of such date.

Included in Ameren Missouri's forecasted long-term debt balance as of December 31, 2016, are two series of variable rate environmental improvement bonds with a forecasted total outstanding principal balance as of such date of $207.5 million. The interest rates of the issues are reset by a Dutch auction process every 35 days. The effective interest cost assumed for this indebtedness for purposes of this proceeding is consistent with actual rates for these securities as of June 1, 2016, including related auction broker/dealer fees. These interest rates, as well as all other elements of the embedded cost of long-term debt, will be updated as part of the true-up.

VII. BALANCE OF SHORT-TERM DEBT

Q. How was the balance of short-term debt determined?

A. The balance of short-term debt of $0 reflected in the proposed Ameren Missouri capital structure represents the forecasted average short-term debt balance during the year ending December 31, 2016, net of cash and construction work in progress balances. As reflected in Schedule RJM-3, the Company expects to have no net short-term borrowings during the period.

VIII. BALANCE AND EMBEDDED COST OF PREFERRED STOCK

Q. How was the balance of preferred stock determined?

A. The preferred stock balance of $81,827,509 reflected in Ameren Missouri's proposed capital structure reflects the expected carrying value of, and the net proceeds received for, Ameren Missouri's projected preferred stock outstanding as of December 31, 2016. The calculation of the preferred stock balance is shown in Schedule RJM-4.

Q. How was the embedded cost of Ameren Missouri's preferred stock determined?

A. As reflected in Schedule RJM-4, the embedded cost of preferred stock of 4.180% was computed by dividing forecasted annualized dividends by the net proceeds received for forecasted preferred stock outstanding as of December 31, 2016.

Q. Did you consider expenses incurred in connection with Ameren Missouri's issuance of preferred stock in calculating the embedded cost of this component of the Company's capital structure?

A. Yes. As reflected in Schedule RJM-4, considered in the embedded cost of preferred stock is not only the cost of dividends but also the cost of preferred stock issuance, including discounts, premiums, expenses, and any losses incurred in connection with redeeming prior preferred stock series. Unlike similar costs incurred in connection with the issuance and redemption of long-term debt, these expenses are not amortized over the life of the security due to the perpetual nature of preferred stock. Nonetheless, it is important and appropriate to consider these costs in order to accurately quantify the true economic cost of Ameren Missouri's preferred stock and establish a fair overall rate of return for the Company.

IX. BALANCE AND COST OF COMMON EQUITY

Q. How was the balance of Ameren Missouri's common equity determined?

A. The common equity balance of $4,008,376,639 reflected in Ameren Missouri's proposed capital structure reflects Ameren Missouri's forecasted book value of common equity as of December 31, 2016. Common equity is generally reflected net of accumulated other comprehensive income ("AOCI"), but AOCI is projected to be zero as of December 31, 2016.

Q. How was the cost of common equity determined?

A. In his testimony in this case, Mr. Hevert states that the cost of common equity capital for Ameren Missouri's integrated electric operations is currently within the range of 9.750% to 10.500% and recommends that the Commission allow Ameren Missouri the opportunity to earn a return on common equity of 9.900%. As a consequence, in forecasting Ameren Missouri's overall weighted average cost of capital for its electric business, I have assumed a cost of common equity of 9.900%, and Ameren Missouri requests that the Commission approve a return on common equity of 9.900% in this case.

X. FAIR RATE OF RETURN

Q. What do you propose is a fair overall rate of return for Ameren Missouri in this case?

A. I believe a return of 7.713%, which is equivalent to Ameren Missouri's forecasted weighted average cost of capital as of December 31, 2016, is fair and reasonable. The calculation of the Company forecasted weighted average cost of capital, considering the debt, preferred stock, and common equity balances and costs set forth above, is reflected in Schedule RJM-1.

XI. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes, it does.

APPENDIX A

STATEMENT OF QUALIFICATIONS

RYAN J. MARTIN

My name is Ryan J. Martin. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri, 63103. I am employed by Ameren Services Company a Vice President and Treasurer. As Treasurer, I am responsible for all areas of the treasury function of Ameren Corporation and its subsidiaries, including corporate finance, cash and investment management, insurance, credit risk management, and investor services. Within the area of corporate finance, I am responsible for, among other things, managing Ameren Corporation's and its subsidiaries' capital, including their short-term and long-term financing activities, such as debt and equity issuances and credit facility arrangements. I am also responsible for monitoring Ameren and its subsidiaries' liquidity positions, key credit metrics, and debt agreement compliance, managing relationships with credit rating agencies and banks, and monitoring capital markets for key developments, emerging risks, and opportunities, among other corporate finance-related activities.

I received my Bachelor of Business Administration degree, with a concentration in Accountancy, in 1995 from the University of Notre Dame. I received my Master of Business Administration degree, with concentrations in finance, marketing, and strategy, in 2004 from Northwestern University's Kellogg School of Management.

I have more than 20 years of experience in various audit, accounting, financial reporting, and finance roles. I began my career in 1995 at Arthur Andersen LLP and worked in the firm's Audit and Business Advisory practice for six years. I left Arthur

Andersen in 2000 to join Career Education Corporation, a public company that owns and operates for-profit, post-secondary schools. At Career Education Corporation, I managed the company's accounting, financial reporting, and corporate finance functions and at various times was also responsible for accounts payable, payroll, and insurance. In 2007, I joined Ameren Services as Assistant Controller. In that role, I managed the Company's general accounting function and plant accounting function and was also responsible for accounting research and policy. In March of 2010, I joined the Treasury department of Ameren Services as the Assistant Treasurer and Manager of Corporate Finance. I was promoted to the role of Assistant Vice President and Treasurer in 2013, and I was promoted to the role of Vice President and Treasurer in 2016.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Annual Revenues for Electric Service.	)))	File No. ER-2016-0179

AFFIDAVIT OF RYAN J. MARTIN

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Ryan J. Martin, being first duly sworn on his oath, states:

1. My name is Ryan J. Martin. I am employed by Ameren Services as Vice President and Treasurer.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company, d/b/a Ameren Missouri, consisting of 18 pages and Schedule(s) RJM-1 to RJM-4, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Ryan J. Martin

Subscribed and sworn to before me this 30 day of June, 2016.

Stephanie A. Gifford
Notary Public

My commission expires: 1/30/2020

STEPHANIE A. GIFFORD
Notary Public - Notary Seal
State of Missouri
Commissioned for St. Charles County
My Commission Expires: January 30, 2020
Commission Number: 11479771

Union Electric Company d/b/a Ameren Missouri
Weighted Average Cost of Capital

at 12/31/2016:

CAPITAL COMPONENT	AMOUNT	PERCENT OF TOTAL	COST	WEIGHTED COST
Long-Term Debt	$3,647,651,680	47.140%	5.391%	2.541%
Short-Term Debt	$0	0.000%	0.000%	0.000%
Preferred Stock	$81,827,509	1.057%	4.180%	0.044%
Common Equity	$4,008,376,639	51.803%	9.900%	5.128%
TOTAL	**$7,737,855,828**	**100.000%**		**7.713%**

Union Electric Company d/b/a Ameren Missouri
Embedded Cost of Long-Term Debt

at December 31, 2016

SERIES	COUPON (a)	ISSUED	MATURITY	PRINCIPAL	FACE AMOUNT OUTSTANDING	UNAMORTIZED BALANCES DISC/(PREM)	UNAMORTIZED BALANCES ISSUE EXP.	UNAMORTIZED BALANCES LOSS	CARRYING VALUE	ANNUALIZED COUPON INT.(b)	ANNUALIZED AMORTIZATION DISC/(PREM)	ANNUALIZED AMORTIZATION ISSUE EXP	ANNUALIZED AMORTIZATION LOSS	ANNUALIZED EXPENSE	EMBEDDED COST
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
Senior Secured Notes	6.400%	15-Jun-07	15-Jun-17	$425,000,000	$425,000,000	$18,696	$157,176			$27,200,000	$37,392	$314,352			
Senior Secured Notes	6.000%	08-Apr-08	01-Apr-18	$250,000,000	$178,520,000	$67,380	$169,365			$10,711,200	$53,904	$135,492			
Senior Secured Notes	5.100%	28-Jul-03	01-Aug-18	$200,000,000	$198,657,000	$11,115	$180,595			$10,131,507	$7,020	$114,060			
Senior Secured Notes	6.700%	19-Jun-08	01-Feb-19	$450,000,000	$329,283,000	$189,900	$488,500			$22,061,961	$91,152	$234,480			
Senior Secured Notes	5.100%	23-Sep-04	01-Oct-19	$300,000,000	$244,311,000	$19,239	$364,452			$12,459,861	$6,996	$132,528			
Senior Secured Notes	5.000%	27-Jan-05	01-Feb-20	$85,000,000	$85,000,000	$138,380	$146,927			$4,250,000	$44,880	$47,652			
Senior Secured Notes	3.500%	04-Apr-14	15-Apr-24	$350,000,000	$350,000,000	$45,675	$2,107,836			$12,250,000	$6,300	$290,736			
First Mortgage Bonds	5.450%	15-Oct-93	01-Oct-28	$44,000,000	$5,000	$13	$24			$273	$1	$2			
Senior Secured Notes	5.500%	10-Mar-03	15-Mar-34	$184,000,000	$184,000,000	$1,140,570	$1,001,052			$10,120,000	$66,120	$58,032			
Senior Secured Notes	5.300%	21-Jul-05	01-Aug-37	$300,000,000	$300,000,000	$654,056	$1,917,955			$15,900,000	$31,776	$93,180			
Senior Secured Notes	8.450%	20-Mar-09	15-Mar-39	$350,000,000	$350,000,000	$864,279	$2,578,419			$29,575,000	$38,844	$115,884			
Senior Secured Notes	3.900%	11-Sep-12	15-Sep-42	$485,000,000	$485,000,000	$2,189,574	$4,147,707			$18,915,000	$85,032	$161,076			
Senior Secured Notes	3.650%	06-Apr-15	15-Apr-45	$250,000,000	$250,000,000	$555,621	$2,632,674			$9,125,000	$19,668	$93,192			
Senior Secured Notes	3.650%	30-Jun-16	15-Apr-45	$150,000,000	$150,000,000	$0	$1,879,308			$5,475,000	$0	$66,383			
Environmental Improvement, Series 1992	0.950%	01-Dec-92	01-Dec-22	$47,500,000	$47,500,000		$129,007			$527,250		$21,804			
Environmental Improvement, Series 1998 ABC	0.951%	04-Sep-98	01-Sep-33	$160,000,000	$160,000,000		$924,200			$1,858,000		$55,452			
TOTAL LONG-TERM DEBT				**$4,030,500,000**	**$3,737,276,000**	**$5,894,498**	**$18,825,197**	**$64,904,625**	**$3,647,651,680**	**$190,560,052**	**$489,085**	**$1,934,305**	**$3,652,932**	**$196,636,374**	**5.391%**

Carrying Value = Face Amount Outstanding less Unamortized Discount, Issuance Expenses, and Loss on Reacquired Debt

C10 = C6 - C7 - C8 - C9

Annualized Expense = Annual Coupon Interest plus Annual Amortization of Discount, Issuance Expenses, and Loss on Reacquired Debt

C15 = C11 + C12 + C13 + C14

Embedded Cost = Annualized Expense divided by Carrying Value

C16 = C15 / C10

(a) Coupon rate for variable rate auction securities reflects prevailing rates as of 6/01/16 and includes ongoing broker dealer fees.

(b) Annualized coupon interest (C11) includes annual bond insurance premiums, where applicable.

- Denotes estimates

Union Electric Company d/b/a Ameren Missouri
Cost of Short-term Debt

MONTH C1	BALANCE OF SHORT-TERM DEBT (a) C2	BALANCE OF TOTAL CWIP C3	BALANCE OF CWIP ACCRUING AFUDC C4	NET AMOUNT OUTSTANDING C5	INTEREST RATE C6
January 2016	$0	$717,268,993	$806,857,428	$0	--
February	$73,800,000	$715,750,082	$671,076,685	$0	0.830%
March	$164,800,000	$536,013,068	$603,990,562	$0	0.680%
April	$194,700,000	$525,212,937	$542,822,037	$0	0.790%
May	$198,500,000	$422,144,643	$354,601,500	$0	0.700%
June	$166,720,816	$391,971,535	$329,256,089	$0	0.700%
July	$61,504,494	$415,323,493	$348,871,734	$0	0.700%
August	*$0*	$454,277,505	$381,593,104	$0	--
September	*$0*	$496,276,672	$416,872,404	$0	--
October	*$0*	$551,492,233	$463,253,476	$0	--
November	*$0*	$583,572,859	$490,201,202	$0	--
December	*$0*	$345,473,801	$290,197,993	$0	--
AVERAGE	**$71,668,776**	**$551,393,543**	**$474,966,185**	**$0**	

C5 Net Amount Outstanding = Balance of Short-Term Debt less Balance of CWIP Accruing AFUDC
C5 = C2 - C4

(a) Short-term debt amounts are net of cash and short-term investments. Negative amounts are excluded.

- Denotes estimates

Union Electric Company d/b/a Ameren Missouri
Embedded Cost of Preferred Stock

at December 31, 2016

SERIES, TYPE, PAR C1	DIVIDEND C2	ISSUED C3	MATURITY C4	SHARES OUTSTANDING C5	PAR ISSUED/ OUTSTANDING C6	PREMIUM C7	ISSUANCE EXPENSE/DISCOUNT C8	NET PROCEEDS C9	ANNUAL DIVIDEND C10	EMBEDDED COST C11
$3.50 Series, Perpetual, $100 par	$3.500	01-May-46	-	130,000	$13,000,000	($910,000)	$252,772	$13,657,228	$455,000	
$3.70 Series, Perpetual, $100 par	$3.700	01-Oct-45	-	40,000	$4,000,000	($70,000)	$69,396	$4,000,604	$148,000	
$4.00 Series, Perpetual, $100 par	$4.000	01-Nov-49	-	150,000	$15,000,000	($384,000)	$326,896	$15,057,104	$600,000	
$4.30 Series, Perpetual, $100 par	$4.300	01-Jul-46	-	40,000	$4,000,000			$4,000,000	$172,000	
$4.50 Series, Perpetual, $100 par	$4.500	01-May-41	-	213,595	$21,359,500	($825,000)	$440,294	$21,744,206	$961,178	
$4.56 Series, Perpetual, $100 par	$4.560	01-Nov-63	-	200,000	$20,000,000	($266,000)	$297,633	$19,968,367	$912,000	
$4.75 Series, Perpetual, $100 par	$4.750	01-Oct-49	-	20,000	$2,000,000			$2,000,000	$95,000	
$5.50 Series, Perpetual, $100 par	$5.500	01-Oct-41	-	14,000	$1,400,000			$1,400,000	$77,000	
TOTAL PREFERRED STOCK					**$80,759,500**	**($2,455,000)**	**$1,386,991**	**$81,827,509**	**$3,420,178**	**4.180%**

issuance expenses, discount/premium, and any loss incurred in acquiring/redeeming prior series are not amortized due to the perpetual nature of the company's preferred stock

Net Proceeds = Par Value Outstanding plus Premium less Issuance Expense and Discount
C9 = C6 + C7 - C8
Embedded Cost = Annual Dividend divided by Net Proceeds
C11 = C10 / C9