

This preliminary prospectus supplement relates to an effective registration statement under the Securities Act of 1933, as amended, but is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not offers to sell these securities and are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED SEPTEMBER , 2011

**Preliminary Prospectus Supplement
(To Prospectus Dated May 11, 2009)**



**Kansas City Power & Light Company
% Notes due 20**

We will pay interest on the notes on and of each year, beginning . The notes will mature on . We may redeem the notes at any time in whole or from time to time in part at the price specified in this prospectus supplement.

The notes will be senior unsecured obligations of Kansas City Power & Light Company exclusively and will rank equally with any existing and future senior unsecured indebtedness of Kansas City Power & Light Company. The notes will not be listed on any securities exchange.

Investing in the notes involves risks that are described in the section entitled “Risk Factors” beginning on page S-10 of this prospectus supplement and beginning on page 3 of the accompanying prospectus.

| | Per Note | Total |
|---|----------|-------|
| Public offering price (1) | % | \$ |
| Underwriting discount | % | \$ |
| Proceeds, before expenses, to Kansas City Power & Light Company | % | \$ |

(1) Plus accrued interest from September , 2011, if settlement occurs after that date

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The notes will be ready for delivery in book-entry form only through The Depository Trust Company on or about September , 2011.

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Co-Managers

September , 2011

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Prospectus

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of the notes. The second part is the accompanying prospectus dated May 11, 2009, which we refer to as the “accompanying prospectus.” The accompanying prospectus contains a description of debt securities and gives more general information, some of which may not apply to the notes.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or in any written communication from us or any underwriter specifying the final terms of this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Before you invest in the notes, you should carefully read the registration statement (including the exhibits thereto) of which this prospectus supplement and the accompanying prospectus form a part, this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and accompanying prospectus. The incorporated documents are described in this prospectus supplement under “Where You Can Find More Information.”

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy Incorporated (Great Plains Energy), separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement and the accompanying prospectus. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus supplement or when we otherwise refer to ourselves in this prospectus supplement, we mean Kansas City Power & Light Company and not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates of capital projects and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our future performance and are subject to risks and uncertainties, including those discussed under the heading “Risk Factors” in this prospectus supplement and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the

Private Securities Litigation Reform Act of 1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus supplement. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including but not limited to possible further deterioration in economic conditions and the timing and extent of economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry, Great Plains Energy and/or the Company;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- impairments of long-lived assets or goodwill;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- the inherent uncertainties in estimating the effects of weather, economic conditions and other factors on customer consumption and financial results;
- ability to achieve generation goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of generation, transmission, distribution or other projects;

- the inherent risks associated with the ownership and operation of a nuclear facility including, but not limited to, environmental, health, safety, regulatory and financial risks;
- workforce risks, including, but not limited to, increased costs of retirement, healthcare and other benefits; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus supplement, in the accompanying prospectus and in our other SEC filings.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, and proxy statements and other information with the Securities and Exchange Commission (the “SEC”) through the SEC’s Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC’s website (<http://www.sec.gov>). You may read and copy such material at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we file with it. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus supplement and the accompanying prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus supplement will automatically update and supersede this information. We are incorporating by reference into this prospectus supplement the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus supplement is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on February 25, 2011;
- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 3, 2011, and for the quarter ended June 30, 2011, filed with the SEC on August 5, 2011; and
- Our Current Reports on Form 8-K dated March 10, 2011 and filed with the SEC on March 10, 2011 and amended April 14, 2011; April 1, 2011 and filed with the SEC on April 6, 2011; April 12, 2011 and filed with the SEC on April 15, 2011; August 19, 2011 and filed with the SEC on August 29, 2011; and [...]

We and our parent company, Great Plains Energy, separately filed the combined Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries), including KCP&L Greater Missouri Operations Company, was separately filed by Great Plains Energy on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus supplement the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L), and we make no representation as to the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus supplement and the accompanying prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus supplement and the accompanying prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein except to the extent specifically so indicated. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1200 Main Street, Kansas City, Missouri 64105 (Telephone No.: (816) 556-2200), Attention: Corporate Secretary, or by contacting us on our website.

PROSPECTUS SUPPLEMENT SUMMARY

Our Company

Kansas City Power & Light Company is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2010, we served approximately 510,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 450,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2010. Our retail revenues averaged approximately 85% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter. KCP&L has one active wholly-owned subsidiary, Kansas City Power & Light Receivables Company.

Our principal executive offices are located at 1200 Main Street, Kansas City, Missouri 64105, and our telephone number is (816) 556-2200.

The Offering

The following summary contains basic information about the notes. It does not contain all the information that is important to you. For a more complete understanding of the notes, please refer to the section of this prospectus supplement entitled “Description of the Notes” and the section of the accompanying prospectus entitled “Description of Notes.”

| | |
|-------------------------------|--|
| Issuer | Kansas City Power & Light Company |
| Notes Offered | \$ aggregate principal amount of % Notes due . |
| Maturity | , . |
| Interest | The notes will bear interest from September , 2011 at the rate of % per year. |
| Interest Payment Dates | and of each year, beginning , 2012. |
| Ranking | The notes will be our senior unsecured obligations. They will rank equal in right of payment with our existing and future senior unsecured obligations and will be senior in right of payment to any existing and future subordinated indebtedness. The notes will be effectively subordinated to all of our existing and any future secured indebtedness, including our general mortgage bonds, to the extent of the collateral securing that indebtedness and to all existing and future liabilities, including trade payables, of our subsidiaries. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness. |
| Optional Redemption | Prior to , 20 (the date that is six months prior to the maturity date of the notes), we may redeem the notes at any time in whole or from time to time in part at the “make-whole premium” indicated under the section entitled “Description of the Notes—Optional Redemption” in this prospectus supplement. On or after , 20 , we may redeem the notes at any time in whole or from time to time in part at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest thereon. See “Description of the Notes—Optional Redemption” in this prospectus supplement. |
| Further Issuances | We may create and issue further notes ranking equally and ratably with and having the same terms as the notes offered by this prospectus supplement. Any additional notes will, together with the notes offered by this prospectus supplement, constitute a single series of notes under the indenture. |
| Use of Proceeds | The use of proceeds for this debt offering will be to repay all or a portion of KCP&L’s outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L’s 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011, KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%. |
| Risk Factors | See “Risk Factors” beginning on page S-10 of this prospectus supplement and page 3 of the accompanying prospectus and other |

information incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in the notes.

No Listing of the Notes.....

We do not intend to make application to list the notes on any national securities exchange or to include them in any automated quotation system.

Governing Law

The indenture and the notes will be governed by New York law.

Summary Consolidated Financial Data

The following consolidated summary financial data for the years ended December 31, 2010 through December 31, 2008 have been derived from our audited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The following summary of consolidated financial data for year to date June 30, 2011 and June 30, 2010 has been derived from our unaudited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The information set forth below is qualified in its entirety by reference to, and therefore, should be read together with, the relevant management's discussion and analysis of financial condition and results of operations, financial statements and related notes and other financial information incorporated by reference herein.

| | Year to Date June 30, | | Year Ended December 31, | | |
|--|---|-----------------|-------------------------|-----------------|-----------------|
| | 2011 | 2010 | 2010 | 2009 | 2008 |
| | (\$ in millions; except per share data) | | | | |
| Income Statement Data: | | | | | |
| Operating revenues | \$ 714.2 | \$ 708.2 | \$ 1,517.1 | \$ 1,318.2 | \$ 1,343.0 |
| Operating expenses | 609.9 | 583.0 | 1,205.7 | 1,086.0 | 1,104.9 |
| Operating income | <u>\$ 104.3</u> | <u>\$ 125.2</u> | <u>\$ 311.4</u> | <u>\$ 232.2</u> | <u>\$ 238.1</u> |
| Net income | <u>\$ 37.4</u> | <u>\$ 67.4</u> | <u>\$ 163.2</u> | <u>\$ 128.9</u> | <u>\$ 125.2</u> |
| Cash Flow Data: | | | | | |
| Cash flows from operating activities | \$ 87.8 | \$ 77.3 | \$ 422.2 | \$ 287.9 | \$ 419.0 |
| Cash flows from investing activities | (141.7) | (262.8) | (508.7) | (667.9) | (846.3) |
| Cash flows from financing activities | 52.8 | 172.1 | 72.7 | 392.0 | 429.5 |
| Other Financial Data: | | | | | |
| Depreciation and amortization | \$ 101.6 | \$ 125.8 | \$ 256.4 | \$ 229.6 | \$ 204.3 |
| Amortization of: | | | | | |
| Nuclear fuel | 5.9 | 12.8 | 25.1 | 16.1 | 14.5 |
| Other | 14.1 | 11.0 | 24.2 | 19.0 | 11.1 |
| Utility capital expenditures | (143.0) | (247.5) | (463.1) | (626.5) | (810.5) |

Ratios of Earnings to Fixed Charges

The following table sets forth our ratios of earnings to fixed charges for the periods indicated.

| Year to Date June 30, | Year Ended December 31, | | | | |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|
| 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| 1.81 | 2.86 | 2.44 | 2.87 | 3.53 | 4.11 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense, and the estimated interest component of lease payments and rentals.

RISK FACTORS

An investment in the notes is subject to various risks. These risks should be considered carefully with the information provided elsewhere and incorporated by reference in this prospectus supplement and the accompanying prospectus before deciding to invest in the notes. In addition to the risk factors set forth below, please read the information included or incorporated by reference under “Risk Factors” and “Cautionary Statements Regarding Certain Forward-Looking Information” in the accompanying prospectus, our Annual Report on Form 10-K for the year ended December 31, 2010 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011 and June 30, 2011 for a description of additional uncertainties associated with our business, results of operations and financial condition and the forward-looking statements included or incorporated by reference in this prospectus supplement and the accompanying prospectus. As used in this section, “we,” “our,” “us” and the “Company” refer to Kansas City Power & Light Company and not to any of its subsidiaries.

Indebtedness—Our indebtedness could adversely affect our ability to fulfill our obligations under the notes.

Our consolidated indebtedness and debt service obligations are significant. Our actual consolidated interest expense was \$85.7 million for the year ended December 31, 2010 and \$50.4 million for year to date June 30, 2011. As of June 30, 2011, our total consolidated long-term debt, including current maturities, was \$1.7 billion, excluding unused commitments and contractual obligations and other commitments, and our total shareholder’s equity was \$2.0 billion. Adjusted for this offering, as of June 30, 2011, our total consolidated long-term debt would have been \$ billion, our total stand-alone debt would have been \$ million and our total shareholder’s equity would have been unchanged. We may incur additional short-term and long-term debt from time to time to finance our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital or capital expenditures or for other general corporate purposes, subject to the restrictions contained in the credit agreement that governs our senior unsecured revolving credit facility and in any other agreements under which we incur debt.

The indenture governing the notes does not limit the amount of unsecured debt that we may incur. In general, the indenture also does not limit the amount of secured debt that we may incur.

The covenants contained in the indenture do not afford the holders of notes any protection in the event of a highly leveraged transaction or other transaction involving us that may adversely affect holders.

Our debt could have important consequences to holders of the notes, including the following:

- we are required to use a substantial portion of our consolidated cash flow from operations to pay principal and interest on our debt, thereby reducing the availability of our consolidated cash flow to fund our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital and capital expenditures and for other general corporate requirements;
- if prevailing interest rates increase, our interest expense could increase because any borrowings under our senior unsecured revolving credit facility will bear interest at floating rates;
- our leverage increases our vulnerability to economic downturns, and adverse competitive and industry conditions could place us at a competitive disadvantage compared to those of our competitors that are less leveraged; and
- our debt service obligations could limit our flexibility in planning for, or reacting to, changes in our business and our industry and could limit our ability to pursue other business opportunities, borrow more money for operations or raise capital in the future and implement our business strategies.

Unsecured Obligations—Because the notes are not secured and are effectively subordinated to the rights of secured creditors, the notes will be subject to the prior claims of any secured creditors, and if a default occurs, we may not have sufficient funds to fulfill our obligations under the notes.

The notes are senior unsecured obligations and will rank equally with any future unsecured and unsubordinated debt and will be effectively junior to our existing secured debt and any future secured debt we may incur. The indenture governing the notes does not limit the amount of unsecured debt that we may incur or restrict us from entering into sale and leaseback transactions. In general, the indenture also does not limit the amount of secured debt that we may incur. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness.

Our assets and those of our subsidiaries which secure our existing or future secured debt will be subject to prior claims by our and their respective secured creditors. In the event of our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up, assets that secure debt will be available to pay obligations on the notes only after all debt secured by those assets has been repaid in full. Holders of the notes will participate in any remaining assets ratably with all of our unsecured and unsubordinated creditors, including trade creditors. If we incur any additional obligations that rank equally with the notes, including trade payables, the holders of those obligations will be entitled to share ratably with the holders of the notes in any proceeds distributed upon our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up. This may have the effect of reducing the amount of proceeds paid to holders of the notes. If there are not sufficient assets remaining to pay all these creditors, all or a portion of the notes then outstanding would remain unpaid.

No Guarantees—Our parent company is not guaranteeing the notes and you should not rely upon information relating to our parent company in determining whether to invest in the notes.

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or distribution to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

No Prior Market for the Notes—There is no prior market for the notes, and if a market develops, it may not be liquid and prices of the notes may vary.

We do not intend to list the notes on any national securities exchange or to seek their quotation on any automated dealer quotation system. We cannot assure holders of the notes that any liquid market for the notes will ever develop or be maintained. The underwriters have advised us that they currently intend to make a market in the notes following the offering. However, the underwriters have no obligation to make a market in the notes and they may stop at any time. Further, there can be no assurance as to the liquidity of any market that may develop for the notes, holders’ ability to sell their notes or the price at which holders will be able to sell their notes. Future trading prices of the notes will depend on many factors, including prevailing interest rates, our financial condition and results of operations, the then-current ratings assigned to the notes and the market for similar securities. Any trading market that develops would be affected by many factors independent of and in addition to the foregoing, including:

- the time remaining to the maturity of the notes;
- the outstanding amount of the notes;
- the terms related to optional redemption of the notes; and

- the level, direction and volatility of market interest rates generally.

KCP&L and certain of its securities are rated by Moody's Investors Service, Inc. and Standard & Poor's Ratings Services. There is no assurance that such credit ratings will be issued or remain in effect for any given period of time or that such ratings will not be decreased, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant. KCP&L's credit ratings could decrease as a result of events directly affecting Great Plains Energy and its subsidiaries (other than KCP&L and its subsidiaries), even though Great Plains Energy is not guaranteeing the notes and is not generally obligated to provide credit support to us. Holders of notes will have no recourse against us or any other parties in the event of a change in or suspension or withdrawal of such ratings. Any decrease, suspension or withdrawal of such ratings may have an adverse effect on the market price or marketability of debt securities issued by us, including the notes.

USE OF PROCEEDS

We estimate the net proceeds to us from the sale of the notes will be approximately \$ million, after deducting the underwriting discount and other expenses of the offering payable by us. We expect to use the net proceeds of this offering to repay all or a portion of KCP&L's outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L's 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011 KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%.

CAPITALIZATION AND SHORT-TERM DEBT

The following table sets forth our consolidated capitalization as of June 30, 2011, and as adjusted to give effect to the issuance and sale of the notes and the use of proceeds from this offering as set forth under "Use of Proceeds" above. This table should be read in conjunction with our consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. See "Where You Can Find More Information" in this prospectus supplement.

| | June 30, 2011 | |
|---|-------------------|-------------------|
| | Actual | As Adjusted |
| | (\$ in millions) | |
| Short-term debt (includes current maturities) | \$ 734.4 | \$ |
| Long-term debt | \$ 1,504.7 | |
| Shareholder's equity: | | |
| Common stock (1,000 shares authorized without par value; 1 share issued, stated value) | \$ 1,563.1 | \$ |
| Retained earnings | 465.7 | |
| Accumulated other comprehensive loss | (33.8) | |
| Total shareholder's equity | <u>1995.0</u> | <u> </u> |
| Total capitalization and short-term debt | <u>\$ 4,234.1</u> | <u>\$</u> |

DESCRIPTION OF THE NOTES

The following description of the particular terms of the notes supplements and, to the extent inconsistent therewith, replaces the description of the general terms and provisions of the notes set forth in the accompanying prospectus under “Description of Notes,” to which reference is hereby made. Whenever a defined term is referred to and not herein defined, the definition thereof is contained in the accompanying prospectus or in the indenture referred to therein. As used in this section, the terms “we,” “us,” “our,” and “KCP&L” refer to Kansas City Power & Light Company only and not to its subsidiaries.

The following description, together with the “Description of Notes” in the accompanying prospectus, is a summary of the material provisions of the notes and the indenture and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the notes and the indenture, including the definition of certain terms used in the indenture. We urge you to read the indenture because it, and not this description, defines your rights as a holder of the notes.

General

The notes constitute a single series of debt securities to be issued pursuant to an indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee. The terms of the notes include those expressly set forth in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as amended. The notes will initially be limited to \$ _____ aggregate principal amount and will mature on _____, 20____.

The notes will bear interest at the rate per year set forth on the cover page of this prospectus supplement from the date of issuance or from the most recent interest payment date to which interest has been paid or provided for, payable semi-annually in arrears on _____ and _____ of each year, beginning _____, 2012, to the persons in whose names the notes are registered at the close of business on the immediately preceding _____ and _____, respectively, whether or not such day is a Business Day. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months (and for any partial periods shall be calculated on the basis of the number of days elapsed in a 360-day year of twelve 30-day months). If any date on which interest is payable on the notes is not a Business Day, then payment of the interest payable on that date will be made on the next succeeding day which is a Business Day (and without any additional interest or other payment in respect of any delay).

The notes will be direct unsecured obligations of KCP&L exclusively, and not the obligation of any of our affiliates. The notes will (i) rank equally with our existing and future senior unsecured indebtedness, (ii) be effectively subordinated (with respect to underlying collateral) to any secured indebtedness now outstanding or that we may incur in the future, and (iii) be structurally subordinated to all indebtedness of the Company’s subsidiaries.

The notes will be issued only in registered form in minimum denominations of \$2,000 and in integral multiples of \$1,000 in excess thereof.

We will initially offer \$ _____ aggregate principal amount of notes. Subject to the terms of the indenture, we may, at any time, without consent of the holders of the notes, issue additional notes having the same ranking, interest rate, maturity and other terms (except for the initial public offering price and the issue date) as the notes being offered hereby; provided that such additional notes must be part of the same issue and fungible with the initially issued notes for U.S. federal income tax purposes. Any such additional notes, together with the notes offered hereby, will constitute a single series of notes under the indenture.

Optional Redemption

Prior to _____, 20____ (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, each at a “make-whole premium” redemption price calculated by us equal to the greater of:

- 100% of the principal amount of the notes to be redeemed; and

- the sum of the present values of the remaining scheduled payments of principal and interest thereon (not including any portion of such payments of interest accrued as of the date of redemption), discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Treasury Rate, plus basis points,

plus, in each case, accrued and unpaid interest on the principal amount being redeemed to the date of redemption. Notwithstanding the foregoing, installments of interest on notes that are due and payable on interest payment dates falling on or prior to a redemption date will be payable on the interest payment date to the registered holders as of the close of business on the relevant record date according to the notes and the indenture.

On or after , 20 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest on the principal amount being redeemed to the date of redemption.

“Comparable Treasury Issue” means the United States Treasury security selected by the Quotation Agent as having a maturity comparable to the remaining term of the notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of such notes.

“Comparable Treasury Price” means, with respect to any redemption date,

- the average of four Reference Treasury Dealer Quotations for such redemption date, after excluding the highest and lowest such Reference Treasury Dealer Quotations, or
- if the Quotation Agent obtains fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations, or
- if only one Reference Treasury Dealer Quotation is received, such quotation.

“Quotation Agent” means the Reference Treasury Dealer appointed by us.

“Reference Treasury Dealer” means

- each of Barclays Capital Inc. and RBS Securities Inc. or their affiliates, and their respective successors, unless either of them ceases to be a primary U.S. government securities dealer in the United States of America (“Primary Treasury Dealer”), in which case we will substitute therefore another Primary Treasury Dealer,
- a Primary Treasury Dealer selected by Wells Fargo Securities, LLC, and
- two other Primary Treasury Dealers that we select.

“Reference Treasury Dealer Quotations” means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by the Quotation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Quotation Agent by such Reference Treasury Dealer at 5:00 p.m., New York City time, on the third business day preceding such redemption date.

“Treasury Rate” means, with respect to any redemption date, the rate per annum equal to the semi-annual equivalent yield to maturity of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

Notice of any redemption will be mailed at least 30 days but not more than 60 days before the redemption date to each holder of the notes to be redeemed. Unless we default in payment of the redemption price, on and after

the redemption date, interest will cease to accrue on the notes or portions thereof called for redemption. If less than all of the notes are to be redeemed, the particular notes or portions of such notes to be redeemed will be selected by The Depository Trust Company in such manner as it shall determine.

Notwithstanding the foregoing, any notice of redemption at our option may state that such redemption will be conditional upon receipt by the Trustee on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

No Guarantees

The notes are not guaranteed by our parent company, Great Plains Energy, or any of its or our subsidiaries. None of those entities has any obligation to make capital contribution or distributions to KCP&L for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture or complying with any other obligation under the indenture or the notes or otherwise.

Book-entry System

Upon issuance, the notes will be represented by one or more global securities deposited with, or on behalf of, The Depository Trust Company, as depository. The global securities representing the notes will be registered in the name of the depository or its nominee. Except under the circumstances described in the accompanying prospectus under “Book-Entry System,” the notes will not be issuable in definitive form. So long as the notes are represented by one or more global securities, the depository or its nominee will be considered the sole owner or holder of such notes for all purposes under the indenture, and the beneficial owners of such notes will be entitled only to those rights and benefits afforded to them in accordance with the depository’s regular operating procedures. The depository has confirmed to us, the underwriters and the Trustee that it intends to follow such procedures with respect to the notes. A further description of the depository’s procedures with respect to global securities is set forth in the accompanying prospectus under “Book-Entry System.”

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following discussion summarizes the material U.S. federal income tax considerations to U.S. Holders and Non-U.S. Holders (each, as defined below) of the purchase, ownership and disposition of the notes. It is included herein for general information purposes only and does not address all tax considerations that may be relevant to investors in light of their personal investment circumstances or that may be relevant to certain types of investors subject to special rules (for example, financial institutions, tax-exempt organizations, insurance companies, regulated investment companies, persons that are broker-dealers, traders in securities who elect the mark to market method of accounting for their securities, U.S. Holders that have a functional currency other than the U.S. dollar, certain former U.S. citizens or long-term residents, retirement plans, real estate investment trusts, foreign governments, international organizations, controlled foreign corporations, passive foreign investment companies, investors in partnerships or other pass-through entities or persons holding the notes as part of a “straddle,” “hedge,” “conversion transaction” or other integrated transaction). The discussion set forth below is limited to initial investors who hold the notes as capital assets within the meaning of Section 1221 of the Code and who purchase the notes for cash at the initial “issue price” (i.e., the first price to the public, excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers, at which a substantial amount of the notes is sold for money). In addition, this discussion does not address the effect of U.S. federal alternative minimum tax, gift or estate tax laws, or any state, local or foreign tax laws. Furthermore, the discussion below is based upon provisions of the Code, the legislative history thereof, U.S. Treasury regulations thereunder and administrative rulings and judicial decisions thereunder as of the date hereof. Such authorities may be repealed, revoked or modified (including changes in effective dates, and possibly with retroactive effect) so as to result in U.S. federal income tax considerations different from those discussed below. We have not sought any rulings from the Internal Revenue Service (“IRS”) with respect to the statements and conclusions made in the following discussion, and there can be no assurance that the IRS will agree with such statements and conclusions or that a court will not sustain any challenge by the IRS in the event of litigation.

For purposes of the following discussion, a “U.S. Holder” means a beneficial owner of the notes that, for U.S. federal income tax purposes, is:

- an individual who is a citizen or resident of the United States;
- a corporation (including, for the purposes of the following discussion, any entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (i) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined under the Code) have the authority to control all substantial decisions of the trust or (ii) the trust has a valid election in place to be treated as a United States person for U.S. federal income tax purposes.

For purposes of the following discussion, a “Non-U.S. Holder” means a beneficial owner of the notes that is neither a U.S. Holder nor a partnership (including, for the purposes of the following discussion, any entity or arrangement treated as a partnership for U.S. federal income tax purposes).

If a partnership holds the notes, the U.S. federal income tax treatment of a partner in the partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships and partners in such partnerships should consult their own tax advisors about the tax consequences of the purchase, ownership and disposition of the notes.

THIS DISCUSSION OF MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS IS NOT INTENDED, AND SHOULD NOT BE CONSTRUED, TO BE TAX OR LEGAL ADVICE TO ANY PARTICULAR INVESTOR IN THE NOTES. PROSPECTIVE INVESTORS ARE ADVISED TO CONSULT THEIR OWN TAX ADVISORS CONCERNING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSIDERATIONS ARISING UNDER THE LAWS OF ANY STATE, LOCAL OR FOREIGN TAXING JURISDICTION OR ANY APPLICABLE TAX TREATIES, AND THE POSSIBLE EFFECT OF CHANGES IN APPLICABLE TAX LAW.

Effect of Certain Additional Payments

In certain circumstances (for example, see “Description of the Notes—Optional Redemption”) we may be obligated to pay amounts on the notes that are in excess of stated interest or principal on the notes. These potential payments may implicate the provisions of the Treasury Regulations relating to “contingent payment debt instruments” (the “CPDI Regulations”). One or more contingencies will not cause the notes to be treated as a contingent payment debt instrument if, as of the issue date, each such contingency is considered remote or incidental or another exception from such treatment applies. We believe that the potential for additional payments on the notes should not cause the notes to be treated as contingent payment debt instruments under the CPDI Regulations. Our determination is binding on a holder unless such holder discloses its contrary position in the manner required by applicable Treasury Regulations. However, the IRS may take a different position, which could require a holder to accrue income on its notes in excess of stated interest, and to treat any income realized on the taxable disposition of a note as ordinary income rather than capital gain. The remainder of this discussion assumes that the notes will not be treated as contingent payment debt instruments. Investors should consult their own tax advisors regarding the possible application of the contingent payment debt instrument rules to the notes.

U.S. Holders

Stated Interest

We expect that the notes will not be issued with original issue discount for U.S. federal income tax purposes, based on our assumption that the stated principal amount of the notes will not exceed their issue price by more than a *de minimis* amount. Accordingly, stated interest on the notes will be taxable as ordinary income as such interest is received or accrued, depending on the U.S. Holder's regular method of accounting for U.S. federal income tax purposes. However, if, contrary to our expectation, the notes are issued with original issue discount for U.S. federal income tax purposes, each U.S. Holder generally will be required to include the original issue discount in its income as it accrues using a constant yield method, regardless of the U.S. Holder's regular method of accounting for U.S. federal income tax purposes, possibly before such U.S. Holder receives any payment attributable to such income. The rules regarding original issue discount are complex and U.S. Holders should consult their own tax advisors regarding their application. The remainder of this discussion assumes that the notes will not be issued with original issue discount for U.S. federal income tax purposes.¹

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Upon a sale, taxable exchange, redemption or other taxable disposition of a note, a U.S. Holder will recognize gain or loss equal to the difference between the amount realized on the disposition, other than amounts attributable to accrued but unpaid interest (which will be taxed in the same manner as stated interest, as described in the preceding paragraph), and the U.S. Holder's adjusted tax basis in the note. A U.S. Holder's adjusted tax basis in a note generally will equal the cost of the note to such holder. Any gain or loss on such disposition will be capital gain or loss and will be long-term capital gain or loss if the U.S. Holder has held the note for longer than 12 months on the date of such disposition. In the case of a U.S. Holder that is not a corporation, long-term capital gains are eligible for preferential rates of taxation. The deductibility of capital losses is subject to limitations.

Medicare Tax

For taxable years beginning after December 31, 2012, a U.S. Holder that is an individual, an estate or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. Holder's "net investment income" (in the case of individuals) or "undistributed net investment income" (in the case of estates and trusts) for the relevant taxable year and (2) the excess of the U.S. Holder's "modified adjusted gross income" (in the case of individuals) or "adjusted gross income" (in the case of estates and trusts) for the taxable year over a certain threshold (which in the case of individuals will be between \$125,000 and \$250,000, depending on the individual's circumstances). A U.S. Holder's net investment income generally will include its interest income on the notes and its net gains from the disposition of the notes, unless such interest income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). U.S. Holders that are individuals, estates or trusts should consult their own tax advisors regarding the applicability of the Medicare tax to their income and gains in respect of their investment in the notes.

Information Reporting and Backup Withholding

A U.S. Holder generally will be subject to information reporting with respect to payments in respect of principal, interest and the gross proceeds from a disposition of the notes unless the U.S. Holder is an exempt recipient such as a corporation. A U.S. Holder generally will be subject to backup withholding with respect to these payments if the U.S. Holder fails to furnish its social security or other taxpayer identification number ("TIN") or otherwise fails to establish an exemption from backup withholding.

¹ Note: Please confirm no OID.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

Non-U.S. Holders

Stated Interest

Subject to the discussion of backup withholding below, payments of interest on the notes to a Non-U.S. Holder generally will not be subject to U.S. withholding tax provided that (1) the Non-U.S. Holder does not actually or constructively own 10% or more of the total combined voting power of all classes of our voting stock, (2) the Non-U.S. Holder is not (a) a controlled foreign corporation that is related to us through actual or deemed stock ownership or (b) a bank receiving interest on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, (3) such interest is not effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States, and (4) either (a) the Non-U.S. Holder provides its name and address on an IRS Form W-8BEN (or other applicable form) and certifies, under penalties of perjury, that it is not a United States person or (b) a securities clearing organization, bank or other financial institution holding the notes on the Non-U.S. Holder's behalf certifies, under penalties of perjury, that it has received a properly executed IRS Form W-8BEN (or other applicable form) from the Non-U.S. Holder and it provides the withholding agent with a copy.

If a Non-U.S. Holder cannot satisfy the requirements in the preceding paragraph, payments of interest made to such Non-U.S. Holder will be subject to U.S. federal withholding tax, currently at a rate of 30%, unless such Non-U.S. Holder (1) timely provides the withholding agent with a properly executed IRS Form W-8BEN (or other applicable form) claiming an exemption from or reduction in withholding under the benefit of an applicable income tax treaty or IRS Form W-8ECI (or other applicable form) certifying that interest paid on the notes is not subject to U.S. federal withholding tax because it is effectively connected with such Non-U.S. Holder's conduct of a trade or business in the United States, or (2) otherwise properly establishes an exemption from withholding taxes.

If interest on the notes is effectively connected with the conduct by a Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), such interest will be subject to U.S. federal income tax on a net income basis at the rate applicable to United States persons generally (and a Non-U.S. Holder that is a corporation may also be subject to a branch profits tax equal to 30% of its effectively connected earnings and profits, subject to certain adjustments, unless such holder qualifies for a lower rate under an applicable income tax treaty). If interest is subject to U.S. federal income tax on a net income basis in accordance with these rules, such payments will not be subject to U.S. federal withholding tax so long as the relevant Non-U.S. Holder timely provides the withholding agent with the appropriate documentation.

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Subject to the discussion of backup withholding below, any gain realized by a Non-U.S. Holder on the sale, taxable exchange, redemption or other taxable disposition of the notes generally will not be subject to U.S. federal income tax, unless (1) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), in which case such gain will be taxed on a net income basis in the same manner as interest that is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and a Non-U.S. Holder that is a corporation may also be subject to the branch profits tax as described above) or (2) the Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are satisfied, in which case the Non-U.S. Holder will be subject to a tax, currently at a rate of 30%, on the excess, if any, of such gain plus all other U.S. source capital gains recognized during the same taxable year over the Non-U.S. Holder's U.S. source capital losses recognized during such taxable year.

Information Reporting and Backup Withholding

Information returns generally will be filed with the IRS in connection with payments of interest on the notes. Copies of the information returns reporting such interest payments and any withholding therefrom may also be made available to the tax authorities in the country in which a Non-U.S. Holder resides under the provisions of an applicable income tax treaty. Unless a Non-U.S. Holder complies with certification procedures to establish that it is not a United States person, information returns may be filed with the IRS in connection with the proceeds from a sale or other disposition of the notes and the Non-U.S. Holder may be subject to backup withholding on payments on the notes or on the proceeds from a sale or other disposition of the notes. Compliance with the certification procedures required to claim the exemption from withholding tax on interest described above will satisfy the certification requirements necessary to avoid backup withholding as well.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

Non-U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

Recently Enacted Legislation

Recently enacted legislation regarding foreign account tax compliance, effective for payments made after December 31, 2012, imposes a withholding tax of 30% on interest and gross proceeds from the disposition of certain debt instruments paid to certain foreign entities unless various information reporting and certain other requirements are satisfied. However, the withholding tax will not be imposed on payments pursuant to obligations outstanding as of March 18, 2012. Nonetheless, certain account information with respect to U.S. Holders who hold notes through certain foreign financial institutions may be reportable to the IRS. Investors should consult with their own tax advisors regarding the possible implications of this recently enacted legislation on their investment in the notes.

THE PRECEDING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. ACCORDINGLY, EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO IT OF PURCHASING, OWNING AND DISPOSING OF NOTES, INCLUDING THE APPLICABILITY AND EFFECT OF ANY STATE, LOCAL OR FOREIGN TAX LAWS, AND OF ANY PROPOSED CHANGES IN APPLICABLE LAW.

UNDERWRITING

Subject to the terms and conditions contained in an underwriting agreement, dated as of the date of this prospectus supplement between us and the underwriters named below, for whom Barclays Capital, Inc., RBS Securities Inc. and Wells Fargo Securities, LLC are acting as representatives, we have agreed to sell to each underwriter, and each underwriter has severally agreed to purchase from us, the principal amount of notes that appears opposite its name in the table below:

| Underwriter | Principal Amount of Notes |
|-----------------------------------|------------------------------|
| Barclays Capital Inc..... | \$ |
| RBS Securities Inc..... | |
| Wells Fargo Securities, LLC | |
| [to come]..... | |
| [to come]..... | |
| [to come]..... | |
| [to come]..... | |
| Total | \$ |

The underwriters are offering the notes subject to their acceptance of the notes from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the notes offered by this prospectus supplement are subject to certain conditions. The underwriters are obligated to take and pay for all of the notes offered by this prospectus supplement if any such notes are taken.

The underwriters initially propose to offer the notes to the public at the public offering price that appears on the cover page of this prospectus supplement. In addition, the underwriters may offer the notes to certain dealers at prices that represent a concession not in excess of % of the principal amount of the notes. Any underwriter may allow, and any such dealer may reallow, a concession not in excess of % of the principal amount of the notes to certain other dealers. After the initial offering of the notes, the underwriters may from time to time vary the offering prices and other selling terms. The underwriters may offer and sell notes through certain of their affiliates.

The following table shows the underwriting discount that we will pay to the underwriters in connection with the offering of the notes:

| | Paid by Us |
|----------------|------------|
| Per Note | % |
| Total..... | \$ |

Expenses associated with this offering to be paid by us, other than the underwriting discount, are estimated to be approximately \$.

We have also agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments which the underwriters may be required to make in respect of any such liabilities.

The notes are a new issue of securities, and there is currently no established trading market for the notes. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. The underwriters have advised us that they intend to make a market in the notes, but they are not obligated to do so. At their sole discretion, the underwriters may discontinue any market making in the notes at any time without notice. Accordingly, we cannot assure you that a liquid trading market will develop for the notes, that you will be able to sell your notes at a particular time or that the prices you receive when you sell will be favorable.

In connection with the offering of the notes, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the prices of the notes. Specifically, the underwriters may over allot in connection with

the offering of the notes, creating syndicate short positions. In addition, the underwriters may bid for and purchase notes in the open market to cover syndicate short positions or to stabilize the price of the notes. Finally, the underwriting syndicate may reclaim selling concessions allowed for distributing the notes in the offering if the syndicate repurchases previously distributed notes in syndicate covering transactions, stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market prices of the notes above independent market levels. The underwriters are not required to engage in any of these activities, and may end any of them at any time without notice.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “Relevant Implementation Date”) it has not made and will not make an offer of notes which are the subject of the offering contemplated by this Prospectus to the public in that Relevant Member State other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of notes shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer of notes to the public” in relation to any notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe for the notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the “FSMA”)) received by it in connection with the issue or sale of the notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and instruments of KCP&L or its subsidiaries. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

The underwriters and their affiliates have provided and in the future may continue to provide investment banking, commercial banking and other financial services, including the provision of credit facilities, to us and our affiliates in the ordinary course of business for which they have received and will receive customary compensation. Affiliates of certain of the underwriters are lenders under revolving credit agreements entered into separately with Great Plains Energy, KCP&L and GMO in August 2010. In connection with these arrangements, affiliates of Wells Fargo Securities, LLC acted as joint lead arranger, joint book manager, syndication agent and lender, and affiliates of Barclays Capital Inc. and RBS Securities acted as documentation agents and lenders.

LEGAL MATTERS

Certain legal matters in connection with the offering of the notes will be passed upon for us by Jaileah X. Huddleston, Assistant Secretary and Corporate Counsel – Securities and Finance and Dewey & LeBoeuf LLP, New York, New York. Certain legal matters will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California.

At September __, 2011, Ms. Huddleston owned beneficially a number of shares of Great Plains Energy's common stock, including restricted stock, and performance shares which may be paid in shares of Great Plains Energy common stock at a later date based on Great Plains Energy's performance, which represented less than 0.1% of the total outstanding common stock.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, of Kansas City Power & Light Company and its subsidiaries, incorporated by reference in this prospectus supplement from the Annual Report on Form 10-K of Kansas City Power & Light Company for the year ended December 31, 2010, and the effectiveness of Kansas City Power & Light Company's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports which are incorporated herein by reference. Such financial statements and financial statement schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.



Kansas City Power & Light Company

% Notes due 20

PROSPECTUS SUPPLEMENT
September , 2011

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Co-Managers

\$400,000,000



Kansas City Power & Light Company

5.30% Notes due 2041

We will pay interest on the notes on April 1 and October 1 of each year, beginning April 1, 2012. The notes will mature on October 1, 2041. We may redeem the notes at any time in whole or from time to time in part at the price specified in this prospectus supplement.

The notes will be senior unsecured obligations of Kansas City Power & Light Company exclusively and will rank equally with any existing and future senior unsecured indebtedness of Kansas City Power & Light Company. The notes will not be listed on any securities exchange.

Investing in the notes involves risks that are described in the section entitled “Risk Factors” beginning on page S-8 of this prospectus supplement and beginning on page 3 of the accompanying prospectus.

| | <u>Per Note</u> | <u>Total</u> |
|---|-----------------|---------------|
| Public offering price ⁽¹⁾ | 99.358% | \$397,432,000 |
| Underwriting discount | 0.875% | \$ 3,500,000 |
| Proceeds, before expenses, to Kansas City Power & Light Company | 98.483% | \$393,932,000 |

(1) Plus accrued interest from September 20, 2011, if settlement occurs after that date

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The notes will be ready for delivery in book-entry form only through The Depository Trust Company on or about September 20, 2011.

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Senior Co-Manager

Scotia Capital

Co-Managers

BNY Mellon Capital Markets, LLC

KeyBanc Capital Markets

September 15, 2011

EXHIBIT B

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of the notes. The second part is the accompanying prospectus dated May 11, 2009, which we refer to as the “accompanying prospectus.” The accompanying prospectus contains a description of debt securities and gives more general information, some of which may not apply to the notes.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or in any written communication from us or any underwriter specifying the final terms of this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Before you invest in the notes, you should carefully read the registration statement (including the exhibits thereto) of which this prospectus supplement and the accompanying prospectus form a part, this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and accompanying prospectus. The incorporated documents are described in this prospectus supplement under “Where You Can Find More Information.”

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy Incorporated (Great Plains Energy), separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement and the accompanying prospectus. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus supplement or when we otherwise refer to ourselves in this prospectus supplement, we mean Kansas City Power & Light Company and not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates of capital projects and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our future performance and are subject to risks and uncertainties, including those discussed under the heading “Risk Factors” in this prospectus supplement and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of

1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus supplement. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including but not limited to possible further deterioration in economic conditions and the timing and extent of economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry, Great Plains Energy and/or the Company;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- impairments of long-lived assets or goodwill;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- the inherent uncertainties in estimating the effects of weather, economic conditions and other factors on customer consumption and financial results;
- ability to achieve generation goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of generation, transmission, distribution or other projects;
- the inherent risks associated with the ownership and operation of a nuclear facility including, but not limited to, environmental, health, safety, regulatory and financial risks;
- workforce risks, including, but not limited to, increased costs of retirement, healthcare and other benefits; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus supplement, in the accompanying prospectus and in our other SEC filings.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, and proxy statements and other information with the Securities and Exchange Commission (the “SEC”) through the SEC’s Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC’s website (<http://www.sec.gov>). You may read and copy such material at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we file with it. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus supplement and the accompanying prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus supplement will automatically update and supersede this information. We are incorporating by reference into this prospectus supplement the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus supplement is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on February 25, 2011;
- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 3, 2011, and for the quarter ended June 30, 2011, filed with the SEC on August 5, 2011; and
- Our Current Reports on Form 8-K dated March 10, 2011 and filed with the SEC on March 10, 2011 and amended April 14, 2011; April 1, 2011 and filed with the SEC on April 6, 2011; April 12, 2011 and filed with the SEC on April 15, 2011; August 19, 2011 and filed with the SEC on August 29, 2011; and September 9, 2011 (Item 1.01 only) and filed with the SEC on September 13, 2011.

We and our parent company, Great Plains Energy, separately filed the combined Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries), including KCP&L Greater Missouri Operations Company, was separately filed by Great Plains Energy on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus supplement the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L), and we make no representation as to the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus supplement and the accompanying prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus supplement and the accompanying prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein except to the extent specifically so indicated. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1200 Main Street, Kansas City, Missouri 64105 (Telephone No.: (816) 556-2200), Attention: Corporate Secretary, or by contacting us on our website.

PROSPECTUS SUPPLEMENT SUMMARY

Our Company

Kansas City Power & Light Company is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2010, we served approximately 510,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 450,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2010. Our retail revenues averaged approximately 85% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter. KCP&L has one active wholly-owned subsidiary, Kansas City Power & Light Receivables Company.

Our principal executive offices are located at 1200 Main Street, Kansas City, Missouri 64105, and our telephone number is (816) 556-2200.

The Offering

The following summary contains basic information about the notes. It does not contain all the information that is important to you. For a more complete understanding of the notes, please refer to the section of this prospectus supplement entitled “Description of the Notes” and the section of the accompanying prospectus entitled “Description of Notes.”

| | |
|-------------------------------------|---|
| Issuer | Kansas City Power & Light Company |
| Notes Offered | \$400,000,000 aggregate principal amount of 5.30% Notes due 2041. |
| Maturity | October 1, 2041. |
| Interest | The notes will bear interest from September 20, 2011 at the rate of 5.30% per year. |
| Interest Payment Dates | April 1 and October 1 of each year, beginning April 1, 2012. |
| Ranking | The notes will be our senior unsecured obligations. They will rank equal in right of payment with our existing and future senior unsecured obligations and will be senior in right of payment to any existing and future subordinated indebtedness. The notes will be effectively subordinated to all of our existing and any future secured indebtedness, including our general mortgage bonds, to the extent of the collateral securing that indebtedness and to all existing and future liabilities, including trade payables, of our subsidiaries. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness. |
| Optional Redemption | <p>Prior to April 1, 2041 (the date that is six months prior to the maturity date of the notes), we may redeem the notes at any time in whole or from time to time in part at the “make-whole premium” indicated under the section entitled “Description of the Notes — Optional Redemption” in this prospectus supplement.</p> <p>On or after April 1, 2041, we may redeem the notes at any time in whole or from time to time in part at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest thereon. See “Description of the Notes — Optional Redemption” in this prospectus supplement.</p> |
| Further Issuances | We may create and issue further notes ranking equally and ratably with and having the same terms as the notes offered by this prospectus supplement. Any additional notes will, together with the notes offered by this prospectus supplement, constitute a single series of notes under the indenture. |
| Use of Proceeds | The use of proceeds for this debt offering will be to repay all or a portion of KCP&L’s outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L’s 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011, KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%. |

| | |
|--|--|
| Risk Factors | See “Risk Factors” beginning on page S-8 of this prospectus supplement and page 3 of the accompanying prospectus and other information incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in the notes. |
| No Listing of the Notes | We do not intend to make application to list the notes on any national securities exchange or to include them in any automated quotation system. |
| Governing Law | The indenture and the notes will be governed by New York law. |

Summary Consolidated Financial Data

The following consolidated summary financial data for the years ended December 31, 2010 through December 31, 2008 have been derived from our audited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The following summary of consolidated financial data for year to date June 30, 2011 and June 30, 2010 has been derived from our unaudited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The information set forth below is qualified in its entirety by reference to, and therefore, should be read together with, the relevant management's discussion and analysis of financial condition and results of operations, financial statements and related notes and other financial information incorporated by reference herein.

| | Year to Date June 30, | | Year Ended December 31, | | |
|--|---|-----------------|-------------------------|-----------------|-----------------|
| | 2011 | 2010 | 2010 | 2009 | 2008 |
| | (\$ in millions; except per share data) | | | | |
| Income Statement Data: | | | | | |
| Operating revenues | \$ 714.2 | \$ 708.2 | \$1,517.1 | \$1,318.2 | \$1,343.0 |
| Operating expenses | 609.9 | 583.0 | 1,205.7 | 1,086.0 | 1,104.9 |
| Operating income | <u>\$ 104.3</u> | <u>\$ 125.2</u> | <u>\$ 311.4</u> | <u>\$ 232.2</u> | <u>\$ 238.1</u> |
| Net income | <u>\$ 37.4</u> | <u>\$ 67.4</u> | <u>\$ 163.2</u> | <u>\$ 128.9</u> | <u>\$ 125.2</u> |
| Cash Flow Data: | | | | | |
| Cash flows from operating activities | \$ 87.8 | \$ 77.3 | \$ 422.2 | \$ 287.9 | \$ 419.0 |
| Cash flows from investing activities | (141.7) | (262.8) | (508.7) | (667.9) | (846.3) |
| Cash flows from financing activities | 52.8 | 172.1 | 72.7 | 392.0 | 429.5 |
| Other Financial Data: | | | | | |
| Depreciation and amortization | \$ 101.6 | \$ 125.8 | \$ 256.4 | \$ 229.6 | \$ 204.3 |
| Amortization of: | | | | | |
| Nuclear fuel | 5.9 | 12.8 | 25.1 | 16.1 | 14.5 |
| Other | 14.1 | 11.0 | 24.2 | 19.0 | 11.1 |
| Utility capital expenditures | (143.0) | (247.5) | (463.1) | (626.5) | (810.5) |

Ratios of Earnings to Fixed Charges

The following table sets forth our ratios of earnings to fixed charges for the periods indicated.

| Year to Date June 30, | Year Ended December 31, | | | | |
|--------------------------|-------------------------|------|------|------|------|
| 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| 1.81 | 2.86 | 2.44 | 2.87 | 3.53 | 4.11 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense, and the estimated interest component of lease payments and rentals.

RISK FACTORS

An investment in the notes is subject to various risks. These risks should be considered carefully with the information provided elsewhere and incorporated by reference in this prospectus supplement and the accompanying prospectus before deciding to invest in the notes. In addition to the risk factors set forth below, please read the information included or incorporated by reference under “Risk Factors” and “Cautionary Statements Regarding Certain Forward-Looking Information” in the accompanying prospectus, our Annual Report on Form 10-K for the year ended December 31, 2010 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011 and June 30, 2011 for a description of additional uncertainties associated with our business, results of operations and financial condition and the forward-looking statements included or incorporated by reference in this prospectus supplement and the accompanying prospectus. As used in this section, “we,” “our,” “us” and the “Company” refer to Kansas City Power & Light Company and not to any of its subsidiaries.

Indebtedness — Our indebtedness could adversely affect our ability to fulfill our obligations under the notes.

Our consolidated indebtedness and debt service obligations are significant. Our actual consolidated interest expense was \$85.7 million for the year ended December 31, 2010 and \$50.4 million for year to date June 30, 2011. As of June 30, 2011, our total consolidated long-term debt, including current maturities, was \$1.7 billion, excluding unused commitments and contractual obligations and other commitments, and our total shareholder’s equity was \$2.0 billion. Adjusted for this offering, as of June 30, 2011, our total consolidated long-term debt would have been \$1.9 billion, our total stand-alone debt would have been \$2.2 billion and our total shareholder’s equity would have been unchanged. We may incur additional short-term and long-term debt from time to time to finance our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital or capital expenditures or for other general corporate purposes, subject to the restrictions contained in the credit agreement that governs our senior unsecured revolving credit facility and in any other agreements under which we incur debt.

The indenture governing the notes does not limit the amount of unsecured debt that we may incur. In general, the indenture also does not limit the amount of secured debt that we may incur.

The covenants contained in the indenture do not afford the holders of notes any protection in the event of a highly leveraged transaction or other transaction involving us that may adversely affect holders.

Our debt could have important consequences to holders of the notes, including the following:

- we are required to use a substantial portion of our consolidated cash flow from operations to pay principal and interest on our debt, thereby reducing the availability of our consolidated cash flow to fund our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital and capital expenditures and for other general corporate requirements;
- if prevailing interest rates increase, our interest expense could increase because any borrowings under our senior unsecured revolving credit facility will bear interest at floating rates;
- our leverage increases our vulnerability to economic downturns, and adverse competitive and industry conditions could place us at a competitive disadvantage compared to those of our competitors that are less leveraged; and
- our debt service obligations could limit our flexibility in planning for, or reacting to, changes in our business and our industry and could limit our ability to pursue other business opportunities, borrow more money for operations or raise capital in the future and implement our business strategies.

Unsecured Obligations — Because the notes are not secured and are effectively subordinated to the rights of secured creditors, the notes will be subject to the prior claims of any secured creditors, and if a default occurs, we may not have sufficient funds to fulfill our obligations under the notes.

The notes are senior unsecured obligations and will rank equally with any future unsecured and unsubordinated debt and will be effectively junior to our existing secured debt and any future secured debt we may incur. The indenture governing the notes does not limit the amount of unsecured debt that we may incur or restrict us from entering into sale and leaseback transactions. In general, the indenture also does not limit the amount of secured debt that we may incur. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness.

Our assets and those of our subsidiaries which secure our existing or future secured debt will be subject to prior claims by our and their respective secured creditors. In the event of our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up, assets that secure debt will be available to pay obligations on the notes only after all debt secured by those assets has been repaid in full. Holders of the notes will participate in any remaining assets ratably with all of our unsecured and unsubordinated creditors, including trade creditors. If we incur any additional obligations that rank equally with the notes, including trade payables, the holders of those obligations will be entitled to share ratably with the holders of the notes in any proceeds distributed upon our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up. This may have the effect of reducing the amount of proceeds paid to holders of the notes. If there are not sufficient assets remaining to pay all these creditors, all or a portion of the notes then outstanding would remain unpaid.

No Guarantees — Our parent company is not guaranteeing the notes and you should not rely upon information relating to our parent company in determining whether to invest in the notes.

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or distribution to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

No Prior Market for the Notes — There is no prior market for the notes, and if a market develops, it may not be liquid and prices of the notes may vary.

We do not intend to list the notes on any national securities exchange or to seek their quotation on any automated dealer quotation system. We cannot assure holders of the notes that any liquid market for the notes will ever develop or be maintained. The underwriters have advised us that they currently intend to make a market in the notes following the offering. However, the underwriters have no obligation to make a market in the notes and they may stop at any time. Further, there can be no assurance as to the liquidity of any market that may develop for the notes, holders’ ability to sell their notes or the price at which holders will be able to sell their notes. Future trading prices of the notes will depend on many factors, including prevailing interest rates, our financial condition and results of operations, the then-current ratings assigned to the notes and the market for similar securities. Any trading market that develops would be affected by many factors independent of and in addition to the foregoing, including:

- the time remaining to the maturity of the notes;
- the outstanding amount of the notes;
- the terms related to optional redemption of the notes; and
- the level, direction and volatility of market interest rates generally.

KCP&L and certain of its securities are rated by Moody's Investors Service, Inc. and Standard & Poor's Ratings Services. There is no assurance that such credit ratings will be issued or remain in effect for any given period of time or that such ratings will not be decreased, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant. KCP&L's credit ratings could decrease as a result of events directly affecting Great Plains Energy and its subsidiaries (other than KCP&L and its subsidiaries), even though Great Plains Energy is not guaranteeing the notes and is not generally obligated to provide credit support to us. Holders of notes will have no recourse against us or any other parties in the event of a change in or suspension or withdrawal of such ratings. Any decrease, suspension or withdrawal of such ratings may have an adverse effect on the market price or marketability of debt securities issued by us, including the notes.

USE OF PROCEEDS

We estimate the net proceeds to us from the sale of the notes will be approximately \$393.5 million, after deducting the underwriting discount and other expenses of the offering payable by us. We expect to use the net proceeds of this offering to repay all or a portion of KCP&L's outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L's 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011 KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%.

CAPITALIZATION AND SHORT-TERM DEBT

The following table sets forth our consolidated capitalization as of June 30, 2011, and as adjusted to give effect to the issuance and sale of the notes and the use of proceeds from this offering as set forth under “Use of Proceeds” above. This table should be read in conjunction with our consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. See “Where You Can Find More Information” in this prospectus supplement.

| | June 30, 2011 | |
|--|-------------------------|---------------------------------------|
| | <u>Actual</u> | <u>As Adjusted</u> |
| | (\$ in millions) | |
| Short-term debt (includes current maturities) | \$ 734.4 | \$ 340.9 |
| Long-term debt | \$1,504.7 | 1,902.1 ⁽¹⁾ |
| Shareholder’s equity: | | |
| Common stock (1,000 shares authorized without par value; 1 share issued, stated value) | \$1,563.1 | \$1,563.1 |
| Retained earnings | 465.7 | 465.7 |
| Accumulated other comprehensive loss | <u>(33.8)</u> | <u>(33.8)</u> |
| Total shareholder’s equity | <u>1,995.0</u> | <u>1,995.0</u> |
| Total capitalization and short-term debt | <u><u>\$4,234.1</u></u> | <u><u>\$4,238.0⁽¹⁾</u></u> |

⁽¹⁾ Reflects \$400 million aggregate principal amount of the notes offered hereby less the unamortized discount of \$2.6 million

DESCRIPTION OF THE NOTES

The following description of the particular terms of the notes supplements and, to the extent inconsistent therewith, replaces the description of the general terms and provisions of the notes set forth in the accompanying prospectus under “Description of Notes,” to which reference is hereby made. Whenever a defined term is referred to and not herein defined, the definition thereof is contained in the accompanying prospectus or in the indenture referred to therein. As used in this section, the terms “we,” “us,” “our,” and “KCP&L” refer to Kansas City Power & Light Company only and not to its subsidiaries.

The following description, together with the “Description of Notes” in the accompanying prospectus, is a summary of the material provisions of the notes and the indenture and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the notes and the indenture, including the definition of certain terms used in the indenture. We urge you to read the indenture because it, and not this description, defines your rights as a holder of the notes.

General

The notes constitute a single series of debt securities to be issued pursuant to an indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee. The terms of the notes include those expressly set forth in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as amended. The notes will initially be limited to \$400,000,000 aggregate principal amount and will mature on October 1, 2041.

The notes will bear interest at the rate per year set forth on the cover page of this prospectus supplement from the date of issuance or from the most recent interest payment date to which interest has been paid or provided for, payable semi-annually in arrears on April 1 and October 1 of each year, beginning April 1, 2012, to the persons in whose names the notes are registered at the close of business on the immediately preceding March 15 and September 15, respectively, whether or not such day is a Business Day. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months (and for any partial periods shall be calculated on the basis of the number of days elapsed in a 360-day year of twelve 30-day months). If any date on which interest is payable on the notes is not a Business Day, then payment of the interest payable on that date will be made on the next succeeding day which is a Business Day (and without any additional interest or other payment in respect of any delay).

The notes will be direct unsecured obligations of KCP&L exclusively, and not the obligation of any of our affiliates. The notes will (i) rank equally with our existing and future senior unsecured indebtedness, (ii) be effectively subordinated (with respect to underlying collateral) to any secured indebtedness now outstanding or that we may incur in the future, and (iii) be structurally subordinated to all indebtedness of the Company’s subsidiaries.

The notes will be issued only in registered form in minimum denominations of \$2,000 and in integral multiples of \$1,000 in excess thereof.

We will initially offer \$400,000,000 aggregate principal amount of notes. Subject to the terms of the indenture, we may, at any time, without consent of the holders of the notes, issue additional notes having the same ranking, interest rate, maturity and other terms (except for the initial public offering price and the issue date) as the notes being offered hereby; provided that such additional notes must be part of the same issue and fungible with the initially issued notes for U.S. federal income tax purposes. Any such additional notes, together with the notes offered hereby, will constitute a single series of notes under the indenture.

Optional Redemption

Prior to April 1, 2041 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, each at a “make-whole premium” redemption price calculated by us equal to the greater of:

- 100% of the principal amount of the notes to be redeemed; and

- the sum of the present values of the remaining scheduled payments of principal and interest thereon (not including any portion of such payments of interest accrued as of the date of redemption), discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Treasury Rate, plus 30 basis points,

plus, in each case, accrued and unpaid interest on the principal amount being redeemed to the date of redemption. Notwithstanding the foregoing, installments of interest on notes that are due and payable on interest payment dates falling on or prior to a redemption date will be payable on the interest payment date to the registered holders as of the close of business on the relevant record date according to the notes and the indenture.

On or after April 1, 2041 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest on the principal amount being redeemed to the date of redemption.

“Comparable Treasury Issue” means the United States Treasury security selected by the Quotation Agent as having a maturity comparable to the remaining term of the notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of such notes.

“Comparable Treasury Price” means, with respect to any redemption date,

- the average of four Reference Treasury Dealer Quotations for such redemption date, after excluding the highest and lowest such Reference Treasury Dealer Quotations, or
- if the Quotation Agent obtains fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations, or
- if only one Reference Treasury Dealer Quotation is received, such quotation.

“Quotation Agent” means the Reference Treasury Dealer appointed by us.

“Reference Treasury Dealer” means

- each of Barclays Capital Inc. and RBS Securities Inc. or their affiliates, and their respective successors, unless either of them ceases to be a primary U.S. government securities dealer in the United States of America (“Primary Treasury Dealer”), in which case we will substitute therefore another Primary Treasury Dealer,
- a Primary Treasury Dealer selected by Wells Fargo Securities, LLC, and
- two other Primary Treasury Dealers that we select.

“Reference Treasury Dealer Quotations” means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by the Quotation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Quotation Agent by such Reference Treasury Dealer at 5:00 p.m., New York City time, on the third business day preceding such redemption date.

“Treasury Rate” means, with respect to any redemption date, the rate per annum equal to the semi-annual equivalent yield to maturity of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

Notice of any redemption will be mailed at least 30 days but not more than 60 days before the redemption date to each holder of the notes to be redeemed. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the notes or portions thereof called for redemption. If less than all of the notes are to be redeemed, the particular notes or portions of such notes to be redeemed will be selected by The Depository Trust Company in such manner as it shall determine.

Notwithstanding the foregoing, any notice of redemption at our option may state that such redemption will be conditional upon receipt by the Trustee on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

No Guarantees

The notes are not guaranteed by our parent company, Great Plains Energy, or any of its or our subsidiaries. None of those entities has any obligation to make capital contribution or distributions to KCP&L for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture or complying with any other obligation under the indenture or the notes or otherwise.

Book-entry System

Upon issuance, the notes will be represented by one or more global securities deposited with, or on behalf of, The Depository Trust Company, as depository. The global securities representing the notes will be registered in the name of the depository or its nominee. Except under the circumstances described in the accompanying prospectus under “Book-Entry System,” the notes will not be issuable in definitive form. So long as the notes are represented by one or more global securities, the depository or its nominee will be considered the sole owner or holder of such notes for all purposes under the indenture, and the beneficial owners of such notes will be entitled only to those rights and benefits afforded to them in accordance with the depository’s regular operating procedures. The depository has confirmed to us, the underwriters and the Trustee that it intends to follow such procedures with respect to the notes. A further description of the depository’s procedures with respect to global securities is set forth in the accompanying prospectus under “Book-Entry System.”

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following discussion summarizes the material U.S. federal income tax considerations to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of the notes. It is included herein for general information purposes only and does not address all tax considerations that may be relevant to investors in light of their personal investment circumstances or that may be relevant to certain types of investors subject to special rules (for example, financial institutions, tax-exempt organizations, insurance companies, persons that are broker-dealers, traders in securities who elect the mark to market method of accounting for their securities, certain former U.S. citizens or long-term residents, retirement plans, foreign governments, international organizations, controlled foreign corporations, passive foreign investment companies, investors in partnerships or other pass-through entities or persons holding the notes as part of a “straddle,” “hedge,” “conversion transaction” or other integrated transaction). The discussion set forth below is limited to initial investors who hold the notes as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the “Code”) and who purchase the notes for cash at the initial “issue price” (i.e., the first price to the public, excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers, at which a substantial amount of the notes is sold for money). In addition, this discussion does not address the effect of U.S. federal alternative minimum tax, gift or estate tax laws, or any state, local or foreign tax laws. Furthermore, the discussion below is based upon provisions of the Code, the legislative history thereof, U.S. Treasury regulations thereunder and administrative rulings and judicial decisions thereunder as of the date hereof. Such authorities may be repealed, revoked or modified (including changes in effective dates, and possibly with retroactive effect) so as to result in U.S. federal income tax considerations different from those discussed below.

For purposes of the following discussion, a “Non-U.S. Holder” means a beneficial owner of the notes that, for U.S. federal income tax purposes, is neither a partnership (including, for the purposes of the following discussion, any entity or arrangement treated as a partnership for U.S. federal income taxes purposes) nor:

- an individual who is a citizen or resident of the United States;
- a corporation (including, for the purposes of the following discussion, any entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (i) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined under the Code) have the authority to control all substantial decisions of the trust or (ii) the trust has a valid election in place to be treated as a United States person for U.S. federal income tax purposes.

If a partnership holds the notes, the U.S. federal income tax treatment of a partner in the partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships and partners in such partnerships should consult their own tax advisors about the tax consequences of the purchase, ownership and disposition of the notes.

THIS DISCUSSION OF MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS IS NOT INTENDED, AND SHOULD NOT BE CONSTRUED, TO BE TAX OR LEGAL ADVICE TO ANY PARTICULAR INVESTOR IN THE NOTES. PROSPECTIVE INVESTORS ARE ADVISED TO CONSULT THEIR OWN TAX ADVISORS CONCERNING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSIDERATIONS ARISING UNDER THE LAWS OF ANY STATE, LOCAL OR FOREIGN TAXING JURISDICTION OR ANY APPLICABLE TAX TREATIES, AND THE POSSIBLE EFFECT OF CHANGES IN APPLICABLE TAX LAW.

Stated Interest

Subject to the discussion of backup withholding below, payments of interest on the notes to a Non-U.S. Holder generally will not be subject to U.S. withholding tax provided that (1) the Non-U.S. Holder does not actually or constructively own 10% or more of the total combined voting power of all classes of our voting stock, (2) the Non-U.S. Holder is not (a) a controlled foreign corporation that is related to us through actual or deemed stock ownership or (b) a bank receiving interest on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, (3) such interest is not effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States, and (4) either (a) the Non-U.S. Holder provides its name and address on an IRS Form W-8BEN (or other applicable form) and certifies, under penalties of perjury, that it is not a United States person or (b) a securities clearing organization, bank or other financial institution holding the notes on the Non-U.S. Holder's behalf certifies, under penalties of perjury, that it has received a properly executed IRS Form W-8BEN (or other applicable form) from the Non-U.S. Holder and it provides the withholding agent with a copy.

If a Non-U.S. Holder cannot satisfy the requirements in the preceding paragraph, payments of interest made to such Non-U.S. Holder will be subject to U.S. federal withholding tax, currently at a rate of 30%, unless such Non-U.S. Holder (1) timely provides the withholding agent with a properly executed IRS Form W-8BEN (or other applicable form) claiming an exemption from or reduction in withholding under the benefit of an applicable income tax treaty or IRS Form W-8ECI (or other applicable form) certifying that interest paid on the notes is not subject to U.S. federal withholding tax because it is effectively connected with such Non-U.S. Holder's conduct of a trade or business in the United States, or (2) otherwise properly establishes an exemption from withholding taxes.

If interest on the notes is effectively connected with the conduct by a Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), such interest will be subject to U.S. federal income tax on a net income basis at the rate applicable to United States persons generally (and a Non-U.S. Holder that is a corporation may also be subject to a branch profits tax equal to 30% of its effectively connected earnings and profits, subject to certain adjustments, unless such holder qualifies for a lower rate under an applicable income tax treaty). If interest is subject to U.S. federal income tax on a net income basis in accordance with these rules, such payments will not be subject to U.S. federal withholding tax so long as the relevant Non-U.S. Holder timely provides the withholding agent with the appropriate documentation.

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Subject to the discussion of backup withholding below, any gain realized by a Non-U.S. Holder on the sale, taxable exchange, redemption or other taxable disposition of the notes generally will not be subject to U.S. federal income tax, unless (1) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), in which case such gain will be taxed on a net income basis in the same manner as interest that is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and a Non-U.S. Holder that is a corporation may also be subject to the branch profits tax as described above) or (2) the Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are satisfied, in which case the Non-U.S. Holder will be subject to a tax, currently at a rate of 30%, on the excess, if any, of such gain plus all other U.S. source capital gains recognized during the same taxable year over the Non-U.S. Holder's U.S. source capital losses recognized during such taxable year.

Information Reporting and Backup Withholding

Information returns generally will be filed with the IRS in connection with payments of interest on the notes. Copies of the information returns reporting such interest payments and any withholding therefrom may also be made available to the tax authorities in the country in which a Non-U.S. Holder resides under the provisions of an applicable income tax treaty. Unless a Non-U.S. Holder complies with certification procedures

to establish that it is not a United States person, information returns may be filed with the IRS in connection with the proceeds from a sale or other disposition of the notes and the Non-U.S. Holder may be subject to backup withholding on payments on the notes or on the proceeds from a sale or other disposition of the notes. Compliance with the certification procedures required to claim the exemption from withholding tax on interest described above will satisfy the certification requirements necessary to avoid backup withholding as well.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

Non-U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

THE PRECEDING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. ACCORDINGLY, EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO IT OF PURCHASING, OWNING AND DISPOSING OF NOTES, INCLUDING THE APPLICABILITY AND EFFECT OF ANY STATE, LOCAL OR FOREIGN TAX LAWS, AND OF ANY PROPOSED CHANGES IN APPLICABLE LAW.

UNDERWRITING

Subject to the terms and conditions contained in an underwriting agreement, dated as of the date of this prospectus supplement between us and the underwriters named below, for whom Barclays Capital, Inc., RBS Securities Inc. and Wells Fargo Securities, LLC are acting as representatives, we have agreed to sell to each underwriter, and each underwriter has severally agreed to purchase from us, the principal amount of notes that appears opposite its name in the table below:

| <u>Underwriter</u> | <u>Principal Amount of Notes</u> |
|--------------------------------------|--|
| Barclays Capital Inc. | \$ 96,000,000 |
| RBS Securities Inc. | 96,000,000 |
| Wells Fargo Securities, LLC. | 96,000,000 |
| Scotia Capital (USA) Inc. | 48,000,000 |
| BNY Mellon Capital Markets, LLC | 32,000,000 |
| KeyBanc Capital Markets Inc. | 32,000,000 |
| Total | <u>\$400,000,000</u> |

The underwriters are offering the notes subject to their acceptance of the notes from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the notes offered by this prospectus supplement are subject to certain conditions. The underwriters are obligated to take and pay for all of the notes offered by this prospectus supplement if any such notes are taken.

The underwriters initially propose to offer the notes to the public at the public offering price that appears on the cover page of this prospectus supplement. In addition, the underwriters may offer the notes to certain dealers at prices that represent a concession not in excess of 0.50% of the principal amount of the notes. Any underwriter may allow, and any such dealer may reallocate, a concession not in excess of 0.25% of the principal amount of the notes to certain other dealers. After the initial offering of the notes, the underwriters may from time to time vary the offering prices and other selling terms. The underwriters may offer and sell notes through certain of their affiliates.

The following table shows the underwriting discount that we will pay to the underwriters in connection with the offering of the notes:

| | <u>Paid by Us</u> |
|----------------|-------------------|
| Per Note | 0.875% |
| Total | \$3,500,000 |

Expenses associated with this offering to be paid by us, other than the underwriting discount, are estimated to be approximately \$400,000.

We have also agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments which the underwriters may be required to make in respect of any such liabilities.

The notes are a new issue of securities, and there is currently no established trading market for the notes. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. The underwriters have advised us that they intend to make a market in the notes, but they are not obligated to do so. At their sole discretion, the underwriters may discontinue any market making in the notes at any time without notice. Accordingly, we cannot assure you that a liquid trading market will develop for the notes, that you will be able to sell your notes at a particular time or that the prices you receive when you sell will be favorable.

In connection with the offering of the notes, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the prices of the notes. Specifically, the underwriters may overallocate in connection

with the offering of the notes, creating syndicate short positions. In addition, the underwriters may bid for and purchase notes in the open market to cover syndicate short positions or to stabilize the price of the notes. Finally, the underwriting syndicate may reclaim selling concessions allowed for distributing the notes in the offering if the syndicate repurchases previously distributed notes in syndicate covering transactions, stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market prices of the notes above independent market levels. The underwriters are not required to engage in any of these activities, and may end any of them at any time without notice.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “Relevant Implementation Date”) it has not made and will not make an offer of notes which are the subject of the offering contemplated by this Prospectus to the public in that Relevant Member State other than:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of notes shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer of notes to the public” in relation to any notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe for the notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the “FSMA”)) received by it in connection with the issue or sale of the notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and instruments of KCP&L or its subsidiaries. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

The underwriters and their affiliates have provided and in the future may continue to provide investment banking, commercial banking and other financial services, including the provision of credit facilities, to us and our affiliates in the ordinary course of business for which they have received and will receive customary compensation. An affiliate of BNY Mellon Capital Markets, LLC, one of the co-managers of this offering, acts as the trustee under the indenture governing the notes, for which it receives customary compensation. Affiliates of the underwriters are lenders under revolving credit agreements entered into separately with Great Plains Energy, KCP&L and GMO in August 2010. In connection with these arrangements, affiliates of Wells Fargo Securities, LLC acted as joint lead arranger, joint book manager, syndication agent and lender, affiliates of Barclays Capital Inc. and RBS Securities acted as documentation agents and lenders, and affiliates of Scotia Capital (USA) Inc., BNY Mellon Capital Markets, LLC and KeyBanc Capital Markets Inc. acted as lenders.

LEGAL MATTERS

Certain legal matters in connection with the offering of the notes will be passed upon for us by Heather A. Humphrey, General Counsel and Vice President — Human Resources and Dewey & LeBoeuf LLP, New York, New York. Certain legal matters will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California.

At September 14, 2011, Ms. Humphrey owned beneficially a number of shares of Great Plains Energy's common stock, including restricted stock, and performance shares which may be paid in shares of Great Plains Energy common stock at a later date based on Great Plains Energy's performance, which represented less than 0.1% of the total outstanding common stock.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, of Kansas City Power & Light Company and its subsidiaries, incorporated by reference in this prospectus supplement from the Annual Report on Form 10-K of Kansas City Power & Light Company for the year ended December 31, 2010, and the effectiveness of Kansas City Power & Light Company's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports which are incorporated herein by reference. Such financial statements and financial statement schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

PROSPECTUS

Kansas City Power & Light Company

Notes General Mortgage Bonds

These securities are not obligations of, nor guaranteed by, Great Plains Energy Incorporated, our corporate parent.

Kansas City Power & Light Company ("KCP&L") may offer and sell, from time to time, notes and general mortgage bonds in one or more offerings. We may offer the securities simultaneously or at different times, in one or more separate series, in amounts, at prices and on terms to be determined at or prior to the time or times of sale.

This prospectus provides you with a general description of these securities. We will provide specific information about the offering and the terms of these securities in one or more supplements to this prospectus. The supplements may also add, update or change information contained in this prospectus. This prospectus may not be used to offer and sell our securities unless accompanied by a prospectus supplement. You should read this prospectus and the related prospectus supplements before you invest in these securities.

Our principal executive offices are located at 1201 Walnut Street, Kansas City, Missouri 64106-2124 and our telephone number is (816) 556-2200.

Investing in these securities involves risks. You should carefully consider the information referred to under the heading "Risk Factors" beginning on page 3 of this prospectus.

We may offer and sell these securities through one or more underwriters or agents. We will set forth in the related prospectus supplement the name of the underwriters or agents, the discount or commission received by them from us as compensation, our other expenses for the offering and sale of these securities, and the net proceeds we receive from the sale. See "Plan of Distribution."

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 11, 2009.

EXHIBIT B

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement we have filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. By using this process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide you with a supplement to this prospectus that will describe the specific terms of that offering. The prospectus supplement may also add, update or change the information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement. The registration statement we filed with the SEC includes exhibits that provide more detail on descriptions of the matters discussed in this prospectus. Before you invest in our securities, you should carefully read the registration statement (including the exhibits) of which this prospectus forms a part, this prospectus, the applicable prospectus supplement and the documents incorporated by reference into this prospectus. The incorporated documents are described under “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement, or in any free writing prospectus. We have not, and the underwriters have not, authorized anyone to provide you with different information and neither we nor the underwriters of any offering of securities will authorize anyone else to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any prospectus supplement and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

As described in more detail below under “Where You Can Find More Information,” we and Great Plains Energy Incorporated (“Great Plains Energy”), our parent company, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus. You should not rely on any information relating solely to Great Plains Energy Incorporated or its subsidiaries (other than the information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in any securities offered hereby. The securities are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the securities or any other amount that may be required to be paid under any indenture, preventing or curing an event of default under the terms of any indenture, complying with any other obligation under any indenture or the securities or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus or when we otherwise refer to ourselves in this prospectus, we mean Kansas City Power & Light Company and, except as expressly stated or the context requires otherwise, not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates for our Comprehensive Energy Plan and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our

future performance and are subject to risks and uncertainties, including those described or referred to under the heading “Risk Factors” in this prospectus, in any prospectus supplement, and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including, but not limited to, possible further deterioration in economic conditions and the timing and extent of any economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry and the Company and Great Plains Energy Incorporated;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- increased competition including, but not limited to, retail choice in the electric utility industry and the entry of new competitors;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- ability to achieve generation planning goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of additional generating capacity and environmental projects;
- nuclear operations;
- workforce risks including, but not limited to, retirement compensation and benefits costs; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus, any prospectus supplement and in our other SEC filings.

KANSAS CITY POWER & LIGHT COMPANY

Kansas City Power & Light Company (“KCP&L”) is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2008, we served approximately 509,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 449,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2008. Our retail revenues averaged approximately 82% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter.

RISK FACTORS

Investing in our securities involves risks. Our business is influenced by many factors that are difficult to predict, involve uncertainties that may materially affect actual results and are often beyond our control. You should carefully consider the information under the heading “Risk Factors” in:

- any prospectus supplement relating to any securities we are offering;
- our annual report on Form 10-K for the fiscal year ended December 31, 2008, which is incorporated by reference into this prospectus; and
- documents we file with the SEC after the date of this prospectus and which are deemed incorporated by reference into this prospectus.

RATIO OF EARNINGS TO FIXED CHARGES

The following table shows our ratio of earnings to fixed charges for the periods indicated:

| Three Months Ended | Fiscal Years Ended December 31, | | | | |
|-----------------------|---------------------------------|------|------|------|------|
| March 31, 2009 | 2008 | 2007 | 2006 | 2005 | 2004 |
| 1.22 | 2.87 | 3.53 | 4.11 | 3.87 | 3.37 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes, adjustment for minority interest in subsidiaries and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense and the estimated interest component of lease payments and rentals.

USE OF PROCEEDS

Unless we inform you otherwise in a supplement to this prospectus, we anticipate using any net proceeds received by us from the issuance of any of the offered securities for general corporate purposes, including, among others:

- repayment of debt;
- repurchase, retirement or refinancing of other securities;
- funding of construction expenditures; and
- acquisitions.

Pending such uses, we may also invest the proceeds in certificates of deposit, United States government securities or certain other short-term interest-bearing securities. If we decide to use the net proceeds from a particular offering of securities for a specific purpose, we will describe that in the related prospectus supplement.

DESCRIPTION OF NOTES

General. The notes will represent unsecured obligations of the Company. We will issue each series of notes under the Indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee. We refer to this Indenture in this prospectus as the “Indenture” and to The Bank of New York Mellon Trust Company, N.A. as the “trustee.” If at any time there is more than one trustee under the Indenture, the term “trustee” as used in this section with respect to the notes of any series means the trustee with respect to the notes of that series.

We have summarized selected provisions of the Indenture below. However, the following statements are summaries only, do not purport to be complete and are subject to, and qualified in their entirety by, all of the provisions of the Indenture, which is incorporated by reference herein. Certain of the terms used below are used herein with the meanings ascribed to such terms by the Indenture. You should carefully read the summary below and the provisions of the Indenture that may be important to you before investing. The Indenture, and not this description, defines the rights of the holders of the notes. Copies of the Indenture will be available at the offices of the trustee at 2 North LaSalle Street, Suite 1020, Chicago, Illinois 60602.

The following sets forth certain general terms and provisions of the notes. The particular terms of the series of notes offered by any prospectus supplement will be described in that prospectus supplement. The Indenture provides that the notes may be issued in one or more series, may be issued at various times, may have differing maturity dates, may bear interest at differing rates and may have other differing terms and conditions, as described below. We need not issue all notes of one series at the same time and, unless otherwise provided, we may reopen a series, without the consent of the holder of the notes of that series for issuances of additional notes. One or more series of the notes may be issued with the same or various maturities at par, above par or at a discount. Notes bearing no interest or interest at a rate which, at the time of issuance, is below the market rate (“Original Issue Discount Securities”) will be sold at a discount (which may be substantial) below their stated principal amount. Federal income tax consequences and other special considerations applicable to any such Original Issue Discount Securities will be described in the prospectus supplement relating to those securities. Unless otherwise described in the applicable prospectus supplement, the Indenture does not limit the aggregate amount of debt, including secured debt, that we or our subsidiaries may incur. There is no limitation of the amount of debt we may issue under the Indenture. The Indenture also permits us to merge or consolidate or to transfer or lease our assets, subject to certain conditions (see “— Consolidation, Merger and Sale” below).

Ranking. Each series of notes will be our direct unsecured general obligations and will rank equally with all of our other unsecured and unsubordinated debt. As of March 31, 2009, our aggregate outstanding debt that would have ranked equally with the notes was approximately \$1,232.0 million.

Unless otherwise provided in a prospectus supplement, the notes will effectively rank junior to our mortgage bonds which were issued under our Mortgage Indenture. The Mortgage Indenture constitutes a mortgage lien upon substantially all of our fixed property and franchises, except property that has been, or may in the future be, released from the lien of the Mortgage Indenture. At March 31, 2009, there was approximately \$755.3 million aggregate principal amount of mortgage bonds outstanding. We have agreed with the issuer of certain bond insurance policies to not issue additional mortgage bonds if, after giving effect to such additional mortgage bonds, the proportion of secured debt to total indebtedness exceeded 75%. Additionally, if the long term rating for such mortgage bonds by Standard & Poor’s or Moody’s Investors Service would be at or below A- or A3, respectively, such agreements would prohibit us from issuing additional mortgage bonds if, after giving effect to such additional mortgage bonds, the proportion of secured debt to total indebtedness exceeded 50%. At March 31, 2009, the proportion of secured debt to total indebtedness was approximately 38%.

Provisions of a Particular Series. The prospectus supplement applicable to each issuance of notes will specify, among other things:

- the title and any limitation on aggregate principal amount of the notes;
- the original issue date of the notes;
- the date or dates on which the principal of any of the notes is payable;
- the fixed or variable interest rate or rates, or method of calculation of such rate or rates, for the notes, and the date from which interest will accrue;
- the terms, if any, regarding the optional or mandatory redemption of any notes, including the redemption date or dates, if any, and the price or prices applicable to such redemption;
- whether the notes are to be issued in whole or in part in the form of one of more global securities and, if so, the identity of the Depositary for such global security or global securities;
- the denominations in which such notes will be issuable;
- the maximum annual interest rate, if any, of the notes;
- the period or periods within which, the price or prices at which and the terms and conditions upon which any notes may be repaid, in whole or in part, at the option of the holder thereof;
- the place or places where the principal of, and premium, if any, and interest, if any, on the notes shall be payable;
- any addition, deletion or modification to the events of default applicable to that series of notes and the covenants for the benefit of the holders of that series;
- our obligation, if any, to redeem, purchase, or repay the notes, including, but not limited to, pursuant to any sinking fund or analogous provision or at the option of a holder thereof and the period or periods within which, the price or prices at which, and the terms and conditions upon which the notes shall be redeemed, purchased, or repaid pursuant to such obligation;
- any remarketing features of the notes;
- any collateral, security, assurance, or guarantee for the note;
- if other than the principal amount thereof, the portion of the principal amount of the notes payable upon declaration of acceleration of the maturity of the notes;
- the securities exchange(s), if any, on which the notes will be listed;
- any interest deferral or extension provisions;
- the terms of any warrants we may issue to purchase notes;
- the right, if any, for us to extend the interest payment periods of the notes, including the maximum duration of any extension and additional interest payable upon exercise of such right; and
- any other terms of the notes not inconsistent with the provisions of the Indenture.

Registration, Transfer and Exchange. Unless otherwise indicated in the applicable prospectus supplement, each series of notes will initially be issued in the form of one or more global securities, in registered form, without coupons, as described under “Book-Entry System.” The global securities will be registered in the name of a depository, or its nominee, and deposited with, or on behalf of, the depository. Except in the circumstances described under “Book-Entry System,” owners of beneficial interests in a global security will not be entitled to have notes registered in their names, will not receive or be entitled to receive physical delivery of any notes and will not be considered the registered holders thereof under the Indenture.

Notes of any series will be exchangeable for other notes of the same series of any authorized denominations and of a like aggregate principal amount and tenor. Subject to the terms of the Indenture and the limitations

applicable to global securities, notes may be presented for exchange or registration of transfer — duly endorsed or accompanied by a duly executed instrument of transfer — at the office of any transfer agent we may designate for such purpose, without service charge but upon payment of any taxes and other governmental charges, and upon satisfaction of such other reasonable requirements as are described in the Indenture.

Unless otherwise indicated in the applicable prospectus supplement, the transfer agent will be the trustee under the Indenture. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the notes of each series.

Payment and Paying Agents. Principal of and interest and premium, if any, on notes issued in the form of global securities will be paid in the manner described under “Book-Entry System.”

Unless otherwise indicated in the applicable prospectus supplement, the principal of and any premium and interest on notes of a particular series in the form of certificated securities will be payable at the office of the trustee or at the authorized office of any paying agent or paying agents upon presentation and surrender of such notes. We may at any time designate additional paying agents or rescind the designation of any paying agent or approve a change in the office through which any paying agent acts, except that we will be required to maintain a paying agent in each place of payment for the notes of a particular series. Unless otherwise indicated in the applicable prospectus supplement, interest on the notes of a particular series, other than interest at maturity, that are in the form of certificated securities will be paid by check payable in clearinghouse funds mailed to the person entitled thereto at such person’s address as it appears on the register for such notes maintained by the trustee. All monies we pay to the trustee or a paying agent for the payment of the principal of, and premium or interest, if any, on, any note which remain unclaimed at the end of two years after such principal, premium or interest shall have become due and payable will be repaid to us, and the holder of such note thereafter may look only to us for payment thereof. However, any such payment shall be subject to escheat pursuant to state abandoned property laws.

Redemption. Any terms for the optional or mandatory redemption of the notes will be set forth in the applicable prospectus supplement. Unless otherwise indicated in the applicable prospectus supplement, notes will be redeemable by us only upon notice by mail not less than 30 nor more than 60 days prior to the date fixed for redemption, and, if less than all the notes of a series are to be redeemed, the particular notes to be redeemed will be selected by such method as shall be provided for any particular series, or in the absence of any such provision, by the trustee in such manner as it shall deem fair and appropriate.

Any notice of redemption at our option may state that such redemption will be conditional upon receipt by the trustee or the paying agent or agents, on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

Consolidation, Merger and Sale or Disposition of Assets. We may not, without the consent of the holders of any notes, consolidate with or merge into any other corporation or sell, transfer, lease or otherwise dispose of our properties as or substantially as an entirety to any person, unless:

- the successor or transferee corporation or the person which receives such properties pursuant to such sale, transfer, lease or other disposition is a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia;
- the successor or transferee corporation or the person which receives such properties pursuant to such sale, transfer, lease or other disposition assumes by supplemental Indenture, in a form reasonably satisfactory to the trustee, the due and punctual payment of the principal of and premium and interest, if any, on all the notes outstanding under the Indenture and the performance of every covenant of the Indenture to be performed or observed by us;
- we have delivered to the trustees for such notes an officer’s certificate and an opinion of counsel, each stating that the transaction complies with the Indenture and the applicable conditions precedent; and

- immediately after giving effect to the transaction, no Event of Default (see “Events of Default”) or event that, after notice or lapse of time, or both, would become an Event of Default, shall have occurred and be continuing.

Upon any such consolidation, merger, sale, transfer, lease or other disposition of our properties as or substantially as an entirety, the successor corporation formed by such consolidation or into which we are merged or the person to whom such sale, transfer, lease or other disposition is made, shall succeed to, and be substituted for, and may exercise every right and power of, us under the Indenture with the same effect as if such successor corporation or person had been named as us therein, and we will be released from all obligations under the Indenture.

Modification. Without the consent of any holder of notes, the trustee for such notes and we may enter into one or more supplemental indentures for any of the following purposes:

- to supply omissions, cure any ambiguity or inconsistency or correct defects, which actions, in each case, are not prejudicial to the interests of the holders of notes of any series in any material respect;
- to change or eliminate any provision of the Indenture, provided that any such change or elimination will become effective with respect to such series only when there is no note of such series outstanding created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision, or such change or elimination is applicable only to notes of such series issued after the effective date of such change or elimination;
- to establish the form or terms of notes of any series as permitted by the Indenture;
- to evidence the succession of another corporation to us, and the assumption of our covenants in the Indenture and the notes by any permitted successor;
- to grant to or confer upon the trustee for any notes for the benefit of the holders of such notes, any additional rights, remedies, powers or authority;
- to permit the trustee for any notes to comply with any duties imposed upon it by law;
- to specify further the duties and responsibilities of, and to define further the relationship among, the trustee for any notes, any authenticating agent and any paying agent, and to evidence the succession of a successor trustee as permitted under the Indenture;
- to add to our covenants for the benefit of the holders of all or any series of outstanding notes, to add to the security of all notes, to surrender any right or power conferred upon us by the Indenture or to add any additional events of default with respect to all or any series of outstanding notes; and
- to make any other change that is not prejudicial to the holders of any notes.

Except as provided above, and except as otherwise provided in the applicable prospectus supplement, the consent of the holders of a majority in aggregate principal amount of the notes of all series then outstanding, considered as one class, is required for the purpose of adding any provisions to, or changing in any manner, or eliminating any of the provisions of, the Indenture pursuant to one or more supplemental indentures or of modifying or waiving in any manner the rights of the holders of the notes; provided, however, that if less than all of the series of notes outstanding are directly affected by a proposed supplemental indenture, then the consent only of the holders of a majority in aggregate principal amount of the outstanding applicable notes of all series so directly affected, considered as one class, will be required.

Notwithstanding the foregoing, no such amendment or modification may, without the consent of each holder of outstanding notes affected thereby:

- change the maturity date of the principal of any note;
- reduce the rate of interest or change the method of calculating such rate, or extend the time of payment of interest, on any note;
- reduce the principal amount of, or premium payable on, any note;

- change the coin or currency of any payment of principal of, or any premium or interest on any note;
- change the date on which any note may be redeemed or adversely affect the rights of a holder to institute suit for the enforcement of any payment of principal of or any premium or interest on any note; or
- modify the foregoing requirements or reduce the percentage of outstanding notes necessary to modify or amend the Indenture or to waive any past default.

A supplemental indenture which changes or eliminates any covenant or other provision of the Indenture which has expressly been included solely for the benefit of one or more series of notes, or which modifies the rights of the holders of notes of such series with respect to such covenant or provision, will be deemed not to affect the rights under the Indenture of the holders of the notes of any other series.

Events of Default. Unless specifically deleted in a supplemental indenture or Board of Directors resolution under which a series of notes is issued, or modified in any such supplemental indenture, each of the following will constitute an event of default under the Indenture with respect to notes of any series:

- failure to pay interest on the notes of such series within 30 days after the same becomes due and payable;
- failure to pay principal of or premium, if any, on any note of such series, as the case may be, within one day after the same becomes due and payable;
- failure to perform or breach of any of our other covenants or warranties in the Indenture (other than a covenant or warranty solely for the benefit of one or more series of notes other than such series) for 60 days after written notice to us by the trustee or to us and the trustee by the holders of at least 33% in aggregate principal amount of the outstanding applicable notes of such series;
- certain events of bankruptcy, insolvency, reorganization, assignment or receivership; or
- any other event of default specified in the applicable prospectus supplement with respect to notes of a particular series.

Additional events of default with respect to a particular series of notes may be specified in a supplemental indenture or resolution of the Board of Directors establishing that series.

No event of default with respect to the notes of a particular series necessarily constitutes an event of default with respect to the notes of any other series issued under the Indenture.

If an event of default with respect to any series of notes occurs and is continuing, then either the trustee for such series or the holders of a majority in aggregate principal amount of the outstanding notes of such series, by notice in writing, may declare the principal amount of and interest on all of the notes of such series to be due and payable immediately; provided, however, that if an event of default occurs and is continuing with respect to more than one series of notes under the Indenture, the trustee for such series or the holders of a majority in aggregate principal amount of the outstanding notes of all such series, considered as one class, may make such declaration of acceleration and not the holders of the notes of any one of such series.

At any time after an acceleration with respect to the notes of any series has been declared, but before a judgment or decree for the payment of the money due has been obtained, the event or events of default giving rise to such acceleration will be waived, and the acceleration will be rescinded and annulled, if

- we pay or deposit with the trustee for such series a sum sufficient to pay all matured installments of interest on all notes of such series, the principal of and premium, if any, on the notes of such series which have become due otherwise than by acceleration and interest thereon at the rate or rates specified in such notes, interest upon overdue installments of interest at the rate or rates specified in such notes, to the extent that payment of such interest is lawful, and all amounts due to the trustee for such series under the Indenture; and

- any other event or events of default with respect to the notes of such series, other than the nonpayment of the principal of and accrued interest on the notes of such series which has become due solely by such acceleration, have been cured or waived as provided in the Indenture.

However, no such waiver or rescission and annulment shall extend to or shall affect any subsequent default or impair any related right.

Subject to the provisions of the Indenture relating to the duties of the trustee in case an event of default shall occur and be continuing, the trustee generally will be under no obligation to exercise any of its rights or powers under the Indenture at the request or direction of any of the holders unless such holders have offered to the trustee reasonable security or indemnity satisfactory to it. Subject to such provisions for the indemnification of the trustee and certain other limitations contained in the Indenture, the holders of a majority in aggregate principal amount of the outstanding notes of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or of exercising any trust or power conferred on the trustee, with respect to the notes of that series; provided, however, that if an event of default occurs and is continuing with respect to more than one series of notes, the holders of a majority in aggregate principal amount of the outstanding notes of all those series, considered as one class, will have the right to make such direction, and not the holders of the notes of any one series. Any direction provided by the holders shall not be in conflict with any rule of law or with the Indenture and will not involve the trustee in personal liability in circumstances where reasonable indemnity would not, in the trustee's sole discretion, be adequate and the trustee may take any other action it deems proper that is not inconsistent with such direction.

The holders of a majority in aggregate principal amount of the outstanding notes of any series may waive any past default under the Indenture on behalf of all holders of notes of that series with respect to the notes of that series, except a default in the payment of principal of or any premium or interest on such notes. No holder of notes of any series may institute any proceeding with respect to the Indenture, or for the appointment of a receiver or a trustee, or for any other remedy, unless such holder has previously given to the trustee for such series written notice of a continuing event of default with respect to the notes of such series, the holders of a majority in aggregate principal amount of the outstanding notes of all series in respect of which an event of default has occurred and is continuing, considered as one class, have made written request to the trustee for such series to institute such proceeding and have offered such reasonable indemnity as the trustee may require, and the trustee for such series has failed to institute such proceeding within 60 days after such notice, request and offer. Furthermore, no holder of notes of any series will be entitled to institute any such action if and to the extent that such action would disturb or prejudice the rights of other holders of those notes.

Notwithstanding the foregoing, each holder of notes of any series has the right, which is absolute and unconditional, to receive payment of the principal of and premium, if any, and interest on such notes when due and to institute suit for the enforcement of any such payment, and such rights may not be impaired without the consent of that holder of notes.

The trustee, within 90 days after it receives notice of the occurrence of a default with respect to the notes of any series, is required to give the holders of the notes of that series notice of such default, unless cured or waived, but, except in the case of default in the payment of principal of, or premium, if any, or interest on, the notes of that series, the trustee may withhold such notice if it determines in good faith that it is in the interest of such holders to do so. We will be required to deliver to the trustees for the notes each year a certificate as to whether or not, to the knowledge of the officers signing such certificate, we are in compliance with all conditions and covenants under the Indenture, determined without regard to any period of grace or requirement of notice under the Indenture.

Defeasance. Unless the applicable prospectus supplement states otherwise, we may elect either:

- (1) to defease and be discharged from any and all obligations in respect of the notes of any series then outstanding under the Indenture (except for certain obligations to register the transfer or exchange of the notes of such series, replace stolen, lost or mutilated notes, maintain paying agencies and hold monies for payment in trust); or

(2) to be released from the obligations of the Indenture with respect to the notes of any series under any covenants applicable to the notes of such series which are subject to covenant defeasance as described in the Indenture, supplemental indenture or other instrument establishing such series.

In the case of either (1) or (2), the following conditions, among others, must be met:

- we will be required to deposit, in trust, with the trustee money or U.S. government obligations, which through the payment of interest on those obligations and principal of those obligations in accordance with their terms will provide money, in an amount sufficient, without reinvestment, to pay all the principal of, premium, if any, and interest on the notes of such series on the dates payments are due (which may include one or more redemption dates designated by us),
- no event of default or event which with the giving of notice or lapse of time, or both, would become an event of default under the Indenture must have occurred and be continuing on the date of the deposit, and 91 days must have passed after the deposit has been made and, during that period, certain events of default must not have occurred and be continuing as of the end of that period,
- the deposit must not cause the trustee to have any conflicting interest with respect to our other securities,
- we must have delivered an opinion of counsel to the effect that the holders will not recognize income, gain or loss for federal income tax purposes (and, in the case of paragraph (1) above, such opinion of counsel must be based on a ruling of the Internal Revenue Service or other change in applicable federal income tax law) as a result of the deposit or defeasance and will be subject to federal income tax in the same amounts, in the same manner and at the same times as if the deposit and defeasance had not occurred, and
- we must have delivered an officer's certificate to the trustee as provided in the Indenture.

We may exercise our defeasance option under paragraph (1) with respect to notes of any series notwithstanding our prior exercise of our covenant defeasance option under paragraph (2). If we exercise our defeasance option under paragraph (1) for notes of any series, payment of the notes of such series may not be accelerated because of a subsequent event of default. If we exercise our covenant defeasance option for notes of any series, payment of the notes of such series may not be accelerated by reference to a subsequent breach of any of the covenants noted under paragraph (2) above. In the event we fail to comply with our remaining obligations with respect to the notes of any series under the Indenture after exercising our covenant defeasance option and the notes of such series are declared due and payable because of the subsequent occurrence of any event of default, the amount of money and U.S. government obligations on deposit with the trustee may be insufficient to pay amounts due on the notes of such series at the time of the acceleration resulting from that event of default. However, we will remain liable for those payments.

Resignation or Removal of Trustee. The trustee may resign at any time upon written notice to us specifying the day upon which the resignation is to take effect and such resignation will take effect immediately upon the later of the appointment of a successor trustee and such specified day. The trustee may be removed at any time with respect to notes of any series by an instrument or concurrent instruments in writing filed with the trustee and signed by the holders, or their attorneys-in-fact, of a majority in aggregate principal amount of that series of notes then outstanding. In addition, so long as no event of default or event which, with the giving of notice or lapse of time or both, would become an event of default has occurred and is continuing, we may remove the trustee upon notice to the holder of each note outstanding and the trustee, and appoint a successor trustee.

Concerning the Trustee. As of March 31, 2009, The Bank of New York Mellon Trust Company, N.A., which is the trustee under the Indenture, and its affiliates were the trustees for \$1,378.7 million of our secured and unsecured debt (including Environmental Improvement Revenue Refunding debt issued by certain governmental entities) and \$100.0 million of the unsecured debt of Great Plains Energy Incorporated under several separate indentures. In addition, an affiliate of The Bank of New York Mellon Trust Company, N.A. is one of the lenders under separate credit agreements with us, our parent and an affiliate and is the trustee under

our nuclear decommissioning fund trust. Affiliates of The Bank of New York Mellon Trust Company, N.A. also perform other services for, and transact other banking business with our affiliates and us in the normal course and may do so in the future. The Indenture provides that our obligations to compensate the trustee and reimburse the trustee for expenses, disbursements and advances will be secured by a lien prior to that of the notes upon the property and funds held or collected by the trustee as such, except funds held in trust for the benefit of the holders of particular notes.

Governing Law. The Indenture and the related notes will be governed by New York law.

DESCRIPTION OF GENERAL MORTGAGE BONDS

We will issue each series of general mortgage bonds under the General Mortgage Indenture and Deed of Trust, dated as of December 1, 1986, as supplemented from time to time, executed by the Company to UMB Bank, N.A. (formerly United Missouri Bank of Kansas City, N.A.), as trustee. We refer in this prospectus to the general mortgage bonds as the “mortgage bonds,” to the mortgage as the “Mortgage Indenture” and to UMB Bank, N.A. as the “Mortgage Trustee.”

We have summarized selected provisions of the Mortgage Indenture below. However, the following statements are an outline only, do not purport to be complete, and are qualified in their entirety by reference to the Mortgage Indenture (which is filed as an exhibit to the registration statement of which this prospectus is a part). Certain of the terms used below are used in this prospectus with the meanings ascribed to such terms by the Mortgage Indenture.

The following sets forth certain general terms and provisions of the mortgage bonds. The particular terms of the series of mortgage bonds offered by any prospectus supplement will be described in that prospectus supplement. Any terms of the mortgage bonds that are not summarized herein will be described in the applicable prospectus supplement.

Security and Priority. The Company’s principal plants and properties, insofar as they constitute real estate, are owned; certain other facilities of the Company are located on premises held by the Company under leases, permits or easements; and the Company’s electric transmission and distribution lines and systems (which constitute a substantial portion of the Company’s investment in physical property) are for the most part located over or under highways, streets, other public places or property owned by others for which permits, grants, easements, licenses or franchises (deemed satisfactory but without examination of underlying land titles) have been obtained.

The Mortgage Indenture constitutes a mortgage lien upon substantially all of the fixed property and franchises of the Company (except property that has been, or may in the future be, released from the lien of the Mortgage Indenture, as described below), consisting principally of electric generating plants, electric transmission and distribution lines and systems, and buildings, subject to encumbrances permitted under the Mortgage Indenture. (*Mortgage Indenture Section 1.03(ff).*) The Mortgage Indenture subjects to the lien thereof property, of the character initially mortgaged, which is acquired by the Company subsequent to December 1, 1986. Such after-acquired property may be subject to prior liens which secure debt outstanding at the time of such acquisition in an amount not in excess of 75% of the cost or fair value, whichever is less, of such after-acquired property at such time. (*Mortgage Indenture Section 1.03(ff)(xv).*)

The property excepted from the lien of the Mortgage Indenture consists principally of: cash and securities (unless deposited with the Mortgage Trustee); accounts receivable; contracts and operating agreements not pledged or required to be pledged with the Mortgage Trustee; equipment, spare parts, tools, materials, supplies and fuel held for sale or lease in the ordinary course of business or for use or consumption in, or the operation of, any properties of, or for the benefit of, the Company, or held in advance of use thereof for maintenance or fixed capital purposes; electricity, gas, steam, water, ice and other materials, products or services for sale, distribution or use; vehicles; leasehold interests and leasehold improvements; minerals and mineral rights; nuclear fuel, cores and materials; communications equipment, computers and office furniture; and other real and personal property which is not an integral part of the electric and any steam generating, transmission and distribution operations of the Company. (*Mortgage Indenture Section 1.03(s).*)

The mortgage bonds will rank equally and ratably (except as to sinking funds and other analogous funds established for the exclusive benefit of a particular series) with all mortgage bonds, regardless of series, from time to time issued and outstanding under the Mortgage Indenture.

The Mortgage Indenture provides that the Mortgage Trustee shall have a lien on the mortgaged property, prior to the mortgage bonds, for the payment of its reasonable compensation and expenses and for indemnity against certain liabilities. (*Mortgage Indenture Section 14.09.*)

Issuance of Additional Mortgage Bonds. The maximum principal amount of mortgage bonds which may be issued under the Mortgage Indenture is not limited. Mortgage bonds of any series may be issued from time to time in principal amounts:

- not exceeding 75% of the amount of unbonded “bondable property;”
- equal to the principal amount of mortgage bonds and “prior lien bonds” which have been retired or purchased or acquired by the Company since the date of the Mortgage Indenture or are then being retired or purchased or acquired by the Company, and which have not theretofore been bonded; or
- equal to the amount of cash deposited with the Mortgage Trustee for such purpose.

(*Mortgage Indenture Articles III, IV, V and VI.*)

“Bondable property” includes: the Company’s electric and any steam generating, transmission and distribution properties; construction work in progress; property in the process of purchase to which the Company has legal title; fractional and undivided interests of the Company in certain property owned jointly or in common with other persons; engineering, financial, economic, environmental, geological and legal or other surveys, data processing equipment and software associated with the acquisition or construction of property; paving, grading and other improvements to property owned by others but used by the Company; and certain property owned by the Company located on property owned by others, including governments.

(*Mortgage Indenture Section 1.03(h).*)

“Prior lien bonds” means any indebtedness secured by liens either (i) existing both at and immediately prior to the acquisition of the property by the Company, or (ii) created as purchase money mortgages at the time the Company acquires the property, and in each case ranking prior to, or on a parity with, the lien of the Mortgage Indenture. (*Mortgage Indenture Sections 1.03(hh) and 1.03(ii).*)

The amount of bondable property is the lesser of its cost or fair value determined in accordance with generally accepted accounting principles in effect at December 1, 1986 or, at the option of the Company, at the date of their determination, minus 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured by a prior lien on bondable property owned by the Company at December 1, 1986, and (b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date. (*Mortgage Indenture Section 1.03(h).*) In determining generally accepted accounting principles, the Company may conform to accounting orders from any governmental regulatory commission. (*Mortgage Indenture Section 1.03(u).*)

Withdrawal of Certain Cash. Cash deposited with the Mortgage Trustee as a basis for the issue of additional mortgage bonds may be withdrawn by the Company in the amount of 75% of the lesser of the cost or fair value of unbonded bondable property that is bonded, after deducting 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured by a prior lien on such bondable property owned by the Company at December 1, 1986, and (b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date.

Any other cash deposited with the Mortgage Trustee may be withdrawn by the Company in the amount of:

- 100% of the lesser of the cost or fair value of unbonded bondable property that is bonded, after deducting 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured

by a prior lien on such bondable property owned by the Company at December 1, 1986, and
(b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date; or

- the principal amount of mortgage bonds and prior lien bonds which have been retired or purchased or acquired by the Company since the date of the Mortgage Indenture or are then being retired or purchased or acquired by the Company, and which have not theretofore been bonded.

(Mortgage Indenture Article XI.)

Release and Substitution of Property. Mortgaged property may be released from the lien of the Mortgage Indenture:

- if after such release the fair value of the remaining mortgaged property equals or exceeds a sum
- equal to 133⅓% of the aggregate principal amount of outstanding mortgage bonds and prior lien bonds outstanding; or
- if, with some limitations, the fair value of the mortgaged property to be released is less than ½ of 1% of the aggregate principal amount of mortgage bonds and prior lien bonds outstanding, provided that the aggregate fair value of mortgaged property released in this manner in any period of 12 consecutive calendar months shall not exceed 1% of the aggregate principal amount of the outstanding mortgage bonds and prior lien bonds outstanding; or
- on the basis of (a) the deposit of cash, governmental obligations or purchase money obligations, (b) bondable property to be acquired by the Company with the proceeds of, or otherwise in connection with, such release, or (c) a waiver of the right to issue mortgage bonds on the basis of mortgage bonds or prior lien bonds which have been retired or purchased or acquired by the Company after December 1, 1986, and have not theretofore been bonded.

(Mortgage Indenture Article X.)

Events of Default. The Mortgage Indenture provides generally that a default occurs upon:

- failure for 90 days to pay interest when due on any mortgage bonds;
- failure to pay when due the principal of, and premium, if any, on any mortgage bonds issued under the Mortgage Indenture or the principal of, premium, if any, or interest on any outstanding prior lien bonds, beyond any specified grace period;
- failure to perform or observe for 90 days after notice of such failure any other of the covenants or conditions of the Company in the Mortgage Indenture, any applicable supplemental indenture, or any of the mortgage bonds issued under the Mortgage Indenture or any applicable supplemental indenture; and
- the occurrence of insolvency, bankruptcy, receivership or similar events.

In case of default, the Mortgage Trustee or the holders of a majority in principal amount of the outstanding mortgage bonds may declare the principal of and interest on all mortgage bonds to be immediately due and payable, but the holders of a majority in principal amount of the outstanding mortgage bonds may rescind such declaration if such default has been cured. *(Mortgage Indenture Sections 12.02 and 12.04.)*

The Company is required to file with the Mortgage Trustee such information, documents and reports with respect to compliance by the Company with the conditions and covenants of the Mortgage Indenture as may be required by the rules and regulations of the SEC. *(Mortgage Indenture Section 17.02.)* The Company is not required to furnish any statement as to the absence of any default.

Modification of the Mortgage Indenture. In general, modifications or alterations of the Mortgage Indenture and any applicable supplemental indenture and of the rights or obligations of the Company and of the bondholders, as well as waivers of compliance with the Mortgage Indenture (including any applicable supplemental indenture) may be made, with the consent of the holders of a majority in principal amount of the

outstanding mortgage bonds affected by the proposed action, if approved by the Company. Provisions relating to such modifications or alterations and waivers of compliance are subject to certain restrictions designed to safeguard the positions of the bondholders and the Mortgage Trustee with respect to certain matters of basic importance, including payment of principal of and interest and premium (if any) on mortgage bonds and creation of liens ranking prior to or on a parity with the lien of the Mortgage Indenture as to any mortgaged property. (*Mortgage Indenture Section 12.24 and Article XV.*)

Concerning the Mortgage Trustee. As of March 31, 2009, the Mortgage Trustee was the trustee for \$755.3 million of mortgage bonds issued under the Mortgage Indenture. In addition, the Company and its affiliates maintain general banking accounts with the Mortgage Trustee. The Mortgage Trustee is also one of the lenders under separate credit agreements with us, our parent and one of our affiliates.

The Mortgage Indenture provides that the holders of a majority in principal amount of the outstanding mortgage bonds have the right to require the Mortgage Trustee to take certain action on behalf of the bondholders, but under certain circumstances the Mortgage Trustee may decline to follow such directions or to exercise certain of its powers. (*Mortgage Indenture Section 12.05.*) Prior to taking any such action the Mortgage Trustee is entitled to indemnity satisfactory to the Mortgage Trustee against costs, expenses and liabilities which may be incurred in the course of such action. (*Mortgage Indenture Section 12.16.*) This right does not, however, impair the absolute right of any holder of mortgage bonds to enforce payment of the principal of, premium, if any, and interest on such mortgage bonds when due. (*Mortgage Indenture Section 12.23.*) The Company has the right to remove the Mortgage Trustee and appoint a successor Mortgage Trustee not more frequently than once in any ten-year period. (*Mortgage Indenture Section 14.18.*)

BOOK-ENTRY SYSTEM

Unless otherwise indicated in the applicable prospectus supplement, each series of notes or general mortgage bonds will initially be issued in the form of one or more global securities, in registered form, without coupons. The global security will be deposited with, or on behalf of, the depository, and registered in the name of the depository or a nominee of the depository. Unless otherwise indicated in the applicable prospectus supplement, the depository for any global securities will be The Depository Trust Company, or DTC.

So long as the depository, or its nominee, is the registered owner of a global security, such depository or such nominee, as the case may be, will be considered the owner of such global security for all purposes under the applicable indenture, including for any notices and voting. Except in limited circumstances, the owners of beneficial interests in a global security will not be entitled to have securities registered in their names, will not receive or be entitled to receive physical delivery of any such securities and will not be considered the registered holder thereof under the applicable indenture. Accordingly, each person holding a beneficial interest in a global security must rely on the procedures of the depository and, if such person is not a direct participant, on procedures of the direct participant through which such person holds its interest, to exercise any of the rights of a registered owner of such security.

Except as otherwise provided in any applicable prospectus supplement, global securities may be exchanged in whole for certificated securities only if the depository notifies us that it is unwilling or unable to continue as depository for the global securities or the depository has ceased to be a clearing agency registered under the Exchange Act and, in either case, we thereupon fail to appoint a successor depository within 90 days. We may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository), subject to DTC's procedures.

In any such case, we have agreed to notify the applicable trustee in writing that, upon surrender by the direct participants and indirect participants of their interest in such global securities, certificated securities representing the applicable securities will be issued to each person that such direct participants and indirect participants and the depository identify as being the beneficial owner of such securities.

The following is based solely on information furnished by DTC:

DTC will act as depository for the global securities. The global securities will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered global security certificate will be issued for each issue of the global securities, each in the aggregate principal amount of such issue and will be deposited with DTC. If, however, the aggregate principal amount of any issue of a series of debt securities exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount and an additional certificate will be issued with respect to any remaining principal amount of such series. DTC is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds securities that its direct participants deposit with DTC. DTC also facilitates the post-trade settlement among direct participants of sales and other securities transactions, in deposited securities through electronic computerized book-entry transfers and pledges between direct participants' accounts, thereby eliminating the need for physical movement of securities certificates.

Direct participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly, which are referred to as indirect participants and, together with the direct participants, the participants. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of global securities under the DTC system must be made by or through direct participants, who will receive a credit for the global securities on DTC's records. The ownership interest of each actual purchaser of each global security, or beneficial owner, is in turn to be recorded on the direct and indirect participants' records. Beneficial owners will not receive written confirmation from DTC of their purchase. Beneficial owners, however, are expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the direct or indirect participant through which the beneficial owner entered into the transaction. Transfers of ownership interests in the global securities are to be accomplished by entries made on the books of direct and indirect participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except in the event that use of the book-entry system for the global securities is discontinued.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of global securities with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual beneficial owners of the global securities; DTC's records reflect only the identity of the direct participants to whose accounts such global securities are credited which may or may not be the beneficial owners. The direct and indirect participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants, and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial owners of global securities may wish to take certain steps to augment transmission to them of notices of significant events with respect to the global securities, such as redemptions, tenders, defaults, and proposed amendments to the security documents. For example, beneficial owners of global securities may wish to ascertain that the nominee holding the global securities for their benefit has agreed to

obtain and transmit notices to beneficial owners, in the alternative, beneficial owners may wish to provide their names and addresses to the registrar and request that copies of the notices be provided directly to them.

If the global securities are redeemable, redemption notices shall be sent to DTC. If less than all of the global securities are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the global securities unless authorized by a direct participant in accordance with DTC's procedures. Under its usual procedures, DTC mails an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns Cede & Co.'s consenting or voting rights to those direct participants whose accounts the global securities are credited on the record date, identified in a listing attached to the omnibus proxy.

Principal, distributions, interest and premium payments, if any, on the global securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us or the trustee for such securities, on payable date in accordance with their respective holdings shown on DTC's records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such participant and not of DTC, the trustee for such securities, or us, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, distributions, interest and premium, if any, on any of the aforementioned securities represented by global securities to DTC is the responsibility of the appropriate trustee and us. Disbursement of such payments to direct participants shall be the responsibility of DTC, and disbursement of such payments to the beneficial owners shall be the responsibility of the participants.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources, including DTC, that we believe to be reliable, but we take no responsibility for the accuracy thereof.

The underwriters, dealers or agents of any of the securities may be direct participants of DTC.

None of the trustees, us or any agent for payment on or registration of transfer or exchange of any global security will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial interests in such global security or for maintaining, supervising or reviewing any records relating to such beneficial interests.

PLAN OF DISTRIBUTION

We may sell the securities in one or more of the following ways from time to time: (i) to underwriters for resale to the public or to institutional investors; (ii) directly to institutional investors; or (iii) through agents to the public or to institutional investors. The prospectus supplement with respect to each series of securities will set forth the terms of the offering of such securities, including the name or names of any underwriters or agents, the purchase price of such securities, and the proceeds to us from such sale, any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation, any initial public offering price, any discounts or concessions allowed or reallocated or paid to dealers and any securities exchange on which such securities may be listed.

If underwriters participate in the sale, such securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more of those firms. The specific managing underwriter or underwriters, if any, will be named in the prospectus supplement relating to the particular securities together with the members of the underwriting syndicate, if any.

Unless otherwise set forth in the applicable prospectus supplement, the obligations of the underwriters to purchase any series of securities will be subject to certain conditions precedent and the underwriters will be obligated to purchase all of such securities being offered, if any are purchased.

We may sell the securities directly or through agents we designate from time to time. The applicable prospectus supplement will set forth the name of any agent involved in the offer or sale of the securities in respect of which such prospectus supplement is delivered and any commissions payable by us to such agent. Unless otherwise indicated in the applicable prospectus supplement, any agent will be acting on a best efforts basis for the period of its appointment.

Underwriters and agents may be entitled under agreements entered into with us to indemnification against certain civil liabilities, including liabilities under the Securities Act of 1933, as amended. Underwriters and agents may engage in transactions with, or perform services for, us in the ordinary course of business.

Each series of securities will be a new issue of securities and will have no established trading market. Any underwriters to whom securities are sold for public offering and sale may make a market in such securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice. The securities may or may not be listed on a national securities exchange.

LEGAL MATTERS

Legal matters with respect to the securities offered under this prospectus will be passed upon for us by Mark English, Assistant General Counsel and Assistant Secretary and Dewey & LeBoeuf LLP. Davis Polk & Wardwell will pass on certain matters for the underwriters, dealers, purchasers, or agents. At May 1, 2009, Mr. English owned beneficially a number of shares of common stock of Great Plains Energy Incorporated, including restricted stock, and performance shares which may be paid in shares of common stock at a later date based on Great Plains Energy Incorporated's performance, which represented less than 0.1% of the total outstanding common stock of Great Plains Energy Incorporated.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, incorporated by reference in this prospectus from the Kansas City Power & Light Company and subsidiaries Annual Report on Form 10-K for the year ended December 31, 2008, and the effectiveness of Kansas City Power & Light Company and subsidiaries internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference (which reports (1) express an unqualified opinion on the consolidated financial statements and financial statement schedule and include an explanatory paragraph regarding the adoption of new accounting standards, and (2) express an unqualified opinion on the effectiveness of internal control over financial reporting). Such consolidated financial statements and financial schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports and other information with the SEC through the SEC's Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC's website (<http://www.sec.gov>). You may read and copy such material at the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to "incorporate by reference" into this prospectus the information we file with them. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus will automatically update and supersede this information. We

are incorporating by reference into this prospectus the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2008, filed with the SEC on February 27, 2009;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2009, filed with the SEC on May 11, 2009; and
- Our Current Reports on Form 8-K dated February 10, 2009 (Item 8.01 only) and filed with the SEC on February 10, 2009; March 6, 2009 and filed with the SEC on March 12, 2009; March 18, 2009 (Item 8.01 only) and filed with the SEC on March 19, 2009; March 19, 2009 and filed with the SEC on March 24, 2009; April 21, 2009 and filed with the SEC on April 21, 2009; and April 24, 2009 and filed with the SEC on April 30, 2009.

We and our parent company, Great Plains Energy Incorporated, separately filed the combined Annual Report on Form 10-K and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries) was separately filed by Great Plains Energy Incorporated on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus the information relating to Great Plains Energy Incorporated and its subsidiaries (other than KCP&L and its consolidated subsidiaries), and we make no representation as to the information relating to Great Plains Energy Incorporated and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1201 Walnut Street, Kansas City, Missouri 64106-2124 (Telephone No.: 816-556-2200), Attention: Corporate Secretary, or by contacting us on our website.

\$400,000,000



Kansas City Power & Light Company

5.30% Notes due 2041

PROSPECTUS SUPPLEMENT

September 15, 2011

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Senior Co-Manager

Scotia Capital

Co-Managers

BNY Mellon Capital Markets, LLC

KeyBanc Capital Markets

This preliminary prospectus supplement relates to an effective registration statement under the Securities Act of 1933, as amended, but is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not offers to sell these securities and are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED SEPTEMBER , 2011

**Preliminary Prospectus Supplement
(To Prospectus Dated May 11, 2009)**



**Kansas City Power & Light Company
% Notes due 20**

We will pay interest on the notes on and of each year, beginning . The notes will mature on . We may redeem the notes at any time in whole or from time to time in part at the price specified in this prospectus supplement.

The notes will be senior unsecured obligations of Kansas City Power & Light Company exclusively and will rank equally with any existing and future senior unsecured indebtedness of Kansas City Power & Light Company. The notes will not be listed on any securities exchange.

Investing in the notes involves risks that are described in the section entitled “Risk Factors” beginning on page S-10 of this prospectus supplement and beginning on page 3 of the accompanying prospectus.

| | Per Note | Total |
|---|----------|-------|
| Public offering price (1) | % | \$ |
| Underwriting discount | % | \$ |
| Proceeds, before expenses, to Kansas City Power & Light Company | % | \$ |

(1) Plus accrued interest from September , 2011, if settlement occurs after that date

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The notes will be ready for delivery in book-entry form only through The Depository Trust Company on or about September , 2011.

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Co-Managers

September , 2011

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of the notes. The second part is the accompanying prospectus dated May 11, 2009, which we refer to as the “accompanying prospectus.” The accompanying prospectus contains a description of debt securities and gives more general information, some of which may not apply to the notes.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or in any written communication from us or any underwriter specifying the final terms of this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Before you invest in the notes, you should carefully read the registration statement (including the exhibits thereto) of which this prospectus supplement and the accompanying prospectus form a part, this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and accompanying prospectus. The incorporated documents are described in this prospectus supplement under “Where You Can Find More Information.”

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy Incorporated (Great Plains Energy), separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement and the accompanying prospectus. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus supplement or when we otherwise refer to ourselves in this prospectus supplement, we mean Kansas City Power & Light Company and not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates of capital projects and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our future performance and are subject to risks and uncertainties, including those discussed under the heading “Risk Factors” in this prospectus supplement and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the

Private Securities Litigation Reform Act of 1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus supplement. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including but not limited to possible further deterioration in economic conditions and the timing and extent of economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry, Great Plains Energy and/or the Company;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- impairments of long-lived assets or goodwill;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- the inherent uncertainties in estimating the effects of weather, economic conditions and other factors on customer consumption and financial results;
- ability to achieve generation goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of generation, transmission, distribution or other projects;

- the inherent risks associated with the ownership and operation of a nuclear facility including, but not limited to, environmental, health, safety, regulatory and financial risks;
- workforce risks, including, but not limited to, increased costs of retirement, healthcare and other benefits; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus supplement, in the accompanying prospectus and in our other SEC filings.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, and proxy statements and other information with the Securities and Exchange Commission (the “SEC”) through the SEC’s Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC’s website (<http://www.sec.gov>). You may read and copy such material at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we file with it. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus supplement and the accompanying prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus supplement will automatically update and supersede this information. We are incorporating by reference into this prospectus supplement the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus supplement is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on February 25, 2011;
- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 3, 2011, and for the quarter ended June 30, 2011, filed with the SEC on August 5, 2011; and
- Our Current Reports on Form 8-K dated March 10, 2011 and filed with the SEC on March 10, 2011 and amended April 14, 2011; April 1, 2011 and filed with the SEC on April 6, 2011; April 12, 2011 and filed with the SEC on April 15, 2011; August 19, 2011 and filed with the SEC on August 29, 2011; and [...]

We and our parent company, Great Plains Energy, separately filed the combined Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries), including KCP&L Greater Missouri Operations Company, was separately filed by Great Plains Energy on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus supplement the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L), and we make no representation as to the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus supplement and the accompanying prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus supplement and the accompanying prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein except to the extent specifically so indicated. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1200 Main Street, Kansas City, Missouri 64105 (Telephone No.: (816) 556-2200), Attention: Corporate Secretary, or by contacting us on our website.

PROSPECTUS SUPPLEMENT SUMMARY

Our Company

Kansas City Power & Light Company is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2010, we served approximately 510,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 450,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2010. Our retail revenues averaged approximately 85% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter. KCP&L has one active wholly-owned subsidiary, Kansas City Power & Light Receivables Company.

Our principal executive offices are located at 1200 Main Street, Kansas City, Missouri 64105, and our telephone number is (816) 556-2200.

The Offering

The following summary contains basic information about the notes. It does not contain all the information that is important to you. For a more complete understanding of the notes, please refer to the section of this prospectus supplement entitled “Description of the Notes” and the section of the accompanying prospectus entitled “Description of Notes.”

| | |
|-------------------------------|--|
| Issuer | Kansas City Power & Light Company |
| Notes Offered | \$ aggregate principal amount of % Notes due . |
| Maturity | , . |
| Interest | The notes will bear interest from September , 2011 at the rate of % per year. |
| Interest Payment Dates | and of each year, beginning , 2012. |
| Ranking | The notes will be our senior unsecured obligations. They will rank equal in right of payment with our existing and future senior unsecured obligations and will be senior in right of payment to any existing and future subordinated indebtedness. The notes will be effectively subordinated to all of our existing and any future secured indebtedness, including our general mortgage bonds, to the extent of the collateral securing that indebtedness and to all existing and future liabilities, including trade payables, of our subsidiaries. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness. |
| Optional Redemption | Prior to , 20 (the date that is six months prior to the maturity date of the notes), we may redeem the notes at any time in whole or from time to time in part at the “make-whole premium” indicated under the section entitled “Description of the Notes—Optional Redemption” in this prospectus supplement. On or after , 20 , we may redeem the notes at any time in whole or from time to time in part at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest thereon. See “Description of the Notes—Optional Redemption” in this prospectus supplement. |
| Further Issuances | We may create and issue further notes ranking equally and ratably with and having the same terms as the notes offered by this prospectus supplement. Any additional notes will, together with the notes offered by this prospectus supplement, constitute a single series of notes under the indenture. |
| Use of Proceeds | The use of proceeds for this debt offering will be to repay all or a portion of KCP&L’s outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L’s 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011, KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%. |
| Risk Factors | See “Risk Factors” beginning on page S-10 of this prospectus supplement and page 3 of the accompanying prospectus and other |

information incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in the notes.

No Listing of the Notes.....

We do not intend to make application to list the notes on any national securities exchange or to include them in any automated quotation system.

Governing Law

The indenture and the notes will be governed by New York law.

Summary Consolidated Financial Data

The following consolidated summary financial data for the years ended December 31, 2010 through December 31, 2008 have been derived from our audited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The following summary of consolidated financial data for year to date June 30, 2011 and June 30, 2010 has been derived from our unaudited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The information set forth below is qualified in its entirety by reference to, and therefore, should be read together with, the relevant management's discussion and analysis of financial condition and results of operations, financial statements and related notes and other financial information incorporated by reference herein.

| | Year to Date June 30, | | Year Ended December 31, | | |
|--|---|-----------------|-------------------------|-----------------|-----------------|
| | 2011 | 2010 | 2010 | 2009 | 2008 |
| | (\$ in millions; except per share data) | | | | |
| Income Statement Data: | | | | | |
| Operating revenues | \$ 714.2 | \$ 708.2 | \$ 1,517.1 | \$ 1,318.2 | \$ 1,343.0 |
| Operating expenses | 609.9 | 583.0 | 1,205.7 | 1,086.0 | 1,104.9 |
| Operating income | <u>\$ 104.3</u> | <u>\$ 125.2</u> | <u>\$ 311.4</u> | <u>\$ 232.2</u> | <u>\$ 238.1</u> |
| Net income | <u>\$ 37.4</u> | <u>\$ 67.4</u> | <u>\$ 163.2</u> | <u>\$ 128.9</u> | <u>\$ 125.2</u> |
| Cash Flow Data: | | | | | |
| Cash flows from operating activities | \$ 87.8 | \$ 77.3 | \$ 422.2 | \$ 287.9 | \$ 419.0 |
| Cash flows from investing activities | (141.7) | (262.8) | (508.7) | (667.9) | (846.3) |
| Cash flows from financing activities | 52.8 | 172.1 | 72.7 | 392.0 | 429.5 |
| Other Financial Data: | | | | | |
| Depreciation and amortization | \$ 101.6 | \$ 125.8 | \$ 256.4 | \$ 229.6 | \$ 204.3 |
| Amortization of: | | | | | |
| Nuclear fuel | 5.9 | 12.8 | 25.1 | 16.1 | 14.5 |
| Other | 14.1 | 11.0 | 24.2 | 19.0 | 11.1 |
| Utility capital expenditures | (143.0) | (247.5) | (463.1) | (626.5) | (810.5) |

Ratios of Earnings to Fixed Charges

The following table sets forth our ratios of earnings to fixed charges for the periods indicated.

| Year to Date June 30, | Year Ended December 31, | | | | |
|----------------------------------|--------------------------------|-------------|-------------|-------------|-------------|
| 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| 1.81 | 2.86 | 2.44 | 2.87 | 3.53 | 4.11 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense, and the estimated interest component of lease payments and rentals.

RISK FACTORS

An investment in the notes is subject to various risks. These risks should be considered carefully with the information provided elsewhere and incorporated by reference in this prospectus supplement and the accompanying prospectus before deciding to invest in the notes. In addition to the risk factors set forth below, please read the information included or incorporated by reference under “Risk Factors” and “Cautionary Statements Regarding Certain Forward-Looking Information” in the accompanying prospectus, our Annual Report on Form 10-K for the year ended December 31, 2010 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011 and June 30, 2011 for a description of additional uncertainties associated with our business, results of operations and financial condition and the forward-looking statements included or incorporated by reference in this prospectus supplement and the accompanying prospectus. As used in this section, “we,” “our,” “us” and the “Company” refer to Kansas City Power & Light Company and not to any of its subsidiaries.

Indebtedness—Our indebtedness could adversely affect our ability to fulfill our obligations under the notes.

Our consolidated indebtedness and debt service obligations are significant. Our actual consolidated interest expense was \$85.7 million for the year ended December 31, 2010 and \$50.4 million for year to date June 30, 2011. As of June 30, 2011, our total consolidated long-term debt, including current maturities, was \$1.7 billion, excluding unused commitments and contractual obligations and other commitments, and our total shareholder’s equity was \$2.0 billion. Adjusted for this offering, as of June 30, 2011, our total consolidated long-term debt would have been \$ billion, our total stand-alone debt would have been \$ million and our total shareholder’s equity would have been unchanged. We may incur additional short-term and long-term debt from time to time to finance our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital or capital expenditures or for other general corporate purposes, subject to the restrictions contained in the credit agreement that governs our senior unsecured revolving credit facility and in any other agreements under which we incur debt.

The indenture governing the notes does not limit the amount of unsecured debt that we may incur. In general, the indenture also does not limit the amount of secured debt that we may incur.

The covenants contained in the indenture do not afford the holders of notes any protection in the event of a highly leveraged transaction or other transaction involving us that may adversely affect holders.

Our debt could have important consequences to holders of the notes, including the following:

- we are required to use a substantial portion of our consolidated cash flow from operations to pay principal and interest on our debt, thereby reducing the availability of our consolidated cash flow to fund our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital and capital expenditures and for other general corporate requirements;
- if prevailing interest rates increase, our interest expense could increase because any borrowings under our senior unsecured revolving credit facility will bear interest at floating rates;
- our leverage increases our vulnerability to economic downturns, and adverse competitive and industry conditions could place us at a competitive disadvantage compared to those of our competitors that are less leveraged; and
- our debt service obligations could limit our flexibility in planning for, or reacting to, changes in our business and our industry and could limit our ability to pursue other business opportunities, borrow more money for operations or raise capital in the future and implement our business strategies.

Unsecured Obligations—Because the notes are not secured and are effectively subordinated to the rights of secured creditors, the notes will be subject to the prior claims of any secured creditors, and if a default occurs, we may not have sufficient funds to fulfill our obligations under the notes.

The notes are senior unsecured obligations and will rank equally with any future unsecured and unsubordinated debt and will be effectively junior to our existing secured debt and any future secured debt we may incur. The indenture governing the notes does not limit the amount of unsecured debt that we may incur or restrict us from entering into sale and leaseback transactions. In general, the indenture also does not limit the amount of secured debt that we may incur. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness.

Our assets and those of our subsidiaries which secure our existing or future secured debt will be subject to prior claims by our and their respective secured creditors. In the event of our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up, assets that secure debt will be available to pay obligations on the notes only after all debt secured by those assets has been repaid in full. Holders of the notes will participate in any remaining assets ratably with all of our unsecured and unsubordinated creditors, including trade creditors. If we incur any additional obligations that rank equally with the notes, including trade payables, the holders of those obligations will be entitled to share ratably with the holders of the notes in any proceeds distributed upon our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up. This may have the effect of reducing the amount of proceeds paid to holders of the notes. If there are not sufficient assets remaining to pay all these creditors, all or a portion of the notes then outstanding would remain unpaid.

No Guarantees—Our parent company is not guaranteeing the notes and you should not rely upon information relating to our parent company in determining whether to invest in the notes.

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or distribution to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

No Prior Market for the Notes—There is no prior market for the notes, and if a market develops, it may not be liquid and prices of the notes may vary.

We do not intend to list the notes on any national securities exchange or to seek their quotation on any automated dealer quotation system. We cannot assure holders of the notes that any liquid market for the notes will ever develop or be maintained. The underwriters have advised us that they currently intend to make a market in the notes following the offering. However, the underwriters have no obligation to make a market in the notes and they may stop at any time. Further, there can be no assurance as to the liquidity of any market that may develop for the notes, holders’ ability to sell their notes or the price at which holders will be able to sell their notes. Future trading prices of the notes will depend on many factors, including prevailing interest rates, our financial condition and results of operations, the then-current ratings assigned to the notes and the market for similar securities. Any trading market that develops would be affected by many factors independent of and in addition to the foregoing, including:

- the time remaining to the maturity of the notes;
- the outstanding amount of the notes;
- the terms related to optional redemption of the notes; and

- the level, direction and volatility of market interest rates generally.

KCP&L and certain of its securities are rated by Moody's Investors Service, Inc. and Standard & Poor's Ratings Services. There is no assurance that such credit ratings will be issued or remain in effect for any given period of time or that such ratings will not be decreased, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant. KCP&L's credit ratings could decrease as a result of events directly affecting Great Plains Energy and its subsidiaries (other than KCP&L and its subsidiaries), even though Great Plains Energy is not guaranteeing the notes and is not generally obligated to provide credit support to us. Holders of notes will have no recourse against us or any other parties in the event of a change in or suspension or withdrawal of such ratings. Any decrease, suspension or withdrawal of such ratings may have an adverse effect on the market price or marketability of debt securities issued by us, including the notes.

USE OF PROCEEDS

We estimate the net proceeds to us from the sale of the notes will be approximately \$ million, after deducting the underwriting discount and other expenses of the offering payable by us. We expect to use the net proceeds of this offering to repay all or a portion of KCP&L's outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L's 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011 KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%.

CAPITALIZATION AND SHORT-TERM DEBT

The following table sets forth our consolidated capitalization as of June 30, 2011, and as adjusted to give effect to the issuance and sale of the notes and the use of proceeds from this offering as set forth under "Use of Proceeds" above. This table should be read in conjunction with our consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. See "Where You Can Find More Information" in this prospectus supplement.

| | June 30, 2011 | |
|---|-------------------|-------------|
| | Actual | As Adjusted |
| | (\$ in millions) | |
| Short-term debt (includes current maturities) | \$ 734.4 | \$ |
| Long-term debt | \$ 1,504.7 | |
| Shareholder's equity: | | |
| Common stock (1,000 shares authorized without par value; 1 share issued, stated value) | \$ 1,563.1 | \$ |
| Retained earnings | 465.7 | |
| Accumulated other comprehensive loss | (33.8) | |
| Total shareholder's equity | 1995.0 | |
| Total capitalization and short-term debt | <u>\$ 4,234.1</u> | <u>\$</u> |

DESCRIPTION OF THE NOTES

The following description of the particular terms of the notes supplements and, to the extent inconsistent therewith, replaces the description of the general terms and provisions of the notes set forth in the accompanying prospectus under "Description of Notes," to which reference is hereby made. Whenever a defined term is referred to and not herein defined, the definition thereof is contained in the accompanying prospectus or in the indenture referred to therein. As used in this section, the terms "we," "us," "our," and "KCP&L" refer to Kansas City Power & Light Company only and not to its subsidiaries.

The following description, together with the "Description of Notes" in the accompanying prospectus, is a summary of the material provisions of the notes and the indenture and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the notes and the indenture, including the definition of certain terms used in the indenture. We urge you to read the indenture because it, and not this description, defines your rights as a holder of the notes.

General

The notes constitute a single series of debt securities to be issued pursuant to an indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee. The terms of the notes include those expressly set forth in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as amended. The notes will initially be limited to \$ _____ aggregate principal amount and will mature on _____, 20____.

The notes will bear interest at the rate per year set forth on the cover page of this prospectus supplement from the date of issuance or from the most recent interest payment date to which interest has been paid or provided for, payable semi-annually in arrears on _____ and _____ of each year, beginning _____, 2012, to the persons in whose names the notes are registered at the close of business on the immediately preceding _____ and _____, respectively, whether or not such day is a Business Day. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months (and for any partial periods shall be calculated on the basis of the number of days elapsed in a 360-day year of twelve 30-day months). If any date on which interest is payable on the notes is not a Business Day, then payment of the interest payable on that date will be made on the next succeeding day which is a Business Day (and without any additional interest or other payment in respect of any delay).

The notes will be direct unsecured obligations of KCP&L exclusively, and not the obligation of any of our affiliates. The notes will (i) rank equally with our existing and future senior unsecured indebtedness, (ii) be effectively subordinated (with respect to underlying collateral) to any secured indebtedness now outstanding or that we may incur in the future, and (iii) be structurally subordinated to all indebtedness of the Company's subsidiaries.

The notes will be issued only in registered form in minimum denominations of \$2,000 and in integral multiples of \$1,000 in excess thereof.

We will initially offer \$ _____ aggregate principal amount of notes. Subject to the terms of the indenture, we may, at any time, without consent of the holders of the notes, issue additional notes having the same ranking, interest rate, maturity and other terms (except for the initial public offering price and the issue date) as the notes being offered hereby; provided that such additional notes must be part of the same issue and fungible with the initially issued notes for U.S. federal income tax purposes. Any such additional notes, together with the notes offered hereby, will constitute a single series of notes under the indenture.

Optional Redemption

Prior to _____, 20____ (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, each at a "make-whole premium" redemption price calculated by us equal to the greater of:

- 100% of the principal amount of the notes to be redeemed; and

- the sum of the present values of the remaining scheduled payments of principal and interest thereon (not including any portion of such payments of interest accrued as of the date of redemption), discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Treasury Rate, plus basis points,

plus, in each case, accrued and unpaid interest on the principal amount being redeemed to the date of redemption. Notwithstanding the foregoing, installments of interest on notes that are due and payable on interest payment dates falling on or prior to a redemption date will be payable on the interest payment date to the registered holders as of the close of business on the relevant record date according to the notes and the indenture.

On or after , 20 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest on the principal amount being redeemed to the date of redemption.

“Comparable Treasury Issue” means the United States Treasury security selected by the Quotation Agent as having a maturity comparable to the remaining term of the notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of such notes.

“Comparable Treasury Price” means, with respect to any redemption date,

- the average of four Reference Treasury Dealer Quotations for such redemption date, after excluding the highest and lowest such Reference Treasury Dealer Quotations, or
- if the Quotation Agent obtains fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations, or
- if only one Reference Treasury Dealer Quotation is received, such quotation.

“Quotation Agent” means the Reference Treasury Dealer appointed by us.

“Reference Treasury Dealer” means

- each of Barclays Capital Inc. and RBS Securities Inc. or their affiliates, and their respective successors, unless either of them ceases to be a primary U.S. government securities dealer in the United States of America (“Primary Treasury Dealer”), in which case we will substitute therefore another Primary Treasury Dealer,
- a Primary Treasury Dealer selected by Wells Fargo Securities, LLC, and
- two other Primary Treasury Dealers that we select.

“Reference Treasury Dealer Quotations” means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by the Quotation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Quotation Agent by such Reference Treasury Dealer at 5:00 p.m., New York City time, on the third business day preceding such redemption date.

“Treasury Rate” means, with respect to any redemption date, the rate per annum equal to the semi-annual equivalent yield to maturity of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

Notice of any redemption will be mailed at least 30 days but not more than 60 days before the redemption date to each holder of the notes to be redeemed. Unless we default in payment of the redemption price, on and after

the redemption date, interest will cease to accrue on the notes or portions thereof called for redemption. If less than all of the notes are to be redeemed, the particular notes or portions of such notes to be redeemed will be selected by The Depository Trust Company in such manner as it shall determine.

Notwithstanding the foregoing, any notice of redemption at our option may state that such redemption will be conditional upon receipt by the Trustee on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

No Guarantees

The notes are not guaranteed by our parent company, Great Plains Energy, or any of its or our subsidiaries. None of those entities has any obligation to make capital contribution or distributions to KCP&L for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture or complying with any other obligation under the indenture or the notes or otherwise.

Book-entry System

Upon issuance, the notes will be represented by one or more global securities deposited with, or on behalf of, The Depository Trust Company, as depository. The global securities representing the notes will be registered in the name of the depository or its nominee. Except under the circumstances described in the accompanying prospectus under “Book-Entry System,” the notes will not be issuable in definitive form. So long as the notes are represented by one or more global securities, the depository or its nominee will be considered the sole owner or holder of such notes for all purposes under the indenture, and the beneficial owners of such notes will be entitled only to those rights and benefits afforded to them in accordance with the depository’s regular operating procedures. The depository has confirmed to us, the underwriters and the Trustee that it intends to follow such procedures with respect to the notes. A further description of the depository’s procedures with respect to global securities is set forth in the accompanying prospectus under “Book-Entry System.”

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

The following discussion summarizes the material U.S. federal income tax considerations to U.S. Holders and Non-U.S. Holders (each, as defined below) of the purchase, ownership and disposition of the notes. It is included herein for general information purposes only and does not address all tax considerations that may be relevant to investors in light of their personal investment circumstances or that may be relevant to certain types of investors subject to special rules (for example, financial institutions, tax-exempt organizations, insurance companies, regulated investment companies, persons that are broker-dealers, traders in securities who elect the mark to market method of accounting for their securities, U.S. Holders that have a functional currency other than the U.S. dollar, certain former U.S. citizens or long-term residents, retirement plans, real estate investment trusts, foreign governments, international organizations, controlled foreign corporations, passive foreign investment companies, investors in partnerships or other pass-through entities or persons holding the notes as part of a “straddle,” “hedge,” “conversion transaction” or other integrated transaction). The discussion set forth below is limited to initial investors who hold the notes as capital assets within the meaning of Section 1221 of the Code and who purchase the notes for cash at the initial “issue price” (i.e., the first price to the public, excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers, at which a substantial amount of the notes is sold for money). In addition, this discussion does not address the effect of U.S. federal alternative minimum tax, gift or estate tax laws, or any state, local or foreign tax laws. Furthermore, the discussion below is based upon provisions of the Code, the legislative history thereof, U.S. Treasury regulations thereunder and administrative rulings and judicial decisions thereunder as of the date hereof. Such authorities may be repealed, revoked or modified (including changes in effective dates, and possibly with retroactive effect) so as to result in U.S. federal income tax considerations different from those discussed below. We have not sought any rulings from the Internal Revenue Service (“IRS”) with respect to the statements and conclusions made in the following discussion, and there can be no assurance that the IRS will agree with such statements and conclusions or that a court will not sustain any challenge by the IRS in the event of litigation.

For purposes of the following discussion, a “U.S. Holder” means a beneficial owner of the notes that, for U.S. federal income tax purposes, is:

- an individual who is a citizen or resident of the United States;
- a corporation (including, for the purposes of the following discussion, any entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (i) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined under the Code) have the authority to control all substantial decisions of the trust or (ii) the trust has a valid election in place to be treated as a United States person for U.S. federal income tax purposes.

For purposes of the following discussion, a “Non-U.S. Holder” means a beneficial owner of the notes that is neither a U.S. Holder nor a partnership (including, for the purposes of the following discussion, any entity or arrangement treated as a partnership for U.S. federal income tax purposes).

If a partnership holds the notes, the U.S. federal income tax treatment of a partner in the partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships and partners in such partnerships should consult their own tax advisors about the tax consequences of the purchase, ownership and disposition of the notes.

THIS DISCUSSION OF MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS IS NOT INTENDED, AND SHOULD NOT BE CONSTRUED, TO BE TAX OR LEGAL ADVICE TO ANY PARTICULAR INVESTOR IN THE NOTES. PROSPECTIVE INVESTORS ARE ADVISED TO CONSULT THEIR OWN TAX ADVISORS CONCERNING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSIDERATIONS ARISING UNDER THE LAWS OF ANY STATE, LOCAL OR FOREIGN TAXING JURISDICTION OR ANY APPLICABLE TAX TREATIES, AND THE POSSIBLE EFFECT OF CHANGES IN APPLICABLE TAX LAW.

Effect of Certain Additional Payments

In certain circumstances (for example, see “Description of the Notes—Optional Redemption”) we may be obligated to pay amounts on the notes that are in excess of stated interest or principal on the notes. These potential payments may implicate the provisions of the Treasury Regulations relating to “contingent payment debt instruments” (the “CPDI Regulations”). One or more contingencies will not cause the notes to be treated as a contingent payment debt instrument if, as of the issue date, each such contingency is considered remote or incidental or another exception from such treatment applies. We believe that the potential for additional payments on the notes should not cause the notes to be treated as contingent payment debt instruments under the CPDI Regulations. Our determination is binding on a holder unless such holder discloses its contrary position in the manner required by applicable Treasury Regulations. However, the IRS may take a different position, which could require a holder to accrue income on its notes in excess of stated interest, and to treat any income realized on the taxable disposition of a note as ordinary income rather than capital gain. The remainder of this discussion assumes that the notes will not be treated as contingent payment debt instruments. Investors should consult their own tax advisors regarding the possible application of the contingent payment debt instrument rules to the notes.

U.S. Holders

Stated Interest

We expect that the notes will not be issued with original issue discount for U.S. federal income tax purposes, based on our assumption that the stated principal amount of the notes will not exceed their issue price by more than a *de minimis* amount. Accordingly, stated interest on the notes will be taxable as ordinary income as such interest is received or accrued, depending on the U.S. Holder's regular method of accounting for U.S. federal income tax purposes. However, if, contrary to our expectation, the notes are issued with original issue discount for U.S. federal income tax purposes, each U.S. Holder generally will be required to include the original issue discount in its income as it accrues using a constant yield method, regardless of the U.S. Holder's regular method of accounting for U.S. federal income tax purposes, possibly before such U.S. Holder receives any payment attributable to such income. The rules regarding original issue discount are complex and U.S. Holders should consult their own tax advisors regarding their application. The remainder of this discussion assumes that the notes will not be issued with original issue discount for U.S. federal income tax purposes.¹

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Upon a sale, taxable exchange, redemption or other taxable disposition of a note, a U.S. Holder will recognize gain or loss equal to the difference between the amount realized on the disposition, other than amounts attributable to accrued but unpaid interest (which will be taxed in the same manner as stated interest, as described in the preceding paragraph), and the U.S. Holder's adjusted tax basis in the note. A U.S. Holder's adjusted tax basis in a note generally will equal the cost of the note to such holder. Any gain or loss on such disposition will be capital gain or loss and will be long-term capital gain or loss if the U.S. Holder has held the note for longer than 12 months on the date of such disposition. In the case of a U.S. Holder that is not a corporation, long-term capital gains are eligible for preferential rates of taxation. The deductibility of capital losses is subject to limitations.

Medicare Tax

For taxable years beginning after December 31, 2012, a U.S. Holder that is an individual, an estate or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. Holder's "net investment income" (in the case of individuals) or "undistributed net investment income" (in the case of estates and trusts) for the relevant taxable year and (2) the excess of the U.S. Holder's "modified adjusted gross income" (in the case of individuals) or "adjusted gross income" (in the case of estates and trusts) for the taxable year over a certain threshold (which in the case of individuals will be between \$125,000 and \$250,000, depending on the individual's circumstances). A U.S. Holder's net investment income generally will include its interest income on the notes and its net gains from the disposition of the notes, unless such interest income or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). U.S. Holders that are individuals, estates or trusts should consult their own tax advisors regarding the applicability of the Medicare tax to their income and gains in respect of their investment in the notes.

Information Reporting and Backup Withholding

A U.S. Holder generally will be subject to information reporting with respect to payments in respect of principal, interest and the gross proceeds from a disposition of the notes unless the U.S. Holder is an exempt recipient such as a corporation. A U.S. Holder generally will be subject to backup withholding with respect to these payments if the U.S. Holder fails to furnish its social security or other taxpayer identification number ("TIN") or otherwise fails to establish an exemption from backup withholding.

¹ Note: Please confirm no OID.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

Non-U.S. Holders

Stated Interest

Subject to the discussion of backup withholding below, payments of interest on the notes to a Non-U.S. Holder generally will not be subject to U.S. withholding tax provided that (1) the Non-U.S. Holder does not actually or constructively own 10% or more of the total combined voting power of all classes of our voting stock, (2) the Non-U.S. Holder is not (a) a controlled foreign corporation that is related to us through actual or deemed stock ownership or (b) a bank receiving interest on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, (3) such interest is not effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States, and (4) either (a) the Non-U.S. Holder provides its name and address on an IRS Form W-8BEN (or other applicable form) and certifies, under penalties of perjury, that it is not a United States person or (b) a securities clearing organization, bank or other financial institution holding the notes on the Non-U.S. Holder's behalf certifies, under penalties of perjury, that it has received a properly executed IRS Form W-8BEN (or other applicable form) from the Non-U.S. Holder and it provides the withholding agent with a copy.

If a Non-U.S. Holder cannot satisfy the requirements in the preceding paragraph, payments of interest made to such Non-U.S. Holder will be subject to U.S. federal withholding tax, currently at a rate of 30%, unless such Non-U.S. Holder (1) timely provides the withholding agent with a properly executed IRS Form W-8BEN (or other applicable form) claiming an exemption from or reduction in withholding under the benefit of an applicable income tax treaty or IRS Form W-8ECI (or other applicable form) certifying that interest paid on the notes is not subject to U.S. federal withholding tax because it is effectively connected with such Non-U.S. Holder's conduct of a trade or business in the United States, or (2) otherwise properly establishes an exemption from withholding taxes.

If interest on the notes is effectively connected with the conduct by a Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), such interest will be subject to U.S. federal income tax on a net income basis at the rate applicable to United States persons generally (and a Non-U.S. Holder that is a corporation may also be subject to a branch profits tax equal to 30% of its effectively connected earnings and profits, subject to certain adjustments, unless such holder qualifies for a lower rate under an applicable income tax treaty). If interest is subject to U.S. federal income tax on a net income basis in accordance with these rules, such payments will not be subject to U.S. federal withholding tax so long as the relevant Non-U.S. Holder timely provides the withholding agent with the appropriate documentation.

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Subject to the discussion of backup withholding below, any gain realized by a Non-U.S. Holder on the sale, taxable exchange, redemption or other taxable disposition of the notes generally will not be subject to U.S. federal income tax, unless (1) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), in which case such gain will be taxed on a net income basis in the same manner as interest that is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and a Non-U.S. Holder that is a corporation may also be subject to the branch profits tax as described above) or (2) the Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are satisfied, in which case the Non-U.S. Holder will be subject to a tax, currently at a rate of 30%, on the excess, if any, of such gain plus all other U.S. source capital gains recognized during the same taxable year over the Non-U.S. Holder's U.S. source capital losses recognized during such taxable year.

Information Reporting and Backup Withholding

Information returns generally will be filed with the IRS in connection with payments of interest on the notes. Copies of the information returns reporting such interest payments and any withholding therefrom may also be made available to the tax authorities in the country in which a Non-U.S. Holder resides under the provisions of an applicable income tax treaty. Unless a Non-U.S. Holder complies with certification procedures to establish that it is not a United States person, information returns may be filed with the IRS in connection with the proceeds from a sale or other disposition of the notes and the Non-U.S. Holder may be subject to backup withholding on payments on the notes or on the proceeds from a sale or other disposition of the notes. Compliance with the certification procedures required to claim the exemption from withholding tax on interest described above will satisfy the certification requirements necessary to avoid backup withholding as well.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

Non-U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

Recently Enacted Legislation

Recently enacted legislation regarding foreign account tax compliance, effective for payments made after December 31, 2012, imposes a withholding tax of 30% on interest and gross proceeds from the disposition of certain debt instruments paid to certain foreign entities unless various information reporting and certain other requirements are satisfied. However, the withholding tax will not be imposed on payments pursuant to obligations outstanding as of March 18, 2012. Nonetheless, certain account information with respect to U.S. Holders who hold notes through certain foreign financial institutions may be reportable to the IRS. Investors should consult with their own tax advisors regarding the possible implications of this recently enacted legislation on their investment in the notes.

THE PRECEDING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. ACCORDINGLY, EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO IT OF PURCHASING, OWNING AND DISPOSING OF NOTES, INCLUDING THE APPLICABILITY AND EFFECT OF ANY STATE, LOCAL OR FOREIGN TAX LAWS, AND OF ANY PROPOSED CHANGES IN APPLICABLE LAW.

UNDERWRITING

Subject to the terms and conditions contained in an underwriting agreement, dated as of the date of this prospectus supplement between us and the underwriters named below, for whom Barclays Capital, Inc., RBS Securities Inc. and Wells Fargo Securities, LLC are acting as representatives, we have agreed to sell to each underwriter, and each underwriter has severally agreed to purchase from us, the principal amount of notes that appears opposite its name in the table below:

| Underwriter | Principal Amount of Notes |
|-----------------------------------|------------------------------|
| Barclays Capital Inc..... | \$ |
| RBS Securities Inc..... | |
| Wells Fargo Securities, LLC | |
| [to come]..... | |
| [to come]..... | |
| [to come]..... | |
| [to come]..... | |
| Total | \$ |

The underwriters are offering the notes subject to their acceptance of the notes from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the notes offered by this prospectus supplement are subject to certain conditions. The underwriters are obligated to take and pay for all of the notes offered by this prospectus supplement if any such notes are taken.

The underwriters initially propose to offer the notes to the public at the public offering price that appears on the cover page of this prospectus supplement. In addition, the underwriters may offer the notes to certain dealers at prices that represent a concession not in excess of % of the principal amount of the notes. Any underwriter may allow, and any such dealer may reallow, a concession not in excess of % of the principal amount of the notes to certain other dealers. After the initial offering of the notes, the underwriters may from time to time vary the offering prices and other selling terms. The underwriters may offer and sell notes through certain of their affiliates.

The following table shows the underwriting discount that we will pay to the underwriters in connection with the offering of the notes:

| | Paid by Us |
|----------------|------------|
| Per Note | % |
| Total..... | \$ |

Expenses associated with this offering to be paid by us, other than the underwriting discount, are estimated to be approximately \$.

We have also agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments which the underwriters may be required to make in respect of any such liabilities.

The notes are a new issue of securities, and there is currently no established trading market for the notes. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. The underwriters have advised us that they intend to make a market in the notes, but they are not obligated to do so. At their sole discretion, the underwriters may discontinue any market making in the notes at any time without notice. Accordingly, we cannot assure you that a liquid trading market will develop for the notes, that you will be able to sell your notes at a particular time or that the prices you receive when you sell will be favorable.

In connection with the offering of the notes, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the prices of the notes. Specifically, the underwriters may over allot in connection with

the offering of the notes, creating syndicate short positions. In addition, the underwriters may bid for and purchase notes in the open market to cover syndicate short positions or to stabilize the price of the notes. Finally, the underwriting syndicate may reclaim selling concessions allowed for distributing the notes in the offering if the syndicate repurchases previously distributed notes in syndicate covering transactions, stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market prices of the notes above independent market levels. The underwriters are not required to engage in any of these activities, and may end any of them at any time without notice.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “Relevant Implementation Date”) it has not made and will not make an offer of notes which are the subject of the offering contemplated by this Prospectus to the public in that Relevant Member State other than:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters for any such offer; or
- (c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of notes shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer of notes to the public” in relation to any notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe for the notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the “FSMA”)) received by it in connection with the issue or sale of the notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and instruments of KCP&L or its subsidiaries. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

The underwriters and their affiliates have provided and in the future may continue to provide investment banking, commercial banking and other financial services, including the provision of credit facilities, to us and our affiliates in the ordinary course of business for which they have received and will receive customary compensation. Affiliates of certain of the underwriters are lenders under revolving credit agreements entered into separately with Great Plains Energy, KCP&L and GMO in August 2010. In connection with these arrangements, affiliates of Wells Fargo Securities, LLC acted as joint lead arranger, joint book manager, syndication agent and lender, and affiliates of Barclays Capital Inc. and RBS Securities acted as documentation agents and lenders.

LEGAL MATTERS

Certain legal matters in connection with the offering of the notes will be passed upon for us by Jaileah X. Huddleston, Assistant Secretary and Corporate Counsel – Securities and Finance and Dewey & LeBoeuf LLP, New York, New York. Certain legal matters will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California.

At September __, 2011, Ms. Huddleston owned beneficially a number of shares of Great Plains Energy's common stock, including restricted stock, and performance shares which may be paid in shares of Great Plains Energy common stock at a later date based on Great Plains Energy's performance, which represented less than 0.1% of the total outstanding common stock.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, of Kansas City Power & Light Company and its subsidiaries, incorporated by reference in this prospectus supplement from the Annual Report on Form 10-K of Kansas City Power & Light Company for the year ended December 31, 2010, and the effectiveness of Kansas City Power & Light Company's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports which are incorporated herein by reference. Such financial statements and financial statement schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.



Kansas City Power & Light Company

% Notes due 20

PROSPECTUS SUPPLEMENT
September , 2011

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Co-Managers

\$400,000,000



Kansas City Power & Light Company

5.30% Notes due 2041

We will pay interest on the notes on April 1 and October 1 of each year, beginning April 1, 2012. The notes will mature on October 1, 2041. We may redeem the notes at any time in whole or from time to time in part at the price specified in this prospectus supplement.

The notes will be senior unsecured obligations of Kansas City Power & Light Company exclusively and will rank equally with any existing and future senior unsecured indebtedness of Kansas City Power & Light Company. The notes will not be listed on any securities exchange.

Investing in the notes involves risks that are described in the section entitled “Risk Factors” beginning on page S-8 of this prospectus supplement and beginning on page 3 of the accompanying prospectus.

| | <u>Per Note</u> | <u>Total</u> |
|---|-----------------|---------------|
| Public offering price ⁽¹⁾ | 99.358% | \$397,432,000 |
| Underwriting discount | 0.875% | \$ 3,500,000 |
| Proceeds, before expenses, to Kansas City Power & Light Company | 98.483% | \$393,932,000 |

(1) Plus accrued interest from September 20, 2011, if settlement occurs after that date

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The notes will be ready for delivery in book-entry form only through The Depository Trust Company on or about September 20, 2011.

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Senior Co-Manager

Scotia Capital

Co-Managers

BNY Mellon Capital Markets, LLC

KeyBanc Capital Markets

September 15, 2011

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Prospectus

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the terms of the offering of the notes. The second part is the accompanying prospectus dated May 11, 2009, which we refer to as the “accompanying prospectus.” The accompanying prospectus contains a description of debt securities and gives more general information, some of which may not apply to the notes.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or in any written communication from us or any underwriter specifying the final terms of this offering. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Before you invest in the notes, you should carefully read the registration statement (including the exhibits thereto) of which this prospectus supplement and the accompanying prospectus form a part, this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and accompanying prospectus. The incorporated documents are described in this prospectus supplement under “Where You Can Find More Information.”

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy Incorporated (Great Plains Energy), separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement and the accompanying prospectus. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus supplement or when we otherwise refer to ourselves in this prospectus supplement, we mean Kansas City Power & Light Company and not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus supplement, the accompanying prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates of capital projects and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our future performance and are subject to risks and uncertainties, including those discussed under the heading “Risk Factors” in this prospectus supplement and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of

1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus supplement. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including but not limited to possible further deterioration in economic conditions and the timing and extent of economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry, Great Plains Energy and/or the Company;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- impairments of long-lived assets or goodwill;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- the inherent uncertainties in estimating the effects of weather, economic conditions and other factors on customer consumption and financial results;
- ability to achieve generation goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of generation, transmission, distribution or other projects;
- the inherent risks associated with the ownership and operation of a nuclear facility including, but not limited to, environmental, health, safety, regulatory and financial risks;
- workforce risks, including, but not limited to, increased costs of retirement, healthcare and other benefits; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus supplement, in the accompanying prospectus and in our other SEC filings.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, and proxy statements and other information with the Securities and Exchange Commission (the “SEC”) through the SEC’s Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC’s website (<http://www.sec.gov>). You may read and copy such material at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we file with it. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus supplement and the accompanying prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus supplement will automatically update and supersede this information. We are incorporating by reference into this prospectus supplement the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus supplement is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2010, filed with the SEC on February 25, 2011;
- Our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2011, filed with the SEC on May 3, 2011, and for the quarter ended June 30, 2011, filed with the SEC on August 5, 2011; and
- Our Current Reports on Form 8-K dated March 10, 2011 and filed with the SEC on March 10, 2011 and amended April 14, 2011; April 1, 2011 and filed with the SEC on April 6, 2011; April 12, 2011 and filed with the SEC on April 15, 2011; August 19, 2011 and filed with the SEC on August 29, 2011; and September 9, 2011 (Item 1.01 only) and filed with the SEC on September 13, 2011.

We and our parent company, Great Plains Energy, separately filed the combined Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries), including KCP&L Greater Missouri Operations Company, was separately filed by Great Plains Energy on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus supplement the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L), and we make no representation as to the information relating to Great Plains Energy and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus supplement and the accompanying prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus supplement and the accompanying prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein except to the extent specifically so indicated. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1200 Main Street, Kansas City, Missouri 64105 (Telephone No.: (816) 556-2200), Attention: Corporate Secretary, or by contacting us on our website.

PROSPECTUS SUPPLEMENT SUMMARY

Our Company

Kansas City Power & Light Company is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2010, we served approximately 510,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 450,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2010. Our retail revenues averaged approximately 85% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter. KCP&L has one active wholly-owned subsidiary, Kansas City Power & Light Receivables Company.

Our principal executive offices are located at 1200 Main Street, Kansas City, Missouri 64105, and our telephone number is (816) 556-2200.

The Offering

The following summary contains basic information about the notes. It does not contain all the information that is important to you. For a more complete understanding of the notes, please refer to the section of this prospectus supplement entitled “Description of the Notes” and the section of the accompanying prospectus entitled “Description of Notes.”

| | |
|-------------------------------------|---|
| Issuer | Kansas City Power & Light Company |
| Notes Offered | \$400,000,000 aggregate principal amount of 5.30% Notes due 2041. |
| Maturity | October 1, 2041. |
| Interest | The notes will bear interest from September 20, 2011 at the rate of 5.30% per year. |
| Interest Payment Dates | April 1 and October 1 of each year, beginning April 1, 2012. |
| Ranking | The notes will be our senior unsecured obligations. They will rank equal in right of payment with our existing and future senior unsecured obligations and will be senior in right of payment to any existing and future subordinated indebtedness. The notes will be effectively subordinated to all of our existing and any future secured indebtedness, including our general mortgage bonds, to the extent of the collateral securing that indebtedness and to all existing and future liabilities, including trade payables, of our subsidiaries. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness. |
| Optional Redemption | <p>Prior to April 1, 2041 (the date that is six months prior to the maturity date of the notes), we may redeem the notes at any time in whole or from time to time in part at the “make-whole premium” indicated under the section entitled “Description of the Notes — Optional Redemption” in this prospectus supplement.</p> <p>On or after April 1, 2041, we may redeem the notes at any time in whole or from time to time in part at a redemption price equal to 100% of the principal amount of the notes to be redeemed plus accrued and unpaid interest thereon. See “Description of the Notes — Optional Redemption” in this prospectus supplement.</p> |
| Further Issuances | We may create and issue further notes ranking equally and ratably with and having the same terms as the notes offered by this prospectus supplement. Any additional notes will, together with the notes offered by this prospectus supplement, constitute a single series of notes under the indenture. |
| Use of Proceeds | The use of proceeds for this debt offering will be to repay all or a portion of KCP&L’s outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L’s 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011, KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%. |

| | |
|--|--|
| Risk Factors | See “Risk Factors” beginning on page S-8 of this prospectus supplement and page 3 of the accompanying prospectus and other information incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in the notes. |
| No Listing of the Notes | We do not intend to make application to list the notes on any national securities exchange or to include them in any automated quotation system. |
| Governing Law | The indenture and the notes will be governed by New York law. |

Summary Consolidated Financial Data

The following consolidated summary financial data for the years ended December 31, 2010 through December 31, 2008 have been derived from our audited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The following summary of consolidated financial data for year to date June 30, 2011 and June 30, 2010 has been derived from our unaudited consolidated financial statements and related notes, incorporated by reference in this prospectus supplement and the accompanying prospectus. The information set forth below is qualified in its entirety by reference to, and therefore, should be read together with, the relevant management's discussion and analysis of financial condition and results of operations, financial statements and related notes and other financial information incorporated by reference herein.

| | Year to Date June 30, | | Year Ended December 31, | | |
|--|---|-----------------|-------------------------|-----------------|-----------------|
| | 2011 | 2010 | 2010 | 2009 | 2008 |
| | (\$ in millions; except per share data) | | | | |
| Income Statement Data: | | | | | |
| Operating revenues | \$ 714.2 | \$ 708.2 | \$1,517.1 | \$1,318.2 | \$1,343.0 |
| Operating expenses | 609.9 | 583.0 | 1,205.7 | 1,086.0 | 1,104.9 |
| Operating income | <u>\$ 104.3</u> | <u>\$ 125.2</u> | <u>\$ 311.4</u> | <u>\$ 232.2</u> | <u>\$ 238.1</u> |
| Net income | <u>\$ 37.4</u> | <u>\$ 67.4</u> | <u>\$ 163.2</u> | <u>\$ 128.9</u> | <u>\$ 125.2</u> |
| Cash Flow Data: | | | | | |
| Cash flows from operating activities | \$ 87.8 | \$ 77.3 | \$ 422.2 | \$ 287.9 | \$ 419.0 |
| Cash flows from investing activities | (141.7) | (262.8) | (508.7) | (667.9) | (846.3) |
| Cash flows from financing activities | 52.8 | 172.1 | 72.7 | 392.0 | 429.5 |
| Other Financial Data: | | | | | |
| Depreciation and amortization | \$ 101.6 | \$ 125.8 | \$ 256.4 | \$ 229.6 | \$ 204.3 |
| Amortization of: | | | | | |
| Nuclear fuel | 5.9 | 12.8 | 25.1 | 16.1 | 14.5 |
| Other | 14.1 | 11.0 | 24.2 | 19.0 | 11.1 |
| Utility capital expenditures | (143.0) | (247.5) | (463.1) | (626.5) | (810.5) |

Ratios of Earnings to Fixed Charges

The following table sets forth our ratios of earnings to fixed charges for the periods indicated.

| Year to Date June 30, | Year Ended December 31, | | | | |
|--------------------------|-------------------------|------|------|------|------|
| 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| 1.81 | 2.86 | 2.44 | 2.87 | 3.53 | 4.11 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense, and the estimated interest component of lease payments and rentals.

RISK FACTORS

An investment in the notes is subject to various risks. These risks should be considered carefully with the information provided elsewhere and incorporated by reference in this prospectus supplement and the accompanying prospectus before deciding to invest in the notes. In addition to the risk factors set forth below, please read the information included or incorporated by reference under “Risk Factors” and “Cautionary Statements Regarding Certain Forward-Looking Information” in the accompanying prospectus, our Annual Report on Form 10-K for the year ended December 31, 2010 and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2011 and June 30, 2011 for a description of additional uncertainties associated with our business, results of operations and financial condition and the forward-looking statements included or incorporated by reference in this prospectus supplement and the accompanying prospectus. As used in this section, “we,” “our,” “us” and the “Company” refer to Kansas City Power & Light Company and not to any of its subsidiaries.

Indebtedness — Our indebtedness could adversely affect our ability to fulfill our obligations under the notes.

Our consolidated indebtedness and debt service obligations are significant. Our actual consolidated interest expense was \$85.7 million for the year ended December 31, 2010 and \$50.4 million for year to date June 30, 2011. As of June 30, 2011, our total consolidated long-term debt, including current maturities, was \$1.7 billion, excluding unused commitments and contractual obligations and other commitments, and our total shareholder’s equity was \$2.0 billion. Adjusted for this offering, as of June 30, 2011, our total consolidated long-term debt would have been \$1.9 billion, our total stand-alone debt would have been \$2.2 billion and our total shareholder’s equity would have been unchanged. We may incur additional short-term and long-term debt from time to time to finance our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital or capital expenditures or for other general corporate purposes, subject to the restrictions contained in the credit agreement that governs our senior unsecured revolving credit facility and in any other agreements under which we incur debt.

The indenture governing the notes does not limit the amount of unsecured debt that we may incur. In general, the indenture also does not limit the amount of secured debt that we may incur.

The covenants contained in the indenture do not afford the holders of notes any protection in the event of a highly leveraged transaction or other transaction involving us that may adversely affect holders.

Our debt could have important consequences to holders of the notes, including the following:

- we are required to use a substantial portion of our consolidated cash flow from operations to pay principal and interest on our debt, thereby reducing the availability of our consolidated cash flow to fund our construction requirements, pension benefit plan funding requirements, dividends to our parent company, working capital and capital expenditures and for other general corporate requirements;
- if prevailing interest rates increase, our interest expense could increase because any borrowings under our senior unsecured revolving credit facility will bear interest at floating rates;
- our leverage increases our vulnerability to economic downturns, and adverse competitive and industry conditions could place us at a competitive disadvantage compared to those of our competitors that are less leveraged; and
- our debt service obligations could limit our flexibility in planning for, or reacting to, changes in our business and our industry and could limit our ability to pursue other business opportunities, borrow more money for operations or raise capital in the future and implement our business strategies.

Unsecured Obligations — Because the notes are not secured and are effectively subordinated to the rights of secured creditors, the notes will be subject to the prior claims of any secured creditors, and if a default occurs, we may not have sufficient funds to fulfill our obligations under the notes.

The notes are senior unsecured obligations and will rank equally with any future unsecured and unsubordinated debt and will be effectively junior to our existing secured debt and any future secured debt we may incur. The indenture governing the notes does not limit the amount of unsecured debt that we may incur or restrict us from entering into sale and leaseback transactions. In general, the indenture also does not limit the amount of secured debt that we may incur. As of June 30, 2011, KCP&L had outstanding \$642.5 million of secured indebtedness.

Our assets and those of our subsidiaries which secure our existing or future secured debt will be subject to prior claims by our and their respective secured creditors. In the event of our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up, assets that secure debt will be available to pay obligations on the notes only after all debt secured by those assets has been repaid in full. Holders of the notes will participate in any remaining assets ratably with all of our unsecured and unsubordinated creditors, including trade creditors. If we incur any additional obligations that rank equally with the notes, including trade payables, the holders of those obligations will be entitled to share ratably with the holders of the notes in any proceeds distributed upon our bankruptcy, insolvency, liquidation, reorganization, dissolution or other winding up. This may have the effect of reducing the amount of proceeds paid to holders of the notes. If there are not sufficient assets remaining to pay all these creditors, all or a portion of the notes then outstanding would remain unpaid.

No Guarantees — Our parent company is not guaranteeing the notes and you should not rely upon information relating to our parent company in determining whether to invest in the notes.

As described in more detail under “Where You Can Find More Information,” we and our parent company, Great Plains Energy, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus supplement. You should not rely on any information relating solely to Great Plains Energy or its subsidiaries (other than KCP&L and its subsidiaries or information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in the notes. The notes are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or distribution to us for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture, complying with any other obligation under the indenture or the notes or otherwise.

No Prior Market for the Notes — There is no prior market for the notes, and if a market develops, it may not be liquid and prices of the notes may vary.

We do not intend to list the notes on any national securities exchange or to seek their quotation on any automated dealer quotation system. We cannot assure holders of the notes that any liquid market for the notes will ever develop or be maintained. The underwriters have advised us that they currently intend to make a market in the notes following the offering. However, the underwriters have no obligation to make a market in the notes and they may stop at any time. Further, there can be no assurance as to the liquidity of any market that may develop for the notes, holders’ ability to sell their notes or the price at which holders will be able to sell their notes. Future trading prices of the notes will depend on many factors, including prevailing interest rates, our financial condition and results of operations, the then-current ratings assigned to the notes and the market for similar securities. Any trading market that develops would be affected by many factors independent of and in addition to the foregoing, including:

- the time remaining to the maturity of the notes;
- the outstanding amount of the notes;
- the terms related to optional redemption of the notes; and
- the level, direction and volatility of market interest rates generally.

KCP&L and certain of its securities are rated by Moody's Investors Service, Inc. and Standard & Poor's Ratings Services. There is no assurance that such credit ratings will be issued or remain in effect for any given period of time or that such ratings will not be decreased, suspended or withdrawn entirely by the rating agencies, if, in each rating agency's judgment, circumstances so warrant. KCP&L's credit ratings could decrease as a result of events directly affecting Great Plains Energy and its subsidiaries (other than KCP&L and its subsidiaries), even though Great Plains Energy is not guaranteeing the notes and is not generally obligated to provide credit support to us. Holders of notes will have no recourse against us or any other parties in the event of a change in or suspension or withdrawal of such ratings. Any decrease, suspension or withdrawal of such ratings may have an adverse effect on the market price or marketability of debt securities issued by us, including the notes.

USE OF PROCEEDS

We estimate the net proceeds to us from the sale of the notes will be approximately \$393.5 million, after deducting the underwriting discount and other expenses of the offering payable by us. We expect to use the net proceeds of this offering to repay all or a portion of KCP&L's outstanding commercial paper and to repay all or a portion of the \$150 million aggregate principal amount of KCP&L's 6.50% Senior Notes due November 15, 2011 at maturity. As of June 30, 2011 KCP&L had \$476.7 million of commercial paper outstanding at a weighted-average interest rate of 0.38%.

CAPITALIZATION AND SHORT-TERM DEBT

The following table sets forth our consolidated capitalization as of June 30, 2011, and as adjusted to give effect to the issuance and sale of the notes and the use of proceeds from this offering as set forth under “Use of Proceeds” above. This table should be read in conjunction with our consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. See “Where You Can Find More Information” in this prospectus supplement.

| | June 30, 2011 | |
|--|-------------------------|---------------------------------------|
| | <u>Actual</u> | <u>As Adjusted</u> |
| | (\$ in millions) | |
| Short-term debt (includes current maturities) | \$ 734.4 | \$ 340.9 |
| Long-term debt | \$1,504.7 | 1,902.1 ⁽¹⁾ |
| Shareholder’s equity: | | |
| Common stock (1,000 shares authorized without par value; 1 share issued, stated value) | \$1,563.1 | \$1,563.1 |
| Retained earnings | 465.7 | 465.7 |
| Accumulated other comprehensive loss | <u>(33.8)</u> | <u>(33.8)</u> |
| Total shareholder’s equity | <u>1,995.0</u> | <u>1,995.0</u> |
| Total capitalization and short-term debt | <u><u>\$4,234.1</u></u> | <u><u>\$4,238.0⁽¹⁾</u></u> |

⁽¹⁾ Reflects \$400 million aggregate principal amount of the notes offered hereby less the unamortized discount of \$2.6 million

DESCRIPTION OF THE NOTES

The following description of the particular terms of the notes supplements and, to the extent inconsistent therewith, replaces the description of the general terms and provisions of the notes set forth in the accompanying prospectus under “Description of Notes,” to which reference is hereby made. Whenever a defined term is referred to and not herein defined, the definition thereof is contained in the accompanying prospectus or in the indenture referred to therein. As used in this section, the terms “we,” “us,” “our,” and “KCP&L” refer to Kansas City Power & Light Company only and not to its subsidiaries.

The following description, together with the “Description of Notes” in the accompanying prospectus, is a summary of the material provisions of the notes and the indenture and does not purport to be complete. This summary is subject to and is qualified by reference to all the provisions of the notes and the indenture, including the definition of certain terms used in the indenture. We urge you to read the indenture because it, and not this description, defines your rights as a holder of the notes.

General

The notes constitute a single series of debt securities to be issued pursuant to an indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee. The terms of the notes include those expressly set forth in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as amended. The notes will initially be limited to \$400,000,000 aggregate principal amount and will mature on October 1, 2041.

The notes will bear interest at the rate per year set forth on the cover page of this prospectus supplement from the date of issuance or from the most recent interest payment date to which interest has been paid or provided for, payable semi-annually in arrears on April 1 and October 1 of each year, beginning April 1, 2012, to the persons in whose names the notes are registered at the close of business on the immediately preceding March 15 and September 15, respectively, whether or not such day is a Business Day. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months (and for any partial periods shall be calculated on the basis of the number of days elapsed in a 360-day year of twelve 30-day months). If any date on which interest is payable on the notes is not a Business Day, then payment of the interest payable on that date will be made on the next succeeding day which is a Business Day (and without any additional interest or other payment in respect of any delay).

The notes will be direct unsecured obligations of KCP&L exclusively, and not the obligation of any of our affiliates. The notes will (i) rank equally with our existing and future senior unsecured indebtedness, (ii) be effectively subordinated (with respect to underlying collateral) to any secured indebtedness now outstanding or that we may incur in the future, and (iii) be structurally subordinated to all indebtedness of the Company’s subsidiaries.

The notes will be issued only in registered form in minimum denominations of \$2,000 and in integral multiples of \$1,000 in excess thereof.

We will initially offer \$400,000,000 aggregate principal amount of notes. Subject to the terms of the indenture, we may, at any time, without consent of the holders of the notes, issue additional notes having the same ranking, interest rate, maturity and other terms (except for the initial public offering price and the issue date) as the notes being offered hereby; provided that such additional notes must be part of the same issue and fungible with the initially issued notes for U.S. federal income tax purposes. Any such additional notes, together with the notes offered hereby, will constitute a single series of notes under the indenture.

Optional Redemption

Prior to April 1, 2041 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, each at a “make-whole premium” redemption price calculated by us equal to the greater of:

- 100% of the principal amount of the notes to be redeemed; and

- the sum of the present values of the remaining scheduled payments of principal and interest thereon (not including any portion of such payments of interest accrued as of the date of redemption), discounted to the date of redemption on a semi-annual basis (assuming a 360-day year consisting of twelve 30-day months) at the Treasury Rate, plus 30 basis points,

plus, in each case, accrued and unpaid interest on the principal amount being redeemed to the date of redemption. Notwithstanding the foregoing, installments of interest on notes that are due and payable on interest payment dates falling on or prior to a redemption date will be payable on the interest payment date to the registered holders as of the close of business on the relevant record date according to the notes and the indenture.

On or after April 1, 2041 (the date that is six months prior to the maturity date of the notes), the notes will be redeemable at any time in whole or from time to time in part, at our option, at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus accrued and unpaid interest on the principal amount being redeemed to the date of redemption.

“Comparable Treasury Issue” means the United States Treasury security selected by the Quotation Agent as having a maturity comparable to the remaining term of the notes to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of comparable maturity to the remaining term of such notes.

“Comparable Treasury Price” means, with respect to any redemption date,

- the average of four Reference Treasury Dealer Quotations for such redemption date, after excluding the highest and lowest such Reference Treasury Dealer Quotations, or
- if the Quotation Agent obtains fewer than four such Reference Treasury Dealer Quotations, the average of all such quotations, or
- if only one Reference Treasury Dealer Quotation is received, such quotation.

“Quotation Agent” means the Reference Treasury Dealer appointed by us.

“Reference Treasury Dealer” means

- each of Barclays Capital Inc. and RBS Securities Inc. or their affiliates, and their respective successors, unless either of them ceases to be a primary U.S. government securities dealer in the United States of America (“Primary Treasury Dealer”), in which case we will substitute therefore another Primary Treasury Dealer,
- a Primary Treasury Dealer selected by Wells Fargo Securities, LLC, and
- two other Primary Treasury Dealers that we select.

“Reference Treasury Dealer Quotations” means, with respect to each Reference Treasury Dealer and any redemption date, the average, as determined by the Quotation Agent, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Quotation Agent by such Reference Treasury Dealer at 5:00 p.m., New York City time, on the third business day preceding such redemption date.

“Treasury Rate” means, with respect to any redemption date, the rate per annum equal to the semi-annual equivalent yield to maturity of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

Notice of any redemption will be mailed at least 30 days but not more than 60 days before the redemption date to each holder of the notes to be redeemed. Unless we default in payment of the redemption price, on and after the redemption date, interest will cease to accrue on the notes or portions thereof called for redemption. If less than all of the notes are to be redeemed, the particular notes or portions of such notes to be redeemed will be selected by The Depository Trust Company in such manner as it shall determine.

Notwithstanding the foregoing, any notice of redemption at our option may state that such redemption will be conditional upon receipt by the Trustee on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

No Guarantees

The notes are not guaranteed by our parent company, Great Plains Energy, or any of its or our subsidiaries. None of those entities has any obligation to make capital contribution or distributions to KCP&L for the purpose of paying the principal of, or premium, if any, and interest on the notes or any other amount that may be required to be paid under the indenture or the notes, preventing or curing an event of default under the terms of the indenture or complying with any other obligation under the indenture or the notes or otherwise.

Book-entry System

Upon issuance, the notes will be represented by one or more global securities deposited with, or on behalf of, The Depository Trust Company, as depository. The global securities representing the notes will be registered in the name of the depository or its nominee. Except under the circumstances described in the accompanying prospectus under “Book-Entry System,” the notes will not be issuable in definitive form. So long as the notes are represented by one or more global securities, the depository or its nominee will be considered the sole owner or holder of such notes for all purposes under the indenture, and the beneficial owners of such notes will be entitled only to those rights and benefits afforded to them in accordance with the depository’s regular operating procedures. The depository has confirmed to us, the underwriters and the Trustee that it intends to follow such procedures with respect to the notes. A further description of the depository’s procedures with respect to global securities is set forth in the accompanying prospectus under “Book-Entry System.”

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following discussion summarizes the material U.S. federal income tax considerations to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of the notes. It is included herein for general information purposes only and does not address all tax considerations that may be relevant to investors in light of their personal investment circumstances or that may be relevant to certain types of investors subject to special rules (for example, financial institutions, tax-exempt organizations, insurance companies, persons that are broker-dealers, traders in securities who elect the mark to market method of accounting for their securities, certain former U.S. citizens or long-term residents, retirement plans, foreign governments, international organizations, controlled foreign corporations, passive foreign investment companies, investors in partnerships or other pass-through entities or persons holding the notes as part of a “straddle,” “hedge,” “conversion transaction” or other integrated transaction). The discussion set forth below is limited to initial investors who hold the notes as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the “Code”) and who purchase the notes for cash at the initial “issue price” (i.e., the first price to the public, excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers, at which a substantial amount of the notes is sold for money). In addition, this discussion does not address the effect of U.S. federal alternative minimum tax, gift or estate tax laws, or any state, local or foreign tax laws. Furthermore, the discussion below is based upon provisions of the Code, the legislative history thereof, U.S. Treasury regulations thereunder and administrative rulings and judicial decisions thereunder as of the date hereof. Such authorities may be repealed, revoked or modified (including changes in effective dates, and possibly with retroactive effect) so as to result in U.S. federal income tax considerations different from those discussed below.

For purposes of the following discussion, a “Non-U.S. Holder” means a beneficial owner of the notes that, for U.S. federal income tax purposes, is neither a partnership (including, for the purposes of the following discussion, any entity or arrangement treated as a partnership for U.S. federal income taxes purposes) nor:

- an individual who is a citizen or resident of the United States;
- a corporation (including, for the purposes of the following discussion, any entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (i) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined under the Code) have the authority to control all substantial decisions of the trust or (ii) the trust has a valid election in place to be treated as a United States person for U.S. federal income tax purposes.

If a partnership holds the notes, the U.S. federal income tax treatment of a partner in the partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships and partners in such partnerships should consult their own tax advisors about the tax consequences of the purchase, ownership and disposition of the notes.

THIS DISCUSSION OF MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS IS NOT INTENDED, AND SHOULD NOT BE CONSTRUED, TO BE TAX OR LEGAL ADVICE TO ANY PARTICULAR INVESTOR IN THE NOTES. PROSPECTIVE INVESTORS ARE ADVISED TO CONSULT THEIR OWN TAX ADVISORS CONCERNING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSIDERATIONS ARISING UNDER THE LAWS OF ANY STATE, LOCAL OR FOREIGN TAXING JURISDICTION OR ANY APPLICABLE TAX TREATIES, AND THE POSSIBLE EFFECT OF CHANGES IN APPLICABLE TAX LAW.

Stated Interest

Subject to the discussion of backup withholding below, payments of interest on the notes to a Non-U.S. Holder generally will not be subject to U.S. withholding tax provided that (1) the Non-U.S. Holder does not actually or constructively own 10% or more of the total combined voting power of all classes of our voting stock, (2) the Non-U.S. Holder is not (a) a controlled foreign corporation that is related to us through actual or deemed stock ownership or (b) a bank receiving interest on an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, (3) such interest is not effectively connected with the conduct by the Non-U.S. Holder of a trade or business within the United States, and (4) either (a) the Non-U.S. Holder provides its name and address on an IRS Form W-8BEN (or other applicable form) and certifies, under penalties of perjury, that it is not a United States person or (b) a securities clearing organization, bank or other financial institution holding the notes on the Non-U.S. Holder's behalf certifies, under penalties of perjury, that it has received a properly executed IRS Form W-8BEN (or other applicable form) from the Non-U.S. Holder and it provides the withholding agent with a copy.

If a Non-U.S. Holder cannot satisfy the requirements in the preceding paragraph, payments of interest made to such Non-U.S. Holder will be subject to U.S. federal withholding tax, currently at a rate of 30%, unless such Non-U.S. Holder (1) timely provides the withholding agent with a properly executed IRS Form W-8BEN (or other applicable form) claiming an exemption from or reduction in withholding under the benefit of an applicable income tax treaty or IRS Form W-8ECI (or other applicable form) certifying that interest paid on the notes is not subject to U.S. federal withholding tax because it is effectively connected with such Non-U.S. Holder's conduct of a trade or business in the United States, or (2) otherwise properly establishes an exemption from withholding taxes.

If interest on the notes is effectively connected with the conduct by a Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), such interest will be subject to U.S. federal income tax on a net income basis at the rate applicable to United States persons generally (and a Non-U.S. Holder that is a corporation may also be subject to a branch profits tax equal to 30% of its effectively connected earnings and profits, subject to certain adjustments, unless such holder qualifies for a lower rate under an applicable income tax treaty). If interest is subject to U.S. federal income tax on a net income basis in accordance with these rules, such payments will not be subject to U.S. federal withholding tax so long as the relevant Non-U.S. Holder timely provides the withholding agent with the appropriate documentation.

Sale, Taxable Exchange, Redemption or Other Taxable Disposition

Subject to the discussion of backup withholding below, any gain realized by a Non-U.S. Holder on the sale, taxable exchange, redemption or other taxable disposition of the notes generally will not be subject to U.S. federal income tax, unless (1) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (and, if an applicable tax treaty so provides, is attributable to a U.S. permanent establishment maintained by the Non-U.S. Holder), in which case such gain will be taxed on a net income basis in the same manner as interest that is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and a Non-U.S. Holder that is a corporation may also be subject to the branch profits tax as described above) or (2) the Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are satisfied, in which case the Non-U.S. Holder will be subject to a tax, currently at a rate of 30%, on the excess, if any, of such gain plus all other U.S. source capital gains recognized during the same taxable year over the Non-U.S. Holder's U.S. source capital losses recognized during such taxable year.

Information Reporting and Backup Withholding

Information returns generally will be filed with the IRS in connection with payments of interest on the notes. Copies of the information returns reporting such interest payments and any withholding therefrom may also be made available to the tax authorities in the country in which a Non-U.S. Holder resides under the provisions of an applicable income tax treaty. Unless a Non-U.S. Holder complies with certification procedures

to establish that it is not a United States person, information returns may be filed with the IRS in connection with the proceeds from a sale or other disposition of the notes and the Non-U.S. Holder may be subject to backup withholding on payments on the notes or on the proceeds from a sale or other disposition of the notes. Compliance with the certification procedures required to claim the exemption from withholding tax on interest described above will satisfy the certification requirements necessary to avoid backup withholding as well.

Backup withholding is not an additional tax. Any amount withheld under the backup withholding rules is allowable as a refund or credit against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that the required information or appropriate claim for refund is properly and timely submitted to the IRS.

Non-U.S. Holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules in their particular situations, the availability of an exemption therefrom and the procedure for obtaining such an exemption, if available.

THE PRECEDING DISCUSSION IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. ACCORDINGLY, EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO IT OF PURCHASING, OWNING AND DISPOSING OF NOTES, INCLUDING THE APPLICABILITY AND EFFECT OF ANY STATE, LOCAL OR FOREIGN TAX LAWS, AND OF ANY PROPOSED CHANGES IN APPLICABLE LAW.

UNDERWRITING

Subject to the terms and conditions contained in an underwriting agreement, dated as of the date of this prospectus supplement between us and the underwriters named below, for whom Barclays Capital, Inc., RBS Securities Inc. and Wells Fargo Securities, LLC are acting as representatives, we have agreed to sell to each underwriter, and each underwriter has severally agreed to purchase from us, the principal amount of notes that appears opposite its name in the table below:

| <u>Underwriter</u> | <u>Principal Amount of Notes</u> |
|--------------------------------------|--|
| Barclays Capital Inc. | \$ 96,000,000 |
| RBS Securities Inc. | 96,000,000 |
| Wells Fargo Securities, LLC. | 96,000,000 |
| Scotia Capital (USA) Inc. | 48,000,000 |
| BNY Mellon Capital Markets, LLC | 32,000,000 |
| KeyBanc Capital Markets Inc. | 32,000,000 |
| Total | <u>\$400,000,000</u> |

The underwriters are offering the notes subject to their acceptance of the notes from us and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the notes offered by this prospectus supplement are subject to certain conditions. The underwriters are obligated to take and pay for all of the notes offered by this prospectus supplement if any such notes are taken.

The underwriters initially propose to offer the notes to the public at the public offering price that appears on the cover page of this prospectus supplement. In addition, the underwriters may offer the notes to certain dealers at prices that represent a concession not in excess of 0.50% of the principal amount of the notes. Any underwriter may allow, and any such dealer may reallocate, a concession not in excess of 0.25% of the principal amount of the notes to certain other dealers. After the initial offering of the notes, the underwriters may from time to time vary the offering prices and other selling terms. The underwriters may offer and sell notes through certain of their affiliates.

The following table shows the underwriting discount that we will pay to the underwriters in connection with the offering of the notes:

| | <u>Paid by Us</u> |
|----------------|-------------------|
| Per Note | 0.875% |
| Total | \$3,500,000 |

Expenses associated with this offering to be paid by us, other than the underwriting discount, are estimated to be approximately \$400,000.

We have also agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or to contribute to payments which the underwriters may be required to make in respect of any such liabilities.

The notes are a new issue of securities, and there is currently no established trading market for the notes. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. The underwriters have advised us that they intend to make a market in the notes, but they are not obligated to do so. At their sole discretion, the underwriters may discontinue any market making in the notes at any time without notice. Accordingly, we cannot assure you that a liquid trading market will develop for the notes, that you will be able to sell your notes at a particular time or that the prices you receive when you sell will be favorable.

In connection with the offering of the notes, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the prices of the notes. Specifically, the underwriters may overallocate in connection

with the offering of the notes, creating syndicate short positions. In addition, the underwriters may bid for and purchase notes in the open market to cover syndicate short positions or to stabilize the price of the notes. Finally, the underwriting syndicate may reclaim selling concessions allowed for distributing the notes in the offering if the syndicate repurchases previously distributed notes in syndicate covering transactions, stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market prices of the notes above independent market levels. The underwriters are not required to engage in any of these activities, and may end any of them at any time without notice.

Selling Restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), each underwriter has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “Relevant Implementation Date”) it has not made and will not make an offer of notes which are the subject of the offering contemplated by this Prospectus to the public in that Relevant Member State other than:

(a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;

(b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the underwriters for any such offer; or

(c) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of notes shall require us or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an “offer of notes to the public” in relation to any notes in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe for the notes, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

United Kingdom

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the “FSMA”)) received by it in connection with the issue or sale of the notes in circumstances in which Section 21(1) of the FSMA does not apply to us; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Notes in, from or otherwise involving the United Kingdom.

Other Relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and instruments of KCP&L or its subsidiaries. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

The underwriters and their affiliates have provided and in the future may continue to provide investment banking, commercial banking and other financial services, including the provision of credit facilities, to us and our affiliates in the ordinary course of business for which they have received and will receive customary compensation. An affiliate of BNY Mellon Capital Markets, LLC, one of the co-managers of this offering, acts as the trustee under the indenture governing the notes, for which it receives customary compensation. Affiliates of the underwriters are lenders under revolving credit agreements entered into separately with Great Plains Energy, KCP&L and GMO in August 2010. In connection with these arrangements, affiliates of Wells Fargo Securities, LLC acted as joint lead arranger, joint book manager, syndication agent and lender, affiliates of Barclays Capital Inc. and RBS Securities acted as documentation agents and lenders, and affiliates of Scotia Capital (USA) Inc., BNY Mellon Capital Markets, LLC and KeyBanc Capital Markets Inc. acted as lenders.

LEGAL MATTERS

Certain legal matters in connection with the offering of the notes will be passed upon for us by Heather A. Humphrey, General Counsel and Vice President — Human Resources and Dewey & LeBoeuf LLP, New York, New York. Certain legal matters will be passed upon for the underwriters by Davis Polk & Wardwell LLP, Menlo Park, California.

At September 14, 2011, Ms. Humphrey owned beneficially a number of shares of Great Plains Energy's common stock, including restricted stock, and performance shares which may be paid in shares of Great Plains Energy common stock at a later date based on Great Plains Energy's performance, which represented less than 0.1% of the total outstanding common stock.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, of Kansas City Power & Light Company and its subsidiaries, incorporated by reference in this prospectus supplement from the Annual Report on Form 10-K of Kansas City Power & Light Company for the year ended December 31, 2010, and the effectiveness of Kansas City Power & Light Company's internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports which are incorporated herein by reference. Such financial statements and financial statement schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

PROSPECTUS

Kansas City Power & Light Company

Notes General Mortgage Bonds

These securities are not obligations of, nor guaranteed by, Great Plains Energy Incorporated, our corporate parent.

Kansas City Power & Light Company (“KCP&L”) may offer and sell, from time to time, notes and general mortgage bonds in one or more offerings. We may offer the securities simultaneously or at different times, in one or more separate series, in amounts, at prices and on terms to be determined at or prior to the time or times of sale.

This prospectus provides you with a general description of these securities. We will provide specific information about the offering and the terms of these securities in one or more supplements to this prospectus. The supplements may also add, update or change information contained in this prospectus. This prospectus may not be used to offer and sell our securities unless accompanied by a prospectus supplement. You should read this prospectus and the related prospectus supplements before you invest in these securities.

Our principal executive offices are located at 1201 Walnut Street, Kansas City, Missouri 64106-2124 and our telephone number is (816) 556-2200.

Investing in these securities involves risks. You should carefully consider the information referred to under the heading “Risk Factors” beginning on page 3 of this prospectus.

We may offer and sell these securities through one or more underwriters or agents. We will set forth in the related prospectus supplement the name of the underwriters or agents, the discount or commission received by them from us as compensation, our other expenses for the offering and sale of these securities, and the net proceeds we receive from the sale. See “Plan of Distribution.”

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 11, 2009.

EXHIBIT B

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement we have filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. By using this process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide you with a supplement to this prospectus that will describe the specific terms of that offering. The prospectus supplement may also add, update or change the information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement. The registration statement we filed with the SEC includes exhibits that provide more detail on descriptions of the matters discussed in this prospectus. Before you invest in our securities, you should carefully read the registration statement (including the exhibits) of which this prospectus forms a part, this prospectus, the applicable prospectus supplement and the documents incorporated by reference into this prospectus. The incorporated documents are described under “Where You Can Find More Information.”

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement, or in any free writing prospectus. We have not, and the underwriters have not, authorized anyone to provide you with different information and neither we nor the underwriters of any offering of securities will authorize anyone else to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any prospectus supplement and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

As described in more detail below under “Where You Can Find More Information,” we and Great Plains Energy Incorporated (“Great Plains Energy”), our parent company, separately file combined annual, quarterly and current reports. However, only the information related to KCP&L and its consolidated subsidiaries is incorporated by reference in this prospectus. You should not rely on any information relating solely to Great Plains Energy Incorporated or its subsidiaries (other than the information provided separately by KCP&L or the subsidiaries of KCP&L) in determining whether to invest in any securities offered hereby. The securities are not guaranteed by Great Plains Energy or any of its or our subsidiaries. None of those entities has any obligation to make any capital contribution or to advance funds to us for the purpose of paying the principal of, or premium, if any, and interest on the securities or any other amount that may be required to be paid under any indenture, preventing or curing an event of default under the terms of any indenture, complying with any other obligation under any indenture or the securities or otherwise.

Unless the context otherwise requires or as otherwise indicated, when we refer to “Kansas City Power & Light,” “KCP&L,” the “Company,” “we,” “us” or “our” in this prospectus or when we otherwise refer to ourselves in this prospectus, we mean Kansas City Power & Light Company and, except as expressly stated or the context requires otherwise, not any of its subsidiaries.

CAUTIONARY STATEMENTS REGARDING CERTAIN FORWARD-LOOKING INFORMATION

This prospectus and the documents incorporated or deemed incorporated by reference as described under the heading “Where You Can Find More Information” contain forward-looking statements that are not based on historical facts. In some cases, you can identify forward-looking statements by use of the words “may,” “should,” “expect,” “plan,” “anticipate,” “estimate,” “predict,” “potential,” or “continue.” Forward-looking statements include, but are not limited to, statements regarding the outcome of regulatory proceedings, cost estimates for our Comprehensive Energy Plan and other matters affecting future operations. These forward-looking statements are based on assumptions, expectations, and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments and other factors they believe to be appropriate. Any forward-looking statements are not guarantees of our

future performance and are subject to risks and uncertainties, including those described or referred to under the heading “Risk Factors” in this prospectus, in any prospectus supplement, and in our other SEC filings. These risks and uncertainties could cause actual results, developments and business decisions to differ materially from those contemplated or implied by forward-looking statements. Consequently, you should recognize these statements for what they are and we caution you not to rely upon them as facts. We claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995 for all forward-looking statements. We disclaim any duty to update the forward-looking statements, which apply only as of the date of this prospectus. Some of the factors that may cause actual results, developments and business decisions to differ materially from those contemplated by these forward-looking statements include the following:

- future economic conditions in regional, national and international markets and their effects on sales, prices and costs, including, but not limited to, possible further deterioration in economic conditions and the timing and extent of any economic recovery;
- prices and availability of electricity in regional and national wholesale markets;
- market perception of the energy industry and the Company and Great Plains Energy Incorporated;
- changes in business strategy, operations or development plans;
- effects of current or proposed state and federal legislative and regulatory actions or developments, including, but not limited to, deregulation, re-regulation and restructuring of the electric utility industry;
- decisions of regulators regarding rates the Company can charge for electricity;
- adverse changes in applicable laws, regulations, rules, principles or practices governing tax, accounting and environmental matters including, but not limited to, air and water quality;
- financial market conditions and performance including, but not limited to, changes in interest rates and credit spreads and in availability and cost of capital and the effects on nuclear decommissioning trust and pension plan assets and costs;
- credit ratings;
- inflation rates;
- effectiveness of risk management policies and procedures and the ability of counterparties to satisfy their contractual commitments;
- impact of terrorist acts;
- increased competition including, but not limited to, retail choice in the electric utility industry and the entry of new competitors;
- ability to carry out marketing and sales plans;
- weather conditions including, but not limited to, weather-related damage and their effects on sales, prices and costs;
- cost, availability, quality and deliverability of fuel;
- ability to achieve generation planning goals and the occurrence and duration of planned and unplanned generation outages;
- delays in the anticipated in-service dates and cost increases of additional generating capacity and environmental projects;
- nuclear operations;
- workforce risks including, but not limited to, retirement compensation and benefits costs; and
- other risks and uncertainties.

This list of factors is not all-inclusive because it is not possible to predict all factors. You should also carefully consider the information referred to under the heading “Risk Factors” in this prospectus, any prospectus supplement and in our other SEC filings.

KANSAS CITY POWER & LIGHT COMPANY

Kansas City Power & Light Company (“KCP&L”) is an integrated, regulated electric utility, headquartered in Kansas City, Missouri, that engages in the generation, transmission, distribution and sale of electricity. As of December 31, 2008, we served approximately 509,000 customers located in western Missouri and eastern Kansas. Our customers included approximately 449,000 residences, 58,000 commercial firms, and 2,000 industrials, municipalities and other electric utilities as of December 31, 2008. Our retail revenues averaged approximately 82% of our total operating revenues over the last three calendar years. Wholesale firm power, bulk power sales and miscellaneous electric revenues accounted for the remainder of utility revenues. We are significantly impacted by seasonality with approximately one-third of our retail revenues recorded in the third quarter.

RISK FACTORS

Investing in our securities involves risks. Our business is influenced by many factors that are difficult to predict, involve uncertainties that may materially affect actual results and are often beyond our control. You should carefully consider the information under the heading “Risk Factors” in:

- any prospectus supplement relating to any securities we are offering;
- our annual report on Form 10-K for the fiscal year ended December 31, 2008, which is incorporated by reference into this prospectus; and
- documents we file with the SEC after the date of this prospectus and which are deemed incorporated by reference into this prospectus.

RATIO OF EARNINGS TO FIXED CHARGES

The following table shows our ratio of earnings to fixed charges for the periods indicated:

| Three Months Ended | Fiscal Years Ended December 31, | | | | |
|-----------------------|---------------------------------|------|------|------|------|
| March 31, 2009 | 2008 | 2007 | 2006 | 2005 | 2004 |
| 1.22 | 2.87 | 3.53 | 4.11 | 3.87 | 3.37 |

For purposes of computing the ratios of earnings to fixed charges: (i) earnings consist of income before deducting net provisions for income taxes, adjustment for minority interest in subsidiaries and fixed charges; and (ii) fixed charges consist of interest on debt, amortization of debt discount, premium and expense and the estimated interest component of lease payments and rentals.

USE OF PROCEEDS

Unless we inform you otherwise in a supplement to this prospectus, we anticipate using any net proceeds received by us from the issuance of any of the offered securities for general corporate purposes, including, among others:

- repayment of debt;
- repurchase, retirement or refinancing of other securities;
- funding of construction expenditures; and
- acquisitions.

Pending such uses, we may also invest the proceeds in certificates of deposit, United States government securities or certain other short-term interest-bearing securities. If we decide to use the net proceeds from a particular offering of securities for a specific purpose, we will describe that in the related prospectus supplement.

DESCRIPTION OF NOTES

General. The notes will represent unsecured obligations of the Company. We will issue each series of notes under the Indenture, dated as of May 1, 2007, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee. We refer to this Indenture in this prospectus as the “Indenture” and to The Bank of New York Mellon Trust Company, N.A. as the “trustee.” If at any time there is more than one trustee under the Indenture, the term “trustee” as used in this section with respect to the notes of any series means the trustee with respect to the notes of that series.

We have summarized selected provisions of the Indenture below. However, the following statements are summaries only, do not purport to be complete and are subject to, and qualified in their entirety by, all of the provisions of the Indenture, which is incorporated by reference herein. Certain of the terms used below are used herein with the meanings ascribed to such terms by the Indenture. You should carefully read the summary below and the provisions of the Indenture that may be important to you before investing. The Indenture, and not this description, defines the rights of the holders of the notes. Copies of the Indenture will be available at the offices of the trustee at 2 North LaSalle Street, Suite 1020, Chicago, Illinois 60602.

The following sets forth certain general terms and provisions of the notes. The particular terms of the series of notes offered by any prospectus supplement will be described in that prospectus supplement. The Indenture provides that the notes may be issued in one or more series, may be issued at various times, may have differing maturity dates, may bear interest at differing rates and may have other differing terms and conditions, as described below. We need not issue all notes of one series at the same time and, unless otherwise provided, we may reopen a series, without the consent of the holder of the notes of that series for issuances of additional notes. One or more series of the notes may be issued with the same or various maturities at par, above par or at a discount. Notes bearing no interest or interest at a rate which, at the time of issuance, is below the market rate (“Original Issue Discount Securities”) will be sold at a discount (which may be substantial) below their stated principal amount. Federal income tax consequences and other special considerations applicable to any such Original Issue Discount Securities will be described in the prospectus supplement relating to those securities. Unless otherwise described in the applicable prospectus supplement, the Indenture does not limit the aggregate amount of debt, including secured debt, that we or our subsidiaries may incur. There is no limitation of the amount of debt we may issue under the Indenture. The Indenture also permits us to merge or consolidate or to transfer or lease our assets, subject to certain conditions (see “— Consolidation, Merger and Sale” below).

Ranking. Each series of notes will be our direct unsecured general obligations and will rank equally with all of our other unsecured and unsubordinated debt. As of March 31, 2009, our aggregate outstanding debt that would have ranked equally with the notes was approximately \$1,232.0 million.

Unless otherwise provided in a prospectus supplement, the notes will effectively rank junior to our mortgage bonds which were issued under our Mortgage Indenture. The Mortgage Indenture constitutes a mortgage lien upon substantially all of our fixed property and franchises, except property that has been, or may in the future be, released from the lien of the Mortgage Indenture. At March 31, 2009, there was approximately \$755.3 million aggregate principal amount of mortgage bonds outstanding. We have agreed with the issuer of certain bond insurance policies to not issue additional mortgage bonds if, after giving effect to such additional mortgage bonds, the proportion of secured debt to total indebtedness exceeded 75%. Additionally, if the long term rating for such mortgage bonds by Standard & Poor’s or Moody’s Investors Service would be at or below A- or A3, respectively, such agreements would prohibit us from issuing additional mortgage bonds if, after giving effect to such additional mortgage bonds, the proportion of secured debt to total indebtedness exceeded 50%. At March 31, 2009, the proportion of secured debt to total indebtedness was approximately 38%.

Provisions of a Particular Series. The prospectus supplement applicable to each issuance of notes will specify, among other things:

- the title and any limitation on aggregate principal amount of the notes;
- the original issue date of the notes;
- the date or dates on which the principal of any of the notes is payable;
- the fixed or variable interest rate or rates, or method of calculation of such rate or rates, for the notes, and the date from which interest will accrue;
- the terms, if any, regarding the optional or mandatory redemption of any notes, including the redemption date or dates, if any, and the price or prices applicable to such redemption;
- whether the notes are to be issued in whole or in part in the form of one of more global securities and, if so, the identity of the Depositary for such global security or global securities;
- the denominations in which such notes will be issuable;
- the maximum annual interest rate, if any, of the notes;
- the period or periods within which, the price or prices at which and the terms and conditions upon which any notes may be repaid, in whole or in part, at the option of the holder thereof;
- the place or places where the principal of, and premium, if any, and interest, if any, on the notes shall be payable;
- any addition, deletion or modification to the events of default applicable to that series of notes and the covenants for the benefit of the holders of that series;
- our obligation, if any, to redeem, purchase, or repay the notes, including, but not limited to, pursuant to any sinking fund or analogous provision or at the option of a holder thereof and the period or periods within which, the price or prices at which, and the terms and conditions upon which the notes shall be redeemed, purchased, or repaid pursuant to such obligation;
- any remarketing features of the notes;
- any collateral, security, assurance, or guarantee for the note;
- if other than the principal amount thereof, the portion of the principal amount of the notes payable upon declaration of acceleration of the maturity of the notes;
- the securities exchange(s), if any, on which the notes will be listed;
- any interest deferral or extension provisions;
- the terms of any warrants we may issue to purchase notes;
- the right, if any, for us to extend the interest payment periods of the notes, including the maximum duration of any extension and additional interest payable upon exercise of such right; and
- any other terms of the notes not inconsistent with the provisions of the Indenture.

Registration, Transfer and Exchange. Unless otherwise indicated in the applicable prospectus supplement, each series of notes will initially be issued in the form of one or more global securities, in registered form, without coupons, as described under “Book-Entry System.” The global securities will be registered in the name of a depository, or its nominee, and deposited with, or on behalf of, the depository. Except in the circumstances described under “Book-Entry System,” owners of beneficial interests in a global security will not be entitled to have notes registered in their names, will not receive or be entitled to receive physical delivery of any notes and will not be considered the registered holders thereof under the Indenture.

Notes of any series will be exchangeable for other notes of the same series of any authorized denominations and of a like aggregate principal amount and tenor. Subject to the terms of the Indenture and the limitations

applicable to global securities, notes may be presented for exchange or registration of transfer — duly endorsed or accompanied by a duly executed instrument of transfer — at the office of any transfer agent we may designate for such purpose, without service charge but upon payment of any taxes and other governmental charges, and upon satisfaction of such other reasonable requirements as are described in the Indenture.

Unless otherwise indicated in the applicable prospectus supplement, the transfer agent will be the trustee under the Indenture. We may at any time designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the notes of each series.

Payment and Paying Agents. Principal of and interest and premium, if any, on notes issued in the form of global securities will be paid in the manner described under “Book-Entry System.”

Unless otherwise indicated in the applicable prospectus supplement, the principal of and any premium and interest on notes of a particular series in the form of certificated securities will be payable at the office of the trustee or at the authorized office of any paying agent or paying agents upon presentation and surrender of such notes. We may at any time designate additional paying agents or rescind the designation of any paying agent or approve a change in the office through which any paying agent acts, except that we will be required to maintain a paying agent in each place of payment for the notes of a particular series. Unless otherwise indicated in the applicable prospectus supplement, interest on the notes of a particular series, other than interest at maturity, that are in the form of certificated securities will be paid by check payable in clearinghouse funds mailed to the person entitled thereto at such person’s address as it appears on the register for such notes maintained by the trustee. All monies we pay to the trustee or a paying agent for the payment of the principal of, and premium or interest, if any, on, any note which remain unclaimed at the end of two years after such principal, premium or interest shall have become due and payable will be repaid to us, and the holder of such note thereafter may look only to us for payment thereof. However, any such payment shall be subject to escheat pursuant to state abandoned property laws.

Redemption. Any terms for the optional or mandatory redemption of the notes will be set forth in the applicable prospectus supplement. Unless otherwise indicated in the applicable prospectus supplement, notes will be redeemable by us only upon notice by mail not less than 30 nor more than 60 days prior to the date fixed for redemption, and, if less than all the notes of a series are to be redeemed, the particular notes to be redeemed will be selected by such method as shall be provided for any particular series, or in the absence of any such provision, by the trustee in such manner as it shall deem fair and appropriate.

Any notice of redemption at our option may state that such redemption will be conditional upon receipt by the trustee or the paying agent or agents, on or prior to the date fixed for such redemption, of money sufficient to pay the principal of and premium, if any, and interest on, such notes and that if such money has not been so received, such notice will be of no force and effect and we will not be required to redeem such notes.

Consolidation, Merger and Sale or Disposition of Assets. We may not, without the consent of the holders of any notes, consolidate with or merge into any other corporation or sell, transfer, lease or otherwise dispose of our properties as or substantially as an entirety to any person, unless:

- the successor or transferee corporation or the person which receives such properties pursuant to such sale, transfer, lease or other disposition is a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia;
- the successor or transferee corporation or the person which receives such properties pursuant to such sale, transfer, lease or other disposition assumes by supplemental Indenture, in a form reasonably satisfactory to the trustee, the due and punctual payment of the principal of and premium and interest, if any, on all the notes outstanding under the Indenture and the performance of every covenant of the Indenture to be performed or observed by us;
- we have delivered to the trustees for such notes an officer’s certificate and an opinion of counsel, each stating that the transaction complies with the Indenture and the applicable conditions precedent; and

- immediately after giving effect to the transaction, no Event of Default (see “Events of Default”) or event that, after notice or lapse of time, or both, would become an Event of Default, shall have occurred and be continuing.

Upon any such consolidation, merger, sale, transfer, lease or other disposition of our properties as or substantially as an entirety, the successor corporation formed by such consolidation or into which we are merged or the person to whom such sale, transfer, lease or other disposition is made, shall succeed to, and be substituted for, and may exercise every right and power of, us under the Indenture with the same effect as if such successor corporation or person had been named as us therein, and we will be released from all obligations under the Indenture.

Modification. Without the consent of any holder of notes, the trustee for such notes and we may enter into one or more supplemental indentures for any of the following purposes:

- to supply omissions, cure any ambiguity or inconsistency or correct defects, which actions, in each case, are not prejudicial to the interests of the holders of notes of any series in any material respect;
- to change or eliminate any provision of the Indenture, provided that any such change or elimination will become effective with respect to such series only when there is no note of such series outstanding created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision, or such change or elimination is applicable only to notes of such series issued after the effective date of such change or elimination;
- to establish the form or terms of notes of any series as permitted by the Indenture;
- to evidence the succession of another corporation to us, and the assumption of our covenants in the Indenture and the notes by any permitted successor;
- to grant to or confer upon the trustee for any notes for the benefit of the holders of such notes, any additional rights, remedies, powers or authority;
- to permit the trustee for any notes to comply with any duties imposed upon it by law;
- to specify further the duties and responsibilities of, and to define further the relationship among, the trustee for any notes, any authenticating agent and any paying agent, and to evidence the succession of a successor trustee as permitted under the Indenture;
- to add to our covenants for the benefit of the holders of all or any series of outstanding notes, to add to the security of all notes, to surrender any right or power conferred upon us by the Indenture or to add any additional events of default with respect to all or any series of outstanding notes; and
- to make any other change that is not prejudicial to the holders of any notes.

Except as provided above, and except as otherwise provided in the applicable prospectus supplement, the consent of the holders of a majority in aggregate principal amount of the notes of all series then outstanding, considered as one class, is required for the purpose of adding any provisions to, or changing in any manner, or eliminating any of the provisions of, the Indenture pursuant to one or more supplemental indentures or of modifying or waiving in any manner the rights of the holders of the notes; provided, however, that if less than all of the series of notes outstanding are directly affected by a proposed supplemental indenture, then the consent only of the holders of a majority in aggregate principal amount of the outstanding applicable notes of all series so directly affected, considered as one class, will be required.

Notwithstanding the foregoing, no such amendment or modification may, without the consent of each holder of outstanding notes affected thereby:

- change the maturity date of the principal of any note;
- reduce the rate of interest or change the method of calculating such rate, or extend the time of payment of interest, on any note;
- reduce the principal amount of, or premium payable on, any note;

- change the coin or currency of any payment of principal of, or any premium or interest on any note;
- change the date on which any note may be redeemed or adversely affect the rights of a holder to institute suit for the enforcement of any payment of principal of or any premium or interest on any note; or
- modify the foregoing requirements or reduce the percentage of outstanding notes necessary to modify or amend the Indenture or to waive any past default.

A supplemental indenture which changes or eliminates any covenant or other provision of the Indenture which has expressly been included solely for the benefit of one or more series of notes, or which modifies the rights of the holders of notes of such series with respect to such covenant or provision, will be deemed not to affect the rights under the Indenture of the holders of the notes of any other series.

Events of Default. Unless specifically deleted in a supplemental indenture or Board of Directors resolution under which a series of notes is issued, or modified in any such supplemental indenture, each of the following will constitute an event of default under the Indenture with respect to notes of any series:

- failure to pay interest on the notes of such series within 30 days after the same becomes due and payable;
- failure to pay principal of or premium, if any, on any note of such series, as the case may be, within one day after the same becomes due and payable;
- failure to perform or breach of any of our other covenants or warranties in the Indenture (other than a covenant or warranty solely for the benefit of one or more series of notes other than such series) for 60 days after written notice to us by the trustee or to us and the trustee by the holders of at least 33% in aggregate principal amount of the outstanding applicable notes of such series;
- certain events of bankruptcy, insolvency, reorganization, assignment or receivership; or
- any other event of default specified in the applicable prospectus supplement with respect to notes of a particular series.

Additional events of default with respect to a particular series of notes may be specified in a supplemental indenture or resolution of the Board of Directors establishing that series.

No event of default with respect to the notes of a particular series necessarily constitutes an event of default with respect to the notes of any other series issued under the Indenture.

If an event of default with respect to any series of notes occurs and is continuing, then either the trustee for such series or the holders of a majority in aggregate principal amount of the outstanding notes of such series, by notice in writing, may declare the principal amount of and interest on all of the notes of such series to be due and payable immediately; provided, however, that if an event of default occurs and is continuing with respect to more than one series of notes under the Indenture, the trustee for such series or the holders of a majority in aggregate principal amount of the outstanding notes of all such series, considered as one class, may make such declaration of acceleration and not the holders of the notes of any one of such series.

At any time after an acceleration with respect to the notes of any series has been declared, but before a judgment or decree for the payment of the money due has been obtained, the event or events of default giving rise to such acceleration will be waived, and the acceleration will be rescinded and annulled, if

- we pay or deposit with the trustee for such series a sum sufficient to pay all matured installments of interest on all notes of such series, the principal of and premium, if any, on the notes of such series which have become due otherwise than by acceleration and interest thereon at the rate or rates specified in such notes, interest upon overdue installments of interest at the rate or rates specified in such notes, to the extent that payment of such interest is lawful, and all amounts due to the trustee for such series under the Indenture; and

- any other event or events of default with respect to the notes of such series, other than the nonpayment of the principal of and accrued interest on the notes of such series which has become due solely by such acceleration, have been cured or waived as provided in the Indenture.

However, no such waiver or rescission and annulment shall extend to or shall affect any subsequent default or impair any related right.

Subject to the provisions of the Indenture relating to the duties of the trustee in case an event of default shall occur and be continuing, the trustee generally will be under no obligation to exercise any of its rights or powers under the Indenture at the request or direction of any of the holders unless such holders have offered to the trustee reasonable security or indemnity satisfactory to it. Subject to such provisions for the indemnification of the trustee and certain other limitations contained in the Indenture, the holders of a majority in aggregate principal amount of the outstanding notes of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or of exercising any trust or power conferred on the trustee, with respect to the notes of that series; provided, however, that if an event of default occurs and is continuing with respect to more than one series of notes, the holders of a majority in aggregate principal amount of the outstanding notes of all those series, considered as one class, will have the right to make such direction, and not the holders of the notes of any one series. Any direction provided by the holders shall not be in conflict with any rule of law or with the Indenture and will not involve the trustee in personal liability in circumstances where reasonable indemnity would not, in the trustee's sole discretion, be adequate and the trustee may take any other action it deems proper that is not inconsistent with such direction.

The holders of a majority in aggregate principal amount of the outstanding notes of any series may waive any past default under the Indenture on behalf of all holders of notes of that series with respect to the notes of that series, except a default in the payment of principal of or any premium or interest on such notes. No holder of notes of any series may institute any proceeding with respect to the Indenture, or for the appointment of a receiver or a trustee, or for any other remedy, unless such holder has previously given to the trustee for such series written notice of a continuing event of default with respect to the notes of such series, the holders of a majority in aggregate principal amount of the outstanding notes of all series in respect of which an event of default has occurred and is continuing, considered as one class, have made written request to the trustee for such series to institute such proceeding and have offered such reasonable indemnity as the trustee may require, and the trustee for such series has failed to institute such proceeding within 60 days after such notice, request and offer. Furthermore, no holder of notes of any series will be entitled to institute any such action if and to the extent that such action would disturb or prejudice the rights of other holders of those notes.

Notwithstanding the foregoing, each holder of notes of any series has the right, which is absolute and unconditional, to receive payment of the principal of and premium, if any, and interest on such notes when due and to institute suit for the enforcement of any such payment, and such rights may not be impaired without the consent of that holder of notes.

The trustee, within 90 days after it receives notice of the occurrence of a default with respect to the notes of any series, is required to give the holders of the notes of that series notice of such default, unless cured or waived, but, except in the case of default in the payment of principal of, or premium, if any, or interest on, the notes of that series, the trustee may withhold such notice if it determines in good faith that it is in the interest of such holders to do so. We will be required to deliver to the trustees for the notes each year a certificate as to whether or not, to the knowledge of the officers signing such certificate, we are in compliance with all conditions and covenants under the Indenture, determined without regard to any period of grace or requirement of notice under the Indenture.

Defeasance. Unless the applicable prospectus supplement states otherwise, we may elect either:

- (1) to defease and be discharged from any and all obligations in respect of the notes of any series then outstanding under the Indenture (except for certain obligations to register the transfer or exchange of the notes of such series, replace stolen, lost or mutilated notes, maintain paying agencies and hold monies for payment in trust); or

(2) to be released from the obligations of the Indenture with respect to the notes of any series under any covenants applicable to the notes of such series which are subject to covenant defeasance as described in the Indenture, supplemental indenture or other instrument establishing such series.

In the case of either (1) or (2), the following conditions, among others, must be met:

- we will be required to deposit, in trust, with the trustee money or U.S. government obligations, which through the payment of interest on those obligations and principal of those obligations in accordance with their terms will provide money, in an amount sufficient, without reinvestment, to pay all the principal of, premium, if any, and interest on the notes of such series on the dates payments are due (which may include one or more redemption dates designated by us),
- no event of default or event which with the giving of notice or lapse of time, or both, would become an event of default under the Indenture must have occurred and be continuing on the date of the deposit, and 91 days must have passed after the deposit has been made and, during that period, certain events of default must not have occurred and be continuing as of the end of that period,
- the deposit must not cause the trustee to have any conflicting interest with respect to our other securities,
- we must have delivered an opinion of counsel to the effect that the holders will not recognize income, gain or loss for federal income tax purposes (and, in the case of paragraph (1) above, such opinion of counsel must be based on a ruling of the Internal Revenue Service or other change in applicable federal income tax law) as a result of the deposit or defeasance and will be subject to federal income tax in the same amounts, in the same manner and at the same times as if the deposit and defeasance had not occurred, and
- we must have delivered an officer's certificate to the trustee as provided in the Indenture.

We may exercise our defeasance option under paragraph (1) with respect to notes of any series notwithstanding our prior exercise of our covenant defeasance option under paragraph (2). If we exercise our defeasance option under paragraph (1) for notes of any series, payment of the notes of such series may not be accelerated because of a subsequent event of default. If we exercise our covenant defeasance option for notes of any series, payment of the notes of such series may not be accelerated by reference to a subsequent breach of any of the covenants noted under paragraph (2) above. In the event we fail to comply with our remaining obligations with respect to the notes of any series under the Indenture after exercising our covenant defeasance option and the notes of such series are declared due and payable because of the subsequent occurrence of any event of default, the amount of money and U.S. government obligations on deposit with the trustee may be insufficient to pay amounts due on the notes of such series at the time of the acceleration resulting from that event of default. However, we will remain liable for those payments.

Resignation or Removal of Trustee. The trustee may resign at any time upon written notice to us specifying the day upon which the resignation is to take effect and such resignation will take effect immediately upon the later of the appointment of a successor trustee and such specified day. The trustee may be removed at any time with respect to notes of any series by an instrument or concurrent instruments in writing filed with the trustee and signed by the holders, or their attorneys-in-fact, of a majority in aggregate principal amount of that series of notes then outstanding. In addition, so long as no event of default or event which, with the giving of notice or lapse of time or both, would become an event of default has occurred and is continuing, we may remove the trustee upon notice to the holder of each note outstanding and the trustee, and appoint a successor trustee.

Concerning the Trustee. As of March 31, 2009, The Bank of New York Mellon Trust Company, N.A., which is the trustee under the Indenture, and its affiliates were the trustees for \$1,378.7 million of our secured and unsecured debt (including Environmental Improvement Revenue Refunding debt issued by certain governmental entities) and \$100.0 million of the unsecured debt of Great Plains Energy Incorporated under several separate indentures. In addition, an affiliate of The Bank of New York Mellon Trust Company, N.A. is one of the lenders under separate credit agreements with us, our parent and an affiliate and is the trustee under

our nuclear decommissioning fund trust. Affiliates of The Bank of New York Mellon Trust Company, N.A. also perform other services for, and transact other banking business with our affiliates and us in the normal course and may do so in the future. The Indenture provides that our obligations to compensate the trustee and reimburse the trustee for expenses, disbursements and advances will be secured by a lien prior to that of the notes upon the property and funds held or collected by the trustee as such, except funds held in trust for the benefit of the holders of particular notes.

Governing Law. The Indenture and the related notes will be governed by New York law.

DESCRIPTION OF GENERAL MORTGAGE BONDS

We will issue each series of general mortgage bonds under the General Mortgage Indenture and Deed of Trust, dated as of December 1, 1986, as supplemented from time to time, executed by the Company to UMB Bank, N.A. (formerly United Missouri Bank of Kansas City, N.A.), as trustee. We refer in this prospectus to the general mortgage bonds as the “mortgage bonds,” to the mortgage as the “Mortgage Indenture” and to UMB Bank, N.A. as the “Mortgage Trustee.”

We have summarized selected provisions of the Mortgage Indenture below. However, the following statements are an outline only, do not purport to be complete, and are qualified in their entirety by reference to the Mortgage Indenture (which is filed as an exhibit to the registration statement of which this prospectus is a part). Certain of the terms used below are used in this prospectus with the meanings ascribed to such terms by the Mortgage Indenture.

The following sets forth certain general terms and provisions of the mortgage bonds. The particular terms of the series of mortgage bonds offered by any prospectus supplement will be described in that prospectus supplement. Any terms of the mortgage bonds that are not summarized herein will be described in the applicable prospectus supplement.

Security and Priority. The Company’s principal plants and properties, insofar as they constitute real estate, are owned; certain other facilities of the Company are located on premises held by the Company under leases, permits or easements; and the Company’s electric transmission and distribution lines and systems (which constitute a substantial portion of the Company’s investment in physical property) are for the most part located over or under highways, streets, other public places or property owned by others for which permits, grants, easements, licenses or franchises (deemed satisfactory but without examination of underlying land titles) have been obtained.

The Mortgage Indenture constitutes a mortgage lien upon substantially all of the fixed property and franchises of the Company (except property that has been, or may in the future be, released from the lien of the Mortgage Indenture, as described below), consisting principally of electric generating plants, electric transmission and distribution lines and systems, and buildings, subject to encumbrances permitted under the Mortgage Indenture. (*Mortgage Indenture Section 1.03(ff).*) The Mortgage Indenture subjects to the lien thereof property, of the character initially mortgaged, which is acquired by the Company subsequent to December 1, 1986. Such after-acquired property may be subject to prior liens which secure debt outstanding at the time of such acquisition in an amount not in excess of 75% of the cost or fair value, whichever is less, of such after-acquired property at such time. (*Mortgage Indenture Section 1.03(ff)(xv).*)

The property excepted from the lien of the Mortgage Indenture consists principally of: cash and securities (unless deposited with the Mortgage Trustee); accounts receivable; contracts and operating agreements not pledged or required to be pledged with the Mortgage Trustee; equipment, spare parts, tools, materials, supplies and fuel held for sale or lease in the ordinary course of business or for use or consumption in, or the operation of, any properties of, or for the benefit of, the Company, or held in advance of use thereof for maintenance or fixed capital purposes; electricity, gas, steam, water, ice and other materials, products or services for sale, distribution or use; vehicles; leasehold interests and leasehold improvements; minerals and mineral rights; nuclear fuel, cores and materials; communications equipment, computers and office furniture; and other real and personal property which is not an integral part of the electric and any steam generating, transmission and distribution operations of the Company. (*Mortgage Indenture Section 1.03(s).*)

The mortgage bonds will rank equally and ratably (except as to sinking funds and other analogous funds established for the exclusive benefit of a particular series) with all mortgage bonds, regardless of series, from time to time issued and outstanding under the Mortgage Indenture.

The Mortgage Indenture provides that the Mortgage Trustee shall have a lien on the mortgaged property, prior to the mortgage bonds, for the payment of its reasonable compensation and expenses and for indemnity against certain liabilities. (*Mortgage Indenture Section 14.09.*)

Issuance of Additional Mortgage Bonds. The maximum principal amount of mortgage bonds which may be issued under the Mortgage Indenture is not limited. Mortgage bonds of any series may be issued from time to time in principal amounts:

- not exceeding 75% of the amount of unbonded “bondable property;”
- equal to the principal amount of mortgage bonds and “prior lien bonds” which have been retired or purchased or acquired by the Company since the date of the Mortgage Indenture or are then being retired or purchased or acquired by the Company, and which have not theretofore been bonded; or
- equal to the amount of cash deposited with the Mortgage Trustee for such purpose.

(*Mortgage Indenture Articles III, IV, V and VI.*)

“Bondable property” includes: the Company’s electric and any steam generating, transmission and distribution properties; construction work in progress; property in the process of purchase to which the Company has legal title; fractional and undivided interests of the Company in certain property owned jointly or in common with other persons; engineering, financial, economic, environmental, geological and legal or other surveys, data processing equipment and software associated with the acquisition or construction of property; paving, grading and other improvements to property owned by others but used by the Company; and certain property owned by the Company located on property owned by others, including governments.

(*Mortgage Indenture Section 1.03(h).*)

“Prior lien bonds” means any indebtedness secured by liens either (i) existing both at and immediately prior to the acquisition of the property by the Company, or (ii) created as purchase money mortgages at the time the Company acquires the property, and in each case ranking prior to, or on a parity with, the lien of the Mortgage Indenture. (*Mortgage Indenture Sections 1.03(hh) and 1.03(ii).*)

The amount of bondable property is the lesser of its cost or fair value determined in accordance with generally accepted accounting principles in effect at December 1, 1986 or, at the option of the Company, at the date of their determination, minus 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured by a prior lien on bondable property owned by the Company at December 1, 1986, and (b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date. (*Mortgage Indenture Section 1.03(h).*) In determining generally accepted accounting principles, the Company may conform to accounting orders from any governmental regulatory commission. (*Mortgage Indenture Section 1.03(u).*)

Withdrawal of Certain Cash. Cash deposited with the Mortgage Trustee as a basis for the issue of additional mortgage bonds may be withdrawn by the Company in the amount of 75% of the lesser of the cost or fair value of unbonded bondable property that is bonded, after deducting 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured by a prior lien on such bondable property owned by the Company at December 1, 1986, and (b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date.

Any other cash deposited with the Mortgage Trustee may be withdrawn by the Company in the amount of:

- 100% of the lesser of the cost or fair value of unbonded bondable property that is bonded, after deducting 133⅓% of the principal amount of all prior lien bonds which are (a) outstanding and secured

by a prior lien on such bondable property owned by the Company at December 1, 1986, and
(b) outstanding and secured by a prior lien, other than due solely to an after-acquired property clause, on bondable property at the date of its acquisition by the Company after such date; or

- the principal amount of mortgage bonds and prior lien bonds which have been retired or purchased or acquired by the Company since the date of the Mortgage Indenture or are then being retired or purchased or acquired by the Company, and which have not theretofore been bonded.

(Mortgage Indenture Article XI.)

Release and Substitution of Property. Mortgaged property may be released from the lien of the Mortgage Indenture:

- if after such release the fair value of the remaining mortgaged property equals or exceeds a sum
- equal to 133⅓% of the aggregate principal amount of outstanding mortgage bonds and prior lien bonds outstanding; or
- if, with some limitations, the fair value of the mortgaged property to be released is less than ½ of 1% of the aggregate principal amount of mortgage bonds and prior lien bonds outstanding, provided that the aggregate fair value of mortgaged property released in this manner in any period of 12 consecutive calendar months shall not exceed 1% of the aggregate principal amount of the outstanding mortgage bonds and prior lien bonds outstanding; or
- on the basis of (a) the deposit of cash, governmental obligations or purchase money obligations, (b) bondable property to be acquired by the Company with the proceeds of, or otherwise in connection with, such release, or (c) a waiver of the right to issue mortgage bonds on the basis of mortgage bonds or prior lien bonds which have been retired or purchased or acquired by the Company after December 1, 1986, and have not theretofore been bonded.

(Mortgage Indenture Article X.)

Events of Default. The Mortgage Indenture provides generally that a default occurs upon:

- failure for 90 days to pay interest when due on any mortgage bonds;
- failure to pay when due the principal of, and premium, if any, on any mortgage bonds issued under the Mortgage Indenture or the principal of, premium, if any, or interest on any outstanding prior lien bonds, beyond any specified grace period;
- failure to perform or observe for 90 days after notice of such failure any other of the covenants or conditions of the Company in the Mortgage Indenture, any applicable supplemental indenture, or any of the mortgage bonds issued under the Mortgage Indenture or any applicable supplemental indenture; and
- the occurrence of insolvency, bankruptcy, receivership or similar events.

In case of default, the Mortgage Trustee or the holders of a majority in principal amount of the outstanding mortgage bonds may declare the principal of and interest on all mortgage bonds to be immediately due and payable, but the holders of a majority in principal amount of the outstanding mortgage bonds may rescind such declaration if such default has been cured. *(Mortgage Indenture Sections 12.02 and 12.04.)*

The Company is required to file with the Mortgage Trustee such information, documents and reports with respect to compliance by the Company with the conditions and covenants of the Mortgage Indenture as may be required by the rules and regulations of the SEC. *(Mortgage Indenture Section 17.02.)* The Company is not required to furnish any statement as to the absence of any default.

Modification of the Mortgage Indenture. In general, modifications or alterations of the Mortgage Indenture and any applicable supplemental indenture and of the rights or obligations of the Company and of the bondholders, as well as waivers of compliance with the Mortgage Indenture (including any applicable supplemental indenture) may be made, with the consent of the holders of a majority in principal amount of the

outstanding mortgage bonds affected by the proposed action, if approved by the Company. Provisions relating to such modifications or alterations and waivers of compliance are subject to certain restrictions designed to safeguard the positions of the bondholders and the Mortgage Trustee with respect to certain matters of basic importance, including payment of principal of and interest and premium (if any) on mortgage bonds and creation of liens ranking prior to or on a parity with the lien of the Mortgage Indenture as to any mortgaged property. (*Mortgage Indenture Section 12.24 and Article XV.*)

Concerning the Mortgage Trustee. As of March 31, 2009, the Mortgage Trustee was the trustee for \$755.3 million of mortgage bonds issued under the Mortgage Indenture. In addition, the Company and its affiliates maintain general banking accounts with the Mortgage Trustee. The Mortgage Trustee is also one of the lenders under separate credit agreements with us, our parent and one of our affiliates.

The Mortgage Indenture provides that the holders of a majority in principal amount of the outstanding mortgage bonds have the right to require the Mortgage Trustee to take certain action on behalf of the bondholders, but under certain circumstances the Mortgage Trustee may decline to follow such directions or to exercise certain of its powers. (*Mortgage Indenture Section 12.05.*) Prior to taking any such action the Mortgage Trustee is entitled to indemnity satisfactory to the Mortgage Trustee against costs, expenses and liabilities which may be incurred in the course of such action. (*Mortgage Indenture Section 12.16.*) This right does not, however, impair the absolute right of any holder of mortgage bonds to enforce payment of the principal of, premium, if any, and interest on such mortgage bonds when due. (*Mortgage Indenture Section 12.23.*) The Company has the right to remove the Mortgage Trustee and appoint a successor Mortgage Trustee not more frequently than once in any ten-year period. (*Mortgage Indenture Section 14.18.*)

BOOK-ENTRY SYSTEM

Unless otherwise indicated in the applicable prospectus supplement, each series of notes or general mortgage bonds will initially be issued in the form of one or more global securities, in registered form, without coupons. The global security will be deposited with, or on behalf of, the depository, and registered in the name of the depository or a nominee of the depository. Unless otherwise indicated in the applicable prospectus supplement, the depository for any global securities will be The Depository Trust Company, or DTC.

So long as the depository, or its nominee, is the registered owner of a global security, such depository or such nominee, as the case may be, will be considered the owner of such global security for all purposes under the applicable indenture, including for any notices and voting. Except in limited circumstances, the owners of beneficial interests in a global security will not be entitled to have securities registered in their names, will not receive or be entitled to receive physical delivery of any such securities and will not be considered the registered holder thereof under the applicable indenture. Accordingly, each person holding a beneficial interest in a global security must rely on the procedures of the depository and, if such person is not a direct participant, on procedures of the direct participant through which such person holds its interest, to exercise any of the rights of a registered owner of such security.

Except as otherwise provided in any applicable prospectus supplement, global securities may be exchanged in whole for certificated securities only if the depository notifies us that it is unwilling or unable to continue as depository for the global securities or the depository has ceased to be a clearing agency registered under the Exchange Act and, in either case, we thereupon fail to appoint a successor depository within 90 days. We may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository), subject to DTC's procedures.

In any such case, we have agreed to notify the applicable trustee in writing that, upon surrender by the direct participants and indirect participants of their interest in such global securities, certificated securities representing the applicable securities will be issued to each person that such direct participants and indirect participants and the depository identify as being the beneficial owner of such securities.

The following is based solely on information furnished by DTC:

DTC will act as depository for the global securities. The global securities will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered global security certificate will be issued for each issue of the global securities, each in the aggregate principal amount of such issue and will be deposited with DTC. If, however, the aggregate principal amount of any issue of a series of debt securities exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount and an additional certificate will be issued with respect to any remaining principal amount of such series. DTC is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds securities that its direct participants deposit with DTC. DTC also facilitates the post-trade settlement among direct participants of sales and other securities transactions, in deposited securities through electronic computerized book-entry transfers and pledges between direct participants' accounts, thereby eliminating the need for physical movement of securities certificates.

Direct participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly, which are referred to as indirect participants and, together with the direct participants, the participants. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of global securities under the DTC system must be made by or through direct participants, who will receive a credit for the global securities on DTC's records. The ownership interest of each actual purchaser of each global security, or beneficial owner, is in turn to be recorded on the direct and indirect participants' records. Beneficial owners will not receive written confirmation from DTC of their purchase. Beneficial owners, however, are expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the direct or indirect participant through which the beneficial owner entered into the transaction. Transfers of ownership interests in the global securities are to be accomplished by entries made on the books of direct and indirect participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except in the event that use of the book-entry system for the global securities is discontinued.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of global securities with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual beneficial owners of the global securities; DTC's records reflect only the identity of the direct participants to whose accounts such global securities are credited which may or may not be the beneficial owners. The direct and indirect participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants, and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial owners of global securities may wish to take certain steps to augment transmission to them of notices of significant events with respect to the global securities, such as redemptions, tenders, defaults, and proposed amendments to the security documents. For example, beneficial owners of global securities may wish to ascertain that the nominee holding the global securities for their benefit has agreed to

obtain and transmit notices to beneficial owners, in the alternative, beneficial owners may wish to provide their names and addresses to the registrar and request that copies of the notices be provided directly to them.

If the global securities are redeemable, redemption notices shall be sent to DTC. If less than all of the global securities are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the global securities unless authorized by a direct participant in accordance with DTC's procedures. Under its usual procedures, DTC mails an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns Cede & Co.'s consenting or voting rights to those direct participants whose accounts the global securities are credited on the record date, identified in a listing attached to the omnibus proxy.

Principal, distributions, interest and premium payments, if any, on the global securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us or the trustee for such securities, on payable date in accordance with their respective holdings shown on DTC's records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such participant and not of DTC, the trustee for such securities, or us, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, distributions, interest and premium, if any, on any of the aforementioned securities represented by global securities to DTC is the responsibility of the appropriate trustee and us. Disbursement of such payments to direct participants shall be the responsibility of DTC, and disbursement of such payments to the beneficial owners shall be the responsibility of the participants.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources, including DTC, that we believe to be reliable, but we take no responsibility for the accuracy thereof.

The underwriters, dealers or agents of any of the securities may be direct participants of DTC.

None of the trustees, us or any agent for payment on or registration of transfer or exchange of any global security will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial interests in such global security or for maintaining, supervising or reviewing any records relating to such beneficial interests.

PLAN OF DISTRIBUTION

We may sell the securities in one or more of the following ways from time to time: (i) to underwriters for resale to the public or to institutional investors; (ii) directly to institutional investors; or (iii) through agents to the public or to institutional investors. The prospectus supplement with respect to each series of securities will set forth the terms of the offering of such securities, including the name or names of any underwriters or agents, the purchase price of such securities, and the proceeds to us from such sale, any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation, any initial public offering price, any discounts or concessions allowed or reallocated or paid to dealers and any securities exchange on which such securities may be listed.

If underwriters participate in the sale, such securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more of those firms. The specific managing underwriter or underwriters, if any, will be named in the prospectus supplement relating to the particular securities together with the members of the underwriting syndicate, if any.

Unless otherwise set forth in the applicable prospectus supplement, the obligations of the underwriters to purchase any series of securities will be subject to certain conditions precedent and the underwriters will be obligated to purchase all of such securities being offered, if any are purchased.

We may sell the securities directly or through agents we designate from time to time. The applicable prospectus supplement will set forth the name of any agent involved in the offer or sale of the securities in respect of which such prospectus supplement is delivered and any commissions payable by us to such agent. Unless otherwise indicated in the applicable prospectus supplement, any agent will be acting on a best efforts basis for the period of its appointment.

Underwriters and agents may be entitled under agreements entered into with us to indemnification against certain civil liabilities, including liabilities under the Securities Act of 1933, as amended. Underwriters and agents may engage in transactions with, or perform services for, us in the ordinary course of business.

Each series of securities will be a new issue of securities and will have no established trading market. Any underwriters to whom securities are sold for public offering and sale may make a market in such securities, but such underwriters will not be obligated to do so and may discontinue any market making at any time without notice. The securities may or may not be listed on a national securities exchange.

LEGAL MATTERS

Legal matters with respect to the securities offered under this prospectus will be passed upon for us by Mark English, Assistant General Counsel and Assistant Secretary and Dewey & LeBoeuf LLP. Davis Polk & Wardwell will pass on certain matters for the underwriters, dealers, purchasers, or agents. At May 1, 2009, Mr. English owned beneficially a number of shares of common stock of Great Plains Energy Incorporated, including restricted stock, and performance shares which may be paid in shares of common stock at a later date based on Great Plains Energy Incorporated's performance, which represented less than 0.1% of the total outstanding common stock of Great Plains Energy Incorporated.

EXPERTS

The consolidated financial statements, and the related financial statement schedule, incorporated by reference in this prospectus from the Kansas City Power & Light Company and subsidiaries Annual Report on Form 10-K for the year ended December 31, 2008, and the effectiveness of Kansas City Power & Light Company and subsidiaries internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference (which reports (1) express an unqualified opinion on the consolidated financial statements and financial statement schedule and include an explanatory paragraph regarding the adoption of new accounting standards, and (2) express an unqualified opinion on the effectiveness of internal control over financial reporting). Such consolidated financial statements and financial schedule have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports and other information with the SEC through the SEC's Electronic Data Gathering, Analysis and Retrieval system and these filings are publicly available through the SEC's website (<http://www.sec.gov>). You may read and copy such material at the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

The SEC allows us to "incorporate by reference" into this prospectus the information we file with them. This means that we can disclose important information to you by referring you to the documents containing the information. The information we incorporate by reference is considered to be included in and an important part of this prospectus and should be read with the same care. Information that we file later with the SEC that is incorporated by reference into this prospectus will automatically update and supersede this information. We

are incorporating by reference into this prospectus the following documents that we have filed with the SEC and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 (excluding information deemed to be furnished and not filed with the SEC) until the offering of the securities described in this prospectus is completed:

- Our Annual Report on Form 10-K for the year ended December 31, 2008, filed with the SEC on February 27, 2009;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2009, filed with the SEC on May 11, 2009; and
- Our Current Reports on Form 8-K dated February 10, 2009 (Item 8.01 only) and filed with the SEC on February 10, 2009; March 6, 2009 and filed with the SEC on March 12, 2009; March 18, 2009 (Item 8.01 only) and filed with the SEC on March 19, 2009; March 19, 2009 and filed with the SEC on March 24, 2009; April 21, 2009 and filed with the SEC on April 21, 2009; and April 24, 2009 and filed with the SEC on April 30, 2009.

We and our parent company, Great Plains Energy Incorporated, separately filed the combined Annual Report on Form 10-K and the Current Reports on Form 8-K listed above. However, the information contained in those combined reports relating solely to our parent and its subsidiaries (other than KCP&L and its consolidated subsidiaries) was separately filed by Great Plains Energy Incorporated on its behalf, and the information contained in those combined reports relating solely to KCP&L and its consolidated subsidiaries was separately filed by us. We do not intend to incorporate by reference into this prospectus the information relating to Great Plains Energy Incorporated and its subsidiaries (other than KCP&L and its consolidated subsidiaries), and we make no representation as to the information relating to Great Plains Energy Incorporated and its subsidiaries (other than KCP&L and its consolidated subsidiaries) contained in such combined reports. The only information you should rely upon in determining whether to invest in the securities offered hereby is the information of KCP&L and its consolidated subsidiaries contained in this prospectus, the information separately provided by KCP&L and its consolidated subsidiaries in the documents incorporated by reference herein and any free writing prospectus used in connection with the offering of securities described in this prospectus.

Our website is www.kcpl.com. Information contained on our website is not incorporated herein. We make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, we make available on or through our website all other reports, notifications and certifications filed electronically with the SEC. You may obtain a free copy of our filings with the SEC by writing or telephoning us at the following address: Kansas City Power & Light Company, 1201 Walnut Street, Kansas City, Missouri 64106-2124 (Telephone No.: 816-556-2200), Attention: Corporate Secretary, or by contacting us on our website.

\$400,000,000



Kansas City Power & Light Company

5.30% Notes due 2041

PROSPECTUS SUPPLEMENT

September 15, 2011

Joint Book-Running Managers

Barclays Capital

RBS

Wells Fargo Securities

Senior Co-Manager

Scotia Capital

Co-Managers

BNY Mellon Capital Markets, LLC
KeyBanc Capital Markets

EXHIBIT B

**THE REMAINDER OF THIS EXHIBIT
CONTAINS
HIGHLY CONFIDENTIAL
INFORMATION
NOT AVAILABLE TO THE PUBLIC**