

Exhibit No.:  
Issue: Cost of Capital; Capital Structure;  
Return on Equity  
Witness: Robert B. Hevert  
Type of Exhibit: Direct Testimony  
Sponsoring Party: Kansas City Power & Light Company  
Case No.: ER-2018-0145  
Date Testimony Prepared: January 30, 2018

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO.: ER-2018-0145**

**DIRECT TESTIMONY**

**OF**

**ROBERT B. HEVERT**

**ON BEHALF OF**

**KANSAS CITY POWER & LIGHT COMPANY**

**Kansas City, Missouri  
January 2018**

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## GLOSSARY OF FREQUENTLY USED TERMS

TERM	DESCRIPTION
Beta Coefficient	A component of the CAPM that measures the risk of a given stock relative to the risk of the overall market.
Capital Asset Pricing Model (“CAPM”)	A risk premium-based model used to estimate the Cost of Equity, assuming the stock is added to a well-diversified portfolio. The CAPM assumes that investors are compensated for the time value of money (represented by the Risk-Free Rate), and risk (represented by the combination of the Beta Coefficient and the Market Risk Premium).
Constant Growth DCF Model	A form of the DCF model that assumes cash flows will grow at a constant rate, in perpetuity. The model simplifies to a form that expresses the Cost of Equity as the sum of the expected dividend yield and the expected growth rate.
Cost of Equity	The return required by investors to invest in equity securities. The terms “Return on Equity” and “Cost of Equity” are used interchangeably.
Discounted Cash Flow (“DCF”) Model	A model used to estimate the Cost of Equity based on expected cash flows. The Cost of Equity equals the discount rate that sets the current market price equal to the present value of expected cash flows.
Dividend Yield	For a given stock, the current dividend divided by the current market price.
Gross Domestic Product (“GDP”)	The value of all finished goods and services produced within a country during a given period of time (usually measured annually). GDP includes public and private consumption, government expenditures, investments, and exports less imports.
Market Return	The expected return on the equity market, taken as a portfolio.
Market Risk Premium	The additional compensation required by investing in the equity market as a portfolio over the Risk-Free rate. The Market Risk Premium is a component of the CAPM.
Multi-Stage DCF Model	A form of the DCF model in which the rate of growth may change over different stages.
Proxy Group	A group of publicly traded companies used as the “proxy” for the subject company (in this case, KCP&L). Proxy companies are sometimes referred to as “Comparable Companies.”

<b>TERM</b>	<b>DESCRIPTION</b>
Return on Equity (“ROE”)	The return required by investors to invest in equity securities. The terms “Return on Equity” and “Cost of Equity” are used interchangeably.
Risk-Free Rate	The rate of return on an asset with no risk of default.
Risk Premium	The additional compensation required by investors for taking on additional increments of risk. Risk Premium-based approaches are used in addition to the DCF and CAPM to estimate the Cost of Equity.
Terminal Growth	The expected rate of growth in the final, or terminal, stage of the Multi-Stage DCF model.
Treasury Inflation Protected Securities (“TIPS”)	Treasury securities that are indexed to inflation. The principal value of TIPS increase with inflation and decrease with deflation, as measured by the Consumer Price Index.
Treasury Yield	The return on Treasury securities; the yield on long-term Treasury bonds is considered to be a measure of the Risk-Free Rate.

**DIRECT TESTIMONY**

**OF**

**ROBERT B. HEVERT**

**Case No. ER-2018-0145**

1           **I.       INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

2   **Q:     Please state your name and business address.**

3   A:     My name is Robert B. Hevert and my business address is ScottMadden, Inc., 1900 West  
4         Park Drive, Suite 250, Westborough, MA 01581.

5   **Q:     On whose behalf are you submitting this testimony?**

6   A:     I am submitting this direct testimony (“Direct Testimony”) before the Missouri Public  
7         Service Commission (“Commission”) on behalf of Kansas City Power & Light Company  
8         (“KCP&L” or the “Company”).

9   **Q:     Please describe your educational background.**

10  A:     I hold a Bachelor’s degree in Business and Economics from the University of Delaware,  
11         and an MBA with a concentration in Finance from the University of Massachusetts. I  
12         also hold the Chartered Financial Analyst designation.

13  **Q:     Please describe your experience in the energy and utility industries.**

14  A:     I have worked in regulated industries for over thirty years, having served as an executive  
15         and manager with consulting firms, a financial officer of a publicly-traded natural gas  
16         utility (at the time, Bay State Gas Company), and an analyst at a telecommunications  
17         utility. In my role as a consultant, I have advised numerous energy and utility clients on  
18         a wide range of financial and economic issues, including corporate and asset-based

1 transactions, asset and enterprise valuation, transaction due diligence, and strategic  
2 matters. As an expert witness, I have provided testimony in more than 230 proceedings  
3 regarding various financial and regulatory matters before numerous state utility  
4 regulatory agencies, the Federal Energy Regulatory Commission, and the Alberta  
5 Utilities Commission. A summary of my professional and educational background,  
6 including a list of my testimony in prior proceedings, is included in Attachment A to my  
7 Direct Testimony.

## 8 II. PURPOSE AND OVERVIEW OF TESTIMONY

9 **Q: What is the purpose of your Direct Testimony?**

10 A: On behalf of KCP&L, my Direct Testimony presents evidence and provides a  
11 recommendation regarding the Company's Return on Equity ("ROE"),<sup>1</sup> and assesses the  
12 reasonableness of the Company's capital structure and Cost of Debt. My analyses and  
13 conclusions are supported by the data presented in Schedules RBH-1 through RBH-12,  
14 which have been prepared by me or under my direction.

15 **Q: What are your conclusions regarding the appropriate Cost of Capital for the**  
16 **Company?**

17 A: The Company's 5.06 percent Cost of Debt reflects the prevailing level of interest rates at  
18 the times of issuance. As such, I conclude that the Company's proposed Cost of Debt is  
19 reasonable and appropriate.

20 As to the Company's requested capital structure of 50.03 percent common equity  
21 and 49.97 percent long-term debt, I conclude that it is consistent with those in place at

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<sup>1</sup> Throughout my Direct Testimony, I interchangeably use the terms "ROE" and "Cost of Equity."

1 similarly-situated utilities, whose capital structures include common equity ratios in the  
2 range of 45.89 percent to 59.52 percent.

3 As to the Company's Cost of Equity, my analyses indicate that an ROE in the  
4 range of 9.75 percent to 10.50 percent represents the range of equity investors' required  
5 return for investment in vertically integrated electric utilities similar to the Company in  
6 today's capital markets. I note that the Cost of Equity, which is the return required by  
7 equity investors to assume the risks of ownership, is a market-based concept. As  
8 discussed further in my testimony, as opposed to the earned return on common equity,  
9 which is an accounting construct that can be observed in historical data, the Cost of  
10 Equity is unobservable and must be estimated based on observable capital market data.  
11 As a consequence, there may be differences of opinion among analysts as to the data,  
12 assumptions and models used in the estimation process.

13 Further, I am aware that the Commission's 2015 Report and Order in Case No.  
14 ER-2014-0370 ("2015 KCP&L Order") discussed the importance of recommendations  
15 that rely on verifiable and independent market data, and accepted market-based rate of  
16 return models.<sup>2</sup> As discussed throughout my Direct Testimony, the analyses that underlie  
17 my recommended range consider the Commission's findings, and reflect the types of  
18 analyses and data discussed in the 2015 KCP&L Order. Based on the those analyses and  
19 data, and in light of that order, it is my view that the Company's ROE is within the range  
20 of 9.75 percent to 10.50 percent, and represents a reasonable, but conservative range of  
21 the Company's Cost of Equity.

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<sup>2</sup> *In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service*, Case No. ER-2014-0370, Report and Order at 20 (Sept. 2, 2015).

1           In my view, the factors that are commonly used to estimate the Cost of Equity  
2 likely indicate that a higher range than 9.75 percent to 10.50 percent, and an ROE at the  
3 mid- to upper-end of such a higher range is appropriate. However, the Company has  
4 asked that I give considerable weight to recent Commission orders, including the types of  
5 data and analyses discussed in those orders, in developing my proposed range and  
6 recommendation. Having done so, my proposed range is lower than otherwise would be  
7 the case.

8 **Q: Has KCP&L filed a rate case since the 2015 KCP&L Order?**

9 A: Yes, it has. In its 2017 Report and Order in Case No. ER-2016-0285 (“2017 KCP&L  
10 Order”), the Commission affirmed the Company’s 9.50 percent ROE noting that “recent  
11 indicators of growth... may suggest an increased return” but found “the reduction of  
12 investment” risk associated with the approval of a fuel adjustment clause had an off-  
13 setting effect.<sup>3</sup>

14 **Q: Please discuss the 2015 KCP&L Order as it relates to your recommended ROE for**  
15 **the Company in this proceeding.**

16 A: My recommendation takes into consideration various aspects of the Commission’s  
17 findings in the 2015 KCP&L Order. In particular, the Commission found that ROEs  
18 between 9.40 percent and 9.60 percent represented “accurate estimate[s] of the current  
19 market cost of capital for KCPL,”<sup>4</sup> and determined that an ROE of 9.50 percent was  
20 reasonable.<sup>5</sup> However, since September 2015 when that order was issued, capital market  
21 conditions have changed, and those changes should be reflected in the market-based

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<sup>3</sup> *In the Matter of Kansas City Power & Light Company’s Request for Authority to Implement a General Rate Increase for Electric Service*, Case No. ER-2016-0285, Report and Order at 22 (May 3, 2017).

<sup>4</sup> 2015 KCP&L Order at 22.



1 return in this case. On balance, given the current capital market environment, business  
2 risks faced by the Company, and the Commission's findings in the 2015 and 2017  
3 Orders, I believe my recommendation represents a proper (if not somewhat conservative)  
4 zone of reasonableness, and that the Company's market-based Cost of Equity falls within  
5 that range.

6 **Q: How does your recommendation compare to recently authorized returns?**

7 A: In both the 2015 and 2017 KCP&L Orders, the Commission noted that it is appropriate to  
8 look to authorized ROEs in other jurisdictions to evaluate the reasonableness of ROE  
9 recommendations.<sup>6</sup> As shown in Chart 1, below, my recommendation is highly  
10 consistent with recently authorized ROEs for vertically integrated electric utilities.

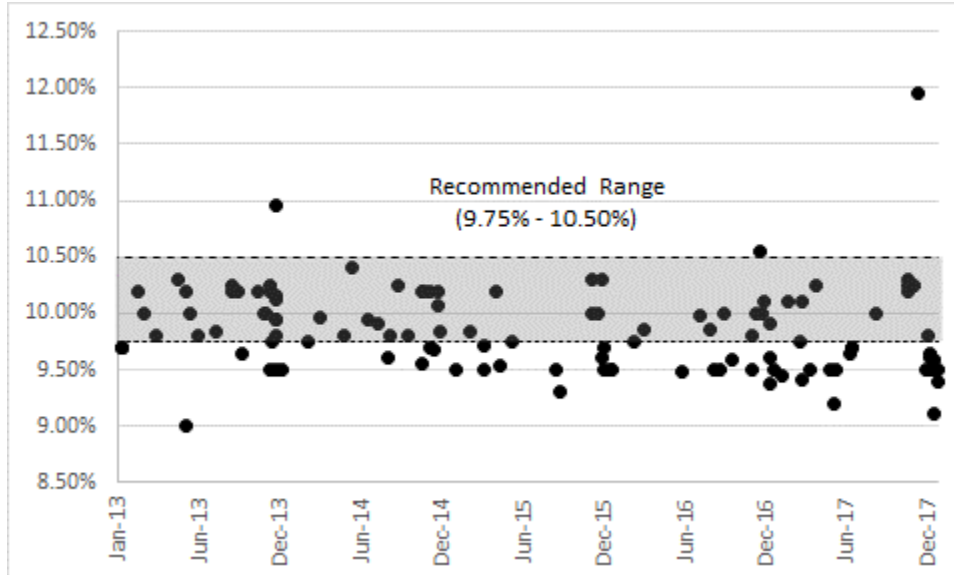
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<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*, at 18-19; 2017 KCP&L Order at 18.

1

**Chart 1: Authorized Returns<sup>7</sup>**



2

3 **Q: Please provide a brief overview of the analyses that led to your ROE**  
4 **recommendation.**

5 A: Because all financial models are subject to various assumptions and constraints, equity  
6 analysts and investors tend to use multiple methods to develop their return requirements.  
7 I therefore relied on three widely-accepted approaches to develop my ROE  
8 recommendation: (1) the Discounted Cash Flow (“DCF”) model, including the Constant  
9 Growth and Multi-Stage forms; (2) the Capital Asset Pricing Model (“CAPM”); and (3)  
10 the Bond Yield Plus Risk Premium approach. As discussed in Sections V, VI and VII, I  
11 considered the results of those methods in the context of both Company-specific, and  
12 general capital market factors. Based on those analyses, I conclude that a range of 9.75  
13 percent to 10.50 percent represents reasonable estimates of the Company’s Cost of  
14 Equity.

<sup>7</sup> S&P Global Market Intelligence as of December 29, 2017.

1 **Q: How is the remainder of your Direct Testimony organized?**

2 A: The remainder of my Direct Testimony is organized as follows:

3 Section III – Provides a summary of issues regarding Cost of Equity estimation in  
4 regulatory proceedings and discusses the regulatory guidelines pertinent to the  
5 development of the cost of capital;

6 Section IV – Explains my selection of the proxy group used to develop my analytical  
7 results;

8 Section V – Explains my analyses and the analytical bases for my ROE recommendation;

9 Section VI – Provides a discussion of specific business risks and other considerations that  
10 have a direct bearing on the Company’s Cost of Equity;

11 Section VII – Highlights the current capital market conditions and their effect on the  
12 Company’s Cost of Equity;

13 Section VIII – Analyzes the Company’s embedded Cost of Debt;

14 Section IX – Provides my analyses of the Company’s capital structure and presents the  
15 overall rate of return;

16 Section X – Summarizes my conclusions and recommendations.  
17

### **III. SUMMARY OF ISSUES SURROUNDING COST OF EQUITY ESTIMATION IN REGULATORY PROCEEDINGS**

18 **Q: Before addressing the specific aspects of this proceeding, please provide an overview  
19 of the issues surrounding the Cost of Equity in regulatory proceedings generally.**

20 A: In very general terms, the Cost of Equity is the return that investors require to make an  
21 equity investment in a firm. That is, investors will only provide funds to a firm if the

1 return that they *expect* is equal to, or greater than, the return that they *require* to accept  
2 the risk of providing funds to the firm. From the firm's perspective, that required return,  
3 whether it is provided to debt or equity investors, has a cost. Individually, we speak of  
4 the "Cost of Debt" and the "Cost of Equity." Together, they are referred to as the "Cost  
5 of Capital."

6 The Cost of Capital (including the costs of both debt and equity) is based on the  
7 economic principle of "opportunity costs." Investing in any asset, whether debt or equity  
8 securities, implies a forgone opportunity to invest in alternative assets. For any  
9 investment to be sensible, its expected return must be at least equal to the return expected  
10 on alternative, comparable investment opportunities. Because investments with like risks  
11 should offer similar returns, the opportunity cost of an investment should equal the return  
12 available on an investment of comparable risk.

13 Although both debt and equity have required costs, they differ in certain  
14 fundamental ways. Most noticeably, the Cost of Debt is contractually defined and can be  
15 directly observed as the interest rate or yield on debt securities.<sup>8</sup> The Cost of Equity, on  
16 the other hand, is neither directly observable nor a contractual obligation. Rather, equity  
17 investors have a claim on cash flows only after debt holders are paid. The uncertainty (or  
18 risk) associated with those residual cash flows determines the Cost of Equity. Because  
19 equity investors bear the "residual risk," they take greater risks and require higher returns  
20 than debt holders. In that basic sense, equity and debt investors differ: They invest in  
21 different securities, face different risks, and require different returns.

22 Whereas the Cost of Debt can be directly observed, the Cost of Equity must be  
23 estimated or inferred based on market data and various financial models. As discussed

1 throughout my Direct Testimony, each of those models is subject to certain assumptions,  
2 which may be more or less applicable under differing market conditions. In addition,  
3 because the Cost of Equity is premised on opportunity costs, the models typically are  
4 applied to a group of “comparable” or “proxy” companies. The choice of models  
5 (including their inputs), the selection of proxy companies, and the interpretation of the  
6 model results all require the application of reasoned judgment. That judgment should  
7 consider data and information that is not necessarily included in the models themselves.

8 In the end, the estimated Cost of Equity should reflect the return that investors  
9 require in light of the subject company’s risks, and the returns available on comparable  
10 investments. A given utility stock may require a higher return based on the risks to  
11 which it is exposed relative to other utilities. That is, simply because utilities are viewed  
12 as a “sector,” that does not mean that all utilities require the same return. The assessment  
13 of relative risk, and its effect on the Cost of Equity necessarily requires the application of  
14 reasoned, experienced judgment applied to a variety of data, much of which is qualitative  
15 in nature.

16 **Q: Please now provide a brief summary of the regulatory guidelines established for the**  
17 **purpose of determining the ROE.**

18 A: The United States Supreme Court established the guiding principles for establishing a fair  
19 return for capital in two cases: (1) *Bluefield Water Works and Improvement Co. v. Public*  
20 *Service Comm’n of West Virginia*, 262 U.S. 679 (1923) (“*Bluefield*”); and (2) *Federal*  
21 *Power Comm’n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”). In those cases,  
22 the Supreme Court recognized that the fair rate of return on equity should be: (1)

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<sup>8</sup> The observed interest rate may be adjusted to reflect issuance or other directly observable costs.

1 comparable to returns investors expect to earn on other investments of similar risk; (2)  
2 sufficient to assure confidence in the company’s financial integrity; and (3) adequate to  
3 maintain and support the company’s credit and to attract capital.

4 **Q: Does Missouri precedent provide similar guidance?**

5 A: Yes. In a prior order, the Commission cited the *Hope* and *Bluefield* decisions at some  
6 length and acknowledged its authority and responsibility to set “just and reasonable” rates  
7 for public utility service, stating that:

8 The standard for rates is “just and reasonable,” a standard founded on  
9 constitutional provisions, as the United States Supreme Court has  
10 explained. But the Commission must also consider the customers.  
11 Balancing the interests of investor and consumer is not reducible to a  
12 single formula, and making pragmatic adjustments is part of the  
13 Commission’s duty. Thus, the law requires a just and reasonable end,  
14 but does not specify a means. The Commission is charged with  
15 approving rate schedules that are as “just and reasonable” to  
16 consumers as they are to the utility.<sup>9</sup>

17 Based on those standards, the authorized ROE should provide the Company with the  
18 opportunity to earn a fair and reasonable return, and should enable efficient access to  
19 external capital under a variety of market conditions.<sup>10</sup>

20 In addition, the Missouri Court of Appeals provided the following guidance,  
21 citing a federal court’s observation:

22 The cases also recognize that the fixing of rates is a matter largely of  
23 prophecy and because of this commissions, in carrying out their  
24 functions, necessarily deal in what are called ‘zones of reasonableness’

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<sup>9</sup> *In the Matter of KCP&L Greater Missouri Operations Company’s Request for Authority to Implement a General Rate Increase for Electric Service*, Case No. ER-2012-0175, Report and Order at 11 (Jan. 9, 2013) (“2013 GMO Order”).

<sup>10</sup> 2017 KCP&L Order at 10-11.

1 the result of which is that they have some latitude in exercising this  
2 most difficult function.<sup>11</sup>

3 The Commission has found it appropriate to consider both quantitative and qualitative  
4 information when developing its zone of reasonableness, which has been viewed as a  
5 range within 100 basis points of the national average.<sup>12</sup> Further, Missouri precedent  
6 notes that the authorized ROE must reflect the need to balance investor and consumer  
7 interests.<sup>13</sup> Consistent with these precedents, I discuss throughout my Direct Testimony  
8 that the estimation of the market required ROE and the zone of reasonableness does not  
9 lend itself to a strict mathematical solution, as the Supreme Court recognized in *Hope*.

10 **Q: Why is it important for a utility to be allowed the opportunity to earn a return**  
11 **adequate to attract equity capital at reasonable terms?**

12 A: A return that is adequate to attract capital at reasonable terms enables the utility to  
13 provide service while maintaining its financial integrity. As discussed above, and in  
14 keeping with the *Hope* and *Bluefield* standards, that return should be commensurate with  
15 the returns expected elsewhere in the market for investments of equivalent risk. The  
16 consequence of the Commission's order in this case, therefore, should be to provide  
17 KCP&L with the opportunity to earn a return on equity that is: (1) adequate to attract  
18 capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3)  
19 commensurate with returns on investments in enterprises having corresponding risks. To  
20 the extent KCP&L is provided a reasonable opportunity to earn its market-based Cost of  
21 Equity, neither customers nor shareholders should be disadvantaged. In fact, a return that

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<sup>11</sup> 2015 KCP&L Order at 21. See *State ex rel. Laclede Gas Co. v. Public Serv. Comm'n.*, 535 S.W.2d 561, 570 - 571 (Mo. App. 1976), quoting *Mountain States Tel. & Tel. Co. v. Public Util. Comm'n.*, 345 F. Supp. 80, 85 (D. Colo. 1972).

<sup>12</sup> *State ex rel. Public Counsel v. Public Serv. Comm'n.*, 274 S.W.3d 569, 574 (Mo. App. W.D. 2009).

<sup>13</sup> *State ex rel. Mo. Gas Energy v. Public Serv. Comm'n.*, 186 S.W.3d 376, 383 (Mo. App. W.D. 2005).

1 is adequate to attract capital at reasonable terms enables the Company to provide safe,  
2 reliable electric utility service while maintaining its financial integrity.

3 **Q: How is the Cost of Equity estimated in regulatory proceedings?**

4 A: The Cost of Equity is estimated by the use of various financial models. By their very  
5 nature, those models produce a range of results from which the ROE is estimated. Both  
6 practitioners and academics, however, recognize that financial models simply are tools to  
7 be used in the ROE estimation process, and that strict adherence to any single approach  
8 or to the specific results of any single approach can lead to flawed or misleading  
9 conclusions. That position is consistent with the *Hope* and *Bluefield* principle that it is  
10 the analytical result, as opposed to the methodology, that is controlling in arriving at ROE  
11 determinations. Thus, a reasonable ROE estimate appropriately considers alternative  
12 methodologies and the reasonableness of their individual and collective results in the  
13 context of observable, relevant market information.

#### IV. PROXY GROUP SELECTION

14 **Q: Why is it necessary to select a group of proxy companies to determine the Cost of**  
15 **Equity for the Company?**

16 A: Since the ROE is a market-based concept, and KCP&L is not a publicly traded entity, it is  
17 necessary to establish a group of comparable, publicly traded companies to serve as its  
18 “proxy.” Even if the Company were a publicly traded entity, short-term events could bias  
19 its market value during a given period of time. A significant benefit of using a proxy  
20 group is that it moderates the effects of anomalous, temporary events associated with any  
21 one company.



1 **Q: Does the selection of a proxy group suggest that analytical results will be tightly**  
2 **clustered around average (i.e., mean) results?**

3 A: No. For example, the Constant Growth DCF approach defines the Cost of Equity as the  
4 sum of the expected dividend yield and projected long-term growth. Despite the care  
5 taken to ensure risk comparability, market expectations with respect to future risks and  
6 growth opportunities will vary from company to company. Therefore, even within a  
7 group of similarly-situated companies, it is common for analytical results to reflect a  
8 seemingly wide range. Consequently, the issue is how to estimate the Cost of Equity  
9 from within that range. Such a determination necessarily must consider a wide range of  
10 both quantitative and qualitative information.

11 **Q: Please provide a summary profile of KCP&L.**

12 A: KCP&L, a wholly owned subsidiary of Great Plains Energy Incorporated (“GPE”),  
13 provides electric service to approximately 534,400 retail customers in Missouri and  
14 Kansas.<sup>14</sup> KCP&L’s current long-term issuer credit rating from Standard & Poor’s  
15 (“S&P”) is BBB+ (outlook: Positive) and Baa1 (outlook: Stable) from Moody’s Investors  
16 Service (“Moody’s”).<sup>15</sup>

17 **Q: How did you select the companies included in your proxy group?**

18 A: I began with the universe of companies that Value Line classifies as Electric Utilities, and  
19 applied the following screening criteria:

- 20
- I excluded companies that do not consistently pay quarterly cash dividends;
  - I excluded companies that were not covered by at least two utility industry equity
- 21 analysts;
- 22

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<sup>14</sup> See Great Plains Energy Inc., SEC Form 10-K for year-end December 31, 2016, at 10.

- 1           • I excluded companies that do not have investment grade senior unsecured bond  
2           and/or corporate credit ratings from S&P;
- 3           • I excluded companies that were not vertically-integrated, *i.e.* utilities that own and  
4           operate regulated generation, transmission and distribution assets;
- 5           • I excluded any companies whose regulated operating income over the three most  
6           recently reported fiscal years comprised less than 60.00 percent of the respective  
7           totals for that company;
- 8           • I excluded any companies whose regulated electric operating income over the  
9           three most recently reported fiscal years represented less than 60.00 percent of  
10          total regulated operating income; and
- 11          • I eliminated companies that are currently known to be party to a merger, or other  
12          significant transaction.

13 **Q: Did you include GPE in your proxy group?**

14 A: No. To avoid the circular logic that would otherwise occur, it has been my consistent  
15 practice to exclude the subject company (or its parent) from the proxy group. In any  
16 event, GPE would be excluded from my project group based on its announced merger  
17 with Westar Energy, Inc.<sup>16</sup>

18 **Q: What companies met those screening criteria?**

19 A: The criteria discussed above resulted in a proxy group of the following 21 companies:

---

<sup>15</sup> Source: S&P Global Market Intelligence as of December 29, 2017.

<sup>16</sup> SEC Form 8-K, Great Plains Energy Incorporated (July 9, 2017)

**Table 1: Proxy Group Screening Results**

<b>Company</b>	<b>Ticker</b>
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
Dominion Energy, Inc. <sup>17</sup>	D
DTE Energy Company	DTE
Duke Energy Corporation	DUK
El Paso Electric Company	EE
Hawaiian Electric Industries, Inc.	HE
IDACORP, Inc.	IDA
NorthWestern Corporation	NWE
OGE Energy Corp.	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
PNM Resources, Inc.	PNM
Portland General Electric Company	POR
Southern Company	SO
WEC Energy Group, Inc.	WEC
Xcel Energy Inc.	XEL

## V. COST OF EQUITY ESTIMATION

2 **Q: Please briefly discuss the ROE in the context of the regulated rate of return.**

3 A: Regulated utilities primarily use common stock and long-term debt to finance their  
4 capital investments. The Weighted Average Cost of Capital weighs the cost of the  
5 individual sources of capital by their respective book values. While the Cost of Debt can

<sup>17</sup> Dominion Energy, Inc. (“Dominion”) announced its proposed acquisition of SCANA Corp. on January 3, 2018, subsequent to the period used in the various analyses discussed in more detail below (i.e., December 29, 2017). See Dominion Energy, Inc. Merger Press Release, January 3, 2018. As such, I have retained Dominion in the

1 be directly observed, the Cost of Equity is market-based and, therefore, must be estimated  
2 based on observable market information.

3 **Q: How is the required ROE determined?**

4 A: I estimated the ROE using analyses based on market data to quantify a range of investor  
5 expectations of required equity returns. By their very nature, quantitative models  
6 produce a range of results from which the market required ROE must be estimated. As  
7 discussed throughout my Direct Testimony, that estimation must be based on a  
8 comprehensive review of relevant data and information, and does not necessarily lend  
9 itself to a strict mathematical solution. Consequently, the key consideration in  
10 determining the ROE is to ensure that the overall analysis reasonably reflects investors'  
11 view of the financial markets in general, and the subject company (in the context of the  
12 proxy companies) in particular.

13 Because the Cost of Equity is not directly observable, it must be estimated based  
14 on both quantitative and qualitative information. Although a number of empirical models  
15 have been developed for that purpose, all are subject to limiting assumptions or other  
16 constraints. Consequently, many finance texts recommend using multiple approaches to  
17 estimate the Cost of Equity.<sup>18</sup> When faced with the task of estimating the Cost of Equity,  
18 analysts and investors are inclined to gather and evaluate as much relevant data as  
19 reasonably can be analyzed and, therefore, rely on multiple analytical approaches.

20 I also note that as a practical matter, no individual model is more reliable than all  
21 others under all market conditions. Therefore, it is both prudent and appropriate to use

---

proxy group, however I may exclude Dominion from any updated analyses that I may file in this proceeding, because it would no longer meet my screening criteria.

1 multiple methodologies in order to mitigate the effects of assumptions and inputs  
2 associated with any single approach. As such, I have considered the results of the  
3 Constant Growth and Multi-Stage forms of the DCF model; the Capital Asset Pricing  
4 Model; and the Bond Yield Plus Risk Premium approach.

5 **A. Constant Growth Discounted Cash Flow Model**

6 **Q: Please more fully describe the Constant Growth DCF approach.**

7 A: The Constant Growth DCF approach is based on the theory that a stock's current price  
8 represents the present value of all expected future cash flows. In its simplest form, the  
9 Constant Growth DCF model expresses the Cost of Equity as the discount rate that sets  
10 the current price equal to expected cash flows:

11 
$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_m}{(1+k)^m} \quad \text{Equation [1]}$$

12 where  $P$  represents the current stock price,  $D_1 \dots D_m$  represent expected future dividends,  
13 and  $k$  is the discount rate, or required ROE. Equation [1] is a standard present value  
14 calculation that can be simplified and rearranged into the familiar form:

15 
$$k = \frac{D_1(1+g)}{P} + g \quad \text{Equation [2]}$$

16 Equation [2] often is referred to as the "Constant Growth DCF" model, in which the first  
17 term is the expected dividend yield and the second term is the expected long-term annual  
18 growth rate.

---

<sup>18</sup> See, e.g., Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice at 341 (7th ed. 1994); Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, at 214 (3rd ed. 2000).

1 **Q: What assumptions are inherent in the Constant Growth DCF model?**

2 A: The Constant Growth DCF model assumes: (1) a constant average annual growth rate for  
3 earnings and dividends; (2) a stable dividend payout ratio; (3) a constant Price to  
4 Earnings multiple; and (4) a discount rate greater than the expected growth rate.

5 **Q: What market data did you use to calculate the dividend yield in your Constant**  
6 **Growth DCF model?**

7 A: The dividend yield is based on the proxy companies' current annualized dividend, and  
8 average closing stock prices over the 30-, 90-, and 180-trading day periods as of  
9 December 29, 2017.

10 **Q: Why did you use three averaging periods to calculate an average stock price?**

11 A: I did so to ensure that the model's results are not skewed by anomalous events that may  
12 affect stock prices on any given trading day. At the same time, the averaging period  
13 should be reasonably representative of expected capital market conditions over the long  
14 term. In my view, using 30-, 90-, and 180-day averaging periods reasonably balances  
15 those concerns.

16 **Q: Did you make any adjustments to the dividend yield to account for periodic growth**  
17 **in dividends?**

18 A: Yes, I did. Since utility companies tend to increase their quarterly dividends at different  
19 times throughout the year, it is reasonable to assume that dividend increases will be  
20 evenly distributed over calendar quarters. Given that assumption, it is appropriate to  
21 calculate the expected dividend yield by applying one-half of the long-term growth rate  
22 to the current dividend yield. That adjustment ensures that the expected dividend yield is,

1 on average, representative of the coming twelve-month period, and does not overstate the  
2 dividends to be paid during that time.

3 **Q: Is it important to select appropriate measures of long-term growth in applying the**  
4 **DCF model?**

5 A: Yes. In its Constant Growth form, the DCF model (*i.e.*, as presented in Equation [2]  
6 above) assumes a single growth estimate in perpetuity. Accordingly, in order to reduce  
7 the long-term growth rate to a single measure, one must assume a fixed payout ratio, and  
8 the same constant growth rate for earnings per share (“EPS”), dividends per share, and  
9 book value per share. Since dividend growth can only be sustained by earnings growth,  
10 the model should incorporate a variety of measures of long-term earnings growth. That  
11 can be accomplished by averaging those measures of long-term growth that tend to be  
12 least influenced by capital allocation decisions that companies may make in response to  
13 near-term changes in the business environment. Because such decisions may directly  
14 affect near-term dividend payout ratios, estimates of earnings growth are more indicative  
15 of long-term investor expectations than are dividend growth estimates. For the purposes  
16 of the Constant Growth DCF model, therefore, growth in EPS represents the appropriate  
17 measure of long-term growth.

1 **Q: Please summarize the findings of academic research on the appropriate measure for**  
2 **estimating equity returns using the DCF model.**

3 A: The relationship between various growth rates and stock valuation metrics has been the  
4 subject of much academic research.<sup>19</sup> As noted over 40 years ago by Charles Phillips in  
5 The Economics of Regulation:

6 For many years, it was thought that investors bought utility stocks  
7 largely on the basis of dividends. More recently, however, studies  
8 indicate that the market is valuing utility stocks with reference to total  
9 per share earnings, so that the earnings-price ratio has assumed  
10 increased emphasis in rate cases.<sup>20</sup>

11 Philips' conclusion continues to hold true. Subsequent academic research has  
12 clearly and consistently indicated that measures of earnings and cash flow are strongly  
13 related to returns, and that analysts' forecasts of growth are superior to other measures of  
14 growth in predicting stock prices.<sup>21</sup> For example, Vander Weide and Carleton state that,  
15 "[our] results ... are consistent with the hypothesis that investors use analysts' forecasts,  
16 rather than historically oriented growth calculations, in making stock buy-and-sell  
17 decisions."<sup>22</sup> Other research specifically notes the importance of analysts' growth  
18 estimates in determining the Cost of Equity, and in the valuation of equity securities. Dr.  
19 Robert Harris noted that "a growing body of knowledge shows that analysts' earnings  
20 forecast are indeed reflected in stock prices." Citing Cragg and Malkiel, Dr. Harris notes  
21 that those authors "found that the evaluations of companies that analysts make are the

---

<sup>19</sup> See Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

<sup>20</sup> Charles F. Phillips, Jr., The Economics of Regulation at 285 (Rev. ed. 1969).

<sup>21</sup> See, e.g., Christofi, Christofi, Lori and Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing (Spring 1999); Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).



1 sorts of ones on which market valuation is based.”<sup>23</sup> Similarly, Brigham, Shome and  
2 Vinson noted that “evidence in the current literature indicates that (i) analysts’ forecasts  
3 are superior to forecasts based solely on time series data; and (ii) investors do rely on  
4 analysts’ forecasts.”<sup>24</sup>

5 To that point, the research of Carleton and Vander Weide demonstrates that  
6 earnings growth projections have a statistically significant relationship to stock valuation  
7 levels, while dividend growth rates do not.<sup>25</sup> Those findings suggest that investors form  
8 their investment decisions based on expectations of growth in earnings, not dividends.  
9 Consequently, earnings growth, not dividend growth, is the appropriate estimate for the  
10 purpose of the Constant Growth DCF model.

11 **Q: Please summarize your inputs to the Constant Growth DCF model.**

12 A: I applied the DCF model to the proxy group of integrated electric utility companies using  
13 the following inputs for the price and dividend terms:

- 14 • The average daily closing prices for the 30-trading days, 90-trading days, and  
15 180-trading days ended December 29, 2017, for the term  $P_0$ ; and
- 16 • The annualized dividend per share as of December 29, 2017, for the term  $D_0$ .

17 I then calculated my DCF results using each of the following growth terms:

- 18 • The Zacks consensus long-term earnings growth estimates;
- 19 • The First Call consensus long-term earnings growth estimates; and

---

<sup>22</sup> Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

<sup>23</sup> Robert S. Harris, *Using Analysts’ Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

<sup>24</sup> Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility’s Cost of Equity*, Financial Management (Spring 1985).

<sup>25</sup> See Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

- 1           • The Value Line long-term earnings growth estimates.<sup>26</sup>

2 **Q: In the 2015 KCP&L Order, the Commission suggested that your Constant Growth**  
3 **DCF results were based on unsustainably high growth rates.<sup>27</sup> Do you believe the**  
4 **EPS growth rates used in your Direct Testimony in this proceeding are too high?**

5 A: No, I do not. First, from a practical standpoint, the Constant Growth form of the DCF  
6 model is subject to certain limiting assumptions, in particular, that expected growth rates  
7 will continue in perpetuity. It is for this reason that I have also provided a Multi-Stage  
8 DCF analysis below in Subsection V(B).

9           Second, as discussed in more detail below, the average long-term growth rate in  
10 GDP has been 6.14 percent. In that regard, the median growth rate in my Constant  
11 Growth DCF analysis of 5.17 percent is reasonable relative to historical measures.<sup>28</sup> That  
12 median growth rate is somewhat below the long-term expected GDP growth rate in my  
13 Multi-Stage DCF analysis (see Schedule RBH-2).

14           Finally, as discussed above, consensus EPS growth rate forecasts are the  
15 appropriate measure of expected growth because earnings growth enables both dividend  
16 and book value growth, and investors rely on analysts' forecasts. As such, I believe the  
17 growth rates used in my Constant Growth DCF model are reasonable, while being  
18 consistent with academic research, and historical and expected measures of long-term  
19 growth.

---

<sup>26</sup> See Schedule RBH-1.

<sup>27</sup> 2015 KCP&L Order at 19.

<sup>28</sup> See Schedule RBH-1.

1 **Q: How did you calculate the DCF results?**

2 A: For each proxy company, I calculated the mean, mean high, and mean low results. For  
3 the mean result, I combined the average of the EPS growth rate estimates reported by  
4 Value Line, Zacks, and First Call with the subject company's dividend yield for each  
5 proxy company and then calculated the average result for those estimates. I calculated  
6 the high DCF result by combining the maximum EPS growth rate estimate as reported by  
7 Value Line, Zacks, and First Call with the subject company's dividend yield. The mean  
8 high result simply is the average of those estimates. I used the same approach to  
9 calculate the low DCF result, using instead the minimum of the Value Line, Zacks, and  
10 First Call estimate for each proxy company, and calculating the average result for those  
11 estimates.

12 **Q: Do you have any concerns with the Constant Growth DCF model under current**  
13 **market conditions?**

14 A: Yes. The Constant Growth DCF model is predicated on a number of assumptions, one of  
15 which is that the Price to Earnings ("P/E") ratio will remain constant, in perpetuity.  
16 Because the utility sector P/E ratios have expanded to the point that they recently have  
17 exceeded both their long-term average and the market P/E ratio, the Constant Growth  
18 DCF model's results should be viewed with caution. As such, it is appropriate to  
19 consider additional methods, such as the Multi-Stage DCF model, CAPM approach, and  
20 the Bond Yield Plus Risk Premium model.

21 **Q: What are the results of your Constant Growth DCF analysis?**

22 A: My Constant Growth DCF results are summarized in Table 2, below (*see* also Schedule  
23 RBH-1).

1 **Table 2: Constant Growth DCF Results<sup>29</sup>**

	<i>Mean Low</i>	<i>Mean</i>	<i>Mean High</i>
30-Day Average	7.39%	8.28%	9.22%
90-Day Average	7.42%	8.31%	9.25%
180-Day Average	7.49%	8.38%	9.32%

2  
3 As noted earlier, the Constant Growth DCF model is subject to a number of  
4 assumptions that likely are not consistent with current market conditions. As also  
5 discussed later in my Direct Testimony, other methods more directly reflect the risk  
6 premium required by investors in response to such risks. On balance, it is my view that  
7 the Constant Growth DCF method should be given less weight than other methods in  
8 establishing the Company's ROE.

9 **Q: With those points in mind, how did you reflect the Constant Growth DCF results in**  
10 **your ROE range and recommendation?**

11 A: I first recognized that the model's mean, and mean low results are well below a  
12 reasonable estimate of the Company's Cost of Equity. For example, of the 1,541 electric  
13 utility rate cases surveyed by Regulatory Research Associates that disclosed the awarded  
14 ROE since 1980, only one included an authorized ROE of 9.00 percent or lower for a  
15 vertically integrated electric utility. On that basis alone, the mean and mean low results  
16 are highly improbable.

17 I also recognize that whereas the Constant Growth DCF model essentially  
18 assumes that existing capital market conditions will remain constant, Risk Premium-  
19 based methods (discussed later in this Section) directly reflect the changing capital

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<sup>29</sup> See Schedule RBH-1.

1 market environment (*see* Section VII). Because it is important to reflect the results of  
2 different models, and the mean and mean low Constant Growth DCF results are far-  
3 removed from recently authorized returns, I concluded that they should be given less  
4 weight than other methods in determining the Company's ROE.

5  
6 **B. Multi-Stage DCF Model**

7 **Q: What other forms of the DCF model have you used?**

8 A: To address certain limiting assumptions underlying the Constant Growth form of the  
9 DCF model, I also considered the Multi-Stage (three-stage) DCF Model. The Multi-  
10 Stage model, which is an extension of the Constant Growth form, enables the analyst to  
11 specify growth rates over three distinct stages. As with the Constant Growth form of the  
12 DCF model, the Multi-Stage form defines the Cost of Equity as the discount rate that sets  
13 the current price equal to the discounted value of future cash flows. Unlike the Constant  
14 Growth form, however, the Multi-Stage model must be solved in an iterative fashion.

15 **Q: Please generally describe the structure of your Multi-Stage DCF model.**

16 A: The Multi-Stage DCF model sets the subject company's stock price equal to the present  
17 value of future cash flows received over three "stages" (*e.g.*, Years 1 to 5; Years 5 to 10;  
18 Year 11 and beyond). In the first two stages, "cash flows" are defined as projected  
19 dividends. In the third stage, "cash flows" equal both dividends and the expected price at  
20 which the stock will be sold at the end of the period (*i.e.*, the "terminal price"). I  
21 calculated the terminal price based on the Gordon model,<sup>30</sup> which defines the price as the  
22 expected dividend divided by the difference between the Cost of Equity (*i.e.*, the discount

---

<sup>30</sup> See Morningstar, Inc., *2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook*, at 48-52.

1 rate) and the long-term expected growth rate. In essence, the terminal price is defined by  
 2 the present value of the remaining “cash flows” in perpetuity. In each of the three stages,  
 3 the dividend is the product of the projected earnings per share and the expected dividend  
 4 payout ratio. A summary description of the model is provided in Table 3 (below).

5 **Table 3: Multi-Stage DCF Structure**

Stage	0	1	2	3
Cash Flow Component	Initial Stock Price	Expected Dividend	Expected Dividend	Expected Dividend + Terminal Value
Inputs	Stock Price Earnings Per Share (“EPS”); Dividends Per Share (“DPS”)	Expected EPS; Expected DPS	Expected EPS; Expected DPS	Expected EPS; Expected DPS; Terminal Value
Assumptions	30-, 90-, and 180-day average stock price	EPS Growth Rate; Payout Ratio	Growth Rate Change; Payout Ratio Change	Long-term Growth Rate; Long-term Payout Ratio

6  
 7 **Q: What are the analytical benefits of your three-stage DCF model?**

8 A: The principal benefits relate to the flexibility provided by the model’s formulation. Since  
 9 the model provides the ability to specify near, intermediate and long-term growth rates,  
 10 for example, it avoids the sometimes limiting assumption that the subject company will  
 11 grow at the same, constant rate in perpetuity. In addition, by calculating the dividend as  
 12 the product of earnings per share and the dividend payout ratio, the model enables  
 13 analysts to reflect assumptions regarding the timing and extent of changes in the payout  
 14 ratio to reflect, for example, increases or decreases in expected capital spending, or

1 transition from current payout levels to long-term expected levels. In that regard,  
2 because the model relies on multiple sources of earnings growth rate assumptions, it is  
3 not limited to a single source, such as Value Line, for all inputs, and mitigates the  
4 potential bias associated with relying on a single source of growth estimates.<sup>31</sup>

5 The model also enables the analyst to assess the reasonableness of the inputs and  
6 results by reference to certain market-based metrics. For example, the stock price  
7 estimate can be divided by the expected earnings per share in the final year to calculate  
8 an average P/E ratio. Similarly, the terminal P/E ratio can be divided by the terminal  
9 growth rate to develop a Price to Earnings Growth (“PEG”) ratio. To the extent that  
10 either the projected P/E or PEG ratios are inconsistent with either historical or expected  
11 levels, it may indicate incorrect or inconsistent assumptions within the balance of the  
12 model.

13 **Q: Please summarize your inputs to the Multi-Stage DCF model.**

14 A: I applied the Multi-Stage model to the proxy group described earlier in my Direct  
15 Testimony. My assumptions with respect to the various model inputs are described in  
16 Table 4 (below).

---

<sup>31</sup> See Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts’ Growth Forecasts*, Financial Management at 21 (Summer 1992).

1

**Table 4: Multi-Stage DCF Model Assumptions**

<b>Stage</b>	<b>Initial</b>	<b>First</b>	<b>Transition</b>	<b>Terminal</b>
Stock Price	30-, 90-, and 180-day average stock price as of December 29, 2017			
Earnings Growth	2016 actual EPS escalated by Period 1 growth rate	EPS growth as average of (1) Value Line; (2) Zacks; and (3) First Call	Transition to Long-term GDP growth	Long-term GDP growth
Payout Ratio	Value Line company-specific	Value Line company-specific	Transition to long-term industry payout ratio	Long-term expected payout ratio
Terminal Value				Expected dividend in final year divided by solved Cost of Equity less long-term growth rate

2

3 **Q: How did you calculate the long-term GDP growth rate?**

4 A: The long-term growth rate of 5.38 percent is based on the real GDP growth rate of 3.22  
5 percent from 1929 through 2016, and an inflation rate of 2.09 percent. The GDP growth  
6 rate is calculated as the compound growth rate in the chain-weighted GDP for the period  
7 from 1929 through 2016.<sup>32</sup> The rate of inflation of 2.09 percent is an average of two  
8 components: (1) the compound annual forward rate starting in ten years (*i.e.*, 2027, which  
9 is the beginning of the terminal period) based on the 30-day average spread between



1 yields on long-term nominal Treasury Securities and long-term Treasury Inflation  
2 Protected Securities, known as the “TIPS spread” of 1.97 percent,<sup>33</sup> and (2) and the  
3 projected Blue Chip Financial Forecast of CPI for 2024 – 2028 of 2.20 percent.<sup>34</sup>

4 I averaged these two measures of inflation because nominal Treasury yields are  
5 related to inflation, which includes the effect of commodities such as oil, that may cause  
6 the current TIPS spread to somewhat understate long-term expected inflation. To  
7 account for that effect, I also considered the 2.20 percent long-term projected rate of  
8 inflation as provided by Blue Chip Financial Forecast.<sup>35</sup> My long-term inflation rate,  
9 therefore, is the average of those two estimates, or 2.09 percent.

10 **Q: Have you compared your long-term growth rate to historical measures?**

11 A: Yes, I have. From 1929 through 2016, the long-term geometric average growth in  
12 nominal GDP was 6.14 percent. The arithmetic average annual growth rate over that  
13 time was 6.37 percent. Considered in that context, my 5.38 percent assumption is  
14 approximately 100 basis points below the long-term average. I also calculated the five-  
15 year average annual growth rates over the 1929 to 2016 period. I then arranged that data  
16 in histograms to provide a perspective of how frequently various levels of growth have  
17 occurred.

18 As Chart 2 demonstrates, average annual growth of 5.38 percent and above has  
19 been observed frequently. When measured over five-year periods, average annual growth  
20 exceeded 5.38 percent in 58 of 83 periods. That is, my result falls in approximately the

---

<sup>32</sup> See Bureau of Economic Analysis, “Current-Dollar and ‘Real’ Gross Domestic Product,” (Dec. 21, 2017 update).

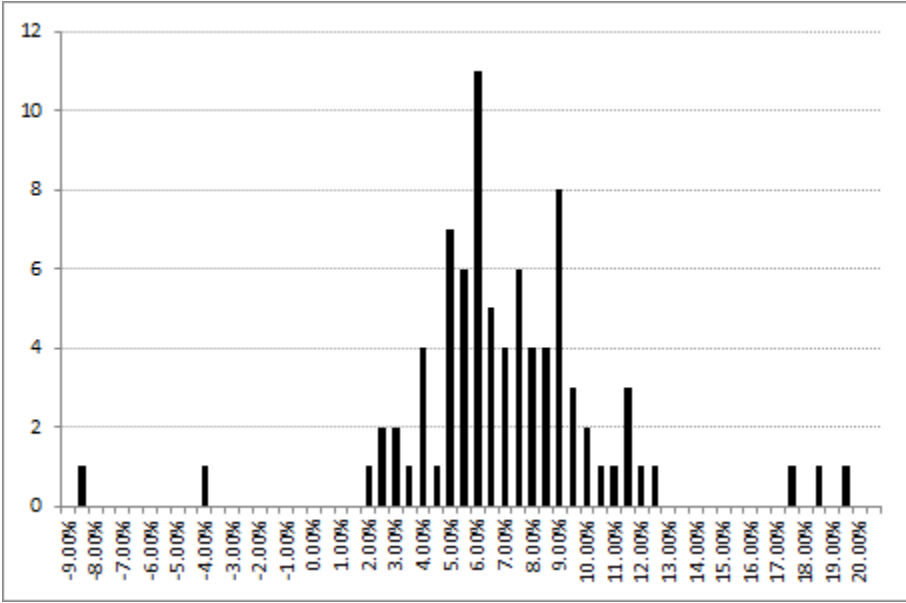
<sup>33</sup> See Board of Governors of the Federal Reserve System, “Table H.15 Selected Interest Rates.”

<sup>34</sup> *Blue Chip Financial Forecasts* at 14 (December 1, 2017).

<sup>35</sup> *Ibid.*

1 30<sup>th</sup> percentile of observed growth rates in GDP. As such, I believe my long-term growth  
2 estimate is reasonable, if not conservative.

3 **Chart 2: Average Annual GDP Growth Measured over Five-Year Periods<sup>36</sup>**



4

5 **Q: Have you compared other projections of GDP to historical measures?**

6 A: Yes, I have. Specifically, I reviewed GDP projections from the Social Security  
7 Administration (“SSA”) and the Energy Information Administration (“EIA”). SSA  
8 forecasts a long-term GDP growth rate of 4.24 percent between 2026 and 2090 under its  
9 Intermediate scenario,<sup>37</sup> and EIA forecasts the GDP growth rate between 2016 and 2050  
10 to be 4.24 percent in its Reference case.<sup>38</sup>

<sup>36</sup> Bureau of Economic Analysis, “Current-Dollar and ‘Real’ Gross Domestic Product,” (Dec. 29, 2017 update).  
<sup>37</sup> Tables V.B.1 and V.B.2 of the 2017 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS includes “Intermediate” scenario assumptions of 2.20 percent and 2.00 percent for the GDP Price Index, and Real GDP Growth, respectively, over the period 2026 through 2090. When combined, those projections indicate nominal GDP growth of 4.24 percent.  
<sup>38</sup> Energy Information Administration, 2017 Annual Energy Outlook, Table 20. EIA forecasts the GDP Price Index, and Real GDP growth to be 2.10 percent. When combined, those assumptions indicate nominal GDP growth of 4.24 percent.

1           Because they are perpetual, terminal growth rates that substantially deviate from  
2           the long-term historical average, they should be viewed with considerable caution. As  
3           Chart 2 demonstrates, average annual growth as low as 4.24 percent has been observed  
4           very infrequently. In fact, average annual growth exceeded 4.24 percent in 71 of 83 five-  
5           year periods, which represents the 15<sup>th</sup> percentile of observed results. While the long-  
6           term growth rate of 5.38 percent used in my Multi-Stage DCF model represents a  
7           conservative measure of the GDP growth, the SSA and EIA forecasts are over 110 basis  
8           points lower. As such, I believe my estimate of the long-term growth rate represents a  
9           more reasonable measure of perpetual growth in the final stage of my Multi-Stage DCF  
10          model.

11          Furthermore, both SSA and EIA provide alternative scenarios in addition to their  
12          base case scenarios (Intermediate and Reference, respectively). SSA's Low-cost and  
13          High-cost scenarios produce a range of nominal GDP forecasts from 2.82 percent to 5.68  
14          percent.<sup>39</sup> EIA develops nine scenarios which produce a range of nominal GDP forecasts  
15          of 4.14 percent to 4.95 percent.<sup>40</sup> My estimated long-term growth rate is within the  
16          ranges of scenarios produced by SSA and somewhat above EIA.

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<sup>39</sup> Tables V.B.1 and V.B.2 of the 2017 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS includes "Low-cost" and "High-cost" scenario assumptions of 2.90 percent and 1.50 percent for the GDP Price Index, and Real GDP Growth 2.70 percent and 1.30 percent, respectively, over the period 2026 through 2090. When combined, those projections indicate nominal GDP growth of 5.68 percent and 2.82 percent.

<sup>40</sup> Energy Information Administration, 2017 Annual Energy Outlook, Table 20. EIA forecasts the GDP Price Index, and Real GDP growth to be 2.00 percent and 2.10 percent, respectively, for the High Oil Price and Low Oil Price scenarios and 3.30 percent and 1.60 percent, respectively, for the Low Economic Growth scenario. When combined, those assumptions indicate nominal GDP growth rates of 4.14 percent and 4.95 percent.

1 **Q: What were your specific assumptions with respect to the payout ratio?**

2 A: As noted in Table 4, for the first two periods, I relied on the first year and long-term  
3 projected payout ratios reported by Value Line<sup>41</sup> for each of the proxy companies. I then  
4 assumed that by the end of the second period (*i.e.*, the end of year 10), the payout ratio  
5 will converge to the historical industry average ratio of 65.91 percent.<sup>42</sup>

6 **Q: What was your principal assumption regarding the terminal value?**

7 A: Although I performed a series of analyses in which the terminal value is calculated based  
8 on the assumed long-term nominal GDP growth rate,<sup>43</sup> I also performed a series of  
9 analyses in which the terminal value is based on the current P/E ratio.<sup>44</sup> The results of  
10 those analyses are shown in Table 5, below. For the reasons discussed below, I believe  
11 that assumption is reasonable and produces reliable results.

12 **Table 5: Multi-Stage DCF Model Results<sup>45</sup>**

	<i>Mean Low</i>	<i>Mean</i>	<i>Mean High</i>
30-Day Average	8.82%	9.36%	9.93%
90-Day Average	8.92%	9.46%	10.03%
180-Day Average	9.13%	9.67%	10.24%

13

14 **Q: Did you undertake any additional analyses to support your recommendation?**

15 A: Yes. As noted earlier, I also applied the CAPM and Risk Premium approaches.

---

<sup>41</sup> As stated in the Value Line Investment Survey company reports as “All Div’ds to Net Prof”, as of December 29, 2017.

<sup>42</sup> Bloomberg Professional, as of December 29, 2017.

<sup>43</sup> See Schedule RBH-2.

<sup>44</sup> Defined as the 30-day average of the proxy group P/E ratio, calculated as an Index.

<sup>45</sup> See Schedule RBH-2.

1 **C. Capital Asset Pricing Model**

2 **Q: Please briefly describe the general form of the CAPM.**

3 A: The CAPM is a risk premium method that estimates the Cost of Equity for a given  
4 security as a function of a risk-free return plus a risk premium (to compensate investors  
5 for the non-diversifiable or “systematic” risk of that security). As shown in Equation [3],  
6 the CAPM is defined by four components, each of which theoretically must be a forward-  
7 looking estimate:

8 
$$k = r_f + \beta(r_m - r_f) \quad \text{Equation [3]}$$

9 where:

10  $k$  = the required market ROE for a security;

11  $\beta$  = the Beta coefficient of that security;

12  $r_f$  = the risk-free rate of return; and

13  $r_m$  = the required return on the market as a whole.

14 In Equation [3], the term  $(r_m - r_f)$  represents the Market Risk Premium.<sup>46</sup>  
15 According to the theory underlying the CAPM, since unsystematic risk can be diversified  
16 away by adding securities to investment portfolios, investors should be concerned only  
17 with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the Beta  
18 coefficient, which is defined as:

19 
$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} \quad \text{Equation [4]}$$

20 Where  $\sigma_j$  is the standard deviation of returns for company “j,”  $\sigma_m$  is the standard  
21 deviation of returns for the broad market (as measured, for example, by the S&P 500  
22 Index), and  $\rho_{j,m}$  is the correlation of returns in between company  $j$  and the broad market.

1 The Beta coefficient therefore represents both relative volatility (*i.e.*, the standard  
2 deviation) of returns, and the correlation in returns between the subject company and the  
3 overall market.

4 Intuitively, higher Beta coefficients indicate that the subject company's returns  
5 have been relatively volatile, and have moved in tandem with the overall market.  
6 Consequently, if a company has a Beta coefficient of 1.00, it is as risky as the market and  
7 does not provide any diversification benefit.

8 **Q: What assumptions did you include in your CAPM analysis?**

9 A: Since utility equity is a long duration investment, I used two different measures of the  
10 risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (*i.e.*, 2.77  
11 percent); and (2) the projected 30-year Treasury yield (*i.e.*, 3.32 percent).

12 **Q: Why have you relied upon the 30-year Treasury yield for your CAPM analysis?**

13 A: In determining the security most relevant to the application of the CAPM, it is important  
14 to select the term (or maturity) that best matches the life of the underlying investment.  
15 Electric utilities typically are long-duration investments and, as such, the 30-year  
16 Treasury yield is more suitable for the purpose of calculating the Cost of Equity.

17 **Q: Please describe your *ex-ante*, or forward-looking, approach to estimating the  
18 Market Risk Premium (“MRP”).**

19 A: The approach is based on the market required return, less the current 30-year Treasury  
20 yield. To estimate the market required return, I calculated the market capitalization  
21 weighted average ROE based on the Constant Growth DCF model. To do so, I relied on

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<sup>46</sup> The Market Risk Premium is defined as the incremental return of the market portfolio over the risk-free rate.

1 data from two sources: (1) Bloomberg; and (2) Value Line.<sup>47</sup> With respect to  
2 Bloomberg-derived growth estimates, I calculated the expected dividend yield (using the  
3 same one-half growth rate assumption described earlier), and combined that amount with  
4 the projected earnings growth rate to arrive at the market capitalization weighted average  
5 DCF result. I performed that calculation for each of the S&P 500 companies for which  
6 Bloomberg provided consensus growth rates. I then subtracted the current 30-year  
7 Treasury yield from that amount to arrive at the market DCF-derived *ex-ante* market risk  
8 premium estimate. In the case of Value Line, I performed the same calculation, again  
9 using all companies for which five-year earnings growth rates were available. The results  
10 of those calculations are provided in Schedule RBH-3.

11 As discussed above, each input to the CAPM should be forward-looking.  
12 Witnesses in prior rate cases have relied on historical measures of the MRP.<sup>48</sup> While it  
13 may be instructive to review historical MRPs to inform the reasonableness of an *ex-ante*  
14 estimate (as I have done below), they do not include investors' expectations, and  
15 therefore are not appropriate for use in the CAPM. Simply relying on the historical MRP  
16 may produce results that are inconsistent with investor sentiment and current conditions  
17 in capital markets. As such, I believe my *ex-ante* approach is reasonable.

18 **Q: Have you undertaken any analyses to determine the reasonableness of the *ex-ante***  
19 **MRP calculation?**

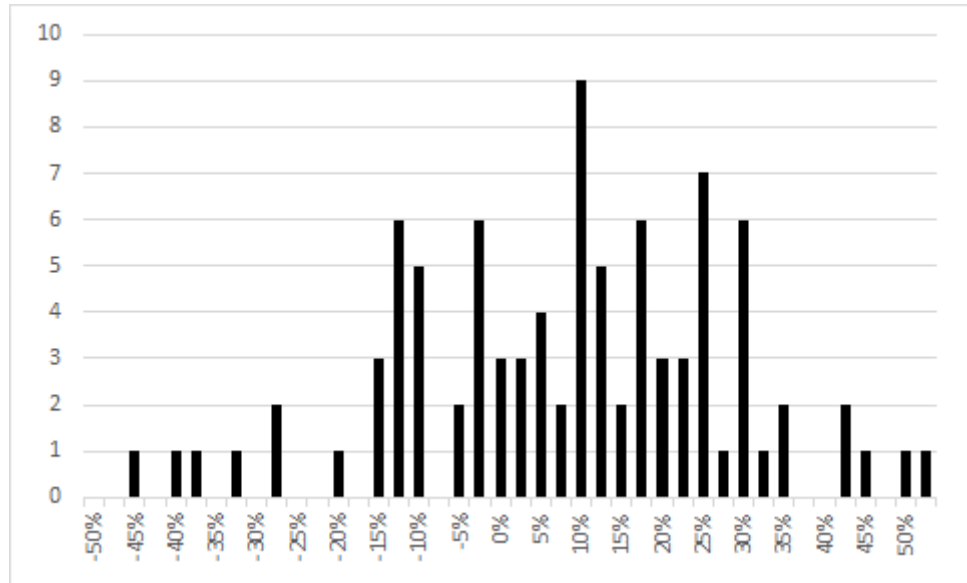
20 A: Yes, I have considered how often various ranges of MRPs have been observed over the  
21 1926 to 2016 period. To perform that analysis, I gathered the annual Market Risk Premia  
22 reported by Duff & Phelps and produced a histogram of those observations. The results

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<sup>47</sup> See Schedule RBH-3.

1 of that analysis, which are presented in Chart 3, demonstrate that MRPs in the range of  
 2 approximately 11.45 percent (the average of my MRP estimates)<sup>49</sup> and higher occurred  
 3 quite often. In fact, there is approximately a 58.00 percent probability that an MRP of at  
 4 least 11.45 percent will occur in any given year.

5 **Chart 3: Frequency Distribution of MRP, 1926 -2016<sup>50</sup>**



6

7 **Q: How did you apply your expected Market Risk Premium and risk-free rate**  
 8 **estimates?**

9 A: I relied on the *ex-ante* Market Risk Premia discussed above, together with the current and  
 10 near-term projected 30-year Treasury yields as inputs to my CAPM analyses.

11 **Q: What Beta coefficient did you use in your CAPM model?**

12 A: As shown in Schedule RBH-4, I considered the Beta coefficients reported by two  
 13 sources: Bloomberg and Value Line. While both of those services adjust their calculated

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<sup>48</sup> See, e.g., Staff Report, Revenue Requirement Cost of Service at 39-42, Kansas City Power & Light Co., Case No. ER-2016-0285 (Nov. 30, 2016).

<sup>49</sup> See Schedule RBH-3.

<sup>50</sup> Duff & Phelps, 2017 Stocks, Bonds, Bills and Inflation Yearbook, Table A-1.



(or “raw”) Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market mean of 1.00, Value Line calculates the Beta coefficient over a five-year period, while Bloomberg’s calculation is based on two years of data.

**Q: What are the results of your CAPM analysis?**

A: As shown in Table 6 the CAPM analyses suggest an ROE range of 8.95 percent to 11.78 percent (*see* also Schedule RBH-5).

**Table 6: Summary of CAPM Results<sup>51</sup>**

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.77%)	8.95%	9.45%
Near Term Projected 30-Year Treasury (3.32%)	9.50%	9.99%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.77%)	10.61%	11.24%
Near Term Projected 30-Year Treasury (3.32%)	11.15%	11.78%

**D. Bond Yield Plus Risk Premium Approach**

**Q: Please generally describe the Bond Yield Plus Risk Premium approach.**

A: This approach is based on the basic financial tenet that equity investors bear the residual risk associated with ownership and therefore require a premium over the return they would have earned as a bondholder. That is, since returns to equity holders are more risky than returns to bondholders, equity investors must be compensated for bearing that additional risk. Risk premium approaches, therefore, estimate the Cost of Equity as the sum of the equity risk premium and the yield on a particular class of bonds. As noted in

1 my discussion of the CAPM, since the equity risk premium is not directly observable, it  
2 typically is estimated using a variety of approaches, some of which incorporate *ex-ante* or  
3 forward-looking estimates of the Cost of Equity, and others that consider historical or *ex-*  
4 *post* estimates. An alternative approach is to use actual authorized returns for electric  
5 utilities to estimate the Equity Risk Premium.

6 **Q: Please explain how you performed your Bond Yield Plus Risk Premium analysis.**

7 A: As suggested above, I first defined the Risk Premium as the difference between the  
8 authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield.  
9 I then gathered data for 1,541 electric utility rate proceedings between January 1980 and  
10 December 29, 2017. In addition to the authorized ROE, I also calculated the average  
11 period between the filing of the case and the date of the final order (the “lag period”). In  
12 order to reflect the prevailing level of interest rates during the pendency of the  
13 proceedings, I calculated the average 30-year Treasury yield over the average lag period  
14 (approximately 200 days).

15 Because the data cover a number of economic cycles, the analysis also may be  
16 used to assess the stability of the Equity Risk Premium. Prior research, for example, has  
17 shown that the Equity Risk Premium is inversely related to the level of interest rates.  
18 That analysis is particularly relevant given the relatively low, but increasing level of  
19 current Treasury yields.

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<sup>51</sup> See Schedule RBH-5.

1 **Q: How did you analyze the relationship between interest rates and the Equity Risk**  
2 **Premium?**

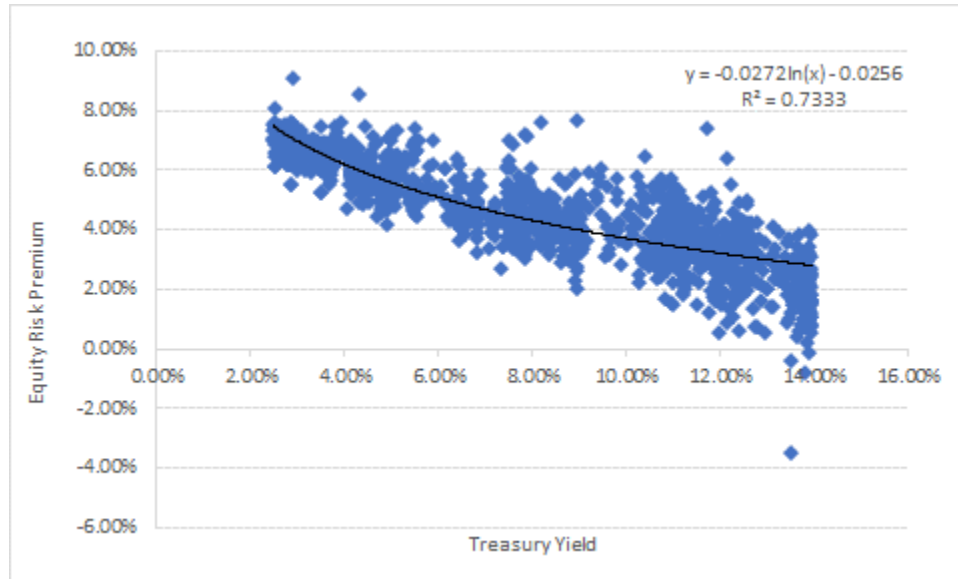
3 A: The basic method used was regression analysis, in which the observed Equity Risk  
4 Premium is the dependent variable, and the average 30-year Treasury yield is the  
5 independent variable. Relative to the long-term historical average, the analytical period  
6 includes interest rates and authorized ROEs that are quite high during one period (*i.e.*, the  
7 1980s) and that are quite low during another (*i.e.*, the 2008 Great Recession and the post-  
8 Lehman bankruptcy period). To account for that variability, I used the semi-log  
9 regression, in which the Equity Risk Premium is expressed as a function of the natural  
10 log of the 30-year Treasury yield:

11 
$$RF = \alpha + \beta(\text{LN}(T_{30}))$$
 Equation [5]

12 As shown on Chart 4 (below), the semi-log form is useful when measuring an  
13 absolute change in the dependent variable (in this case, the Risk Premium) relative to a  
14 proportional change in the independent variable (the 30-year Treasury yield).

1

**Chart 4: Equity Risk Premium<sup>52</sup>**



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As Chart 4 illustrates, over time there has been a statistically significant, negative relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently, simply applying the long-term average Equity Risk Premium of 4.61 percent would significantly understate the Cost of Equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart 4, however, the implied ROE is between 9.95 percent and 10.25 percent (see Table 7 and Schedule RBH-6).

10

**Table 7: Summary of Bond Yield Plus Risk Premium Results<sup>53</sup>**

	<i>Return on Equity</i>
Current 30-Year Treasury (2.77%)	9.95%
Near Term Projected 30-Year Treasury (3.32%)	10.01%
Long Term Projected 30-Year Treasury (4.20%)	10.25%

<sup>52</sup> See Schedule RBH-6.

<sup>53</sup> See Schedule RBH-6.

1 **Q: Has the Commission considered authorized ROEs in other jurisdictions in setting**  
2 **the authorized ROE for a subject company?**

3 A: Yes, it has. For example, in the 2015 KCP&L Order the Commission determined that  
4 recently authorized ROEs for utilities throughout the United States supported its  
5 authorized ROE:

6 KCPL must compete with other utilities all over the country for the  
7 same capital. Therefore, the industry authorized return on equity  
8 provides a reasonableness test for the recommendations offered by the  
9 return on equity experts.<sup>54</sup>

10 The Bond Yield Plus Risk Premium approach relies on the same data over an  
11 approximately 36-year period, while also considering the inverse relationship between  
12 Treasury yields and the Equity Risk Premium. That is, the Bond Yield Plus Risk  
13 Premium approach provides additional information beyond a simple average of  
14 authorized ROEs in that it accounts for different market environments and considers the  
15 long-term relationship between the inputs to the analysis.

16 **Q: Have you provided an alternative Bond Yield Plus Risk Premium analysis to**  
17 **account for how market conditions may affect the inverse relationship between**  
18 **interest rates and the Equity Risk Premium?**

19 A: Yes. To address the prospect that the market conditions affect the relationship between  
20 interest rates and the Equity Risk Premium, I first calculated the “credit spread,” or the  
21 difference between the Moody’s A-Utility Bond yield and the 30-Year Treasury yield.  
22 To reflect the risk of equity investments, I calculated the market volatility as measured by  
23 the CBOE Volatility Index (the “VIX”) since 1990, the first year for which data was  
24 available. I then performed a regression analysis in which the Equity Risk Premium is

1 the dependent variable, and Treasury yields, credit spreads, and the VIX were the  
2 explanatory variables. There were three principal findings from those analyses (*see*  
3 Schedule RBH-7):

- 4 1. Credit spreads and the VIX do not negate the statistically significant inverse  
5 relationship between Treasury yields and the Equity Risk Premium.
- 6 2. There is a high degree of correlation between credit spreads and the VIX,  
7 indicating that the two move closely together. That is, the “relative risk” of the  
8 two is not a meaningful factor.
- 9 3. Based on the current, and projected Treasury yields, the expected ROE falls in the  
10 range of 9.59 percent to 9.70 percent. Those results are only slightly below my  
11 recommended range, and are not far removed from the results of my Bond Yield  
12 Plus Risk Premium analysis (*see* Schedule RBH-7).

13 Lastly, please note that neither the VIX nor credit spreads added significantly to  
14 the explanatory value of the regression equations.

## VI. BUSINESS RISKS AND OTHER CONSIDERATIONS

15 **Q: Do the mean DCF, CAPM, and Bond Yield Plus Risk Premium results for the proxy**  
16 **group provide an appropriate estimate of the Cost of Equity for KCP&L?**

17 A: No, the mean results do not necessarily provide an appropriate estimate of the Company’s  
18 Cost of Equity. In my view, there are additional factors that must be taken into  
19 consideration when determining where the Company’s Cost of Equity falls within the  
20 range of results. Those factors include: (1) the regulatory environment in which the

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<sup>54</sup> 2015 KCP&L Order at 19.

1 Company operates; (2) the Company's generation portfolio; and (3) the Company's  
2 capital expenditure plans. Those risk factors, which are discussed below, should be  
3 considered with respect to their overall effect on KCP&L's risk profile and therefore its  
4 Cost of Equity.

5 **A. Regulatory Environment**

6 **Q: How does the regulatory environment in which a utility operates affect its access to**  
7 **and cost of capital?**

8 A: The regulatory environment can significantly affect both the access to and the cost of  
9 capital in several ways. First, the proportion and cost of debt capital available to utility  
10 companies are influenced by rating agencies' assessment of the regulatory environment.  
11 In addition, it is important to recognize that regulatory decisions regarding the authorized  
12 ROE and capital structure have direct consequences for the subject utility's internal cash  
13 flow generation (sometimes referred to as "Funds from Operations" or "FFO"). Since  
14 credit ratings are intended to reflect the ability to meet financial obligations as they come  
15 due, the ability to generate the cash flows required to meet those obligations (and to  
16 provide an additional amount for unexpected events) is of critical importance to debt  
17 investors. Two of the most important metrics used to assess that ability are the ratios of  
18 FFO to debt, and FFO to interest expense, both of which are directly affected by  
19 regulatory decisions regarding the appropriate rate of return and capital structure.

20 Investors recognize that a reasonable allowed ROE that is subject to earnings  
21 attrition due to unfavorable regulatory or economic factors does not provide any  
22 assurance that the utility actually will recover its costs or earn a reasonable return. The

1 authorized ROE affects not only the cash flow-related metrics that measure financial  
2 strength, but also provides an indication of the degree of regulatory support, as well as  
3 risk associated with a given utility and jurisdiction. It is, therefore, an important measure  
4 of regulatory support and financial integrity from several perspectives.

5 **Q: Have you compared KCP&L's regulatory risks to electric utilities in other**  
6 **jurisdictions?**

7 A: Regulatory Research Associates (“RRA”) rates the Commission as having a “Below  
8 Average / 1” regulatory environment from an investor viewpoint.<sup>55</sup> In fact, fewer than  
9 10.00 percent of regulatory bodies have lower ratings from RRA.<sup>56</sup> Any further decrease  
10 in the perception of regulatory supportiveness may cause investors’ assessment of  
11 KCP&L’s regulatory risk (and therefore its business risk and S&P Business Risk rating)  
12 to become more negative, further increasing KCP&L’s overall cost of capital.

13 **Q: Are there issues associated with regulatory lag that also are a consideration for**  
14 **equity investors?**

15 A: Yes, there are. As noted in an April 2013 report by Regulatory Research Associates,  
16 Missouri is one of only five states that prohibits utilities from including Construction  
17 Work in Progress (“CWIP”) in the rate base.<sup>57</sup> As a consequence, the Company’s ability  
18 to maintain its revenue and cash flow is disadvantaged relative to others that either have  
19 the ability to include CWIP in rate base during general rate cases (and therefore earn a  
20 cash return on that investment), or are provided a more timely cash return through  
21 adjustment clauses. When the revenue per dollar of assets decreases, the earned return on

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<sup>55</sup> RRA Regulatory Focus: Missouri Regulatory Review at 1 (Dec. 19, 2017).

<sup>56</sup> Regulatory Research Associates, calculated as of December 29, 2017.



1 common equity also will decrease. Because that earned return is a principal element of  
2 cash flow, the dilution in earnings resulting from the untimely recovery of capital  
3 investments diminishes the Company's financial profile and increases its relative risk.

4 In addition, rates for Missouri utilities are usually set based on an historical test  
5 year, with limited "known-and-measurable" changes.<sup>58</sup> In contrast, other utilities,  
6 including utilities in the proxy group, have the ability to recover rate base additions  
7 through forecast test years or alternative rate plans. As Regulatory Research Associates  
8 has noted, "[s]uch rate changes provide for improved cash flow and possibly earnings  
9 through reduced regulatory lag."<sup>59</sup> As with the inability to include CWIP in its rate base,  
10 because it is subject to the regulatory lag otherwise mitigated by forecast test years or  
11 alternative rate plans, KCP&L's ability to generate earnings and cash flow is  
12 disadvantaged relative to its peers.

13 **Q: As required by the Commission's rule at 4 CSR 240-3.161(3)(N), please provide a**  
14 **complete explanation of any changes in business risk to the Company resulting from**  
15 **implementation of the fuel adjustment clause ("FAC") it proposes to continue in this**  
16 **proceeding, in addition to any other changes in business risk experienced by the**  
17 **Company.**

18 A: The use of FAC mechanisms is prevalent throughout the industry. As shown in Schedule  
19 RBH-8, each of the vertically integrated companies in my proxy group has a fuel  
20 adjustment mechanism. As a consequence, the continuation of an FAC for KCP&L  
21 would leave its business and regulatory risk profile comparable to the risk profiles of

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<sup>57</sup> Regulatory Research Associates, *Construction Work in Progress: Getting Acquainted with an Old Issue* at 2 (Apr. 22, 2013); Regulatory Research Associates, *Missouri Regulatory Review*, October 6, 2016, at 3.

<sup>58</sup> Regulatory Research Associates, *Missouri Regulatory Review* at 2 (Dec. 19, 2017).

1 other electric utilities, as it relates to fuel cost recovery. Therefore, no downward  
2 adjustment to KCP&L's rate of return would be reasonable or appropriate as a result of  
3 continuation of an FAC. Of course, discontinuation of an FAC for KCP&L would likely  
4 warrant an upward adjustment to the Company's return due to what would be an  
5 incremental risk for KCP&L in the area of fuel cost recovery relative to other electric  
6 utilities.

7 **Q: Are you aware of GPE's July 10, 2017 announcement of its pending merger with**  
8 **Westar Energy, Inc. ("Westar")?**

9 A: Yes, I am. Because my analyses are focused on KCP&L on a standalone basis, and given  
10 that the transaction between GPE and Westar will occur at the holding company level, the  
11 announcement has not directly affected my recommendation.<sup>60</sup>

12 **B. Generation Portfolio**

13 **Q: Please provide an overview of the Company's generation portfolio.**

14 A: KCP&L's operations are heavily dependent on coal-fired generation, which represented  
15 75.00 percent of the Company's electric utility 2016 net generation.<sup>61</sup>

16 **Q: Please briefly describe the risks associated with KCP&L's generation portfolio.**

17 A: In general, highly capital-intensive generation assets are subject to certain risks including  
18 the recovery of the investors' capital in the event of a change in market structure or a  
19 plant failure, and recovery of replacement power and repair costs in the event of extended

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<sup>59</sup> Regulatory Research Associates, *Alternative Regulation/Incentive Plans, A State-by-State Review* at 1 (Nov. 2013).

<sup>60</sup> Please note that, based on the screening criterion regarding mergers or other significant transactions, Westar was excluded from the proxy group provided in Table 1.

<sup>61</sup> S&P Global Market Intelligence, KCP&L electric utility net generation.

1 or unplanned outage. In addition, federal environmental and safety regulations present a  
2 substantial risk of requiring investors to commit new capital to comply with new  
3 regulations or operation restrictions or possibly closure. In fact, a report by the Staff of  
4 the Missouri Public Service Commission estimated that known Environmental Protection  
5 Agency regulations, which primarily affect coal-fired generating plants in Missouri,  
6 would cost state electric utilities and their customers between approximately \$2.23 billion  
7 and \$2.47 billion from 2012 to 2022.<sup>62</sup> That report further highlighted the level of  
8 uncertainty regarding emerging environmental regulations and the potential consequences  
9 of those emerging environmental regulations, including additional plant investments.

10 In a September 2014 report, S&P noted that power generators have addressed  
11 carbon-reduction policies that target coal-fired generating plants by implementing three  
12 strategies: adding “scrubbers” to coal-fired plants; switching to burning natural gas; or  
13 retiring coal-fired plants outright.<sup>63</sup> To the extent these strategies increase costs for  
14 utilities, their credit profiles may come under pressure. As noted by S&P:

15 Higher costs could become a key credit issue for regulated utilities given  
16 the importance of managing customer rate increases, which has  
17 implications for relations with regulators, as well as economic and  
18 political ramifications that could heighten business risk. Any rating  
19 actions would likely not occur until there is further clarity from a utility  
20 about early plant retirements and related cost recovery. For utilities that  
21 have significant coal-fired generation, recovery mechanisms will be  
22 extremely important to continue to support operating cash flow and  
23 maintain robust financial measures.<sup>64</sup>

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<sup>62</sup> See Amended Updated Staff Report on The Cost of Compliance with Federal Environmental Regulations, Case No. EW-2012-0065 (Apr. 3, 2014) at 23. The report includes cost estimates for Kansas City Power & Light Company, KCP&L Greater Missouri Operations Co., Ameren Missouri, and Empire District Electric Company.

<sup>63</sup> S&P Research, *The Clean Power Plan Will Spur Further Coal Plant Closings, But How Will U.S. Utilities Recover The Costs?* (September 2, 2014).

<sup>64</sup> *Ibid.*

1 **Q: What are your conclusions regarding the Company’s generating portfolio?**

2 A: The Company’s generating portfolio consists of a high percentage of coal power plants  
3 that face certain inherent risks associated with capital intensive assets such as the risk of  
4 an extended forced outage and changing market dynamics. In particular, the Company  
5 and its investors are faced with the risk that new and impending federal environmental  
6 and safety regulations will require it to expend additional capital or face closure or  
7 curtailment of generating capacity. For example, GPE has announced that KCP&L will  
8 cease burning coal at its Montrose plant in 2018, and that KCP&L Greater Missouri  
9 Operations Company will similarly cease burning coal at its Sibley and Lake Road plants  
10 by 2018 and 2019, respectively, citing the cost-effectiveness of complying with  
11 environmental regulations.<sup>65</sup> Because investors consider these risks in establishing their  
12 return requirements, the Commission likewise should consider the effect of the additional  
13 risk associated with the Company’s generating portfolio in determining KCP&L’s  
14 authorized ROE.

15 **C. Planned Capital Expenditures**

16 **Q: Please briefly summarize the Company’s capital investment plans.**

17 A: GPE’s three-year capital expenditures budget over the 2018-2020 timeframe totals  
18 approximately \$1.57 billion, which includes substantial investments for KCP&L.<sup>66</sup>  
19 Because the Company will continue to make substantial investments in its utility

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<sup>65</sup> See Kansas City Power & Light Company Release, “KCP&L Furthers Sustainability Commitment by Announcing Plans to Cease Burning Coal at Three Power Plants” (Jan. 20, 2016); Kansas City Power & Light Company Release, “KCP&L Continues Sustainability Commitment by Announcing Retirement of Six Units at Three Power Plants” (June 2, 2017).

<sup>66</sup> See Great Plains Energy Inc., SEC Form 10-K for year-end December 31, 2016 at 50.

1 operations, it will require efficient access to capital markets during the period that rates  
2 established in this proceeding will be in effect.

3 **Q: Do credit rating agencies recognize risk associated with increased capital**  
4 **expenditures?**

5 A: Yes, they do. From a credit perspective, the additional pressure on cash flows associated  
6 with high levels of capital expenditures exerts corresponding pressure on credit metrics  
7 and, therefore, credit ratings. S&P has noted that:

8 For regulated utilities, infrastructure spending leads to rate-base growth.  
9 But for a company to preserve its financial strength, it must be able to  
10 quickly begin recovering this spending.

11 \*\*\*

12 To retain critical access to the debt markets, utilities will need to continue  
13 to seek and receive supportive cost recovery from regulators.<sup>67</sup>

14 The rating agency views noted above also are consistent with certain observations  
15 discussed earlier in my Direct Testimony: (1) the benefits of maintaining a strong  
16 financial profile are significant when capital access is required, and become particularly  
17 acute during periods of market instability; and (2) the Commission's decision in this  
18 proceeding will have a direct bearing on the Company's credit profile, and its ability to  
19 access the capital needed to fund its investments.

20 **Q: Have you also considered the relationship between capital expenditures and the**  
21 **earned return on common equity?**

22 A: Yes, I have. The "DuPont" formula decomposes the Return on Common Equity into  
23 three components: (1) the Profit Margin (net income/revenues); (2) Asset Turnover

---

<sup>67</sup> Standard & Poor's, *U.S. Utilities' Capital Spending is Rising, and Cost-Recovery is Vital*, RatingsDirect, May 14, 2012, at 6.

1 (revenues/net plant); and (3) the Equity Multiplier (net plant/equity).<sup>68</sup> As Schedule  
2 RBH-9 demonstrates, based on the proxy companies, the Asset Turnover rate declined  
3 from 2008 through 2016 and is expected to remain at its current level through Value  
4 Line's 2020 – 2022 projection period. Over that same period, according to Value Line  
5 data, average Net Plant is expected to experience a cumulative increase of approximately  
6 125.00 percent. Since, as noted above, the utility industry is going through a period of  
7 increased capital investment, the lag between the addition of net plant and revenue  
8 generated by those investments dilute the Asset Turnover ratio, at least in the near term.

9 To gain an additional perspective on the relationship between plant additions and  
10 Asset Turnover, I performed a regression analysis in which the annual change in the  
11 Asset Turnover rate was the dependent variable, and the annual change in Net Plant was  
12 the independent variable. As shown in Schedule RBH-9, that analysis indicates a  
13 statistically significant negative relationship between the two variables, such that as  
14 annual net plant increases, the Asset Turnover ratio decreases. This, in turn, suggests that  
15 an increase in capital expenditures also negatively affects the Return on Common Equity,  
16 causing greater financial stress to the utility. To the extent investors value a company  
17 based on earnings and cash flow, this additional financial strain is a key concern.

18 **Q: What are your conclusions regarding the effect of the Company's capital spending**  
19 **plans on its risk profile?**

20 **A:** It is clear that the Company's capital expenditure program is significant. The financial  
21 community recognizes the additional risks associated with substantial capital

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<sup>68</sup> The DuPont formula is commonly used by financial analysts to monitor specific operational and financial drivers of a company's earned ROE. The formula expands the calculation of the ROE into the product of three financial metrics: Profit Margin, Asset Turnover and the Equity Multiplier. That is,  $ROE = (\text{earnings} / \text{revenue})$

1 expenditures and the financing, regulatory and operating risks associated with those  
2 plans. The Company must have access to the capital markets on a timely basis and at  
3 reasonable cost rates to fund those investments. In my view, the Company's capital  
4 investment plan remains an important consideration in establishing its ROE and overall  
5 rate of return.

6 **Q: What are your conclusions regarding the Company's overall business risk profile?**

7 A: The regulatory environment is one of the most important issues considered by both debt  
8 and equity investors in assessing the risks and prospects of utility companies. From the  
9 perspective of debt investors, the authorized return should enable the Company to  
10 generate the cash flow needed to meet its near-term financial obligations, make the  
11 capital investments needed to maintain and expand its system, and maintain sufficient  
12 levels of liquidity to fund unexpected events. That financial liquidity must be derived not  
13 only from internally generated funds, but also by efficient access to capital markets.  
14 Because investors have many investment alternatives, even within a given market sector,  
15 the Company's financial profile must be adequate on a relative basis to ensure its ability  
16 to attract capital under a variety of economic and financial market conditions.

17 From the perspective of GPE, the authorized return must be sufficient to fund  
18 incremental capital investments in KCP&L's operations. From the perspective of equity  
19 investors, the authorized return must be adequate to provide a risk-comparable return on  
20 the equity portion of the Company's capital investments. Since (as discussed earlier)  
21 equity investors are the residual claimants on the Company's cash, they are particularly  
22 concerned with regulatory uncertainty and its effect on future cash flows.

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x (revenue / assets) x (assets / equity). See, e.g., Eugene Brigham & Michael Ehrhardt, Financial Management:

1           In light of those risks, I believe that an ROE in the range of 9.75 percent to 10.50  
2 percent is reasonable, if not conservative. An ROE in that range would permit the  
3 Company to compete for capital at a time when it requires additional funds to finance  
4 large projects as it confronts multiple new and emerging safety and environmental  
5 regulations.

## VII. CAPITAL MARKET ENVIRONMENT

6 **Q: Do economic conditions influence the required cost of capital and required return**  
7 **on common equity?**

8 A: Yes. As discussed in Section V, the models used to estimate the Cost of Equity are  
9 meant to reflect, and therefore are influenced by, current and expected capital market  
10 conditions. As such, it is important to assess the reasonableness of any financial model's  
11 results in the context of observable market data. To the extent certain ROE estimates are  
12 incompatible with such data or inconsistent with basic financial principles, it is  
13 appropriate to consider whether alternative estimation techniques are likely to provide  
14 more meaningful and reliable results.

15 **Q: Do you have any general observations regarding the relationship between Federal**  
16 **Reserve monetary policy, capital market conditions, and KCP&L's Cost of Equity?**

17 A: Yes, I do. Much has been reported about the Federal Reserve's Quantitative Easing  
18 policy and its effect on interest rates. Although the Federal Reserve completed its  
19 Quantitative Easing initiative in October 2014, it was not until December 2015 that it  
20 raised the Federal Funds rate, and began the process of rate normalization.<sup>69</sup> Therefore, a  
21 significant issue is how investors will react as that process continues, and eventually is

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Theory and Practice at 140-41 (12<sup>th</sup> ed., 2008).



1 completed. A viable outcome is that investors will perceive greater prospects of  
2 macroeconomic growth, which will increase the growth rates included in the DCF model.  
3 At the same time, higher growth and the absence of Federal market intervention could  
4 provide the opportunity for interest rates to increase, thereby increasing the dividend  
5 yield portion of the DCF model. In that case, both terms of the Constant Growth DCF  
6 model would increase, producing increased ROE estimates.

7 More recently, interest rates have risen and become increasingly volatile. In the  
8 equity markets, sectors that historically have included dividend-paying companies lost  
9 value, as increasing interest rates provided investors with other sources of current  
10 income. Because those dynamics affect different models in different ways, it would be  
11 inappropriate to rely on a single method to estimate the Company's Cost of Equity. A  
12 more reasoned approach is to understand the relationships among Federal monetary  
13 policy, interest rates, and measures of market risk, and to consider how those factors may  
14 affect different models and their results. As discussed throughout my Direct Testimony,  
15 it remains important to consider a broad range of data and models when determining the  
16 Company's Cost of Equity.

17 **Q: Please summarize the effect of recent Federal Reserve policies on interest rates and**  
18 **the cost of capital.**

19 A: Beginning in 2008, the Federal Reserve proceeded on a steady path of initiatives intended  
20 to lower long-term Treasury yields.<sup>70</sup> The Federal Reserve's policy actions "were  
21 designed to put downward pressure on longer-term interest rates by having the Federal  
22 Reserve take onto its balance sheet some of the duration and prepayment risks that would

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<sup>69</sup> See Federal Reserve Press Release, December 16, 2015.

1 otherwise have been borne by private investors.”<sup>71</sup> Under that policy, “Securities held  
2 outright” on the Federal Reserve’s balance sheet increased from approximately \$489  
3 billion at the beginning of October 2008 to \$4.23 trillion by December 2017.<sup>72</sup> To put  
4 that increase in context, the securities held by the Federal Reserve represented  
5 approximately 3.29 percent of Gross Domestic Product (“GDP”) at the end of September  
6 2008, and had risen to approximately 21.70 percent of GDP in December 2017.<sup>73</sup> As  
7 such, the Federal Reserve provided a significant source of liquidity, and had a substantial  
8 effect on capital markets.

9 **Q: Does your recommendation consider the interest rate environment?**

10 A: Yes, it does. From an analytical perspective, it is important that the inputs and  
11 assumptions used to arrive at an ROE recommendation, including assessments of capital  
12 market conditions, are consistent with the recommendation itself. Although all analyses  
13 require an element of judgment, the application of that judgment must be made in the  
14 context of the quantitative and qualitative information available to the analyst, and the  
15 capital market environment in which the analyses were undertaken. Because the Cost of  
16 Equity is forward-looking, the salient issue is whether investors see the likelihood of  
17 increased interest rates during the period in which the rates set in this proceeding will be  
18 in effect.

19 The low interest rate environment associated with central bank intervention may  
20 lead some analysts to conclude that current capital costs, including the Cost of Equity, are  
21 low and will remain as such. However, that conclusion only holds true under the

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<sup>70</sup> See Federal Reserve Press Release, June 19, 2013.

<sup>71</sup> Federal Reserve Bank of New York, *Domestic Open Market Operations During 2012*, April 2013, page 29.

<sup>72</sup> Source: Federal Reserve Board Schedule H.4.1. “Securities held outright” include U.S. Treasury securities, Federal agency debt securities, and mortgage-backed securities

1 hypothesis of Perfectly Competitive Capital Markets (“PCCM”) and the classical  
2 valuation framework which, under normal economic and capital market conditions,  
3 underpin the traditional Cost of Equity models. Perfectly Competitive Capital Markets  
4 are those in which no single trader, or “market-mover,” would have the power to change  
5 the prices of goods or services, including bond and common stock securities. In other  
6 words, under the PCCM hypothesis, no single trader would have a significant effect on  
7 market prices.

8 Classic valuation theory assumes investors trade securities rationally, with prices  
9 reflecting their perceptions of value. Although central banks may set benchmark interest  
10 rates, they have maintained below-normal rates to stimulate economic expansion and  
11 capital market recovery. It therefore is reasonable to conclude that the Federal Reserve  
12 and other central banks have been acting as market-movers, thereby having a significant  
13 effect on the market prices of both bonds and stocks. The presence of market-movers,  
14 such as the Federal Reserve, runs counter to the PCCM hypothesis, which underlies  
15 traditional Cost of Equity models. Consequently, the results of those models should be  
16 considered in the context of both quantitative and qualitative information.

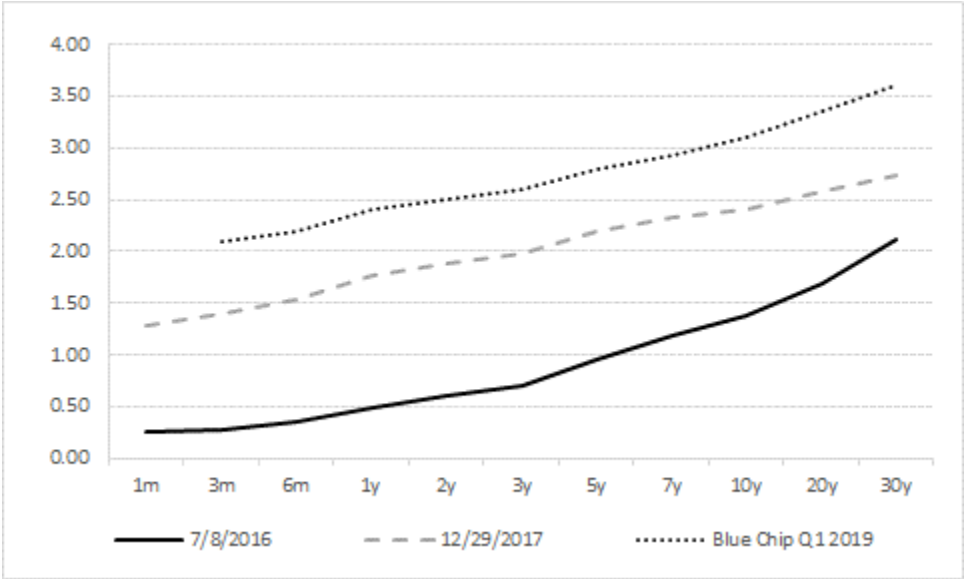
17 Although the Federal Reserve’s market intervention policies have kept interest  
18 rates historically low, since July 8, 2016 (when the 30-year Treasury yield hit an all-time  
19 low of 2.11 percent), rates have risen. As the Federal Reserve increased the Federal  
20 Funds target rate by 25 basis points in December 2016 (from 0.25 percent - 0.50 percent  
21 to 0.50 percent - 0.75 percent), March 2017 (to 0.75 percent - 1.00 percent), June 2017  
22 (to 1.00 percent – 1.25 percent), and in December 2017 (to 1.25 percent – 1.50 percent),

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<sup>73</sup> Source: Federal Reserve Board Schedule H.4.1; Bureau of Economic Analysis.

1 short-term and long-term interest rates increased by a corresponding amount (*see* Chart 5  
2 below).<sup>74</sup>

3 **Chart 5: Treasury Yield Curve: 7/8/2016, 12/29/2017 and Projected Q1 2019<sup>75</sup>**



4  
5 Lastly, on September 20, 2017, the Federal Reserve announced that it will  
6 “initiate the balance sheet normalization program described in the June 2017 Addendum  
7 to the Committee’s Policy Normalization Principles and Plans.”<sup>76</sup> Those “Principles and  
8 Plans” call for reducing the reinvestment of principal payments received from its  
9 holdings of Treasury securities by up to \$30 billion per month, and mortgage-backed  
10 securities by up to \$20 billion per month.<sup>77</sup> At the same time, the Federal Reserve will  
11 continue considering increases to the Federal Funds target rate. As noted below, current  
12 market data indicate an approximately 96.30 percent likelihood of further rate increases  
13 by December 2018.

<sup>74</sup> Federal Reserve Board Schedule H.15. 6-month and 1-year Treasury yields increased by 117 basis points and 128 basis points, respectively, July 8, 2016 to December 29, 2017.

<sup>75</sup> Sources: Federal Reserve Board Schedule H.15.; Blue Chip Financial Forecasts, Vol. 36, No. 12 at p. 2 (Dec. 1, 2017). 3-year, 7-year and 20-year projected Treasury yields interpolated.

<sup>76</sup> Federal Reserve Press Release, (Sept. 20, 2017).

1 **Q: Does market-based data indicate that investors see a probability of increasing**  
 2 **interest rates?**

3 A: Yes. Forward Treasury yields implied by the slope of the yield curve and published  
 4 projections by sources such as *Blue Chip Financial Forecasts* (which provides consensus  
 5 estimates from approximately 50 professional economists) indicate investors expect long-  
 6 term interest rates to increase.

7 Looking first to short-term interest rates, data compiled by CME Group indicates  
 8 that investors see a high likelihood of further Federal Funds rate increases, even after the  
 9 four increases between December 14, 2016 and December 13, 2017. As shown in Table  
 10 8, (below) the market is now anticipating at least one additional rate hike (96.30 percent  
 11 probability) and possibly two or more (77.30 percent) by December 2018.

12 **Table 8: Probability of Federal Funds Rate Increases<sup>78</sup>**

Target Rate (bps)	Federal Reserve Meeting Date							
	1/31/18	3/21/18	5/2/18	6/13/18	8/1/18	9/26/18	11/8/18	12/19/18
125-150	98.5%	37.4%	35.9%	12.6%	11.3%	5.6%	5.3%	3.7%
150-175	1.5%	61.6%	60.6%	44.5%	41.3%	26.2%	25.1%	19.0%
175-200		1.0%	3.5%	40.6%	41.0%	41.2%	40.4%	35.7%
200-225				2.3%	6.1%	23.7%	24.6%	29.5%
225-250					0.3%	3.2%	4.3%	10.6%
250-275						0.1%	0.3%	1.5%
275-300								0.1%

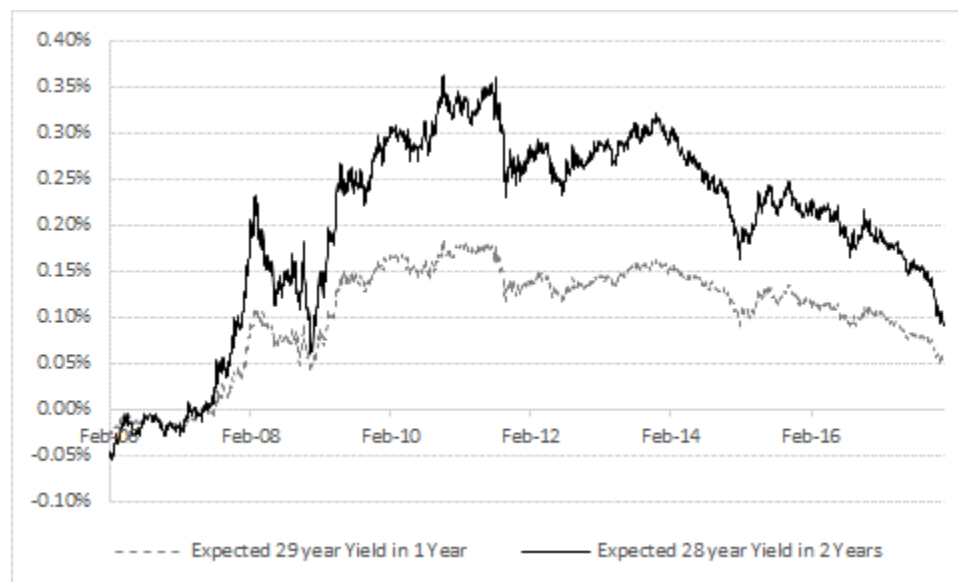
13  
 14 Lastly, we can view the market’s expectations of future interest rates based on the  
 15 current yield curve. Those expected rates, often referred to as “forward yields” are  
 16 derived from the “Expectations” theory, which states that (for example) the current 30-

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<sup>77</sup> Federal Reserve *Addendum to the Policy Normalization Principles and Plans*, as adopted effective June 13, 2017.

1 year Treasury yield equals the combination of the current three-year Treasury yield, and  
 2 the 29-year Treasury yield expected in one year. That is, an investor would be indifferent  
 3 to (1) holding a 30-year Treasury to maturity, or (2) holding a one-year Treasury to  
 4 maturity, then a 29-year Treasury bond, also to maturity.<sup>79</sup> Chart 6, below, shows the  
 5 difference between the forward and spot Treasury yields over time. It indicates that since  
 6 2006 the implied forward 29- and 28- year yields (one and two years hence, respectively)  
 7 consistently exceeded the (interpolated) spot yields. That is, just as economists'  
 8 projections implied increased interest rates, so did observable Treasury yields.

9 **Chart 6: Forward vs. Interpolated Treasury Yields<sup>80</sup>**



10

11

<sup>78</sup> See <http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>, accessed Jan. 8, 2018.

<sup>79</sup> In addition to the Expectations theory, there are other theories regarding the term structure of interest rates including: the Liquidity Premium Theory, which asserts that investors require a premium for holding long term bonds; the Market Segmentation Theory, which states that securities of different terms are not substitutable and, as such, the supply of and demand for short-term and long-term instruments is developed independently; and the Preferred Habitat Theory, which states that in addition to interest rate expectations, certain investors have distinct investment horizons and will require a return premium for bonds with maturities outside of that preference. See, e.g., Scott B. Smart, William L. Megginson, and Lawrence J. Gitman, *Corporate Finance* at 130-131.

<sup>80</sup> Source: Federal Reserve Schedule H.15. Spot yields are interpolated.

1 **Q: What do you conclude from these analyses of capital market conditions?**

2 A: First, it is clear that interest rates have increased from the low levels experienced in early  
3 2016. Second, it is clear that market-based data indicate investors' expectations of rising  
4 interest rates in the near- and longer-term. As that occurs, and as interest rates continue  
5 to rise, it would be reasonable to expect lower utility valuations, higher dividend yields,  
6 and higher growth rates. In the context of the Discounted Cash Flow model, those  
7 variables would combine to indicate increases in the Cost of Equity.

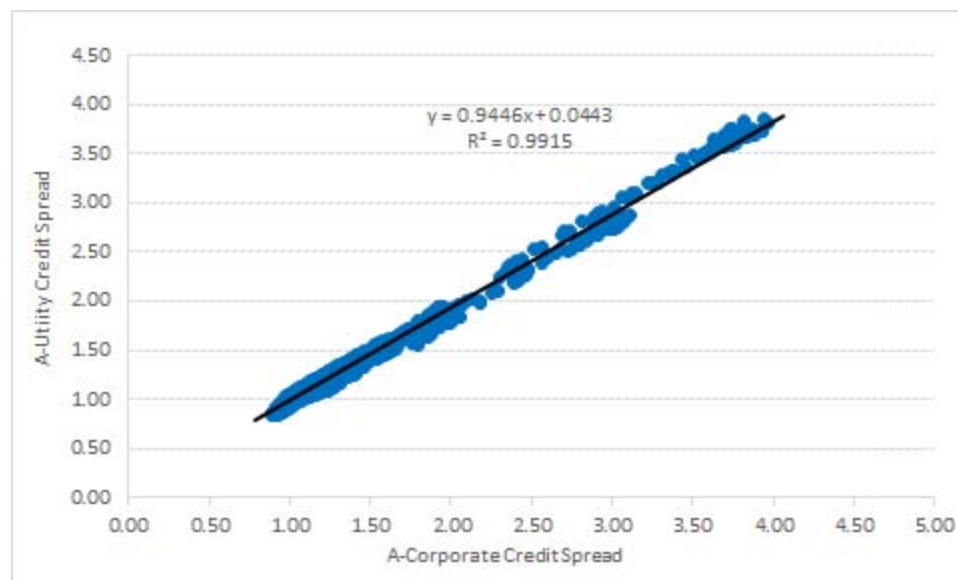
8           Although the market data discussed above indicate increasing costs of capital, it is  
9 important to keep in mind that although estimating the Cost of Equity is an empirical  
10 exercise, rote application of a specific form of an analysis, or the mechanical use of  
11 specific model inputs, may well produce misleading results. The methods used to  
12 estimate the Cost of Equity, or the weight given to any one method, may change from  
13 case to case. Therefore, the returns authorized in other jurisdictions provide a relevant,  
14 observable, and verifiable benchmark for assessing the reasonableness of analytical  
15 assumptions, results, and conclusions. As shown in Chart 1, my recommended ROE  
16 range of 9.75 percent to 10.50 percent is highly consistent with authorized returns over  
17 the last five years.

18  
19 **Q: Have you also reviewed the relationship between credit spreads for A-rated utility  
20 debt relative to A-rated corporate debt?**

21 A: Yes, I have. Given the historical volatility in the spread between corporate and utility A-  
22 rated debt, there is no reason to conclude that utility yields are different than those of  
23 their corporate counterparts. That conclusion is consistent with the finding that over  
24 time, there has been a nearly one-to-one relationship between credit spreads on A-rated

1 corporate and utility bonds. In fact, a regression analysis in which corporate credit  
2 spreads are the explanatory variable and utility credit spreads are the dependent variable  
3 shows that slope is approximately 1.00 and highly significant (*see* Chart 7, below).  
4 Because the intercept term is nearly zero, we can conclude that there has been no material  
5 difference between the two, and there certainly is no meaningful difference in the current  
6 market.

7 **Chart 7: Corporate and Utility Credit Spreads (A-Rated)**<sup>81</sup>



8

9 **Q: Have there been recent periods when utility valuation levels were high relative to**  
10 **both their long-term average and the market?**

11 A: Yes. For example, between July and December 2016, the S&P Electric Utility Index lost  
12 approximately 9.00 percent of its value. At the same time, the S&P 500 increased by  
13 approximately 7.00 percent, indicating that the utility sector under-performed the market  
14 by about 16.00 percent. Also during that time, the 30-year Treasury yield increased by  
15 approximately 95 basis points (an increase of nearly 45.00 percent). The point simply is



1 that as interest rates increased, utility valuations fell. Because (as noted above) investors  
2 see the strong likelihood of further interest rate increases, there is a continuing risk of  
3 losses in the utility sector. Such market conditions support my recommended ROE.

4 **Q: What conclusions do you draw from your analyses of the current capital market**  
5 **environment, and how do those conclusions affect your ROE recommendation?**

6 A: In my view, we cannot conclude that the recent levels of utility valuations are due to a  
7 fundamental change in the risk perceptions of utility investors. There is no measurable  
8 difference between credit spreads of A-rated utility debt and A-rated corporate debt. That  
9 is, based on analyses of credit spreads, there is no reason to conclude that investors see  
10 utilities as less risky relative to either historical levels or to their corporate counterparts.

11 From an analytical perspective, it is important that the inputs and assumptions  
12 used to arrive at an ROE determination, including assessments of capital market  
13 conditions, are consistent with the conclusion itself. Although all analyses require an  
14 element of judgment, the application of that judgment must be made in the context of the  
15 quantitative and qualitative information available to the analyst and the capital market  
16 environment in which the analyses were undertaken. Because the application of financial  
17 models and interpretation of their results often is the subject of differences among  
18 analysts in regulatory proceedings, I believe that it is important to review and consider a  
19 variety of data points. This approach enables us to put in context both quantitative  
20 analyses and the associated recommendations.

21 Because not all models used to estimate the Cost of Equity adequately reflect  
22 those changing market dynamics, it is important to give appropriate weight to the

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<sup>81</sup> Source: Federal Reserve Schedule H.15.

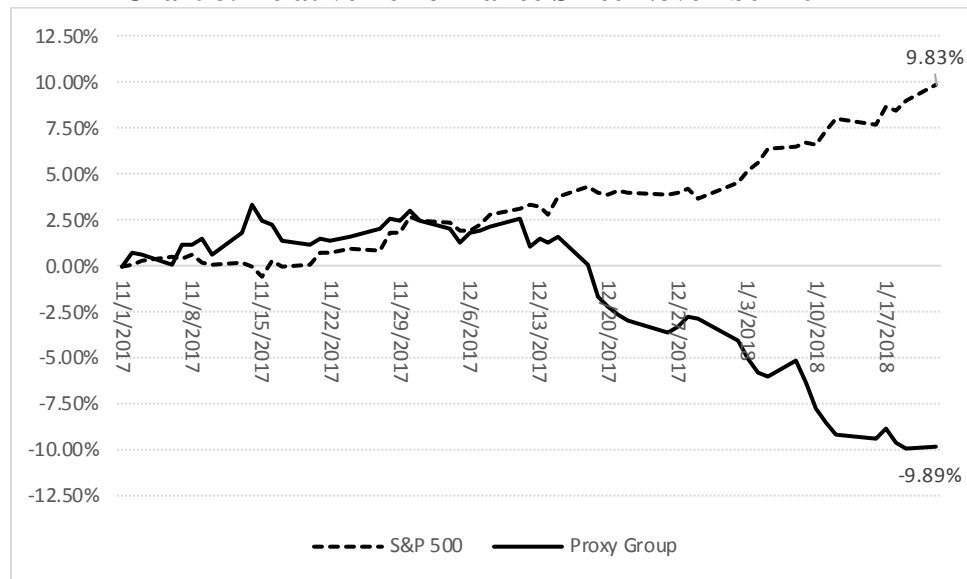
1 methods and to their results. Moreover, because those models produce a range of results,  
2 it is important to consider the type of data discussed above in determining where the  
3 Companies' ROE falls within that range. As described in Section V, on balance, I  
4 believe that the DCF-based results should be viewed very carefully, and that more weight  
5 should be accorded the Risk Premium-based methods, i.e., the Capital Asset Pricing  
6 Model discussed in Section V.C and the Bond Yield Plus Risk Premium Model discussed  
7 in Section V.D. I believe that doing so supports my recommended range of 9.75 percent  
8 to 10.50 percent.

9  
10 **Q. Have you also considered the effect of the recently enacted Tax Cut and Jobs Act**  
11 **(“TCJA”)?**

12 A. Yes, I have. On December 22, 2017, the President of the United States signed the TCJA  
13 into law. Since shortly before the TCJA was signed, electric utilities (as measured by my  
14 proxy group) have significantly underperformed the overall market. As Chart 8 (below)  
15 demonstrates, from November 1, 2017 through January 22, 2018 the S&P 500 gained  
16 about 9.80 percent in value. In stark contrast, my proxy group lost about 9.90 percent,  
17 underperforming the overall market by nearly 20.00 percentage points.

1

**Chart 8: Relative Performance Since November 2017<sup>82</sup>**



2

3 A reasonable inference to be drawn from that data is that investors have been re-  
 4 evaluating electric utilities relative to other market sectors. To the extent investors now  
 5 view utilities as less attractive relative to alternative investments, the proxy companies’  
 6 prices will fall, and the dividend yields will increase. As explained below, because rating  
 7 agencies have begun to discuss the consequences of the TCJA for utilities’ cash flow, a  
 8 reasonable conclusion is that equity investors also have begun to recognize those  
 9 consequences, and to allocate their capital to other market sectors.

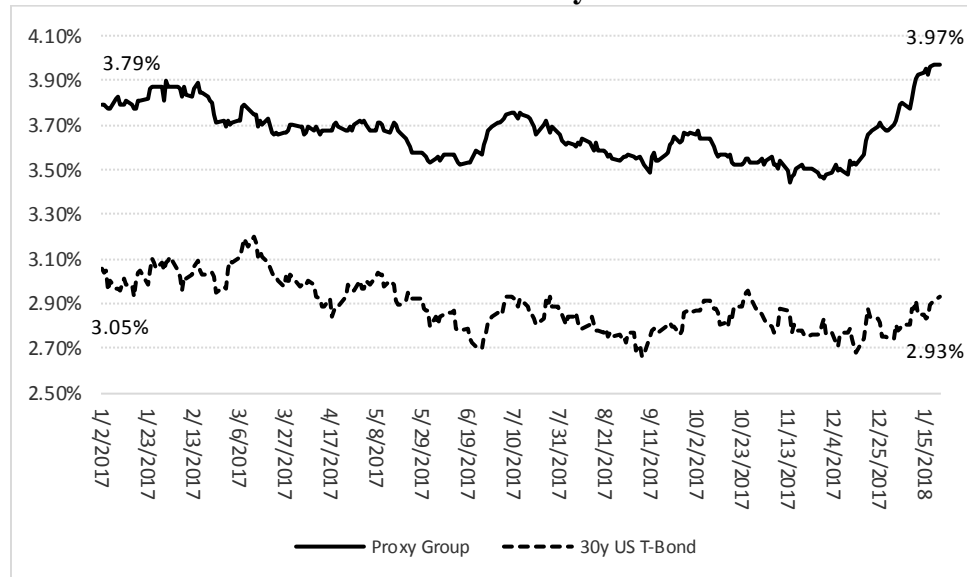
10 **Q. Have the proxy companies’ dividend yields increased coincident with the TCJA?**

11 A. Yes, since the beginning of December 2017 the dividend yield for my proxy group  
 12 increased by about 50 basis points, while the 30-year Treasury yield increased by about  
 13 17 basis points (see Chart 9, below). Again, that data suggests the fall in price among  
 14 utility stocks may be a matter of relative value stemming from concerns regarding the  
 15 TCJA’s effect on utilities’ cash flow. As discussed below, Moody’s Investors Service  
 16 (“Moody’s”), Standard & Poor’s, and Fitch Ratings all recently have evaluated the utility

<sup>82</sup> Source: S&P Global Market Intelligence. Proxy group calculated as an index.

1 sector in the context of the TCJA, with Moody's noting negative ratings implications for  
2 many of the utilities it covers.

3 **Chart 9: Proxy Group Dividend Yield**  
4 **vs. 30-Year Treasury Yield**<sup>83</sup>



5  
6 **Q. Are there reasons to expect the TCJA may affect the models used to estimate the**  
7 **Cost of Equity?**

8 A. Yes, there are. As discussed earlier in my Direct Testimony, the Constant Growth DCF  
9 model is based on several assumptions that together assume current market conditions  
10 essentially will remain in place, unchanged, in perpetuity. Because we have seen a  
11 significant change in utility valuations, we should recognize the mean DCF results likely  
12 are not reliable indicators of the Company's Cost of Equity. As also discussed in my  
13 Direct Testimony, the Cost of Equity is affected by the degree of financial leverage, or  
14 debt, in the capital structure. Because there is a "tax shield" associated with debt, lower  
15 marginal tax rates will increase the risk-effect of leverage. That effect would manifest  
16 itself in increased Beta coefficients of the CAPM, for example. The point simply is that

<sup>83</sup> Source: S&P Global Market Intelligence. My proxy group calculated as an index.

1 the reduction in utility valuations coincident with the TCJA is consistent with financial  
2 theory.

3 **Q. What concerns have rating agencies raised as they consider the implications of the**  
4 **TCJA for utilities' cash flow?**

5 A. The rating agencies have observed that a reduction in utilities' revenue associated with  
6 lower income taxes and the potential return of excess accumulated deferred income taxes  
7 also may reduce utilities' cash flow.<sup>84</sup> As FitchRatings pointed out “[a]bsent mitigating  
8 strategies on the regulatory front, this is expected to lead to weaker credit metrics and  
9 negative rating actions for issuers with limited headroom to absorb the leverage creep.”<sup>85</sup>  
10 In a similar vein, Standard & Poor's observed that the TCJA is “...negative for credit  
11 quality because the combination of a lower tax rate and the loss of stimulus provisions  
12 related to bonus depreciation or full expensing of capital spending will create headwinds  
13 in operating cash-flow generation capabilities as customer rates are lowered in response  
14 to the new tax code.”<sup>86</sup> Moody's stated the following:

15 Tax reform is credit negative for US regulated utilities because the  
16 lower 21% statutory tax rate reduces cash collected from customers,  
17 while the loss of bonus depreciation reduces tax deferrals, all else  
18 being equal. Moody's calculates that the recent changes in tax laws  
19 will dilute a utility's ratio of cash flow before changes in working  
20 capital to debt by approximately 150 - 250 basis points on average,  
21 depending to some degree on the size of the company's capital  
22 expenditure programs. From a leverage perspective, Moody's estimates

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<sup>84</sup> See S&P Global Market Intelligence, *Rating agencies warn tax reform could drag US utility sector credit quality*, January 25, 2018.

<sup>85</sup> FitchRatings Special Report, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector*, January 24, 2018.

<sup>86</sup> S&P Global Ratings, *U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound*, January 24, 2018.

1 that debt to total capitalization ratios will increase, based on the lower  
2 value of deferred tax liabilities.<sup>87</sup>

3 All three rating agencies, therefore, have observed the negative effects of the TCJA on  
4 utilities' cash flow, and the potential consequences for their credit profiles.

5 **Q. Have the rating agencies also discussed possible regulatory reactions to the cash**  
6 **flow implications of the TCJA?**

7 A. Yes. Moody's, for example, identified approaches to help preserve credit profiles,  
8 including "...accelerated cost recovery of certain regulatory assets or future investment;  
9 changes to the equity layer or allowed ROEs in rates, and other actions." Moody's also  
10 suggested that "[c]hanges to corporate financial policies could include changes to  
11 capitalization, the financing of future investments, dividend growth, or others."<sup>88</sup>

12 FitchRatings observed the following:

13 A majority of states have opened dockets or requested all utilities in  
14 the state to submit an analysis on the implications of the tax reform.  
15 While regulators will be keen to provide some sort of rate relief for  
16 customers, such actions could take many forms and vary in time  
17 frame. Some jurisdictions may be open to a negotiated outcome that  
18 focuses more on benefits of rate stability and creditworthy utilities  
19 rather than immediate rate reductions. In the former, many tools could  
20 be employed, including the following:

- 21 • Deferral of lower tax expense to use as an offset to expected future  
22 rate increases either from the recovery of regulatory deferrals or rate  
23 base growth
- 24 • Return of excess unprotected ADIT over a longer-term horizon
- 25 • Increase in authorized equity ratio and/or return on equity
- 26 • Accelerated depreciation on some assets

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<sup>87</sup> Moody's Investors' Service, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform*, January 19, 2018.

<sup>88</sup> Moody's Investors' Service, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform*, January 19, 2018.

1 • Lower capex<sup>89</sup>

2 As both rating agencies discussed, regulatory responses may vary by company and  
3 jurisdiction, but may include a variety of potential approaches.

4 **Q. What conclusions do you draw from the data and information discussed above?**

5 A. There is little question that the TCJA has increased cash flow-related risks for utilities.  
6 Those risks are manifested in the sector's significant underperformance relative to the  
7 broad market, and in the comments of financial participants such as Moody's, Standard &  
8 Poor's, and FitchRatings.

9 **Q. Are you recommending a higher ROE in this proceeding in connection with the**  
10 **TCJA?**

11 A. No, I am not. Rather, I recommend that the Commission consider the capital market  
12 implications of the TCJA as part of its review. Based on the data and information  
13 discussed above, it is my view that the TCJA, and its implications for utilities' cash flows  
14 and credit profiles, provide further support for my ROE range and recommendation.

## VIII. COST OF DEBT

16 **Q: What is the Company's Cost of Debt?**

17 A: As shown in Schedule RBH-10, the Company's Cost of Debt is 5.06 percent.

18 **Q: Have you assessed the Company's Cost of Debt?**

19 A: Yes, I reviewed the prevailing Bloomberg Fair Value Curves for A-rated and BBB-rated  
20 utility debt concurrent with the date of issuance of the Company's debt instruments. As

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<sup>89</sup> FitchRatings Special Report, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector*, January 24, 2018.

1 shown Schedule RBH-11, the Company's weighted average coupon rate is consistent  
2 with the prevailing yields at the times of issuance. As such, I believe the Company's  
3 5.06 percent current Cost of Debt is reasonable.

#### IX. CAPITAL STRUCTURE AND OVERALL RATE OF RETURN

4 **Q: Please summarize the Company's requested capital structure and overall rate of**  
5 **return.**

6 A: The requested capital structure components and resulting overall rate of return are  
7 presented in Table 9 below:

8 **Table 9: Summary of Overall Rate of Return<sup>90</sup>**

<b>Capital Components</b>	<b>Ratio</b>	<b>Cost</b>	<b>Weighted Cost</b>
Long-Term Debt	49.97%	5.06%	2.00%
Common Equity	50.03%	9.85%	4.93%
<b>Total</b>	<b>100.00%</b>		6.92%

9 **Q: What is the basis for the Company's requested capital structure and overall rate of**  
10 **return?**

11 A: The requested capital structure, as well as the Cost of Debt, are based on KCP&L's  
12 projected capital structure at June 30, 2018. The data supporting the requested capital  
13 structure is presented in Schedule RBH-10, with the June 30, 2018 summary shown on  
14 page 1 of that schedule.

---

<sup>90</sup> See Schedule RBH-10.



1 **Q: What are the principal differences between KCP&L’s actual capital structure as of**  
2 **November 30, 2017 and the requested projected capital structure as of June 30,**  
3 **2018?**

4 A: The actual KCP&L capital structure as of November 30, 2017, is shown on page 2 of  
5 Schedule RBH-10. The key differences between the actual capital structure and the  
6 requested capital structure, projected as of June 30, 2018, are as follows:

- 7 • Net Long-Term Debt is projected to decrease by \$50 million due to  
8 refinancing of expiring debt.
- 9 • Equity is projected to increase by \$28.61 million due to additional  
10 earnings and an increase in the accumulated other comprehensive income  
11 balance, which is partially offset by common dividends declared.

12 **Q: How does the capital structure affect the Cost of Equity?**

13 A: In practice, the capital structure should enable the Company to maintain or enhance its  
14 financial integrity, thereby enabling access to capital at competitive rates under a variety  
15 of economic and financial market conditions. The capital structure relates to financial  
16 risk, which is a function of the percentage of debt relative to equity (that relationship is  
17 often referred to as “financial leverage”). As the percentage of debt in the capital  
18 structure increases, so do the fixed obligations for the repayment of that debt and,  
19 therefore, the risk that cash flows may not be sufficient to meet those obligations on a  
20 timely basis. Consequently, as the degree of financial leverage increases, the risk of  
21 financial distress (*i.e.*, financial risk) also increases. Since the capital structure can affect  
22 the subject company’s overall level of risk, it is an important consideration in establishing

1 a just and reasonable rate of return. Therefore, it is important to consider the capital  
2 structure in light of industry practice and investor requirements.

3 **Q: Please describe your analysis of the Company's capital structure relative to industry  
4 practice.**

5 A: As a measure of industry practice, I calculated the average capital structure for each of  
6 the utility operating companies held by the proxy companies over the last eight fiscal  
7 quarters. As shown in Schedule RBH-12, the proxy group average capital structure over  
8 that period includes 52.32 percent common equity and 47.38 percent long-term debt; the  
9 average common equity ratios (on a company-specific basis) range from 45.89 percent to  
10 59.52 percent. Based on that review, it is apparent that KCP&L's capital structure is  
11 consistent with those in place at the proxy companies.

12 **Q: What is the basis for using average capital components rather than a point-in-time  
13 measurement?**

14 A: Measuring the capital components at a particular point in time can skew the capital  
15 structure by the specific circumstances of a particular period. Therefore, it is more  
16 appropriate to normalize the relative relationship between the capital components over a  
17 period of time.

18 **Q: What is your conclusion regarding an appropriate capital structure for KCP&L?**

19 A: Considering the range of proxy company average equity ratios from 45.89 percent to  
20 59.52 percent, I believe that KCP&L's 50.03 percent common equity ratio is appropriate.

21

## X. CONCLUSIONS AND RECOMMENDATION

1 **Q: What is your conclusion regarding the Company's Cost of Equity?**

2 A: As discussed in Section V (and as shown in Schedules RBH-1 through RBH-7), I have  
3 performed several analyses to estimate KCP&L's Cost of Equity. In light of those  
4 results, and taking into consideration other relevant and observable market data, as well  
5 as the Commission's findings in the KCP&L Order, I believe that an ROE in the range of  
6 9.75 percent to 10.50 percent represents the range of returns required by equity investors  
7 under current and expected market conditions. As discussed earlier in my testimony, my  
8 recommendation reflects analytical results based on a proxy group of electric utilities,  
9 and takes into consideration the Company's risk profile, including the regulatory  
10 environment in which KCP&L operates, its generation portfolio, and its planned capital  
11 expenditures.

12 I also conclude that the Company's 5.06 percent Cost of Debt reflects prevailing  
13 market conditions at the times of issuance, and therefore is reasonable and appropriate.  
14 Lastly, I conclude that the Company's capital structure, which consists of 50.03 percent  
15 common equity, 49.97 percent long-term debt is reasonable relative to its peers. The  
16 Company's proposed capital structure is consistent with industry practice, and supports  
17 KCP&L's financial integrity.

18 **Q: Does this conclude your Direct Testimony?**

19 A: Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

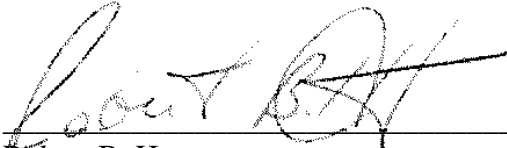
In the Matter of Kansas City Power & Light            )  
Company's Request for Authority to Implement        )  
A General Rate Increase for Electric Service        )        Case No. ER-2018-0145

**AFFIDAVIT OF ROBERT B. HEVERT**

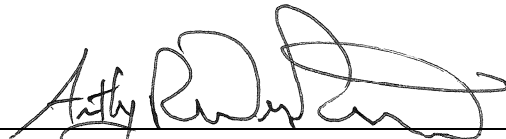
**STATE OF MISSOURI**    )  
  ) ss  
**COUNTY OF JACKSON**    )

Robert B. Hevert, being first duly sworn on his oath, states:

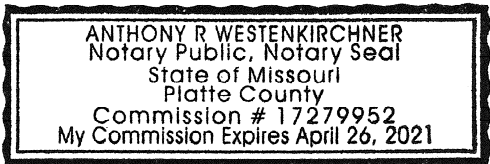
1.       My name is Robert B. Hevert and my business address is ScottMadden, Inc., 1900 W. Park Drive, Suite 250, Westborough, MA 01581. I have been retained to serve as an expert witness to provide testimony on behalf of Kansas City Power & Light Company.
  
2.       Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company consisting of seventy-one ( 71 ) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.
  
3.       I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
Robert B. Hevert

Subscribed and sworn before me this 29<sup>th</sup> day of January 2018.

  
\_\_\_\_\_  
Notary Public

My commission expires: 4/26/2021



Constant Growth Discounted Cash Flow Model  
30 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.14	\$77.37	2.77%	2.85%	7.20%	5.00%	5.00%	5.73%	7.84%	8.58%	10.07%
Alliant Energy Corporation	LNT	\$1.26	\$43.95	2.87%	2.96%	6.40%	7.05%	6.00%	6.48%	8.95%	9.44%	10.02%
Ameren Corporation	AEE	\$1.83	\$61.69	2.97%	3.07%	7.00%	7.00%	6.00%	6.67%	9.06%	9.73%	10.07%
American Electric Power Company, Inc.	AEP	\$2.48	\$75.90	3.27%	3.33%	4.80%	2.77%	4.00%	3.86%	6.08%	7.19%	8.15%
Black Hills Corporation	BKH	\$1.90	\$58.88	3.23%	3.32%	4.90%	4.26%	7.50%	5.55%	7.56%	8.87%	10.85%
CMS Energy Corporation	CMS	\$1.33	\$48.93	2.72%	2.81%	6.50%	7.44%	6.50%	6.81%	9.31%	9.62%	10.26%
Dominion Energy, Inc.	D	\$3.34	\$82.55	4.05%	4.15%	5.60%	3.64%	6.50%	5.25%	7.76%	9.40%	10.68%
DTE Energy Company	DTE	\$3.53	\$112.59	3.14%	3.22%	6.00%	4.91%	6.00%	5.64%	8.12%	8.86%	9.23%
Duke Energy Corporation	DUK	\$3.56	\$87.23	4.08%	4.16%	4.00%	3.23%	4.50%	3.91%	7.38%	8.07%	8.67%
El Paso Electric Company	EE	\$1.34	\$58.40	2.29%	2.35%	5.20%	5.30%	5.00%	5.17%	7.35%	7.52%	7.66%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$37.06	3.35%	3.40%	4.20%	4.50%	1.50%	3.40%	4.87%	6.80%	7.92%
IDACORP, Inc.	IDA	\$2.36	\$95.25	2.48%	2.53%	5.00%	4.00%	3.50%	4.17%	6.02%	6.70%	7.54%
NorthWestern Corporation	NWE	\$2.10	\$61.63	3.41%	3.45%	1.50%	2.25%	4.50%	2.75%	4.93%	6.20%	7.98%
OGE Energy Corp.	OGE	\$1.33	\$34.24	3.88%	3.98%	4.30%	3.90%	6.00%	4.73%	7.86%	8.71%	10.00%
Otter Tail Corporation	OTTR	\$1.28	\$46.05	2.78%	2.86%	NA	5.20%	7.00%	6.10%	8.05%	8.96%	9.88%
Pinnacle West Capital Corporation	PNW	\$2.78	\$88.73	3.13%	3.21%	3.20%	5.46%	5.50%	4.72%	6.38%	7.93%	8.72%
PNM Resources, Inc.	PNM	\$1.06	\$43.71	2.42%	2.50%	5.50%	6.05%	7.50%	6.35%	7.99%	8.85%	10.02%
Portland General Electric Company	POR	\$1.36	\$47.86	2.84%	2.91%	3.80%	4.00%	6.00%	4.60%	6.70%	7.51%	8.93%
Southern Company	SO	\$2.32	\$50.56	4.59%	4.67%	4.50%	2.33%	3.50%	3.44%	6.97%	8.11%	9.19%
WEC Energy Group, Inc.	WEC	\$2.21	\$67.80	3.26%	3.35%	5.40%	5.27%	6.00%	5.56%	8.62%	8.91%	9.36%
Xcel Energy Inc.	XEL	\$1.44	\$50.21	2.87%	2.94%	5.50%	NA	4.50%	5.00%	7.43%	7.94%	8.45%
Proxy Group Mean				3.16%	3.24%	5.03%	4.68%	5.36%	5.04%	7.39%	8.28%	9.22%
Proxy Group Median				3.13%	3.21%	5.10%	4.71%	6.00%	5.17%	7.56%	8.58%	9.23%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals indicated number of trading day average as of December 29, 2017
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.5 x [8])
- [5] Source: Zacks
- [6] Source: Yahoo! Finance
- [7] Source: Value Line
- [8] Equals Average([5], [6], [7])
- [9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model  
90 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.14	\$77.72	2.75%	2.83%	7.20%	5.00%	5.00%	5.73%	7.82%	8.57%	10.05%
Alliant Energy Corporation	LNT	\$1.26	\$43.28	2.91%	3.01%	6.40%	7.05%	6.00%	6.48%	9.00%	9.49%	10.06%
Ameren Corporation	AEE	\$1.83	\$60.87	3.01%	3.11%	7.00%	7.00%	6.00%	6.67%	9.10%	9.77%	10.11%
American Electric Power Company, Inc.	AEP	\$2.48	\$74.10	3.35%	3.41%	4.80%	2.77%	4.00%	3.86%	6.16%	7.27%	8.23%
Black Hills Corporation	BKH	\$1.90	\$64.26	2.96%	3.04%	4.90%	4.26%	7.50%	5.55%	7.28%	8.59%	10.57%
CMS Energy Corporation	CMS	\$1.33	\$48.25	2.76%	2.85%	6.50%	7.44%	6.50%	6.81%	9.35%	9.66%	10.30%
Dominion Energy, Inc.	D	\$3.34	\$80.26	4.16%	4.27%	5.60%	3.64%	6.50%	5.25%	7.88%	9.52%	10.80%
DTE Energy Company	DTE	\$3.53	\$111.40	3.17%	3.26%	6.00%	4.91%	6.00%	5.64%	8.16%	8.89%	9.26%
Duke Energy Corporation	DUK	\$3.56	\$87.07	4.09%	4.17%	4.00%	3.23%	4.50%	3.91%	7.38%	8.08%	8.68%
El Paso Electric Company	EE	\$1.34	\$57.15	2.34%	2.41%	5.20%	5.30%	5.00%	5.17%	7.40%	7.57%	7.71%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$35.42	3.50%	3.56%	4.20%	4.50%	1.50%	3.40%	5.03%	6.96%	8.08%
IDACORP, Inc.	IDA	\$2.36	\$92.20	2.56%	2.61%	5.00%	4.00%	3.50%	4.17%	6.10%	6.78%	7.62%
NorthWestern Corporation	NWE	\$2.10	\$59.96	3.50%	3.55%	1.50%	2.25%	4.50%	2.75%	5.03%	6.30%	8.08%
OGE Energy Corp.	OGE	\$1.33	\$35.55	3.74%	3.83%	4.30%	3.90%	6.00%	4.73%	7.71%	8.56%	9.85%
Otter Tail Corporation	OTTR	\$1.28	\$44.86	2.85%	2.94%	NA	5.20%	7.00%	6.10%	8.13%	9.04%	9.95%
Pinnacle West Capital Corporation	PNW	\$2.78	\$88.35	3.15%	3.22%	3.20%	5.46%	5.50%	4.72%	6.40%	7.94%	8.73%
PNM Resources, Inc.	PNM	\$1.06	\$42.64	2.49%	2.56%	5.50%	6.05%	7.50%	6.35%	8.05%	8.91%	10.08%
Portland General Electric Company	POR	\$1.36	\$47.20	2.88%	2.95%	3.80%	4.00%	6.00%	4.60%	6.74%	7.55%	8.97%
Southern Company	SO	\$2.32	\$50.41	4.60%	4.68%	4.50%	2.33%	3.50%	3.44%	6.99%	8.12%	9.21%
WEC Energy Group, Inc.	WEC	\$2.21	\$66.46	3.33%	3.42%	5.40%	5.27%	6.00%	5.56%	8.68%	8.97%	9.42%
Xcel Energy Inc.	XEL	\$1.44	\$49.41	2.91%	2.99%	5.50%	NA	4.50%	5.00%	7.48%	7.99%	8.49%
Proxy Group Mean				3.19%	3.27%	5.03%	4.68%	5.36%	5.04%	7.42%	8.31%	9.25%
Proxy Group Median				3.01%	3.11%	5.10%	4.71%	6.00%	5.17%	7.48%	8.56%	9.26%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals indicated number of trading day average as of December 29, 2017
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.5 x [8])
- [5] Source: Zacks
- [6] Source: Yahoo! Finance
- [7] Source: Value Line
- [8] Equals Average([5], [6], [7])
- [9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model  
180 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.14	\$74.84	2.86%	2.94%	7.20%	5.00%	5.00%	5.73%	7.93%	8.67%	10.16%
Alliant Energy Corporation	LNT	\$1.26	\$41.99	3.00%	3.10%	6.40%	7.05%	6.00%	6.48%	9.09%	9.58%	10.16%
Ameren Corporation	AEE	\$1.83	\$58.43	3.13%	3.24%	7.00%	7.00%	6.00%	6.67%	9.23%	9.90%	10.24%
American Electric Power Company, Inc.	AEP	\$2.48	\$72.02	3.44%	3.51%	4.80%	2.77%	4.00%	3.86%	6.26%	7.37%	8.33%
Black Hills Corporation	BKH	\$1.90	\$66.70	2.85%	2.93%	4.90%	4.26%	7.50%	5.55%	7.17%	8.48%	10.46%
CMS Energy Corporation	CMS	\$1.33	\$47.39	2.81%	2.90%	6.50%	7.44%	6.50%	6.81%	9.40%	9.72%	10.35%
Dominion Energy, Inc.	D	\$3.34	\$79.20	4.22%	4.33%	5.60%	3.64%	6.50%	5.25%	7.93%	9.57%	10.85%
DTE Energy Company	DTE	\$3.53	\$109.30	3.23%	3.32%	6.00%	4.91%	6.00%	5.64%	8.22%	8.96%	9.33%
Duke Energy Corporation	DUK	\$3.56	\$85.84	4.15%	4.23%	4.00%	3.23%	4.50%	3.91%	7.44%	8.14%	8.74%
El Paso Electric Company	EE	\$1.34	\$54.81	2.44%	2.51%	5.20%	5.30%	5.00%	5.17%	7.51%	7.67%	7.81%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$34.21	3.62%	3.69%	4.20%	4.50%	1.50%	3.40%	5.15%	7.09%	8.21%
IDACORP, Inc.	IDA	\$2.36	\$89.17	2.65%	2.70%	5.00%	4.00%	3.50%	4.17%	6.19%	6.87%	7.71%
NorthWestern Corporation	NWE	\$2.10	\$60.36	3.48%	3.53%	1.50%	2.25%	4.50%	2.75%	5.01%	6.28%	8.06%
OGE Energy Corp.	OGE	\$1.33	\$35.34	3.76%	3.85%	4.30%	3.90%	6.00%	4.73%	7.74%	8.59%	9.88%
Otter Tail Corporation	OTTR	\$1.28	\$42.38	3.02%	3.11%	NA	5.20%	7.00%	6.10%	8.30%	9.21%	10.13%
Pinnacle West Capital Corporation	PNW	\$2.78	\$87.50	3.18%	3.25%	3.20%	5.46%	5.50%	4.72%	6.43%	7.97%	8.76%
PNM Resources, Inc.	PNM	\$1.06	\$40.68	2.61%	2.69%	5.50%	6.05%	7.50%	6.35%	8.18%	9.04%	10.20%
Portland General Electric Company	POR	\$1.36	\$46.57	2.92%	2.99%	3.80%	4.00%	6.00%	4.60%	6.78%	7.59%	9.01%
Southern Company	SO	\$2.32	\$49.86	4.65%	4.73%	4.50%	2.33%	3.50%	3.44%	7.04%	8.18%	9.26%
WEC Energy Group, Inc.	WEC	\$2.21	\$64.40	3.43%	3.53%	5.40%	5.27%	6.00%	5.56%	8.79%	9.08%	9.53%
Xcel Energy Inc.	XEL	\$1.44	\$48.05	3.00%	3.07%	5.50%	NA	4.50%	5.00%	7.56%	8.07%	8.58%
Proxy Group Mean				3.26%	3.34%	5.03%	4.68%	5.36%	5.04%	7.49%	8.38%	9.32%
Proxy Group Median				3.13%	3.24%	5.10%	4.71%	6.00%	5.17%	7.56%	8.48%	9.33%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of December 29, 2017

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Equals Average([5], [6], [7])

[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Multi-Stage Growth Discounted Cash Flow Model  
30 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal	
			Value										PEG	
Company	Ticker	Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.51%	22.21	4.13
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.45%	22.59	4.20
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	8.93%	19.54	3.63
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	9.22%	18.09	3.36
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	8.68%	21.03	3.91
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	8.72%	20.78	3.86
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	8.70%	20.91	3.89
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	8.66%	21.13	3.93
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.42%	22.83	4.25
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.36%	23.26	4.32
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	9.63%	16.34	3.04
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.23%	24.36	4.53
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	8.86%	19.93	3.71
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.02%	19.05	3.54
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.12%	25.30	4.70
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.60%	21.56	4.01
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.36%	23.33	4.34
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.57%	21.76	4.05
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	9.24%	17.98	3.34
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	8.75%	20.59	3.83
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.64%	21.30	3.96

Mean 8.70%  
Max 9.63%  
Min 8.12%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%





Multi-Stage Growth Discounted Cash Flow Model  
30 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	High									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.82%	20.17	3.75
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.57%	21.77	4.05
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	9.01%	19.12	3.56
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	9.47%	16.99	3.16
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	9.12%	18.56	3.45
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	8.86%	19.95	3.71
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	9.00%	19.20	3.57
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	8.74%	20.63	3.84
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.55%	21.92	4.08
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.39%	23.05	4.29
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	9.96%	15.17	2.82
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.39%	23.03	4.28
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	9.30%	17.72	3.30
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.34%	17.51	3.26
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.29%	23.84	4.43
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.77%	20.47	3.81
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.59%	21.65	4.03
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.88%	19.84	3.69
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.53%	16.74	3.11
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	8.85%	19.99	3.72
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	8.75%	20.60	3.83

Mean 8.91%  
Max 9.96%  
Min 8.29%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



Multi-Stage Growth Discounted Cash Flow Model  
30 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
			Value			Low						PEG		
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.36%	23.32	4.34
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.35%	23.33	4.34
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	8.78%	20.41	3.79
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	8.95%	19.46	3.62
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	8.41%	22.90	4.26
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	8.65%	21.21	3.94
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	8.35%	23.39	4.35
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	8.51%	22.18	4.12
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.28%	23.94	4.45
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.33%	23.52	4.37
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	9.11%	18.62	3.46
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.10%	25.49	4.74
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	8.58%	21.72	4.04
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	8.82%	20.16	3.75
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.96%	26.87	5.00
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.28%	23.90	4.44
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.19%	24.68	4.59
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.40%	22.96	4.27
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	8.96%	19.41	3.61
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	8.69%	20.98	3.90
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	8.53%	22.03	4.10

Mean 8.50%  
Max 9.11%  
Min 7.96%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



Multi-Stage Growth Discounted Cash Flow Model  
90 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal	
			Value										PEG	
Company	Ticker	Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.49%	22.31	4.15
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.50%	22.25	4.14
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	\$0.00	8.98%	19.28	3.58
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.31%	17.65	3.28
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.41%	22.91	4.26
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.77%	20.49	3.81
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	\$0.00	8.80%	20.30	3.77
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.70%	20.91	3.89
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.43%	22.79	4.24
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.43%	22.77	4.23
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	\$0.00	9.84%	15.57	2.90
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.32%	23.58	4.38
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	\$0.00	8.96%	19.38	3.60
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	\$0.00	8.89%	19.80	3.68
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.20%	24.64	4.58
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.61%	21.47	3.99
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.43%	22.77	4.23
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.61%	21.46	3.99
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.25%	17.92	3.33
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	\$0.00	8.82%	20.17	3.75
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.69%	20.95	3.90

Mean 8.74%  
Max 9.84%  
Min 8.20%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%





Multi-Stage Growth Discounted Cash Flow Model  
90 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal	
				Value		High								PEG
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.81%	20.26	3.77
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.62%	21.43	3.98
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	\$0.00	9.06%	18.87	3.51
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.57%	16.58	3.08
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.82%	20.20	3.76
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.91%	19.67	3.66
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	\$0.00	9.11%	18.63	3.46
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.78%	20.41	3.80
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.55%	21.88	4.07
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.46%	22.57	4.20
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	\$0.00	10.18%	14.47	2.69
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.49%	22.29	4.15
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	\$0.00	9.41%	17.24	3.20
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	\$0.00	9.19%	18.20	3.38
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.37%	23.22	4.32
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.79%	20.38	3.79
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.67%	21.13	3.93
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.93%	19.57	3.64
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.54%	16.68	3.10
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	\$0.00	8.92%	19.59	3.64
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.81%	20.27	3.77
											Mean	8.95%		
											Max	10.18%		
											Min	8.37%		

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%





Multi-Stage Growth Discounted Cash Flow Model  
90 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	Low									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.34%	23.43	4.36
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.40%	22.97	4.27
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	\$0.00	8.83%	20.14	3.74
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.04%	18.99	3.53
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.16%	24.95	4.64
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.70%	20.91	3.89
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	\$0.00	8.44%	22.70	4.22
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.54%	21.95	4.08
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.28%	23.90	4.44
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.40%	23.02	4.28
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	\$0.00	9.29%	17.74	3.30
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.19%	24.67	4.59
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	\$0.00	8.67%	21.12	3.93
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	\$0.00	8.69%	20.95	3.90
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.03%	26.17	4.87
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.30%	23.80	4.43
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.26%	24.08	4.48
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.45%	22.64	4.21
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	\$0.00	8.97%	19.35	3.60
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	\$0.00	8.76%	20.56	3.82
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.58%	21.67	4.03

Mean 8.54%  
Max 9.29%  
Min 8.03%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



Multi-Stage Growth Discounted Cash Flow Model  
180 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	
Company	Ticker	Price	EPS Growth Rate Estimates Value				Long-Term Growth	Payout Ratio			Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.61%	21.48	3.99
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.60%	21.58	4.01
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	\$0.00	9.13%	18.51	3.44
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.43%	17.14	3.19
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.30%	23.75	4.42
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.83%	20.13	3.74
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	\$0.00	8.85%	20.01	3.72
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.76%	20.51	3.81
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.47%	22.45	4.17
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.56%	21.85	4.06
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	\$0.00	10.00%	15.01	2.79
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.42%	22.80	4.24
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	\$0.00	8.94%	19.51	3.63
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	\$0.00	8.91%	19.68	3.66
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.36%	23.28	4.33
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.64%	21.26	3.95
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.57%	21.74	4.04
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.66%	21.18	3.94
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.30%	17.72	3.29
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	\$0.00	8.93%	19.54	3.63
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.79%	20.37	3.79

Mean 8.81%  
Max 10.00%  
Min 8.30%

Projected Annual Earnings per Share	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio	[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]	
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



Multi-Stage Growth Discounted Cash Flow Model  
180 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
			Value	High										
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.94%	19.52	3.63
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.72%	20.79	3.86
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	\$0.00	9.21%	18.11	3.37
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.69%	16.10	2.99
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.70%	20.94	3.89
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.97%	19.33	3.59
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	\$0.00	9.16%	18.37	3.42
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.85%	20.03	3.72
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.60%	21.55	4.01
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.59%	21.65	4.03
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	\$0.00	10.36%	13.95	2.59
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.60%	21.56	4.01
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	\$0.00	9.38%	17.36	3.23
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	\$0.00	9.22%	18.09	3.36
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.54%	21.94	4.08
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.82%	20.19	3.75
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.82%	20.18	3.75
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.97%	19.32	3.59
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.59%	16.49	3.07
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	\$0.00	9.04%	18.97	3.53
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.90%	19.70	3.66

Mean 9.03%  
Max 10.36%  
Min 8.54%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.12	\$2.26	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$161.15
Alliant Energy Corporation	LNT	\$1.17	\$1.25	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$2.83	\$89.25
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$4.58	\$125.87
American Electric Power Company, Inc.	AEP	\$3.06	\$3.14	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$6.19	\$151.13
Black Hills Corporation	BKH	\$1.44	\$1.55	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$4.65	\$147.90
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$102.34
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.68	\$158.22
DTE Energy Company	DTE	\$2.87	\$3.15	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$233.75
Duke Energy Corporation	DUK	\$3.14	\$3.26	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$5.31	\$173.65
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.62	\$119.00
Hawaiian Electric Industries, Inc.	HE	\$1.84	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$69.37
IDACORP, Inc.	IDA	\$2.23	\$2.42	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$5.84	\$191.21
NorthWestern Corporation	NWE	\$2.20	\$2.30	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$4.85	\$127.76
OGE Energy Corp.	OGE	\$1.20	\$1.29	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$73.87
Otter Tail Corporation	OTTR	\$1.23	\$1.25	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$2.73	\$91.04
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$185.97
PNM Resources, Inc.	PNM	\$0.85	\$0.96	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$2.92	\$89.43
Portland General Electric Company	POR	\$1.35	\$1.42	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$100.83
Southern Company	SO	\$2.22	\$2.30	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$101.36
WEC Energy Group, Inc.	WEC	\$2.07	\$2.20	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.71	\$135.69
Xcel Energy Inc.	XEL	\$1.45	\$1.55	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$3.40	\$101.55

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$74.84)	\$0.00	\$0.01	\$2.20	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$166.59
Alliant Energy Corporation	LNT	(\$41.99)	\$0.00	\$0.01	\$1.21	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$92.08
Ameren Corporation	AEE	(\$58.43)	\$0.00	\$0.01	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$130.45
American Electric Power Company, Inc.	AEP	(\$72.02)	\$0.00	\$0.02	\$3.13	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$157.32
Black Hills Corporation	BKH	(\$66.70)	\$0.00	\$0.01	\$1.50	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$152.55
CMS Energy Corporation	CMS	(\$47.39)	\$0.00	\$0.01	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$105.83
Dominion Energy, Inc.	D	(\$79.20)	\$0.00	\$0.02	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$163.90	
DTE Energy Company	DTE	(\$109.30)	\$0.00	\$0.02	\$2.95	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$241.45
Duke Energy Corporation	DUK	(\$85.84)	\$0.00	\$0.02	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$178.96
El Paso Electric Company	EE	(\$54.81)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$122.62
Hawaiian Electric Industries, Inc.	HE	(\$34.21)	\$0.00	\$0.01	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$72.65
IDACORP, Inc.	IDA	(\$89.17)	\$0.00	\$0.01	\$2.29	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$197.05
NorthWestern Corporation	NWE	(\$60.36)	\$0.00	\$0.01	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$132.61
OGE Energy Corp.	OGE	(\$35.34)	\$0.00	\$0.01	\$1.24	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$76.56
Otter Tail Corporation	OTTR	(\$42.38)	\$0.00	\$0.01	\$1.28	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$93.77
Pinnacle West Capital Corporation	PNW	(\$87.50)	\$0.00	\$0.01	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$192.04
PNM Resources, Inc.	PNM	(\$40.68)	\$0.00	\$0.00	\$0.88	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$92.35
Portland General Electric Company	POR	(\$46.57)	\$0.00	\$0.01	\$1.39	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$104.27
Southern Company	SO	(\$49.86)	\$0.00	\$0.01	\$2.27	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$105.41
WEC Energy Group, Inc.	WEC	(\$64.40)	\$0.00	\$0.01	\$2.13	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$140.41
Xcel Energy Inc.	XEL	(\$48.05)	\$0.00	\$0.01	\$1.49	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$104.95

Multi-Stage Growth Discounted Cash Flow Model  
180 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	Low									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	\$0.00	8.46%	22.55	4.19
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	\$0.00	8.50%	22.28	4.14
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	\$0.00	8.97%	19.33	3.59
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	\$0.00	9.14%	18.44	3.43
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	\$0.00	8.06%	25.88	4.81
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	\$0.00	8.76%	20.54	3.82
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	\$0.00	8.48%	22.37	4.16
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	\$0.00	8.60%	21.53	4.00
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	\$0.00	8.33%	23.54	4.38
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	\$0.00	8.52%	22.09	4.11
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	\$0.00	9.44%	17.10	3.18
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	\$0.00	8.29%	23.85	4.43
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	\$0.00	8.64%	21.26	3.95
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	\$0.00	8.71%	20.82	3.87
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	\$0.00	8.19%	24.72	4.60
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	\$0.00	8.33%	23.57	4.38
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	\$0.00	8.40%	22.99	4.27
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	\$0.00	8.49%	22.34	4.15
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	\$0.00	9.01%	19.13	3.56
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	\$0.00	8.87%	19.91	3.70
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	\$0.00	8.68%	21.06	3.92

Mean 8.61%  
Max 9.44%  
Min 8.06%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.08	\$2.16	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$4.66	\$159.39
Alliant Energy Corporation	LNT	\$1.15	\$1.22	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.63	\$2.63	\$88.83
Ameren Corporation	AEE	\$1.82	\$1.90	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.27	\$4.27	\$125.17
American Electric Power Company, Inc.	AEP	\$3.00	\$3.02	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.34	\$5.34	\$149.51
Black Hills Corporation	BKH	\$1.40	\$1.46	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.70	\$145.30
CMS Energy Corporation	CMS	\$1.29	\$1.37	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.27	\$101.82
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$4.63	\$157.11
DTE Energy Company	DTE	\$2.84	\$3.08	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$7.12	\$7.12	\$232.53
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.85	\$4.85	\$173.07
El Paso Electric Company	EE	\$1.25	\$1.36	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.55	\$118.82
Hawaiian Electric Industries, Inc.	HE	\$1.79	\$1.78	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.64	\$2.64	\$68.39
IDACORP, Inc.	IDA	\$2.20	\$2.35	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$5.25	\$5.25	\$189.90
NorthWestern Corporation	NWE	\$2.13	\$2.17	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.90	\$3.90	\$125.89
OGE Energy Corp.	OGE	\$1.18	\$1.24	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$2.32	\$73.20
Otter Tail Corporation	OTTR	\$1.21	\$1.21	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$90.28
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$5.15	\$5.15	\$184.07
PNM Resources, Inc.	PNM	\$0.84	\$0.92	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.54	\$2.54	\$88.47
Portland General Electric Company	POR	\$1.32	\$1.36	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$2.94	\$99.66
Southern Company	SO	\$2.17	\$2.21	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.46	\$3.46	\$100.48
WEC Energy Group, Inc.	WEC	\$2.06	\$2.17	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.48	\$135.23
Xcel Energy Inc.	XEL	\$1.43	\$1.52	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.16	\$3.16	\$101.09

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]	
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32	
ALLETE, Inc.	ALE	(\$74.84)	\$0.00	\$0.01	\$2.13	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.42	\$164.05
Alliant Energy Corporation	LNT	(\$41.99)	\$0.00	\$0.01	\$1.19	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.49	\$91.46
Ameren Corporation	AEE	(\$58.43)	\$0.00	\$0.01	\$1.87	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.05	\$129.44
American Electric Power Company, Inc.	AEP	(\$72.02)	\$0.00	\$0.02	\$3.04	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.07	\$154.86
Black Hills Corporation	BKH	(\$66.70)	\$0.00	\$0.01	\$1.43	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.51	\$149.00
CMS Energy Corporation	CMS	(\$47.39)	\$0.00	\$0.01	\$1.33	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.10	\$105.09
Dominion Energy, Inc.	D	(\$79.20)	\$0.00	\$0.02	\$3.01	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.39	\$161.74	
DTE Energy Company	DTE	(\$109.30)	\$0.00	\$0.02	\$2.91	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$6.76	\$239.65
Duke Energy Corporation	DUK	(\$85.84)	\$0.00	\$0.02	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.60	\$177.91
El Paso Electric Company	EE	(\$54.81)	\$0.00	\$0.01	\$1.29	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.36	\$122.36
Hawaiian Electric Industries, Inc.	HE	(\$34.21)	\$0.00	\$0.01	\$1.80	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.50	\$71.02
IDACORP, Inc.	IDA	(\$89.17)	\$0.00	\$0.01	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$4.98	\$195.15
NorthWestern Corporation	NWE	(\$60.36)	\$0.00	\$0.01	\$2.15	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.70	\$129.79
OGE Energy Corp.	OGE	(\$35.34)	\$0.00	\$0.01	\$1.20	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.20	\$75.51
Otter Tail Corporation	OTTR	(\$42.38)	\$0.00	\$0.01	\$1.24	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.28	\$92.69
Pinnacle West Capital Corporation	PNW	(\$87.50)	\$0.00	\$0.01	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$4.88	\$189.22
PNM Resources, Inc.	PNM	(\$40.68)	\$0.00	\$0.00	\$0.86	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$91.00
Portland General Electric Company	POR	(\$46.57)	\$0.00	\$0.01	\$1.35	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.79	\$102.60
Southern Company	SO	(\$49.86)	\$0.00	\$0.01	\$2.20	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.29	\$103.95
WEC Energy Group, Inc.	WEC	(\$64.40)	\$0.00	\$0.01	\$2.11	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.25	\$139.70
Xcel Energy Inc.	XEL	(\$48.05)	\$0.00	\$0.01	\$1.46	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.00	\$104.25

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
30 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
Company	Ticker	Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.86%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.70%	23.56	4.38
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.04%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	10.76%	23.56	4.38
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	9.36%	23.56	4.38
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.47%	23.56	4.38
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	9.39%	23.56	4.38
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.31%	23.56	4.38
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.61%	23.56	4.38
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.44%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	11.71%	23.56	4.38
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.03%	23.56	4.38
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	9.85%	23.56	4.38
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	10.26%	23.56	4.38
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.69%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.13%	23.56	4.38
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.42%	23.56	4.38
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	9.04%	23.56	4.38
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.80%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.55%	23.56	4.38
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.24%	23.56	4.38

Mean 9.36%  
Max 11.71%  
Min 7.69%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
30 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	High									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	9.74%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	9.04%	23.56	4.38
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.24%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	11.36%	23.56	4.38
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	10.53%	23.56	4.38
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.85%	23.56	4.38
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	10.18%	23.56	4.38
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.53%	23.56	4.38
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.97%	23.56	4.38
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.52%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	12.44%	23.56	4.38
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.53%	23.56	4.38
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	10.95%	23.56	4.38
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	11.06%	23.56	4.38
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.22%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.60%	23.56	4.38
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	9.09%	23.56	4.38
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	9.90%	23.56	4.38
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	11.48%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.82%	23.56	4.38
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.54%	23.56	4.38

Mean 9.93%  
Max 12.44%  
Min 8.22%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual  
Cash Flows

Company	Ticker	[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	Terminal Value
ALLETE, Inc.	ALE	\$2.12	\$2.26	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$5.44	\$194.57
Alliant Energy Corporation	LNT	\$1.17	\$1.25	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$2.83	\$2.83	\$101.17
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$4.58	\$4.58	\$163.75
American Electric Power Company, Inc.	AEP	\$3.06	\$3.14	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$6.19	\$6.19	\$221.15
Black Hills Corporation	BKH	\$1.44	\$1.55	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$4.65	\$4.65	\$166.43
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.49	\$124.77
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.48	\$4.25	\$4.31	\$4.35	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.68	\$5.68	\$202.92
DTE Energy Company	DTE	\$2.87	\$3.15	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$7.69	\$275.02
Duke Energy Corporation	DUK	\$3.14	\$3.26	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$5.31	\$5.31	\$189.84
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.62	\$3.62	\$129.49
Hawaiian Electric Industries, Inc.	HE	\$1.84	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$3.28	\$117.18
IDACORP, Inc.	IDA	\$2.23	\$2.42	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$5.84	\$5.84	\$208.95
NorthWestern Corporation	NWE	\$2.20	\$2.30	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$4.85	\$4.85	\$173.46
OGE Energy Corp.	OGE	\$1.20	\$1.29	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$2.69	\$96.23
Otter Tail Corporation	OTTR	\$1.23	\$1.25	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$2.73	\$2.73	\$97.76
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$6.07	\$217.08
PNM Resources, Inc.	PNM	\$0.85	\$0.96	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$2.92	\$2.92	\$104.41
Portland General Electric Company	POR	\$1.35	\$1.42	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.44	\$122.99
Southern Company	SO	\$2.22	\$2.30	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.05	\$148.81
WEC Energy Group, Inc.	WEC	\$2.07	\$2.20	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.71	\$4.71	\$168.55
Xcel Energy Inc.	XEL	\$1.45	\$1.55	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$3.40	\$3.40	\$121.45

Projected Annual Data  
Investor Cash Flows

Company	Ticker	Initial Outflow	[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
ALLETE, Inc.	ALE	(\$77.37)	\$0.00	\$0.01	\$2.20	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.16	\$200.01
Alliant Energy Corporation	LNT	(\$43.95)	\$0.00	\$0.01	\$1.21	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$2.69	\$104.00
Ameren Corporation	AEE	(\$61.69)	\$0.00	\$0.01	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$4.35	\$168.33
American Electric Power Company, Inc.	AEP	(\$75.90)	\$0.00	\$0.02	\$3.13	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$5.87	\$227.33
Black Hills Corporation	BKH	(\$58.88)	\$0.00	\$0.01	\$1.50	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$4.42	\$171.08
CMS Energy Corporation	CMS	(\$48.93)	\$0.00	\$0.01	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$3.31	\$128.26
Dominion Energy, Inc.	D	(\$82.55)	\$0.00	\$0.02	\$3.14	\$3.53	\$3.81	\$4.10	\$4.48	\$4.25	\$4.31	\$4.35	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.39	\$208.60	
DTE Energy Company	DTE	(\$112.59)	\$0.00	\$0.02	\$2.95	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.30	\$282.72
Duke Energy Corporation	DUK	(\$87.23)	\$0.00	\$0.02	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$5.04	\$195.15
El Paso Electric Company	EE	(\$58.40)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.44	\$133.11
Hawaiian Electric Industries, Inc.	HE	(\$37.06)	\$0.00	\$0.01	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.11	\$120.46
IDACORP, Inc.	IDA	(\$95.25)	\$0.00	\$0.01	\$2.29	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$5.55	\$214.79
NorthWestern Corporation	NWE	(\$61.63)	\$0.00	\$0.01	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$4.60	\$178.32
OGE Energy Corp.	OGE	(\$34.24)	\$0.00	\$0.01	\$1.24	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.55	\$98.92
Otter Tail Corporation	OTTR	(\$46.05)	\$0.00	\$0.01	\$1.28	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$2.59	\$100.50
Pinnacle West Capital Corporation	PNW	(\$88.73)	\$0.00	\$0.01	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$5.76	\$223.15
PNM Resources, Inc.	PNM	(\$43.71)	\$0.00	\$0.00	\$0.88	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$2.77	\$107.33
Portland General Electric Company	POR	(\$47.86)	\$0.00	\$0.01	\$1.39	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$3.26	\$126.43
Southern Company	SO	(\$50.56)	\$0.00	\$0.01	\$2.27	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$3.84	\$148.86
WEC Energy Group, Inc.	WEC	(\$67.80)	\$0.00	\$0.01	\$2.13	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.47	\$173.26
Xcel Energy Inc.	XEL	(\$50.21)	\$0.00	\$0.01	\$1.49	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$3.22	\$124.85

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
30 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
Company	Ticker	Price	Zacks	First Call	Value Line	Low Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.37	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.42%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.95	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.41%	23.56	4.38
Ameren Corporation	AEE	\$61.69	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	9.63%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$75.90	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	10.07%	23.56	4.38
Black Hills Corporation	BKH	\$58.88	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	8.59%	23.56	4.38
CMS Energy Corporation	CMS	\$48.93	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.28%	23.56	4.38
Dominion Energy, Inc.	D	\$82.55	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	8.39%	23.56	4.38
DTE Energy Company	DTE	\$112.59	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	8.87%	23.56	4.38
Duke Energy Corporation	DUK	\$87.23	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.18%	23.56	4.38
El Paso Electric Company	EE	\$58.40	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.34%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$37.06	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	10.47%	23.56	4.38
IDACORP, Inc.	IDA	\$95.25	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	7.63%	23.56	4.38
NorthWestern Corporation	NWE	\$61.63	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	9.06%	23.56	4.38
OGE Energy Corp.	OGE	\$34.24	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.74%	23.56	4.38
Otter Tail Corporation	OTTR	\$46.05	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.17%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.73	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.20%	23.56	4.38
PNM Resources, Inc.	PNM	\$43.71	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	7.91%	23.56	4.38
Portland General Electric Company	POR	\$47.86	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.56%	23.56	4.38
Southern Company	SO	\$50.56	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.08%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$67.80	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.37%	23.56	4.38
Xcel Energy Inc.	XEL	\$50.21	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	8.93%	23.56	4.38

Mean 8.82%  
Max 10.47%  
Min 7.17%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.08	\$2.16	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$166.52
Alliant Energy Corporation	LNT	\$1.15	\$1.22	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.63	\$93.95
Ameren Corporation	AEE	\$1.82	\$1.90	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.27	\$152.60
American Electric Power Company, Inc.	AEP	\$3.00	\$3.02	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.34	\$191.03
Black Hills Corporation	BKH	\$1.40	\$1.46	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$132.28
CMS Energy Corporation	CMS	\$1.29	\$1.37	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$116.80
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$165.46
DTE Energy Company	DTE	\$2.84	\$3.08	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$7.12	\$254.51
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.85	\$173.23
El Paso Electric Company	EE	\$1.25	\$1.36	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$126.75
Hawaiian Electric Industries, Inc.	HE	\$1.79	\$1.78	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.64	\$94.24
IDACORP, Inc.	IDA	\$2.20	\$2.35	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$5.25	\$187.60
NorthWestern Corporation	NWE	\$2.13	\$2.17	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.90	\$139.51
OGE Energy Corp.	OGE	\$1.18	\$1.24	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$82.83
Otter Tail Corporation	OTTR	\$1.21	\$1.21	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$86.07
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$5.15	\$184.04
PNM Resources, Inc.	PNM	\$0.84	\$0.92	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.54	\$90.68
Portland General Electric Company	POR	\$1.32	\$1.36	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$105.10
Southern Company	SO	\$2.17	\$2.21	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.46	\$123.77
WEC Energy Group, Inc.	WEC	\$2.06	\$2.17	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$160.03
Xcel Energy Inc.	XEL	\$1.43	\$1.52	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.16	\$113.08

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]	
Company	Ticker	Initial																		
		Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32	
ALLETE, Inc.	ALE	(\$77.37)	\$0.00	\$0.01	\$2.13	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$171.18	
Alliant Energy Corporation	LNT	(\$43.95)	\$0.00	\$0.01	\$1.19	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$96.58	
Ameren Corporation	AEE	(\$61.69)	\$0.00	\$0.01	\$1.87	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$156.87	
American Electric Power Company, Inc.	AEP	(\$75.90)	\$0.00	\$0.02	\$3.04	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$196.37	
Black Hills Corporation	BKH	(\$58.88)	\$0.00	\$0.01	\$1.43	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$135.98	
CMS Energy Corporation	CMS	(\$48.93)	\$0.00	\$0.01	\$1.33	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$120.06	
Dominion Energy, Inc.	D	(\$82.55)	\$0.00	\$0.02	\$3.01	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$170.09	
DTE Energy Company	DTE	(\$112.59)	\$0.00	\$0.02	\$2.91	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$261.63	
Duke Energy Corporation	DUK	(\$87.23)	\$0.00	\$0.02	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$178.08	
El Paso Electric Company	EE	(\$58.40)	\$0.00	\$0.01	\$1.29	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$130.29	
Hawaiian Electric Industries, Inc.	HE	(\$37.06)	\$0.00	\$0.01	\$1.80	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$96.88	
IDACORP, Inc.	IDA	(\$95.25)	\$0.00	\$0.01	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$192.85	
NorthWestern Corporation	NWE	(\$61.63)	\$0.00	\$0.01	\$2.15	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$143.42	
OGE Energy Corp.	OGE	(\$34.24)	\$0.00	\$0.01	\$1.20	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$85.14	
Otter Tail Corporation	OTTR	(\$46.05)	\$0.00	\$0.01	\$1.24	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$88.48	
Pinnacle West Capital Corporation	PNW	(\$88.73)	\$0.00	\$0.01	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$189.19	
PNM Resources, Inc.	PNM	(\$43.71)	\$0.00	\$0.00	\$0.86	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$93.21	
Portland General Electric Company	POR	(\$47.86)	\$0.00	\$0.01	\$1.35	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$108.04	
Southern Company	SO	(\$50.56)	\$0.00	\$0.01	\$2.20	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$127.23	
WEC Energy Group, Inc.	WEC	(\$67.80)	\$0.00	\$0.01	\$2.11	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$164.51	
Xcel Energy Inc.	XEL	(\$50.21)	\$0.00	\$0.01	\$1.46	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$116.25	

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
90 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
Company	Ticker	Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.82%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.84%	23.56	4.38
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.16%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	10.99%	23.56	4.38
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	8.58%	23.56	4.38
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.60%	23.56	4.38
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	9.67%	23.56	4.38
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.41%	23.56	4.38
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.62%	23.56	4.38
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.63%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	12.18%	23.56	4.38
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.32%	23.56	4.38
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	10.11%	23.56	4.38
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.90%	23.56	4.38
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.93%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.16%	23.56	4.38
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.64%	23.56	4.38
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	9.17%	23.56	4.38
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.83%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.74%	23.56	4.38
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.39%	23.56	4.38

Mean 9.46%  
Max 12.18%  
Min 7.93%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.09	\$2.19	\$2.30	\$2.41	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31	\$3.54	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$4.91	\$175.45
Alliant Energy Corporation	LNT	\$1.16	\$1.23	\$1.31	\$1.40	\$1.49	\$1.58	\$1.68	\$1.78	\$1.88	\$1.99	\$2.09	\$2.21	\$2.32	\$2.45	\$2.58	\$2.72	\$97.22
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.02	\$2.12	\$2.22	\$2.40	\$2.59	\$2.79	\$3.00	\$3.22	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$159.96
American Electric Power Company, Inc.	AEP	\$3.03	\$3.08	\$3.13	\$3.17	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.21	\$5.49	\$5.78	\$206.66
Black Hills Corporation	BKH	\$1.42	\$1.49	\$1.58	\$1.66	\$1.76	\$1.94	\$2.15	\$2.36	\$2.60	\$2.85	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$145.08
CMS Energy Corporation	CMS	\$1.29	\$1.38	\$1.47	\$1.57	\$1.68	\$1.81	\$1.95	\$2.10	\$2.25	\$2.41	\$2.57	\$2.71	\$2.85	\$3.01	\$3.17	\$3.34	\$119.40
Dominion Energy, Inc.	D	\$3.01	\$3.20	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.68	\$4.93	\$5.19	\$185.67
DTE Energy Company	DTE	\$2.86	\$3.13	\$3.42	\$3.73	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$7.50	\$268.03
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.71	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$181.96
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.38	\$2.56	\$2.76	\$2.91	\$3.07	\$3.23	\$3.40	\$3.59	\$128.27
Hawaiian Electric Industries, Inc.	HE	\$1.82	\$1.84	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$108.25
IDACORP, Inc.	IDA	\$2.22	\$2.38	\$2.56	\$2.75	\$2.95	\$3.12	\$3.30	\$3.51	\$3.73	\$3.97	\$4.24	\$4.46	\$4.70	\$4.96	\$5.22	\$5.51	\$196.84
NorthWestern Corporation	NWE	\$2.16	\$2.22	\$2.28	\$2.34	\$2.41	\$2.51	\$2.63	\$2.76	\$2.92	\$3.09	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$4.28	\$152.87
OGE Energy Corp.	OGE	\$1.19	\$1.26	\$1.33	\$1.41	\$1.49	\$1.55	\$1.61	\$1.67	\$1.74	\$1.81	\$1.89	\$1.99	\$2.10	\$2.21	\$2.33	\$2.46	\$87.93
Otter Tail Corporation	OTTR	\$1.22	\$1.23	\$1.24	\$1.25	\$1.25	\$1.35	\$1.46	\$1.58	\$1.71	\$1.84	\$1.97	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$91.75
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.71	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$205.33
PNM Resources, Inc.	PNM	\$0.84	\$0.94	\$1.04	\$1.16	\$1.28	\$1.39	\$1.52	\$1.64	\$1.78	\$1.92	\$2.07	\$2.18	\$2.30	\$2.43	\$2.56	\$2.69	\$96.31
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.92	\$2.06	\$2.22	\$2.40	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$111.32
Southern Company	SO	\$2.20	\$2.26	\$2.32	\$2.38	\$2.45	\$2.50	\$2.56	\$2.63	\$2.70	\$2.79	\$2.89	\$3.04	\$3.21	\$3.38	\$3.56	\$3.75	\$134.20
WEC Energy Group, Inc.	WEC	\$2.06	\$2.18	\$2.32	\$2.45	\$2.60	\$2.74	\$2.88	\$3.03	\$3.18	\$3.35	\$3.52	\$3.70	\$3.90	\$4.11	\$4.34	\$4.57	\$163.33
Xcel Energy Inc.	XEL	\$1.44	\$1.54	\$1.64	\$1.75	\$1.86	\$1.96	\$2.06	\$2.16	\$2.27	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$117.20

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$77.72)	\$0.00	\$0.01	\$2.15	\$2.30	\$2.41	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31	\$3.54	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$180.35
Alliant Energy Corporation	LNT	(\$43.28)	\$0.00	\$0.01	\$1.20	\$1.31	\$1.40	\$1.49	\$1.58	\$1.68	\$1.78	\$1.88	\$1.99	\$2.09	\$2.21	\$2.32	\$2.45	\$2.58	\$99.94
Ameren Corporation	AEE	(\$60.87)	\$0.00	\$0.01	\$1.89	\$2.02	\$2.12	\$2.22	\$2.40	\$2.59	\$2.79	\$3.00	\$3.22	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$164.43
American Electric Power Company, Inc.	AEP	(\$74.10)	\$0.00	\$0.02	\$3.09	\$3.13	\$3.17	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.21	\$5.49	\$212.45
Black Hills Corporation	BKH	(\$64.26)	\$0.00	\$0.01	\$1.46	\$1.58	\$1.66	\$1.76	\$1.94	\$2.15	\$2.36	\$2.60	\$2.85	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$149.14
CMS Energy Corporation	CMS	(\$48.25)	\$0.00	\$0.01	\$1.33	\$1.47	\$1.57	\$1.68	\$1.81	\$1.95	\$2.10	\$2.25	\$2.41	\$2.57	\$2.71	\$2.85	\$3.01	\$3.17	\$122.74
Dominion Energy, Inc.	D	(\$80.26)	\$0.00	\$0.02	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$4.00	\$4.21	\$4.44	\$4.68	\$4.93	\$5.19	\$190.86
DTE Energy Company	DTE	(\$111.40)	\$0.00	\$0.02	\$2.94	\$3.42	\$3.73	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$275.53
Duke Energy Corporation	DUK	(\$87.07)	\$0.00	\$0.02	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.71	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$187.05
El Paso Electric Company	EE	(\$57.15)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.38	\$2.56	\$2.76	\$2.91	\$3.07	\$3.23	\$3.40	\$131.85
Hawaiian Electric Industries, Inc.	HE	(\$35.42)	\$0.00	\$0.01	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$111.28
IDACORP, Inc.	IDA	(\$92.20)	\$0.00	\$0.01	\$2.26	\$2.56	\$2.75	\$2.95	\$3.12	\$3.30	\$3.51	\$3.73	\$3.97	\$4.24	\$4.46	\$4.70	\$4.96	\$5.22	\$202.35
NorthWestern Corporation	NWE	(\$59.96)	\$0.00	\$0.01	\$2.19	\$2.28	\$2.34	\$2.41	\$2.51	\$2.63	\$2.76	\$2.92	\$3.09	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$157.15
OGE Energy Corp.	OGE	(\$35.55)	\$0.00	\$0.01	\$1.21	\$1.33	\$1.41	\$1.49	\$1.55	\$1.61	\$1.67	\$1.74	\$1.81	\$1.89	\$1.99	\$2.10	\$2.21	\$2.33	\$90.39
Otter Tail Corporation	OTTR	(\$44.86)	\$0.00	\$0.01	\$1.26	\$1.24	\$1.25	\$1.25	\$1.35	\$1.46	\$1.58	\$1.71	\$1.84	\$1.97	\$2.08	\$2.19	\$2.31	\$2.44	\$94.32
Pinnacle West Capital Corporation	PNW	(\$88.35)	\$0.00	\$0.01	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.71	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$211.07
PNM Resources, Inc.	PNM	(\$42.64)	\$0.00	\$0.00	\$0.87	\$1.04	\$1.16	\$1.28	\$1.39	\$1.52	\$1.64	\$1.78	\$1.92	\$2.07	\$2.18	\$2.30	\$2.43	\$2.56	\$99.00
Portland General Electric Company	POR	(\$47.20)	\$0.00	\$0.01	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.92	\$2.06	\$2.22	\$2.40	\$2.52	\$2.66	\$2.80	\$2.95	\$114.43
Southern Company	SO	(\$50.41)	\$0.00	\$0.01	\$2.23	\$2.32	\$2.38	\$2.45	\$2.50	\$2.56	\$2.63	\$2.70	\$2.79	\$2.89	\$3.04	\$3.21	\$3.38	\$3.56	\$137.95
WEC Energy Group, Inc.	WEC	(\$66.46)	\$0.00	\$0.01	\$2.12	\$2.32	\$2.45	\$2.60	\$2.74	\$2.88	\$3.03	\$3.18	\$3.35	\$3.52	\$3.70	\$3.90	\$4.11	\$4.34	\$167.90
Xcel Energy Inc.	XEL	(\$49.41)	\$0.00	\$0.01	\$1.47	\$1.64	\$1.75	\$1.86	\$1.96	\$2.06	\$2.16	\$2.27	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$120.48

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
90 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	High									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	9.70%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	9.18%	23.56	4.38
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.37%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	11.59%	23.56	4.38
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	9.74%	23.56	4.38
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.97%	23.56	4.38
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	10.45%	23.56	4.38
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.63%	23.56	4.38
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.99%	23.56	4.38
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.71%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	12.91%	23.56	4.38
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.82%	23.56	4.38
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	11.22%	23.56	4.38
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	10.69%	23.56	4.38
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.46%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.64%	23.56	4.38
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	9.32%	23.56	4.38
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	10.02%	23.56	4.38
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	11.51%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	10.01%	23.56	4.38
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.69%	23.56	4.38

Mean 10.03%  
Max 12.91%  
Min 8.46%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.12	\$2.26	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$194.57
Alliant Energy Corporation	LNT	\$1.17	\$1.25	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$2.83	\$101.17
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$4.58	\$163.75
American Electric Power Company, Inc.	AEP	\$3.06	\$3.14	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$6.19	\$221.15
Black Hills Corporation	BKH	\$1.44	\$1.55	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$4.65	\$166.43
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$124.77
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.68	\$202.92
DTE Energy Company	DTE	\$2.87	\$3.15	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$275.02
Duke Energy Corporation	DUK	\$3.14	\$3.26	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$5.31	\$189.84
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.62	\$129.49
Hawaiian Electric Industries, Inc.	HE	\$1.84	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$117.18
IDACORP, Inc.	IDA	\$2.23	\$2.42	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$5.84	\$208.95
NorthWestern Corporation	NWE	\$2.20	\$2.30	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$4.85	\$173.46
OGE Energy Corp.	OGE	\$1.20	\$1.29	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$96.23
Otter Tail Corporation	OTTR	\$1.23	\$1.25	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$2.73	\$97.76
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$217.08
PNM Resources, Inc.	PNM	\$0.85	\$0.96	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$2.92	\$104.41
Portland General Electric Company	POR	\$1.35	\$1.42	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$122.99
Southern Company	SO	\$2.22	\$2.30	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$144.81
WEC Energy Group, Inc.	WEC	\$2.07	\$2.20	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.71	\$168.55
Xcel Energy Inc.	XEL	\$1.45	\$1.55	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$3.40	\$121.45

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$77.72)	\$0.00	\$0.01	\$2.20	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$200.01
Alliant Energy Corporation	LNT	(\$43.28)	\$0.00	\$0.01	\$1.21	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$104.00
Ameren Corporation	AEE	(\$60.87)	\$0.00	\$0.01	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$168.33
American Electric Power Company, Inc.	AEP	(\$74.10)	\$0.00	\$0.02	\$3.13	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$227.33
Black Hills Corporation	BKH	(\$64.26)	\$0.00	\$0.01	\$1.50	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$171.08
CMS Energy Corporation	CMS	(\$48.25)	\$0.00	\$0.01	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$128.26
Dominion Energy, Inc.	D	(\$80.26)	\$0.00	\$0.02	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$208.60	
DTE Energy Company	DTE	(\$111.40)	\$0.00	\$0.02	\$2.95	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$282.72
Duke Energy Corporation	DUK	(\$87.07)	\$0.00	\$0.02	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$195.15
El Paso Electric Company	EE	(\$57.15)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$133.11
Hawaiian Electric Industries, Inc.	HE	(\$35.42)	\$0.00	\$0.01	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$120.46
IDACORP, Inc.	IDA	(\$92.20)	\$0.00	\$0.01	\$2.29	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$214.79
NorthWestern Corporation	NWE	(\$59.96)	\$0.00	\$0.01	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$178.32
OGE Energy Corp.	OGE	(\$35.55)	\$0.00	\$0.01	\$1.24	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$98.92
Otter Tail Corporation	OTTR	(\$44.86)	\$0.00	\$0.01	\$1.28	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$100.50
Pinnacle West Capital Corporation	PNW	(\$88.35)	\$0.00	\$0.01	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$223.15
PNM Resources, Inc.	PNM	(\$42.64)	\$0.00	\$0.00	\$0.88	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$107.33
Portland General Electric Company	POR	(\$47.20)	\$0.00	\$0.01	\$1.39	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$126.43
Southern Company	SO	(\$50.41)	\$0.00	\$0.01	\$2.27	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$148.86
WEC Energy Group, Inc.	WEC	(\$66.46)	\$0.00	\$0.01	\$2.13	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$173.26
Xcel Energy Inc.	XEL	(\$49.41)	\$0.00	\$0.01	\$1.49	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$124.85

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
90 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	Low									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.72	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.38%	23.56	4.38
Alliant Energy Corporation	LNT	\$43.28	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.55%	23.56	4.38
Ameren Corporation	AEE	\$60.87	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	9.76%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$74.10	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	10.30%	23.56	4.38
Black Hills Corporation	BKH	\$64.26	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	7.81%	23.56	4.38
CMS Energy Corporation	CMS	\$48.25	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.41%	23.56	4.38
Dominion Energy, Inc.	D	\$80.26	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	8.66%	23.56	4.38
DTE Energy Company	DTE	\$111.40	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	8.97%	23.56	4.38
Duke Energy Corporation	DUK	\$87.07	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.20%	23.56	4.38
El Paso Electric Company	EE	\$57.15	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.54%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$35.42	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	10.92%	23.56	4.38
IDACORP, Inc.	IDA	\$92.20	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	7.92%	23.56	4.38
NorthWestern Corporation	NWE	\$59.96	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	9.32%	23.56	4.38
OGE Energy Corp.	OGE	\$35.55	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.38%	23.56	4.38
Otter Tail Corporation	OTTR	\$44.86	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.40%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$88.35	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.24%	23.56	4.38
PNM Resources, Inc.	PNM	\$42.64	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.13%	23.56	4.38
Portland General Electric Company	POR	\$47.20	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.68%	23.56	4.38
Southern Company	SO	\$50.41	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.11%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$66.46	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.56%	23.56	4.38
Xcel Energy Inc.	XEL	\$49.41	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.08%	23.56	4.38

Mean 8.92%  
Max 10.92%  
Min 7.40%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

El Paso Electric Company	EE		50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE		77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA		54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE		62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE		67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR		72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW		63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM		48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR		59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO		75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC		66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL		62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.08	\$2.16	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$4.66	\$166.52
Alliant Energy Corporation	LNT	\$1.15	\$1.22	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.63	\$2.63	\$93.95
Ameren Corporation	AEE	\$1.82	\$1.90	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.27	\$4.27	\$152.60
American Electric Power Company, Inc.	AEP	\$3.00	\$3.02	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.34	\$5.34	\$191.03
Black Hills Corporation	BKH	\$1.40	\$1.46	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.70	\$132.28
CMS Energy Corporation	CMS	\$1.29	\$1.37	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.27	\$116.80
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$4.63	\$165.46
DTE Energy Company	DTE	\$2.84	\$3.08	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$7.12	\$7.12	\$254.51
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.85	\$4.85	\$173.23
El Paso Electric Company	EE	\$1.25	\$1.36	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.55	\$126.75
Hawaiian Electric Industries, Inc.	HE	\$1.79	\$1.78	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.64	\$2.64	\$94.24
IDACORP, Inc.	IDA	\$2.20	\$2.35	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$5.25	\$5.25	\$187.60
NorthWestern Corporation	NWE	\$2.13	\$2.17	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.90	\$3.90	\$139.51
OGE Energy Corp.	OGE	\$1.18	\$1.24	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$2.32	\$82.83
Otter Tail Corporation	OTTR	\$1.21	\$1.21	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$86.07
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$5.15	\$5.15	\$184.04
PNM Resources, Inc.	PNM	\$0.84	\$0.92	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.54	\$2.54	\$90.68
Portland General Electric Company	POR	\$1.32	\$1.36	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$2.94	\$105.10
Southern Company	SO	\$2.17	\$2.21	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.46	\$3.46	\$123.77
WEC Energy Group, Inc.	WEC	\$2.06	\$2.17	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.48	\$160.03
Xcel Energy Inc.	XEL	\$1.43	\$1.52	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.16	\$3.16	\$113.08

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]	
Company	Ticker	Initial																		
		Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32	
ALLETE, Inc.	ALE	(\$77.72)	\$0.00	\$0.01	\$2.13	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.42	\$171.18
Alliant Energy Corporation	LNT	(\$43.28)	\$0.00	\$0.01	\$1.19	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.49	\$96.58
Ameren Corporation	AEE	(\$60.87)	\$0.00	\$0.01	\$1.87	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.05	\$156.87
American Electric Power Company, Inc.	AEP	(\$74.10)	\$0.00	\$0.02	\$3.04	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.07	\$196.37
Black Hills Corporation	BKH	(\$64.26)	\$0.00	\$0.01	\$1.43	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.51	\$135.98
CMS Energy Corporation	CMS	(\$48.25)	\$0.00	\$0.01	\$1.33	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.10	\$120.06
Dominion Energy, Inc.	D	(\$80.26)	\$0.00	\$0.02	\$3.01	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.39	\$170.09	
DTE Energy Company	DTE	(\$111.40)	\$0.00	\$0.02	\$2.91	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$6.76	\$261.63
Duke Energy Corporation	DUK	(\$87.07)	\$0.00	\$0.02	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.60	\$178.08
El Paso Electric Company	EE	(\$57.15)	\$0.00	\$0.01	\$1.29	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.36	\$130.29
Hawaiian Electric Industries, Inc.	HE	(\$35.42)	\$0.00	\$0.01	\$1.80	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.50	\$96.88
IDACORP, Inc.	IDA	(\$92.20)	\$0.00	\$0.01	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$4.98	\$192.85
NorthWestern Corporation	NWE	(\$59.96)	\$0.00	\$0.01	\$2.15	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.70	\$143.42
OGE Energy Corp.	OGE	(\$35.55)	\$0.00	\$0.01	\$1.20	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.20	\$85.14
Otter Tail Corporation	OTTR	(\$44.86)	\$0.00	\$0.01	\$1.24	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.28	\$88.48
Pinnacle West Capital Corporation	PNW	(\$88.35)	\$0.00	\$0.01	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$4.88	\$189.19
PNM Resources, Inc.	PNM	(\$42.64)	\$0.00	\$0.00	\$0.86	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$93.21
Portland General Electric Company	POR	(\$47.20)	\$0.00	\$0.01	\$1.35	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.79	\$108.04
Southern Company	SO	(\$50.41)	\$0.00	\$0.01	\$2.20	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.29	\$127.23
WEC Energy Group, Inc.	WEC	(\$66.46)	\$0.00	\$0.01	\$2.11	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.25	\$164.51
Xcel Energy Inc.	XEL	(\$49.41)	\$0.00	\$0.01	\$1.46	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.00	\$116.25

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
180 Day Average Stock Price  
Average EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
Company	Ticker	Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	5.73%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	9.16%	23.56	4.38
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	6.48%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	9.12%	23.56	4.38
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	6.67%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.55%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	3.86%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	11.27%	23.56	4.38
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	5.55%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	8.25%	23.56	4.38
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	6.81%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.76%	23.56	4.38
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	5.25%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	9.79%	23.56	4.38
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	5.64%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.58%	23.56	4.38
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	3.91%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.76%	23.56	4.38
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.17%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	9.01%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	3.40%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	12.54%	23.56	4.38
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	4.17%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.62%	23.56	4.38
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	2.75%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	10.04%	23.56	4.38
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	4.73%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.96%	23.56	4.38
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	6.10%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.43%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	4.72%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.25%	23.56	4.38
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	6.35%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	9.05%	23.56	4.38
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	4.60%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	9.29%	23.56	4.38
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	3.44%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.94%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	5.56%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	10.03%	23.56	4.38
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	5.00%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.65%	23.56	4.38

Mean 9.67%  
Max 12.54%  
Min 8.25%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.32	\$3.51	\$3.71	\$3.92	\$4.15	\$4.38	\$4.63	\$4.89	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07	\$7.45
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.26	\$2.40	\$2.55	\$2.70	\$2.85	\$3.01	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92	\$4.13
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.05	\$3.25	\$3.47	\$3.70	\$3.94	\$4.19	\$4.44	\$4.69	\$4.96	\$5.22	\$5.51	\$5.80	\$6.11	\$6.44	\$6.79
American Electric Power Company, Inc.	AEP	\$4.23	\$4.39	\$4.56	\$4.74	\$4.92	\$5.11	\$5.32	\$5.55	\$5.81	\$6.09	\$6.41	\$6.75	\$7.11	\$7.50	\$7.90	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.93	\$3.09	\$3.26	\$3.45	\$3.64	\$3.84	\$4.05	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.26	\$2.41	\$2.58	\$2.75	\$2.93	\$3.12	\$3.31	\$3.50	\$3.70	\$3.90	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.19	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.10	\$7.48	\$7.88
DTE Energy Company	DTE	\$4.83	\$5.10	\$5.39	\$5.69	\$6.01	\$6.35	\$6.71	\$7.08	\$7.47	\$7.88	\$8.31	\$8.75	\$9.22	\$9.72	\$10.24	\$10.79	\$11.37
Duke Energy Corporation	DUK	\$3.71	\$3.86	\$4.01	\$4.16	\$4.33	\$4.49	\$4.68	\$4.89	\$5.11	\$5.36	\$5.64	\$5.94	\$6.26	\$6.60	\$6.95	\$7.33	\$7.72
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.64	\$2.78	\$2.92	\$3.07	\$3.23	\$3.40	\$3.58	\$3.77	\$3.98	\$4.19	\$4.41	\$4.65	\$4.90	\$5.17	\$5.44
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.37	\$2.45	\$2.53	\$2.62	\$2.71	\$2.81	\$2.92	\$3.05	\$3.19	\$3.36	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.28	\$4.45	\$4.64	\$4.83	\$5.04	\$5.27	\$5.53	\$5.80	\$6.10	\$6.43	\$6.77	\$7.14	\$7.52	\$7.93	\$8.35
NorthWestern Corporation	NWE	\$3.39	\$3.48	\$3.58	\$3.68	\$3.78	\$3.88	\$4.01	\$4.15	\$4.32	\$4.51	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84	\$6.16	\$6.49
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.85	\$1.94	\$2.03	\$2.13	\$2.23	\$2.34	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.54	\$3.73
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.80	\$1.91	\$2.03	\$2.15	\$2.28	\$2.41	\$2.55	\$2.70	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.05	\$6.36	\$6.71	\$7.07	\$7.45	\$7.85	\$8.27	\$8.71
PNM Resources, Inc.	PNM	\$1.65	\$1.75	\$1.87	\$1.98	\$2.11	\$2.24	\$2.38	\$2.53	\$2.68	\$2.83	\$2.98	\$3.15	\$3.31	\$3.49	\$3.68	\$3.88	\$4.09
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.59	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.04	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.93	\$3.03	\$3.13	\$3.24	\$3.35	\$3.48	\$3.62	\$3.78	\$3.96	\$4.16	\$4.38	\$4.62	\$4.87	\$5.13	\$5.40	\$5.70
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.88	\$4.09	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92	\$6.24	\$6.58	\$6.93
Xcel Energy Inc.	XEL	\$2.21	\$2.32	\$2.44	\$2.56	\$2.69	\$2.82	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.09	\$2.19	\$2.30	\$2.41	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31	\$3.54	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$4.91	\$175.45
Alliant Energy Corporation	LNT	\$1.16	\$1.23	\$1.31	\$1.40	\$1.49	\$1.58	\$1.68	\$1.78	\$1.88	\$1.99	\$2.09	\$2.21	\$2.32	\$2.45	\$2.58	\$2.72	\$97.22
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.02	\$2.12	\$2.22	\$2.40	\$2.59	\$2.79	\$3.00	\$3.22	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$159.96
American Electric Power Company, Inc.	AEP	\$3.03	\$3.08	\$3.13	\$3.17	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.21	\$5.49	\$5.78	\$206.66
Black Hills Corporation	BKH	\$1.42	\$1.49	\$1.58	\$1.66	\$1.76	\$1.94	\$2.15	\$2.36	\$2.60	\$2.85	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$145.08
CMS Energy Corporation	CMS	\$1.29	\$1.38	\$1.47	\$1.57	\$1.68	\$1.81	\$1.95	\$2.10	\$2.25	\$2.41	\$2.57	\$2.71	\$2.85	\$3.01	\$3.17	\$3.34	\$119.40
Dominion Energy, Inc.	D	\$3.01	\$3.20	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.68	\$4.93	\$5.19	\$185.67
DTE Energy Company	DTE	\$2.86	\$3.13	\$3.42	\$3.73	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$7.50	\$268.03
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.71	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$181.96
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.38	\$2.56	\$2.76	\$2.91	\$3.07	\$3.23	\$3.40	\$3.59	\$128.27
Hawaiian Electric Industries, Inc.	HE	\$1.82	\$1.84	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.03	\$108.25
IDACORP, Inc.	IDA	\$2.22	\$2.38	\$2.56	\$2.75	\$2.95	\$3.12	\$3.30	\$3.51	\$3.73	\$3.97	\$4.24	\$4.46	\$4.70	\$4.96	\$5.22	\$5.51	\$196.84
NorthWestern Corporation	NWE	\$2.16	\$2.22	\$2.28	\$2.34	\$2.41	\$2.51	\$2.63	\$2.76	\$2.92	\$3.09	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$4.28	\$152.87
OGE Energy Corp.	OGE	\$1.19	\$1.26	\$1.33	\$1.41	\$1.49	\$1.55	\$1.61	\$1.67	\$1.74	\$1.81	\$1.89	\$1.99	\$2.10	\$2.21	\$2.33	\$2.46	\$87.93
Otter Tail Corporation	OTTR	\$1.22	\$1.23	\$1.24	\$1.25	\$1.25	\$1.35	\$1.46	\$1.58	\$1.71	\$1.84	\$1.97	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$91.75
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.71	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$205.33
PNM Resources, Inc.	PNM	\$0.84	\$0.94	\$1.04	\$1.16	\$1.28	\$1.39	\$1.52	\$1.64	\$1.78	\$1.92	\$2.07	\$2.18	\$2.30	\$2.43	\$2.56	\$2.69	\$96.31
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.92	\$2.06	\$2.22	\$2.40	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$111.32
Southern Company	SO	\$2.20	\$2.26	\$2.32	\$2.38	\$2.45	\$2.50	\$2.56	\$2.63	\$2.70	\$2.79	\$2.89	\$3.04	\$3.21	\$3.38	\$3.56	\$3.75	\$134.20
WEC Energy Group, Inc.	WEC	\$2.06	\$2.18	\$2.32	\$2.45	\$2.60	\$2.74	\$2.88	\$3.03	\$3.18	\$3.35	\$3.52	\$3.70	\$3.90	\$4.11	\$4.34	\$4.57	\$163.33
Xcel Energy Inc.	XEL	\$1.44	\$1.54	\$1.64	\$1.75	\$1.86	\$1.96	\$2.06	\$2.16	\$2.27	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$117.20

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$74.84)	\$0.00	\$0.01	\$2.15	\$2.30	\$2.41	\$2.53	\$2.71	\$2.90	\$3.10	\$3.31	\$3.54	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$180.35
Alliant Energy Corporation	LNT	(\$41.99)	\$0.00	\$0.01	\$1.20	\$1.31	\$1.40	\$1.49	\$1.58	\$1.68	\$1.78	\$1.88	\$1.99	\$2.09	\$2.21	\$2.32	\$2.45	\$2.58	\$99.94
Ameren Corporation	AEE	(\$58.43)	\$0.00	\$0.01	\$1.89	\$2.02	\$2.12	\$2.22	\$2.40	\$2.59	\$2.79	\$3.00	\$3.22	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$164.43
American Electric Power Company, Inc.	AEP	(\$72.02)	\$0.00	\$0.02	\$3.09	\$3.13	\$3.17	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.21	\$5.49	\$212.45
Black Hills Corporation	BKH	(\$66.70)	\$0.00	\$0.01	\$1.46	\$1.58	\$1.66	\$1.76	\$1.94	\$2.15	\$2.36	\$2.60	\$2.85	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$149.14
CMS Energy Corporation	CMS	(\$47.39)	\$0.00	\$0.01	\$1.33	\$1.47	\$1.57	\$1.68	\$1.81	\$1.95	\$2.10	\$2.25	\$2.41	\$2.57	\$2.71	\$2.85	\$3.01	\$3.17	\$122.74
Dominion Energy, Inc.	D	(\$79.20)	\$0.00	\$0.02	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$4.00	\$4.21	\$4.44	\$4.68	\$4.93	\$5.19	\$190.86
DTE Energy Company	DTE	(\$109.30)	\$0.00	\$0.02	\$2.94	\$3.42	\$3.73	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$275.53
Duke Energy Corporation	DUK	(\$85.84)	\$0.00	\$0.02	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.71	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$187.05
El Paso Electric Company	EE	(\$54.81)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.38	\$2.56	\$2.76	\$2.91	\$3.07	\$3.23	\$3.40	\$131.85
Hawaiian Electric Industries, Inc.	HE	(\$34.21)	\$0.00	\$0.01	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$111.28
IDACORP, Inc.	IDA	(\$89.17)	\$0.00	\$0.01	\$2.26	\$2.56	\$2.75	\$2.95	\$3.12	\$3.30	\$3.51	\$3.73	\$3.97	\$4.24	\$4.46	\$4.70	\$4.96	\$5.22	\$202.35
NorthWestern Corporation	NWE	(\$60.36)	\$0.00	\$0.01	\$2.19	\$2.28	\$2.34	\$2.41	\$2.51	\$2.63	\$2.76	\$2.92	\$3.09	\$3.29	\$3.47	\$3.65	\$3.85	\$4.06	\$157.15
OGE Energy Corp.	OGE	(\$35.34)	\$0.00	\$0.01	\$1.21	\$1.33	\$1.41	\$1.49	\$1.55	\$1.61	\$1.67	\$1.74	\$1.81	\$1.89	\$1.99	\$2.10	\$2.21	\$2.33	\$90.39
Otter Tail Corporation	OTTR	(\$42.38)	\$0.00	\$0.01	\$1.26	\$1.24	\$1.25	\$1.25	\$1.35	\$1.46	\$1.58	\$1.71	\$1.84	\$1.97	\$2.08	\$2.19	\$2.31	\$2.44	\$94.32
Pinnacle West Capital Corporation	PNW	(\$87.50)	\$0.00	\$0.01	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.71	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$211.07
PNM Resources, Inc.	PNM	(\$40.68)	\$0.00	\$0.00	\$0.87	\$1.04	\$1.16	\$1.28	\$1.39	\$1.52	\$1.64	\$1.78	\$1.92	\$2.07	\$2.18	\$2.30	\$2.43	\$2.56	\$99.00
Portland General Electric Company	POR	(\$46.57)	\$0.00	\$0.01	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.92	\$2.06	\$2.22	\$2.40	\$2.52	\$2.66	\$2.80	\$2.95	\$114.43
Southern Company	SO	(\$49.86)	\$0.00	\$0.01	\$2.23	\$2.32	\$2.38	\$2.45	\$2.50	\$2.56	\$2.63	\$2.70	\$2.79	\$2.89	\$3.04	\$3.21	\$3.38	\$3.56	\$137.95
WEC Energy Group, Inc.	WEC	(\$64.40)	\$0.00	\$0.01	\$2.12	\$2.32	\$2.45	\$2.60	\$2.74	\$2.88	\$3.03	\$3.18	\$3.35	\$3.52	\$3.70	\$3.90	\$4.11	\$4.34	\$167.90
Xcel Energy Inc.	XEL	(\$48.05)	\$0.00	\$0.01	\$1.47	\$1.64	\$1.75	\$1.86	\$1.96	\$2.06	\$2.16	\$2.27	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$120.48

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
180 Day Average Stock Price  
High EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
				Value	High									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	7.20%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	10.05%	23.56	4.38
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	7.05%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	9.46%	23.56	4.38
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	7.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.75%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	4.80%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	11.87%	23.56	4.38
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	7.50%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	9.40%	23.56	4.38
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	7.44%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	10.14%	23.56	4.38
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	6.50%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	10.58%	23.56	4.38
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	6.00%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.81%	23.56	4.38
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	4.50%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	9.12%	23.56	4.38
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.30%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	9.09%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	4.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	13.27%	23.56	4.38
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	5.00%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	9.13%	23.56	4.38
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	4.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	11.15%	23.56	4.38
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	6.00%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	10.75%	23.56	4.38
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	7.00%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	8.97%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	5.50%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	9.73%	23.56	4.38
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	7.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	9.74%	23.56	4.38
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	6.00%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	10.15%	23.56	4.38
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	4.50%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	11.62%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	6.00%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	10.31%	23.56	4.38
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	5.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.95%	23.56	4.38

Mean 10.24%  
Max 13.27%  
Min 8.97%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.37	\$3.61	\$3.87	\$4.15	\$4.45	\$4.75	\$5.07	\$5.38	\$5.71	\$6.03	\$6.35	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.14	\$3.30	\$3.48	\$3.67	\$3.87	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.54	\$4.80	\$5.08	\$5.35	\$5.64	\$5.94	\$6.26	\$6.59	\$6.95
American Electric Power Company, Inc.	AEP	\$4.23	\$4.43	\$4.65	\$4.87	\$5.10	\$5.35	\$5.61	\$5.89	\$6.19	\$6.51	\$6.85	\$7.22	\$7.61	\$8.02	\$8.45	\$8.91	\$9.39
Black Hills Corporation	BKH	\$2.63	\$2.83	\$3.04	\$3.27	\$3.51	\$3.78	\$4.05	\$4.32	\$4.60	\$4.88	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.70	\$7.06
CMS Energy Corporation	CMS	\$1.98	\$2.13	\$2.29	\$2.46	\$2.64	\$2.83	\$3.04	\$3.24	\$3.45	\$3.66	\$3.87	\$4.07	\$4.29	\$4.53	\$4.77	\$5.02	\$5.30
Dominion Energy, Inc.	D	\$3.44	\$3.66	\$3.90	\$4.16	\$4.43	\$4.71	\$5.01	\$5.32	\$5.63	\$5.96	\$6.29	\$6.63	\$6.98	\$7.36	\$7.76	\$8.17	\$8.61
DTE Energy Company	DTE	\$4.83	\$5.12	\$5.43	\$5.75	\$6.10	\$6.46	\$6.84	\$7.24	\$7.65	\$8.08	\$8.52	\$8.98	\$9.47	\$9.97	\$10.51	\$11.08	\$11.67
Duke Energy Corporation	DUK	\$3.71	\$3.88	\$4.05	\$4.23	\$4.42	\$4.62	\$4.84	\$5.07	\$5.32	\$5.59	\$5.88	\$6.20	\$6.53	\$6.88	\$7.26	\$7.65	\$8.06
El Paso Electric Company	EE	\$2.39	\$2.52	\$2.65	\$2.79	\$2.94	\$3.09	\$3.26	\$3.43	\$3.62	\$3.81	\$4.01	\$4.23	\$4.46	\$4.70	\$4.95	\$5.21	\$5.50
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.39	\$2.50	\$2.61	\$2.73	\$2.85	\$2.99	\$3.13	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72	\$4.97
IDACORP, Inc.	IDA	\$3.94	\$4.14	\$4.34	\$4.56	\$4.79	\$5.03	\$5.28	\$5.55	\$5.84	\$6.15	\$6.48	\$6.82	\$7.19	\$7.58	\$7.99	\$8.42	\$8.87
NorthWestern Corporation	NWE	\$3.39	\$3.54	\$3.70	\$3.87	\$4.04	\$4.22	\$4.42	\$4.63	\$4.86	\$5.11	\$5.38	\$5.67	\$5.97	\$6.29	\$6.63	\$6.99	\$7.36
OGE Energy Corp.	OGE	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.26	\$2.39	\$2.53	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.68	\$3.88	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.71	\$1.83	\$1.96	\$2.10	\$2.24	\$2.40	\$2.55	\$2.71	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$3.74	\$3.94	\$4.15
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.06	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.30	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.65	\$1.77	\$1.91	\$2.05	\$2.20	\$2.37	\$2.54	\$2.71	\$2.89	\$3.06	\$3.24	\$3.41	\$3.59	\$3.79	\$3.99	\$4.21	\$4.43
Portland General Electric Company	POR	\$2.16	\$2.29	\$2.43	\$2.57	\$2.73	\$2.89	\$3.06	\$3.24	\$3.42	\$3.61	\$3.81	\$4.02	\$4.23	\$4.46	\$4.70	\$4.95	\$5.22
Southern Company	SO	\$2.83	\$2.96	\$3.09	\$3.23	\$3.37	\$3.53	\$3.69	\$3.87	\$4.06	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15
WEC Energy Group, Inc.	WEC	\$2.96	\$3.14	\$3.33	\$3.53	\$3.74	\$3.96	\$4.19	\$4.44	\$4.69	\$4.95	\$5.22	\$5.50	\$5.80	\$6.11	\$6.44	\$6.79	\$7.15
Xcel Energy Inc.	XEL	\$2.21	\$2.33	\$2.46	\$2.60	\$2.74	\$2.89	\$3.05	\$3.21	\$3.39	\$3.57	\$3.76	\$3.97	\$4.18	\$4.40	\$4.64	\$4.89	\$5.15

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%



El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.12	\$2.26	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$194.57
Alliant Energy Corporation	LNT	\$1.17	\$1.25	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$2.83	\$101.17
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$4.58	\$163.75
American Electric Power Company, Inc.	AEP	\$3.06	\$3.14	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$6.19	\$221.15
Black Hills Corporation	BKH	\$1.44	\$1.55	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$4.65	\$166.43
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$124.77
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.68	\$202.92
DTE Energy Company	DTE	\$2.87	\$3.15	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$275.02
Duke Energy Corporation	DUK	\$3.14	\$3.26	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$5.31	\$189.84
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$3.62	\$129.49
Hawaiian Electric Industries, Inc.	HE	\$1.84	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$3.28	\$117.18
IDACORP, Inc.	IDA	\$2.23	\$2.42	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$5.84	\$208.95
NorthWestern Corporation	NWE	\$2.20	\$2.30	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$4.85	\$173.46
OGE Energy Corp.	OGE	\$1.20	\$1.29	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$96.23
Otter Tail Corporation	OTTR	\$1.23	\$1.25	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$2.73	\$97.76
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$217.08
PNM Resources, Inc.	PNM	\$0.85	\$0.96	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$2.92	\$104.41
Portland General Electric Company	POR	\$1.35	\$1.42	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$122.99
Southern Company	SO	\$2.22	\$2.30	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$144.81
WEC Energy Group, Inc.	WEC	\$2.07	\$2.20	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.71	\$168.55
Xcel Energy Inc.	XEL	\$1.45	\$1.55	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$3.40	\$121.45

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$74.84)	\$0.00	\$0.01	\$2.20	\$2.40	\$2.55	\$2.71	\$2.94	\$3.17	\$3.42	\$3.67	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$200.01
Alliant Energy Corporation	LNT	(\$41.99)	\$0.00	\$0.01	\$1.21	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.96	\$2.07	\$2.18	\$2.29	\$2.42	\$2.55	\$2.69	\$104.00
Ameren Corporation	AEE	(\$58.43)	\$0.00	\$0.01	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.86	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.35	\$168.33
American Electric Power Company, Inc.	AEP	(\$72.02)	\$0.00	\$0.02	\$3.13	\$3.21	\$3.29	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.02	\$5.29	\$5.57	\$5.87	\$227.33
Black Hills Corporation	BKH	(\$66.70)	\$0.00	\$0.01	\$1.50	\$1.67	\$1.79	\$1.93	\$2.16	\$2.42	\$2.69	\$2.97	\$3.27	\$3.58	\$3.77	\$3.98	\$4.19	\$4.42	\$171.08
CMS Energy Corporation	CMS	(\$47.39)	\$0.00	\$0.01	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.69	\$2.83	\$2.98	\$3.14	\$3.31	\$128.26
Dominion Energy, Inc.	D	(\$79.20)	\$0.00	\$0.02	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.35	\$4.37	\$4.60	\$4.85	\$5.11	\$5.39	\$5.68	\$208.60
DTE Energy Company	DTE	(\$109.30)	\$0.00	\$0.02	\$2.95	\$3.45	\$3.78	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$282.72
Duke Energy Corporation	DUK	(\$85.84)	\$0.00	\$0.02	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.31	\$4.54	\$4.78	\$5.04	\$195.15
El Paso Electric Company	EE	(\$54.81)	\$0.00	\$0.01	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.59	\$2.79	\$2.94	\$3.10	\$3.26	\$3.44	\$133.11
Hawaiian Electric Industries, Inc.	HE	(\$34.21)	\$0.00	\$0.01	\$1.88	\$1.92	\$1.96	\$2.00	\$2.07	\$2.15	\$2.23	\$2.32	\$2.42	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$120.46
IDACORP, Inc.	IDA	(\$89.17)	\$0.00	\$0.01	\$2.29	\$2.62	\$2.84	\$3.07	\$3.27	\$3.48	\$3.71	\$3.95	\$4.22	\$4.50	\$4.74	\$4.99	\$5.26	\$5.55	\$214.79
NorthWestern Corporation	NWE	(\$60.36)	\$0.00	\$0.01	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.15	\$4.37	\$4.60	\$178.32
OGE Energy Corp.	OGE	(\$35.34)	\$0.00	\$0.01	\$1.24	\$1.38	\$1.48	\$1.58	\$1.66	\$1.74	\$1.82	\$1.90	\$1.99	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$98.92
Otter Tail Corporation	OTTR	(\$42.38)	\$0.00	\$0.01	\$1.28	\$1.27	\$1.29	\$1.30	\$1.42	\$1.55	\$1.68	\$1.81	\$1.96	\$2.10	\$2.22	\$2.34	\$2.46	\$2.59	\$100.50
Pinnacle West Capital Corporation	PNW	(\$87.50)	\$0.00	\$0.01	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.15	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$223.15
PNM Resources, Inc.	PNM	(\$40.68)	\$0.00	\$0.00	\$0.88	\$1.08	\$1.21	\$1.35	\$1.48	\$1.63	\$1.77	\$1.93	\$2.08	\$2.25	\$2.37	\$2.50	\$2.63	\$2.77	\$107.33
Portland General Electric Company	POR	(\$46.57)	\$0.00	\$0.01	\$1.39	\$1.49	\$1.57	\$1.65	\$1.79	\$1.94	\$2.10	\$2.27	\$2.46	\$2.65	\$2.79	\$2.94	\$3.10	\$3.26	\$126.43
Southern Company	SO	(\$49.86)	\$0.00	\$0.01	\$2.27	\$2.39	\$2.48	\$2.57	\$2.65	\$2.73	\$2.82	\$2.91	\$3.01	\$3.12	\$3.28	\$3.46	\$3.65	\$3.84	\$148.86
WEC Energy Group, Inc.	WEC	(\$64.40)	\$0.00	\$0.01	\$2.13	\$2.34	\$2.49	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$173.26
Xcel Energy Inc.	XEL	(\$48.05)	\$0.00	\$0.01	\$1.49	\$1.66	\$1.78	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$2.61	\$2.75	\$2.90	\$3.06	\$3.22	\$124.85

Multi-Stage Growth Discounted Cash Flow Model - Terminal P/E  
180 Day Average Stock Price  
Low EPS Growth Rate Estimate in First Stage

Inputs		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
Company	Ticker	Price	Zacks	First Call	Value Line	Low Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$74.84	7.20%	5.00%	5.00%	5.00%	5.38%	63.00%	61.00%	65.91%	(\$0.00)	8.72%	23.56	4.38
Alliant Energy Corporation	LNT	\$41.99	6.40%	7.05%	6.00%	6.00%	5.38%	66.00%	66.00%	65.91%	(\$0.00)	8.83%	23.56	4.38
Ameren Corporation	AEE	\$58.43	7.00%	7.00%	6.00%	6.00%	5.38%	64.00%	60.00%	65.91%	(\$0.00)	10.14%	23.56	4.38
American Electric Power Company, Inc.	AEP	\$72.02	4.80%	2.77%	4.00%	2.77%	5.38%	69.00%	63.00%	65.91%	(\$0.00)	10.57%	23.56	4.38
Black Hills Corporation	BKH	\$66.70	4.90%	4.26%	7.50%	4.26%	5.38%	51.00%	51.00%	65.91%	(\$0.00)	7.49%	23.56	4.38
CMS Energy Corporation	CMS	\$47.39	6.50%	7.44%	6.50%	6.50%	5.38%	61.00%	61.00%	65.91%	(\$0.00)	9.57%	23.56	4.38
Dominion Energy, Inc.	D	\$79.20	5.60%	3.64%	6.50%	3.64%	5.38%	83.00%	87.00%	65.91%	(\$0.00)	8.79%	23.56	4.38
DTE Energy Company	DTE	\$109.30	6.00%	4.91%	6.00%	4.91%	5.38%	56.00%	64.00%	65.91%	(\$0.00)	9.14%	23.56	4.38
Duke Energy Corporation	DUK	\$85.84	4.00%	3.23%	4.50%	3.23%	5.38%	81.00%	79.00%	65.91%	(\$0.00)	8.33%	23.56	4.38
El Paso Electric Company	EE	\$54.81	5.20%	5.30%	5.00%	5.00%	5.38%	50.00%	57.00%	65.91%	(\$0.00)	8.91%	23.56	4.38
Hawaiian Electric Industries, Inc.	HE	\$34.21	4.20%	4.50%	1.50%	1.50%	5.38%	77.00%	70.00%	65.91%	(\$0.00)	11.27%	23.56	4.38
IDACORP, Inc.	IDA	\$89.17	5.00%	4.00%	3.50%	3.50%	5.38%	54.00%	61.00%	65.91%	(\$0.00)	8.22%	23.56	4.38
NorthWestern Corporation	NWE	\$60.36	1.50%	2.25%	4.50%	1.50%	5.38%	62.00%	62.00%	65.91%	(\$0.00)	9.25%	23.56	4.38
OGE Energy Corp.	OGE	\$35.34	4.30%	3.90%	6.00%	3.90%	5.38%	67.00%	70.00%	65.91%	(\$0.00)	9.44%	23.56	4.38
Otter Tail Corporation	OTTR	\$42.38	NA	5.20%	7.00%	5.20%	5.38%	72.00%	58.00%	65.91%	(\$0.00)	7.90%	23.56	4.38
Pinnacle West Capital Corporation	PNW	\$87.50	3.20%	5.46%	5.50%	3.20%	5.38%	63.00%	63.00%	65.91%	(\$0.00)	8.32%	23.56	4.38
PNM Resources, Inc.	PNM	\$40.68	5.50%	6.05%	7.50%	5.50%	5.38%	48.00%	57.00%	65.91%	(\$0.00)	8.55%	23.56	4.38
Portland General Electric Company	POR	\$46.57	3.80%	4.00%	6.00%	3.80%	5.38%	59.00%	57.00%	65.91%	(\$0.00)	8.80%	23.56	4.38
Southern Company	SO	\$49.86	4.50%	2.33%	3.50%	2.33%	5.38%	75.00%	73.00%	65.91%	(\$0.00)	10.22%	23.56	4.38
WEC Energy Group, Inc.	WEC	\$64.40	5.40%	5.27%	6.00%	5.27%	5.38%	66.00%	67.00%	65.91%	(\$0.00)	9.86%	23.56	4.38
Xcel Energy Inc.	XEL	\$48.05	5.50%	NA	4.50%	4.50%	5.38%	62.00%	66.00%	65.91%	(\$0.00)	9.34%	23.56	4.38

Mean 9.13%  
Max 11.27%  
Min 7.49%

Projected Annual Earnings per Share		[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]
Company	Ticker	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.30	\$3.46	\$3.63	\$3.82	\$4.01	\$4.21	\$4.43	\$4.66	\$4.90	\$5.16	\$5.44	\$5.73	\$6.04	\$6.36	\$6.71	\$7.07
Alliant Energy Corporation	LNT	\$1.65	\$1.75	\$1.85	\$1.97	\$2.08	\$2.21	\$2.34	\$2.47	\$2.61	\$2.76	\$2.91	\$3.07	\$3.23	\$3.41	\$3.59	\$3.78	\$3.99
Ameren Corporation	AEE	\$2.68	\$2.84	\$3.01	\$3.19	\$3.38	\$3.59	\$3.80	\$4.02	\$4.25	\$4.48	\$4.73	\$4.98	\$5.25	\$5.53	\$5.83	\$6.15	\$6.48
American Electric Power Company, Inc.	AEP	\$4.23	\$4.35	\$4.47	\$4.59	\$4.72	\$4.85	\$5.00	\$5.19	\$5.40	\$5.64	\$5.92	\$6.24	\$6.57	\$6.93	\$7.30	\$7.69	\$8.11
Black Hills Corporation	BKH	\$2.63	\$2.74	\$2.86	\$2.98	\$3.11	\$3.24	\$3.38	\$3.54	\$3.71	\$3.90	\$4.10	\$4.32	\$4.55	\$4.80	\$5.06	\$5.33	\$5.61
CMS Energy Corporation	CMS	\$1.98	\$2.11	\$2.25	\$2.39	\$2.55	\$2.71	\$2.88	\$3.06	\$3.24	\$3.43	\$3.62	\$3.81	\$4.02	\$4.24	\$4.46	\$4.70	\$4.96
Dominion Energy, Inc.	D	\$3.44	\$3.57	\$3.69	\$3.83	\$3.97	\$4.11	\$4.27	\$4.46	\$4.66	\$4.88	\$5.13	\$5.40	\$5.69	\$6.00	\$6.32	\$6.66	\$7.02
DTE Energy Company	DTE	\$4.83	\$5.07	\$5.32	\$5.58	\$5.85	\$6.14	\$6.44	\$6.77	\$7.12	\$7.49	\$7.89	\$8.31	\$8.76	\$9.23	\$9.73	\$10.25	\$10.80
Duke Energy Corporation	DUK	\$3.71	\$3.83	\$3.95	\$4.08	\$4.21	\$4.35	\$4.51	\$4.68	\$4.88	\$5.11	\$5.37	\$5.66	\$5.96	\$6.28	\$6.62	\$6.98	\$7.35
El Paso Electric Company	EE	\$2.39	\$2.51	\$2.63	\$2.77	\$2.91	\$3.05	\$3.20	\$3.37	\$3.54	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$5.10	\$5.38
Hawaiian Electric Industries, Inc.	HE	\$2.29	\$2.32	\$2.36	\$2.39	\$2.43	\$2.47	\$2.52	\$2.59	\$2.68	\$2.79	\$2.92	\$3.08	\$3.24	\$3.42	\$3.60	\$3.80	\$4.00
IDACORP, Inc.	IDA	\$3.94	\$4.08	\$4.22	\$4.37	\$4.52	\$4.68	\$4.86	\$5.06	\$5.28	\$5.53	\$5.81	\$6.13	\$6.46	\$6.80	\$7.17	\$7.56	\$7.96
NorthWestern Corporation	NWE	\$3.39	\$3.44	\$3.49	\$3.54	\$3.60	\$3.65	\$3.73	\$3.83	\$3.97	\$4.13	\$4.32	\$4.56	\$4.80	\$5.06	\$5.33	\$5.62	\$5.92
OGE Energy Corp.	OGE	\$1.69	\$1.76	\$1.82	\$1.90	\$1.97	\$2.05	\$2.13	\$2.22	\$2.33	\$2.44	\$2.57	\$2.71	\$2.85	\$3.00	\$3.17	\$3.34	\$3.52
Otter Tail Corporation	OTTR	\$1.60	\$1.68	\$1.77	\$1.86	\$1.96	\$2.06	\$2.17	\$2.28	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.08	\$4.21	\$4.34	\$4.48	\$4.62	\$4.79	\$4.98	\$5.19	\$5.43	\$5.70	\$6.01	\$6.33	\$6.67	\$7.03	\$7.41	\$7.81
PNM Resources, Inc.	PNM	\$1.65	\$1.74	\$1.84	\$1.94	\$2.04	\$2.16	\$2.27	\$2.40	\$2.53	\$2.67	\$2.81	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85
Portland General Electric Company	POR	\$2.16	\$2.24	\$2.33	\$2.42	\$2.51	\$2.60	\$2.71	\$2.83	\$2.96	\$3.10	\$3.26	\$3.43	\$3.62	\$3.81	\$4.02	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.96	\$3.03	\$3.10	\$3.18	\$3.27	\$3.37	\$3.50	\$3.66	\$3.84	\$4.04	\$4.26	\$4.49	\$4.73	\$4.98	\$5.25
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.28	\$3.45	\$3.64	\$3.83	\$4.03	\$4.24	\$4.47	\$4.71	\$4.96	\$5.23	\$5.51	\$5.80	\$6.12	\$6.44	\$6.79
Xcel Energy Inc.	XEL	\$2.21	\$2.31	\$2.41	\$2.52	\$2.64	\$2.75	\$2.88	\$3.02	\$3.17	\$3.33	\$3.50	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$4.80

Projected Annual Dividend Payout Ratio		[31]	[32]	[33]	[34]	[35]	[36]	[37]	[38]	[39]	[40]	[41]	[42]	[43]	[44]	[45]	[46]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	63.00%	62.50%	62.00%	61.50%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	66.00%	66.00%	66.00%	66.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Ameren Corporation	AEE	64.00%	63.00%	62.00%	61.00%	60.00%	60.98%	61.97%	62.95%	63.94%	64.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
American Electric Power Company, Inc.	AEP	69.00%	67.50%	66.00%	64.50%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Black Hills Corporation	BKH	51.00%	51.00%	51.00%	51.00%	51.00%	53.48%	55.97%	58.45%	60.94%	63.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
CMS Energy Corporation	CMS	61.00%	61.00%	61.00%	61.00%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Dominion Energy, Inc.	D	83.00%	84.00%	85.00%	86.00%	87.00%	83.48%	79.97%	76.45%	72.94%	69.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
DTE Energy Company	DTE	56.00%	58.00%	60.00%	62.00%	64.00%	64.32%	64.64%	64.95%	65.27%	65.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Duke Energy Corporation	DUK	81.00%	80.50%	80.00%	79.50%	79.00%	76.82%	74.64%	72.45%	70.27%	68.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

El Paso Electric Company	EE	50.00%	51.75%	53.50%	55.25%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Hawaiian Electric Industries, Inc.	HE	77.00%	75.25%	73.50%	71.75%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
IDACORP, Inc.	IDA	54.00%	55.75%	57.50%	59.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
NorthWestern Corporation	NWE	62.00%	62.00%	62.00%	62.00%	62.00%	62.65%	63.30%	63.95%	64.60%	65.25%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
OGE Energy Corp.	OGE	67.00%	67.75%	68.50%	69.25%	70.00%	69.32%	68.64%	67.95%	67.27%	66.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	72.00%	68.50%	65.00%	61.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Pinnacle West Capital Corporation	PNW	63.00%	63.00%	63.00%	63.00%	63.00%	63.48%	63.97%	64.45%	64.94%	65.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
PNM Resources, Inc.	PNM	48.00%	50.25%	52.50%	54.75%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Portland General Electric Company	POR	59.00%	58.50%	58.00%	57.50%	57.00%	58.48%	59.97%	61.45%	62.94%	64.42%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Southern Company	SO	75.00%	74.50%	74.00%	73.50%	73.00%	71.82%	70.64%	69.45%	68.27%	67.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
WEC Energy Group, Inc.	WEC	66.00%	66.25%	66.50%	66.75%	67.00%	66.82%	66.64%	66.45%	66.27%	66.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Xcel Energy Inc.	XEL	62.00%	63.00%	64.00%	65.00%	66.00%	65.98%	65.97%	65.95%	65.94%	65.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%

Projected Annual Cash Flows		[47]	[48]	[49]	[50]	[51]	[52]	[53]	[54]	[55]	[56]	[57]	[58]	[59]	[60]	[61]	[62]	[63]
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Terminal Value
ALLETE, Inc.	ALE	\$2.08	\$2.16	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.66	\$166.52
Alliant Energy Corporation	LNT	\$1.15	\$1.22	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$2.63	\$93.95
Ameren Corporation	AEE	\$1.82	\$1.90	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$4.27	\$152.60
American Electric Power Company, Inc.	AEP	\$3.00	\$3.02	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$5.34	\$191.03
Black Hills Corporation	BKH	\$1.40	\$1.46	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$132.28
CMS Energy Corporation	CMS	\$1.29	\$1.37	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$116.80
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$165.46
DTE Energy Company	DTE	\$2.84	\$3.08	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$7.12	\$254.51
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.85	\$173.23
El Paso Electric Company	EE	\$1.25	\$1.36	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$3.55	\$126.75
Hawaiian Electric Industries, Inc.	HE	\$1.79	\$1.78	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$2.64	\$94.24
IDACORP, Inc.	IDA	\$2.20	\$2.35	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$5.25	\$187.60
NorthWestern Corporation	NWE	\$2.13	\$2.17	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.90	\$139.51
OGE Energy Corp.	OGE	\$1.18	\$1.24	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$82.83
Otter Tail Corporation	OTTR	\$1.21	\$1.21	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$86.07
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$5.15	\$184.04
PNM Resources, Inc.	PNM	\$0.84	\$0.92	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.54	\$90.68
Portland General Electric Company	POR	\$1.32	\$1.36	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$105.10
Southern Company	SO	\$2.17	\$2.21	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$3.46	\$123.77
WEC Energy Group, Inc.	WEC	\$2.06	\$2.17	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$160.03
Xcel Energy Inc.	XEL	\$1.43	\$1.52	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$3.16	\$113.08

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Company	Ticker	Initial Outflow	12/29/17	12/31/17	6/30/18	6/30/19	6/30/20	6/30/21	6/30/22	6/30/23	6/30/24	6/30/25	6/30/26	6/30/27	6/30/28	6/30/29	6/30/30	6/30/31	6/30/32
ALLETE, Inc.	ALE	(\$74.84)	\$0.00	\$0.01	\$2.13	\$2.25	\$2.35	\$2.44	\$2.60	\$2.77	\$2.95	\$3.15	\$3.36	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$171.18
Alliant Energy Corporation	LNT	(\$41.99)	\$0.00	\$0.01	\$1.19	\$1.30	\$1.37	\$1.46	\$1.54	\$1.63	\$1.72	\$1.82	\$1.92	\$2.02	\$2.13	\$2.25	\$2.37	\$2.49	\$96.58
Ameren Corporation	AEE	(\$58.43)	\$0.00	\$0.01	\$1.87	\$1.98	\$2.06	\$2.15	\$2.32	\$2.49	\$2.67	\$2.87	\$3.07	\$3.28	\$3.46	\$3.65	\$3.84	\$4.05	\$156.87
American Electric Power Company, Inc.	AEP	(\$72.02)	\$0.00	\$0.02	\$3.04	\$3.03	\$3.04	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.57	\$4.81	\$5.07	\$196.37
Black Hills Corporation	BKH	(\$66.70)	\$0.00	\$0.01	\$1.43	\$1.52	\$1.58	\$1.65	\$1.81	\$1.98	\$2.17	\$2.37	\$2.60	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51	\$135.98
CMS Energy Corporation	CMS	(\$47.39)	\$0.00	\$0.01	\$1.33	\$1.46	\$1.55	\$1.65	\$1.78	\$1.92	\$2.06	\$2.20	\$2.36	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$120.06
Dominion Energy, Inc.	D	(\$79.20)	\$0.00	\$0.02	\$3.01	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$170.09	
DTE Energy Company	DTE	(\$109.30)	\$0.00	\$0.02	\$2.91	\$3.35	\$3.63	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.76	\$261.63
Duke Energy Corporation	DUK	(\$85.84)	\$0.00	\$0.02	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.66	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$178.08
El Paso Electric Company	EE	(\$54.81)	\$0.00	\$0.01	\$1.29	\$1.48	\$1.61	\$1.74	\$1.87	\$2.02	\$2.18	\$2.35	\$2.53	\$2.73	\$2.87	\$3.03	\$3.19	\$3.36	\$130.29
Hawaiian Electric Industries, Inc.	HE	(\$34.21)	\$0.00	\$0.01	\$1.80	\$1.76	\$1.74	\$1.73	\$1.75	\$1.78	\$1.82	\$1.88	\$1.94	\$2.03	\$2.14	\$2.25	\$2.37	\$2.50	\$96.88
IDACORP, Inc.	IDA	(\$89.17)	\$0.00	\$0.01	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.26	\$4.48	\$4.73	\$4.98	\$192.85
NorthWestern Corporation	NWE	(\$60.36)	\$0.00	\$0.01	\$2.15	\$2.20	\$2.23	\$2.26	\$2.34	\$2.43	\$2.54	\$2.67	\$2.82	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$143.42
OGE Energy Corp.	OGE	(\$35.34)	\$0.00	\$0.01	\$1.20	\$1.30	\$1.36	\$1.43	\$1.48	\$1.53	\$1.58	\$1.64	\$1.71	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$85.14
Otter Tail Corporation	OTTR	(\$42.38)	\$0.00	\$0.01	\$1.24	\$1.21	\$1.21	\$1.20	\$1.29	\$1.38	\$1.49	\$1.60	\$1.72	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$88.48
Pinnacle West Capital Corporation	PNW	(\$87.50)	\$0.00	\$0.01	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.35	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.64	\$4.88	\$189.19
PNM Resources, Inc.	PNM	(\$40.68)	\$0.00	\$0.00	\$0.86	\$1.02	\$1.12	\$1.23	\$1.33	\$1.44	\$1.55	\$1.68	\$1.81	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$93.21
Portland General Electric Company	POR	(\$46.57)	\$0.00	\$0.01	\$1.35	\$1.40	\$1.44	\$1.48	\$1.58	\$1.69	\$1.82	\$1.95	\$2.10	\$2.26	\$2.38	\$2.51	\$2.65	\$2.79	\$108.04
Southern Company	SO	(\$49.86)	\$0.00	\$0.01	\$2.20	\$2.24	\$2.28	\$2.32	\$2.35	\$2.38	\$2.43	\$2.50	\$2.57	\$2.66	\$2.81	\$2.96	\$3.12	\$3.29	\$127.23
WEC Energy Group, Inc.	WEC	(\$64.40)	\$0.00	\$0.01	\$2.11	\$2.30	\$2.43	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.83	\$4.03	\$4.25	\$164.51
Xcel Energy Inc.	XEL	(\$48.05)	\$0.00	\$0.01	\$1.46	\$1.61	\$1.71	\$1.82	\$1.90	\$1.99	\$2.09	\$2.20	\$2.31	\$2.43	\$2.56	\$2.70	\$2.85	\$3.00	\$116.25

Multi-Stage DCF Notes:

- [1] Source: Bloomberg; based on 30-, 90-, and 180-day historical average as of December 29, 2017
- [2] Source: Zacks
- [3] Source: Yahoo! Finance
- [4] Source: Value Line
- [5] Equals indicated value (average, minimum, maximum) of Columns [2], [3], [4]
- [6] Source: Federal Reserve, Bureau of Economic Analysis, Blue Chip Financial Forecast
- [7] Source: Value Line
- [8] Source: Value Line
- [9] Source: Bloomberg Professional
- [10] Equals Column [1] + Column [64]
- [11] Equals result of Excel Solver function; goal: Column [10] equals \$0.00
- [12] Equals Column [63] / Column [30]; or Proxy Group 30-day average PE ratio (source: S&P Global Market Intelligence)
- [13] Equals Column [12] / (Column [6] x 100)
- [14] Source: Value Line
- [15] Equals Column [14] x (1 + Column [5])
- [16] Equals Column [15] x (1 + Column [5])
- [17] Equals Column [16] x (1 + Column [5])
- [18] Equals Column [17] x (1 + Column [5])
- [19] Equals Column [18] x (1 + Column [5])
- [20] Equals (1 + (Column [5] + (((Column [6] - Column [5]) / (2027 - 2022 + 1)) x (2022 - 2021)))) x Column [19]
- [21] Equals (1 + (Column [5] + (((Column [6] - Column [5]) / (2027 - 2022 + 1)) x (2023 - 2021)))) x Column [20]
- [22] Equals (1 + (Column [5] + (((Column [6] - Column [5]) / (2027 - 2022 + 1)) x (2024 - 2021)))) x Column [21]
- [23] Equals (1 + (Column [5] + (((Column [6] - Column [5]) / (2027 - 2022 + 1)) x (2025 - 2021)))) x Column [22]
- [24] Equals (1 + (Column [5] + (((Column [6] - Column [5]) / (2027 - 2022 + 1)) x (2026 - 2021)))) x Column [23]
- [25] Equals Column [24] x (1 + Column [6])
- [26] Equals Column [25] x (1 + Column [6])
- [27] Equals Column [26] x (1 + Column [6])
- [28] Equals Column [27] x (1 + Column [6])
- [29] Equals Column [28] x (1 + Column [6])
- [30] Equals Column [29] x (1 + Column [6])
- [31] Equals Column [7]
- [32] Equals Column [31] + ((Column [35] - Column [31]) / 4)
- [33] Equals Column [32] + ((Column [35] - Column [31]) / 4)
- [34] Equals Column [33] + ((Column [35] - Column [31]) / 4)
- [35] Equals Column [8]
- [36] Equals Column [35] + ((Column [41] - Column [35]) / 6)
- [37] Equals Column [36] + ((Column [41] - Column [35]) / 6)
- [38] Equals Column [37] + ((Column [41] - Column [35]) / 6)
- [39] Equals Column [38] + ((Column [41] - Column [35]) / 6)
- [40] Equals Column [39] + ((Column [41] - Column [35]) / 6)
- [41] Equals Column [9]
- [42] Equals Column [9]
- [43] Equals Column [9]
- [44] Equals Column [9]
- [45] Equals Column [9]
- [46] Equals Column [9]
- [47] Equals Column [15] x Column [31]
- [48] Equals Column [16] x Column [32]
- [49] Equals Column [17] x Column [33]
- [50] Equals Column [18] x Column [34]
- [51] Equals Column [19] x Column [35]
- [52] Equals Column [20] x Column [36]
- [53] Equals Column [21] x Column [37]
- [54] Equals Column [22] x Column [38]
- [55] Equals Column [23] x Column [39]
- [56] Equals Column [24] x Column [40]
- [57] Equals Column [25] x Column [41]
- [58] Equals Column [26] x Column [42]
- [59] Equals Column [27] x Column [43]
- [60] Equals Column [28] x Column [44]
- [61] Equals Column [29] x Column [45]
- [62] Equals Column [30] x Column [46]
- [63] Equals (Column [62] x (1 + Column [6])) / (Column [11] - Column [6]); or Column [12] x Column [30]
- [64] Equals negative net present value; discount rate equals Column [11], cash flows equal Column [65] through Column [81]
- [65] Equals \$0.00
- [66] Equals Column [47] x (12/31/2017 - 11/17/2017) / 365
- [67] Equals Column [47] x (1 + (0.5 x Column [5]))
- [68] Equals Column [49]
- [69] Equals Column [50]
- [70] Equals Column [51]
- [71] Equals Column [52]
- [72] Equals Column [53]
- [73] Equals Column [54]
- [74] Equals Column [55]
- [75] Equals Column [56]
- [76] Equals Column [57]
- [77] Equals Column [58]
- [78] Equals Column [59]
- [79] Equals Column [60]
- [80] Equals Column [61]
- [81] Equals Column [62] + [63]

Ex-Ante Market Risk Premium  
Market DCF Method Based - Bloomberg

[1]	[2]	[3]
S&P 500	Current 30-Year	
Est. Required	Treasury (30-day	Implied Market
Market Return	average)	Risk Premium
13.78%	2.77%	11.00%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
AGILENT TECHNOLOGIES INC	A	\$ 21,632.52	0.09%	0.90%	4.93%	5.85%	0.0052%
AMERICAN AIRLINES GROUP INC	AAL	\$ 24,896.31	0.10%	0.80%	-1.14%	-0.35%	-0.0004%
ADVANCE AUTO PARTS INC	AAP	\$ 7,366.90	0.03%	0.26%	13.05%	13.32%	0.0041%
APPLE INC	AAPL	\$ 860,882.49	3.56%	1.56%	10.17%	11.80%	0.4208%
ABBVIE INC	ABBV	\$ 154,390.72	0.64%	2.68%	11.70%	14.53%	0.0929%
AMERISOURCEBERGEN CORP	ABC	\$ 20,024.29	0.08%	1.68%	7.53%	9.27%	0.0077%
ABBOTT LABORATORIES	ABT	\$ 99,336.08	0.41%	1.88%	11.78%	13.77%	0.0566%
ACCENTURE PLC-CL A	ACN	\$ 98,590.72	0.41%	1.74%	10.57%	12.40%	0.0506%
ADOBE SYSTEMS INC	ADBE	\$ 86,383.33	0.36%	0.00%	16.77%	16.77%	0.0600%
ANALOG DEVICES INC	ADI	\$ 32,819.64	0.14%	2.06%	9.75%	11.91%	0.0162%
ARCHER-DANIELS-MIDLAND CO	ADM	\$ 22,414.75	0.09%	3.15%	8.50%	11.79%	0.0109%
AUTOMATIC DATA PROCESSING	ADP	\$ 51,972.56	0.22%	2.02%	10.85%	12.98%	0.0279%
ALLIANCE DATA SYSTEMS CORP	ADS	\$ 14,004.43	0.06%	0.82%	14.00%	14.88%	0.0086%
AUTODESK INC	ADSK	\$ 23,090.57	0.10%	0.00%	38.00%	38.00%	0.0363%
AMEREN CORPORATION	AEE	\$ 14,313.03	0.06%	3.04%	7.01%	10.15%	0.0060%
AMERICAN ELECTRIC POWER	AEP	\$ 36,188.01	0.15%	3.25%	4.34%	7.66%	0.0115%
AES CORP	AES	\$ 7,151.99	0.03%	4.23%	8.48%	12.89%	0.0038%
AETNA INC	AET	\$ 58,825.18	0.24%	1.06%	12.00%	13.12%	0.0320%
AFLAC INC	AFL	\$ 34,510.67	0.14%	2.80%	2.85%	5.69%	0.0081%
ALLERGAN PLC	AGN	\$ 54,403.94	0.23%	1.71%	8.50%	10.28%	0.0232%
AMERICAN INTERNATIONAL GROUP	AIG	\$ 53,560.00	0.22%	2.15%	11.00%	13.27%	0.0294%
APARTMENT INVT & MGMT CO -A	AIV	\$ 6,863.49	0.03%	3.32%	6.80%	10.23%	0.0029%
ASSURANT INC	AIZ	\$ 5,426.37	N/A	2.13%	N/A	N/A	N/A
ARTHUR J GALLAGHER & CO	AJG	\$ 11,440.96	0.05%	2.47%	9.95%	12.54%	0.0059%
AKAMAI TECHNOLOGIES INC	AKAM	\$ 11,001.63	0.05%	0.00%	12.53%	12.53%	0.0057%
ALBEMARLE CORP	ALB	\$ 14,131.29	0.06%	1.00%	12.40%	13.46%	0.0079%
ALIGN TECHNOLOGY INC	ALGN	\$ 17,814.68	N/A	0.00%	N/A	N/A	N/A
ALASKA AIR GROUP INC	ALK	\$ 9,045.03	0.04%	1.63%	-0.18%	1.45%	0.0005%
ALLSTATE CORP	ALL	\$ 37,695.60	0.16%	1.40%	16.27%	17.78%	0.0278%
ALLEGION PLC	ALLE	\$ 7,561.59	0.03%	0.75%	12.99%	13.78%	0.0043%
ALEXION PHARMACEUTICALS INC	ALXN	\$ 26,717.56	0.11%	0.00%	19.89%	19.89%	0.0220%
APPLIED MATERIALS INC	AMAT	\$ 54,000.14	0.22%	0.79%	11.35%	12.18%	0.0272%
ADVANCED MICRO DEVICES	AMD	\$ 9,918.13	0.04%	0.00%	8.00%	8.00%	0.0033%
AMETEK INC	AME	\$ 16,749.06	0.07%	0.51%	11.75%	12.29%	0.0085%
AFFILIATED MANAGERS GROUP	AMG	\$ 11,408.19	0.05%	0.39%	14.89%	15.31%	0.0072%
AMGEN INC	AMGN	\$ 126,235.85	0.52%	2.60%	4.80%	7.45%	0.0390%
AMERIPRISE FINANCIAL INC	AMP	\$ 25,069.70	0.10%	1.92%	8.80%	10.80%	0.0112%
AMERICAN TOWER CORP	AMT	\$ 61,184.94	0.25%	1.84%	19.71%	21.73%	0.0550%
AMAZON.COM INC	AMZN	\$ 563,535.05	2.33%	0.00%	25.64%	25.64%	0.5983%
ANDEAVOR	ANDV	\$ 17,836.73	0.07%	2.00%	18.80%	20.99%	0.0155%
ANSYS INC	ANSS	\$ 12,524.56	0.05%	0.00%	10.38%	10.38%	0.0054%
ANTHEM INC	ANTM	\$ 57,773.68	0.24%	1.19%	11.25%	12.50%	0.0299%
AON PLC	AON	\$ 33,486.29	0.14%	1.05%	11.06%	12.17%	0.0169%
SMITH (A.O.) CORP	AOS	\$ 10,535.84	0.04%	0.91%	15.00%	15.98%	0.0070%
APACHE CORP	APA	\$ 16,083.40	0.07%	2.37%	-17.48%	-15.32%	-0.0102%
ANADARKO PETROLEUM CORP	APC	\$ 29,349.53	0.12%	0.37%	-1.91%	-1.54%	-0.0019%
AIR PRODUCTS & CHEMICALS INC	APD	\$ 35,903.52	0.15%	2.33%	10.30%	12.75%	0.0190%
AMPHENOL CORP-CL A	APH	\$ 26,808.77	0.11%	0.77%	12.22%	13.04%	0.0145%
APTIV PLC	APTIV	\$ 22,551.19	0.09%	1.35%	10.43%	11.84%	0.0111%
ALEXANDRIA REAL ESTATE EQUIT	ARE	\$ 12,499.79	0.05%	2.61%	7.30%	10.01%	0.0052%
ARCONIC INC	ARNC	\$ 13,116.08	0.05%	1.17%	17.50%	18.78%	0.0102%
ACTIVISION BLIZZARD INC	ATVI	\$ 47,876.22	0.20%	0.47%	13.93%	14.43%	0.0286%
AVALONBAY COMMUNITIES INC	AVB	\$ 24,636.26	0.10%	3.18%	6.45%	9.73%	0.0099%
BROADCOM LTD	AVGO	\$ 105,165.22	0.44%	2.72%	15.00%	17.93%	0.0781%
AVERY DENNISON CORP	AVY	\$ 10,111.86	0.04%	1.55%	7.80%	9.41%	0.0039%
AMERICAN WATER WORKS CO INC	AWK	\$ 16,319.57	0.07%	1.78%	8.53%	10.38%	0.0070%
AMERICAN EXPRESS CO	AXP	\$ 86,200.71	0.36%	1.35%	10.17%	11.59%	0.0414%
ACUITY BRANDS INC	AYI	\$ 7,418.91	0.03%	0.30%	11.00%	11.31%	0.0035%
AUTOZONE INC	AZO	\$ 19,458.11	0.08%	0.00%	12.90%	12.90%	0.0104%
BOEING CO/THE	BA	\$ 175,642.06	0.73%	1.93%	16.27%	18.36%	0.1335%
BANK OF AMERICA CORP	BAC	\$ 307,911.72	1.27%	1.34%	12.65%	14.07%	0.1794%
BAXTER INTERNATIONAL INC	BAX	\$ 35,217.94	0.15%	0.97%	13.45%	14.48%	0.0211%
BB&T CORP	BBT	\$ 39,225.15	0.16%	2.53%	8.65%	11.29%	0.0183%
BEST BUY CO INC	BBY	\$ 20,015.60	0.08%	1.97%	12.65%	14.74%	0.0122%
CR BARD INC	BCR	\$ 24,144.87	0.10%	0.31%	8.73%	9.06%	0.0091%
BECTON DICKINSON AND CO	BDX	\$ 57,028.85	0.24%	1.43%	12.80%	14.32%	0.0338%
FRANKLIN RESOURCES INC	BEN	\$ 24,000.83	0.10%	1.99%	10.00%	12.09%	0.0120%
BROWN-FORMAN CORP-CLASS B	BF/B	\$ 26,150.71	0.11%	1.12%	10.73%	11.91%	0.0129%
BRIGHTHOUSE FINANCIAL INC	BHF	\$ 7,023.49	0.03%	0.00%	8.00%	8.00%	0.0023%
BAKER HUGHES A GE CO	BHGE	\$ 36,236.87	0.15%	1.77%	7.92%	9.76%	0.0146%
BIOGEN INC	BIIB	\$ 67,370.21	0.28%	0.00%	5.21%	5.21%	0.0145%
BANK OF NEW YORK MELLON CORP	BK	\$ 55,153.84	0.23%	1.60%	9.07%	10.74%	0.0245%
BLACKROCK INC	BLK	\$ 83,179.41	0.34%	1.95%	14.03%	16.12%	0.0555%
BALL CORP	BLL	\$ 13,249.63	0.05%	0.85%	1.27%	2.13%	0.0012%
BRISTOL-MYERS SQUIBB CO	BMJ	\$ 100,296.96	0.42%	2.54%	8.07%	10.71%	0.0445%
BERKSHIRE HATHAWAY INC-CL B	BRK/B	\$ 489,248.72	2.03%	0.00%	6.60%	6.60%	0.1337%
BOSTON SCIENTIFIC CORP	BSX	\$ 34,041.52	0.14%	0.00%	10.37%	10.37%	0.0146%
BORGWARNER INC	BWA	\$ 10,771.74	0.04%	1.13%	7.20%	8.37%	0.0037%
BOSTON PROPERTIES INC	BXP	\$ 20,066.52	0.08%	2.32%	5.56%	7.94%	0.0066%
CITIGROUP INC	C	\$ 196,740.19	0.81%	1.31%	12.40%	13.79%	0.1123%
CA INC	CA	\$ 13,929.12	0.06%	3.09%	2.97%	6.10%	0.0035%
CONAGRA BRANDS INC	CAG	\$ 15,388.12	0.06%	2.23%	8.80%	11.13%	0.0071%
CARDINAL HEALTH INC	CAH	\$ 19,275.77	0.08%	3.02%	12.30%	15.51%	0.0124%
CATERPILLAR INC	CAT	\$ 93,749.63	0.39%	2.01%	10.00%	12.11%	0.0470%
CHUBB LTD	CB	\$ 67,836.76	0.28%	1.93%	8.73%	10.74%	0.0302%
CBRE GROUP INC - A	CBG	\$ 14,701.98	0.06%	0.00%	9.35%	9.35%	0.0057%
CBOE GLOBAL MARKETS INC	CBOE	\$ 14,135.71	0.06%	0.83%	22.16%	23.09%	0.0135%
CBS CORP-CLASS B NON VOTING	CBS	\$ 23,639.87	0.10%	1.25%	14.98%	16.32%	0.0160%
CROWN CASTLE INTL CORP	CCI	\$ 45,100.60	0.19%	3.52%	21.03%	24.92%	0.0465%
CARNIVAL CORP	CCL	\$ 47,583.29	0.20%	2.66%	12.49%	15.31%	0.0302%
CADENCE DESIGN SYS INC	CDNS	\$ 11,808.30	0.05%	0.00%	12.00%	12.00%	0.0059%
CELGENE CORP	CELG	\$ 82,164.39	0.34%	0.00%	18.95%	18.95%	0.0645%
CERNER CORP	CERN	\$ 22,401.44	0.09%	0.00%	13.40%	13.40%	0.0124%

CF INDUSTRIES HOLDINGS INC	CF	\$	9,922.88	0.04%	2.82%	6.00%	8.91%	0.0037%
CITIZENS FINANCIAL GROUP	CFG	\$	20,653.80	0.09%	1.54%	15.14%	16.80%	0.0144%
CHURCH & DWIGHT CO INC	CHD	\$	12,538.75	0.05%	1.52%	9.01%	10.60%	0.0055%
CHESAPEAKE ENERGY CORP	CHK	\$	3,598.40	0.01%	0.00%	-13.30%	-13.30%	-0.0020%
C.H. ROBINSON WORLDWIDE INC	CHRW	\$	12,419.62	0.05%	2.04%	9.28%	11.41%	0.0059%
CHARTER COMMUNICATIONS INC-A	CHTR	\$	93,788.82	0.39%	0.00%	22.44%	22.44%	0.0872%
CIGNA CORP	CI	\$	50,071.78	0.21%	0.02%	12.10%	12.12%	0.0251%
CINCINNATI FINANCIAL CORP	CINF	\$	12,300.46	N/A	2.89%	N/A	N/A	N/A
COLGATE-PALMOLIVE CO	CL	\$	66,253.04	0.27%	2.11%	7.53%	9.72%	0.0267%
CLOROX COMPANY	CLX	\$	19,178.32	0.08%	2.25%	6.35%	8.67%	0.0069%
COMERICA INC	CMA	\$	15,097.56	0.06%	1.26%	29.00%	30.44%	0.0190%
COMCAST CORP-CLASS A	CMCSA	\$	187,184.56	0.78%	1.57%	11.35%	13.01%	0.1008%
CME GROUP INC	CME	\$	49,700.01	0.21%	4.01%	12.29%	16.55%	0.0341%
CHIPOTLE MEXICAN GRILL INC	CMG	\$	8,160.16	0.03%	0.00%	46.98%	46.98%	0.0159%
CUMMINS INC	CMI	\$	29,316.50	0.12%	2.37%	10.92%	13.42%	0.0163%
CMS ENERGY CORP	CMS	\$	13,342.55	0.06%	2.80%	6.28%	9.17%	0.0051%
CENTENE CORP	CNC	\$	17,408.51	0.07%	0.00%	13.27%	13.27%	0.0096%
CENTERPOINT ENERGY INC	CNP	\$	12,224.11	0.05%	3.79%	7.36%	11.29%	0.0057%
CAPITAL ONE FINANCIAL CORP	COF	\$	48,270.83	0.20%	1.61%	7.25%	8.92%	0.0178%
CABOT OIL & GAS CORP	COG	\$	13,227.74	0.05%	0.59%	41.22%	41.93%	0.0230%
ROCKWELL COLLINS INC	COL	\$	22,213.70	0.09%	1.09%	10.55%	11.70%	0.0108%
COOPER COS INC/THE	COO	\$	10,645.84	0.04%	0.04%	9.75%	9.79%	0.0043%
CONOCOPHILLIPS	COP	\$	65,621.86	0.27%	1.93%	6.00%	7.99%	0.0217%
COSTCO WHOLESALE CORP	COST	\$	81,726.38	0.34%	1.12%	10.03%	11.20%	0.0379%
COTY INC-CL A	COTY	\$	14,907.39	0.06%	2.49%	17.13%	19.83%	0.0122%
CAMPBELL SOUP CO	CPB	\$	14,462.20	0.06%	3.06%	4.49%	7.62%	0.0046%
SALESFORCE.COM INC	CRM	\$	73,840.73	0.31%	0.00%	28.30%	28.30%	0.0865%
CISCO SYSTEMS INC	CSCO	\$	189,340.73	0.78%	3.19%	4.80%	8.07%	0.0633%
CSRA INC	CSRA	\$	4,900.30	0.02%	1.34%	7.30%	8.69%	0.0018%
CSX CORP	CSX	\$	49,163.71	0.20%	1.42%	13.04%	14.55%	0.0296%
CINTAS CORP	CTAS	\$	16,565.41	0.07%	1.02%	13.18%	14.26%	0.0098%
CENTURYLINK INC	CTL	\$	17,830.98	0.07%	12.95%	-14.57%	-2.56%	-0.0019%
COGNIZANT TECH SOLUTIONS-A	CTSH	\$	41,876.63	0.17%	0.70%	14.20%	14.95%	0.0259%
CITRIX SYSTEMS INC	CTXS	\$	13,259.44	0.05%	0.00%	4.85%	4.85%	0.0027%
CVS HEALTH CORP	CVS	\$	73,441.95	0.30%	2.73%	12.03%	14.93%	0.0454%
CHEVRON CORP	CVX	\$	237,782.62	0.98%	3.46%	42.60%	46.80%	0.4607%
CONCHO RESOURCES INC	CXO	\$	22,337.12	N/A	0.00%	N/A	N/A	N/A
DOMINION ENERGY INC	D	\$	52,164.52	0.22%	3.75%	5.98%	9.84%	0.0212%
DELTA AIR LINES INC	DAL	\$	39,926.50	0.17%	1.81%	4.75%	6.61%	0.0109%
DEERE & CO	DE	\$	50,489.35	0.21%	1.58%	9.00%	10.65%	0.0223%
DISCOVER FINANCIAL SERVICES	DFS	\$	27,951.24	0.12%	1.68%	6.40%	8.13%	0.0094%
DOLLAR GENERAL CORP	DG	\$	25,258.13	0.10%	1.11%	8.28%	9.43%	0.0099%
QUEST DIAGNOSTICS INC	DGX	\$	13,424.13	0.06%	1.82%	7.87%	9.76%	0.0054%
DR HORTON INC	DHI	\$	19,202.47	0.08%	0.94%	17.20%	18.22%	0.0145%
DANAHER CORP	DHR	\$	64,566.08	0.27%	0.27%	7.98%	8.57%	0.0229%
WALT DISNEY CO/THE	DIS	\$	162,373.66	0.67%	1.59%	8.73%	10.39%	0.0699%
DISCOVERY COMMUNICATIONS-A	DISCA	\$	12,587.98	0.05%	0.00%	5.05%	5.05%	0.0026%
DISH NETWORK CORP-A	DISH	\$	22,268.57	0.09%	0.00%	-5.75%	-5.75%	-0.0053%
DIGITAL REALTY TRUST INC	DLR	\$	23,673.65	0.10%	3.27%	7.26%	10.65%	0.0104%
DOLLAR TREE INC	DLTR	\$	25,442.83	0.11%	0.00%	13.98%	13.98%	0.0147%
DOVER CORP	DOV	\$	15,733.34	0.07%	1.81%	14.73%	16.68%	0.0109%
DR PEPPER SNAPPLE GROUP INC	DPS	\$	17,523.35	0.07%	2.39%	0.07%	8.58%	0.0080%
DUKE REALTY CORP	DRE	\$	9,690.59	0.04%	5.95%	3.71%	9.77%	0.0039%
DARDEN RESTAURANTS INC	DRI	\$	11,875.11	0.05%	2.63%	9.50%	12.25%	0.0060%
DTE ENERGY COMPANY	DTE	\$	19,636.06	0.08%	3.04%	5.78%	8.90%	0.0072%
DUKE ENERGY CORP	DUK	\$	58,877.00	0.24%	4.19%	5.02%	9.32%	0.0227%
DAVITA INC	DVA	\$	13,243.43	0.05%	0.00%	1.45%	1.45%	0.0008%
DEVON ENERGY CORP	DVN	\$	21,755.70	0.09%	0.58%	16.95%	17.58%	0.0158%
DOWDUPONT INC	DWDP	\$	166,654.11	0.69%	2.16%	7.43%	9.66%	0.0667%
DXC TECHNOLOGY CO	DXC	\$	27,072.00	0.11%	0.74%	15.00%	15.80%	0.0177%
ELECTRONIC ARTS INC	EA	\$	32,350.65	0.13%	0.00%	13.78%	13.78%	0.0185%
EBAY INC	EBAY	\$	39,422.11	0.16%	0.00%	8.93%	8.93%	0.0146%
ECOLAB INC	ECL	\$	38,766.52	0.16%	1.13%	12.95%	14.15%	0.0227%
CONSOLIDATED EDISON INC	ED	\$	26,340.34	0.11%	3.25%	2.00%	5.28%	0.0058%
EQUIFAX INC	EFX	\$	14,159.76	0.06%	1.32%	10.00%	11.39%	0.0067%
EDISON INTERNATIONAL	EIX	\$	20,604.30	0.09%	3.51%	6.16%	9.78%	0.0083%
ESTEE LAUDER COMPANIES-CL A	EL	\$	46,854.49	0.19%	1.18%	12.00%	13.25%	0.0257%
EASTMAN CHEMICAL CO	EMN	\$	13,315.55	0.06%	2.20%	7.30%	9.58%	0.0053%
EMERSON ELECTRIC CO	EMR	\$	44,728.42	0.19%	2.80%	8.59%	11.50%	0.0213%
EOG RESOURCES INC	EOG	\$	62,395.64	0.26%	0.62%	-10.86%	-10.27%	-0.0265%
EQUINIX INC	EQIX	\$	35,457.08	0.15%	1.77%	25.52%	27.52%	0.0404%
EQUITY RESIDENTIAL	EQR	\$	23,434.50	0.10%	3.16%	5.30%	8.54%	0.0083%
EQT CORP	EQT	\$	14,669.16	0.06%	0.21%	17.50%	17.73%	0.0108%
EVERSOURCE ENERGY	ES	\$	20,020.85	0.08%	3.01%	6.10%	9.20%	0.0076%
EXPRESS SCRIPTS HOLDING CO	ESRX	\$	42,274.08	0.18%	0.00%	11.33%	11.33%	0.0198%
ESSEX PROPERTY TRUST INC	ESS	\$	15,939.36	0.07%	2.90%	6.23%	9.23%	0.0061%
E*TRADE FINANCIAL CORP	ETFC	\$	13,284.48	0.06%	0.00%	17.57%	17.57%	0.0097%
EATON CORP PLC	ETN	\$	34,811.81	0.14%	3.03%	9.82%	13.00%	0.0187%
ENTERGY CORP	ETR	\$	14,670.66	0.06%	4.32%	0.14%	4.46%	0.0027%
ENVISION HEALTHCARE CORP	EVHC	\$	4,181.27	0.02%	0.00%	2.74%	2.74%	0.0005%
EDWARDS LIFESCIENCES CORP	EW	\$	23,851.68	0.10%	0.00%	16.68%	16.68%	0.0165%
EXELON CORP	EXC	\$	37,837.06	0.16%	3.34%	1.13%	4.49%	0.0070%
EXPEDITORS INTL WASH INC	EXPD	\$	11,495.60	0.05%	1.30%	8.50%	9.85%	0.0047%
EXPEDIA INC	EXPE	\$	18,235.22	0.08%	0.96%	14.60%	15.63%	0.0118%
EXTRA SPACE STORAGE INC	EXR	\$	11,019.38	0.05%	3.59%	6.82%	10.53%	0.0048%
FORD MOTOR CO	F	\$	49,614.05	0.21%	4.97%	-7.57%	-2.79%	-0.0057%
FASTENAL CO	FAST	\$	15,717.38	0.07%	2.35%	15.75%	18.28%	0.0119%
FACEBOOK INC-A	FB	\$	514,985.30	2.13%	0.00%	28.81%	28.81%	0.6143%
FORTUNE BRANDS HOME & SECURI	FBHS	\$	10,389.24	0.04%	1.05%	11.61%	12.72%	0.0055%
FREEMPORT-MCMORAN INC	FCX	\$	27,446.32	0.11%	0.00%	26.81%	26.81%	0.0305%
FEDEX CORP	FDX	\$	66,849.18	0.28%	0.80%	13.65%	14.50%	0.0401%
FIRSTENERGY CORP	FE	\$	13,621.55	0.06%	4.70%	-1.25%	3.42%	0.0019%
F5 NETWORKS INC	FFIV	\$	8,213.52	0.03%	0.00%	8.93%	8.93%	0.0030%
FIDELITY NATIONAL INFO SERV	FIS	\$	31,413.69	0.13%	1.22%	12.00%	13.29%	0.0173%
FISERV INC	FISV	\$	27,327.41	0.11%	0.00%	10.80%	10.80%	0.0122%
FIFTH THIRD BANCORP	FITB	\$	21,407.34	0.09%	1.98%	6.20%	8.24%	0.0073%
FOOT LOCKER INC	FL	\$	5,682.12	0.02%	2.50%	0.90%	3.41%	0.0008%
FLIR SYSTEMS INC	FLIR	\$	6,460.33	N/A	1.20%	N/A	N/A	N/A
FLUOR CORP	FLR	\$	7,224.56	0.03%	1.66%	8.46%	10.18%	0.0030%
FLOWSERVE CORP	FLS	\$	5,503.65	0.02%	1.81%	8.99%	10.87%	0.0025%
FMC CORP	FMC	\$	12,709.22	0.05%	0.71%	12.80%	13.55%	0.0071%
TWENTY-FIRST CENTURY FOX-A	FOXA	\$	63,640.46	0.26%	1.16%	8.53%	9.73%	0.0256%
FEDERAL REALTY INVS TRUST	FRT	\$	9,634.95	0.04%	2.99%	6.17%	9.25%	0.0037%
TECHNIPFMC PLC	FTI	\$	14,603.89	0.06%	0.94%	4.56%	5.52%	0.0033%
FORTIVE CORP	FTV	\$	25,145.89	0.10%	0.38%	10.24%	10.64%	0.0111%
GENERAL DYNAMICS CORP	GD	\$	60,746.69	0.25%	1.62%	8.48%	10.17%	0.0256%
GENERAL ELECTRIC CO	GE	\$	151,327.88	0.63%	5.13%	8.17%	13.51%	0.0846%



GGP INC	GGP	\$	22,126.40	0.09%	3.88%	4.58%	8.55%	0.0078%
GILEAD SCIENCES INC	GILD	\$	93,581.11	0.39%	2.89%	3.00%	5.93%	0.0230%
GENERAL MILLS INC	GIS	\$	33,738.61	0.14%	3.35%	7.93%	11.42%	0.0159%
CORNING INC	GLW	\$	27,801.15	0.12%	1.95%	9.65%	11.70%	0.0135%
GENERAL MOTORS CO	GM	\$	58,222.51	0.24%	3.72%	8.94%	12.83%	0.0309%
ALPHABET INC-CL A	GOOGL	\$	729,293.54	3.02%	0.00%	17.97%	17.97%	0.5427%
GENUINE PARTS CO	GPC	\$	13,929.75	0.06%	2.84%	9.47%	12.45%	0.0072%
GLOBAL PAYMENTS INC	GPN	\$	15,952.44	0.07%	0.04%	14.50%	14.55%	0.0096%
GAP INC/THE	GPS	\$	13,244.47	0.05%	2.72%	6.83%	9.64%	0.0053%
GARMIN LTD	GRMN	\$	11,169.38	0.05%	3.42%	5.78%	9.30%	0.0043%
GOLDMAN SACHS GROUP INC	GS	\$	99,815.71	0.41%	1.14%	9.93%	11.13%	0.0460%
GOODYEAR TIRE & RUBBER CO	GT	\$	7,958.83	N/A	1.29%	N/A	N/A	N/A
WW GRAINGER INC	GWV	\$	13,462.28	0.06%	2.14%	11.80%	14.06%	0.0078%
HALLIBURTON CO	HAL	\$	42,641.07	0.18%	1.47%	74.00%	76.02%	0.1342%
HASBRO INC	HAS	\$	11,320.86	0.05%	2.51%	9.70%	12.33%	0.0058%
HUNTINGTON BANCSHARES INC	HBAN	\$	15,738.58	0.07%	2.40%	10.27%	12.80%	0.0083%
HANESBRANDS INC	HBI	\$	7,623.46	0.03%	2.87%	8.56%	11.55%	0.0036%
HCA HEALTHCARE INC	HCA	\$	31,099.97	0.13%	0.00%	11.08%	11.08%	0.0143%
WELLTOWER INC	HCN	\$	23,617.66	0.10%	5.47%	2.21%	7.73%	0.0076%
HCP INC	HCP	\$	12,234.35	0.05%	5.68%	-3.91%	1.66%	0.0008%
HOME DEPOT INC	HD	\$	221,323.40	0.92%	1.88%	14.01%	16.03%	0.1469%
HESS CORP	HES	\$	15,083.78	0.06%	2.17%	-14.90%	-12.89%	-0.0081%
HARTFORD FINANCIAL SVCS GRP	HIG	\$	20,076.13	0.08%	1.70%	9.50%	11.28%	0.0094%
HILTON WORLDWIDE HOLDINGS IN	HLT	\$	25,551.32	0.11%	0.75%	16.88%	17.69%	0.0187%
HARLEY-DAVIDSON INC	HOG	\$	8,562.86	0.04%	2.89%	7.95%	10.96%	0.0039%
HOLOGIC INC	HOLX	\$	11,785.47	0.05%	0.00%	8.82%	8.82%	0.0043%
HONEYWELL INTERNATIONAL INC	HON	\$	116,833.14	0.48%	1.77%	8.82%	10.67%	0.0516%
HELMERICH & PAYNE	HP	\$	7,020.26	N/A	4.33%	N/A	N/A	N/A
HEWLETT PACKARD ENTERPRISE	HPE	\$	22,888.20	0.09%	2.03%	3.18%	5.24%	0.0050%
HP INC	HPQ	\$	34,566.25	0.14%	2.68%	5.93%	8.70%	0.0124%
H&R BLOCK INC	HRB	\$	5,481.79	0.02%	3.66%	11.00%	14.86%	0.0034%
HORMEL FOODS CORP	HRL	\$	19,271.60	0.08%	2.06%	6.15%	8.27%	0.0066%
HARRIS CORP	HRS	\$	16,884.76	N/A	1.61%	N/A	N/A	N/A
HENRY SCHEIN INC	HSIC	\$	10,967.97	0.05%	0.00%	9.65%	9.65%	0.0044%
HOST HOTELS & RESORTS INC	HST	\$	14,690.75	0.06%	4.09%	3.80%	7.96%	0.0048%
HERSHEY CO/THE	HSY	\$	23,916.03	0.10%	2.25%	9.73%	12.10%	0.0120%
HUMANA INC	HUM	\$	35,439.30	0.15%	0.64%	11.71%	12.40%	0.0182%
INTL BUSINESS MACHINES CORP	IBM	\$	142,034.91	0.59%	3.85%	3.77%	7.69%	0.0452%
INTERCONTINENTAL EXCHANGE IN	ICE	\$	41,279.45	0.17%	1.14%	11.49%	12.69%	0.0217%
IDEXX LABORATORIES INC	IDXX	\$	13,639.26	0.06%	0.00%	11.16%	11.16%	0.0063%
INTL FLAVORS & FRAGRANCES	IFF	\$	12,052.70	0.05%	0.00%	5.10%	5.10%	0.0025%
ILLUMINA INC	ILMN	\$	31,899.54	0.13%	0.00%	14.70%	14.70%	0.0194%
INCYTE CORP	INCY	\$	19,987.34	0.08%	0.00%	40.42%	40.42%	0.0335%
IHS MARKIT LTD	INFO	\$	18,010.03	0.07%	0.00%	13.06%	13.06%	0.0097%
INTEL CORP	INTC	\$	216,028.80	0.89%	2.34%	8.56%	11.00%	0.0984%
INTUIT INC	INTU	\$	40,336.44	0.17%	0.99%	14.82%	15.88%	0.0265%
INTERNATIONAL PAPER CO	IP	\$	23,925.06	0.10%	3.19%	7.18%	10.48%	0.0104%
INTERPUBLIC GROUP OF COS INC	IPG	\$	7,834.35	0.03%	3.57%	4.57%	8.21%	0.0027%
IQVIA HOLDINGS INC	IQV	\$	20,362.01	0.08%	0.00%	14.64%	14.64%	0.0123%
INGERSOLL-RAND PLC	IR	\$	22,285.71	0.09%	1.88%	9.90%	11.87%	0.0110%
IRON MOUNTAIN INC	IRM	\$	10,616.55	N/A	5.63%	N/A	N/A	N/A
INTUITIVE SURGICAL INC	ISRG	\$	40,890.74	0.17%	0.00%	11.83%	11.83%	0.0200%
GARTNER INC	IT	\$	11,163.72	0.05%	0.00%	17.50%	17.50%	0.0081%
ILLINOIS TOOL WORKS	ITW	\$	57,162.64	0.24%	1.66%	9.79%	11.54%	0.0273%
INVESCO LTD	IVZ	\$	14,874.65	0.06%	3.17%	13.39%	16.77%	0.0103%
HUNT (JB) TRANSPRT SVCS INC	JBHT	\$	12,619.27	0.05%	0.80%	13.40%	14.25%	0.0074%
JOHNSON CONTROLS INTERNATION	JCI	\$	35,268.33	0.15%	2.83%	11.93%	14.93%	0.0218%
JACOBS ENGINEERING GROUP INC	JEC	\$	7,949.59	0.03%	0.91%	10.70%	11.65%	0.0038%
JOHNSON & JOHNSON	JNJ	\$	375,360.58	1.55%	2.38%	7.10%	9.56%	0.1486%
JUNIPER NETWORKS INC	JNPR	\$	10,685.46	0.04%	1.42%	5.60%	7.06%	0.0031%
JPMORGAN CHASE & CO	JPM	\$	371,052.45	1.54%	1.98%	8.87%	10.94%	0.1680%
NORDSTROM INC	JWN	\$	7,892.67	0.03%	3.18%	9.67%	13.00%	0.0042%
KELLOGG CO	K	\$	23,485.23	0.10%	3.12%	6.31%	9.52%	0.0093%
KEYCORP	KEY	\$	21,690.81	0.09%	1.89%	12.32%	14.33%	0.0129%
KRAFT HEINZ CO/THE	KHC	\$	94,748.06	0.39%	3.16%	7.01%	10.28%	0.0403%
KIMCO REALTY CORP	KIM	\$	7,725.61	0.03%	6.07%	17.15%	23.73%	0.0076%
KLA-TENCOR CORP	KLAC	\$	16,465.30	0.07%	2.20%	8.05%	10.34%	0.0070%
KIMBERLY-CLARK CORP	KMB	\$	42,443.04	0.18%	3.19%	6.03%	9.31%	0.0164%
KINDER MORGAN INC	KMI	\$	40,354.64	0.17%	2.77%	15.75%	18.73%	0.0313%
CARMAX INC	KMX	\$	11,692.83	0.05%	0.00%	12.37%	12.37%	0.0060%
COCA-COLA CO/THE	KO	\$	195,479.42	0.81%	3.22%	5.58%	8.89%	0.0719%
MICHAEL KORS HOLDINGS LTD	KORS	\$	9,573.35	0.04%	0.00%	14.39%	14.39%	0.0057%
KROGER CO	KR	\$	24,193.38	0.10%	1.84%	3.09%	4.96%	0.0050%
KOHL'S CORP	KSS	\$	9,110.90	0.04%	4.06%	4.90%	9.06%	0.0034%
KANSAS CITY SOUTHERN	KSU	\$	10,894.81	0.05%	1.33%	14.85%	16.28%	0.0073%
LOEWS CORP	L	\$	16,841.66	N/A	0.50%	N/A	N/A	N/A
L BRANDS INC	LB	\$	16,998.01	0.07%	3.99%	9.20%	13.37%	0.0094%
LEGGETT & PLATT INC	LEG	\$	6,291.64	0.03%	2.95%	17.40%	20.61%	0.0054%
LENNAR CORP-A	LEN	\$	14,585.15	0.06%	0.25%	12.46%	12.73%	0.0077%
LABORATORY CRP OF AMER HLDGS	LH	\$	16,238.12	0.07%	0.00%	10.50%	10.50%	0.0071%
LKQ CORP	LKQ	\$	12,568.83	0.05%	0.00%	15.70%	15.70%	0.0082%
L3 TECHNOLOGIES INC	LLL	\$	15,460.42	0.06%	1.59%	6.79%	8.42%	0.0054%
ELI LILLY & CO	LLY	\$	92,998.46	0.39%	2.49%	10.85%	13.47%	0.0519%
LOCKHEED MARTIN CORP	LMT	\$	92,056.01	0.38%	2.30%	10.63%	13.05%	0.0497%
LINCOLN NATIONAL CORP	LNC	\$	16,821.42	0.07%	1.55%	9.25%	10.87%	0.0076%
ALLIANT ENERGY CORP	LNT	\$	9,851.62	0.04%	2.96%	6.10%	9.14%	0.0037%
LOWE'S COS INC	LOW	\$	77,117.95	0.32%	1.69%	15.52%	17.34%	0.0554%
LAM RESEARCH CORP	LRCX	\$	29,809.45	0.12%	0.97%	2.50%	3.48%	0.0043%
LEUCADIA NATIONAL CORP	LUK	\$	9,437.67	0.04%	1.36%	18.00%	19.48%	0.0076%
SOUTHWEST AIRLINES CO	LUV	\$	38,837.22	0.16%	0.69%	6.98%	7.70%	0.0124%
LYONDELLBASELL INDU-CL A	LYB	\$	43,516.86	0.18%	3.23%	8.00%	11.36%	0.0205%
MACY'S INC	M	\$	7,672.03	0.03%	6.15%	2.97%	9.21%	0.0029%
MASTERCARD INC - A	MA	\$	160,239.33	0.66%	0.58%	17.85%	18.48%	0.1226%
MID-AMERICA APARTMENT COMM	MAA	\$	11,426.33	N/A	3.48%	N/A	N/A	N/A
MACERICH CO/THE	MAC	\$	9,245.96	0.04%	4.66%	7.36%	12.18%	0.0047%
MARRIOTT INTERNATIONAL -CL A	MAR	\$	49,484.62	0.20%	0.95%	14.16%	15.18%	0.0311%
MASCO CORP	MAS	\$	13,822.00	0.06%	0.93%	15.44%	16.44%	0.0094%
MATTEL INC	MAT	\$	5,286.56	0.02%	5.33%	9.73%	15.32%	0.0034%
MCDONALD'S CORP	MCD	\$	137,211.58	0.57%	2.22%	9.86%	12.19%	0.0693%
MICROCHIP TECHNOLOGY INC	MCHP	\$	20,555.61	0.09%	1.65%	14.18%	15.94%	0.0136%
MCKESSON CORP	MCK	\$	32,511.59	0.13%	0.83%	10.30%	11.18%	0.0150%
MOODY'S CORP	MCO	\$	28,208.27	0.12%	1.03%	8.00%	9.07%	0.0106%
MONDELEZ INTERNATIONAL INC-A	MDLZ	\$	63,959.83	0.26%	1.86%	11.64%	13.61%	0.0361%
MEDTRONIC PLC	MDT	\$	109,294.96	0.45%	2.31%	5.96%	8.33%	0.0377%
METLIFE INC	MET	\$	53,204.25	0.22%	3.16%	9.00%	12.31%	0.0271%
MGM RESORTS INTERNATIONAL	MGM	\$	18,903.36	0.08%	1.32%	7.47%	8.83%	0.0069%
MOHAWK INDUSTRIES INC	MHK	\$	20,509.90	0.08%	0.00%	7.95%	7.95%	0.0068%

MCCORMICK & CO-NON VTG SHRS	MKC	\$	13,329.40	0.06%	1.84%	9.70%	11.63%	0.0064%
MARTIN MARIETTA MATERIALS	MLM	\$	13,894.48	0.06%	0.78%	20.67%	21.52%	0.0124%
MARSH & MCLENNAN COS	MMC	\$	41,537.94	0.17%	1.76%	12.39%	14.26%	0.0245%
3M CO	MMM	\$	140,188.28	0.58%	2.00%	8.67%	10.75%	0.0624%
MONSTER BEVERAGE CORP	MNST	\$	35,693.24	0.15%	0.00%	20.30%	20.30%	0.0300%
ALTRIA GROUP INC	MO	\$	136,263.82	0.56%	3.60%	8.06%	11.81%	0.0666%
MONSANTO CO	MON	\$	51,476.72	0.21%	2.00%	8.10%	10.18%	0.0217%
MOSAIC CO/THE	MOS	\$	9,007.93	0.04%	2.34%	13.45%	15.95%	0.0059%
MARATHON PETROLEUM CORP	MPC	\$	32,225.43	0.13%	2.31%	13.28%	15.74%	0.0210%
MERCK & CO. INC.	MRK	\$	153,304.06	0.63%	3.13%	5.19%	8.40%	0.0533%
MARATHON OIL CORP	MRO	\$	14,384.80	0.06%	1.18%	5.00%	6.21%	0.0037%
MORGAN STANLEY	MS	\$	94,860.47	0.39%	1.73%	15.84%	17.71%	0.0695%
MICROSOFT CORP	MSFT	\$	659,906.05	2.73%	1.95%	10.32%	12.37%	0.3380%
MOTOROLA SOLUTIONS INC	MSI	\$	14,635.06	0.06%	2.16%	4.35%	6.56%	0.0040%
M & T BANK CORP	MTB	\$	25,736.62	0.11%	1.76%	9.02%	10.86%	0.0116%
METTLER-TOLEDO INTERNATIONAL	MTD	\$	15,846.78	0.07%	0.00%	12.16%	12.16%	0.0080%
MICRON TECHNOLOGY INC	MU	\$	47,547.67	0.20%	0.41%	1.60%	2.01%	0.0040%
MYLAN NV	MYL	\$	22,696.62	0.09%	0.00%	2.95%	2.95%	0.0028%
NAVIENT CORP	NAVI	\$	3,503.32	N/A	4.80%	N/A	N/A	N/A
NOBLE ENERGY INC	NBL	\$	14,179.74	0.06%	1.37%	3.72%	5.11%	0.0030%
NORWEGIAN CRUISE LINE HOLDIN	NCLH	\$	12,165.70	0.05%	0.00%	14.33%	14.33%	0.0072%
NASDAQ INC	NDAQ	\$	12,771.16	0.05%	1.91%	9.82%	11.82%	0.0063%
NEXTERA ENERGY INC	NEE	\$	73,471.40	0.30%	2.52%	7.11%	9.71%	0.0295%
NEWMONT MINING CORP	NEM	\$	20,010.78	0.08%	0.71%	-11.20%	-10.53%	-0.0087%
NETFLIX INC	NFLX	\$	83,067.07	0.34%	0.00%	39.74%	39.74%	0.1367%
NEWFIELD EXPLORATION CO	NFX	\$	6,293.98	0.03%	0.00%	12.36%	12.36%	0.0032%
NISOURCE INC	NI	\$	8,645.49	0.04%	2.72%	7.63%	10.46%	0.0037%
NIKE INC -CL B	NKE	\$	102,051.48	0.42%	1.22%	9.65%	10.92%	0.0462%
NIELSEN HOLDINGS PLC	NLSN	\$	12,964.52	0.05%	3.71%	9.50%	13.38%	0.0072%
NORTHROP GRUMMAN CORP	NOC	\$	53,426.44	0.22%	1.26%	7.81%	9.11%	0.0202%
NATIONAL OILWELL VARCO INC	NOV	\$	13,688.76	N/A	0.56%	N/A	N/A	N/A
NRG ENERGY INC	NRG	\$	9,017.96	0.04%	0.51%	23.53%	24.10%	0.0090%
NORFOLK SOUTHERN CORP	NSC	\$	41,462.96	0.17%	1.69%	14.23%	16.05%	0.0276%
NETAPP INC	NTAP	\$	14,758.92	0.06%	1.45%	12.15%	13.68%	0.0084%
NORTHERN TRUST CORP	NTRS	\$	22,717.10	0.09%	1.61%	11.68%	13.38%	0.0126%
NUCOR CORP	NUE	\$	20,213.14	0.08%	2.38%	12.00%	14.52%	0.0122%
NVIDIA CORP	NVDA	\$	117,261.00	0.49%	0.29%	12.00%	12.31%	0.0598%
NEWELL BRANDS INC	NWL	\$	15,144.09	0.06%	2.85%	4.42%	7.33%	0.0046%
NEWS CORP - CLASS A	NWSA	\$	9,522.16	0.04%	1.33%	19.03%	20.49%	0.0081%
REALTY INCOME CORP	O	\$	16,067.40	0.07%	4.44%	4.94%	9.50%	0.0063%
ONEOK INC	OKE	\$	20,494.69	0.08%	5.33%	12.75%	18.42%	0.0156%
OMNICOM GROUP	OMC	\$	16,789.69	0.07%	3.08%	4.80%	7.95%	0.0055%
ORACLE CORP	ORCL	\$	195,720.38	0.81%	1.52%	8.28%	9.86%	0.0799%
O'REILLY AUTOMOTIVE INC	ORLY	\$	20,452.56	0.08%	0.00%	15.33%	15.33%	0.0130%
OCCIDENTAL PETROLEUM CORP	OXY	\$	56,367.97	0.23%	4.15%	-3.12%	0.97%	0.0023%
PAYCHEX INC	PAYX	\$	24,453.35	0.10%	2.92%	8.50%	11.54%	0.0117%
PEOPLE'S UNITED FINANCIAL	PBCT	\$	6,474.91	0.03%	3.68%	2.00%	5.72%	0.0015%
PACCAR INC	PCAR	\$	24,992.45	0.10%	2.54%	7.50%	10.13%	0.0105%
P G & E CORP	PCG	\$	23,061.57	0.10%	4.46%	5.15%	9.73%	0.0093%
PRICELINE GROUP INC/THE	PCLN	\$	84,748.79	0.35%	0.00%	16.96%	16.96%	0.0595%
PATTERSON COS INC	PDCO	\$	3,425.99	0.01%	2.97%	5.57%	8.62%	0.0012%
PUBLIC SERVICE ENTERPRISE GP	PEG	\$	26,061.00	0.11%	3.34%	2.31%	5.69%	0.0061%
PEPSICO INC	PEP	\$	170,543.43	0.71%	2.63%	6.21%	8.93%	0.0630%
PFIZER INC	PFE	\$	215,896.82	0.89%	3.51%	7.02%	10.65%	0.0952%
PRINCIPAL FINANCIAL GROUP	PFG	\$	20,374.53	0.08%	2.64%	10.40%	13.18%	0.0111%
PROCTER & GAMBLE CO/THE	PG	\$	233,095.71	0.97%	3.07%	7.31%	10.50%	0.1013%
PROGRESSIVE CORP	PGR	\$	32,755.71	0.14%	1.48%	11.93%	13.50%	0.0183%
PARKER HANNIFIN CORP	PH	\$	26,589.26	0.11%	1.33%	11.49%	12.90%	0.0142%
PULTEGROUP INC	PHM	\$	9,774.42	0.04%	0.99%	20.04%	21.13%	0.0086%
PACKAGING CORP OF AMERICA	PKG	\$	11,373.95	0.05%	2.05%	8.50%	10.64%	0.0050%
PERKINELMER INC	PKI	\$	8,059.67	0.03%	0.38%	54.39%	54.88%	0.0183%
PROLOGIS INC	PLD	\$	34,161.90	0.14%	2.70%	7.49%	10.30%	0.0146%
PHILIP MORRIS INTERNATIONAL	PM	\$	164,095.85	0.68%	3.99%	9.39%	13.57%	0.0922%
PNC FINANCIAL SERVICES GROUP	PNC	\$	68,653.34	0.28%	1.82%	10.09%	11.99%	0.0341%
PENTAIR PLC	PNR	\$	12,824.41	0.05%	1.96%	8.18%	10.22%	0.0054%
PINNACLE WEST CAPITAL	PNW	\$	9,517.14	0.04%	3.14%	4.06%	7.27%	0.0029%
PPG INDUSTRIES INC	PPG	\$	29,727.88	0.12%	1.47%	7.65%	9.17%	0.0113%
PPL CORP	PPL	\$	21,297.72	0.09%	5.11%	-1.00%	4.08%	0.0036%
PERRIGO CO PLC	PRGO	\$	12,275.68	0.05%	0.73%	6.43%	7.19%	0.0037%
PRUDENTIAL FINANCIAL INC	PRU	\$	48,751.52	0.20%	2.66%	11.45%	14.26%	0.0288%
PUBLIC STORAGE	PSA	\$	36,374.61	0.15%	3.85%	4.87%	8.81%	0.0133%
PHILLIPS 66	PSX	\$	51,256.80	0.21%	2.70%	-18.87%	-16.42%	-0.0348%
PVH CORP	PVH	\$	10,555.47	0.04%	0.12%	10.69%	10.82%	0.0047%
QUANTA SERVICES INC	PWR	\$	6,070.14	N/A	0.00%	N/A	N/A	N/A
PRAXAIR INC	PX	\$	44,285.71	0.18%	2.04%	12.80%	14.97%	0.0274%
PIONEER NATURAL RESOURCES CO	PXD	\$	29,413.07	0.12%	0.05%	20.00%	20.05%	0.0244%
PAYPAL HOLDINGS INC	PYPL	\$	88,484.64	0.37%	0.00%	20.77%	20.77%	0.0761%
QUALCOMM INC	QCOM	\$	94,376.02	0.39%	3.67%	10.47%	14.32%	0.0560%
QORVO INC	QRVO	\$	8,468.06	0.04%	0.00%	14.02%	14.02%	0.0049%
ROYAL CARIBBEAN CRUISES LTD	RCL	\$	25,536.53	0.11%	1.79%	20.40%	22.37%	0.0237%
EVEREST RE GROUP LTD	RE	\$	9,087.08	0.04%	2.29%	10.00%	12.41%	0.0047%
REGENCY CENTERS CORP	REG	\$	11,779.71	0.05%	3.05%	9.27%	12.47%	0.0061%
REGENERON PHARMACEUTICALS	REGN	\$	40,393.00	0.17%	0.00%	16.95%	16.95%	0.0283%
REGIONS FINANCIAL CORP	RF	\$	20,044.31	0.08%	1.85%	11.88%	13.84%	0.0115%
ROBERT HALF INTL INC	RHI	\$	6,961.93	0.03%	1.72%	8.90%	10.70%	0.0031%
RED HAT INC	RHT	\$	21,251.36	0.09%	0.00%	17.25%	17.25%	0.0152%
RAYMOND JAMES FINANCIAL INC	RJF	\$	12,894.97	0.05%	1.12%	14.50%	15.70%	0.0084%
RALPH LAUREN CORP	RL	\$	8,427.51	0.03%	1.97%	1.58%	3.57%	0.0012%
RESMED INC	RMD	\$	12,017.84	0.05%	1.77%	13.40%	15.29%	0.0076%
ROCKWELL AUTOMATION INC	ROK	\$	25,209.78	0.10%	1.64%	10.85%	12.58%	0.0131%
ROPER TECHNOLOGIES INC	ROP	\$	26,511.81	0.11%	0.54%	12.83%	13.40%	0.0147%
ROSS STORES INC	ROST	\$	30,667.22	0.13%	0.80%	13.00%	13.85%	0.0176%
RANGE RESOURCES CORP	RRC	\$	4,233.26	0.02%	0.47%	29.16%	29.70%	0.0052%
REPUBLIC SERVICES INC	RSR	\$	22,596.92	0.09%	1.93%	10.78%	12.82%	0.0120%
RAYTHEON COMPANY	RTN	\$	54,304.99	0.22%	1.67%	8.71%	10.45%	0.0235%
SBA COMMUNICATIONS CORP	SBAC	\$	19,201.77	0.08%	0.00%	22.70%	22.70%	0.0180%
STARBUCKS CORP	SBUX	\$	81,711.40	0.34%	2.13%	15.90%	18.20%	0.0616%
SCANA CORP	SCG	\$	5,673.27	0.02%	6.16%	-1.39%	4.72%	0.0011%
SCHWAB (CHARLES) CORP	SCHW	\$	68,865.41	0.29%	0.62%	18.82%	19.50%	0.0556%
SEALED AIR CORP	SEE	\$	8,893.05	0.04%	1.29%	6.12%	7.45%	0.0027%
SHERWIN-WILLIAMS CO/THE	SHW	\$	38,344.45	0.16%	0.83%	11.24%	12.12%	0.0192%
SIGNET JEWELERS LTD	SIG	\$	3,422.18	0.01%	2.16%	4.17%	6.37%	0.0009%
JM SMUCKER CO/THE	SJM	\$	14,113.36	0.06%	2.49%	5.05%	7.60%	0.0044%
SCHLUMBERGER LTD	SLB	\$	93,352.79	0.39%	2.84%	44.17%	47.64%	0.1841%
SL GREEN REALTY CORP	SLG	\$	10,069.07	0.04%	3.09%	0.35%	3.45%	0.0014%
SNAP-ON INC	SNA	\$	9,936.35	0.04%	1.87%	10.75%	12.72%	0.0052%
SCRIPPS NETWORKS INTER-CL A	SNI	\$	11,092.20	0.05%	1.37%	5.75%	7.16%	0.0033%



SYNOPSIS INC	SNPS	\$	12,676.35	0.05%	0.00%	10.00%	10.00%	0.0052%
SOUTHERN CO/THE	SO	\$	48,064.71	0.20%	4.80%	4.10%	9.00%	0.0179%
SIMON PROPERTY GROUP INC	SPG	\$	53,387.16	0.22%	4.17%	6.67%	10.98%	0.0243%
S&P GLOBAL INC	SPGI	\$	43,197.00	0.18%	0.97%	10.00%	11.01%	0.0197%
STERICYCLE INC	SRCL	\$	5,804.50	0.02%	0.22%	8.83%	9.06%	0.0022%
SEMPRA ENERGY	SRE	\$	26,845.22	0.11%	3.07%	12.34%	15.60%	0.0173%
SUNTRUST BANKS INC	STI	\$	30,746.99	0.13%	2.05%	8.51%	10.65%	0.0136%
STATE STREET CORP	STT	\$	36,197.37	0.15%	1.64%	13.71%	15.47%	0.0232%
SEAGATE TECHNOLOGY	STX	\$	12,105.09	0.05%	6.13%	10.40%	16.84%	0.0084%
CONSTELLATION BRANDS INC-A	STZ	\$	44,685.32	0.19%	0.91%	16.51%	17.50%	0.0324%
STANLEY BLACK & DECKER INC	SWK	\$	26,022.25	0.11%	1.43%	11.00%	12.50%	0.0135%
SKYWORKS SOLUTIONS INC	SWKS	\$	17,393.85	0.07%	1.34%	13.08%	14.51%	0.0104%
SYNCHRONY FINANCIAL	SYF	\$	30,215.86	0.13%	1.45%	5.60%	7.09%	0.0089%
STRYKER CORP	SYK	\$	57,946.95	0.24%	1.10%	9.37%	10.52%	0.0252%
SYMANTEC CORP	SYMC	\$	17,396.70	0.07%	1.13%	10.30%	11.49%	0.0083%
SYSCO CORP	SYYS	\$	31,643.75	0.13%	2.25%	10.99%	13.37%	0.0175%
AT&T INC	T	\$	238,684.32	0.99%	5.06%	5.10%	10.29%	0.1017%
MOLSON COORS BREWING CO -B	TAP	\$	17,699.87	0.07%	2.00%	6.96%	9.02%	0.0066%
TRANSDIGM GROUP INC	TDG	\$	14,269.17	0.06%	0.00%	9.76%	9.76%	0.0058%
TE CONNECTIVITY LTD	TEL	\$	33,419.60	0.14%	1.72%	7.01%	8.79%	0.0122%
TARGET CORP	TGT	\$	35,468.12	0.15%	3.81%	-0.05%	3.75%	0.0055%
TIFFANY & CO	TIF	\$	12,918.64	0.05%	1.90%	10.48%	12.48%	0.0067%
TJX COMPANIES INC	TJX	\$	48,345.85	0.20%	1.58%	12.67%	14.35%	0.0287%
TORCHMARK CORP	TMK	\$	10,472.18	0.04%	0.65%	8.00%	8.68%	0.0038%
THERMO FISHER SCIENTIFIC INC	TMO	\$	76,141.00	0.32%	0.32%	12.50%	12.84%	0.0405%
TAPESTRY INC	TPR	\$	12,577.92	0.05%	3.11%	11.63%	14.92%	0.0078%
TRIPADVISOR INC	TRIP	\$	4,785.78	0.02%	0.00%	12.82%	12.82%	0.0025%
T ROWE PRICE GROUP INC	TROW	\$	25,425.59	0.11%	2.17%	12.94%	15.25%	0.0161%
TRAVELERS COS INC/THE	TRV	\$	37,124.11	0.15%	2.09%	6.95%	9.11%	0.0140%
TRACTOR SUPPLY COMPANY	TSCO	\$	9,385.94	0.04%	1.41%	12.40%	13.90%	0.0054%
TYSON FOODS INC-CL A	TSN	\$	32,368.73	0.13%	1.43%	9.60%	11.10%	0.0149%
TOTAL SYSTEM SERVICES INC	TSS	\$	14,540.40	0.06%	0.51%	12.75%	13.29%	0.0080%
TIME WARNER INC	TWX	\$	71,217.90	0.29%	1.80%	8.30%	10.18%	0.0300%
TEXAS INSTRUMENTS INC	TXN	\$	102,931.95	0.43%	2.03%	10.74%	12.88%	0.0549%
TEXTRON INC	TXT	\$	14,906.96	0.06%	0.15%	8.81%	8.97%	0.0055%
UNDER ARMOUR INC-CLASS A	UAA	\$	6,108.03	0.03%	0.00%	10.44%	10.44%	0.0026%
UNITED CONTINENTAL HOLDINGS	UAL	\$	20,504.79	0.08%	0.00%	-0.39%	-0.39%	-0.0003%
UDR INC	UDR	\$	10,313.96	0.04%	3.22%	5.95%	9.27%	0.0040%
UNIVERSAL HEALTH SERVICES-B	UHS	\$	10,758.26	0.04%	0.26%	7.97%	8.25%	0.0037%
ULTA BEAUTY INC	ULTA	\$	13,641.56	0.06%	0.00%	17.00%	17.00%	0.0096%
UNITEDHEALTH GROUP INC	UNH	\$	213,640.61	0.88%	1.31%	12.40%	13.79%	0.1220%
UNUM GROUP	UNM	\$	12,316.72	0.05%	1.56%	5.00%	6.60%	0.0034%
UNION PACIFIC CORP	UNP	\$	105,559.34	0.44%	1.82%	12.10%	14.03%	0.0613%
UNITED PARCEL SERVICE-CL B	UPS	\$	102,675.29	0.43%	2.78%	9.18%	12.09%	0.0514%
UNITED RENTALS INC	URI	\$	14,539.22	0.06%	0.00%	14.17%	14.17%	0.0085%
US BANCORP	USB	\$	88,915.54	0.37%	2.17%	7.93%	10.19%	0.0375%
UNITED TECHNOLOGIES CORP	UTX	\$	101,873.56	0.42%	2.19%	8.82%	11.11%	0.0469%
VISA INC-CLASS A SHARES	V	\$	258,391.72	1.07%	0.68%	16.33%	17.06%	0.1826%
VARIAN MEDICAL SYSTEMS INC	VAR	\$	10,165.00	0.04%	0.00%	6.40%	6.40%	0.0027%
VF CORP	VFC	\$	29,241.03	0.12%	2.32%	8.50%	10.92%	0.0132%
VIACOM INC-CLASS B	VIAB	\$	12,595.75	0.05%	2.65%	3.02%	5.71%	0.0030%
VALERO ENERGY CORP	VLO	\$	40,218.10	0.17%	3.05%	9.86%	13.06%	0.0217%
VULCAN MATERIALS CO	VMC	\$	16,981.36	0.07%	0.78%	23.30%	24.17%	0.0170%
VORNADO REALTY TRUST	VNO	\$	14,844.65	0.06%	3.26%	-0.72%	2.53%	0.0016%
VERISK ANALYTICS INC	VRSK	\$	15,810.42	0.07%	0.00%	8.58%	8.58%	0.0056%
VERISIGN INC	VRSN	\$	11,280.36	0.05%	0.00%	10.50%	10.50%	0.0049%
VERTEX PHARMACEUTICALS INC	VRTX	\$	37,900.02	0.16%	0.00%	70.84%	70.84%	0.1112%
VENTAS INC	VTR	\$	21,373.39	0.09%	5.19%	2.75%	8.01%	0.0071%
VERIZON COMMUNICATIONS INC	VZ	\$	215,924.80	0.89%	4.42%	2.21%	6.67%	0.0597%
WATERS CORP	WAT	\$	15,364.98	0.06%	0.00%	8.37%	8.37%	0.0053%
WALGREENS BOOTS ALLIANCE INC	WBA	\$	71,919.63	0.30%	2.25%	10.97%	13.34%	0.0397%
WESTERN DIGITAL CORP	WDC	\$	23,523.91	0.10%	2.54%	14.08%	16.80%	0.0164%
WEC ENERGY GROUP INC	WEC	\$	20,963.68	0.09%	3.13%	5.68%	8.90%	0.0077%
WELLS FARGO & CO	WFC	\$	298,754.94	1.24%	2.54%	22.22%	25.04%	0.3097%
WHIRLPOOL CORP	WHR	\$	12,118.94	0.05%	2.51%	7.23%	9.83%	0.0049%
WILLIS TOWERS WATSON PLC	WLTW	\$	19,896.93	0.08%	1.40%	13.15%	14.64%	0.0121%
WASTE MANAGEMENT INC	WM	\$	37,472.85	0.16%	1.97%	10.35%	12.43%	0.0193%
WILLIAMS COS INC	WMB	\$	25,207.50	0.10%	3.94%	2.30%	6.28%	0.0066%
WAL-MART STORES INC	WMT	\$	292,535.17	1.21%	2.07%	5.45%	7.57%	0.0917%
WESTROCK CO	WRK	\$	16,102.72	0.07%	2.73%	9.03%	11.89%	0.0079%
WESTERN UNION CO	WU	\$	8,731.15	0.04%	3.68%	8.00%	11.83%	0.0043%
WEYERHAEUSER CO	WY	\$	26,615.29	0.11%	3.53%	9.50%	13.20%	0.0145%
WYNDHAM WORLDWIDE CORP	WYN	\$	11,740.67	0.05%	2.01%	13.65%	15.80%	0.0077%
WYNN RESORTS LTD	WYNN	\$	17,328.11	0.07%	1.20%	32.40%	33.80%	0.0243%
CIMAREX ENERGY CO	XEC	\$	11,622.78	0.05%	0.26%	63.22%	63.57%	0.0306%
XCEL ENERGY INC	XEL	\$	24,428.47	0.10%	2.99%	5.97%	9.05%	0.0092%
XL GROUP LTD	XL	\$	9,001.49	0.04%	2.15%	20.45%	22.82%	0.0085%
XILINX INC	XLNX	\$	16,919.24	0.07%	2.08%	8.30%	10.47%	0.0073%
EXXON MOBIL CORP	XOM	\$	354,391.55	1.47%	3.66%	16.27%	20.23%	0.2968%
DENTSPLY SIRONA INC	XRAY	\$	15,120.03	0.06%	0.51%	10.15%	10.69%	0.0067%
XEROX CORP	XRX	\$	7,421.19	0.03%	3.43%	2.90%	6.38%	0.0020%
XYLEM INC	XYL	\$	12,248.72	0.05%	1.06%	15.35%	16.49%	0.0084%
YUM! BRANDS INC	YUM	\$	27,502.05	0.11%	1.40%	12.98%	14.47%	0.0165%
ZIMMER BIOMET HOLDINGS INC	ZBH	\$	24,432.43	0.10%	0.80%	6.97%	7.80%	0.0079%
ZIONS BANCORPORATION	ZION	\$	10,152.98	0.04%	0.86%	9.00%	9.90%	0.0042%
ZOETIS INC	ZTS	\$	35,104.25	0.15%	0.58%	15.14%	15.76%	0.0229%
Total Market Capitalization:		\$	24,151,835.62					13.78%

Notes:

- [1] Equals sum of Col. [9]
- [2] Source: Bloomberg Professional
- [3] Equals [1] - [2]
- [4] Source: Bloomberg Professional
- [5] Equals weight in S&P 500 based on market capitalization
- [6] Source: Bloomberg Professional
- [7] Source: Bloomberg Professional
- [8] Equals ([6] x (1 + (0.5 x [7]))) + [7]
- [9] Equals Col. [5] x Col. [8]

Ex-Ante Market Risk Premium  
Market DCF Method Based - Value Line

[1]	[2]	[3]
S&P 500 Est. Required Market Return	Current 30-Year Treasury (30-day average)	Implied Market Risk Premium
14.67%	2.77%	11.89%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
AGILENT TECHNOLOGIES INC	A	\$ 21,741.44	0.10%	0.89%	7.00%	7.92%	0.0079%
AMERICAN AIRLINES GROUP INC	AAL	\$ 25,339.20	0.12%	0.76%	1.00%	1.76%	0.0020%
ADVANCE AUTO PARTS INC	AAP	\$ 7,399.41	0.03%	0.24%	9.50%	9.75%	0.0033%
APPLE INC	AAPL	\$ 897,136.50	4.11%	1.56%	14.50%	16.17%	0.6653%
ABBVIE INC	ABBV	\$ 156,276.40	0.72%	2.90%	11.50%	14.57%	0.1044%
AMERISOURCEBERGEN CORP	ABC	\$ 20,368.16	0.09%	1.64%	9.50%	11.22%	0.0105%
ABBOTT LABORATORIES	ABT	\$ 99,092.41	0.45%	1.97%	8.50%	10.55%	0.0480%
ACCENTURE PLC-CL A	ACN	\$ 97,966.20	0.45%	1.73%	9.00%	10.81%	0.0485%
ADOBE SYSTEMS INC	ADBE	\$ 86,036.09	0.39%	0.00%	33.00%	33.00%	0.1302%
ANALOG DEVICES INC	ADI	\$ 32,593.77	0.15%	2.03%	16.00%	18.19%	0.0272%
ARCHER-DANIELS-MIDLAND CO	ADM	\$ 22,410.31	0.10%	3.19%	3.50%	6.75%	0.0069%
AUTOMATIC DATA PROCESSING	ADP	\$ 52,125.60	0.24%	2.15%	10.00%	12.26%	0.0293%
ALLIANCE DATA SYSTEMS CORP	ADS	\$ 13,812.83	0.06%	0.83%	11.50%	12.38%	0.0078%
AUTODESK INC	ADSK	\$ 23,002.48	N/A	0.00%	N/A	N/A	N/A
AMEREN CORPORATION	AEE	\$ 14,160.56	0.06%	3.17%	6.00%	9.27%	0.0060%
AMERICAN ELECTRIC POWER	AEP	\$ 36,268.43	0.17%	3.40%	4.00%	7.47%	0.0124%
AES CORP	AES	\$ 7,013.31	N/A	4.90%	N/A	N/A	N/A
AETNA INC	AET	\$ 58,936.06	0.27%	1.11%	9.00%	10.16%	0.0275%
AFLAC INC	AFL	\$ 34,310.45	0.16%	2.07%	4.00%	6.11%	0.0096%
ALLERGAN PLC	AGN	\$ 55,753.74	0.26%	1.67%	10.00%	11.75%	0.0300%
AMERICAN INTERNATIONAL GROUP	AIG	\$ 54,004.71	0.25%	2.13%	27.00%	29.42%	0.0728%
APARTMENT INVT & MGMT CO -A	AIV	\$ -	N/A	3.34%	N/A	N/A	N/A
ASSURANT INC	AIZ	\$ 5,439.85	0.02%	2.22%	4.00%	6.26%	0.0016%
ARTHUR J GALLAGHER & CO	AJG	\$ 11,386.79	0.05%	2.48%	15.50%	18.17%	0.0095%
AKAMAI TECHNOLOGIES INC	AKAM	\$ 11,174.83	0.05%	0.00%	11.00%	11.00%	0.0056%
ALBEMARLE CORP	ALB	\$ 14,215.18	0.07%	1.00%	9.50%	10.55%	0.0069%
ALIGN TECHNOLOGY INC	ALGN	\$ 17,539.30	0.08%	0.00%	23.50%	23.50%	0.0189%
ALASKA AIR GROUP INC	ALK	\$ 9,215.78	0.04%	1.61%	5.50%	7.15%	0.0030%
ALLSTATE CORP	ALL	\$ 37,515.60	0.17%	1.42%	7.50%	8.97%	0.0154%
ALLEGION PLC	ALLE	\$ 7,697.11	0.04%	0.79%	10.00%	10.83%	0.0038%
ALEXION PHARMACEUTICALS INC	ALXN	\$ 26,367.52	0.12%	0.00%	23.50%	23.50%	0.0284%
APPLIED MATERIALS INC	AMAT	\$ 55,314.74	0.25%	0.93%	24.00%	25.04%	0.0635%
ADVANCED MICRO DEVICES	AMD	\$ 10,508.85	N/A	0.00%	N/A	N/A	N/A
AMETEK INC	AME	\$ 16,783.71	0.08%	0.50%	5.50%	6.01%	0.0046%
AFFILIATED MANAGERS GROUP	AMG	\$ 11,224.53	0.05%	0.40%	7.00%	7.41%	0.0038%
AMGEN INC	AMGN	\$ 128,375.70	0.59%	2.99%	8.50%	11.62%	0.0684%
AMERIPRISE FINANCIAL INC	AMP	\$ 25,469.64	0.12%	1.93%	12.00%	14.05%	0.0164%
AMERICAN TOWER CORP	AMT	\$ 59,926.75	0.27%	2.09%	10.50%	12.70%	0.0349%
AMAZON.COM INC	AMZN	\$ 566,234.30	2.60%	0.00%	58.50%	58.50%	1.5188%
ANDEAVOR	ANDV	\$ 17,318.57	0.08%	2.13%	6.50%	8.70%	0.0069%
ANSYS INC	ANSS	\$ 12,490.11	0.06%	0.00%	9.50%	9.50%	0.0054%
ANTHEM INC	ANTM	\$ 57,936.71	0.27%	1.24%	12.00%	13.31%	0.0354%
AON PLC	AON	\$ 33,943.27	0.16%	1.06%	9.50%	10.61%	0.0165%
SMITH (A.O.) CORP	AOS	\$ 10,609.80	0.05%	0.91%	11.50%	12.46%	0.0061%
APACHE CORP	APA	\$ 16,498.42	0.08%	2.31%	20.00%	22.54%	0.0171%
ANADARKO PETROLEUM CORP	APC	\$ 28,713.10	N/A	0.39%	N/A	N/A	N/A
AIR PRODUCTS & CHEMICALS INC	APD	\$ 35,561.86	0.16%	2.33%	9.00%	11.43%	0.0186%
AMPHENOL CORP-CL A	APH	\$ 27,007.23	0.12%	0.86%	9.50%	10.40%	0.0129%
APTIV PLC	APTIV	\$ 22,591.00	0.10%	1.46%	7.50%	9.01%	0.0093%
ALEXANDRIA REAL ESTATE EQUIT	ARE	N/A	N/A	0.00%	N/A	N/A	N/A
ARCONIC INC	ARNC	\$ 12,899.48	N/A	0.90%	N/A	N/A	N/A
ACTIVISION BLIZZARD INC	ATVI	\$ 49,204.19	0.23%	0.52%	9.00%	9.54%	0.0215%
AVALONBAY COMMUNITIES INC	AVB	\$ -	N/A	3.42%	N/A	N/A	N/A
BROADCOM LTD	AVGO	\$ 106,587.40	0.49%	2.68%	44.00%	47.27%	0.2310%
AVERY DENNISON CORP	AVY	\$ 10,043.00	0.05%	1.68%	10.00%	11.76%	0.0054%
AMERICAN WATER WORKS CO INC	AWK	\$ 16,000.15	0.07%	1.93%	8.50%	10.51%	0.0077%
AMERICAN EXPRESS CO	AXP	\$ 85,793.50	0.39%	1.42%	6.00%	7.46%	0.0294%
ACUITY BRANDS INC	AYI	\$ 7,255.01	0.03%	0.30%	14.50%	14.82%	0.0049%
AUTOZONE INC	AZO	\$ 19,244.52	0.09%	0.00%	11.50%	11.50%	0.0101%
BOEING CO/THE	BA	\$ 176,236.50	0.81%	2.32%	11.00%	13.45%	0.1087%
BANK OF AMERICA CORP	BAC	\$ 311,841.90	1.43%	1.74%	17.00%	18.89%	0.2701%
BAXTER INTERNATIONAL INC	BAX	\$ 35,144.65	0.16%	0.99%	4.00%	5.01%	0.0081%
BB&T CORP	BBT	\$ 39,753.73	0.18%	2.74%	5.50%	8.32%	0.0152%
BEST BUY CO INC	BBY	\$ 19,855.68	0.09%	2.21%	9.00%	11.31%	0.0103%
CR BARD INC	BCR	\$ 24,156.41	0.11%	0.32%	10.00%	10.34%	0.0114%
BECTON DICKINSON AND CO	BDX	\$ 49,559.11	0.23%	1.47%	9.00%	10.54%	0.0239%
FRANKLIN RESOURCES INC	BEN	\$ 24,460.96	0.11%	2.10%	5.00%	7.15%	0.0080%
BROWN-FORMAN CORP-CLASS B	BF/B	\$ 25,899.05	0.12%	1.17%	10.00%	11.23%	0.0133%
BRIGHTHOUSE FINANCIAL INC	BHF	N/A	N/A	0.00%	N/A	N/A	N/A
BAKER HUGHES A GE CO	BHGE	\$ 13,824.40	N/A	2.23%	N/A	N/A	N/A
BIOGEN INC	BIIB	\$ 68,205.56	0.31%	0.00%	7.00%	7.00%	0.0219%
BANK OF NEW YORK MELLON CORP	BK	\$ 55,665.84	0.26%	1.77%	8.50%	10.35%	0.0264%
BLACKROCK INC	BLK	\$ 82,445.57	0.38%	1.95%	10.50%	12.55%	0.0475%
BALL CORP	BLL	\$ 13,164.89	0.06%	1.06%	15.00%	16.14%	0.0097%
BRISTOL-MYERS SQUIBB CO	BMJ	\$ 100,657.00	0.46%	2.60%	14.50%	17.29%	0.0798%
BERKSHIRE HATHAWAY INC-CL B	BRK/B	\$ -	N/A	0.00%	N/A	N/A	N/A
BOSTON SCIENTIFIC CORP	BSX	\$ 34,510.58	0.16%	0.00%	18.50%	18.50%	0.0293%
BORGWARNER INC	BWA	\$ 10,963.58	0.05%	1.31%	8.50%	9.87%	0.0050%
BOSTON PROPERTIES INC	BXP	\$ -	N/A	2.52%	N/A	N/A	N/A
CITIGROUP INC	C	\$ 200,468.30	0.92%	1.69%	11.00%	12.78%	0.1175%
CA INC	CA	\$ 13,863.66	0.06%	3.10%	6.00%	9.19%	0.0058%
CONAGRA BRANDS INC	CAG	\$ 15,461.65	0.07%	2.25%	3.00%	5.28%	0.0037%
CARDINAL HEALTH INC	CAH	\$ 19,744.20	0.09%	3.08%	12.00%	15.26%	0.0138%
CATERPILLAR INC	CAT	\$ 92,000.60	0.42%	2.02%	10.00%	12.12%	0.0511%
CHUBB LTD	CB	\$ 67,307.70	0.31%	1.96%	8.00%	10.04%	0.0310%

CBRE GROUP INC - A	CBG	\$	14,705.36	0.07%	0.00%	8.50%	8.50%	0.0057%
CBOE GLOBAL MARKETS INC	CBOE	\$	14,140.27	0.06%	0.87%	13.00%	13.93%	0.0090%
CBS CORP-CLASS B NON VOTING	CBS	\$	24,212.00	0.11%	1.19%	13.50%	14.77%	0.0164%
CROWN CASTLE INTL CORP	CCI	\$	43,950.83	0.20%	3.98%	8.50%	12.65%	0.0255%
CARNIVAL CORP	CCL	\$	47,831.14	0.22%	2.71%	12.50%	15.38%	0.0337%
CADENCE DESIGN SYS INC	CDNS	\$	11,994.65	0.05%	0.00%	10.00%	10.00%	0.0055%
CELGENE CORP	CELG	\$	84,912.35	0.39%	0.00%	25.00%	25.00%	0.0973%
CERNER CORP	CERN	\$	22,560.73	0.10%	0.00%	9.50%	9.50%	0.0098%
CF INDUSTRIES HOLDINGS INC	CF	\$	9,621.85	0.04%	3.08%	9.50%	12.73%	0.0056%
CITIZENS FINANCIAL GROUP	CFG	\$	21,278.91	0.10%	1.88%	10.50%	12.48%	0.0122%
CHURCH & DWIGHT CO INC	CHD	\$	12,360.89	0.06%	1.54%	7.50%	9.10%	0.0052%
CHESAPEAKE ENERGY CORP	CHK	\$	3,480.34	N/A	0.00%	N/A	N/A	N/A
C.H. ROBINSON WORLDWIDE INC	CHRW	\$	12,186.96	0.06%	2.11%	6.00%	8.17%	0.0046%
CHARTER COMMUNICATIONS INC-A	CHTR	\$	82,772.21	0.38%	0.00%	26.00%	26.00%	0.0987%
CIGNA CORP	CI	\$	50,424.20	0.23%	0.02%	12.00%	12.02%	0.0278%
CINCINNATI FINANCIAL CORP	CINF	\$	12,080.24	0.06%	2.72%	6.50%	9.31%	0.0052%
COLGATE-PALMOLIVE CO	CL	\$	65,559.32	0.30%	2.14%	11.00%	13.26%	0.0399%
CLOROX COMPANY	CLX	\$	19,181.31	0.09%	2.26%	7.00%	9.34%	0.0082%
COMERICA INC	CMA	\$	15,281.77	0.07%	1.37%	13.50%	14.96%	0.0105%
COMCAST CORP-CLASS A	CMCSA	\$	190,736.60	0.87%	1.54%	11.00%	12.62%	0.1104%
CME GROUP INC	CME	\$	51,166.13	0.23%	1.75%	8.50%	10.32%	0.0242%
CHIPOTLE MEXICAN GRILL INC	CMG	\$	8,271.12	0.04%	0.00%	11.00%	11.00%	0.0042%
CUMMINS INC	CMI	\$	29,098.36	0.13%	2.47%	8.00%	10.57%	0.0141%
CMS ENERGY CORP	CMS	\$	13,308.42	0.06%	3.01%	6.50%	9.61%	0.0059%
CENTENE CORP	CNC	\$	17,703.54	0.08%	0.00%	14.00%	14.00%	0.0114%
CENTERPOINT ENERGY INC	CNP	\$	11,969.70	0.05%	4.00%	6.00%	10.12%	0.0056%
CAPITAL ONE FINANCIAL CORP	COF	\$	48,209.48	0.22%	1.61%	4.00%	5.64%	0.0125%
CABOT OIL & GAS CORP	COG	\$	12,820.70	N/A	0.72%	N/A	N/A	N/A
ROCKWELL COLLINS INC	COL	\$	21,988.24	0.10%	0.98%	14.00%	15.05%	0.0152%
COOPER COS INC/THE	COO	\$	10,866.73	0.05%	0.03%	16.50%	16.53%	0.0082%
CONOCOPHILLIPS	COP	\$	66,714.72	0.31%	1.93%	59.00%	61.50%	0.1881%
COSTCO WHOLESALE CORP	COST	\$	82,039.75	0.38%	1.07%	10.00%	11.12%	0.0418%
COTY INC-CL A	COTY	\$	14,800.65	0.07%	2.53%	8.50%	11.14%	0.0076%
CAMPBELL SOUP CO	CPB	\$	15,720.41	0.07%	2.88%	4.00%	6.94%	0.0050%
SALESFORCE.COM INC	CRM	\$	74,844.72	N/A	0.00%	N/A	N/A	N/A
CISCO SYSTEMS INC	CSCO	\$	190,762.00	0.87%	3.01%	7.50%	10.62%	0.0929%
CSRA INC	CSRA	\$	4,957.38	N/A	1.32%	N/A	N/A	N/A
CSX CORP	CSX	\$	49,047.52	0.22%	1.46%	11.50%	13.04%	0.0293%
CINTAS CORP	CTAS	\$	16,951.64	0.08%	1.02%	12.50%	13.58%	0.0106%
CENTURYLINK INC	CTL	\$	9,602.46	0.04%	12.36%	-1.50%	10.77%	0.0047%
COGNIZANT TECH SOLUTIONS-A	CTSH	\$	42,716.00	0.20%	0.83%	12.50%	13.38%	0.0262%
CITRIX SYSTEMS INC	CTXS	\$	13,276.44	0.06%	0.00%	5.50%	5.50%	0.0033%
CVS HEALTH CORP	CVS	\$	75,610.32	0.35%	2.68%	9.00%	11.80%	0.0409%
CHEVRON CORP	CVX	\$	237,079.90	1.09%	3.51%	15.00%	18.77%	0.2041%
CONCHO RESOURCES INC	CXO	\$	22,279.72	0.10%	0.00%	24.50%	24.50%	0.0250%
DOMINION ENERGY INC	D	\$	51,938.60	0.24%	4.12%	6.50%	10.75%	0.0256%
DELTA AIR LINES INC	DAL	\$	39,947.88	0.18%	2.18%	10.50%	12.79%	0.0234%
DEERE & CO	DE	\$	50,077.35	0.23%	1.54%	8.00%	9.60%	0.0220%
DISCOVER FINANCIAL SERVICES	DFS	\$	27,833.91	0.13%	1.84%	5.00%	6.89%	0.0088%
DOLLAR GENERAL CORP	DG	\$	24,886.13	0.11%	1.14%	9.50%	10.69%	0.0122%
QUEST DIAGNOSTICS INC	DGX	\$	13,484.40	0.06%	1.82%	9.50%	11.41%	0.0071%
DR HORTON INC	DHI	\$	19,098.04	0.09%	0.98%	11.00%	12.03%	0.0105%
DANAHER CORP	DHR	\$	65,251.82	0.30%	0.60%	9.00%	9.63%	0.0288%
WALT DISNEY CO/THE	DIS	\$	175,312.00	0.80%	1.53%	8.50%	10.10%	0.0811%
DISCOVERY COMMUNICATIONS-A	DISCA	\$	8,854.73	0.04%	0.00%	13.50%	13.50%	0.0055%
DISH NETWORK CORP-A	DISH	\$	22,907.26	0.11%	0.00%	2.50%	2.50%	0.0026%
DIGITAL REALTY TRUST INC	DLR	\$	-	N/A	3.65%	N/A	N/A	N/A
DOLLAR TREE INC	DLTR	\$	25,717.91	0.12%	0.00%	17.00%	17.00%	0.0200%
DOVER CORP	DOV	\$	15,713.08	0.07%	1.86%	8.00%	9.93%	0.0072%
DR PEPPER SNAPPLE GROUP INC	DPS	\$	17,305.31	0.08%	2.48%	7.50%	10.07%	0.0080%
DUKE REALTY CORP	DRE	\$	-	0.00%	2.99%	33.50%	36.99%	0.0000%
DARDEN RESTAURANTS INC	DRI	\$	11,756.36	0.05%	2.65%	11.00%	13.80%	0.0074%
DTE ENERGY COMPANY	DTE	\$	19,418.97	0.09%	3.32%	6.00%	9.42%	0.0084%
DUKE ENERGY CORP	DUK	\$	59,010.00	0.27%	4.32%	4.50%	8.92%	0.0241%
DAVITA INC	DVA	\$	13,605.78	0.06%	0.00%	10.00%	10.00%	0.0062%
DEVON ENERGY CORP	DVN	\$	21,483.00	0.10%	0.59%	14.50%	15.13%	0.0149%
DOWDUPONT INC	DWDP	\$	167,594.30	N/A	2.37%	N/A	N/A	N/A
DXC TECHNOLOGY CO	DXC	\$	27,421.25	0.13%	0.75%	18.00%	18.82%	0.0237%
ELECTRONIC ARTS INC	EA	\$	33,254.76	0.15%	0.00%	13.00%	13.00%	0.0198%
EBAY INC	EBAY	\$	39,662.69	0.18%	0.00%	10.00%	10.00%	0.0182%
ECOLAB INC	ECL	\$	38,572.91	0.18%	1.23%	8.50%	9.78%	0.0173%
CONSOLIDATED EDISON INC	ED	\$	26,284.90	0.12%	3.35%	2.50%	5.89%	0.0071%
EQUIFAX INC	EFX	\$	14,348.40	0.07%	1.31%	8.00%	9.36%	0.0062%
EDISON INTERNATIONAL	EIX	\$	20,627.09	0.09%	3.82%	4.00%	7.90%	0.0075%
ESTEE LAUDER COMPANIES-CL A	EL	\$	47,016.16	0.22%	1.19%	13.50%	14.77%	0.0318%
EASTMAN CHEMICAL CO	EMN	\$	13,349.59	0.06%	2.41%	10.00%	12.53%	0.0077%
EMERSON ELECTRIC CO	EMR	\$	44,648.93	0.20%	2.79%	12.00%	14.96%	0.0306%
EOG RESOURCES INC	EOG	\$	61,531.03	0.28%	0.69%	29.00%	29.79%	0.0840%
EQUINIX INC	EQIX	\$	34,883.76	0.16%	1.79%	23.00%	25.00%	0.0400%
EQUITY RESIDENTIAL	EQR	\$	-	N/A	3.25%	N/A	N/A	N/A
EQT CORP	EQT	\$	9,606.67	0.04%	0.22%	22.00%	22.24%	0.0098%
EVERSOURCE ENERGY	ES	\$	19,640.60	0.09%	3.26%	6.50%	9.87%	0.0089%
EXPRESS SCRIPTS HOLDING CO	ESRX	\$	42,174.15	0.19%	0.00%	14.50%	14.50%	0.0280%
ESSEX PROPERTY TRUST INC	ESS	\$	-	N/A	2.98%	N/A	N/A	N/A
E*TRADE FINANCIAL CORP	ETFC	\$	13,523.57	0.06%	0.00%	15.50%	15.50%	0.0096%
EATON CORP PLC	ETN	\$	34,410.86	0.16%	3.07%	7.00%	10.18%	0.0161%
ENTERGY CORP	ETR	\$	14,391.63	0.07%	4.47%	-2.50%	1.91%	0.0013%
ENVISION HEALTHCARE CORP	EVHC	\$	4,173.09	N/A	0.00%	N/A	N/A	N/A
EDWARDS LIFESCIENCES CORP	EW	\$	23,973.15	0.11%	0.00%	17.00%	17.00%	0.0187%
EXELON CORP	EXC	\$	37,540.49	0.17%	3.43%	7.00%	10.55%	0.0182%
EXPEDITORS INTL WASH INC	EXPD	\$	11,390.41	0.05%	1.31%	8.00%	9.36%	0.0049%
EXPEDIA INC	EXPE	\$	18,280.90	0.08%	1.00%	19.00%	20.10%	0.0168%
EXTRA SPACE STORAGE INC	EXR	\$	-	N/A	3.95%	N/A	N/A	N/A
FORD MOTOR CO	F	\$	50,170.17	0.23%	4.75%	2.50%	7.31%	0.0168%
FASTENAL CO	FAST	\$	15,550.29	0.07%	2.37%	5.50%	7.94%	0.0057%
FACEBOOK INC-A	FB	\$	515,669.80	2.36%	0.00%	31.50%	31.50%	0.7448%
FORTUNE BRANDS HOME & SECURI	FBHS	\$	10,522.85	0.05%	1.15%	12.00%	13.22%	0.0064%
FREEMPORT-MCMORAN INC	FCX	\$	26,324.64	N/A	0.00%	N/A	N/A	N/A
FEDEX CORP	FDX	\$	67,018.05	0.31%	0.80%	11.00%	11.84%	0.0364%

FIRSTENERGY CORP	FE	\$	13,730.57	0.06%	4.71%	12.00%	16.99%	0.0107%
F5 NETWORKS INC	FFIV	\$	8,284.94	0.04%	0.00%	11.00%	11.00%	0.0042%
FIDELITY NATIONAL INFO SERV	FIS	\$	31,588.38	0.14%	1.22%	7.50%	8.77%	0.0127%
FISERV INC	FISV	\$	27,275.54	0.13%	0.00%	9.00%	9.00%	0.0113%
FIFTH THIRD BANCORP	FITB	\$	21,820.31	0.10%	2.10%	4.50%	6.65%	0.0067%
FOOT LOCKER INC	FL	\$	6,397.46	0.03%	2.58%	6.50%	9.16%	0.0027%
FLIR SYSTEMS INC	FLIR	\$	6,556.67	0.03%	1.52%	7.50%	9.08%	0.0027%
FLUOR CORP	FLR	\$	7,171.38	0.03%	1.64%	2.00%	3.66%	0.0012%
FLOWERVE CORP	FLS	\$	5,418.76	0.02%	1.83%	2.50%	4.35%	0.0011%
FMC CORP	FMC	\$	12,773.69	0.06%	0.73%	8.00%	8.76%	0.0051%
TWENTY-FIRST CENTURY FOX-A	FOXA	\$	65,042.33	0.30%	1.03%	11.50%	12.59%	0.0375%
FEDERAL REALTY INVS TRUST	FRT	\$	-	N/A	3.09%	N/A	N/A	N/A
TECHNIPFMC PLC	FTI		N/A	N/A	0.00%	N/A	N/A	N/A
FORTIVE CORP	FTV	\$	25,298.00	N/A	0.39%	N/A	N/A	N/A
GENERAL DYNAMICS CORP	GD	\$	60,457.09	0.28%	1.66%	5.50%	7.21%	0.0200%
GENERAL ELECTRIC CO	GE	\$	151,501.30	0.69%	2.75%	13.50%	16.44%	0.1142%
GGP INC	GGP	\$	-	N/A	4.16%	N/A	N/A	N/A
GILEAD SCIENCES INC	GILD	\$	95,437.15	0.44%	2.85%	-1.00%	1.84%	0.0080%
GENERAL MILLS INC	GIS	\$	44,921.34	0.21%	3.33%	3.50%	6.89%	0.0142%
CORNING INC	GLW	\$	28,068.70	0.13%	1.92%	11.50%	13.53%	0.0174%
GENERAL MOTORS CO	GM	\$	59,024.00	0.27%	3.61%	5.50%	9.21%	0.0249%
ALPHABET INC-CL A	GOOGL		N/A	N/A	0.00%	N/A	N/A	N/A
GENUINE PARTS CO	GPC	\$	13,859.33	0.06%	2.86%	7.50%	10.47%	0.0067%
GLOBAL PAYMENTS INC	GPN	\$	15,935.04	0.07%	0.04%	12.00%	12.04%	0.0088%
GAP INC/THE	GPS	\$	13,401.05	0.06%	2.67%	0.50%	3.18%	0.0020%
GARMIN LTD	GRMN	\$	11,094.38	0.05%	3.52%	5.50%	9.12%	0.0046%
GOLDMAN SACHS GROUP INC	GS	\$	98,948.38	0.45%	1.15%	9.50%	10.70%	0.0486%
GOODYEAR TIRE & RUBBER CO	GT	\$	8,012.22	0.04%	1.75%	10.00%	11.84%	0.0043%
WW GRAINGER INC	GWV	\$	13,392.14	0.06%	2.18%	4.50%	6.73%	0.0041%
HALLIBURTON CO	HAL	\$	42,004.24	0.19%	1.50%	21.50%	23.16%	0.0446%
HASBRO INC	HAS	\$	11,563.69	0.05%	2.46%	10.50%	13.09%	0.0069%
HUNTINGTON BANCSHARES INC	HBAN	\$	16,041.24	0.07%	3.03%	10.00%	13.18%	0.0097%
HANESBRANDS INC	HBI	\$	7,360.71	0.03%	3.17%	9.00%	12.31%	0.0042%
HCA HEALTHCARE INC	HCA	\$	31,357.12	0.14%	0.00%	10.00%	10.00%	0.0144%
WELLTOWER INC	HCN	\$	-	N/A	5.62%	N/A	N/A	N/A
HCP INC	HCP	\$	-	N/A	5.90%	N/A	N/A	N/A
HOME DEPOT INC	HD	\$	219,677.40	1.01%	2.21%	11.00%	13.33%	0.1343%
HESS CORP	HES	\$	14,724.72	N/A	2.16%	N/A	N/A	N/A
HARTFORD FINANCIAL SVCS GRP	HIG	\$	19,997.21	0.09%	1.79%	12.50%	14.40%	0.0132%
HILTON WORLDWIDE HOLDINGS IN	HLT	\$	25,471.42	0.12%	0.76%	7.00%	7.79%	0.0091%
HARLEY-DAVIDSON INC	HOG	\$	8,719.36	0.04%	2.82%	8.00%	10.93%	0.0044%
HOLOGIC INC	HOLX	\$	12,119.86	0.06%	0.00%	27.00%	27.00%	0.0150%
HONEYWELL INTERNATIONAL INC	HON	\$	117,107.40	0.54%	1.94%	8.50%	10.52%	0.0565%
HELMERICH & PAYNE	HP	\$	6,909.07	0.03%	4.40%	4.50%	9.00%	0.0029%
HEWLETT PACKARD ENTERPRISE	HPE	\$	23,480.77	0.11%	2.04%	3.50%	5.58%	0.0060%
HP INC	HPQ	\$	35,053.57	0.16%	2.64%	4.50%	7.20%	0.0116%
H&R BLOCK INC	HRB	\$	5,582.12	0.03%	3.60%	8.00%	11.74%	0.0030%
HORMEL FOODS CORP	HRL	\$	19,215.02	0.09%	2.06%	10.50%	12.67%	0.0112%
HARRIS CORP	HRS	\$	16,998.58	0.08%	1.60%	10.50%	12.18%	0.0095%
HENRY SCHEIN INC	HSIC	\$	11,168.78	0.05%	0.00%	10.50%	10.50%	0.0054%
HOST HOTELS & RESORTS INC	HST	\$	-	N/A	4.09%	N/A	N/A	N/A
HERSHEY CO/THE	HSY	\$	24,155.31	0.11%	2.29%	6.50%	8.86%	0.0098%
HUMANA INC	HUM	\$	34,797.84	0.16%	0.66%	10.50%	11.19%	0.0179%
INTL BUSINESS MACHINES CORP	IBM	\$	140,257.30	N/A	4.16%	N/A	N/A	N/A
INTERCONTINENTAL EXCHANGE IN	ICE	\$	41,084.46	0.19%	1.14%	12.00%	13.21%	0.0249%
IDEXX LABORATORIES INC	IDXX	\$	13,730.70	0.06%	0.00%	15.00%	15.00%	0.0094%
INTL FLAVORS & FRAGRANCES	IFF	\$	11,993.45	0.05%	1.86%	7.50%	9.43%	0.0052%
ILLUMINA INC	ILMN	\$	31,327.22	0.14%	0.00%	17.00%	17.00%	0.0244%
INCYTE CORP	INCY	\$	20,333.79	0.09%	0.00%	70.50%	70.50%	0.0657%
IHS MARKIT LTD	INFO	\$	17,966.46	0.08%	0.00%	14.50%	14.50%	0.0119%
INTEL CORP	INTC	\$	218,836.80	1.00%	2.33%	7.50%	9.92%	0.0995%
INTUIT INC	INTU	\$	40,553.90	0.19%	0.98%	14.50%	15.55%	0.0289%
INTERNATIONAL PAPER CO	IP	\$	23,733.49	0.11%	3.31%	18.50%	22.12%	0.0241%
INTERPUBLIC GROUP OF COS INC	IPG	\$	8,079.86	0.04%	3.56%	10.00%	13.74%	0.0051%
IQVIA HOLDINGS INC	IQV	\$	21,160.88	0.10%	0.00%	12.50%	12.50%	0.0121%
INGERSOLL-RAND PLC	IR	\$	22,640.19	0.10%	1.99%	11.00%	13.10%	0.0136%
IRON MOUNTAIN INC	IRM	\$	9,914.67	0.05%	6.33%	11.00%	17.68%	0.0080%
INTUITIVE SURGICAL INC	ISRG	\$	40,468.96	0.19%	0.00%	15.50%	15.50%	0.0288%
GARTNER INC	IT	\$	11,151.27	0.05%	0.00%	16.00%	16.00%	0.0082%
ILLINOIS TOOL WORKS	ITW	\$	57,645.88	0.26%	1.85%	10.50%	12.45%	0.0329%
INVESCO LTD	IVZ	\$	14,903.93	0.07%	3.17%	5.50%	8.76%	0.0060%
HUNT (JB) TRANSPRT SVCS INC	JBHT	\$	12,371.25	0.06%	0.84%	9.00%	9.88%	0.0056%
JOHNSON CONTROLS INTERNATION	JCI	\$	35,431.16	0.16%	2.74%	-0.50%	2.23%	0.0036%
JACOBS ENGINEERING GROUP INC	JEC	\$	7,995.35	0.04%	0.90%	8.00%	8.94%	0.0033%
JOHNSON & JOHNSON	JNJ	\$	378,743.60	1.74%	2.47%	9.50%	12.09%	0.2099%
JUNIPER NETWORKS INC	JNPR	\$	10,818.10	0.05%	1.40%	7.00%	8.45%	0.0042%
JPMORGAN CHASE & CO	JPM	\$	374,140.60	1.72%	2.11%	6.50%	8.68%	0.1489%
NORDSTROM INC	JWN	\$	7,913.50	0.04%	3.12%	2.00%	5.15%	0.0019%
KELLOGG CO	K	\$	23,339.25	0.11%	3.22%	7.00%	10.33%	0.0111%
KEYCORP	KEY	\$	22,044.77	0.10%	2.20%	11.00%	13.32%	0.0135%
KRAFT HEINZ CO/THE	KHC	\$	94,857.84	N/A	3.25%	N/A	N/A	N/A
KIMCO REALTY CORP	KIM	\$	-	N/A	6.35%	N/A	N/A	N/A
KLA-TENCOR CORP	KLAC	\$	17,021.62	0.08%	2.17%	16.00%	18.34%	0.0143%
KIMBERLY-CLARK CORP	KMB	\$	42,309.33	0.19%	3.23%	10.50%	13.90%	0.0270%
KINDER MORGAN INC	KMI	\$	40,316.84	0.18%	2.77%	24.00%	27.10%	0.0501%
CARMAX INC	KMX	\$	12,005.66	0.06%	0.00%	10.00%	10.00%	0.0055%
COCA-COLA CO/THE	KO	\$	194,347.20	0.89%	3.38%	4.50%	7.96%	0.0709%
MICHAEL KORS HOLDINGS LTD	KORS	\$	9,736.85	0.04%	0.00%	3.00%	3.00%	0.0013%
KROGER CO	KR	\$	24,271.55	0.11%	1.89%	3.50%	5.42%	0.0060%
KOHL'S CORP	KSS	\$	8,982.96	0.04%	4.40%	7.00%	11.55%	0.0048%
KANSAS CITY SOUTHERN	KSU	\$	11,263.35	0.05%	1.33%	9.50%	10.89%	0.0056%
LOEWS CORP	L	\$	16,760.76	0.08%	0.50%	15.00%	15.54%	0.0119%
L BRANDS INC	LB	\$	17,086.38	0.08%	3.96%	0.50%	4.47%	0.0035%
LEGGETT & PLATT INC	LEG	\$	6,246.81	0.03%	3.04%	7.50%	10.65%	0.0031%
LENNAR CORP-A	LEN	\$	15,298.02	0.07%	0.25%	10.50%	10.76%	0.0075%
LABORATORY CRP OF AMER HLDGS	LH	\$	16,476.90	0.08%	0.00%	9.00%	9.00%	0.0068%
LKQ CORP	LKQ	\$	12,638.84	0.06%	0.00%	11.50%	11.50%	0.0067%
L3 TECHNOLOGIES INC	LLL	\$	15,246.68	0.07%	1.54%	10.00%	11.62%	0.0081%
ELI LILLY & CO	LLY	\$	94,264.74	0.43%	2.63%	11.00%	13.77%	0.0595%

LOCKHEED MARTIN CORP	LMT	\$	90,949.16	0.42%	2.59%	10.00%	12.72%	0.0530%
LINCOLN NATIONAL CORP	LNC	\$	17,111.34	0.08%	1.69%	7.00%	8.75%	0.0069%
ALLIANT ENERGY CORP	LNT	\$	9,784.55	0.04%	2.98%	6.00%	9.07%	0.0041%
LOWE'S COS INC	LOW	\$	75,396.63	0.35%	1.92%	13.50%	15.55%	0.0538%
LAM RESEARCH CORP	LRCX	\$	30,100.41	0.14%	1.05%	20.00%	21.16%	0.0292%
LEUCADIA NATIONAL CORP	LUK	\$	9,424.79	0.04%	1.51%	30.00%	31.74%	0.0137%
SOUTHWEST AIRLINES CO	LUV	\$	39,181.41	0.18%	0.76%	10.50%	11.30%	0.0203%
LYONDELLBASELL INDU-CL A	LYB	\$	43,500.83	0.20%	3.26%	4.00%	7.33%	0.0146%
MACY'S INC	M	\$	7,787.75	0.04%	5.91%	2.00%	7.97%	0.0028%
MASTERCARD INC - A	MA	\$	159,561.80	0.73%	0.66%	13.00%	13.70%	0.1003%
MID-AMERICA APARTMENT COMM	MAA		N/A	N/A	0.00%	N/A	N/A	N/A
MACERICH CO/THE	MAC	\$	-	N/A	4.60%	N/A	N/A	N/A
MARRIOTT INTERNATIONAL -CL A	MAR	\$	48,835.63	0.22%	0.99%	15.00%	16.06%	0.0360%
MASCO CORP	MAS	\$	13,780.76	0.06%	1.00%	14.00%	15.07%	0.0095%
MATTEL INC	MAT	\$	5,399.53	0.02%	0.00%	4.50%	4.50%	0.0011%
MCDONALD'S CORP	MCD	\$	136,998.80	0.63%	2.35%	9.50%	11.96%	0.0751%
MICROCHIP TECHNOLOGY INC	MCHP	\$	20,919.95	0.10%	1.63%	14.50%	16.25%	0.0156%
MCKESSON CORP	MCK	\$	33,228.68	0.15%	0.85%	11.00%	11.90%	0.0181%
MOODY'S CORP	MCO	\$	28,180.63	0.13%	1.03%	9.50%	10.58%	0.0137%
MONDELEZ INTERNATIONAL INC-A	MDLZ	\$	64,450.83	0.30%	2.09%	10.00%	12.19%	0.0360%
MEDTRONIC PLC	MDT	\$	110,290.70	0.51%	2.31%	6.00%	8.38%	0.0424%
METLIFE INC	MET	\$	53,800.27	0.25%	3.31%	7.00%	10.43%	0.0257%
MGM RESORTS INTERNATIONAL	MGM	\$	19,074.12	0.09%	1.30%	41.50%	43.07%	0.0377%
MOHAWK INDUSTRIES INC	MHK	\$	20,655.56	0.09%	0.00%	8.50%	8.50%	0.0081%
MCCORMICK & CO-NON VTG SHRS	MKC	\$	13,250.45	0.06%	2.06%	9.00%	11.15%	0.0068%
MARTIN MARIETTA MATERIALS	MLM	\$	13,231.19	0.06%	0.84%	17.50%	18.41%	0.0112%
MARSH & MCLENNAN COS	MMC	\$	41,255.48	0.19%	1.86%	10.00%	11.95%	0.0226%
3M CO	MMM	\$	139,836.80	0.64%	2.00%	8.00%	10.08%	0.0646%
MONSTER BEVERAGE CORP	MNST	\$	35,986.22	0.16%	0.00%	12.00%	12.00%	0.0198%
ALTRIA GROUP INC	MO	\$	137,378.10	0.63%	3.67%	10.00%	13.85%	0.0873%
MONSANTO CO	MON	\$	50,719.04	0.23%	1.87%	6.00%	7.93%	0.0184%
MOSAIC CO/THE	MOS	\$	8,860.50	0.04%	0.40%	3.00%	3.41%	0.0014%
MARATHON PETROLEUM CORP	MPC	\$	33,032.34	0.15%	2.53%	6.50%	9.11%	0.0138%
MERCK & CO. INC.	MRK	\$	154,314.50	0.71%	3.39%	5.50%	8.98%	0.0636%
MARATHON OIL CORP	MRO	\$	14,492.50	N/A	1.17%	N/A	N/A	N/A
MORGAN STANLEY	MS	\$	95,843.52	0.44%	1.89%	10.50%	12.49%	0.0549%
MICROSOFT CORP	MSFT	\$	660,060.00	3.03%	1.97%	8.50%	10.55%	0.3194%
MOTOROLA SOLUTIONS INC	MSI	\$	14,842.44	0.07%	2.27%	10.50%	12.89%	0.0088%
M & T BANK CORP	MTB	\$	26,479.24	0.12%	1.73%	8.00%	9.80%	0.0119%
METTLER-TOLEDO INTERNATIONAL	MTD	\$	15,818.82	0.07%	0.00%	11.00%	11.00%	0.0080%
MICRON TECHNOLOGY INC	MU	\$	51,438.36	0.24%	0.00%	31.00%	31.00%	0.0731%
MYLAN NV	MYL	\$	22,505.25	0.10%	0.00%	10.00%	10.00%	0.0103%
NAVIENT CORP	NAVI	\$	3,450.72	0.02%	4.88%	6.00%	11.03%	0.0017%
NOBLE ENERGY INC	NBL	\$	14,063.00	N/A	1.39%	N/A	N/A	N/A
NORWEGIAN CRUISE LINE HOLDIN	NCLH	\$	12,368.77	0.06%	0.00%	21.50%	21.50%	0.0122%
NASDAQ INC	NDAQ	\$	12,561.26	0.06%	2.02%	9.50%	11.62%	0.0067%
NEXTERA ENERGY INC	NEE	\$	72,667.09	0.33%	2.79%	7.00%	9.89%	0.0329%
NEWMONT MINING CORP	NEM	\$	19,589.43	0.09%	0.82%	9.00%	9.86%	0.0089%
NETFLIX INC	NFLX	\$	81,621.72	0.37%	0.00%	44.50%	44.50%	0.1665%
NEWFIELD EXPLORATION CO	NFX	\$	6,189.91	0.03%	0.00%	18.00%	18.00%	0.0051%
NISOURCE INC	NI	\$	8,302.80	0.04%	2.84%	5.50%	8.42%	0.0032%
NIKE INC -CL B	NKE	\$	105,673.40	0.48%	1.24%	14.00%	15.33%	0.0743%
NIELSEN HOLDINGS PLC	NLSN	\$	12,982.32	0.06%	3.73%	2.50%	6.28%	0.0037%
NORTHROP GRUMMAN CORP	NOC	\$	53,005.01	0.24%	1.31%	8.00%	9.36%	0.0228%
NATIONAL OILWELL VARCO INC	NOV	\$	13,510.88	0.06%	0.56%	3.00%	3.57%	0.0022%
NRG ENERGY INC	NRG	\$	8,694.91	N/A	0.44%	N/A	N/A	N/A
NORFOLK SOUTHERN CORP	NSC	\$	41,285.58	0.19%	1.69%	8.00%	9.76%	0.0185%
NETAPP INC	NTAP	\$	15,008.07	0.07%	1.42%	16.00%	17.53%	0.0121%
NORTHERN TRUST CORP	NTRS	\$	22,753.47	0.10%	1.68%	9.50%	11.26%	0.0117%
NUCOR CORP	NUE	\$	20,515.18	0.09%	2.36%	20.50%	23.10%	0.0217%
NVIDIA CORP	NVDA	\$	118,709.40	0.54%	0.31%	23.50%	23.85%	0.1298%
NEWELL BRANDS INC	NWL	\$	15,070.58	0.07%	2.99%	24.50%	27.86%	0.0192%
NEWS CORP - CLASS A	NWSA	\$	9,519.80	N/A	1.22%	N/A	N/A	N/A
REALTY INCOME CORP	O	\$	-	N/A	4.76%	N/A	N/A	N/A
ONEOK INC	OKE	\$	19,910.70	0.09%	5.71%	18.50%	24.74%	0.0226%
OMNICOM GROUP	OMC	\$	17,077.88	0.08%	3.11%	7.50%	10.73%	0.0084%
ORACLE CORP	ORCL	\$	195,881.00	0.90%	1.61%	8.00%	9.67%	0.0869%
O'REILLY AUTOMOTIVE INC	ORLY	\$	20,609.13	0.09%	0.00%	11.00%	11.00%	0.0104%
OCCIDENTAL PETROLEUM CORP	OXY	\$	55,541.48	0.25%	4.27%	25.00%	29.80%	0.0759%
PAYCHEX INC	PAYX	\$	24,634.90	0.11%	3.00%	8.50%	11.63%	0.0131%
PEOPLE'S UNITED FINANCIAL	PBCT	\$	6,554.29	0.03%	3.63%	10.50%	14.32%	0.0043%
PACCAR INC	PCAR	\$	25,037.34	0.11%	2.53%	6.50%	9.11%	0.0105%
P G & E CORP	PCG	\$	22,862.90	0.10%	0.00%	9.50%	9.50%	0.0100%
PRICELINE GROUP INC/THE	PCLN	\$	86,719.57	0.40%	0.00%	15.00%	15.00%	0.0596%
PATTERSON COS INC	PDCCO	\$	3,443.06	0.02%	3.03%	13.00%	16.23%	0.0026%
PUBLIC SERVICE ENTERPRISE GP	PEG	\$	25,760.05	0.12%	3.49%	1.00%	4.51%	0.0053%
PEPSICO INC	PEP	\$	168,284.00	0.77%	2.77%	7.50%	10.37%	0.0800%
PFIZER INC	PFE	\$	216,016.00	0.99%	3.75%	11.00%	14.96%	0.1481%
PRINCIPAL FINANCIAL GROUP	PFGB	\$	20,552.74	0.09%	2.75%	4.50%	7.31%	0.0069%
PROCTER & GAMBLE CO/THE	PG	\$	232,562.90	1.07%	3.01%	10.00%	13.16%	0.1403%
PROGRESSIVE CORP	PGR	\$	32,453.28	0.15%	1.72%	8.00%	9.79%	0.0146%
PARKER HANNIFIN CORP	PH	\$	26,603.90	0.12%	1.32%	7.50%	8.87%	0.0108%
PULTEGROUP INC	PHM	\$	9,926.22	0.05%	1.18%	17.00%	18.28%	0.0083%
PACKAGING CORP OF AMERICA	PKG	\$	11,356.32	0.05%	2.10%	8.50%	10.69%	0.0056%
PERKINELMER INC	PKI	\$	8,075.97	0.04%	0.38%	8.00%	8.40%	0.0031%
PROLOGIS INC	PLD	\$	-	N/A	2.79%	N/A	N/A	N/A
PHILIP MORRIS INTERNATIONAL	PM	\$	162,743.80	0.75%	4.09%	7.50%	11.74%	0.0876%
PNC FINANCIAL SERVICES GROUP	PNC	\$	69,619.77	0.32%	2.05%	5.50%	7.61%	0.0243%
PENTAIR PLC	PNR	\$	12,742.66	0.06%	2.00%	11.50%	13.62%	0.0080%
PINNACLE WEST CAPITAL	PNW	\$	9,514.29	0.04%	3.26%	5.50%	8.85%	0.0039%
PPG INDUSTRIES INC	PPG	\$	29,565.02	0.14%	1.55%	10.50%	12.13%	0.0164%
PPL CORP	PPL	\$	21,462.87	0.10%	5.26%	1.50%	6.80%	0.0067%
PERRIGO CO PLC	PRGO	\$	12,274.94	0.06%	0.79%	-0.50%	0.29%	0.0002%
PRUDENTIAL FINANCIAL INC	PRU	\$	49,583.33	0.23%	2.57%	5.50%	8.14%	0.0185%
PUBLIC STORAGE	PSA	\$	-	N/A	4.15%	N/A	N/A	N/A
PHILLIPS 66	PSX	\$	50,714.54	0.23%	3.01%	5.00%	8.09%	0.0188%
PVH CORP	PVH	\$	10,452.82	0.05%	0.11%	7.50%	7.61%	0.0036%
QUANTA SERVICES INC	PWR	\$	5,957.56	0.03%	0.00%	17.00%	17.00%	0.0046%
PRAXAIR INC	PX	\$	44,119.60	0.20%	2.18%	8.00%	10.27%	0.0208%



PIONEER NATURAL RESOURCES CO	PXD	\$	28,727.26	0.13%	0.05%	37.50%	37.56%	0.0495%
PAYPAL HOLDINGS INC	PYPL	\$	88,972.05	N/A	0.00%	N/A	N/A	N/A
QUALCOMM INC	QCOM	\$	94,910.86	0.44%	3.73%	5.00%	8.82%	0.0384%
QORVO INC	QRVO	\$	8,579.20	0.04%	0.00%	26.50%	26.50%	0.0104%
ROYAL CARIBBEAN CRUISES LTD	RCL	\$	26,063.63	0.12%	1.97%	12.50%	14.59%	0.0174%
EVEREST RE GROUP LTD	RE	\$	8,970.89	0.04%	2.46%	3.50%	6.00%	0.0025%
REGENCY CENTERS CORP	REG		N/A	N/A	0.00%	N/A	N/A	N/A
REGENERON PHARMACEUTICALS	REGN	\$	41,969.22	0.19%	0.00%	23.00%	23.00%	0.0443%
REGIONS FINANCIAL CORP	RF	\$	20,373.75	0.09%	2.23%	9.50%	11.84%	0.0111%
ROBERT HALF INTL INC	RHI	\$	7,003.14	0.03%	1.83%	4.50%	6.37%	0.0020%
RED HAT INC	RHT	\$	21,786.99	0.10%	0.00%	19.50%	19.50%	0.0195%
RAYMOND JAMES FINANCIAL INC	RJF	\$	12,997.12	0.06%	1.11%	11.50%	12.67%	0.0076%
RALPH LAUREN CORP	RL	\$	8,204.80	0.04%	1.98%	1.50%	3.49%	0.0013%
RESMED INC	RMD	\$	12,089.59	0.06%	1.65%	10.00%	11.73%	0.0065%
ROCKWELL AUTOMATION INC	ROK	\$	24,927.58	0.11%	1.72%	6.00%	7.77%	0.0089%
ROPER TECHNOLOGIES INC	ROP	\$	26,448.29	0.12%	0.64%	7.50%	8.16%	0.0099%
ROSS STORES INC	ROST	\$	30,625.18	0.14%	0.86%	9.00%	9.90%	0.0139%
RANGE RESOURCES CORP	RRC	\$	4,094.03	0.02%	0.49%	23.50%	24.05%	0.0045%
REPUBLIC SERVICES INC	RSG	\$	22,391.30	0.10%	2.11%	8.50%	10.70%	0.0110%
RAYTHEON COMPANY	RTN	\$	53,996.76	0.25%	1.71%	8.00%	9.78%	0.0242%
SBA COMMUNICATIONS CORP	SBAC	\$	18,692.68	0.09%	0.00%	87.50%	87.50%	0.0750%
STARBUCKS CORP	SBUX	\$	83,243.41	0.38%	2.17%	15.00%	17.33%	0.0662%
SCANA CORP	SCG	\$	5,346.77	0.02%	6.55%	3.50%	10.16%	0.0025%
SCHWAB (CHARLES) CORP	SCHW	\$	70,056.77	0.32%	0.67%	14.00%	14.72%	0.0473%
SEALED AIR CORP	SEE	\$	8,785.19	0.04%	1.31%	12.00%	13.39%	0.0054%
SHERWIN-WILLIAMS CO/THE	SHW	\$	38,483.82	0.18%	0.85%	14.50%	15.41%	0.0272%
SIGNET JEWELERS LTD	SIG	\$	3,367.30	0.02%	2.37%	2.00%	4.39%	0.0007%
JM SMUCKER CO/THE	SJM	\$	14,076.18	0.06%	2.53%	6.00%	8.61%	0.0056%
SCHLUMBERGER LTD	SLB	\$	94,003.88	0.43%	2.95%	17.50%	20.71%	0.0893%
SL GREEN REALTY CORP	SLG	\$	-	N/A	3.28%	N/A	N/A	N/A
SNAP-ON INC	SNA	\$	10,007.58	0.05%	1.87%	9.00%	10.95%	0.0050%
SCRIPPS NETWORKS INTER-CL A	SNI	\$	11,134.67	0.05%	1.40%	6.50%	7.95%	0.0041%
SYNOPSIS INC	SNPS	\$	12,992.58	0.06%	0.00%	9.50%	9.50%	0.0057%
SOUTHERN CO/THE	SO	\$	49,669.55	0.23%	4.81%	3.50%	8.39%	0.0191%
SIMON PROPERTY GROUP INC	SPG	\$	-	N/A	4.49%	N/A	N/A	N/A
S&P GLOBAL INC	SPGI	\$	43,038.90	0.20%	1.04%	11.50%	12.60%	0.0249%
STERICYCLE INC	SRCL	\$	5,874.78	0.03%	0.00%	4.50%	4.50%	0.0012%
SEMPRA ENERGY	SRE	\$	26,834.41	0.12%	3.26%	7.50%	10.88%	0.0134%
SUNTRUST BANKS INC	STI	\$	31,201.87	0.14%	2.44%	7.00%	9.53%	0.0136%
STATE STREET CORP	STT	\$	36,457.38	0.17%	1.74%	7.50%	9.31%	0.0156%
SEAGATE TECHNOLOGY	STX	\$	12,137.39	0.06%	6.01%	4.50%	10.65%	0.0059%
CONSTELLATION BRANDS INC-A	STZ	\$	43,926.59	0.20%	0.97%	13.50%	14.54%	0.0293%
STANLEY BLACK & DECKER INC	SWK	\$	25,925.69	0.12%	1.49%	9.50%	11.06%	0.0131%
SKYWORKS SOLUTIONS INC	SWKS	\$	17,850.42	0.08%	1.31%	14.00%	15.40%	0.0126%
SYNCHRONY FINANCIAL	SYF	\$	30,207.74	0.14%	1.55%	8.00%	9.61%	0.0133%
STRYKER CORP	SYK	\$	57,633.40	0.26%	1.22%	15.00%	16.31%	0.0431%
SYMANTEC CORP	SYMC	\$	17,647.15	0.08%	1.05%	10.50%	11.61%	0.0094%
SYSCO CORP	SYO	\$	31,607.50	0.14%	2.38%	10.50%	13.00%	0.0188%
AT&T INC	T	\$	238,697.30	1.09%	5.14%	5.50%	10.78%	0.1180%
MOLSON COORS BREWING CO -B	TAP	\$	17,486.17	0.08%	2.16%	14.00%	16.31%	0.0131%
TRANSDIGM GROUP INC	TDG	\$	14,170.71	0.06%	0.00%	8.00%	8.00%	0.0052%
TE CONNECTIVITY LTD	TEL	\$	33,791.45	0.15%	1.68%	9.50%	11.26%	0.0174%
TARGET CORP	TGT	\$	35,474.01	0.16%	3.80%	4.50%	8.39%	0.0136%
TIFFANY & CO	TIF	\$	12,735.78	0.06%	2.05%	8.00%	10.13%	0.0059%
TJX COMPANIES INC	TJX	\$	48,244.72	0.22%	1.64%	10.50%	12.23%	0.0270%
TORCHMARK CORP	TMK	\$	10,441.14	0.05%	0.66%	7.50%	8.18%	0.0039%
THERMO FISHER SCIENTIFIC INC	TMO	\$	76,642.18	0.35%	0.31%	10.50%	10.83%	0.0380%
TAPESTRY INC	TPR	\$	12,581.53	0.06%	3.05%	8.00%	11.17%	0.0064%
TRIPADVISOR INC	TRIP	\$	4,823.20	0.02%	0.00%	4.50%	4.50%	0.0010%
T ROWE PRICE GROUP INC	TROW	\$	25,335.59	0.12%	2.24%	8.00%	10.33%	0.0120%
TRAVELERS COS INC/THE	TRV	\$	36,796.23	0.17%	2.14%	1.00%	3.15%	0.0053%
TRACTOR SUPPLY COMPANY	TSCO	\$	9,362.21	0.04%	1.57%	9.00%	10.64%	0.0046%
TYSON FOODS INC-CL A	TSN	\$	29,866.88	0.14%	1.48%	10.50%	12.06%	0.0165%
TOTAL SYSTEM SERVICES INC	TSS	\$	14,461.95	0.07%	0.66%	11.00%	11.70%	0.0078%
TIME WARNER INC	TWX	\$	72,408.05	0.33%	1.73%	9.50%	11.31%	0.0376%
TEXAS INSTRUMENTS INC	TXN	\$	102,650.20	0.47%	2.38%	10.50%	13.00%	0.0612%
TEXTRON INC	TXT	\$	15,061.21	0.07%	0.14%	12.00%	12.15%	0.0084%
UNDER ARMOUR INC-CLASS A	UA	\$	6,849.68	0.03%	0.00%	10.00%	10.00%	0.0031%
UNITED CONTINENTAL HOLDINGS	UAL	\$	19,931.83	0.09%	0.00%	1.00%	1.00%	0.0009%
UDR INC	UDR	\$	-	N/A	3.29%	N/A	N/A	N/A
UNIVERSAL HEALTH SERVICES-B	UHS	\$	10,893.05	0.05%	0.35%	9.00%	9.37%	0.0047%
ULTA BEAUTY INC	ULTA	\$	13,959.68	0.06%	0.00%	20.00%	20.00%	0.0128%
UNITEDHEALTH GROUP INC	UNH	\$	214,817.60	0.98%	1.35%	13.50%	14.94%	0.1472%
UNUM GROUP	UNM	\$	12,302.04	0.06%	1.68%	11.00%	12.77%	0.0072%
UNION PACIFIC CORP	UNP	\$	105,624.60	0.48%	1.99%	8.00%	10.07%	0.0488%
UNITED PARCEL SERVICE-CL B	UPS	\$	102,216.00	0.47%	2.93%	10.00%	13.08%	0.0613%
UNITED RENTALS INC	URI	\$	14,416.99	0.07%	0.00%	8.50%	8.50%	0.0056%
US BANCORP	USB	\$	90,888.80	0.42%	2.24%	4.50%	6.79%	0.0283%
UNITED TECHNOLOGIES CORP	UTX	\$	101,665.90	0.47%	2.20%	7.50%	9.78%	0.0456%
VISA INC-CLASS A SHARES	V	\$	234,936.90	1.08%	0.75%	11.50%	12.29%	0.1324%
VARIAN MEDICAL SYSTEMS INC	VAR	\$	10,152.11	0.05%	0.00%	7.00%	7.00%	0.0033%
VF CORP	VFC	\$	29,283.96	0.13%	2.48%	8.50%	11.09%	0.0149%
VIACOM INC-CLASS B	VIAB	\$	12,780.22	0.06%	2.52%	2.00%	4.55%	0.0027%
VALERO ENERGY CORP	VLO	\$	39,732.37	0.18%	3.19%	5.00%	8.27%	0.0151%
VULCAN MATERIALS CO	VMC	\$	16,250.72	0.07%	0.81%	19.00%	19.89%	0.0148%
VORNADO REALTY TRUST	VNO	\$	14,645.29	0.07%	3.11%	-0.50%	2.60%	0.0017%
VERISK ANALYTICS INC	VRSK	\$	15,724.54	0.07%	0.00%	10.50%	10.50%	0.0076%
VERISIGN INC	VRSN	\$	11,289.39	0.05%	0.00%	10.50%	10.50%	0.0054%
VERTEX PHARMACEUTICALS INC	VRTX	\$	37,604.29	N/A	0.00%	N/A	N/A	N/A
VENTAS INC	VTR	\$	-	N/A	5.55%	N/A	N/A	N/A
VERIZON COMMUNICATIONS INC	VZ	\$	216,251.20	0.99%	4.45%	2.00%	6.49%	0.0644%
WATERS CORP	WAT	\$	15,468.62	0.07%	0.00%	8.50%	8.50%	0.0060%
WALGREENS BOOTS ALLIANCE INC	WBA	\$	78,384.53	0.36%	2.18%	11.00%	13.30%	0.0478%
WESTERN DIGITAL CORP	WDC	\$	23,844.85	0.11%	2.47%	13.00%	15.63%	0.0171%
WEC ENERGY GROUP INC	WEC	\$	20,708.10	0.09%	3.37%	6.00%	9.47%	0.0090%
WELLS FARGO & CO	WFC	\$	303,606.10	1.39%	2.58%	5.00%	7.64%	0.1064%
WHIRLPOOL CORP	WHR	\$	12,211.92	0.06%	2.59%	9.50%	12.21%	0.0068%
WILLIS TOWERS WATSON PLC	WLTW	\$	20,155.96	N/A	1.39%	N/A	N/A	N/A
WASTE MANAGEMENT INC	WM	\$	37,250.53	0.17%	1.98%	8.50%	10.56%	0.0180%

WILLIAMS COS INC	WMB	\$	25,044.32	0.11%	3.96%	18.50%	22.83%	0.0262%
WAL-MART STORES INC	WMT	\$	291,042.10	1.33%	2.10%	5.50%	7.66%	0.1022%
WESTROCK CO	WRK	\$	16,247.28	0.07%	2.69%	10.00%	12.82%	0.0096%
WESTERN UNION CO	WU	\$	8,846.12	0.04%	3.63%	5.50%	9.23%	0.0037%
WEYERHAEUSER CO	WY	\$	26,514.93	0.12%	3.64%	14.50%	18.40%	0.0224%
WYNDHAM WORLDWIDE CORP	WYN	\$	11,476.56	0.05%	2.23%	7.50%	9.81%	0.0052%
WYNN RESORTS LTD	WYNN	\$	17,319.96	0.08%	1.19%	14.00%	15.27%	0.0121%
CIMAREX ENERGY CO	XEC	\$	11,315.10	0.05%	0.27%	31.00%	31.31%	0.0162%
XCEL ENERGY INC	XEL	\$	24,570.65	0.11%	3.10%	4.50%	7.67%	0.0086%
XL GROUP LTD	XL	\$	9,357.13	0.04%	2.51%	13.00%	15.67%	0.0067%
XILINX INC	XLNX	\$	17,157.65	0.08%	2.05%	8.00%	10.13%	0.0080%
EXXON MOBIL CORP	XOM	\$	355,272.50	1.63%	3.72%	10.50%	14.42%	0.2348%
DENTSPLY SIRONA INC	XRAY	\$	15,038.80	0.07%	0.53%	8.50%	9.05%	0.0062%
XEROX CORP	XRX	\$	7,563.75	0.03%	3.37%	4.00%	7.44%	0.0026%
XYLEM INC	XYL	\$	12,167.90	0.06%	1.06%	14.00%	15.13%	0.0084%
YUM! BRANDS INC	YUM	\$	27,967.50	0.13%	1.60%	6.50%	8.15%	0.0105%
ZIMMER BIOMET HOLDINGS INC	ZBH	\$	24,277.88	0.11%	0.90%	11.00%	11.95%	0.0133%
ZIONS BANCORPORATION	ZION	\$	10,277.18	0.05%	1.63%	13.50%	15.24%	0.0072%
ZOETIS INC	ZTS	\$	35,260.50	0.16%	0.70%	12.00%	12.74%	0.0206%
Total Market Capitalization:			\$ 21,809,944.56					14.67%

Notes:

[1] Equals sum of Col. [9]

[2] Source: Bloomberg Professional

[3] Equals [1] - [2]

[4] Source: Value Line

[5] Equals weight in S&P 500 based on market capitalization

[6] Source: Value Line

[7] Source: Value Line

[8] Equals  $([6] \times (1 + (0.5 \times [7]))) + [7]$

[9] Equals Col. [5] x Col. [8]

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1] Bloomberg	[2] Value Line
ALLETE, Inc.	ALE	0.746	0.800
Alliant Energy Corporation	LNT	0.469	0.700
Ameren Corporation	AEE	0.443	0.700
American Electric Power Company, Inc.	AEP	0.496	0.650
Black Hills Corporation	BKH	0.519	0.900
CMS Energy Corporation	CMS	0.475	0.650
Dominion Resources, Inc.	D	0.500	0.650
DTE Energy Company	DTE	0.521	0.650
Duke Energy Corporation	DUK	0.461	0.600
El Paso Electric Company	EE	0.762	0.800
Hawaiian Electric Industries, Inc.	HE	0.564	0.700
IDACORP, Inc.	IDA	0.700	0.700
NorthWestern Corporation	NWE	0.602	0.700
OGE Energy Corp.	OGE	0.652	0.950
Otter Tail Corporation	OTTR	0.870	0.900
Pinnacle West Capital Corporation	PNW	0.563	0.700
PNM Resources, Inc.	PNM	0.615	0.750
Portland General Electric Company	POR	0.470	0.700
Southern Company	SO	0.531	0.550
Wisconsin Energy Corporation	WEC	0.431	0.600
Xcel Energy Inc.	XEL	0.401	0.600
Mean		0.561	0.712

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line



Capital Asset Pricing Model Results  
Bloomberg, and Value Line Derived Market Risk Premium

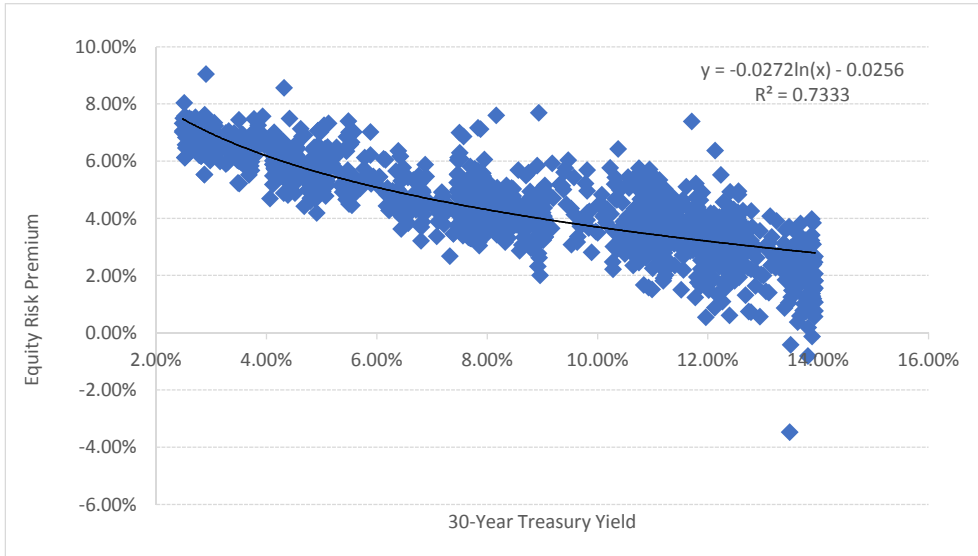
	[1]	[2]	[3]	[4]	[5]	[6]
			Ex-Ante Market Risk Premium		CAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived
<b>PROXY GROUP AVERAGE BLOOMBERG BETA COEFFICIENT</b>						
Current 30-Year Treasury (30-day average) [7]	2.77%	0.561	11.00%	11.89%	8.95%	9.45%
Near-Term Projected 30-Year Treasury [8]	3.32%	0.561	11.00%	11.89%	9.50%	9.99%
Mean					9.22%	9.72%
			Ex-Ante Market Risk Premium		CAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived
<b>PROXY GROUP AVERAGE VALUE LINE AVERAGE BETA COEFFICIENT</b>						
Current 30-Year Treasury (30-day average) [7]	2.77%	0.712	11.00%	11.89%	10.61%	11.24%
Near-Term Projected 30-Year Treasury [8]	3.32%	0.712	11.00%	11.89%	11.15%	11.78%
Mean					10.88%	11.51%

Notes:

- [1] See Notes [7], [8] and [9]  
 [2] Source: RBH-4  
 [3] Source: RBH-3  
 [4] Source: RBH-3  
 [5] Equals Col. [1] + (Col. [2] x Col. [3])  
 [6] Equals Col. [1] + (Col. [2] x Col. [4])  
 [7] Bloomberg Professional  
 [8] Source: Blue Chip Financial Forecasts, Vol. 37, No. 1, January 1, 2018, at 2.

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
-2.56%	-2.72%			
Current 30-Year Treasury		2.77%	7.18%	9.95%
Near-Term Projected 30-Year Treasury		3.32%	6.69%	10.01%
Long-Term Projected 30-Year Treasury		4.20%	6.05%	10.25%



Notes:

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional,  
Near Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 1, January 1, 2018, at 2.  
Long Term Projected = Blue Chip Financial Forecasts, Vol. 36, No. 12, December 1, 2017, at 14.
- [4] Equals [1] + ln([3]) x [2]
- [5] Equals [3] + [4]
- [6] Source: S&P Global Market Intelligence
- [7] Source: S&P Global Market Intelligence
- [8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period)
- [9] Equals [7] - [8]

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
1/1/1980	14.50%	9.36%	5.14%
1/7/1980	14.39%	9.38%	5.01%
1/9/1980	15.00%	9.40%	5.60%
1/14/1980	15.17%	9.42%	5.75%
1/17/1980	13.93%	9.44%	4.49%
1/23/1980	15.50%	9.47%	6.03%
1/30/1980	13.86%	9.52%	4.34%
1/31/1980	12.61%	9.53%	3.08%
2/6/1980	13.71%	9.58%	4.13%
2/13/1980	12.80%	9.63%	3.17%
2/14/1980	13.00%	9.65%	3.35%
2/19/1980	13.50%	9.68%	3.82%
2/27/1980	13.75%	9.78%	3.97%
2/29/1980	13.75%	9.81%	3.94%
2/29/1980	14.00%	9.81%	4.19%
2/29/1980	14.77%	9.81%	4.96%
3/7/1980	12.70%	9.89%	2.81%
3/14/1980	13.50%	9.97%	3.53%
3/26/1980	14.16%	10.10%	4.06%
3/27/1980	14.24%	10.12%	4.12%
3/28/1980	14.50%	10.13%	4.37%
4/11/1980	12.75%	10.27%	2.48%
4/14/1980	13.85%	10.29%	3.56%
4/16/1980	15.50%	10.31%	5.19%
4/22/1980	13.25%	10.35%	2.90%
4/22/1980	13.90%	10.35%	3.55%
4/24/1980	16.80%	10.38%	6.43%
4/29/1980	15.50%	10.41%	5.09%
5/6/1980	13.70%	10.45%	3.25%
5/7/1980	15.00%	10.45%	4.55%
5/8/1980	13.75%	10.46%	3.29%
5/9/1980	14.35%	10.47%	3.88%
5/13/1980	13.60%	10.48%	3.12%
5/15/1980	13.25%	10.49%	2.76%
5/19/1980	13.75%	10.51%	3.24%
5/27/1980	13.62%	10.54%	3.08%
5/27/1980	14.60%	10.54%	4.06%
5/29/1980	16.00%	10.56%	5.44%
5/30/1980	13.80%	10.56%	3.24%
6/2/1980	15.63%	10.57%	5.06%
6/9/1980	15.90%	10.60%	5.30%
6/10/1980	13.78%	10.60%	3.18%
6/12/1980	14.25%	10.61%	3.64%
6/19/1980	13.40%	10.62%	2.78%
6/30/1980	13.00%	10.65%	2.35%
6/30/1980	13.40%	10.65%	2.75%
7/9/1980	14.75%	10.67%	4.08%
7/10/1980	15.00%	10.68%	4.32%
7/15/1980	15.80%	10.70%	5.10%
7/18/1980	13.80%	10.71%	3.09%
7/22/1980	14.10%	10.72%	3.38%
7/24/1980	15.00%	10.73%	4.27%

7/25/1980	13.48%	10.73%	2.75%
7/31/1980	14.58%	10.75%	3.83%
8/8/1980	13.50%	10.78%	2.72%
8/8/1980	14.00%	10.78%	3.22%
8/8/1980	15.45%	10.78%	4.67%
8/11/1980	14.85%	10.78%	4.07%
8/14/1980	14.00%	10.79%	3.21%
8/14/1980	16.25%	10.79%	5.46%
8/25/1980	13.75%	10.82%	2.93%
8/27/1980	13.80%	10.83%	2.97%
8/29/1980	12.50%	10.84%	1.66%
9/15/1980	13.50%	10.88%	2.62%
9/15/1980	13.93%	10.88%	3.05%
9/15/1980	15.80%	10.88%	4.92%
9/24/1980	12.50%	10.93%	1.57%
9/24/1980	15.00%	10.93%	4.07%
9/26/1980	13.75%	10.94%	2.81%
9/30/1980	14.10%	10.96%	3.14%
9/30/1980	14.20%	10.96%	3.24%
10/1/1980	13.90%	10.97%	2.93%
10/3/1980	15.50%	10.98%	4.52%
10/7/1980	12.50%	10.99%	1.51%
10/9/1980	13.25%	11.00%	2.25%
10/9/1980	14.50%	11.00%	3.50%
10/9/1980	14.50%	11.00%	3.50%
10/16/1980	16.10%	11.02%	5.08%
10/17/1980	14.50%	11.03%	3.47%
10/31/1980	13.75%	11.11%	2.64%
10/31/1980	14.25%	11.11%	3.14%
11/4/1980	15.00%	11.12%	3.88%
11/5/1980	13.75%	11.12%	2.63%
11/5/1980	14.00%	11.12%	2.88%
11/8/1980	13.75%	11.14%	2.61%
11/10/1980	14.85%	11.15%	3.70%
11/17/1980	14.00%	11.18%	2.82%
11/18/1980	14.00%	11.19%	2.81%
11/19/1980	13.00%	11.19%	1.81%
11/24/1980	14.00%	11.21%	2.79%
11/26/1980	14.00%	11.21%	2.79%
12/8/1980	14.15%	11.22%	2.93%
12/8/1980	15.10%	11.22%	3.88%
12/9/1980	15.35%	11.22%	4.13%
12/12/1980	15.45%	11.23%	4.22%
12/17/1980	13.25%	11.23%	2.02%
12/18/1980	15.80%	11.23%	4.57%
12/19/1980	14.50%	11.23%	3.27%
12/19/1980	14.64%	11.23%	3.41%
12/22/1980	13.45%	11.23%	2.22%
12/22/1980	15.00%	11.23%	3.77%
12/30/1980	14.50%	11.22%	3.28%
12/30/1980	14.95%	11.22%	3.73%
12/31/1980	13.39%	11.22%	2.17%
1/2/1981	15.25%	11.22%	4.03%
1/7/1981	14.30%	11.21%	3.09%
1/19/1981	15.25%	11.20%	4.05%
1/23/1981	13.10%	11.20%	1.90%
1/23/1981	14.40%	11.20%	3.20%

1/26/1981	15.25%	11.20%	4.05%
1/27/1981	15.00%	11.21%	3.79%
1/31/1981	13.47%	11.22%	2.25%
2/3/1981	15.25%	11.23%	4.02%
2/5/1981	15.75%	11.25%	4.50%
2/11/1981	15.60%	11.28%	4.32%
2/20/1981	15.25%	11.33%	3.92%
3/11/1981	15.40%	11.49%	3.91%
3/12/1981	14.51%	11.50%	3.01%
3/12/1981	16.00%	11.50%	4.50%
3/13/1981	13.02%	11.52%	1.50%
3/18/1981	16.19%	11.55%	4.64%
3/19/1981	13.75%	11.56%	2.19%
3/23/1981	14.30%	11.58%	2.72%
3/25/1981	15.30%	11.60%	3.70%
4/1/1981	14.53%	11.68%	2.85%
4/3/1981	19.10%	11.71%	7.39%
4/9/1981	15.00%	11.78%	3.22%
4/9/1981	15.30%	11.78%	3.52%
4/9/1981	16.50%	11.78%	4.72%
4/9/1981	17.00%	11.78%	5.22%
4/10/1981	13.75%	11.80%	1.95%
4/13/1981	13.57%	11.82%	1.75%
4/15/1981	15.30%	11.85%	3.45%
4/16/1981	13.50%	11.87%	1.63%
4/17/1981	14.10%	11.87%	2.23%
4/21/1981	14.00%	11.90%	2.10%
4/21/1981	16.80%	11.90%	4.90%
4/24/1981	16.00%	11.95%	4.05%
4/27/1981	12.50%	11.97%	0.53%
4/27/1981	13.61%	11.97%	1.64%
4/29/1981	13.65%	12.00%	1.65%
4/30/1981	13.50%	12.02%	1.48%
5/4/1981	16.22%	12.05%	4.17%
5/5/1981	14.40%	12.07%	2.33%
5/7/1981	16.25%	12.11%	4.14%
5/7/1981	16.27%	12.11%	4.16%
5/8/1981	13.00%	12.13%	0.87%
5/8/1981	16.00%	12.13%	3.87%
5/12/1981	13.50%	12.16%	1.34%
5/15/1981	15.75%	12.22%	3.53%
5/18/1981	14.88%	12.23%	2.65%
5/20/1981	16.00%	12.26%	3.74%
5/21/1981	14.00%	12.27%	1.73%
5/26/1981	14.90%	12.30%	2.60%
5/27/1981	15.00%	12.31%	2.69%
5/29/1981	15.50%	12.34%	3.16%
6/1/1981	16.50%	12.35%	4.15%
6/3/1981	14.67%	12.37%	2.30%
6/5/1981	13.00%	12.39%	0.61%
6/10/1981	16.75%	12.42%	4.33%
6/17/1981	14.40%	12.46%	1.94%
6/18/1981	16.33%	12.47%	3.86%
6/25/1981	14.75%	12.51%	2.24%
6/26/1981	16.00%	12.52%	3.48%
6/30/1981	15.25%	12.54%	2.71%
7/1/1981	15.50%	12.56%	2.94%

7/1/1981	17.50%	12.56%	4.94%
7/10/1981	16.00%	12.62%	3.38%
7/14/1981	16.90%	12.64%	4.26%
7/15/1981	16.00%	12.65%	3.35%
7/17/1981	15.00%	12.67%	2.33%
7/20/1981	15.00%	12.68%	2.32%
7/21/1981	14.00%	12.69%	1.31%
7/28/1981	13.48%	12.74%	0.74%
7/31/1981	13.50%	12.78%	0.72%
7/31/1981	15.00%	12.78%	2.22%
7/31/1981	16.00%	12.78%	3.22%
8/5/1981	15.71%	12.83%	2.88%
8/10/1981	14.50%	12.87%	1.63%
8/11/1981	15.00%	12.88%	2.12%
8/20/1981	13.50%	12.95%	0.55%
8/20/1981	16.50%	12.95%	3.55%
8/24/1981	15.00%	12.97%	2.03%
8/28/1981	15.00%	13.01%	1.99%
9/3/1981	14.50%	13.05%	1.45%
9/10/1981	14.50%	13.11%	1.39%
9/11/1981	16.00%	13.12%	2.88%
9/16/1981	16.00%	13.15%	2.85%
9/17/1981	16.50%	13.16%	3.34%
9/23/1981	15.85%	13.20%	2.65%
9/28/1981	15.50%	13.23%	2.27%
10/9/1981	15.75%	13.33%	2.42%
10/15/1981	16.25%	13.37%	2.88%
10/16/1981	15.50%	13.38%	2.12%
10/16/1981	16.50%	13.38%	3.12%
10/19/1981	14.25%	13.39%	0.86%
10/20/1981	15.25%	13.41%	1.84%
10/20/1981	17.00%	13.41%	3.59%
10/23/1981	16.00%	13.45%	2.55%
10/27/1981	10.00%	13.48%	-3.48%
10/29/1981	14.75%	13.51%	1.24%
10/29/1981	16.50%	13.51%	2.99%
11/3/1981	15.17%	13.53%	1.64%
11/5/1981	16.60%	13.55%	3.05%
11/6/1981	15.17%	13.56%	1.61%
11/24/1981	15.50%	13.61%	1.89%
11/25/1981	15.25%	13.61%	1.64%
11/25/1981	15.35%	13.61%	1.74%
11/25/1981	16.10%	13.61%	2.49%
11/25/1981	16.10%	13.61%	2.49%
12/1/1981	15.70%	13.61%	2.09%
12/1/1981	16.00%	13.61%	2.39%
12/1/1981	16.49%	13.61%	2.88%
12/1/1981	16.50%	13.61%	2.89%
12/4/1981	16.00%	13.61%	2.39%
12/11/1981	16.25%	13.63%	2.62%
12/14/1981	14.00%	13.63%	0.37%
12/15/1981	15.81%	13.63%	2.18%
12/15/1981	16.00%	13.63%	2.37%
12/16/1981	15.25%	13.63%	1.62%
12/17/1981	16.50%	13.63%	2.87%
12/18/1981	15.45%	13.63%	1.82%
12/30/1981	14.25%	13.67%	0.58%

12/30/1981	16.00%	13.67%	2.33%
12/30/1981	16.25%	13.67%	2.58%
12/31/1981	16.15%	13.67%	2.48%
1/4/1982	15.50%	13.67%	1.83%
1/11/1982	14.50%	13.72%	0.78%
1/11/1982	17.00%	13.72%	3.28%
1/13/1982	14.75%	13.74%	1.01%
1/14/1982	15.75%	13.75%	2.00%
1/15/1982	15.00%	13.76%	1.24%
1/15/1982	16.50%	13.76%	2.74%
1/22/1982	16.25%	13.79%	2.46%
1/27/1982	16.84%	13.81%	3.03%
1/28/1982	13.00%	13.81%	-0.81%
1/29/1982	15.50%	13.82%	1.68%
2/1/1982	15.85%	13.82%	2.03%
2/3/1982	16.44%	13.84%	2.60%
2/8/1982	15.50%	13.86%	1.64%
2/11/1982	16.00%	13.88%	2.12%
2/11/1982	16.20%	13.88%	2.32%
2/17/1982	15.00%	13.89%	1.11%
2/19/1982	15.17%	13.89%	1.28%
2/26/1982	15.25%	13.89%	1.36%
3/1/1982	15.03%	13.89%	1.14%
3/1/1982	16.00%	13.89%	2.11%
3/3/1982	15.00%	13.88%	1.12%
3/8/1982	17.10%	13.88%	3.22%
3/12/1982	16.25%	13.88%	2.37%
3/17/1982	17.30%	13.88%	3.42%
3/22/1982	15.10%	13.89%	1.21%
3/27/1982	15.40%	13.89%	1.51%
3/30/1982	15.50%	13.90%	1.60%
3/31/1982	17.00%	13.91%	3.09%
4/1/1982	14.70%	13.91%	0.79%
4/1/1982	16.50%	13.91%	2.59%
4/2/1982	15.50%	13.91%	1.59%
4/5/1982	15.50%	13.92%	1.58%
4/8/1982	16.40%	13.93%	2.47%
4/13/1982	14.50%	13.94%	0.56%
4/23/1982	15.75%	13.94%	1.81%
4/27/1982	15.00%	13.94%	1.06%
4/28/1982	15.75%	13.94%	1.81%
4/30/1982	14.70%	13.94%	0.76%
4/30/1982	15.50%	13.94%	1.56%
5/3/1982	16.60%	13.94%	2.66%
5/4/1982	16.00%	13.94%	2.06%
5/14/1982	15.50%	13.92%	1.58%
5/18/1982	15.42%	13.92%	1.50%
5/19/1982	14.69%	13.92%	0.77%
5/20/1982	15.00%	13.91%	1.09%
5/20/1982	15.10%	13.91%	1.19%
5/20/1982	15.50%	13.91%	1.59%
5/20/1982	16.30%	13.91%	2.39%
5/21/1982	17.75%	13.91%	3.84%
5/27/1982	15.00%	13.89%	1.11%
5/28/1982	15.50%	13.89%	1.61%
5/28/1982	17.00%	13.89%	3.11%
6/1/1982	13.75%	13.89%	-0.14%

6/1/1982	16.60%	13.89%	2.71%
6/9/1982	17.86%	13.88%	3.98%
6/14/1982	15.75%	13.88%	1.87%
6/15/1982	14.85%	13.88%	0.97%
6/18/1982	15.50%	13.87%	1.63%
6/21/1982	14.90%	13.87%	1.03%
6/23/1982	16.00%	13.86%	2.14%
6/23/1982	16.17%	13.86%	2.31%
6/24/1982	14.85%	13.86%	0.99%
6/25/1982	14.70%	13.86%	0.84%
7/1/1982	16.00%	13.84%	2.16%
7/2/1982	15.62%	13.84%	1.78%
7/2/1982	17.00%	13.84%	3.16%
7/13/1982	14.00%	13.82%	0.18%
7/13/1982	16.80%	13.82%	2.98%
7/14/1982	15.76%	13.82%	1.94%
7/14/1982	16.02%	13.82%	2.20%
7/19/1982	16.50%	13.80%	2.70%
7/22/1982	14.50%	13.77%	0.73%
7/22/1982	17.00%	13.77%	3.23%
7/27/1982	16.75%	13.75%	3.00%
7/29/1982	16.50%	13.74%	2.76%
8/11/1982	17.50%	13.68%	3.82%
8/18/1982	17.07%	13.63%	3.44%
8/20/1982	15.73%	13.60%	2.13%
8/25/1982	16.00%	13.57%	2.43%
8/26/1982	15.50%	13.56%	1.94%
8/30/1982	15.00%	13.55%	1.45%
9/3/1982	16.20%	13.53%	2.67%
9/8/1982	15.00%	13.52%	1.48%
9/15/1982	13.08%	13.50%	-0.42%
9/15/1982	16.25%	13.50%	2.75%
9/16/1982	16.00%	13.50%	2.50%
9/17/1982	15.25%	13.50%	1.75%
9/23/1982	17.17%	13.47%	3.70%
9/24/1982	14.50%	13.46%	1.04%
9/27/1982	15.25%	13.46%	1.79%
10/1/1982	15.50%	13.42%	2.08%
10/15/1982	15.90%	13.32%	2.58%
10/22/1982	15.75%	13.24%	2.51%
10/22/1982	17.15%	13.24%	3.91%
10/29/1982	15.54%	13.16%	2.38%
11/1/1982	15.50%	13.15%	2.35%
11/3/1982	17.20%	13.13%	4.07%
11/4/1982	16.25%	13.11%	3.14%
11/5/1982	16.20%	13.09%	3.11%
11/9/1982	16.00%	13.05%	2.95%
11/23/1982	15.50%	12.89%	2.61%
11/23/1982	15.85%	12.89%	2.96%
11/30/1982	16.50%	12.81%	3.69%
12/1/1982	17.04%	12.79%	4.25%
12/6/1982	15.00%	12.73%	2.27%
12/6/1982	16.35%	12.73%	3.62%
12/10/1982	15.50%	12.66%	2.84%
12/13/1982	16.00%	12.65%	3.35%
12/14/1982	15.30%	12.63%	2.67%
12/14/1982	16.40%	12.63%	3.77%



12/20/1982	16.00%	12.57%	3.43%
12/21/1982	14.75%	12.56%	2.19%
12/21/1982	15.85%	12.56%	3.29%
12/22/1982	16.25%	12.54%	3.71%
12/22/1982	16.58%	12.54%	4.04%
12/22/1982	16.75%	12.54%	4.21%
12/29/1982	14.90%	12.48%	2.42%
12/29/1982	16.25%	12.48%	3.77%
12/30/1982	16.00%	12.47%	3.53%
12/30/1982	16.35%	12.47%	3.88%
12/30/1982	16.77%	12.47%	4.30%
1/5/1983	17.33%	12.40%	4.93%
1/11/1983	15.90%	12.34%	3.56%
1/12/1983	14.63%	12.33%	2.30%
1/12/1983	15.50%	12.33%	3.17%
1/20/1983	17.75%	12.24%	5.51%
1/21/1983	15.00%	12.22%	2.78%
1/24/1983	14.50%	12.21%	2.29%
1/24/1983	15.50%	12.21%	3.29%
1/25/1983	15.85%	12.19%	3.66%
1/27/1983	16.14%	12.17%	3.97%
2/1/1983	18.50%	12.13%	6.37%
2/4/1983	14.00%	12.10%	1.90%
2/10/1983	15.00%	12.06%	2.94%
2/21/1983	15.50%	11.98%	3.52%
2/22/1983	15.50%	11.97%	3.53%
2/23/1983	15.10%	11.96%	3.14%
2/23/1983	16.00%	11.96%	4.04%
3/2/1983	15.25%	11.89%	3.36%
3/9/1983	15.20%	11.82%	3.38%
3/15/1983	13.00%	11.77%	1.23%
3/18/1983	15.25%	11.73%	3.52%
3/23/1983	15.40%	11.69%	3.71%
3/24/1983	15.00%	11.67%	3.33%
3/29/1983	15.50%	11.63%	3.87%
3/30/1983	16.71%	11.61%	5.10%
3/31/1983	15.00%	11.59%	3.41%
4/4/1983	15.20%	11.58%	3.62%
4/8/1983	15.50%	11.51%	3.99%
4/11/1983	14.81%	11.49%	3.32%
4/19/1983	14.50%	11.38%	3.12%
4/20/1983	16.00%	11.36%	4.64%
4/29/1983	16.00%	11.24%	4.76%
5/1/1983	14.50%	11.24%	3.26%
5/9/1983	15.50%	11.15%	4.35%
5/11/1983	16.46%	11.12%	5.34%
5/12/1983	14.14%	11.11%	3.03%
5/18/1983	15.00%	11.05%	3.95%
5/23/1983	14.90%	11.01%	3.89%
5/23/1983	15.50%	11.01%	4.49%
5/25/1983	15.50%	10.98%	4.52%
5/27/1983	15.00%	10.96%	4.04%
5/31/1983	14.00%	10.95%	3.05%
5/31/1983	15.50%	10.95%	4.55%
6/2/1983	14.50%	10.93%	3.57%
6/17/1983	15.03%	10.84%	4.19%
7/1/1983	14.80%	10.78%	4.02%

7/1/1983	14.90%	10.78%	4.12%
7/8/1983	16.25%	10.76%	5.49%
7/13/1983	13.20%	10.75%	2.45%
7/19/1983	15.00%	10.74%	4.26%
7/19/1983	15.10%	10.74%	4.36%
7/25/1983	16.25%	10.73%	5.52%
7/28/1983	15.90%	10.74%	5.16%
8/3/1983	16.34%	10.75%	5.59%
8/3/1983	16.50%	10.75%	5.75%
8/19/1983	15.00%	10.80%	4.20%
8/22/1983	15.50%	10.80%	4.70%
8/22/1983	16.40%	10.80%	5.60%
8/31/1983	14.75%	10.84%	3.91%
9/7/1983	15.00%	10.86%	4.14%
9/14/1983	15.78%	10.89%	4.89%
9/16/1983	15.00%	10.90%	4.10%
9/19/1983	14.50%	10.91%	3.59%
9/20/1983	16.50%	10.91%	5.59%
9/28/1983	14.50%	10.94%	3.56%
9/29/1983	15.50%	10.95%	4.55%
9/30/1983	15.25%	10.95%	4.30%
9/30/1983	16.15%	10.95%	5.20%
10/4/1983	14.80%	10.96%	3.84%
10/7/1983	16.00%	10.97%	5.03%
10/13/1983	15.52%	10.99%	4.53%
10/17/1983	15.50%	11.00%	4.50%
10/18/1983	14.50%	11.00%	3.50%
10/19/1983	16.25%	11.01%	5.24%
10/19/1983	16.50%	11.01%	5.49%
10/26/1983	15.00%	11.04%	3.96%
10/27/1983	15.20%	11.04%	4.16%
11/1/1983	16.00%	11.06%	4.94%
11/9/1983	14.90%	11.09%	3.81%
11/10/1983	14.35%	11.10%	3.25%
11/23/1983	16.00%	11.13%	4.87%
11/23/1983	16.15%	11.13%	5.02%
11/30/1983	15.00%	11.14%	3.86%
12/5/1983	15.25%	11.15%	4.10%
12/6/1983	15.07%	11.15%	3.92%
12/8/1983	15.90%	11.16%	4.74%
12/9/1983	14.75%	11.17%	3.58%
12/12/1983	14.50%	11.17%	3.33%
12/15/1983	15.56%	11.19%	4.37%
12/19/1983	14.80%	11.21%	3.59%
12/20/1983	14.69%	11.22%	3.47%
12/20/1983	16.00%	11.22%	4.78%
12/20/1983	16.25%	11.22%	5.03%
12/22/1983	14.75%	11.23%	3.52%
12/22/1983	15.75%	11.23%	4.52%
1/3/1984	14.75%	11.27%	3.48%
1/10/1984	15.90%	11.30%	4.60%
1/12/1984	15.60%	11.31%	4.29%
1/18/1984	13.75%	11.33%	2.42%
1/19/1984	15.90%	11.33%	4.57%
1/30/1984	16.10%	11.37%	4.73%
1/31/1984	15.25%	11.37%	3.88%
2/1/1984	14.80%	11.38%	3.42%

2/6/1984	13.75%	11.40%	2.35%
2/6/1984	14.75%	11.40%	3.35%
2/9/1984	15.25%	11.42%	3.83%
2/15/1984	15.70%	11.44%	4.26%
2/20/1984	15.00%	11.46%	3.54%
2/20/1984	15.00%	11.46%	3.54%
2/22/1984	14.75%	11.47%	3.28%
2/28/1984	14.50%	11.51%	2.99%
3/2/1984	14.25%	11.54%	2.71%
3/20/1984	16.00%	11.64%	4.36%
3/23/1984	15.50%	11.67%	3.83%
3/26/1984	14.71%	11.68%	3.03%
4/2/1984	15.50%	11.71%	3.79%
4/6/1984	14.74%	11.75%	2.99%
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4/17/1984	15.00%	11.81%	3.19%
4/18/1984	16.20%	11.82%	4.38%
4/25/1984	14.64%	11.85%	2.79%
4/30/1984	14.40%	11.87%	2.53%
5/16/1984	14.69%	11.98%	2.71%
5/16/1984	15.00%	11.98%	3.02%
5/22/1984	14.40%	12.02%	2.38%
5/29/1984	15.10%	12.06%	3.04%
6/13/1984	15.25%	12.15%	3.10%
6/15/1984	15.60%	12.17%	3.43%
6/22/1984	16.25%	12.21%	4.04%
6/29/1984	15.25%	12.26%	2.99%
7/2/1984	13.35%	12.27%	1.08%
7/10/1984	16.00%	12.31%	3.69%
7/12/1984	16.50%	12.32%	4.18%
7/13/1984	16.25%	12.33%	3.92%
7/17/1984	14.14%	12.35%	1.79%
7/18/1984	15.30%	12.36%	2.94%
7/18/1984	15.50%	12.36%	3.14%
7/19/1984	14.30%	12.37%	1.93%
7/24/1984	16.79%	12.39%	4.40%
7/31/1984	16.00%	12.43%	3.57%
8/3/1984	14.25%	12.44%	1.81%
8/17/1984	14.30%	12.49%	1.81%
8/20/1984	15.00%	12.49%	2.51%
8/27/1984	16.30%	12.51%	3.79%
8/31/1984	15.55%	12.52%	3.03%
9/6/1984	16.00%	12.53%	3.47%
9/10/1984	14.75%	12.54%	2.21%
9/13/1984	15.00%	12.55%	2.45%
9/17/1984	17.38%	12.56%	4.82%
9/26/1984	14.50%	12.57%	1.93%
9/28/1984	15.00%	12.57%	2.43%
9/28/1984	16.25%	12.57%	3.68%
10/9/1984	14.75%	12.58%	2.17%
10/12/1984	15.60%	12.59%	3.01%
10/22/1984	15.00%	12.59%	2.41%
10/26/1984	16.40%	12.58%	3.82%
10/31/1984	16.25%	12.58%	3.67%
11/7/1984	15.60%	12.58%	3.02%
11/9/1984	16.00%	12.58%	3.42%
11/14/1984	15.75%	12.58%	3.17%

11/20/1984	15.25%	12.58%	2.67%
11/20/1984	15.92%	12.58%	3.34%
11/23/1984	15.00%	12.58%	2.42%
11/28/1984	16.15%	12.57%	3.58%
12/3/1984	15.80%	12.56%	3.24%
12/4/1984	16.50%	12.56%	3.94%
12/18/1984	16.40%	12.53%	3.87%
12/19/1984	14.75%	12.53%	2.22%
12/19/1984	15.00%	12.53%	2.47%
12/20/1984	16.00%	12.53%	3.47%
12/28/1984	16.00%	12.50%	3.50%
1/3/1985	14.75%	12.49%	2.26%
1/10/1985	15.75%	12.47%	3.28%
1/11/1985	16.30%	12.46%	3.84%
1/23/1985	15.80%	12.43%	3.37%
1/24/1985	15.82%	12.43%	3.39%
1/25/1985	16.75%	12.42%	4.33%
1/30/1985	14.90%	12.40%	2.50%
1/31/1985	14.75%	12.39%	2.36%
2/8/1985	14.47%	12.35%	2.12%
3/1/1985	13.84%	12.31%	1.53%
3/8/1985	16.85%	12.28%	4.57%
3/14/1985	15.50%	12.25%	3.25%
3/15/1985	15.62%	12.25%	3.37%
3/29/1985	15.62%	12.17%	3.45%
4/3/1985	14.60%	12.14%	2.46%
4/9/1985	15.50%	12.11%	3.39%
4/16/1985	15.70%	12.06%	3.64%
4/22/1985	14.00%	12.02%	1.98%
4/26/1985	15.50%	11.98%	3.52%
4/29/1985	15.00%	11.97%	3.03%
5/2/1985	14.68%	11.94%	2.74%
5/8/1985	15.62%	11.89%	3.73%
5/10/1985	16.50%	11.87%	4.63%
5/29/1985	14.61%	11.73%	2.88%
5/31/1985	16.00%	11.71%	4.29%
6/14/1985	15.50%	11.61%	3.89%
7/9/1985	15.00%	11.45%	3.55%
7/16/1985	14.50%	11.39%	3.11%
7/26/1985	14.50%	11.33%	3.17%
8/2/1985	14.80%	11.29%	3.51%
8/7/1985	15.00%	11.27%	3.73%
8/28/1985	14.25%	11.15%	3.10%
8/28/1985	15.50%	11.15%	4.35%
8/29/1985	14.50%	11.15%	3.35%
9/9/1985	14.60%	11.11%	3.49%
9/9/1985	14.90%	11.11%	3.79%
9/17/1985	14.90%	11.08%	3.82%
9/23/1985	15.00%	11.06%	3.94%
9/27/1985	15.50%	11.05%	4.45%
9/27/1985	15.80%	11.05%	4.75%
10/2/1985	14.00%	11.03%	2.97%
10/2/1985	14.75%	11.03%	3.72%
10/3/1985	15.25%	11.03%	4.22%
10/24/1985	15.40%	10.96%	4.44%
10/24/1985	15.82%	10.96%	4.86%
10/24/1985	15.85%	10.96%	4.89%

10/28/1985	16.00%	10.95%	5.05%
10/29/1985	16.65%	10.94%	5.71%
10/31/1985	15.06%	10.93%	4.13%
11/4/1985	14.50%	10.92%	3.58%
11/7/1985	15.50%	10.90%	4.60%
11/8/1985	14.30%	10.89%	3.41%
12/12/1985	14.75%	10.73%	4.02%
12/18/1985	15.00%	10.69%	4.31%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	15.00%	10.67%	4.33%
1/24/1986	15.40%	10.41%	4.99%
1/31/1986	15.00%	10.35%	4.65%
2/5/1986	15.00%	10.32%	4.68%
2/5/1986	15.75%	10.32%	5.43%
2/10/1986	13.30%	10.29%	3.01%
2/11/1986	12.50%	10.28%	2.22%
2/14/1986	14.40%	10.24%	4.16%
2/18/1986	16.00%	10.23%	5.77%
2/24/1986	14.50%	10.18%	4.32%
2/26/1986	14.00%	10.15%	3.85%
3/5/1986	14.90%	10.08%	4.82%
3/11/1986	14.50%	10.02%	4.48%
3/12/1986	13.50%	10.00%	3.50%
3/27/1986	14.10%	9.86%	4.24%
3/31/1986	13.50%	9.84%	3.66%
4/1/1986	14.00%	9.83%	4.17%
4/2/1986	15.50%	9.81%	5.69%
4/4/1986	15.00%	9.78%	5.22%
4/14/1986	13.40%	9.69%	3.71%
4/23/1986	15.00%	9.57%	5.43%
5/16/1986	14.50%	9.32%	5.18%
5/16/1986	14.50%	9.32%	5.18%
5/29/1986	13.90%	9.19%	4.71%
5/30/1986	15.10%	9.18%	5.92%
6/2/1986	12.81%	9.17%	3.64%
6/11/1986	14.00%	9.07%	4.93%
6/24/1986	16.63%	8.94%	7.69%
6/26/1986	12.00%	8.91%	3.09%
6/26/1986	14.75%	8.91%	5.84%
6/30/1986	13.00%	8.87%	4.13%
7/10/1986	14.34%	8.75%	5.59%
7/11/1986	12.75%	8.73%	4.02%
7/14/1986	12.60%	8.71%	3.89%
7/17/1986	12.40%	8.66%	3.74%
7/25/1986	14.25%	8.57%	5.68%
8/6/1986	13.50%	8.44%	5.06%
8/14/1986	13.50%	8.35%	5.15%
9/16/1986	12.75%	8.06%	4.69%
9/19/1986	13.25%	8.03%	5.22%
10/1/1986	14.00%	7.95%	6.05%
10/3/1986	13.40%	7.93%	5.47%
10/31/1986	13.50%	7.77%	5.73%
11/5/1986	13.00%	7.75%	5.25%
12/3/1986	12.90%	7.58%	5.32%
12/4/1986	14.44%	7.58%	6.86%
12/16/1986	13.60%	7.52%	6.08%

12/22/1986	13.80%	7.51%	6.29%
12/30/1986	13.00%	7.49%	5.51%
1/2/1987	13.00%	7.49%	5.51%
1/12/1987	12.40%	7.47%	4.93%
1/27/1987	12.71%	7.46%	5.25%
3/2/1987	12.47%	7.47%	5.00%
3/3/1987	13.60%	7.47%	6.13%
3/4/1987	12.38%	7.47%	4.91%
3/10/1987	13.50%	7.47%	6.03%
3/13/1987	13.00%	7.47%	5.53%
3/31/1987	13.00%	7.46%	5.54%
4/6/1987	13.00%	7.47%	5.53%
4/14/1987	12.50%	7.49%	5.01%
4/16/1987	14.50%	7.50%	7.00%
4/27/1987	12.00%	7.54%	4.46%
5/5/1987	12.85%	7.58%	5.27%
5/12/1987	12.65%	7.62%	5.03%
5/28/1987	13.50%	7.70%	5.80%
6/15/1987	13.20%	7.78%	5.42%
6/29/1987	15.00%	7.83%	7.17%
6/30/1987	12.50%	7.84%	4.66%
7/8/1987	12.00%	7.86%	4.14%
7/10/1987	12.90%	7.86%	5.04%
7/15/1987	13.50%	7.88%	5.62%
7/16/1987	13.50%	7.88%	5.62%
7/16/1987	15.00%	7.88%	7.12%
7/27/1987	13.00%	7.92%	5.08%
7/27/1987	13.40%	7.92%	5.48%
7/27/1987	13.50%	7.92%	5.58%
7/31/1987	12.98%	7.95%	5.03%
8/26/1987	12.63%	8.06%	4.57%
8/26/1987	12.75%	8.06%	4.69%
8/27/1987	13.25%	8.06%	5.19%
9/9/1987	13.00%	8.14%	4.86%
9/30/1987	12.75%	8.31%	4.44%
9/30/1987	13.00%	8.31%	4.69%
10/2/1987	11.50%	8.33%	3.17%
10/15/1987	13.00%	8.43%	4.57%
11/2/1987	13.00%	8.55%	4.45%
11/19/1987	13.00%	8.64%	4.36%
11/30/1987	12.00%	8.68%	3.32%
12/3/1987	14.20%	8.70%	5.50%
12/15/1987	13.25%	8.77%	4.48%
12/16/1987	13.50%	8.78%	4.72%
12/16/1987	13.72%	8.78%	4.94%
12/17/1987	11.75%	8.79%	2.96%
12/18/1987	13.50%	8.80%	4.70%
12/21/1987	12.01%	8.81%	3.20%
12/22/1987	12.00%	8.81%	3.19%
12/22/1987	12.00%	8.81%	3.19%
12/22/1987	12.75%	8.81%	3.94%
12/22/1987	13.00%	8.81%	4.19%
1/20/1988	13.80%	8.94%	4.86%
1/26/1988	13.90%	8.95%	4.95%
1/29/1988	13.20%	8.96%	4.24%
2/4/1988	12.60%	8.96%	3.64%
3/1/1988	11.56%	8.94%	2.62%

3/23/1988	12.87%	8.92%	3.95%
3/24/1988	11.24%	8.92%	2.32%
3/30/1988	12.72%	8.92%	3.80%
4/1/1988	12.50%	8.92%	3.58%
4/7/1988	13.25%	8.93%	4.32%
4/25/1988	10.96%	8.96%	2.00%
5/3/1988	12.91%	8.97%	3.94%
5/11/1988	13.50%	8.99%	4.51%
5/16/1988	13.00%	8.99%	4.01%
6/30/1988	12.75%	9.00%	3.75%
7/1/1988	12.75%	8.99%	3.76%
7/20/1988	13.40%	8.96%	4.44%
8/5/1988	12.75%	8.92%	3.83%
8/23/1988	11.70%	8.93%	2.77%
8/29/1988	12.75%	8.94%	3.81%
8/30/1988	13.50%	8.94%	4.56%
9/8/1988	12.60%	8.95%	3.65%
10/13/1988	13.10%	8.93%	4.17%
12/19/1988	13.00%	9.02%	3.98%
12/20/1988	12.25%	9.02%	3.23%
12/20/1988	13.00%	9.02%	3.98%
12/21/1988	12.90%	9.02%	3.88%
12/27/1988	13.00%	9.03%	3.97%
12/28/1988	13.10%	9.03%	4.07%
12/30/1988	13.40%	9.04%	4.36%
1/27/1989	13.00%	9.05%	3.95%
1/31/1989	13.00%	9.05%	3.95%
2/17/1989	13.00%	9.05%	3.95%
2/20/1989	12.40%	9.05%	3.35%
3/1/1989	12.76%	9.05%	3.71%
3/8/1989	13.00%	9.05%	3.95%
3/30/1989	14.00%	9.05%	4.95%
4/5/1989	14.20%	9.05%	5.15%
4/18/1989	13.00%	9.05%	3.95%
5/5/1989	12.40%	9.05%	3.35%
6/2/1989	13.20%	9.00%	4.20%
6/8/1989	13.50%	8.98%	4.52%
6/27/1989	13.25%	8.91%	4.34%
6/30/1989	13.00%	8.90%	4.10%
8/14/1989	12.50%	8.77%	3.73%
9/28/1989	12.25%	8.63%	3.62%
10/24/1989	12.50%	8.54%	3.96%
11/9/1989	13.00%	8.49%	4.51%
12/15/1989	13.00%	8.34%	4.66%
12/20/1989	12.90%	8.32%	4.58%
12/21/1989	12.90%	8.31%	4.59%
12/27/1989	12.50%	8.29%	4.21%
12/27/1989	13.00%	8.29%	4.71%
1/10/1990	12.80%	8.24%	4.56%
1/11/1990	12.90%	8.24%	4.66%
1/17/1990	12.80%	8.22%	4.58%
1/26/1990	12.00%	8.20%	3.80%
2/9/1990	12.10%	8.17%	3.93%
2/24/1990	12.86%	8.15%	4.71%
3/30/1990	12.90%	8.16%	4.74%
4/4/1990	15.76%	8.17%	7.59%
4/12/1990	12.52%	8.18%	4.34%

4/19/1990	12.75%	8.20%	4.55%
5/21/1990	12.10%	8.28%	3.82%
5/29/1990	12.40%	8.30%	4.10%
5/31/1990	12.00%	8.30%	3.70%
6/4/1990	12.90%	8.30%	4.60%
6/6/1990	12.25%	8.31%	3.94%
6/15/1990	13.20%	8.32%	4.88%
6/20/1990	12.92%	8.32%	4.60%
6/27/1990	12.90%	8.33%	4.57%
6/29/1990	12.50%	8.33%	4.17%
7/6/1990	12.10%	8.34%	3.76%
7/6/1990	12.35%	8.34%	4.01%
8/10/1990	12.55%	8.41%	4.14%
8/16/1990	13.21%	8.43%	4.78%
8/22/1990	13.10%	8.45%	4.65%
8/24/1990	13.00%	8.46%	4.54%
9/26/1990	11.45%	8.59%	2.86%
10/2/1990	13.00%	8.61%	4.39%
10/5/1990	12.84%	8.62%	4.22%
10/19/1990	13.00%	8.67%	4.33%
10/25/1990	12.30%	8.68%	3.62%
11/21/1990	12.70%	8.69%	4.01%
12/13/1990	12.30%	8.67%	3.63%
12/17/1990	12.87%	8.67%	4.20%
12/18/1990	13.10%	8.67%	4.43%
12/19/1990	12.00%	8.66%	3.34%
12/20/1990	12.75%	8.66%	4.09%
12/21/1990	12.50%	8.66%	3.84%
12/27/1990	12.79%	8.66%	4.13%
1/2/1991	13.10%	8.65%	4.45%
1/4/1991	12.50%	8.65%	3.85%
1/15/1991	12.75%	8.64%	4.11%
1/25/1991	11.70%	8.63%	3.07%
2/4/1991	12.50%	8.60%	3.90%
2/7/1991	12.50%	8.59%	3.91%
2/12/1991	13.00%	8.58%	4.43%
2/14/1991	12.72%	8.57%	4.15%
2/22/1991	12.80%	8.55%	4.25%
3/6/1991	13.10%	8.53%	4.57%
3/8/1991	12.30%	8.52%	3.78%
3/8/1991	13.00%	8.52%	4.48%
4/22/1991	13.00%	8.49%	4.51%
5/7/1991	13.50%	8.47%	5.03%
5/13/1991	13.25%	8.47%	4.78%
5/30/1991	12.75%	8.44%	4.31%
6/12/1991	12.00%	8.41%	3.59%
6/25/1991	11.70%	8.39%	3.31%
6/28/1991	12.50%	8.38%	4.12%
7/1/1991	12.00%	8.38%	3.62%
7/3/1991	12.50%	8.37%	4.13%
7/19/1991	12.10%	8.34%	3.76%
8/1/1991	12.90%	8.32%	4.58%
8/16/1991	13.20%	8.29%	4.91%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	12.25%	8.23%	4.02%
10/17/1991	13.00%	8.20%	4.80%
10/23/1991	12.50%	8.20%	4.30%



10/23/1991	12.55%	8.20%	4.35%
10/31/1991	11.80%	8.19%	3.61%
11/1/1991	12.00%	8.19%	3.81%
11/5/1991	12.25%	8.19%	4.06%
11/12/1991	12.50%	8.18%	4.32%
11/12/1991	13.25%	8.18%	5.07%
11/25/1991	12.40%	8.18%	4.22%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.50%	8.18%	4.32%
11/27/1991	12.10%	8.18%	3.92%
12/18/1991	12.25%	8.15%	4.10%
12/19/1991	12.60%	8.15%	4.45%
12/19/1991	12.80%	8.15%	4.65%
12/20/1991	12.65%	8.14%	4.51%
1/9/1992	12.80%	8.09%	4.71%
1/16/1992	12.75%	8.07%	4.68%
1/21/1992	12.00%	8.06%	3.94%
1/22/1992	13.00%	8.06%	4.94%
1/27/1992	12.65%	8.05%	4.60%
1/31/1992	12.00%	8.04%	3.96%
2/11/1992	12.40%	8.03%	4.37%
2/25/1992	12.50%	8.01%	4.49%
3/16/1992	11.43%	7.98%	3.45%
3/18/1992	12.28%	7.98%	4.30%
4/2/1992	12.10%	7.95%	4.15%
4/9/1992	11.45%	7.94%	3.51%
4/10/1992	11.50%	7.93%	3.57%
4/14/1992	11.50%	7.93%	3.57%
5/5/1992	11.50%	7.89%	3.61%
5/12/1992	11.87%	7.88%	3.99%
5/12/1992	12.46%	7.88%	4.58%
6/1/1992	12.30%	7.87%	4.43%
6/12/1992	10.90%	7.86%	3.04%
6/26/1992	12.35%	7.85%	4.50%
6/29/1992	11.00%	7.85%	3.15%
6/30/1992	13.00%	7.85%	5.15%
7/13/1992	11.90%	7.84%	4.06%
7/13/1992	13.50%	7.84%	5.66%
7/22/1992	11.20%	7.83%	3.37%
8/3/1992	12.00%	7.81%	4.19%
8/6/1992	12.50%	7.80%	4.70%
9/22/1992	12.00%	7.71%	4.29%
9/28/1992	11.40%	7.71%	3.69%
9/30/1992	11.75%	7.70%	4.05%
10/2/1992	13.00%	7.70%	5.30%
10/12/1992	12.20%	7.70%	4.50%
10/16/1992	13.16%	7.70%	5.46%
10/30/1992	11.75%	7.71%	4.04%
11/3/1992	12.00%	7.71%	4.29%
12/3/1992	11.85%	7.68%	4.17%
12/15/1992	11.00%	7.66%	3.34%
12/16/1992	11.90%	7.66%	4.24%
12/16/1992	12.40%	7.66%	4.74%
12/17/1992	12.00%	7.66%	4.34%
12/22/1992	12.30%	7.65%	4.65%
12/22/1992	12.40%	7.65%	4.75%
12/29/1992	12.25%	7.63%	4.62%

12/30/1992	12.00%	7.63%	4.37%
12/31/1992	11.90%	7.63%	4.27%
1/12/1993	12.00%	7.61%	4.39%
1/21/1993	11.25%	7.59%	3.66%
2/2/1993	11.40%	7.56%	3.84%
2/15/1993	12.30%	7.52%	4.78%
2/24/1993	11.90%	7.49%	4.41%
2/26/1993	11.80%	7.48%	4.32%
2/26/1993	12.20%	7.48%	4.72%
4/23/1993	11.75%	7.29%	4.46%
5/11/1993	11.75%	7.25%	4.50%
5/14/1993	11.50%	7.24%	4.26%
5/25/1993	11.50%	7.23%	4.27%
5/28/1993	11.00%	7.22%	3.78%
6/3/1993	12.00%	7.21%	4.79%
6/16/1993	11.50%	7.19%	4.31%
6/18/1993	12.10%	7.18%	4.92%
6/25/1993	11.67%	7.17%	4.50%
7/21/1993	11.38%	7.10%	4.28%
7/23/1993	10.46%	7.09%	3.37%
8/24/1993	11.50%	6.96%	4.54%
9/21/1993	10.50%	6.81%	3.69%
9/29/1993	11.47%	6.77%	4.70%
9/30/1993	11.60%	6.76%	4.84%
11/2/1993	10.80%	6.60%	4.20%
11/12/1993	12.00%	6.57%	5.43%
11/26/1993	11.00%	6.52%	4.48%
12/14/1993	10.55%	6.48%	4.07%
12/16/1993	10.60%	6.48%	4.12%
12/21/1993	11.30%	6.47%	4.83%
1/4/1994	10.07%	6.44%	3.63%
1/13/1994	11.00%	6.42%	4.58%
1/21/1994	11.00%	6.40%	4.60%
1/28/1994	11.35%	6.39%	4.96%
2/3/1994	11.40%	6.38%	5.02%
2/17/1994	10.60%	6.36%	4.24%
2/25/1994	11.25%	6.35%	4.90%
2/25/1994	12.00%	6.35%	5.65%
3/1/1994	11.00%	6.35%	4.65%
3/4/1994	11.00%	6.35%	4.65%
4/25/1994	11.00%	6.41%	4.59%
5/10/1994	11.75%	6.45%	5.30%
5/13/1994	10.50%	6.46%	4.04%
6/3/1994	11.00%	6.54%	4.46%
6/27/1994	11.40%	6.65%	4.75%
8/5/1994	12.75%	6.88%	5.87%
10/31/1994	10.00%	7.33%	2.67%
11/9/1994	10.85%	7.39%	3.46%
11/9/1994	10.85%	7.39%	3.46%
11/18/1994	11.20%	7.45%	3.75%
11/22/1994	11.60%	7.47%	4.13%
11/28/1994	11.06%	7.49%	3.57%
12/8/1994	11.50%	7.54%	3.96%
12/8/1994	11.70%	7.54%	4.16%
12/14/1994	10.95%	7.56%	3.39%
12/15/1994	11.50%	7.57%	3.93%
12/19/1994	11.50%	7.58%	3.92%

12/28/1994	12.15%	7.61%	4.54%
1/9/1995	12.28%	7.64%	4.64%
1/31/1995	11.00%	7.69%	3.31%
2/10/1995	12.60%	7.70%	4.90%
2/17/1995	11.90%	7.70%	4.20%
3/9/1995	11.50%	7.71%	3.79%
3/20/1995	12.00%	7.72%	4.28%
3/23/1995	12.81%	7.72%	5.09%
3/29/1995	11.60%	7.72%	3.88%
4/6/1995	11.10%	7.71%	3.39%
4/7/1995	11.00%	7.71%	3.29%
4/19/1995	11.00%	7.70%	3.30%
5/12/1995	11.63%	7.68%	3.95%
5/25/1995	11.20%	7.65%	3.55%
6/9/1995	11.25%	7.60%	3.65%
6/21/1995	12.25%	7.56%	4.69%
6/30/1995	11.10%	7.52%	3.58%
9/11/1995	11.30%	7.20%	4.10%
9/27/1995	11.30%	7.12%	4.18%
9/27/1995	11.50%	7.12%	4.38%
9/27/1995	11.75%	7.12%	4.63%
9/29/1995	11.00%	7.11%	3.89%
11/9/1995	11.38%	6.90%	4.48%
11/9/1995	12.36%	6.90%	5.46%
11/17/1995	11.00%	6.86%	4.14%
12/4/1995	11.35%	6.78%	4.57%
12/11/1995	11.40%	6.74%	4.66%
12/20/1995	11.60%	6.70%	4.90%
12/27/1995	12.00%	6.66%	5.34%
2/5/1996	12.25%	6.48%	5.77%
3/29/1996	10.67%	6.42%	4.25%
4/8/1996	11.00%	6.42%	4.58%
4/11/1996	12.59%	6.43%	6.16%
4/11/1996	12.59%	6.43%	6.16%
4/24/1996	11.25%	6.43%	4.82%
4/30/1996	11.00%	6.43%	4.57%
5/13/1996	11.00%	6.44%	4.56%
5/23/1996	11.25%	6.43%	4.82%
6/25/1996	11.25%	6.48%	4.77%
6/27/1996	11.20%	6.48%	4.72%
8/12/1996	10.40%	6.57%	3.83%
9/27/1996	11.00%	6.71%	4.29%
10/16/1996	12.25%	6.76%	5.49%
11/5/1996	11.00%	6.81%	4.19%
11/26/1996	11.30%	6.83%	4.47%
12/18/1996	11.75%	6.83%	4.92%
12/31/1996	11.50%	6.83%	4.67%
1/3/1997	10.70%	6.83%	3.87%
2/13/1997	11.80%	6.82%	4.98%
2/20/1997	11.80%	6.82%	4.98%
3/31/1997	10.02%	6.80%	3.22%
4/2/1997	11.65%	6.80%	4.85%
4/28/1997	11.50%	6.81%	4.69%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.77%	5.23%
12/12/1997	11.00%	6.60%	4.40%
12/23/1997	11.12%	6.57%	4.55%

2/2/1998	12.75%	6.39%	6.36%
3/2/1998	11.25%	6.29%	4.96%
3/6/1998	10.75%	6.27%	4.48%
3/20/1998	10.50%	6.22%	4.28%
4/30/1998	12.20%	6.12%	6.08%
7/10/1998	11.40%	5.94%	5.46%
9/15/1998	11.90%	5.78%	6.12%
11/30/1998	12.60%	5.58%	7.02%
12/10/1998	12.20%	5.54%	6.66%
12/17/1998	12.10%	5.52%	6.58%
2/5/1999	10.30%	5.38%	4.92%
3/4/1999	10.50%	5.34%	5.16%
4/6/1999	10.94%	5.32%	5.62%
7/29/1999	10.75%	5.52%	5.23%
9/23/1999	10.75%	5.70%	5.05%
11/17/1999	11.10%	5.90%	5.20%
1/7/2000	11.50%	6.05%	5.45%
1/7/2000	11.50%	6.05%	5.45%
2/17/2000	10.60%	6.17%	4.43%
3/28/2000	11.25%	6.20%	5.05%
5/24/2000	11.00%	6.18%	4.82%
7/18/2000	12.20%	6.16%	6.04%
9/29/2000	11.16%	6.03%	5.13%
11/28/2000	12.90%	5.89%	7.01%
11/30/2000	12.10%	5.88%	6.22%
1/23/2001	11.25%	5.79%	5.46%
2/8/2001	11.50%	5.77%	5.73%
5/8/2001	10.75%	5.62%	5.13%
6/26/2001	11.00%	5.62%	5.38%
7/25/2001	11.02%	5.60%	5.42%
7/25/2001	11.02%	5.60%	5.42%
7/31/2001	11.00%	5.59%	5.41%
8/31/2001	10.50%	5.56%	4.94%
9/7/2001	10.75%	5.55%	5.20%
9/10/2001	11.00%	5.55%	5.45%
9/20/2001	10.00%	5.55%	4.45%
10/24/2001	10.30%	5.54%	4.76%
11/28/2001	10.60%	5.49%	5.11%
12/3/2001	12.88%	5.49%	7.39%
12/20/2001	12.50%	5.50%	7.00%
1/22/2002	10.00%	5.50%	4.50%
3/27/2002	10.10%	5.45%	4.65%
4/22/2002	11.80%	5.45%	6.35%
5/28/2002	10.17%	5.46%	4.71%
6/10/2002	12.00%	5.47%	6.53%
6/18/2002	11.16%	5.48%	5.68%
6/20/2002	11.00%	5.48%	5.52%
6/20/2002	12.30%	5.48%	6.82%
7/15/2002	11.00%	5.48%	5.52%
9/12/2002	12.30%	5.45%	6.85%
9/26/2002	10.45%	5.41%	5.04%
12/4/2002	11.55%	5.29%	6.26%
12/13/2002	11.75%	5.27%	6.48%
12/20/2002	11.40%	5.25%	6.15%
1/8/2003	11.10%	5.19%	5.91%
1/31/2003	12.45%	5.13%	7.32%
2/28/2003	12.30%	5.05%	7.25%

3/6/2003	10.75%	5.03%	5.72%
3/7/2003	9.96%	5.02%	4.94%
3/20/2003	12.00%	4.98%	7.02%
4/3/2003	12.00%	4.96%	7.04%
4/15/2003	11.15%	4.94%	6.21%
6/25/2003	10.75%	4.79%	5.96%
6/26/2003	10.75%	4.79%	5.96%
7/9/2003	9.75%	4.79%	4.96%
7/16/2003	9.75%	4.79%	4.96%
7/25/2003	9.50%	4.80%	4.70%
8/26/2003	10.50%	4.83%	5.67%
12/17/2003	9.85%	4.94%	4.91%
12/17/2003	10.70%	4.94%	5.76%
12/18/2003	11.50%	4.94%	6.56%
12/19/2003	12.00%	4.94%	7.06%
12/19/2003	12.00%	4.94%	7.06%
12/23/2003	10.50%	4.94%	5.56%
1/13/2004	12.00%	4.95%	7.05%
3/2/2004	10.75%	4.99%	5.76%
3/26/2004	10.25%	5.02%	5.23%
4/5/2004	11.25%	5.03%	6.22%
5/18/2004	10.50%	5.07%	5.43%
5/25/2004	10.25%	5.08%	5.17%
5/27/2004	10.25%	5.08%	5.17%
6/2/2004	11.22%	5.08%	6.14%
6/30/2004	10.50%	5.10%	5.40%
6/30/2004	10.50%	5.10%	5.40%
7/16/2004	11.60%	5.11%	6.49%
8/25/2004	10.25%	5.10%	5.15%
9/9/2004	10.40%	5.10%	5.30%
11/9/2004	10.50%	5.07%	5.43%
11/23/2004	11.00%	5.06%	5.94%
12/14/2004	10.97%	5.07%	5.90%
12/21/2004	11.25%	5.07%	6.18%
12/21/2004	11.50%	5.07%	6.43%
12/22/2004	10.70%	5.07%	5.63%
12/22/2004	11.50%	5.07%	6.43%
12/29/2004	9.85%	5.07%	4.78%
1/6/2005	10.70%	5.08%	5.62%
2/18/2005	10.30%	4.98%	5.32%
2/25/2005	10.50%	4.96%	5.54%
3/10/2005	11.00%	4.93%	6.07%
3/24/2005	10.30%	4.90%	5.40%
4/4/2005	10.00%	4.88%	5.12%
4/7/2005	10.25%	4.87%	5.38%
5/18/2005	10.25%	4.78%	5.47%
5/25/2005	10.75%	4.76%	5.99%
5/26/2005	9.75%	4.76%	4.99%
6/1/2005	9.75%	4.75%	5.00%
7/19/2005	11.50%	4.64%	6.86%
8/5/2005	11.75%	4.62%	7.13%
8/15/2005	10.13%	4.61%	5.52%
9/28/2005	10.00%	4.54%	5.46%
10/4/2005	10.75%	4.54%	6.21%
12/12/2005	11.00%	4.55%	6.45%
12/13/2005	10.75%	4.55%	6.20%
12/21/2005	10.29%	4.54%	5.75%

12/21/2005	10.40%	4.54%	5.86%
12/22/2005	11.00%	4.54%	6.46%
12/22/2005	11.15%	4.54%	6.61%
12/28/2005	10.00%	4.54%	5.46%
12/28/2005	10.00%	4.54%	5.46%
1/5/2006	11.00%	4.53%	6.47%
1/27/2006	9.75%	4.52%	5.23%
3/3/2006	10.39%	4.53%	5.86%
4/17/2006	10.20%	4.61%	5.59%
4/26/2006	10.60%	4.64%	5.96%
5/17/2006	11.60%	4.69%	6.91%
6/6/2006	10.00%	4.74%	5.26%
6/27/2006	10.75%	4.80%	5.95%
7/6/2006	10.20%	4.83%	5.37%
7/24/2006	9.60%	4.86%	4.74%
7/26/2006	10.50%	4.86%	5.64%
7/28/2006	10.05%	4.86%	5.19%
8/23/2006	9.55%	4.89%	4.66%
9/1/2006	10.54%	4.90%	5.64%
9/14/2006	10.00%	4.91%	5.09%
10/6/2006	9.67%	4.92%	4.75%
11/21/2006	10.08%	4.95%	5.13%
11/21/2006	10.08%	4.95%	5.13%
11/21/2006	10.12%	4.95%	5.17%
12/1/2006	10.25%	4.95%	5.30%
12/1/2006	10.50%	4.95%	5.55%
12/7/2006	10.75%	4.95%	5.80%
12/21/2006	10.90%	4.95%	5.95%
12/21/2006	11.25%	4.95%	6.30%
12/22/2006	10.25%	4.95%	5.30%
1/5/2007	10.00%	4.95%	5.05%
1/11/2007	10.10%	4.95%	5.15%
1/11/2007	10.10%	4.95%	5.15%
1/11/2007	10.90%	4.95%	5.95%
1/12/2007	10.10%	4.95%	5.15%
1/13/2007	10.40%	4.95%	5.45%
1/19/2007	10.80%	4.94%	5.86%
3/21/2007	11.35%	4.87%	6.48%
3/22/2007	9.75%	4.86%	4.89%
5/15/2007	10.00%	4.81%	5.19%
5/17/2007	10.25%	4.81%	5.44%
5/17/2007	10.25%	4.81%	5.44%
5/22/2007	10.20%	4.80%	5.40%
5/22/2007	10.50%	4.80%	5.70%
5/23/2007	10.70%	4.80%	5.90%
5/25/2007	9.67%	4.80%	4.87%
6/15/2007	9.90%	4.82%	5.08%
6/21/2007	10.20%	4.83%	5.37%
6/22/2007	10.50%	4.83%	5.67%
6/28/2007	10.75%	4.84%	5.91%
7/12/2007	9.67%	4.86%	4.81%
7/19/2007	10.00%	4.87%	5.13%
7/19/2007	10.00%	4.87%	5.13%
8/15/2007	10.40%	4.88%	5.52%
10/9/2007	10.00%	4.91%	5.09%
10/17/2007	9.10%	4.91%	4.19%
10/31/2007	9.96%	4.90%	5.06%

11/29/2007	10.90%	4.87%	6.03%
12/6/2007	10.75%	4.86%	5.89%
12/13/2007	9.96%	4.86%	5.10%
12/14/2007	10.70%	4.86%	5.84%
12/14/2007	10.80%	4.86%	5.94%
12/19/2007	10.20%	4.86%	5.34%
12/20/2007	10.20%	4.85%	5.35%
12/20/2007	11.00%	4.85%	6.15%
12/28/2007	10.25%	4.85%	5.40%
12/31/2007	11.25%	4.85%	6.40%
1/8/2008	10.75%	4.83%	5.92%
1/17/2008	10.75%	4.81%	5.94%
1/28/2008	9.40%	4.80%	4.60%
1/30/2008	10.00%	4.79%	5.21%
1/31/2008	10.71%	4.79%	5.92%
2/29/2008	10.25%	4.75%	5.50%
3/12/2008	10.25%	4.73%	5.52%
3/25/2008	9.10%	4.68%	4.42%
4/22/2008	10.25%	4.60%	5.65%
4/24/2008	10.10%	4.60%	5.50%
5/1/2008	10.70%	4.59%	6.11%
5/19/2008	11.00%	4.56%	6.44%
5/27/2008	10.00%	4.55%	5.45%
6/10/2008	10.70%	4.54%	6.16%
6/27/2008	10.50%	4.54%	5.96%
6/27/2008	11.04%	4.54%	6.50%
7/10/2008	10.43%	4.52%	5.91%
7/16/2008	9.40%	4.52%	4.88%
7/30/2008	10.80%	4.51%	6.29%
7/31/2008	10.70%	4.51%	6.19%
8/11/2008	10.25%	4.51%	5.74%
8/26/2008	10.18%	4.50%	5.68%
9/10/2008	10.30%	4.50%	5.80%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/30/2008	10.20%	4.48%	5.72%
10/8/2008	10.15%	4.46%	5.69%
11/13/2008	10.55%	4.45%	6.10%
11/17/2008	10.20%	4.44%	5.76%
12/1/2008	10.25%	4.40%	5.85%
12/23/2008	11.00%	4.27%	6.73%
12/29/2008	10.00%	4.24%	5.76%
12/29/2008	10.20%	4.24%	5.96%
12/31/2008	10.75%	4.22%	6.53%
1/14/2009	10.50%	4.15%	6.35%
1/21/2009	10.50%	4.12%	6.38%
1/21/2009	10.50%	4.12%	6.38%
1/21/2009	10.50%	4.12%	6.38%
1/27/2009	10.76%	4.09%	6.67%
1/30/2009	10.50%	4.08%	6.42%
2/4/2009	8.75%	4.06%	4.69%
3/4/2009	10.50%	3.96%	6.54%
3/12/2009	11.50%	3.93%	7.57%
4/2/2009	11.10%	3.85%	7.25%
4/21/2009	10.61%	3.80%	6.81%
4/24/2009	10.00%	3.79%	6.21%

4/30/2009	11.25%	3.78%	7.47%
5/4/2009	10.74%	3.77%	6.97%
5/20/2009	10.25%	3.74%	6.51%
5/28/2009	10.50%	3.74%	6.76%
6/22/2009	10.00%	3.76%	6.24%
6/24/2009	10.80%	3.77%	7.03%
7/8/2009	10.63%	3.77%	6.86%
7/17/2009	10.50%	3.78%	6.72%
8/31/2009	10.25%	3.82%	6.43%
10/14/2009	10.70%	4.01%	6.69%
10/23/2009	10.88%	4.06%	6.82%
11/2/2009	10.70%	4.09%	6.61%
11/3/2009	10.70%	4.10%	6.60%
11/24/2009	10.25%	4.15%	6.10%
11/25/2009	10.75%	4.16%	6.59%
11/30/2009	10.35%	4.17%	6.18%
12/3/2009	10.50%	4.18%	6.32%
12/7/2009	10.70%	4.18%	6.52%
12/16/2009	10.90%	4.21%	6.69%
12/16/2009	11.00%	4.21%	6.79%
12/18/2009	10.40%	4.22%	6.18%
12/18/2009	10.40%	4.22%	6.18%
12/22/2009	10.20%	4.23%	5.97%
12/22/2009	10.40%	4.23%	6.17%
12/22/2009	10.40%	4.23%	6.17%
12/30/2009	10.00%	4.26%	5.74%
1/4/2010	10.80%	4.28%	6.52%
1/11/2010	11.00%	4.30%	6.70%
1/26/2010	10.13%	4.35%	5.78%
1/27/2010	10.40%	4.35%	6.05%
1/27/2010	10.40%	4.35%	6.05%
1/27/2010	10.70%	4.35%	6.35%
2/9/2010	9.80%	4.38%	5.42%
2/18/2010	10.60%	4.40%	6.20%
2/24/2010	10.18%	4.41%	5.77%
3/2/2010	9.63%	4.41%	5.22%
3/4/2010	10.50%	4.41%	6.09%
3/5/2010	10.50%	4.41%	6.09%
3/11/2010	11.90%	4.42%	7.48%
3/17/2010	10.00%	4.41%	5.59%
3/25/2010	10.15%	4.42%	5.73%
4/2/2010	10.10%	4.43%	5.67%
4/27/2010	10.00%	4.46%	5.54%
4/29/2010	9.90%	4.46%	5.44%
4/29/2010	10.06%	4.46%	5.60%
4/29/2010	10.26%	4.46%	5.80%
5/12/2010	10.30%	4.45%	5.85%
5/12/2010	10.30%	4.45%	5.85%
5/28/2010	10.10%	4.44%	5.66%
5/28/2010	10.20%	4.44%	5.76%
6/7/2010	10.30%	4.44%	5.86%
6/16/2010	10.00%	4.44%	5.56%
6/28/2010	9.67%	4.43%	5.24%
6/28/2010	10.50%	4.43%	6.07%
6/30/2010	9.40%	4.43%	4.97%
7/1/2010	10.25%	4.43%	5.82%
7/15/2010	10.53%	4.43%	6.10%



7/15/2010	10.70%	4.43%	6.27%
7/30/2010	10.70%	4.41%	6.29%
8/4/2010	10.50%	4.41%	6.09%
8/6/2010	9.83%	4.41%	5.42%
8/25/2010	9.90%	4.37%	5.53%
9/3/2010	10.60%	4.35%	6.25%
9/14/2010	10.70%	4.33%	6.37%
9/16/2010	10.00%	4.33%	5.67%
9/16/2010	10.00%	4.33%	5.67%
9/30/2010	9.75%	4.29%	5.46%
10/14/2010	10.35%	4.24%	6.11%
10/28/2010	10.70%	4.21%	6.49%
11/2/2010	10.38%	4.20%	6.18%
11/4/2010	10.70%	4.20%	6.50%
11/19/2010	10.20%	4.18%	6.02%
11/22/2010	10.00%	4.18%	5.82%
12/1/2010	10.13%	4.16%	5.97%
12/6/2010	9.86%	4.15%	5.71%
12/9/2010	10.25%	4.15%	6.10%
12/13/2010	10.70%	4.15%	6.55%
12/14/2010	10.13%	4.15%	5.98%
12/15/2010	10.44%	4.15%	6.29%
12/17/2010	10.00%	4.15%	5.85%
12/20/2010	10.60%	4.15%	6.45%
12/21/2010	10.30%	4.14%	6.16%
12/27/2010	9.90%	4.14%	5.76%
12/29/2010	11.15%	4.14%	7.01%
1/5/2011	10.15%	4.13%	6.02%
1/12/2011	10.30%	4.12%	6.18%
1/13/2011	10.30%	4.12%	6.18%
1/18/2011	10.00%	4.12%	5.88%
1/20/2011	9.30%	4.12%	5.18%
1/20/2011	10.13%	4.12%	6.01%
1/31/2011	9.60%	4.12%	5.48%
2/3/2011	10.00%	4.12%	5.88%
2/25/2011	10.00%	4.14%	5.86%
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3/30/2011	10.00%	4.18%	5.82%
4/12/2011	10.00%	4.21%	5.79%
4/25/2011	10.74%	4.23%	6.51%
4/26/2011	9.67%	4.23%	5.44%
4/27/2011	10.40%	4.24%	6.16%
5/4/2011	10.00%	4.24%	5.76%
5/4/2011	10.00%	4.24%	5.76%
5/24/2011	10.50%	4.27%	6.23%
6/8/2011	10.75%	4.30%	6.45%
6/16/2011	9.20%	4.32%	4.88%
6/17/2011	9.95%	4.32%	5.63%
7/13/2011	10.20%	4.36%	5.84%
8/1/2011	9.20%	4.39%	4.81%
8/8/2011	10.00%	4.38%	5.62%
8/11/2011	10.00%	4.38%	5.62%
8/12/2011	10.35%	4.37%	5.98%
8/19/2011	10.25%	4.36%	5.89%
9/2/2011	12.88%	4.32%	8.56%
9/22/2011	10.00%	4.24%	5.76%

10/12/2011	10.30%	4.14%	6.16%
10/20/2011	10.50%	4.10%	6.40%
11/30/2011	10.90%	3.87%	7.03%
11/30/2011	10.90%	3.87%	7.03%
12/14/2011	10.00%	3.80%	6.20%
12/14/2011	10.30%	3.80%	6.50%
12/20/2011	10.20%	3.76%	6.44%
12/21/2011	10.20%	3.76%	6.44%
12/22/2011	9.90%	3.75%	6.15%
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5/29/2012	10.05%	3.11%	6.94%
6/7/2012	10.30%	3.08%	7.22%
6/14/2012	9.40%	3.06%	6.34%
6/15/2012	10.40%	3.06%	7.34%
6/18/2012	9.60%	3.06%	6.54%
6/19/2012	9.25%	3.05%	6.20%
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6/17/2015	9.00%	2.82%	6.18%
9/2/2015	9.50%	2.79%	6.71%
9/10/2015	9.30%	2.79%	6.51%
10/15/2015	9.00%	2.81%	6.19%
11/19/2015	10.00%	2.88%	7.12%
11/19/2015	10.30%	2.88%	7.42%
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12/15/2015	9.60%	2.91%	6.69%
12/17/2015	9.70%	2.91%	6.79%
12/18/2015	9.50%	2.91%	6.59%
12/30/2015	9.50%	2.93%	6.57%
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4/29/2016	9.80%	2.83%	6.97%
6/3/2016	9.75%	2.80%	6.95%
6/8/2016	9.48%	2.80%	6.68%
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11/9/2016	9.80%	2.48%	7.32%
11/10/2016	9.50%	2.48%	7.02%
11/15/2016	9.55%	2.49%	7.06%
11/18/2016	10.00%	2.50%	7.50%
11/29/2016	10.55%	2.51%	8.04%
12/1/2016	10.00%	2.51%	7.49%
12/6/2016	8.64%	2.52%	6.12%
12/6/2016	8.64%	2.52%	6.12%
12/7/2016	10.10%	2.52%	7.58%
12/12/2016	9.60%	2.53%	7.07%
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10/26/2017	10.25%	2.91%	7.34%
10/26/2017	10.30%	2.91%	7.39%
11/6/2017	10.25%	2.91%	7.34%
11/15/2017	11.95%	2.91%	9.04%
11/30/2017	10.00%	2.88%	7.12%
11/30/2017	10.00%	2.88%	7.12%
12/5/2017	9.50%	2.88%	6.62%
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12/14/2017	9.65%	2.86%	6.79%
12/18/2017	9.50%	2.86%	6.64%
12/20/2017	9.58%	2.86%	6.72%
12/21/2017	9.10%	2.85%	6.25%
12/28/2017	9.50%	2.85%	6.65%
12/29/2017	9.40%	2.85%	6.55%

# of Cases: 1541  
Average: 4.61%

Alternative Bond Yield Plus Risk Premium Analyses

	[1]	[2]	[3]	[4]
	30-Year Treasury Yield	Moody's Utility A Yield	Moody's Utility A Credit Spread	VIX
30-Day Average	2.77%	3.81%	1.03%	10.34
Near-Term Projected	3.32%	3.81%	0.49%	10.34
Long-Term Projected	4.20%	3.81%	-0.39%	10.34

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.839887946
R Square	0.705411762
Adjusted R Square	0.70412722
Standard Error	0.005358463
Observations	692

ANOVA

	df	SS	MS	F	Significance F
Regression	3	0.047303817	0.015767939	549.154412	4.5268E-182
Residual	688	0.01975463	2.87131E-05		
Total	691	0.067058447			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.027749506	0.00214866	-12.91479673	2.5451E-34	-0.031968224	-0.023530788	-0.031968224	-0.023530788
LN(30-Year Treasury)	-0.025746751	0.000661026	-38.94969012	3.6014E-176	-0.027044621	-0.024448881	-0.027044621	-0.024448881
Moody's Utility A Credit Spread	0.194808374	0.085685578	2.273525822	0.023301857	0.026571766	0.363044981	0.026571766	0.363044981
VIX	0.000178794	5.5527E-05	3.219948155	0.001342431	6.97713E-05	0.000287817	6.97713E-05	0.000287817

	Risk Premium	Return on Equity
Regression Result - Credit Spread, VIX	6.84%	9.61%
Regression Result - Credit Spread, VIX	6.28%	9.59%
Regression Result - Credit Spread, VIX	5.50%	9.70%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional
- [3] Source: Bloomberg Professional
- [4] Source: Bloomberg Professional
- [5] Source: S&P Global Market Intelligence
- [6] Source: S&P Global Market Intelligence
- [7] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of December 29, 2011
- [8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of December 29, 2011
- [9] Equals LN[8]
- [10] Equals [8] - [7]
- [11] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of December 29, 2011
- [12] Equals [6] - [7]

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
1/1/1980	14.50%	9.36%		-2.37			5.14%
1/7/1980	14.39%	9.38%		-2.37			5.01%
1/9/1980	15.00%	9.40%		-2.36			5.60%
1/14/1980	15.17%	9.42%		-2.36			5.75%
1/17/1980	13.93%	9.44%		-2.36			4.49%
1/23/1980	15.50%	9.47%		-2.36			6.03%
1/30/1980	13.86%	9.52%		-2.35			4.34%
1/31/1980	12.61%	9.53%		-2.35			3.08%
2/6/1980	13.71%	9.58%		-2.35			4.13%
2/13/1980	12.80%	9.63%		-2.34			3.17%
2/14/1980	13.00%	9.65%		-2.34			3.35%
2/19/1980	13.50%	9.68%		-2.34			3.82%
2/27/1980	13.75%	9.78%		-2.32			3.97%
2/29/1980	13.75%	9.81%		-2.32			3.94%
2/29/1980	14.00%	9.81%		-2.32			4.19%
2/29/1980	14.77%	9.81%		-2.32			4.96%
3/7/1980	12.70%	9.89%		-2.31			2.81%
3/14/1980	13.50%	9.97%		-2.31			3.53%
3/26/1980	14.16%	10.10%		-2.29			4.06%
3/27/1980	14.24%	10.12%		-2.29			4.12%
3/28/1980	14.50%	10.13%		-2.29			4.37%
4/11/1980	12.75%	10.27%		-2.28			2.48%
4/14/1980	13.85%	10.29%		-2.27			3.56%
4/16/1980	15.50%	10.31%		-2.27			5.19%
4/22/1980	13.25%	10.35%		-2.27			2.90%
4/22/1980	13.90%	10.35%		-2.27			3.55%
4/24/1980	16.80%	10.38%		-2.27			6.43%
4/29/1980	15.50%	10.41%		-2.26			5.09%
5/6/1980	13.70%	10.45%		-2.26			3.25%
5/7/1980	15.00%	10.45%		-2.26			4.55%
5/8/1980	13.75%	10.46%		-2.26			3.29%
5/9/1980	14.35%	10.47%		-2.26			3.88%
5/13/1980	13.60%	10.48%		-2.26			3.12%
5/15/1980	13.25%	10.49%		-2.25			2.76%
5/19/1980	13.75%	10.51%		-2.25			3.24%
5/27/1980	13.62%	10.54%		-2.25			3.08%
5/27/1980	14.60%	10.54%		-2.25			4.06%
5/29/1980	16.00%	10.56%		-2.25			5.44%
5/30/1980	13.80%	10.56%		-2.25			3.24%
6/2/1980	15.63%	10.57%		-2.25			5.06%
6/9/1980	15.90%	10.60%		-2.24			5.30%
6/10/1980	13.78%	10.60%		-2.24			3.18%
6/12/1980	14.25%	10.61%		-2.24			3.64%
6/19/1980	13.40%	10.62%		-2.24			2.78%
6/30/1980	13.00%	10.65%		-2.24			2.35%
6/30/1980	13.40%	10.65%		-2.24			2.75%
7/9/1980	14.75%	10.67%		-2.24			4.08%
7/10/1980	15.00%	10.68%		-2.24			4.32%
7/15/1980	15.80%	10.70%		-2.24			5.10%
7/18/1980	13.80%	10.71%		-2.23			3.09%
7/22/1980	14.10%	10.72%		-2.23			3.38%
7/24/1980	15.00%	10.73%		-2.23			4.27%
7/25/1980	13.48%	10.73%		-2.23			2.75%
7/31/1980	14.58%	10.75%		-2.23			3.83%
8/8/1980	13.50%	10.78%		-2.23			2.72%
8/8/1980	14.00%	10.78%		-2.23			3.22%
8/8/1980	15.45%	10.78%		-2.23			4.67%
8/11/1980	14.85%	10.78%		-2.23			4.07%
8/14/1980	14.00%	10.79%		-2.23			3.21%
8/14/1980	16.25%	10.79%		-2.23			5.46%
8/25/1980	13.75%	10.82%		-2.22			2.93%
8/27/1980	13.80%	10.83%		-2.22			2.97%
8/29/1980	12.50%	10.84%		-2.22			1.66%
9/15/1980	13.50%	10.88%		-2.22			2.62%
9/15/1980	13.93%	10.88%		-2.22			3.05%
9/15/1980	15.80%	10.88%		-2.22			4.92%
9/24/1980	12.50%	10.93%		-2.21			1.57%
9/24/1980	15.00%	10.93%		-2.21			4.07%
9/26/1980	13.75%	10.94%		-2.21			2.81%
9/30/1980	14.10%	10.96%		-2.21			3.14%
9/30/1980	14.20%	10.96%		-2.21			3.24%
10/1/1980	13.90%	10.97%		-2.21			2.93%
10/3/1980	15.50%	10.98%		-2.21			4.52%
10/7/1980	12.50%	10.99%		-2.21			1.51%
10/9/1980	13.25%	11.00%		-2.21			2.25%
10/9/1980	14.50%	11.00%		-2.21			3.50%
10/9/1980	14.50%	11.00%		-2.21			3.50%
10/16/1980	16.10%	11.02%		-2.21			5.08%
10/17/1980	14.50%	11.03%		-2.20			3.47%
10/31/1980	13.75%	11.11%		-2.20			2.64%
10/31/1980	14.25%	11.11%		-2.20			3.14%
11/4/1980	15.00%	11.12%		-2.20			3.88%
11/5/1980	13.75%	11.12%		-2.20			2.63%



[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
11/5/1980	14.00%	11.12%		-2.20			2.88%
11/8/1980	13.75%	11.14%		-2.19			2.61%
11/10/1980	14.85%	11.15%		-2.19			3.70%
11/17/1980	14.00%	11.18%		-2.19			2.82%
11/18/1980	14.00%	11.19%		-2.19			2.81%
11/19/1980	13.00%	11.19%		-2.19			1.81%
11/24/1980	14.00%	11.21%		-2.19			2.79%
11/26/1980	14.00%	11.21%		-2.19			2.79%
12/8/1980	14.15%	11.22%		-2.19			2.93%
12/8/1980	15.10%	11.22%		-2.19			3.88%
12/9/1980	15.35%	11.22%		-2.19			4.13%
12/12/1980	15.45%	11.23%		-2.19			4.22%
12/17/1980	13.25%	11.23%		-2.19			2.02%
12/18/1980	15.80%	11.23%		-2.19			4.57%
12/19/1980	14.50%	11.23%		-2.19			3.27%
12/19/1980	14.64%	11.23%		-2.19			3.41%
12/22/1980	13.45%	11.23%		-2.19			2.22%
12/22/1980	15.00%	11.23%		-2.19			3.77%
12/30/1980	14.50%	11.22%		-2.19			3.28%
12/30/1980	14.95%	11.22%		-2.19			3.73%
12/31/1980	13.39%	11.22%		-2.19			2.17%
1/2/1981	15.25%	11.22%		-2.19			4.03%
1/7/1981	14.30%	11.21%		-2.19			3.09%
1/19/1981	15.25%	11.20%		-2.19			4.05%
1/23/1981	13.10%	11.20%		-2.19			1.90%
1/23/1981	14.40%	11.20%		-2.19			3.20%
1/26/1981	15.25%	11.20%		-2.19			4.05%
1/27/1981	15.00%	11.21%		-2.19			3.79%
1/31/1981	13.47%	11.22%		-2.19			2.25%
2/3/1981	15.25%	11.23%		-2.19			4.02%
2/5/1981	15.75%	11.25%		-2.19			4.50%
2/11/1981	15.60%	11.28%		-2.18			4.32%
2/20/1981	15.25%	11.33%		-2.18			3.92%
3/11/1981	15.40%	11.49%		-2.16			3.91%
3/12/1981	14.51%	11.50%		-2.16			3.01%
3/12/1981	16.00%	11.50%		-2.16			4.50%
3/13/1981	13.02%	11.52%		-2.16			1.50%
3/18/1981	16.19%	11.55%		-2.16			4.64%
3/19/1981	13.75%	11.56%		-2.16			2.19%
3/23/1981	14.30%	11.58%		-2.16			2.72%
3/25/1981	15.30%	11.60%		-2.15			3.70%
4/1/1981	14.53%	11.68%		-2.15			2.85%
4/3/1981	19.10%	11.71%		-2.14			7.39%
4/9/1981	15.00%	11.78%		-2.14			3.22%
4/9/1981	15.30%	11.78%		-2.14			3.52%
4/9/1981	16.50%	11.78%		-2.14			4.72%
4/9/1981	17.00%	11.78%		-2.14			5.22%
4/10/1981	13.75%	11.80%		-2.14			1.95%
4/13/1981	13.57%	11.82%		-2.14			1.75%
4/15/1981	15.30%	11.85%		-2.13			3.45%
4/16/1981	13.50%	11.87%		-2.13			1.63%
4/17/1981	14.10%	11.87%		-2.13			2.23%
4/21/1981	14.00%	11.90%		-2.13			2.10%
4/21/1981	16.80%	11.90%		-2.13			4.90%
4/24/1981	16.00%	11.95%		-2.12			4.05%
4/27/1981	12.50%	11.97%		-2.12			0.53%
4/27/1981	13.61%	11.97%		-2.12			1.64%
4/29/1981	13.65%	12.00%		-2.12			1.65%
4/30/1981	13.50%	12.02%		-2.12			1.48%
5/4/1981	16.22%	12.05%		-2.12			4.17%
5/5/1981	14.40%	12.07%		-2.11			2.33%
5/7/1981	16.25%	12.11%		-2.11			4.14%
5/7/1981	16.27%	12.11%		-2.11			4.16%
5/8/1981	13.00%	12.13%		-2.11			0.87%
5/8/1981	16.00%	12.13%		-2.11			3.87%
5/12/1981	13.50%	12.16%		-2.11			1.34%
5/15/1981	15.75%	12.22%		-2.10			3.53%
5/18/1981	14.88%	12.23%		-2.10			2.65%
5/20/1981	16.00%	12.26%		-2.10			3.74%
5/21/1981	14.00%	12.27%		-2.10			1.73%
5/26/1981	14.90%	12.30%		-2.10			2.60%
5/27/1981	15.00%	12.31%		-2.09			2.69%
5/29/1981	15.50%	12.34%		-2.09			3.16%
6/1/1981	16.50%	12.35%		-2.09			4.15%
6/3/1981	14.67%	12.37%		-2.09			2.30%
6/5/1981	13.00%	12.39%		-2.09			0.61%
6/10/1981	16.75%	12.42%		-2.09			4.33%
6/17/1981	14.40%	12.46%		-2.08			1.94%
6/18/1981	16.33%	12.47%		-2.08			3.86%
6/25/1981	14.75%	12.51%		-2.08			2.24%
6/26/1981	16.00%	12.52%		-2.08			3.48%
6/30/1981	15.25%	12.54%		-2.08			2.71%
7/1/1981	15.50%	12.56%		-2.07			2.94%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
7/1/1981	17.50%	12.66%		-2.07			4.94%
7/10/1981	16.00%	12.62%		-2.07			3.38%
7/14/1981	16.90%	12.64%		-2.07			4.26%
7/15/1981	16.00%	12.65%		-2.07			3.35%
7/17/1981	15.00%	12.67%		-2.07			2.33%
7/20/1981	15.00%	12.68%		-2.07			2.32%
7/21/1981	14.00%	12.69%		-2.06			1.31%
7/28/1981	13.48%	12.74%		-2.06			0.74%
7/31/1981	13.50%	12.78%		-2.06			0.72%
7/31/1981	15.00%	12.78%		-2.06			2.22%
7/31/1981	16.00%	12.78%		-2.06			3.22%
8/5/1981	15.71%	12.83%		-2.05			2.88%
8/10/1981	14.50%	12.87%		-2.05			1.63%
8/11/1981	15.00%	12.88%		-2.05			2.12%
8/20/1981	13.50%	12.95%		-2.04			0.55%
8/20/1981	16.50%	12.95%		-2.04			3.55%
8/24/1981	15.00%	12.97%		-2.04			2.03%
8/28/1981	15.00%	13.01%		-2.04			1.99%
9/3/1981	14.50%	13.05%		-2.04			1.45%
9/10/1981	14.50%	13.11%		-2.03			1.39%
9/11/1981	16.00%	13.12%		-2.03			2.88%
9/16/1981	16.00%	13.15%		-2.03			2.85%
9/17/1981	16.50%	13.16%		-2.03			3.34%
9/23/1981	15.85%	13.20%		-2.03			2.65%
9/28/1981	15.50%	13.23%		-2.02			2.27%
10/9/1981	15.75%	13.33%		-2.02			2.42%
10/15/1981	16.25%	13.37%		-2.01			2.88%
10/16/1981	15.50%	13.38%		-2.01			2.12%
10/16/1981	16.50%	13.38%		-2.01			3.12%
10/19/1981	14.25%	13.39%		-2.01			0.86%
10/20/1981	15.25%	13.41%		-2.01			1.84%
10/20/1981	17.00%	13.41%		-2.01			3.59%
10/23/1981	16.00%	13.45%		-2.01			2.55%
10/27/1981	10.00%	13.48%		-2.00			-3.48%
10/29/1981	14.75%	13.51%		-2.00			1.24%
10/29/1981	16.50%	13.51%		-2.00			2.99%
11/3/1981	15.17%	13.53%		-2.00			1.64%
11/5/1981	16.60%	13.55%		-2.00			3.05%
11/6/1981	15.17%	13.56%		-2.00			1.61%
11/24/1981	15.50%	13.61%		-1.99			1.89%
11/25/1981	15.25%	13.61%		-1.99			1.64%
11/25/1981	15.35%	13.61%		-1.99			1.74%
11/25/1981	16.10%	13.61%		-1.99			2.49%
11/25/1981	16.10%	13.61%		-1.99			2.49%
12/1/1981	15.70%	13.61%		-1.99			2.09%
12/1/1981	16.00%	13.61%		-1.99			2.39%
12/1/1981	16.49%	13.61%		-1.99			2.88%
12/1/1981	16.50%	13.61%		-1.99			2.89%
12/4/1981	16.00%	13.61%		-1.99			2.39%
12/11/1981	16.25%	13.63%		-1.99			2.62%
12/14/1981	14.00%	13.63%		-1.99			0.37%
12/15/1981	15.81%	13.63%		-1.99			2.18%
12/15/1981	16.00%	13.63%		-1.99			2.37%
12/16/1981	15.25%	13.63%		-1.99			1.62%
12/17/1981	16.50%	13.63%		-1.99			2.87%
12/18/1981	15.45%	13.63%		-1.99			1.82%
12/30/1981	14.25%	13.67%		-1.99			0.58%
12/30/1981	16.00%	13.67%		-1.99			2.33%
12/30/1981	16.25%	13.67%		-1.99			2.58%
12/31/1981	16.15%	13.67%		-1.99			2.48%
1/4/1982	15.50%	13.67%		-1.99			1.83%
1/11/1982	14.50%	13.72%		-1.99			0.78%
1/11/1982	17.00%	13.72%		-1.99			3.28%
1/13/1982	14.75%	13.74%		-1.98			1.01%
1/14/1982	15.75%	13.75%		-1.98			2.00%
1/15/1982	15.00%	13.76%		-1.98			1.24%
1/15/1982	16.50%	13.76%		-1.98			2.74%
1/22/1982	16.25%	13.79%		-1.98			2.46%
1/27/1982	16.84%	13.81%		-1.98			3.03%
1/28/1982	13.00%	13.81%		-1.98			-0.81%
1/29/1982	15.50%	13.82%		-1.98			1.68%
2/1/1982	15.85%	13.82%		-1.98			2.03%
2/3/1982	16.44%	13.84%		-1.98			2.60%
2/8/1982	15.50%	13.86%		-1.98			1.64%
2/11/1982	16.00%	13.88%		-1.97			2.12%
2/11/1982	16.20%	13.88%		-1.97			2.32%
2/17/1982	15.00%	13.89%		-1.97			1.11%
2/19/1982	15.17%	13.89%		-1.97			1.28%
2/26/1982	15.25%	13.89%		-1.97			1.36%
3/1/1982	15.03%	13.89%		-1.97			1.14%
3/1/1982	16.00%	13.89%		-1.97			2.11%
3/3/1982	15.00%	13.88%		-1.97			1.12%
3/8/1982	17.10%	13.88%		-1.97			3.22%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
3/12/1982	16.25%	13.88%		-1.97			2.37%
3/17/1982	17.30%	13.88%		-1.97			3.42%
3/22/1982	15.10%	13.89%		-1.97			1.21%
3/27/1982	15.40%	13.89%		-1.97			1.51%
3/30/1982	15.50%	13.90%		-1.97			1.60%
3/31/1982	17.00%	13.91%		-1.97			3.09%
4/1/1982	14.70%	13.91%		-1.97			0.79%
4/1/1982	16.50%	13.91%		-1.97			2.59%
4/2/1982	15.50%	13.91%		-1.97			1.59%
4/5/1982	15.50%	13.92%		-1.97			1.58%
4/8/1982	16.40%	13.93%		-1.97			2.47%
4/13/1982	14.50%	13.94%		-1.97			0.56%
4/23/1982	15.75%	13.94%		-1.97			1.81%
4/27/1982	15.00%	13.94%		-1.97			1.06%
4/28/1982	15.75%	13.94%		-1.97			1.81%
4/30/1982	14.70%	13.94%		-1.97			0.76%
4/30/1982	15.50%	13.94%		-1.97			1.56%
5/3/1982	16.60%	13.94%		-1.97			2.66%
5/4/1982	16.00%	13.94%		-1.97			2.06%
5/14/1982	15.50%	13.92%		-1.97			1.58%
5/18/1982	15.42%	13.92%		-1.97			1.50%
5/19/1982	14.69%	13.92%		-1.97			0.77%
5/20/1982	15.00%	13.91%		-1.97			1.09%
5/20/1982	15.10%	13.91%		-1.97			1.19%
5/20/1982	15.50%	13.91%		-1.97			1.59%
5/20/1982	16.30%	13.91%		-1.97			2.39%
5/21/1982	17.75%	13.91%		-1.97			3.84%
5/27/1982	15.00%	13.89%		-1.97			1.11%
5/28/1982	15.50%	13.89%		-1.97			1.61%
5/28/1982	17.00%	13.89%		-1.97			3.11%
6/1/1982	13.75%	13.89%		-1.97			-0.14%
6/1/1982	16.60%	13.89%		-1.97			2.71%
6/9/1982	17.86%	13.88%		-1.97			3.98%
6/14/1982	15.75%	13.88%		-1.97			1.87%
6/15/1982	14.85%	13.88%		-1.97			0.97%
6/18/1982	15.50%	13.87%		-1.98			1.63%
6/21/1982	14.90%	13.87%		-1.98			1.03%
6/23/1982	16.00%	13.86%		-1.98			2.14%
6/23/1982	16.17%	13.86%		-1.98			2.31%
6/24/1982	14.85%	13.86%		-1.98			0.99%
6/25/1982	14.70%	13.86%		-1.98			0.84%
7/1/1982	16.00%	13.84%		-1.98			2.16%
7/2/1982	15.62%	13.84%		-1.98			1.78%
7/2/1982	17.00%	13.84%		-1.98			3.16%
7/13/1982	14.00%	13.82%		-1.98			0.18%
7/13/1982	16.80%	13.82%		-1.98			2.98%
7/14/1982	15.76%	13.82%		-1.98			1.94%
7/14/1982	16.02%	13.82%		-1.98			2.20%
7/19/1982	16.50%	13.80%		-1.98			2.70%
7/22/1982	14.50%	13.77%		-1.98			0.73%
7/22/1982	17.00%	13.77%		-1.98			3.23%
7/27/1982	16.75%	13.75%		-1.98			3.00%
7/29/1982	16.50%	13.74%		-1.99			2.76%
8/11/1982	17.50%	13.68%		-1.99			3.82%
8/18/1982	17.07%	13.63%		-1.99			3.44%
8/20/1982	15.73%	13.60%		-1.99			2.13%
8/25/1982	16.00%	13.57%		-2.00			2.43%
8/26/1982	15.50%	13.56%		-2.00			1.94%
8/30/1982	15.00%	13.55%		-2.00			1.45%
9/3/1982	16.20%	13.53%		-2.00			2.67%
9/8/1982	15.00%	13.52%		-2.00			1.48%
9/15/1982	13.08%	13.50%		-2.00			-0.42%
9/15/1982	16.25%	13.50%		-2.00			2.75%
9/16/1982	16.00%	13.50%		-2.00			2.50%
9/17/1982	15.25%	13.50%		-2.00			1.75%
9/23/1982	17.17%	13.47%		-2.00			3.70%
9/24/1982	14.50%	13.46%		-2.01			1.04%
9/27/1982	15.25%	13.46%		-2.01			1.79%
10/1/1982	15.50%	13.42%		-2.01			2.08%
10/15/1982	15.90%	13.32%		-2.02			2.58%
10/22/1982	15.75%	13.24%		-2.02			2.51%
10/22/1982	17.15%	13.24%		-2.02			3.91%
10/29/1982	15.54%	13.16%		-2.03			2.38%
11/1/1982	15.50%	13.15%		-2.03			2.35%
11/3/1982	17.20%	13.13%		-2.03			4.07%
11/4/1982	16.25%	13.11%		-2.03			3.14%
11/5/1982	16.20%	13.09%		-2.03			3.11%
11/9/1982	16.00%	13.05%		-2.04			2.95%
11/23/1982	15.50%	12.89%		-2.05			2.61%
11/23/1982	15.85%	12.89%		-2.05			2.96%
11/30/1982	16.50%	12.81%		-2.06			3.69%
12/1/1982	17.04%	12.79%		-2.06			4.25%
12/6/1982	15.00%	12.73%		-2.06			2.27%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
12/6/1982	16.35%	12.73%		-2.06			3.62%
12/10/1982	15.50%	12.66%		-2.07			2.84%
12/13/1982	16.00%	12.65%		-2.07			3.35%
12/14/1982	15.30%	12.63%		-2.07			2.67%
12/14/1982	16.40%	12.63%		-2.07			3.77%
12/20/1982	16.00%	12.57%		-2.07			3.43%
12/21/1982	14.75%	12.56%		-2.07			2.19%
12/21/1982	15.85%	12.56%		-2.07			3.29%
12/22/1982	16.25%	12.54%		-2.08			3.71%
12/22/1982	16.58%	12.54%		-2.08			4.04%
12/22/1982	16.75%	12.54%		-2.08			4.21%
12/29/1982	14.90%	12.48%		-2.08			2.42%
12/29/1982	16.25%	12.48%		-2.08			3.77%
12/30/1982	16.00%	12.47%		-2.08			3.53%
12/30/1982	16.35%	12.47%		-2.08			3.88%
12/30/1982	16.77%	12.47%		-2.08			4.30%
1/5/1983	17.33%	12.40%		-2.09			4.93%
1/11/1983	15.90%	12.34%		-2.09			3.56%
1/12/1983	14.63%	12.33%		-2.09			2.30%
1/12/1983	15.50%	12.33%		-2.09			3.17%
1/20/1983	17.75%	12.24%		-2.10			5.51%
1/21/1983	15.00%	12.22%		-2.10			2.78%
1/24/1983	14.50%	12.21%		-2.10			2.29%
1/24/1983	15.50%	12.21%		-2.10			3.29%
1/25/1983	15.85%	12.19%		-2.10			3.66%
1/27/1983	16.14%	12.17%		-2.11			3.97%
2/1/1983	18.50%	12.13%		-2.11			6.37%
2/4/1983	14.00%	12.10%		-2.11			1.90%
2/10/1983	15.00%	12.06%		-2.12			2.94%
2/21/1983	15.50%	11.98%		-2.12			3.52%
2/22/1983	15.50%	11.97%		-2.12			3.53%
2/23/1983	15.10%	11.96%		-2.12			3.14%
2/23/1983	16.00%	11.96%		-2.12			4.04%
3/2/1983	15.25%	11.89%		-2.13			3.36%
3/9/1983	15.20%	11.82%		-2.13			3.38%
3/15/1983	13.00%	11.77%		-2.14			1.23%
3/18/1983	15.25%	11.73%		-2.14			3.52%
3/23/1983	15.40%	11.69%		-2.15			3.71%
3/24/1983	15.00%	11.67%		-2.15			3.33%
3/29/1983	15.50%	11.63%		-2.15			3.87%
3/30/1983	16.71%	11.61%		-2.15			5.10%
3/31/1983	15.00%	11.59%		-2.15			3.41%
4/4/1983	15.20%	11.58%		-2.16			3.62%
4/8/1983	15.50%	11.51%		-2.16			3.99%
4/11/1983	14.81%	11.49%		-2.16			3.32%
4/19/1983	14.50%	11.38%		-2.17			3.12%
4/20/1983	16.00%	11.36%		-2.18			4.64%
4/29/1983	16.00%	11.24%		-2.19			4.76%
5/1/1983	14.50%	11.24%		-2.19			3.26%
5/9/1983	15.50%	11.15%		-2.19			4.35%
5/11/1983	16.46%	11.12%		-2.20			5.34%
5/12/1983	14.14%	11.11%		-2.20			3.03%
5/18/1983	15.00%	11.05%		-2.20			3.95%
5/23/1983	14.90%	11.01%		-2.21			3.89%
5/23/1983	15.50%	11.01%		-2.21			4.49%
5/25/1983	15.50%	10.98%		-2.21			4.52%
5/27/1983	15.00%	10.96%		-2.21			4.04%
5/31/1983	14.00%	10.95%		-2.21			3.05%
5/31/1983	15.50%	10.95%		-2.21			4.55%
6/2/1983	14.50%	10.93%		-2.21			3.57%
6/17/1983	15.03%	10.84%		-2.22			4.19%
7/1/1983	14.80%	10.78%		-2.23			4.02%
7/1/1983	14.90%	10.78%		-2.23			4.12%
7/8/1983	16.25%	10.76%		-2.23			5.49%
7/13/1983	13.20%	10.75%		-2.23			2.45%
7/19/1983	15.00%	10.74%		-2.23			4.26%
7/19/1983	15.10%	10.74%		-2.23			4.36%
7/25/1983	16.25%	10.73%		-2.23			5.52%
7/28/1983	15.90%	10.74%		-2.23			5.16%
8/3/1983	16.34%	10.75%		-2.23			5.59%
8/3/1983	16.50%	10.75%		-2.23			5.75%
8/19/1983	15.00%	10.80%		-2.23			4.20%
8/22/1983	15.50%	10.80%		-2.23			4.70%
8/22/1983	16.40%	10.80%		-2.23			5.60%
8/31/1983	14.75%	10.84%		-2.22			3.91%
9/7/1983	15.00%	10.86%		-2.22			4.14%
9/14/1983	15.78%	10.89%		-2.22			4.89%
9/16/1983	15.00%	10.90%		-2.22			4.10%
9/19/1983	14.50%	10.91%		-2.22			3.59%
9/20/1983	16.50%	10.91%		-2.22			5.59%
9/28/1983	14.50%	10.94%		-2.21			3.56%
9/29/1983	15.50%	10.95%		-2.21			4.55%
9/30/1983	15.25%	10.95%		-2.21			4.30%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
9/30/1983	16.15%	10.95%		-2.21			5.20%
10/4/1983	14.80%	10.96%		-2.21			3.84%
10/7/1983	16.00%	10.97%		-2.21			5.03%
10/13/1983	15.52%	10.99%		-2.21			4.53%
10/17/1983	15.50%	11.00%		-2.21			4.50%
10/18/1983	14.50%	11.00%		-2.21			3.50%
10/19/1983	16.25%	11.01%		-2.21			5.24%
10/19/1983	16.50%	11.01%		-2.21			5.49%
10/26/1983	15.00%	11.04%		-2.20			3.96%
10/27/1983	15.20%	11.04%		-2.20			4.16%
11/1/1983	16.00%	11.06%		-2.20			4.94%
11/9/1983	14.90%	11.09%		-2.20			3.81%
11/10/1983	14.35%	11.10%		-2.20			3.25%
11/23/1983	16.00%	11.13%		-2.20			4.87%
11/23/1983	16.15%	11.13%		-2.20			5.02%
11/30/1983	15.00%	11.14%		-2.19			3.86%
12/5/1983	15.25%	11.15%		-2.19			4.10%
12/6/1983	15.07%	11.15%		-2.19			3.92%
12/8/1983	15.90%	11.16%		-2.19			4.74%
12/9/1983	14.75%	11.17%		-2.19			3.58%
12/12/1983	14.50%	11.17%		-2.19			3.33%
12/15/1983	15.56%	11.19%		-2.19			4.37%
12/19/1983	14.80%	11.21%		-2.19			3.59%
12/20/1983	14.69%	11.22%		-2.19			3.47%
12/20/1983	16.00%	11.22%		-2.19			4.78%
12/20/1983	16.25%	11.22%		-2.19			5.03%
12/22/1983	14.75%	11.23%		-2.19			3.52%
12/22/1983	15.75%	11.23%		-2.19			4.52%
1/3/1984	14.75%	11.27%		-2.18			3.48%
1/10/1984	15.90%	11.30%		-2.18			4.60%
1/12/1984	15.60%	11.31%		-2.18			4.29%
1/18/1984	13.75%	11.33%		-2.18			2.42%
1/19/1984	15.90%	11.33%		-2.18			4.57%
1/30/1984	16.10%	11.37%		-2.17			4.73%
1/31/1984	15.25%	11.37%		-2.17			3.88%
2/1/1984	14.80%	11.38%		-2.17			3.42%
2/6/1984	13.75%	11.40%		-2.17			2.35%
2/6/1984	14.75%	11.40%		-2.17			3.35%
2/9/1984	15.25%	11.42%		-2.17			3.83%
2/15/1984	15.70%	11.44%		-2.17			4.26%
2/20/1984	15.00%	11.46%		-2.17			3.54%
2/20/1984	15.00%	11.46%		-2.17			3.54%
2/22/1984	14.75%	11.47%		-2.17			3.28%
2/28/1984	14.50%	11.51%		-2.16			2.99%
3/2/1984	14.25%	11.54%		-2.16			2.71%
3/20/1984	16.00%	11.64%		-2.15			4.36%
3/23/1984	15.50%	11.67%		-2.15			3.83%
3/26/1984	14.71%	11.68%		-2.15			3.03%
4/2/1984	15.50%	11.71%		-2.14			3.79%
4/6/1984	14.74%	11.75%		-2.14			2.99%
4/11/1984	15.72%	11.78%		-2.14			3.94%
4/17/1984	15.00%	11.81%		-2.14			3.19%
4/18/1984	16.20%	11.82%		-2.14			4.38%
4/25/1984	14.64%	11.85%		-2.13			2.79%
4/30/1984	14.40%	11.87%		-2.13			2.53%
5/16/1984	14.69%	11.98%		-2.12			2.71%
5/16/1984	15.00%	11.98%		-2.12			3.02%
5/22/1984	14.40%	12.02%		-2.12			2.38%
5/29/1984	15.10%	12.06%		-2.12			3.04%
6/13/1984	15.25%	12.15%		-2.11			3.10%
6/15/1984	15.60%	12.17%		-2.11			3.43%
6/22/1984	16.25%	12.21%		-2.10			4.04%
6/29/1984	15.25%	12.26%		-2.10			2.99%
7/2/1984	13.35%	12.27%		-2.10			1.08%
7/10/1984	16.00%	12.31%		-2.09			3.69%
7/12/1984	16.50%	12.32%		-2.09			4.18%
7/13/1984	16.25%	12.33%		-2.09			3.92%
7/17/1984	14.14%	12.35%		-2.09			1.79%
7/18/1984	15.30%	12.36%		-2.09			2.94%
7/18/1984	15.50%	12.36%		-2.09			3.14%
7/19/1984	14.30%	12.37%		-2.09			1.93%
7/24/1984	16.79%	12.39%		-2.09			4.40%
7/31/1984	16.00%	12.43%		-2.09			3.57%
8/3/1984	14.25%	12.44%		-2.08			1.81%
8/17/1984	14.30%	12.49%		-2.08			1.81%
8/20/1984	15.00%	12.49%		-2.08			2.51%
8/27/1984	16.30%	12.51%		-2.08			3.79%
8/31/1984	15.55%	12.52%		-2.08			3.03%
9/6/1984	16.00%	12.53%		-2.08			3.47%
9/10/1984	14.75%	12.54%		-2.08			2.21%
9/13/1984	15.00%	12.55%		-2.08			2.45%
9/17/1984	17.38%	12.56%		-2.08			4.82%
9/26/1984	14.50%	12.57%		-2.07			1.93%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
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9/28/1984	16.25%	12.57%		-2.07			3.68%
10/9/1984	14.75%	12.58%		-2.07			2.17%
10/12/1984	15.60%	12.59%		-2.07			3.01%
10/22/1984	15.00%	12.59%		-2.07			2.41%
10/26/1984	16.40%	12.58%		-2.07			3.82%
10/31/1984	16.25%	12.58%		-2.07			3.67%
11/7/1984	15.60%	12.58%		-2.07			3.02%
11/9/1984	16.00%	12.58%		-2.07			3.42%
11/14/1984	15.75%	12.58%		-2.07			3.17%
11/20/1984	15.25%	12.58%		-2.07			2.67%
11/20/1984	15.92%	12.58%		-2.07			3.34%
11/23/1984	15.00%	12.58%		-2.07			2.42%
11/28/1984	16.15%	12.57%		-2.07			3.58%
12/3/1984	15.80%	12.56%		-2.07			3.24%
12/4/1984	16.50%	12.56%		-2.07			3.94%
12/18/1984	16.40%	12.53%		-2.08			3.87%
12/19/1984	14.75%	12.53%		-2.08			2.22%
12/19/1984	15.00%	12.53%		-2.08			2.47%
12/20/1984	16.00%	12.53%		-2.08			3.47%
12/28/1984	16.00%	12.50%		-2.08			3.50%
1/3/1985	14.75%	12.49%		-2.08			2.26%
1/10/1985	15.75%	12.47%		-2.08			3.28%
1/11/1985	16.30%	12.46%		-2.08			3.84%
1/23/1985	15.80%	12.43%		-2.08			3.37%
1/24/1985	15.82%	12.43%		-2.09			3.39%
1/25/1985	16.75%	12.42%		-2.09			4.33%
1/30/1985	14.90%	12.40%		-2.09			2.50%
1/31/1985	14.75%	12.39%		-2.09			2.36%
2/8/1985	14.47%	12.35%		-2.09			2.12%
3/1/1985	13.84%	12.31%		-2.10			1.53%
3/8/1985	16.85%	12.28%		-2.10			4.57%
3/14/1985	15.50%	12.25%		-2.10			3.25%
3/15/1985	15.62%	12.25%		-2.10			3.37%
3/29/1985	15.62%	12.17%		-2.11			3.45%
4/3/1985	14.60%	12.14%		-2.11			2.46%
4/9/1985	15.50%	12.11%		-2.11			3.39%
4/16/1985	15.70%	12.06%		-2.12			3.64%
4/22/1985	14.00%	12.02%		-2.12			1.98%
4/26/1985	15.50%	11.98%		-2.12			3.52%
4/29/1985	15.00%	11.97%		-2.12			3.03%
5/2/1985	14.68%	11.94%		-2.13			2.74%
5/8/1985	15.62%	11.89%		-2.13			3.73%
5/10/1985	16.50%	11.87%		-2.13			4.63%
5/29/1985	14.61%	11.73%		-2.14			2.88%
5/31/1985	16.00%	11.71%		-2.14			4.29%
6/14/1985	15.50%	11.61%		-2.15			3.89%
7/9/1985	15.00%	11.45%		-2.17			3.55%
7/16/1985	14.50%	11.39%		-2.17			3.11%
7/26/1985	14.50%	11.33%		-2.18			3.17%
8/2/1985	14.80%	11.29%		-2.18			3.51%
8/7/1985	15.00%	11.27%		-2.18			3.73%
8/28/1985	14.25%	11.15%		-2.19			3.10%
8/28/1985	15.50%	11.15%		-2.19			4.35%
8/29/1985	14.50%	11.15%		-2.19			3.35%
9/9/1985	14.60%	11.11%		-2.20			3.49%
9/9/1985	14.90%	11.11%		-2.20			3.79%
9/17/1985	14.90%	11.08%		-2.20			3.82%
9/23/1985	15.00%	11.06%		-2.20			3.94%
9/27/1985	15.50%	11.05%		-2.20			4.45%
9/27/1985	15.80%	11.05%		-2.20			4.75%
10/2/1985	14.00%	11.03%		-2.20			2.97%
10/2/1985	14.75%	11.03%		-2.20			3.72%
10/3/1985	15.25%	11.03%		-2.20			4.22%
10/24/1985	15.40%	10.96%		-2.21			4.44%
10/24/1985	15.82%	10.96%		-2.21			4.86%
10/24/1985	15.85%	10.96%		-2.21			4.89%
10/28/1985	16.00%	10.95%		-2.21			5.05%
10/29/1985	16.65%	10.94%		-2.21			5.71%
10/31/1985	15.06%	10.93%		-2.21			4.13%
11/4/1985	14.50%	10.92%		-2.21			3.58%
11/7/1985	15.50%	10.90%		-2.22			4.60%
11/8/1985	14.30%	10.89%		-2.22			3.41%
12/12/1985	14.75%	10.73%		-2.23			4.02%
12/18/1985	15.00%	10.69%		-2.24			4.31%
12/20/1985	14.50%	10.67%		-2.24			3.83%
12/20/1985	14.50%	10.67%		-2.24			3.83%
12/20/1985	15.00%	10.67%		-2.24			4.33%
1/24/1986	15.40%	10.41%		-2.26			4.99%
1/31/1986	15.00%	10.35%		-2.27			4.65%
2/5/1986	15.00%	10.32%		-2.27			4.68%
2/5/1986	15.75%	10.32%		-2.27			5.43%
2/10/1986	13.30%	10.29%		-2.27			3.01%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
2/11/1986	12.50%	10.28%		-2.27			2.22%
2/14/1986	14.40%	10.24%		-2.28			4.16%
2/18/1986	16.00%	10.23%		-2.28			5.77%
2/24/1986	14.50%	10.18%		-2.28			4.32%
2/26/1986	14.00%	10.15%		-2.29			3.85%
3/5/1986	14.90%	10.08%		-2.29			4.82%
3/11/1986	14.50%	10.02%		-2.30			4.48%
3/12/1986	13.50%	10.00%		-2.30			3.50%
3/27/1986	14.10%	9.86%		-2.32			4.24%
3/31/1986	13.50%	9.84%		-2.32			3.66%
4/1/1986	14.00%	9.83%		-2.32			4.17%
4/2/1986	15.50%	9.81%		-2.32			5.69%
4/4/1986	15.00%	9.78%		-2.32			5.22%
4/14/1986	13.40%	9.69%		-2.33			3.71%
4/23/1986	15.00%	9.57%		-2.35			5.43%
5/16/1986	14.50%	9.32%		-2.37			5.18%
5/16/1986	14.50%	9.32%		-2.37			5.18%
5/29/1986	13.90%	9.19%		-2.39			4.71%
5/30/1986	15.10%	9.18%		-2.39			5.92%
6/2/1986	12.81%	9.17%		-2.39			3.64%
6/11/1986	14.00%	9.07%		-2.40			4.93%
6/24/1986	16.63%	8.94%		-2.41			7.69%
6/26/1986	12.00%	8.91%		-2.42			3.09%
6/26/1986	14.75%	8.91%		-2.42			5.84%
6/30/1986	13.00%	8.87%		-2.42			4.13%
7/10/1986	14.34%	8.75%		-2.44			5.59%
7/11/1986	12.75%	8.73%		-2.44			4.02%
7/14/1986	12.60%	8.71%		-2.44			3.89%
7/17/1986	12.40%	8.66%		-2.45			3.74%
7/25/1986	14.25%	8.57%		-2.46			5.68%
8/6/1986	13.50%	8.44%		-2.47			5.06%
8/14/1986	13.50%	8.35%		-2.48			5.15%
9/16/1986	12.75%	8.06%		-2.52			4.69%
9/19/1986	13.25%	8.03%		-2.52			5.22%
10/1/1986	14.00%	7.95%		-2.53			6.05%
10/3/1986	13.40%	7.93%		-2.53			5.47%
10/31/1986	13.50%	7.77%		-2.55			5.73%
11/5/1986	13.00%	7.75%		-2.56			5.25%
12/3/1986	12.90%	7.58%		-2.58			5.32%
12/4/1986	14.44%	7.58%		-2.58			6.86%
12/16/1986	13.60%	7.52%		-2.59			6.08%
12/22/1986	13.80%	7.51%		-2.59			6.29%
12/30/1986	13.00%	7.49%		-2.59			5.51%
1/2/1987	13.00%	7.49%		-2.59			5.51%
1/12/1987	12.40%	7.47%		-2.59			4.93%
1/27/1987	12.71%	7.46%		-2.60			5.25%
3/2/1987	12.47%	7.47%		-2.59			5.00%
3/3/1987	13.60%	7.47%		-2.59			6.13%
3/4/1987	12.38%	7.47%		-2.59			4.91%
3/10/1987	13.50%	7.47%		-2.59			6.03%
3/13/1987	13.00%	7.47%		-2.59			5.53%
3/31/1987	13.00%	7.46%		-2.59			5.54%
4/6/1987	13.00%	7.47%		-2.59			5.53%
4/14/1987	12.50%	7.49%		-2.59			5.01%
4/16/1987	14.50%	7.50%		-2.59			7.00%
4/27/1987	12.00%	7.54%		-2.59			4.46%
5/5/1987	12.85%	7.58%		-2.58			5.27%
5/12/1987	12.65%	7.62%		-2.57			5.03%
5/28/1987	13.50%	7.70%		-2.56			5.80%
6/15/1987	13.20%	7.78%		-2.55			5.42%
6/29/1987	15.00%	7.83%		-2.55			7.17%
6/30/1987	12.50%	7.84%		-2.55			4.66%
7/8/1987	12.00%	7.86%		-2.54			4.14%
7/10/1987	12.90%	7.86%		-2.54			5.04%
7/15/1987	13.50%	7.88%		-2.54			5.62%
7/16/1987	13.50%	7.88%		-2.54			5.62%
7/16/1987	15.00%	7.88%		-2.54			7.12%
7/27/1987	13.00%	7.92%		-2.54			5.08%
7/27/1987	13.40%	7.92%		-2.54			5.48%
7/27/1987	13.50%	7.92%		-2.54			5.58%
7/31/1987	12.98%	7.95%		-2.53			5.03%
8/26/1987	12.63%	8.06%		-2.52			4.57%
8/26/1987	12.75%	8.06%		-2.52			4.69%
8/27/1987	13.25%	8.06%		-2.52			5.19%
9/9/1987	13.00%	8.14%		-2.51			4.86%
9/30/1987	12.75%	8.31%		-2.49			4.44%
9/30/1987	13.00%	8.31%		-2.49			4.69%
10/2/1987	11.50%	8.33%		-2.49			3.17%
10/15/1987	13.00%	8.43%		-2.47			4.57%
11/2/1987	13.00%	8.55%		-2.46			4.45%
11/19/1987	13.00%	8.64%		-2.45			4.36%
11/30/1987	12.00%	8.68%		-2.44			3.32%
12/3/1987	14.20%	8.70%		-2.44			5.50%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
12/15/1987	13.25%	8.77%		-2.43			4.48%
12/16/1987	13.50%	8.78%		-2.43			4.72%
12/16/1987	13.72%	8.78%		-2.43			4.94%
12/17/1987	11.75%	8.79%		-2.43			2.96%
12/18/1987	13.50%	8.80%		-2.43			4.70%
12/21/1987	12.01%	8.81%		-2.43			3.20%
12/22/1987	12.00%	8.81%		-2.43			3.19%
12/22/1987	12.00%	8.81%		-2.43			3.19%
12/22/1987	12.75%	8.81%		-2.43			3.94%
12/22/1987	13.00%	8.81%		-2.43			4.19%
1/20/1988	13.80%	8.94%		-2.42			4.86%
1/26/1988	13.90%	8.95%		-2.41			4.95%
1/29/1988	13.20%	8.96%		-2.41			4.24%
2/4/1988	12.60%	8.96%		-2.41			3.64%
3/1/1988	11.56%	8.94%		-2.41			2.62%
3/23/1988	12.87%	8.92%		-2.42			3.95%
3/24/1988	11.24%	8.92%		-2.42			2.32%
3/30/1988	12.72%	8.92%		-2.42			3.80%
4/1/1988	12.50%	8.92%		-2.42			3.58%
4/7/1988	13.25%	8.93%		-2.42			4.32%
4/25/1988	10.96%	8.96%		-2.41			2.00%
5/3/1988	12.91%	8.97%		-2.41			3.94%
5/11/1988	13.50%	8.99%		-2.41			4.51%
5/16/1988	13.00%	8.99%		-2.41			4.01%
6/30/1988	12.75%	9.00%		-2.41			3.75%
7/1/1988	12.75%	8.99%		-2.41			3.76%
7/20/1988	13.40%	8.96%		-2.41			4.44%
8/5/1988	12.75%	8.92%		-2.42			3.83%
8/23/1988	11.70%	8.93%		-2.42			2.77%
8/29/1988	12.75%	8.94%		-2.41			3.81%
8/30/1988	13.50%	8.94%		-2.41			4.56%
9/8/1988	12.60%	8.95%		-2.41			3.65%
10/13/1988	13.10%	8.93%		-2.42			4.17%
12/19/1988	13.00%	9.02%		-2.41			3.98%
12/20/1988	12.25%	9.02%		-2.41			3.23%
12/20/1988	13.00%	9.02%		-2.41			3.98%
12/21/1988	12.90%	9.02%		-2.41			3.88%
12/27/1988	13.00%	9.03%		-2.40			3.97%
12/28/1988	13.10%	9.03%		-2.40			4.07%
12/30/1988	13.40%	9.04%		-2.40			4.36%
1/27/1989	13.00%	9.05%		-2.40			3.95%
1/31/1989	13.00%	9.05%		-2.40			3.95%
2/17/1989	13.00%	9.05%		-2.40			3.95%
2/20/1989	12.40%	9.05%		-2.40			3.35%
3/1/1989	12.76%	9.05%		-2.40			3.71%
3/8/1989	13.00%	9.05%		-2.40			3.95%
3/30/1989	14.00%	9.05%		-2.40			4.95%
4/5/1989	14.20%	9.05%		-2.40			5.15%
4/18/1989	13.00%	9.05%		-2.40			3.95%
5/5/1989	12.40%	9.05%		-2.40			3.35%
6/2/1989	13.20%	9.00%		-2.41			4.20%
6/8/1989	13.50%	8.98%		-2.41			4.52%
6/27/1989	13.25%	8.91%		-2.42			4.34%
6/30/1989	13.00%	8.90%		-2.42			4.10%
8/14/1989	12.50%	8.77%		-2.43			3.73%
9/28/1989	12.25%	8.63%		-2.45			3.62%
10/24/1989	12.50%	8.54%		-2.46			3.96%
11/9/1989	13.00%	8.49%		-2.47			4.51%
12/15/1989	13.00%	8.34%		-2.48			4.66%
12/20/1989	12.90%	8.32%		-2.49			4.58%
12/21/1989	12.90%	8.31%		-2.49			4.59%
12/27/1989	12.50%	8.29%		-2.49			4.21%
12/27/1989	13.00%	8.29%		-2.49			4.71%
1/10/1990	12.80%	8.24%		-2.50		19.95	4.56%
1/11/1990	12.90%	8.24%		-2.50		19.96	4.66%
1/17/1990	12.80%	8.22%		-2.50		21.59	4.58%
1/26/1990	12.00%	8.20%		-2.50		22.87	3.80%
2/9/1990	12.10%	8.17%		-2.50		23.58	3.93%
2/24/1990	12.86%	8.15%		-2.51		23.35	4.71%
3/30/1990	12.90%	8.16%		-2.51		22.17	4.74%
4/4/1990	15.76%	8.17%		-2.51		22.16	7.59%
4/12/1990	12.52%	8.18%		-2.50		22.04	4.34%
4/19/1990	12.75%	8.20%		-2.50		22.01	4.55%
5/21/1990	12.10%	8.28%		-2.49		21.42	3.82%
5/29/1990	12.40%	8.30%		-2.49		21.25	4.10%
5/31/1990	12.00%	8.30%		-2.49		21.17	3.70%
6/4/1990	12.90%	8.30%		-2.49		21.11	4.60%
6/6/1990	12.25%	8.31%		-2.49		21.06	3.94%
6/15/1990	13.20%	8.32%		-2.49		20.80	4.88%
6/20/1990	12.92%	8.32%		-2.49		20.68	4.60%
6/27/1990	12.90%	8.33%		-2.49		20.52	4.57%
6/29/1990	12.50%	8.33%		-2.48		20.45	4.17%
7/6/1990	12.10%	8.34%		-2.48		20.33	3.76%



[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
7/6/1990	12.35%	8.34%		-2.48		20.33	4.01%
8/10/1990	12.55%	8.41%		-2.48		20.52	4.14%
8/16/1990	13.21%	8.43%		-2.47		20.64	4.78%
8/22/1990	13.10%	8.45%		-2.47		20.82	4.65%
8/24/1990	13.00%	8.46%		-2.47		21.00	4.54%
9/26/1990	11.45%	8.59%		-2.45		21.96	2.86%
10/2/1990	13.00%	8.61%		-2.45		22.09	4.39%
10/5/1990	12.84%	8.62%		-2.45		22.18	4.22%
10/19/1990	13.00%	8.67%		-2.45		22.68	4.33%
10/25/1990	12.30%	8.68%		-2.44		22.81	3.62%
11/21/1990	12.70%	8.69%		-2.44		22.98	4.01%
12/13/1990	12.30%	8.67%		-2.44		22.96	3.63%
12/17/1990	12.87%	8.67%		-2.45		22.99	4.20%
12/18/1990	13.10%	8.67%		-2.45		23.00	4.43%
12/19/1990	12.00%	8.66%		-2.45		23.02	3.34%
12/20/1990	12.75%	8.66%		-2.45		23.04	4.09%
12/21/1990	12.50%	8.66%		-2.45		23.05	3.84%
12/27/1990	12.79%	8.66%		-2.45		23.11	4.13%
1/2/1991	13.10%	8.65%		-2.45		23.23	4.45%
1/4/1991	12.50%	8.65%		-2.45		23.31	3.85%
1/15/1991	12.75%	8.64%		-2.45		23.74	4.11%
1/25/1991	11.70%	8.63%		-2.45		23.92	3.07%
2/4/1991	12.50%	8.60%		-2.45		23.93	3.90%
2/7/1991	12.50%	8.59%		-2.45		23.93	3.91%
2/12/1991	13.00%	8.58%		-2.46		23.96	4.43%
2/14/1991	12.72%	8.57%		-2.46		23.98	4.15%
2/22/1991	12.80%	8.55%		-2.46		24.05	4.25%
3/6/1991	13.10%	8.53%		-2.46		24.14	4.57%
3/8/1991	12.30%	8.52%		-2.46		24.18	3.78%
3/8/1991	13.00%	8.52%		-2.46		24.18	4.48%
4/22/1991	13.00%	8.49%		-2.47		24.19	4.51%
5/7/1991	13.50%	8.47%		-2.47		24.21	5.03%
5/13/1991	13.25%	8.47%		-2.47		24.13	4.78%
5/30/1991	12.75%	8.44%		-2.47		23.59	4.31%
6/12/1991	12.00%	8.41%		-2.48		23.06	3.59%
6/25/1991	11.70%	8.39%		-2.48		22.50	3.31%
6/28/1991	12.50%	8.38%		-2.48		22.35	4.12%
7/1/1991	12.00%	8.38%		-2.48		22.30	3.62%
7/3/1991	12.50%	8.37%		-2.48		22.18	4.13%
7/19/1991	12.10%	8.34%		-2.48		21.59	3.76%
8/1/1991	12.90%	8.32%		-2.49		20.95	4.58%
8/16/1991	13.20%	8.29%		-2.49		20.17	4.91%
9/27/1991	12.50%	8.23%		-2.50		19.03	4.27%
9/30/1991	12.25%	8.23%		-2.50		19.01	4.02%
10/17/1991	13.00%	8.20%		-2.50		18.52	4.80%
10/23/1991	12.50%	8.20%		-2.50		18.27	4.30%
10/23/1991	12.55%	8.20%		-2.50		18.27	4.35%
10/31/1991	11.80%	8.19%		-2.50		17.73	3.61%
11/1/1991	12.00%	8.19%		-2.50		17.67	3.81%
11/5/1991	12.25%	8.19%		-2.50		17.58	4.06%
11/12/1991	12.50%	8.18%		-2.50		17.38	4.32%
11/12/1991	13.25%	8.18%		-2.50		17.38	5.07%
11/25/1991	12.40%	8.18%		-2.50		17.24	4.22%
11/26/1991	11.60%	8.18%		-2.50		17.22	3.42%
11/26/1991	12.50%	8.18%		-2.50		17.22	4.32%
11/27/1991	12.10%	8.18%		-2.50		17.21	3.92%
12/18/1991	12.25%	8.15%		-2.51		17.09	4.10%
12/19/1991	12.60%	8.15%		-2.51		17.08	4.45%
12/19/1991	12.80%	8.15%		-2.51		17.08	4.65%
12/20/1991	12.65%	8.14%		-2.51		17.06	4.51%
1/9/1992	12.80%	8.09%		-2.51		17.13	4.71%
1/16/1992	12.75%	8.07%		-2.52		17.14	4.68%
1/21/1992	12.00%	8.06%		-2.52		17.13	3.94%
1/22/1992	13.00%	8.06%		-2.52		17.12	4.94%
1/27/1992	12.65%	8.05%		-2.52		17.08	4.60%
1/31/1992	12.00%	8.04%		-2.52		17.12	3.96%
2/1/1992	12.40%	8.03%		-2.52		17.16	4.37%
2/25/1992	12.50%	8.01%		-2.52		17.14	4.49%
3/16/1992	11.43%	7.98%		-2.53		17.25	3.45%
3/18/1992	12.28%	7.98%		-2.53		17.25	4.30%
4/2/1992	12.10%	7.95%		-2.53		17.23	4.15%
4/9/1992	11.45%	7.94%		-2.53		17.25	3.51%
4/10/1992	11.50%	7.93%		-2.53		17.24	3.57%
4/14/1992	11.50%	7.93%		-2.53		17.22	3.57%
5/5/1992	11.50%	7.89%		-2.54		17.08	3.61%
5/12/1992	11.87%	7.88%		-2.54		17.08	3.99%
5/12/1992	12.46%	7.88%		-2.54		17.08	4.58%
6/1/1992	12.30%	7.87%		-2.54		17.01	4.43%
6/12/1992	10.90%	7.86%		-2.54		16.96	3.04%
6/26/1992	12.35%	7.85%		-2.54		16.91	4.50%
6/29/1992	11.00%	7.85%		-2.54		16.89	3.15%
6/30/1992	13.00%	7.85%		-2.55		16.87	5.15%
7/13/1992	11.90%	7.84%		-2.55		16.78	4.06%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
7/13/1992	13.50%	7.84%		-2.55		16.78	5.66%
7/22/1992	11.20%	7.83%		-2.55		16.66	3.37%
8/3/1992	12.00%	7.81%		-2.55		16.51	4.19%
8/6/1992	12.50%	7.80%		-2.55		16.48	4.70%
9/22/1992	12.00%	7.71%		-2.56		15.90	4.29%
9/28/1992	11.40%	7.71%		-2.56		15.79	3.69%
9/30/1992	11.75%	7.70%		-2.56		15.76	4.05%
10/2/1992	13.00%	7.70%		-2.56		15.75	5.30%
10/12/1992	12.20%	7.70%		-2.56		15.86	4.50%
10/16/1992	13.16%	7.70%		-2.56		15.84	5.46%
10/30/1992	11.75%	7.71%		-2.56		15.75	4.04%
11/3/1992	12.00%	7.71%		-2.56		15.75	4.29%
12/3/1992	11.85%	7.68%		-2.57		15.37	4.17%
12/15/1992	11.00%	7.66%		-2.57		15.19	3.34%
12/16/1992	11.90%	7.66%		-2.57		15.16	4.24%
12/16/1992	12.40%	7.66%		-2.57		15.16	4.74%
12/17/1992	12.00%	7.66%		-2.57		15.13	4.34%
12/22/1992	12.30%	7.65%		-2.57		15.01	4.65%
12/22/1992	12.40%	7.65%		-2.57		15.01	4.75%
12/29/1992	12.25%	7.63%	8.36%	-2.57	0.73%	14.87	4.62%
12/30/1992	12.00%	7.63%	8.36%	-2.57	0.73%	14.85	4.37%
12/31/1992	11.90%	7.63%	8.36%	-2.57	0.74%	14.83	4.27%
1/12/1993	12.00%	7.61%	8.37%	-2.58	0.76%	14.72	4.39%
1/21/1993	11.25%	7.59%	8.34%	-2.58	0.75%	14.55	3.66%
2/2/1993	11.40%	7.56%	8.28%	-2.58	0.72%	14.36	3.84%
2/15/1993	12.30%	7.52%	8.23%	-2.59	0.71%	14.23	4.78%
2/24/1993	11.90%	7.49%	8.19%	-2.59	0.70%	14.19	4.41%
2/26/1993	11.80%	7.48%	8.18%	-2.59	0.70%	14.17	4.32%
2/26/1993	12.20%	7.48%	8.18%	-2.59	0.70%	14.17	4.72%
4/23/1993	11.75%	7.29%	8.03%	-2.62	0.74%	13.85	4.46%
5/11/1993	11.75%	7.25%	8.00%	-2.62	0.75%	13.85	4.50%
5/14/1993	11.50%	7.24%	8.00%	-2.63	0.76%	13.87	4.26%
5/25/1993	11.50%	7.23%	7.99%	-2.63	0.76%	13.88	4.27%
5/28/1993	11.00%	7.22%	7.99%	-2.63	0.77%	13.85	3.78%
6/3/1993	12.00%	7.21%	7.98%	-2.63	0.77%	13.84	4.79%
6/16/1993	11.50%	7.19%	7.97%	-2.63	0.78%	13.77	4.31%
6/18/1993	12.10%	7.18%	7.96%	-2.63	0.78%	13.76	4.92%
6/25/1993	11.67%	7.17%	7.95%	-2.64	0.79%	13.73	4.50%
7/21/1993	11.38%	7.10%	7.90%	-2.65	0.81%	13.46	4.28%
7/23/1993	10.46%	7.09%	7.90%	-2.65	0.81%	13.37	3.37%
8/24/1993	11.50%	6.96%	7.83%	-2.67	0.87%	12.80	4.54%
9/21/1993	10.50%	6.81%	7.75%	-2.69	0.94%	12.72	3.69%
9/29/1993	11.47%	6.77%	7.73%	-2.69	0.96%	12.73	4.70%
9/30/1993	11.60%	6.76%	7.72%	-2.69	0.96%	12.74	4.84%
11/2/1993	10.80%	6.60%	7.60%	-2.72	0.99%	12.67	4.20%
11/12/1993	12.00%	6.57%	7.57%	-2.72	1.00%	12.76	5.43%
11/26/1993	11.00%	6.52%	7.53%	-2.73	1.01%	12.85	4.48%
12/14/1993	10.55%	6.48%	7.49%	-2.74	1.01%	12.75	4.07%
12/16/1993	10.60%	6.48%	7.49%	-2.74	1.01%	12.73	4.12%
12/21/1993	11.30%	6.47%	7.48%	-2.74	1.01%	12.66	4.83%
1/4/1994	10.07%	6.44%	7.45%	-2.74	1.01%	12.50	3.63%
1/13/1994	11.00%	6.42%	7.43%	-2.75	1.01%	12.46	4.58%
1/21/1994	11.00%	6.40%	7.41%	-2.75	1.01%	12.39	4.60%
1/28/1994	11.35%	6.39%	7.40%	-2.75	1.01%	12.37	4.96%
2/3/1994	11.40%	6.38%	7.39%	-2.75	1.01%	12.34	5.02%
2/17/1994	10.60%	6.36%	7.38%	-2.76	1.01%	12.38	4.24%
2/25/1994	11.25%	6.35%	7.37%	-2.76	1.02%	12.40	4.90%
2/25/1994	12.00%	6.35%	7.37%	-2.76	1.02%	12.40	5.65%
3/1/1994	11.00%	6.35%	7.37%	-2.76	1.02%	12.41	4.65%
3/4/1994	11.00%	6.35%	7.37%	-2.76	1.02%	12.44	4.65%
4/25/1994	11.00%	6.41%	7.42%	-2.75	1.01%	13.02	4.59%
5/10/1994	11.75%	6.45%	7.45%	-2.74	1.01%	13.19	5.30%
5/13/1994	10.50%	6.46%	7.47%	-2.74	1.01%	13.24	4.04%
6/3/1994	11.00%	6.54%	7.53%	-2.73	0.99%	13.31	4.46%
6/27/1994	11.40%	6.65%	7.63%	-2.71	0.98%	13.42	4.75%
8/5/1994	12.75%	6.88%	7.82%	-2.68	0.95%	13.41	5.87%
10/31/1994	10.00%	7.33%	8.22%	-2.61	0.90%	13.76	2.67%
11/9/1994	10.85%	7.39%	8.28%	-2.61	0.89%	13.92	3.46%
11/9/1994	10.85%	7.39%	8.28%	-2.61	0.89%	13.92	3.46%
11/18/1994	11.20%	7.45%	8.33%	-2.60	0.88%	14.12	3.75%
11/22/1994	11.60%	7.47%	8.35%	-2.59	0.88%	14.14	4.13%
11/28/1994	11.06%	7.49%	8.37%	-2.59	0.88%	14.20	3.57%
12/8/1994	11.50%	7.54%	8.43%	-2.58	0.88%	14.30	3.96%
12/8/1994	11.70%	7.54%	8.43%	-2.58	0.88%	14.30	4.16%
12/14/1994	10.95%	7.56%	8.45%	-2.58	0.89%	14.29	3.39%
12/15/1994	11.50%	7.57%	8.46%	-2.58	0.89%	14.27	3.93%
12/19/1994	11.50%	7.58%	8.47%	-2.58	0.89%	14.24	3.92%
12/28/1994	12.15%	7.61%	8.50%	-2.58	0.88%	14.15	4.54%
1/9/1995	12.28%	7.64%	8.53%	-2.57	0.89%	14.14	4.64%
1/31/1995	11.00%	7.69%	8.58%	-2.57	0.89%	13.72	3.31%
2/10/1995	12.60%	7.70%	8.59%	-2.56	0.89%	13.56	4.90%
2/17/1995	11.90%	7.70%	8.60%	-2.56	0.90%	13.50	4.20%
3/9/1995	11.50%	7.71%	8.61%	-2.56	0.90%	13.36	3.79%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
3/20/1995	12.00%	7.72%	8.61%	-2.56	0.89%	13.34	4.28%
3/23/1995	12.81%	7.72%	8.61%	-2.56	0.89%	13.32	5.09%
3/29/1995	11.60%	7.72%	8.61%	-2.56	0.90%	13.31	3.88%
4/6/1995	11.10%	7.71%	8.61%	-2.56	0.90%	13.31	3.39%
4/7/1995	11.00%	7.71%	8.61%	-2.56	0.90%	13.30	3.29%
4/19/1995	11.00%	7.70%	8.61%	-2.56	0.91%	13.21	3.30%
5/12/1995	11.63%	7.68%	8.58%	-2.57	0.90%	13.20	3.95%
5/25/1995	11.20%	7.65%	8.56%	-2.57	0.91%	13.21	3.55%
6/9/1995	11.25%	7.60%	8.52%	-2.58	0.92%	13.25	3.65%
6/21/1995	12.25%	7.56%	8.48%	-2.58	0.92%	13.23	4.69%
6/30/1995	11.10%	7.52%	8.45%	-2.59	0.94%	13.19	3.58%
9/11/1995	11.30%	7.20%	8.18%	-2.63	0.97%	12.51	4.10%
9/27/1995	11.30%	7.12%	8.10%	-2.64	0.98%	12.25	4.18%
9/27/1995	11.50%	7.12%	8.10%	-2.64	0.98%	12.25	4.38%
9/27/1995	11.75%	7.12%	8.10%	-2.64	0.98%	12.25	4.63%
9/29/1995	11.00%	7.11%	8.09%	-2.64	0.98%	12.24	3.89%
11/9/1995	11.38%	6.90%	7.91%	-2.67	1.01%	12.46	4.48%
11/9/1995	12.36%	6.90%	7.91%	-2.67	1.01%	12.46	5.46%
11/17/1995	11.00%	6.86%	7.87%	-2.68	1.02%	12.50	4.14%
12/4/1995	11.35%	6.78%	7.82%	-2.69	1.04%	12.51	4.57%
12/11/1995	11.40%	6.74%	7.79%	-2.70	1.04%	12.52	4.66%
12/20/1995	11.60%	6.70%	7.75%	-2.70	1.05%	12.50	4.90%
12/27/1995	12.00%	6.66%	7.72%	-2.71	1.06%	12.48	5.34%
2/5/1996	12.25%	6.48%	7.59%	-2.74	1.11%	12.63	5.77%
3/29/1996	10.67%	6.42%	7.52%	-2.75	1.11%	13.47	4.25%
4/8/1996	11.00%	6.42%	7.53%	-2.75	1.11%	13.62	4.58%
4/11/1996	12.59%	6.43%	7.53%	-2.74	1.11%	13.73	6.16%
4/11/1996	12.59%	6.43%	7.53%	-2.74	1.11%	13.73	6.16%
4/24/1996	11.25%	6.43%	7.55%	-2.74	1.11%	13.92	4.82%
4/30/1996	11.00%	6.43%	7.55%	-2.74	1.12%	13.98	4.57%
5/13/1996	11.00%	6.44%	7.57%	-2.74	1.13%	14.14	4.56%
5/23/1996	11.25%	6.43%	7.57%	-2.74	1.14%	14.23	4.82%
6/25/1996	11.25%	6.48%	7.60%	-2.74	1.12%	14.71	4.77%
6/27/1996	11.20%	6.48%	7.60%	-2.74	1.12%	14.75	4.72%
8/12/1996	10.40%	6.57%	7.67%	-2.72	1.10%	15.35	3.83%
9/27/1996	11.00%	6.71%	7.76%	-2.70	1.05%	15.96	4.29%
10/16/1996	12.25%	6.76%	7.79%	-2.69	1.03%	16.20	5.49%
11/5/1996	11.00%	6.81%	7.83%	-2.69	1.02%	16.42	4.19%
11/26/1996	11.30%	6.83%	7.84%	-2.68	1.01%	16.58	4.47%
12/18/1996	11.75%	6.83%	7.85%	-2.68	1.02%	16.80	4.92%
12/31/1996	11.50%	6.83%	7.85%	-2.68	1.02%	16.84	4.67%
1/3/1997	10.70%	6.83%	7.85%	-2.68	1.02%	16.86	3.87%
2/13/1997	11.80%	6.82%	7.83%	-2.68	1.01%	17.23	4.98%
2/20/1997	11.80%	6.82%	7.83%	-2.69	1.01%	17.29	4.98%
3/31/1997	10.02%	6.80%	7.81%	-2.69	1.00%	17.83	3.22%
4/2/1997	11.65%	6.80%	7.80%	-2.69	1.00%	17.86	4.85%
4/28/1997	11.50%	6.81%	7.80%	-2.69	0.99%	18.20	4.69%
4/29/1997	11.70%	6.81%	7.80%	-2.69	0.99%	18.21	4.89%
7/17/1997	12.00%	6.77%	7.75%	-2.69	0.97%	19.03	5.23%
12/12/1997	11.00%	6.60%	7.60%	-2.72	1.00%	22.57	4.40%
12/23/1997	11.12%	6.57%	7.58%	-2.72	1.01%	22.84	4.55%
2/2/1998	12.75%	6.39%	7.47%	-2.75	1.08%	23.43	6.36%
3/2/1998	11.25%	6.29%	7.39%	-2.77	1.10%	23.40	4.96%
3/6/1998	10.75%	6.27%	7.38%	-2.77	1.11%	23.37	4.48%
3/20/1998	10.50%	6.22%	7.34%	-2.78	1.12%	23.35	4.28%
4/30/1998	12.20%	6.12%	7.26%	-2.79	1.14%	23.66	6.08%
7/10/1998	11.40%	5.94%	7.16%	-2.82	1.23%	23.13	5.46%
9/15/1998	11.90%	5.78%	7.09%	-2.85	1.31%	23.82	6.12%
11/30/1998	12.60%	5.58%	7.05%	-2.89	1.47%	26.04	7.02%
12/10/1998	12.20%	5.54%	7.05%	-2.89	1.50%	26.30	6.66%
12/17/1998	12.10%	5.52%	7.04%	-2.90	1.52%	26.55	6.58%
2/5/1999	10.30%	5.38%	7.01%	-2.92	1.63%	27.50	4.92%
3/4/1999	10.50%	5.34%	7.01%	-2.93	1.67%	28.15	5.16%
4/6/1999	10.94%	5.32%	7.03%	-2.93	1.70%	28.43	5.62%
7/29/1999	10.75%	5.52%	7.25%	-2.90	1.74%	25.84	5.23%
9/23/1999	10.75%	5.70%	7.43%	-2.86	1.73%	24.95	5.05%
11/17/1999	11.10%	5.90%	7.63%	-2.83	1.73%	24.34	5.20%
1/7/2000	11.50%	6.05%	7.79%	-2.81	1.75%	23.49	5.45%
1/7/2000	11.50%	6.05%	7.79%	-2.81	1.75%	23.49	5.45%
2/17/2000	10.60%	6.17%	7.94%	-2.78	1.77%	23.37	4.43%
3/28/2000	11.25%	6.20%	8.04%	-2.78	1.85%	22.98	5.05%
5/24/2000	11.00%	6.18%	8.19%	-2.78	2.00%	23.85	4.82%
7/18/2000	12.20%	6.16%	8.27%	-2.79	2.11%	23.37	6.04%
9/29/2000	11.16%	6.03%	8.31%	-2.81	2.28%	22.44	5.13%
11/28/2000	12.90%	5.89%	8.28%	-2.83	2.40%	22.97	7.01%
11/30/2000	12.10%	5.88%	8.28%	-2.83	2.40%	23.03	6.22%
1/23/2001	11.25%	5.79%	8.20%	-2.85	2.41%	23.50	5.46%
2/8/2001	11.50%	5.77%	8.18%	-2.85	2.40%	23.17	5.73%
5/8/2001	10.75%	5.62%	7.97%	-2.88	2.35%	24.37	5.13%
6/26/2001	11.00%	5.62%	7.93%	-2.88	2.31%	24.90	5.38%
7/25/2001	11.02%	5.60%	7.89%	-2.88	2.29%	25.06	5.42%
7/25/2001	11.02%	5.60%	7.89%	-2.88	2.29%	25.06	5.42%
7/31/2001	11.00%	5.59%	7.88%	-2.88	2.29%	24.98	5.41%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
8/31/2001	10.50%	5.56%	7.82%	-2.89	2.26%	24.50	4.94%
9/7/2001	10.75%	5.55%	7.81%	-2.89	2.25%	24.54	5.20%
9/10/2001	11.00%	5.55%	7.80%	-2.89	2.25%	24.57	5.45%
9/20/2001	10.00%	5.55%	7.79%	-2.89	2.25%	24.85	4.45%
10/24/2001	10.30%	5.54%	7.78%	-2.89	2.24%	25.70	4.76%
11/28/2001	10.60%	5.49%	7.75%	-2.90	2.26%	26.15	5.11%
12/3/2001	12.88%	5.49%	7.75%	-2.90	2.26%	26.20	7.39%
12/20/2001	12.50%	5.50%	7.76%	-2.90	2.26%	26.14	7.00%
1/22/2002	10.00%	5.50%	7.76%	-2.90	2.27%	25.52	4.50%
3/27/2002	10.10%	5.45%	7.69%	-2.91	2.24%	24.63	4.65%
4/22/2002	11.80%	5.45%	7.67%	-2.91	2.22%	24.46	6.35%
5/28/2002	10.17%	5.46%	7.64%	-2.91	2.17%	24.27	4.71%
6/10/2002	12.00%	5.47%	7.63%	-2.91	2.16%	24.33	6.53%
6/18/2002	11.16%	5.48%	7.62%	-2.90	2.15%	24.40	5.68%
6/20/2002	11.00%	5.48%	7.62%	-2.90	2.15%	24.45	5.52%
6/20/2002	12.30%	5.48%	7.62%	-2.90	2.15%	24.45	6.82%
7/15/2002	11.00%	5.48%	7.60%	-2.90	2.13%	24.13	5.52%
9/12/2002	12.30%	5.45%	7.51%	-2.91	2.06%	25.14	6.85%
9/26/2002	10.45%	5.41%	7.48%	-2.92	2.07%	25.82	5.04%
12/4/2002	11.55%	5.29%	7.36%	-2.94	2.07%	28.01	6.26%
12/13/2002	11.75%	5.27%	7.34%	-2.94	2.08%	28.25	6.48%
12/20/2002	11.40%	5.25%	7.33%	-2.95	2.08%	28.44	6.15%
1/8/2003	11.10%	5.19%	7.29%	-2.96	2.10%	28.87	5.91%
1/31/2003	12.45%	5.13%	7.24%	-2.97	2.11%	29.61	7.32%
2/28/2003	12.30%	5.05%	7.19%	-2.99	2.14%	30.69	7.25%
3/6/2003	10.75%	5.03%	7.17%	-2.99	2.14%	30.93	5.72%
3/7/2003	9.96%	5.02%	7.17%	-2.99	2.14%	30.99	4.94%
3/20/2003	12.00%	4.98%	7.13%	-3.00	2.15%	31.50	7.02%
4/3/2003	12.00%	4.96%	7.10%	-3.00	2.14%	31.71	7.04%
4/15/2003	11.15%	4.94%	7.07%	-3.01	2.13%	31.67	6.21%
6/25/2003	10.75%	4.79%	6.85%	-3.04	2.06%	28.30	5.96%
6/26/2003	10.75%	4.79%	6.84%	-3.04	2.05%	28.22	5.96%
7/9/2003	9.75%	4.79%	6.82%	-3.04	2.03%	27.50	4.96%
7/16/2003	9.75%	4.79%	6.80%	-3.04	2.01%	27.03	4.96%
7/25/2003	9.50%	4.80%	6.79%	-3.04	1.99%	26.35	4.70%
8/26/2003	10.50%	4.83%	6.74%	-3.03	1.90%	24.80	5.67%
12/17/2003	9.85%	4.94%	6.51%	-3.01	1.57%	20.53	4.91%
12/17/2003	10.70%	4.94%	6.51%	-3.01	1.57%	20.53	5.76%
12/18/2003	11.50%	4.94%	6.51%	-3.01	1.57%	20.45	6.56%
12/19/2003	12.00%	4.94%	6.50%	-3.01	1.56%	20.38	7.06%
12/19/2003	12.00%	4.94%	6.50%	-3.01	1.56%	20.38	7.06%
12/23/2003	10.50%	4.94%	6.50%	-3.01	1.56%	20.21	5.56%
1/13/2004	12.00%	4.95%	6.46%	-3.01	1.51%	19.36	7.05%
3/2/2004	10.75%	4.99%	6.38%	-3.00	1.39%	18.18	5.76%
3/26/2004	10.25%	5.02%	6.35%	-2.99	1.33%	17.98	5.23%
4/5/2004	11.25%	5.03%	6.35%	-2.99	1.32%	17.86	6.22%
5/18/2004	10.50%	5.07%	6.36%	-2.98	1.28%	17.45	5.43%
5/25/2004	10.25%	5.08%	6.35%	-2.98	1.28%	17.37	5.17%
5/27/2004	10.25%	5.08%	6.35%	-2.98	1.28%	17.34	5.17%
6/2/2004	11.22%	5.08%	6.35%	-2.98	1.27%	17.30	6.14%
6/30/2004	10.50%	5.10%	6.32%	-2.98	1.22%	16.97	5.40%
6/30/2004	10.50%	5.10%	6.32%	-2.98	1.22%	16.97	5.40%
7/16/2004	11.60%	5.11%	6.30%	-2.97	1.19%	16.72	6.49%
8/25/2004	10.25%	5.10%	6.27%	-2.98	1.17%	16.53	5.15%
9/9/2004	10.40%	5.10%	6.25%	-2.98	1.16%	16.36	5.30%
11/9/2004	10.50%	5.07%	6.20%	-2.98	1.13%	15.94	5.43%
11/23/2004	11.00%	5.06%	6.19%	-2.98	1.13%	15.75	5.94%
12/14/2004	10.97%	5.07%	6.18%	-2.98	1.11%	15.58	5.90%
12/21/2004	11.25%	5.07%	6.17%	-2.98	1.10%	15.51	6.18%
12/21/2004	11.50%	5.07%	6.17%	-2.98	1.10%	15.51	6.43%
12/22/2004	10.70%	5.07%	6.17%	-2.98	1.10%	15.49	5.63%
12/22/2004	11.50%	5.07%	6.17%	-2.98	1.10%	15.49	6.43%
12/29/2004	9.85%	5.07%	6.17%	-2.98	1.10%	15.33	4.78%
1/6/2005	10.70%	5.08%	6.17%	-2.98	1.09%	15.14	5.62%
2/18/2005	10.30%	4.98%	6.08%	-3.00	1.11%	14.60	5.32%
2/25/2005	10.50%	4.96%	6.07%	-3.00	1.11%	14.48	5.54%
3/10/2005	11.00%	4.93%	6.03%	-3.01	1.10%	14.19	6.07%
3/24/2005	10.30%	4.90%	5.99%	-3.02	1.09%	14.06	5.40%
4/4/2005	10.00%	4.88%	5.97%	-3.02	1.09%	14.02	5.12%
4/7/2005	10.25%	4.87%	5.96%	-3.02	1.09%	14.00	5.38%
5/18/2005	10.25%	4.78%	5.86%	-3.04	1.08%	13.90	5.47%
5/25/2005	10.75%	4.76%	5.84%	-3.04	1.07%	13.77	5.99%
5/26/2005	9.75%	4.76%	5.83%	-3.04	1.07%	13.74	4.99%
6/1/2005	9.75%	4.75%	5.82%	-3.05	1.07%	13.66	5.00%
7/19/2005	11.50%	4.64%	5.73%	-3.07	1.08%	13.17	6.86%
8/5/2005	11.75%	4.62%	5.70%	-3.07	1.07%	12.95	7.13%
8/15/2005	10.13%	4.61%	5.68%	-3.08	1.07%	12.85	5.52%
9/28/2005	10.00%	4.54%	5.61%	-3.09	1.07%	12.77	5.46%
10/4/2005	10.75%	4.54%	5.61%	-3.09	1.07%	12.78	6.21%
12/12/2005	11.00%	4.55%	5.63%	-3.09	1.08%	12.96	6.45%
12/13/2005	10.75%	4.55%	5.63%	-3.09	1.08%	12.96	6.20%
12/21/2005	10.29%	4.54%	5.63%	-3.09	1.09%	12.91	5.75%
12/21/2005	10.40%	4.54%	5.63%	-3.09	1.09%	12.91	5.86%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
12/22/2005	11.00%	4.54%	5.63%	-3.09	1.09%	12.90	6.46%
12/22/2005	11.15%	4.54%	5.63%	-3.09	1.09%	12.90	6.61%
12/28/2005	10.00%	4.54%	5.63%	-3.09	1.09%	12.87	5.46%
12/28/2005	10.00%	4.54%	5.63%	-3.09	1.09%	12.87	5.46%
1/5/2006	11.00%	4.53%	5.62%	-3.09	1.09%	12.82	6.47%
1/27/2006	9.75%	4.52%	5.62%	-3.10	1.10%	12.73	5.23%
3/3/2006	10.39%	4.53%	5.65%	-3.09	1.12%	12.40	5.86%
4/17/2006	10.20%	4.61%	5.75%	-3.08	1.14%	12.34	5.59%
4/26/2006	10.60%	4.64%	5.78%	-3.07	1.14%	12.34	5.96%
5/17/2006	11.60%	4.69%	5.85%	-3.06	1.15%	12.47	6.91%
6/6/2006	10.00%	4.74%	5.90%	-3.05	1.16%	12.72	5.26%
6/27/2006	10.75%	4.80%	5.98%	-3.04	1.18%	13.07	5.95%
7/6/2006	10.20%	4.83%	6.00%	-3.03	1.18%	13.12	5.37%
7/24/2006	9.60%	4.86%	6.05%	-3.02	1.19%	13.30	4.74%
7/26/2006	10.50%	4.86%	6.06%	-3.02	1.20%	13.30	5.64%
7/28/2006	10.05%	4.86%	6.06%	-3.02	1.20%	13.29	5.19%
8/23/2006	9.55%	4.89%	6.09%	-3.02	1.21%	13.19	4.66%
9/1/2006	10.54%	4.90%	6.10%	-3.02	1.21%	13.19	5.64%
9/14/2006	10.00%	4.91%	6.11%	-3.01	1.21%	13.24	5.09%
10/6/2006	9.67%	4.92%	6.12%	-3.01	1.20%	13.29	4.75%
11/21/2006	10.08%	4.95%	6.15%	-3.01	1.19%	13.11	5.13%
11/21/2006	10.08%	4.95%	6.15%	-3.01	1.19%	13.11	5.13%
11/21/2006	10.12%	4.95%	6.15%	-3.01	1.19%	13.11	5.17%
12/1/2006	10.25%	4.95%	6.14%	-3.00	1.19%	13.06	5.30%
12/1/2006	10.50%	4.95%	6.14%	-3.00	1.19%	13.06	5.55%
12/7/2006	10.75%	4.95%	6.14%	-3.00	1.19%	13.06	5.80%
12/21/2006	10.90%	4.95%	6.14%	-3.01	1.18%	12.98	5.95%
12/21/2006	11.25%	4.95%	6.14%	-3.01	1.18%	12.98	6.30%
12/22/2006	10.25%	4.95%	6.14%	-3.01	1.18%	12.97	5.30%
1/5/2007	10.00%	4.95%	6.13%	-3.01	1.18%	12.97	5.05%
1/11/2007	10.10%	4.95%	6.13%	-3.01	1.18%	12.98	5.15%
1/11/2007	10.10%	4.95%	6.13%	-3.01	1.18%	12.98	5.15%
1/11/2007	10.90%	4.95%	6.13%	-3.01	1.18%	12.98	5.95%
1/12/2007	10.10%	4.95%	6.13%	-3.01	1.18%	12.97	5.15%
1/13/2007	10.40%	4.95%	6.13%	-3.01	1.18%	12.97	5.45%
1/19/2007	10.80%	4.94%	6.13%	-3.01	1.18%	12.95	5.86%
3/21/2007	11.35%	4.87%	6.03%	-3.02	1.16%	12.82	6.48%
3/22/2007	9.75%	4.86%	6.03%	-3.02	1.16%	12.81	4.89%
5/15/2007	10.00%	4.81%	5.94%	-3.03	1.14%	12.23	5.19%
5/17/2007	10.25%	4.81%	5.94%	-3.04	1.13%	12.22	5.44%
5/17/2007	10.25%	4.81%	5.94%	-3.04	1.13%	12.22	5.44%
5/22/2007	10.20%	4.80%	5.94%	-3.04	1.13%	12.20	5.40%
5/22/2007	10.50%	4.80%	5.94%	-3.04	1.13%	12.20	5.70%
5/23/2007	10.70%	4.80%	5.94%	-3.04	1.13%	12.19	5.90%
5/25/2007	9.67%	4.80%	5.94%	-3.04	1.13%	12.18	4.87%
6/15/2007	9.90%	4.82%	5.94%	-3.03	1.12%	12.27	5.08%
6/21/2007	10.20%	4.83%	5.94%	-3.03	1.12%	12.30	5.37%
6/22/2007	10.50%	4.83%	5.95%	-3.03	1.12%	12.31	5.67%
6/28/2007	10.75%	4.84%	5.95%	-3.03	1.11%	12.38	5.91%
7/12/2007	9.67%	4.86%	5.96%	-3.02	1.11%	12.56	4.81%
7/19/2007	10.00%	4.87%	5.97%	-3.02	1.11%	12.65	5.13%
7/19/2007	10.00%	4.87%	5.97%	-3.02	1.11%	12.65	5.13%
8/15/2007	10.40%	4.88%	5.99%	-3.02	1.11%	13.75	5.52%
10/9/2007	10.00%	4.91%	6.07%	-3.01	1.16%	15.91	5.09%
10/17/2007	9.10%	4.91%	6.08%	-3.01	1.17%	16.13	4.19%
10/31/2007	9.96%	4.90%	6.08%	-3.02	1.18%	16.59	5.06%
11/29/2007	10.90%	4.87%	6.08%	-3.02	1.21%	18.10	6.03%
12/6/2007	10.75%	4.86%	6.08%	-3.02	1.22%	18.41	5.89%
12/13/2007	9.96%	4.86%	6.09%	-3.02	1.24%	18.60	5.10%
12/14/2007	10.70%	4.86%	6.10%	-3.02	1.24%	18.63	5.84%
12/14/2007	10.80%	4.86%	6.10%	-3.02	1.24%	18.63	5.94%
12/19/2007	10.20%	4.86%	6.10%	-3.03	1.25%	18.72	5.34%
12/20/2007	10.20%	4.85%	6.10%	-3.03	1.25%	18.75	5.35%
12/20/2007	11.00%	4.85%	6.10%	-3.03	1.25%	18.75	6.15%
12/28/2007	10.25%	4.85%	6.12%	-3.03	1.26%	18.83	5.40%
12/31/2007	11.25%	4.85%	6.12%	-3.03	1.27%	18.86	6.40%
1/8/2008	10.75%	4.83%	6.12%	-3.03	1.29%	19.13	5.92%
1/17/2008	10.75%	4.81%	6.12%	-3.03	1.31%	19.48	5.94%
1/28/2008	9.40%	4.80%	6.12%	-3.04	1.33%	19.95	4.60%
1/30/2008	10.00%	4.79%	6.12%	-3.04	1.33%	20.10	5.21%
1/31/2008	10.71%	4.79%	6.12%	-3.04	1.34%	20.17	5.92%
2/29/2008	10.25%	4.75%	6.15%	-3.05	1.40%	21.41	5.50%
3/12/2008	10.25%	4.73%	6.16%	-3.05	1.43%	21.95	5.52%
3/25/2008	9.10%	4.68%	6.16%	-3.06	1.48%	22.51	4.42%
4/22/2008	10.25%	4.60%	6.16%	-3.08	1.56%	23.28	5.65%
4/24/2008	10.10%	4.60%	6.16%	-3.08	1.56%	23.32	5.50%
5/1/2008	10.70%	4.59%	6.16%	-3.08	1.57%	23.42	6.11%
5/19/2008	11.00%	4.56%	6.16%	-3.09	1.60%	23.33	6.44%
5/27/2008	10.00%	4.55%	6.16%	-3.09	1.61%	23.21	5.45%
6/10/2008	10.70%	4.54%	6.17%	-3.09	1.62%	22.88	6.16%
6/27/2008	10.50%	4.54%	6.18%	-3.09	1.64%	22.74	5.96%
6/27/2008	11.04%	4.54%	6.18%	-3.09	1.64%	22.74	6.50%
7/10/2008	10.43%	4.52%	6.19%	-3.10	1.66%	22.86	5.91%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
7/16/2008	9.40%	4.52%	6.19%	-3.10	1.67%	23.05	4.88%
7/30/2008	10.80%	4.51%	6.20%	-3.10	1.69%	23.31	6.29%
7/31/2008	10.70%	4.51%	6.20%	-3.10	1.70%	23.32	6.19%
8/11/2008	10.25%	4.51%	6.22%	-3.10	1.71%	23.36	5.74%
8/26/2008	10.18%	4.50%	6.24%	-3.10	1.74%	23.26	5.68%
9/10/2008	10.30%	4.50%	6.25%	-3.10	1.75%	23.04	5.80%
9/24/2008	10.65%	4.48%	6.28%	-3.11	1.79%	23.44	6.17%
9/24/2008	10.65%	4.48%	6.28%	-3.11	1.79%	23.44	6.17%
9/24/2008	10.65%	4.48%	6.28%	-3.11	1.79%	23.44	6.17%
9/30/2008	10.20%	4.48%	6.29%	-3.11	1.81%	23.77	5.72%
10/8/2008	10.15%	4.46%	6.31%	-3.11	1.85%	24.58	5.69%
11/13/2008	10.55%	4.45%	6.52%	-3.11	2.08%	29.55	6.10%
11/17/2008	10.20%	4.44%	6.54%	-3.11	2.09%	29.97	5.76%
12/1/2008	10.25%	4.40%	6.59%	-3.12	2.20%	31.76	5.85%
12/23/2008	11.00%	4.27%	6.62%	-3.15	2.35%	34.10	6.73%
12/29/2008	10.00%	4.24%	6.62%	-3.16	2.38%	34.33	5.76%
12/29/2008	10.20%	4.24%	6.62%	-3.16	2.38%	34.33	5.96%
12/31/2008	10.75%	4.22%	6.62%	-3.17	2.40%	34.45	6.53%
1/14/2009	10.50%	4.15%	6.63%	-3.18	2.48%	35.20	6.35%
1/21/2009	10.50%	4.12%	6.63%	-3.19	2.51%	35.74	6.38%
1/21/2009	10.50%	4.12%	6.63%	-3.19	2.51%	35.74	6.38%
1/21/2009	10.50%	4.12%	6.63%	-3.19	2.51%	35.74	6.38%
1/27/2009	10.76%	4.09%	6.63%	-3.20	2.54%	36.20	6.67%
1/30/2009	10.50%	4.08%	6.63%	-3.20	2.56%	36.50	6.42%
2/4/2009	8.75%	4.06%	6.64%	-3.20	2.57%	36.86	4.69%
3/4/2009	10.50%	3.96%	6.64%	-3.23	2.67%	39.48	6.54%
3/12/2009	11.50%	3.93%	6.64%	-3.24	2.71%	40.32	7.57%
4/2/2009	11.10%	3.85%	6.65%	-3.26	2.80%	41.94	7.25%
4/21/2009	10.61%	3.80%	6.65%	-3.27	2.85%	42.82	6.81%
4/24/2009	10.00%	3.79%	6.66%	-3.27	2.87%	43.01	6.21%
4/30/2009	11.25%	3.78%	6.66%	-3.28	2.89%	43.20	7.47%
5/4/2009	10.74%	3.77%	6.66%	-3.28	2.89%	43.30	6.97%
5/20/2009	10.25%	3.74%	6.66%	-3.29	2.92%	43.85	6.51%
5/28/2009	10.50%	3.74%	6.67%	-3.29	2.92%	44.13	6.76%
6/22/2009	10.00%	3.76%	6.66%	-3.28	2.90%	44.90	6.24%
6/24/2009	10.80%	3.77%	6.66%	-3.28	2.89%	44.97	7.03%
7/8/2009	10.63%	3.77%	6.64%	-3.28	2.88%	44.89	6.86%
7/17/2009	10.50%	3.78%	6.62%	-3.28	2.84%	44.53	6.72%
8/31/2009	10.25%	3.82%	6.34%	-3.27	2.52%	39.06	6.43%
10/14/2009	10.70%	4.01%	6.13%	-3.22	2.12%	33.94	6.69%
10/23/2009	10.88%	4.06%	6.10%	-3.20	2.05%	33.27	6.82%
11/2/2009	10.70%	4.09%	6.08%	-3.20	1.99%	32.69	6.61%
11/3/2009	10.70%	4.10%	6.08%	-3.20	1.99%	32.55	6.60%
11/24/2009	10.25%	4.15%	6.03%	-3.18	1.87%	30.96	6.10%
11/25/2009	10.75%	4.16%	6.02%	-3.18	1.86%	30.84	6.59%
11/30/2009	10.35%	4.17%	6.02%	-3.18	1.85%	30.67	6.18%
12/3/2009	10.50%	4.18%	6.01%	-3.18	1.83%	30.27	6.32%
12/7/2009	10.70%	4.18%	6.00%	-3.17	1.82%	29.98	6.52%
12/16/2009	10.90%	4.21%	5.98%	-3.17	1.77%	29.08	6.69%
12/16/2009	11.00%	4.21%	5.98%	-3.17	1.77%	29.08	6.79%
12/18/2009	10.40%	4.22%	5.98%	-3.16	1.75%	28.81	6.18%
12/18/2009	10.40%	4.22%	5.98%	-3.16	1.75%	28.81	6.18%
12/22/2009	10.20%	4.23%	5.97%	-3.16	1.74%	28.54	5.97%
12/22/2009	10.40%	4.23%	5.97%	-3.16	1.74%	28.54	6.17%
12/22/2009	10.40%	4.23%	5.97%	-3.16	1.74%	28.54	6.17%
12/30/2009	10.00%	4.26%	5.96%	-3.16	1.70%	27.98	5.74%
1/4/2010	10.80%	4.28%	5.95%	-3.15	1.68%	27.77	6.52%
1/11/2010	11.00%	4.30%	5.94%	-3.15	1.64%	27.16	6.70%
1/26/2010	10.13%	4.35%	5.90%	-3.13	1.55%	26.14	5.78%
1/27/2010	10.40%	4.35%	5.90%	-3.13	1.54%	26.06	6.05%
1/27/2010	10.40%	4.35%	5.90%	-3.13	1.54%	26.06	6.05%
1/27/2010	10.70%	4.35%	5.90%	-3.13	1.54%	26.06	6.35%
2/9/2010	9.80%	4.38%	5.87%	-3.13	1.49%	25.50	5.42%
2/18/2010	10.60%	4.40%	5.85%	-3.12	1.45%	25.09	6.20%
2/24/2010	10.18%	4.41%	5.84%	-3.12	1.43%	24.84	5.77%
3/2/2010	9.63%	4.41%	5.82%	-3.12	1.41%	24.58	5.22%
3/4/2010	10.50%	4.41%	5.82%	-3.12	1.41%	24.45	6.09%
3/5/2010	10.50%	4.41%	5.82%	-3.12	1.40%	24.40	6.09%
3/11/2010	11.90%	4.42%	5.80%	-3.12	1.39%	24.14	7.48%
3/17/2010	10.00%	4.41%	5.79%	-3.12	1.37%	23.87	5.59%
3/25/2010	10.15%	4.42%	5.77%	-3.12	1.36%	23.50	5.73%
4/2/2010	10.10%	4.43%	5.76%	-3.12	1.33%	23.19	5.67%
4/27/2010	10.00%	4.46%	5.74%	-3.11	1.29%	22.18	5.54%
4/29/2010	9.90%	4.46%	5.74%	-3.11	1.28%	22.13	5.44%
4/29/2010	10.06%	4.46%	5.74%	-3.11	1.28%	22.13	5.60%
4/29/2010	10.26%	4.46%	5.74%	-3.11	1.28%	22.13	5.80%
5/12/2010	10.30%	4.45%	5.72%	-3.11	1.27%	22.27	5.85%
5/12/2010	10.30%	4.45%	5.72%	-3.11	1.27%	22.27	5.85%
5/28/2010	10.10%	4.44%	5.70%	-3.11	1.26%	22.82	5.66%
5/28/2010	10.20%	4.44%	5.70%	-3.11	1.26%	22.82	5.76%
6/7/2010	10.30%	4.44%	5.69%	-3.11	1.25%	23.01	5.86%
6/16/2010	10.00%	4.44%	5.69%	-3.11	1.25%	23.17	5.56%
6/28/2010	9.67%	4.43%	5.68%	-3.12	1.25%	23.20	5.24%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
6/28/2010	10.50%	4.43%	5.68%	-3.12	1.25%	23.20	6.07%
6/30/2010	9.40%	4.43%	5.68%	-3.12	1.25%	23.30	4.97%
7/1/2010	10.25%	4.43%	5.68%	-3.12	1.25%	23.35	5.82%
7/15/2010	10.53%	4.43%	5.67%	-3.12	1.24%	23.44	6.10%
7/15/2010	10.70%	4.43%	5.67%	-3.12	1.24%	23.44	6.27%
7/30/2010	10.70%	4.41%	5.66%	-3.12	1.24%	23.39	6.29%
8/4/2010	10.50%	4.41%	5.65%	-3.12	1.24%	23.39	6.09%
8/6/2010	9.83%	4.41%	5.65%	-3.12	1.24%	23.40	5.42%
8/25/2010	9.90%	4.37%	5.60%	-3.13	1.23%	23.38	5.53%
9/3/2010	10.60%	4.35%	5.58%	-3.14	1.23%	23.43	6.25%
9/14/2010	10.70%	4.33%	5.56%	-3.14	1.23%	23.46	6.37%
9/16/2010	10.00%	4.33%	5.56%	-3.14	1.23%	23.44	5.67%
9/16/2010	10.00%	4.33%	5.56%	-3.14	1.23%	23.44	5.67%
9/30/2010	9.75%	4.29%	5.52%	-3.15	1.23%	23.46	5.46%
10/14/2010	10.35%	4.24%	5.48%	-3.16	1.24%	23.48	6.11%
10/28/2010	10.70%	4.21%	5.45%	-3.17	1.24%	23.52	6.49%
11/2/2010	10.38%	4.20%	5.44%	-3.17	1.24%	23.57	6.18%
11/4/2010	10.70%	4.20%	5.44%	-3.17	1.24%	23.56	6.50%
11/19/2010	10.20%	4.18%	5.42%	-3.18	1.24%	23.30	6.02%
11/22/2010	10.00%	4.18%	5.41%	-3.18	1.24%	23.26	5.82%
12/1/2010	10.13%	4.16%	5.40%	-3.18	1.24%	23.19	5.97%
12/6/2010	9.86%	4.15%	5.39%	-3.18	1.24%	23.17	5.71%
12/9/2010	10.25%	4.15%	5.39%	-3.18	1.23%	23.12	6.10%
12/13/2010	10.70%	4.15%	5.38%	-3.18	1.24%	23.10	6.55%
12/14/2010	10.13%	4.15%	5.38%	-3.18	1.24%	23.10	5.98%
12/15/2010	10.44%	4.15%	5.38%	-3.18	1.24%	23.09	6.29%
12/17/2010	10.00%	4.15%	5.38%	-3.18	1.24%	23.08	5.85%
12/20/2010	10.60%	4.15%	5.38%	-3.18	1.23%	23.07	6.45%
12/21/2010	10.30%	4.14%	5.38%	-3.18	1.23%	23.07	6.16%
12/27/2010	9.90%	4.14%	5.37%	-3.18	1.23%	23.04	5.76%
12/29/2010	11.15%	4.14%	5.37%	-3.18	1.23%	23.04	7.01%
1/5/2011	10.15%	4.13%	5.37%	-3.19	1.23%	23.06	6.02%
1/12/2011	10.30%	4.12%	5.36%	-3.19	1.23%	23.04	6.18%
1/13/2011	10.30%	4.12%	5.35%	-3.19	1.23%	23.03	6.18%
1/18/2011	10.00%	4.12%	5.35%	-3.19	1.23%	23.02	5.88%
1/20/2011	9.30%	4.12%	5.35%	-3.19	1.23%	23.03	5.18%
1/20/2011	10.13%	4.12%	5.35%	-3.19	1.23%	23.03	6.01%
1/31/2011	9.60%	4.12%	5.34%	-3.19	1.22%	23.09	5.48%
2/3/2011	10.00%	4.12%	5.33%	-3.19	1.22%	23.10	5.88%
2/25/2011	10.00%	4.14%	5.34%	-3.18	1.20%	22.61	5.86%
3/25/2011	9.80%	4.18%	5.35%	-3.18	1.17%	21.32	5.62%
3/30/2011	10.00%	4.18%	5.35%	-3.17	1.16%	21.18	5.82%
4/12/2011	10.00%	4.21%	5.35%	-3.17	1.14%	20.76	5.79%
4/25/2011	10.74%	4.23%	5.37%	-3.16	1.13%	20.20	6.51%
4/26/2011	9.67%	4.23%	5.37%	-3.16	1.13%	20.15	5.44%
4/27/2011	10.40%	4.24%	5.37%	-3.16	1.13%	20.11	6.16%
5/4/2011	10.00%	4.24%	5.37%	-3.16	1.13%	19.87	5.76%
5/4/2011	10.00%	4.24%	5.37%	-3.16	1.13%	19.87	5.76%
5/24/2011	10.50%	4.27%	5.38%	-3.15	1.11%	19.45	6.23%
6/8/2011	10.75%	4.30%	5.39%	-3.15	1.09%	19.06	6.45%
6/16/2011	9.20%	4.32%	5.40%	-3.14	1.09%	18.86	4.88%
6/17/2011	9.95%	4.32%	5.40%	-3.14	1.09%	18.85	5.63%
7/13/2011	10.20%	4.36%	5.43%	-3.13	1.06%	18.50	5.84%
8/1/2011	9.20%	4.39%	5.44%	-3.13	1.05%	18.46	4.81%
8/8/2011	10.00%	4.38%	5.43%	-3.13	1.05%	18.77	5.62%
8/11/2011	10.00%	4.38%	5.42%	-3.13	1.05%	19.06	5.62%
8/12/2011	10.35%	4.37%	5.42%	-3.13	1.05%	19.14	5.98%
8/19/2011	10.25%	4.36%	5.41%	-3.13	1.05%	19.52	5.89%
9/2/2011	12.88%	4.32%	5.37%	-3.14	1.05%	20.30	8.56%
9/22/2011	10.00%	4.24%	5.31%	-3.16	1.07%	21.32	5.76%
10/12/2011	10.30%	4.14%	5.23%	-3.18	1.09%	22.80	6.16%
10/20/2011	10.50%	4.10%	5.20%	-3.19	1.10%	23.24	6.40%
11/30/2011	10.90%	3.87%	5.03%	-3.25	1.15%	25.24	7.03%
11/30/2011	10.90%	3.87%	5.03%	-3.25	1.15%	25.24	7.03%
12/14/2011	10.00%	3.80%	4.97%	-3.27	1.17%	25.64	6.20%
12/14/2011	10.30%	3.80%	4.97%	-3.27	1.17%	25.64	6.50%
12/20/2011	10.20%	3.76%	4.94%	-3.28	1.17%	25.73	6.44%
12/21/2011	10.20%	3.76%	4.93%	-3.28	1.17%	25.74	6.44%
12/22/2011	9.90%	3.75%	4.92%	-3.28	1.17%	25.74	6.15%
12/22/2011	10.40%	3.75%	4.92%	-3.28	1.17%	25.74	6.65%
12/23/2011	10.19%	3.74%	4.92%	-3.28	1.17%	25.74	6.45%
1/25/2012	10.50%	3.57%	4.80%	-3.33	1.23%	25.85	6.93%
1/27/2012	10.50%	3.56%	4.78%	-3.34	1.23%	25.86	6.94%
2/15/2012	10.20%	3.47%	4.71%	-3.36	1.23%	26.07	6.73%
2/23/2012	9.90%	3.44%	4.68%	-3.37	1.24%	26.09	6.46%
2/27/2012	10.25%	3.43%	4.67%	-3.37	1.24%	26.10	6.82%
2/29/2012	10.40%	3.41%	4.66%	-3.38	1.25%	26.12	6.99%
3/29/2012	10.37%	3.32%	4.58%	-3.41	1.26%	25.97	7.05%
4/4/2012	10.00%	3.30%	4.56%	-3.41	1.27%	25.86	6.70%
4/26/2012	10.00%	3.21%	4.49%	-3.44	1.28%	25.88	6.79%
5/2/2012	10.00%	3.18%	4.47%	-3.45	1.29%	25.81	6.82%
5/7/2012	9.80%	3.17%	4.46%	-3.45	1.29%	25.81	6.63%
5/15/2012	10.00%	3.14%	4.43%	-3.46	1.28%	25.77	6.86%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
5/29/2012	10.05%	3.11%	4.40%	-3.47	1.29%	25.29	6.94%
6/7/2012	10.30%	3.08%	4.38%	-3.48	1.30%	24.83	7.22%
6/14/2012	9.40%	3.06%	4.36%	-3.49	1.30%	24.50	6.34%
6/15/2012	10.40%	3.06%	4.36%	-3.49	1.30%	24.44	7.34%
6/18/2012	9.60%	3.06%	4.36%	-3.49	1.30%	24.37	6.54%
6/19/2012	9.25%	3.05%	4.35%	-3.49	1.30%	24.30	6.20%
6/26/2012	10.10%	3.04%	4.34%	-3.49	1.30%	23.90	7.06%
6/29/2012	10.00%	3.04%	4.34%	-3.49	1.30%	23.63	6.96%
7/9/2012	10.20%	3.03%	4.32%	-3.50	1.30%	23.23	7.17%
7/16/2012	9.80%	3.02%	4.31%	-3.50	1.29%	22.67	6.78%
7/20/2012	9.31%	3.01%	4.30%	-3.50	1.30%	22.15	6.30%
7/20/2012	9.81%	3.01%	4.30%	-3.50	1.30%	22.15	6.80%
9/13/2012	9.80%	2.94%	4.22%	-3.53	1.28%	19.17	6.86%
9/19/2012	9.80%	2.94%	4.22%	-3.53	1.28%	18.89	6.86%
9/19/2012	10.05%	2.94%	4.22%	-3.53	1.28%	18.89	7.11%
9/26/2012	9.50%	2.94%	4.21%	-3.53	1.27%	18.55	6.56%
10/12/2012	9.60%	2.93%	4.19%	-3.53	1.26%	18.06	6.67%
10/23/2012	9.75%	2.93%	4.17%	-3.53	1.24%	17.86	6.82%
10/24/2012	10.30%	2.93%	4.17%	-3.53	1.24%	17.85	7.37%
11/9/2012	10.30%	2.92%	4.14%	-3.53	1.22%	17.75	7.38%
11/28/2012	10.40%	2.90%	4.12%	-3.54	1.22%	17.61	7.50%
11/29/2012	9.75%	2.89%	4.11%	-3.54	1.22%	17.59	6.86%
11/29/2012	9.88%	2.89%	4.11%	-3.54	1.22%	17.59	6.99%
12/5/2012	9.71%	2.89%	4.10%	-3.54	1.22%	17.53	6.82%
12/5/2012	10.40%	2.89%	4.10%	-3.54	1.22%	17.53	7.51%
12/12/2012	9.80%	2.88%	4.09%	-3.55	1.21%	17.49	6.92%
12/13/2012	9.50%	2.88%	4.09%	-3.55	1.21%	17.48	6.62%
12/13/2012	10.50%	2.88%	4.09%	-3.55	1.21%	17.48	7.62%
12/14/2012	10.40%	2.88%	4.09%	-3.55	1.21%	17.47	7.52%
12/19/2012	9.71%	2.87%	4.09%	-3.55	1.21%	17.46	6.84%
12/19/2012	10.25%	2.87%	4.09%	-3.55	1.21%	17.46	7.38%
12/20/2012	9.50%	2.87%	4.09%	-3.55	1.21%	17.44	6.63%
12/20/2012	9.80%	2.87%	4.09%	-3.55	1.21%	17.44	6.93%
12/20/2012	10.25%	2.87%	4.09%	-3.55	1.21%	17.44	7.38%
12/20/2012	10.25%	2.87%	4.09%	-3.55	1.21%	17.44	7.38%
12/20/2012	10.30%	2.87%	4.09%	-3.55	1.21%	17.44	7.43%
12/20/2012	10.40%	2.87%	4.09%	-3.55	1.21%	17.44	7.53%
12/20/2012	10.45%	2.87%	4.09%	-3.55	1.21%	17.44	7.58%
12/21/2012	10.20%	2.87%	4.09%	-3.55	1.22%	17.43	7.33%
12/26/2012	9.80%	2.86%	4.08%	-3.55	1.22%	17.45	6.94%
1/9/2013	9.70%	2.85%	4.06%	-3.56	1.22%	17.49	6.85%
1/9/2013	9.70%	2.85%	4.06%	-3.56	1.22%	17.49	6.85%
1/9/2013	9.70%	2.85%	4.06%	-3.56	1.22%	17.49	6.85%
1/16/2013	9.60%	2.84%	4.05%	-3.56	1.21%	17.44	6.76%
1/16/2013	9.60%	2.84%	4.05%	-3.56	1.21%	17.44	6.76%
2/13/2013	10.20%	2.84%	4.03%	-3.56	1.19%	17.01	7.36%
2/22/2013	9.75%	2.85%	4.03%	-3.56	1.17%	16.90	6.90%
2/27/2013	10.00%	2.86%	4.02%	-3.56	1.17%	16.86	7.14%
3/14/2013	9.30%	2.88%	4.02%	-3.55	1.14%	16.37	6.42%
3/27/2013	9.80%	2.90%	4.03%	-3.54	1.13%	15.90	6.90%
5/1/2013	9.84%	2.94%	4.02%	-3.53	1.08%	15.26	6.90%
5/15/2013	10.30%	2.96%	4.03%	-3.52	1.07%	15.03	7.34%
5/30/2013	10.20%	2.98%	4.05%	-3.51	1.07%	14.88	7.22%
5/31/2013	9.00%	2.98%	4.05%	-3.51	1.07%	14.89	6.02%
6/11/2013	10.00%	3.00%	4.06%	-3.51	1.06%	14.96	7.00%
6/21/2013	9.75%	3.02%	4.08%	-3.50	1.06%	15.01	6.73%
6/25/2013	9.80%	3.03%	4.09%	-3.50	1.06%	15.02	6.77%
7/12/2013	9.36%	3.07%	4.13%	-3.48	1.06%	15.06	6.29%
8/8/2013	9.83%	3.14%	4.20%	-3.46	1.05%	14.83	6.69%
8/14/2013	9.15%	3.16%	4.21%	-3.45	1.05%	14.74	5.99%
9/11/2013	10.20%	3.26%	4.31%	-3.42	1.04%	14.57	6.94%
9/11/2013	10.25%	3.26%	4.31%	-3.42	1.04%	14.57	6.99%
9/24/2013	10.20%	3.31%	4.35%	-3.41	1.04%	14.48	6.89%
10/3/2013	9.65%	3.33%	4.37%	-3.40	1.04%	14.46	6.32%
11/6/2013	10.20%	3.41%	4.44%	-3.38	1.03%	14.40	6.79%
11/21/2013	10.00%	3.44%	4.47%	-3.37	1.03%	14.36	6.56%
11/26/2013	10.00%	3.45%	4.48%	-3.37	1.03%	14.35	6.55%
12/3/2013	10.25%	3.47%	4.49%	-3.36	1.02%	14.38	6.78%
12/4/2013	9.50%	3.47%	4.50%	-3.36	1.02%	14.38	6.03%
12/5/2013	10.20%	3.48%	4.50%	-3.36	1.02%	14.38	6.72%
12/9/2013	8.72%	3.48%	4.51%	-3.36	1.02%	14.35	5.24%
12/9/2013	9.75%	3.48%	4.51%	-3.36	1.02%	14.35	6.27%
12/13/2013	9.75%	3.50%	4.52%	-3.35	1.02%	14.34	6.25%
12/16/2013	9.95%	3.50%	4.52%	-3.35	1.02%	14.35	6.45%
12/16/2013	9.95%	3.50%	4.52%	-3.35	1.02%	14.35	6.45%
12/16/2013	10.12%	3.50%	4.52%	-3.35	1.02%	14.35	6.62%
12/17/2013	9.50%	3.51%	4.53%	-3.35	1.02%	14.36	5.99%
12/17/2013	10.95%	3.51%	4.53%	-3.35	1.02%	14.36	7.44%
12/18/2013	8.72%	3.51%	4.53%	-3.35	1.02%	14.37	5.21%
12/18/2013	9.80%	3.51%	4.53%	-3.35	1.02%	14.37	6.29%
12/19/2013	10.15%	3.51%	4.53%	-3.35	1.02%	14.37	6.64%
12/30/2013	9.50%	3.54%	4.55%	-3.34	1.01%	14.40	5.96%
2/20/2014	9.20%	3.68%	4.64%	-3.30	0.96%	14.61	5.52%



[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
2/26/2014	9.75%	3.69%	4.65%	-3.30	0.96%	14.64	6.06%
3/17/2014	9.55%	3.72%	4.67%	-3.29	0.96%	14.72	5.83%
3/26/2014	9.40%	3.73%	4.68%	-3.29	0.95%	14.67	5.67%
3/26/2014	9.96%	3.73%	4.68%	-3.29	0.95%	14.67	6.23%
4/2/2014	9.70%	3.73%	4.68%	-3.29	0.95%	14.59	5.97%
5/16/2014	9.80%	3.70%	4.63%	-3.30	0.93%	14.38	6.10%
5/30/2014	9.70%	3.68%	4.61%	-3.30	0.93%	14.34	6.02%
6/6/2014	10.40%	3.67%	4.60%	-3.30	0.93%	14.27	6.73%
6/30/2014	9.55%	3.64%	4.56%	-3.31	0.92%	13.95	5.91%
7/2/2014	9.62%	3.64%	4.56%	-3.31	0.92%	13.91	5.98%
7/10/2014	9.95%	3.63%	4.54%	-3.32	0.91%	13.86	6.32%
7/23/2014	9.75%	3.61%	4.52%	-3.32	0.91%	13.71	6.14%
7/29/2014	9.45%	3.60%	4.51%	-3.32	0.90%	13.58	5.85%
7/31/2014	9.90%	3.60%	4.50%	-3.32	0.90%	13.57	6.30%
8/20/2014	9.75%	3.57%	4.47%	-3.33	0.90%	13.61	6.18%
8/25/2014	9.60%	3.56%	4.46%	-3.34	0.90%	13.59	6.04%
8/29/2014	9.80%	3.54%	4.44%	-3.34	0.90%	13.57	6.26%
9/11/2014	9.60%	3.51%	4.42%	-3.35	0.90%	13.56	6.09%
9/15/2014	10.25%	3.51%	4.41%	-3.35	0.91%	13.57	6.74%
10/9/2014	9.80%	3.45%	4.36%	-3.37	0.91%	13.61	6.35%
11/6/2014	9.56%	3.37%	4.29%	-3.39	0.92%	14.11	6.19%
11/6/2014	10.20%	3.37%	4.29%	-3.39	0.92%	14.11	6.83%
11/14/2014	10.20%	3.35%	4.28%	-3.40	0.93%	13.98	6.85%
11/26/2014	9.70%	3.33%	4.27%	-3.40	0.94%	13.82	6.37%
11/26/2014	10.20%	3.33%	4.27%	-3.40	0.94%	13.82	6.87%
12/4/2014	9.68%	3.31%	4.25%	-3.41	0.95%	13.79	6.37%
12/10/2014	9.25%	3.29%	4.24%	-3.41	0.95%	13.80	5.96%
12/10/2014	9.25%	3.29%	4.24%	-3.41	0.95%	13.80	5.96%
12/11/2014	10.07%	3.29%	4.24%	-3.42	0.95%	13.83	6.78%
12/12/2014	10.20%	3.28%	4.23%	-3.42	0.95%	13.87	6.92%
12/17/2014	9.17%	3.27%	4.23%	-3.42	0.96%	13.96	5.90%
12/18/2014	9.83%	3.26%	4.22%	-3.42	0.96%	13.98	6.57%
1/23/2015	9.50%	3.14%	4.13%	-3.46	0.99%	14.37	6.36%
2/24/2015	9.83%	3.04%	4.06%	-3.49	1.02%	14.67	6.79%
3/18/2015	9.75%	2.98%	4.02%	-3.51	1.04%	14.88	6.77%
3/25/2015	9.50%	2.96%	4.00%	-3.52	1.04%	14.94	6.54%
3/26/2015	9.72%	2.95%	4.00%	-3.52	1.04%	14.97	6.77%
4/23/2015	10.20%	2.87%	3.94%	-3.55	1.07%	15.19	7.33%
4/29/2015	9.53%	2.86%	3.93%	-3.56	1.07%	15.20	6.67%
5/1/2015	9.60%	2.85%	3.93%	-3.56	1.08%	15.23	6.75%
5/26/2015	9.75%	2.83%	3.93%	-3.56	1.10%	15.16	6.92%
6/17/2015	9.00%	2.82%	3.95%	-3.57	1.13%	15.29	6.18%
6/17/2015	9.00%	2.82%	3.95%	-3.57	1.13%	15.29	6.18%
9/2/2015	9.50%	2.79%	4.00%	-3.58	1.21%	15.67	6.71%
9/10/2015	9.30%	2.79%	4.01%	-3.58	1.22%	15.97	6.51%
10/15/2015	9.00%	2.81%	4.06%	-3.57	1.24%	16.67	6.19%
11/19/2015	10.00%	2.88%	4.15%	-3.55	1.27%	16.29	7.12%
11/19/2015	10.30%	2.88%	4.15%	-3.55	1.27%	16.29	7.42%
12/3/2015	10.00%	2.90%	4.18%	-3.54	1.28%	16.27	7.10%
12/9/2015	9.14%	2.90%	4.19%	-3.54	1.29%	16.32	6.24%
12/9/2015	9.14%	2.90%	4.19%	-3.54	1.29%	16.32	6.24%
12/11/2015	10.30%	2.90%	4.20%	-3.54	1.29%	16.41	7.40%
12/15/2015	9.60%	2.91%	4.20%	-3.54	1.30%	16.49	6.69%
12/17/2015	9.70%	2.91%	4.21%	-3.54	1.30%	16.53	6.79%
12/18/2015	9.50%	2.91%	4.21%	-3.54	1.30%	16.56	6.59%
12/30/2015	9.50%	2.93%	4.23%	-3.53	1.30%	16.59	6.57%
1/6/2016	9.50%	2.94%	4.25%	-3.53	1.31%	16.71	6.56%
2/23/2016	9.75%	2.94%	4.31%	-3.53	1.38%	18.29	6.81%
3/16/2016	9.85%	2.91%	4.31%	-3.54	1.40%	18.67	6.94%
4/29/2016	9.80%	2.83%	4.25%	-3.56	1.42%	18.56	6.97%
6/3/2016	9.75%	2.80%	4.21%	-3.57	1.40%	18.78	6.95%
6/8/2016	9.48%	2.80%	4.20%	-3.58	1.40%	18.67	6.68%
6/15/2016	9.00%	2.78%	4.19%	-3.58	1.40%	18.34	6.22%
6/15/2016	9.00%	2.78%	4.19%	-3.58	1.40%	18.34	6.22%
7/18/2016	9.98%	2.71%	4.11%	-3.61	1.40%	17.47	7.27%
8/9/2016	9.85%	2.66%	4.05%	-3.63	1.39%	17.06	7.19%
8/18/2016	9.50%	2.63%	4.03%	-3.64	1.40%	16.96	6.87%
8/24/2016	9.75%	2.62%	4.01%	-3.64	1.40%	16.91	7.13%
9/1/2016	9.50%	2.59%	3.98%	-3.65	1.39%	16.79	6.91%
9/8/2016	10.00%	2.58%	3.97%	-3.66	1.39%	16.69	7.42%
9/28/2016	9.58%	2.54%	3.92%	-3.67	1.39%	16.54	7.04%
9/30/2016	9.90%	2.53%	3.91%	-3.68	1.39%	16.46	7.37%
11/9/2016	9.80%	2.48%	3.85%	-3.70	1.36%	15.66	7.32%
11/10/2016	9.50%	2.48%	3.84%	-3.70	1.36%	15.62	7.02%
11/15/2016	9.55%	2.49%	3.84%	-3.69	1.36%	15.52	7.06%
11/18/2016	10.00%	2.50%	3.84%	-3.69	1.35%	15.39	7.50%
11/29/2016	10.55%	2.51%	3.85%	-3.69	1.34%	14.98	8.04%
12/1/2016	10.00%	2.51%	3.85%	-3.68	1.34%	14.90	7.49%
12/6/2016	8.64%	2.52%	3.85%	-3.68	1.33%	14.79	6.12%
12/6/2016	8.64%	2.52%	3.85%	-3.68	1.33%	14.79	6.12%
12/7/2016	10.10%	2.52%	3.85%	-3.68	1.33%	14.74	7.58%
12/12/2016	9.60%	2.53%	3.86%	-3.68	1.33%	14.63	7.07%
12/14/2016	9.10%	2.53%	3.86%	-3.68	1.32%	14.59	6.57%

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility A Yield	LN(30-Year Treasury)	Moody's Utility A Credit Spread	VIX	Risk Premium
12/19/2016	9.00%	2.54%	3.86%	-3.67	1.32%	14.52	6.46%
12/19/2016	9.37%	2.54%	3.86%	-3.67	1.32%	14.52	6.83%
12/22/2016	9.60%	2.55%	3.86%	-3.67	1.31%	14.41	7.05%
12/22/2016	9.90%	2.55%	3.86%	-3.67	1.31%	14.41	7.35%
12/28/2016	9.50%	2.55%	3.86%	-3.67	1.31%	14.34	6.95%
1/18/2017	9.45%	2.58%	3.86%	-3.66	1.28%	14.20	6.87%
1/24/2017	9.00%	2.59%	3.86%	-3.65	1.27%	14.13	6.41%
1/31/2017	10.10%	2.60%	3.87%	-3.65	1.27%	14.05	7.50%
2/15/2017	9.60%	2.62%	3.88%	-3.64	1.25%	13.90	6.98%
2/22/2017	9.60%	2.64%	3.88%	-3.64	1.25%	13.82	6.96%
2/24/2017	9.75%	2.64%	3.89%	-3.63	1.25%	13.80	7.11%
2/28/2017	10.10%	2.64%	3.89%	-3.63	1.25%	13.78	7.46%
3/2/2017	9.41%	2.65%	3.89%	-3.63	1.24%	13.75	6.76%
3/20/2017	9.50%	2.68%	3.91%	-3.62	1.23%	13.56	6.82%
4/4/2017	10.25%	2.71%	3.93%	-3.61	1.22%	13.30	7.54%
4/12/2017	9.40%	2.74%	3.94%	-3.60	1.21%	13.09	6.66%
4/20/2017	9.50%	2.76%	3.95%	-3.59	1.19%	13.06	6.74%
5/3/2017	9.50%	2.79%	3.98%	-3.58	1.19%	12.95	6.71%
5/11/2017	9.20%	2.81%	4.00%	-3.57	1.18%	12.88	6.39%
5/18/2017	9.50%	2.83%	4.01%	-3.57	1.18%	12.88	6.67%
5/23/2017	9.70%	2.84%	4.02%	-3.56	1.18%	12.86	6.86%
6/16/2017	9.65%	2.89%	4.05%	-3.54	1.16%	12.69	6.76%
6/22/2017	9.70%	2.90%	4.06%	-3.54	1.16%	12.65	6.80%
6/22/2017	9.70%	2.90%	4.06%	-3.54	1.16%	12.65	6.80%
7/24/2017	9.50%	2.95%	4.09%	-3.52	1.15%	12.24	6.55%
8/15/2017	10.00%	2.97%	4.10%	-3.52	1.13%	11.97	7.03%
9/22/2017	9.60%	2.93%	4.07%	-3.53	1.14%	11.47	6.67%
9/28/2017	9.80%	2.92%	4.07%	-3.53	1.14%	11.43	6.88%
10/20/2017	9.50%	2.91%	4.04%	-3.54	1.13%	11.23	6.59%
10/26/2017	10.20%	2.91%	4.03%	-3.54	1.12%	11.22	7.29%
10/26/2017	10.25%	2.91%	4.03%	-3.54	1.12%	11.22	7.34%
10/26/2017	10.30%	2.91%	4.03%	-3.54	1.12%	11.22	7.39%
11/6/2017	10.25%	2.90%	4.03%	-3.54	1.12%	11.15	7.35%
11/15/2017	11.95%	2.89%	4.02%	-3.54	1.12%	11.15	9.06%
11/30/2017	10.00%	2.88%	4.00%	-3.55	1.12%	11.11	7.12%
11/30/2017	10.00%	2.88%	4.00%	-3.55	1.12%	11.11	7.12%
12/5/2017	9.50%	2.88%	3.99%	-3.55	1.11%	11.11	6.62%
12/6/2017	8.40%	2.87%	3.99%	-3.55	1.11%	11.10	5.53%
12/6/2017	8.40%	2.87%	3.99%	-3.55	1.11%	11.10	5.53%
12/7/2017	9.80%	2.87%	3.99%	-3.55	1.11%	11.10	6.93%
12/14/2017	9.60%	2.86%	3.98%	-3.55	1.11%	11.04	6.74%
12/14/2017	9.65%	2.86%	3.98%	-3.55	1.11%	11.04	6.79%
12/18/2017	9.50%	2.86%	3.97%	-3.55	1.11%	11.02	6.64%
12/20/2017	9.58%	2.86%	3.97%	-3.56	1.11%	11.01	6.72%
12/21/2017	9.10%	2.85%	3.97%	-3.56	1.11%	10.99	6.25%
12/28/2017	9.50%	2.85%	3.96%	-3.56	1.11%	10.96	6.65%
12/29/2017	9.40%	2.85%	3.95%	-3.56	1.11%	10.96	6.55%

Average: 4.61%  
# of Rate Cases: 1,541

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

Company	Parent	State	Adjustment Clauses							Alternative Regulation / Incentive Plans					
			Fuel/ Purchased Power/Gas Commodity	Decoupling (F/P) [1]	Capital Investment (New and Replaceme nt) [2]	Energy Efficiency [3]	Renewables & RPS [4]	Environm ental [5]	Other [6]	Formula- Based Rates	Price Freeze/ Cap	Earnings Sharing	Formula- Based ROE	Service Quality/ Performa nce	Merger Savings
ALLETE (Minnesota Power)	ALE	MN	✓			✓	✓	✓							
Superior Water, Light and Power Company	ALE	WI	✓												
Interstate Power and Light Company	LNT	IA	✓			✓		✓							
Wisconsin Power and Light Company	LNT	WI	✓												
Ameren Illinois Company	AEE	IL	✓			✓		✓					✓		
Union Electric Company	AEE	MO	✓	P		✓		✓							
AEP Texas Central Company	AEP	TX	NA		✓	✓		✓							
AEP Texas North Company	AEP	TX	NA		✓	✓		✓							
Appalachian Power Company	AEP	VA	✓		✓	✓		✓							
Appalachian Power/Wheeling Power	AEP	WV	✓		✓	✓		✓							
Indiana Michigan Power Company	AEP	IN	✓	P	✓	✓		✓							
Indiana Michigan Power Company	AEP	MI	✓	P	✓	✓		✓							
Kentucky Power Company	AEP	KY	✓	P	✓	✓		✓							
Kingsport Power Company	AEP	TN	✓		✓	✓		✓							
Ohio Power Company	AEP	OH	✓	F	✓	✓		✓							
Public Service Company of Oklahoma	AEP	OK	✓	P	✓	✓		✓		✓	✓				
Southwestern Electric Power Company	AEP	AR	✓	P	✓	✓		✓							
Southwestern Electric Power Company	AEP	LA	✓		✓	✓		✓							
Southwestern Electric Power Company	AEP	TX	✓		✓	✓		✓		✓	✓				
Black Hills Colorado Electric Utility Company, LP	BKH	CO	✓		✓	✓		✓							
Black Hills Power, Inc.	BKH	SD	✓	P	✓	✓		✓							
Black Hills Power, Inc.	BKH	WY	✓		✓	✓		✓							
Cheyenne Light, Fuel and Power Company	BKH	WY	✓	P	✓	✓		✓							
Consumers Energy Company	CMS	MI	✓		✓	✓		✓							
Virginia Electric and Power Company	D	NC	✓		✓	✓		✓							
Virginia Electric and Power Company	D	VA	✓		✓	✓		✓		✓	✓		✓		
DTE Electric Company	DTE	MI	✓		✓	✓		✓							
Duke Energy Carolinas, LLC	DUK	NC	✓	P	✓	✓		✓							
Duke Energy Carolinas, LLC	DUK	SC	✓	P	✓	✓		✓							
Duke Energy Florida, LLC	DUK	FL	✓		✓	✓		✓							
Duke Energy Indiana, LLC	DUK	IN	✓	P	✓	✓		✓							
Duke Energy Kentucky, Inc.	DUK	KY	✓	P	✓	✓		✓							
Duke Energy Ohio, Inc.	DUK	OH	✓	P	✓	✓		✓							
Duke Energy Progress, LLC	DUK	NC	✓		✓	✓		✓							
Duke Energy Progress, LLC	DUK	SC	✓		✓	✓		✓							
El Paso Electric Company	EE	NM	✓		✓	✓		✓							
El Paso Electric Company	EE	TX	✓		✓	✓		✓							
Hawaii Electric Light Company, Inc.	HE	HI	✓	F	✓	✓		✓		✓	✓				
Hawaiian Electric Company, Inc.	HE	HI	✓	F	✓	✓		✓							
Maui Electric Company, Limited	HE	HI	✓	F	✓	✓		✓							
Idaho Power Co.	IDA	ID	✓	F	✓	✓		✓							
Idaho Power Co.	IDA	OR	✓		✓	✓		✓							
NorthWestern Corporation	NWE	MT	✓		✓	✓		✓							
NorthWestern Corporation	NWE	SD	✓		✓	✓		✓							
Oklahoma Gas and Electric Company	OGE	AR	✓	P	✓	✓		✓							
Oklahoma Gas and Electric Company	OGE	OK	✓	P	✓	✓		✓							
Otter Tail Power Company	OTTR	MN	✓		✓	✓		✓							
Otter Tail Power Company	OTTR	ND	✓		✓	✓		✓							
Otter Tail Power Company	OTTR	SD	✓		✓	✓		✓							
Arizona Public Service Company	PNW	AZ	✓	P	✓	✓		✓							
Public Service Company of New Mexico	PNM	NM	✓		✓	✓		✓		✓					
Texas New Mexico Power	PNM	TX	NA		✓	✓		✓							
Portland General Electric Company	POR	OR	✓	P	✓	✓		✓							
Alabama Power Company	SO	AL	✓		✓	✓		✓							
Georgia Power Company	SO	GA	✓		✓	✓		✓							
Gulf Power Company	SO	FL	✓		✓	✓		✓							
Mississippi Power Company	SO	MS	✓	P	✓	✓		✓							
Wisconsin Electric Power Company	WEC	MI	✓		✓	✓		✓							
Wisconsin Electric Power Company	WEC	WI	✓		✓	✓		✓							
Wisconsin Public Service Corporation	WEC	WI	✓		✓	✓		✓							
Northern States Power Company - MN	XEL	MN	✓	F	✓	✓		✓							
Northern States Power Company - MN	XEL	ND	✓		✓	✓		✓							
Northern States Power Company - MN	XEL	SD	✓	P	✓	✓		✓							
Northern States Power Company - WI	XEL	MI	✓		✓	✓		✓							
Northern States Power Company - WI	XEL	WI	✓		✓	✓		✓							
Public Service Company of Colorado	XEL	CO	✓	P	✓	✓		✓		✓	✓				
Southwestern Public Service Company	XEL	NM	✓		✓	✓		✓							
Southwestern Public Service Company	XEL	TX	✓		✓	✓		✓							

Notes:

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*Note: Texas electric T&D-only, and Georgia and Ohio gas utilities do not have provider of last resort obligations, therefore fuel/power/gas cost recovery is not applicable. A mechanism may cover one or more cost categories; therefore, designations may not indicate separate mechanisms for each category.*

[1] Full or partial decoupling (such as Straight-Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs).

[2] Includes recovery of costs related to targeted new generation projects, infrastructure replacement, system integrity/hardening, Smart Grid, AMI metering, and other capital expenditures.

[3] Utility-sponsored conservation, energy efficiency, load control, or other demand side management programs.

[4] Recovers costs associated with renewable energy projects, clean energy, Distributed Energy Resources, REC purchases, net metering, RPS expense, and renewable PPAs.

[5] EPA upgrade costs, emissions control & allowance purchase costs, nuclear decommissioning, and other costs to comply with state and federal environmental mandates.

[6] Pension expenses, bad debt costs, storm costs, vegetation management, RTO/Transmission Expense, capacity costs, transmission costs, government & franchise fees and taxes, economic development, and low income programs.

Sources: Company SEC Form 10-Ks; Operating company tariffs; Regulatory Research Associates, *Alternative Regulation/Incentive Plans: A State-by-State Overview*, November 19, 2013; Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview*, August 22, 2016.

Change in Net Plant and Asset Turnover  
Proxy Group - Annual Average

Year	Average Revenue/Net Plant	Average Change in Net Plant	Cumulative Change in Net Plant
2008	63.09%		
2009	51.93%	8.16%	8.16%
2010	52.12%	6.36%	15.04%
2011	50.74%	6.12%	22.07%
2012	45.25%	8.02%	31.87%
2013	44.40%	4.62%	37.96%
2014	42.55%	9.17%	50.61%
2015	36.76%	11.99%	68.66%
2016	34.55%	9.04%	83.90%
3-5 Year Projection	34.85%	22.31%	124.92%

Change in Net Plant and Asset Turnover  
Proxy Group - Individual Company Results

Ticker	Year	Revenue	Net Plant	Revenue/Net Plant	Change in Net Plant	Change in Revenue/Net Plant
ALE	2008	\$ 801.00	\$ 1,387.30	57.74%		
ALE	2009	759.10	1,622.70	46.78%	16.97%	-18.98%
ALE	2010	907.00	1,805.60	50.23%	11.27%	7.38%
ALE	2011	928.20	1,982.70	46.81%	9.81%	-6.80%
ALE	2012	961.20	2,347.60	40.94%	18.40%	-12.54%
ALE	2013	1,018.40	2,576.50	39.53%	9.75%	-3.46%
ALE	2014	1,136.80	3,286.40	34.59%	27.55%	-12.49%
ALE	2015	1,486.40	3,669.10	40.51%	11.64%	17.11%
ALE	2016	1,339.70	3,741.20	35.81%	1.97%	-11.61%
ALE	2020-22	1,655.00	4,000.00	41.38%	6.92%	15.54%
LNT	2008	\$ 3,681.70	\$ 5,353.50	68.77%		
LNT	2009	3,432.80	6,203.00	55.34%	15.87%	-19.53%
LNT	2010	3,416.10	6,730.60	50.75%	8.51%	-8.29%
LNT	2011	3,665.30	7,037.10	52.09%	4.55%	2.62%
LNT	2012	3,094.50	7,838.00	39.48%	11.38%	-24.20%
LNT	2013	3,276.80	7,147.30	45.85%	-8.81%	16.12%
LNT	2014	3,350.30	6,442.00	52.01%	-9.87%	13.44%
LNT	2015	3,253.60	8,970.20	36.27%	39.25%	-30.26%
LNT	2016	3,320.00	9,809.90	33.84%	9.36%	-6.69%
LNT	2020-22	3,895.00	11,000.00	35.41%	12.13%	4.63%
AEE	2008	\$ 7,839.00	\$ 16,567.00	47.32%		
AEE	2009	7,090.00	17,610.00	40.26%	6.30%	-14.91%
AEE	2010	7,638.00	17,853.00	42.78%	1.38%	6.26%
AEE	2011	7,531.00	18,127.00	41.55%	1.53%	-2.89%
AEE	2012	6,828.00	16,096.00	42.42%	-11.20%	2.11%
AEE	2013	5,838.00	16,205.00	36.03%	0.68%	-15.07%
AEE	2014	6,053.00	17,424.00	34.74%	7.52%	-3.57%
AEE	2015	6,098.00	18,799.00	32.44%	7.89%	-6.63%
AEE	2016	6,076.00	20,113.00	30.21%	6.99%	-6.87%
AEE	2020-22	7,000.00	26,200.00	26.72%	30.26%	-11.56%
AEP	2008	\$ 14,440.00	\$ 32,987.00	43.77%		
AEP	2009	13,489.00	34,344.00	39.28%	4.11%	-10.28%
AEP	2010	14,427.00	35,674.00	40.44%	3.87%	2.97%
AEP	2011	15,116.00	36,971.00	40.89%	3.64%	1.10%
AEP	2012	14,945.00	38,763.00	38.55%	4.85%	-5.70%
AEP	2013	15,357.00	40,997.00	37.46%	5.76%	-2.84%
AEP	2014	17,020.00	44,117.00	38.58%	7.61%	2.99%
AEP	2015	16,453.00	46,133.00	35.66%	4.57%	-7.56%
AEP	2016	16,380.00	45,639.00	35.89%	-1.07%	0.63%
AEP	2020-22	17,000.00	65,300.00	26.03%	43.08%	-27.46%
BKH	2008	\$ 1,005.80	\$ 2,022.20	49.74%		
BKH	2009	1,269.60	2,160.70	58.76%	6.85%	18.14%
BKH	2010	1,307.30	2,495.40	52.39%	15.49%	-10.84%
BKH	2011	1,272.20	2,789.60	45.61%	11.79%	-12.95%
BKH	2012	1,173.90	2,742.70	42.80%	-1.68%	-6.15%
BKH	2013	1,275.90	2,990.30	42.67%	9.03%	-0.31%
BKH	2014	1,393.60	3,239.40	43.02%	8.33%	0.83%
BKH	2015	1,304.60	3,259.10	40.03%	0.61%	-6.95%
BKH	2016	1,573.00	4,469.00	35.20%	37.12%	-12.07%
BKH	2020-22	2,025.00	5,275.00	38.39%	18.04%	9.06%
CMS	2008	\$ 6,821.00	\$ 9,190.00	74.22%		
CMS	2009	6,205.00	9,682.00	64.09%	5.35%	-13.65%
CMS	2010	6,432.00	10,069.00	63.88%	4.00%	-0.33%
CMS	2011	6,503.00	10,633.00	61.16%	5.60%	-4.26%
CMS	2012	6,312.00	11,551.00	54.64%	8.63%	-10.65%
CMS	2013	6,566.00	12,246.00	53.62%	6.02%	-1.88%
CMS	2014	7,179.00	13,412.00	53.53%	9.52%	-0.17%
CMS	2015	6,456.00	14,705.00	43.90%	9.64%	-17.98%
CMS	2016	6,399.00	15,715.00	40.72%	6.87%	-7.25%
CMS	2020-22	7,500.00	19,900.00	37.69%	26.63%	-7.44%
D	2008	\$ 16,290.00	\$ 23,274.00	69.99%		
D	2009	15,131.00	25,592.00	59.12%	9.96%	-15.53%
D	2010	15,197.00	26,713.00	56.89%	4.38%	-3.78%
D	2011	14,379.00	29,670.00	48.46%	11.07%	-14.81%
D	2012	13,093.00	30,773.00	42.55%	3.72%	-12.21%
D	2013	13,120.00	32,628.00	40.21%	6.03%	-5.49%
D	2014	12,436.00	36,270.00	34.29%	11.16%	-14.73%
D	2015	11,683.00	41,554.00	28.12%	14.57%	-18.00%

Change in Net Plant and Asset Turnover  
Proxy Group - Individual Company Results

Ticker	Year	Revenue	Net Plant	Revenue/Net	Change in	Change in
				Plant	Plant	Revenue/Net Plant
D	2016	11,737.00	49,964.00	23.49%	20.24%	-16.45%
D	2020-22	13,850.00	64,300.00	21.54%	28.69%	-8.31%
DTE	2008 \$	9,329.00	\$ 12,231.00	76.27%		
DTE	2009	8,014.00	12,431.00	64.47%	1.64%	-15.48%
DTE	2010	8,557.00	12,992.00	65.86%	4.51%	2.17%
DTE	2011	8,897.00	13,746.00	64.72%	5.80%	-1.73%
DTE	2012	8,791.00	14,684.00	59.87%	6.82%	-7.50%
DTE	2013	9,661.00	15,800.00	61.15%	7.60%	2.13%
DTE	2014	12,301.00	16,820.00	73.13%	6.46%	19.61%
DTE	2015	10,337.00	18,034.00	57.32%	7.22%	-21.62%
DTE	2016	10,630.00	19,730.00	53.88%	9.40%	-6.01%
DTE	2020-22	15,000.00	26,300.00	57.03%	33.30%	5.86%
DUK	2008 \$	13,207.00	\$ 34,036.00	38.80%		
DUK	2009	12,731.00	37,950.00	33.55%	11.50%	-13.55%
DUK	2010	14,272.00	40,344.00	35.38%	6.31%	5.45%
DUK	2011	14,529.00	42,661.00	34.06%	5.74%	-3.73%
DUK	2012	19,624.00	68,558.00	28.62%	60.70%	-15.95%
DUK	2013	24,598.00	69,490.00	35.40%	1.36%	23.67%
DUK	2014	23,925.00	70,046.00	34.16%	0.80%	-3.51%
DUK	2015	23,459.00	75,709.00	30.99%	8.08%	-9.28%
DUK	2016	22,743.00	82,520.00	27.56%	9.00%	-11.05%
DUK	2020-22	26,650.00	109,100.00	24.43%	32.21%	-11.37%
EE	2008 \$	1,038.90	\$ 1,595.60	65.11%		
EE	2009	828.00	1,756.00	47.15%	10.05%	-27.58%
EE	2010	877.30	1,865.80	47.02%	6.25%	-0.28%
EE	2011	918.00	1,947.10	47.15%	4.36%	0.27%
EE	2012	852.90	2,102.30	40.57%	7.97%	-13.95%
EE	2013	890.40	2,257.50	39.44%	7.38%	-2.78%
EE	2014	917.50	2,488.40	36.87%	10.23%	-6.52%
EE	2015	849.90	2,695.50	31.53%	8.32%	-14.48%
EE	2016	886.90	2,821.20	31.44%	4.66%	-0.30%
EE	2020-22	1,025.00	3,325.00	30.83%	17.86%	-1.94%
HE	2008 \$	3,218.90	\$ 2,907.40	110.71%		
HE	2009	2,309.60	3,088.60	74.78%	6.23%	-32.46%
HE	2010	2,665.00	3,165.90	84.18%	2.50%	12.57%
HE	2011	3,242.30	3,334.50	97.23%	5.33%	15.51%
HE	2012	3,375.00	3,594.80	93.89%	7.81%	-3.44%
HE	2013	3,238.50	3,858.90	83.92%	7.35%	-10.61%
HE	2014	3,239.50	4,148.80	78.08%	7.51%	-6.96%
HE	2015	2,603.00	4,377.70	59.46%	5.52%	-23.85%
HE	2016	2,380.70	4,603.50	51.71%	5.16%	-13.03%
HE	2020-22	2,950.00	5,525.00	53.39%	20.02%	3.25%
IDA	2008 \$	960.40	\$ 2,758.20	34.82%		
IDA	2009	1,049.80	2,917.00	35.99%	5.76%	3.36%
IDA	2010	1,036.00	3,161.40	32.77%	8.38%	-8.94%
IDA	2011	1,026.80	3,406.60	30.14%	7.76%	-8.02%
IDA	2012	1,080.70	3,536.00	30.56%	3.80%	1.40%
IDA	2013	1,246.20	3,665.00	34.00%	3.65%	11.26%
IDA	2014	1,282.50	3,833.50	33.46%	4.60%	-1.61%
IDA	2015	1,270.30	3,992.40	31.82%	4.15%	-4.89%
IDA	2016	1,262.00	4,172.00	30.25%	4.50%	-4.93%
IDA	2020-22	1,400.00	4,925.00	28.43%	18.05%	-6.03%
NWE	2008 \$	1,260.80	\$ 1,839.70	68.53%		
NWE	2009	1,141.90	1,964.10	58.14%	6.76%	-15.17%
NWE	2010	1,110.70	2,118.00	52.44%	7.84%	-9.80%
NWE	2011	1,117.30	2,213.30	50.48%	4.50%	-3.74%
NWE	2012	1,070.30	2,435.60	43.94%	10.04%	-12.95%
NWE	2013	1,154.50	2,690.10	42.92%	10.45%	-2.34%
NWE	2014	1,204.90	3,758.00	32.06%	39.70%	-25.29%
NWE	2015	1,214.30	4,059.50	29.91%	8.02%	-6.70%
NWE	2016	1,257.20	4,214.90	29.83%	3.83%	-0.28%
NWE	2020-22	1,575.00	4,875.00	32.31%	15.66%	8.32%
OGE	2008 \$	4,070.70	\$ 5,249.80	77.54%		
OGE	2009	2,869.70	5,911.60	48.54%	12.61%	-37.40%
OGE	2010	3,716.90	6,464.40	57.50%	9.35%	18.45%
OGE	2011	3,915.90	7,474.00	52.39%	15.62%	-8.88%
OGE	2012	3,671.20	8,344.80	43.99%	11.65%	-16.03%
OGE	2013	2,867.70	6,672.80	42.98%	-20.04%	-2.31%

Change in Net Plant and Asset Turnover  
Proxy Group - Individual Company Results

Ticker	Year	Revenue	Net Plant	Revenue/Net Plant	Change in Net Plant	Change in Revenue/Net Plant
OGE	2014	2,453.10	6,979.90	35.15%	4.60%	-18.22%
OGE	2015	2,196.90	7,322.40	30.00%	4.91%	-14.63%
OGE	2016	2,259.20	7,696.20	29.35%	5.10%	-2.16%
OGE	2020-22	2,850.00	8,725.00	32.66%	13.37%	11.28%
OTTR	2008 \$	1,311.20	\$ 1,037.60	126.37%		
OTTR	2009	1,039.50	1,098.60	94.62%	5.88%	-25.12%
OTTR	2010	1,119.10	1,108.70	100.94%	0.92%	6.68%
OTTR	2011	1,077.90	1,077.50	100.04%	-2.81%	-0.89%
OTTR	2012	859.20	1,049.50	81.87%	-2.60%	-18.16%
OTTR	2013	893.30	1,167.00	76.55%	11.20%	-6.50%
OTTR	2014	799.30	1,268.50	63.01%	8.70%	-17.68%
OTTR	2015	779.80	1,387.80	56.19%	9.40%	-10.83%
OTTR	2016	803.50	1,477.20	54.39%	6.44%	-3.20%
OTTR	2020-22	1,100.00	1,850.00	59.46%	25.24%	9.31%
PNW	2008 \$	3,367.10	\$ 8,916.70	37.76%		
PNW	2009	3,297.10	9,257.80	35.61%	3.83%	-5.69%
PNW	2010	3,263.60	9,578.80	34.07%	3.47%	-4.33%
PNW	2011	3,241.40	9,962.30	32.54%	4.00%	-4.50%
PNW	2012	3,301.80	10,396.00	31.76%	4.35%	-2.39%
PNW	2013	3,454.60	10,889.00	31.73%	4.74%	-0.11%
PNW	2014	3,491.60	11,194.00	31.19%	2.80%	-1.68%
PNW	2015	3,495.40	11,809.00	29.60%	5.49%	-5.10%
PNW	2016	3,498.70	12,714.00	27.52%	7.66%	-7.03%
PNW	2020-22	4,500.00	15,100.00	29.80%	18.77%	8.30%
PNM	2008 \$	1,959.50	\$ 3,192.00	61.39%		
PNM	2009	1,647.70	3,332.40	49.44%	4.40%	-19.45%
PNM	2010	1,673.50	3,444.40	48.59%	3.36%	-1.74%
PNM	2011	1,700.60	3,627.10	46.89%	5.30%	-3.50%
PNM	2012	1,342.40	3,746.50	35.83%	3.29%	-23.58%
PNM	2013	1,387.90	3,933.90	35.28%	5.00%	-1.54%
PNM	2014	1,435.90	4,270.00	33.63%	8.54%	-4.68%
PNM	2015	1,439.10	4,535.40	31.73%	6.22%	-5.64%
PNM	2016	1,363.00	4,904.70	27.79%	8.14%	-12.42%
PNM	2020-22	1,725.00	5,525.00	31.22%	12.65%	12.35%
POR	2008 \$	1,745.00	\$ 3,301.00	52.86%		
POR	2009	1,804.00	3,858.00	46.76%	16.87%	-11.54%
POR	2010	1,783.00	4,133.00	43.14%	7.13%	-7.74%
POR	2011	1,813.00	4,285.00	42.31%	3.68%	-1.92%
POR	2012	1,805.00	4,392.00	41.10%	2.50%	-2.87%
POR	2013	1,810.00	4,880.00	37.09%	11.11%	-9.75%
POR	2014	1,900.00	5,679.00	33.46%	16.37%	-9.80%
POR	2015	1,898.00	6,012.00	31.57%	5.86%	-5.64%
POR	2016	1,923.00	6,434.00	29.89%	7.02%	-5.33%
POR	2020-22	2,300.00	6,450.00	35.66%	0.25%	19.31%
SO	2008 \$	17,127.00	\$ 35,878.00	47.74%		
SO	2009	15,743.00	39,230.00	40.13%	9.34%	-15.93%
SO	2010	17,456.00	42,002.00	41.56%	7.07%	3.56%
SO	2011	17,657.00	45,010.00	39.23%	7.16%	-5.61%
SO	2012	16,537.00	48,390.00	34.17%	7.51%	-12.88%
SO	2013	17,087.00	51,208.00	33.37%	5.82%	-2.36%
SO	2014	18,467.00	54,868.00	33.66%	7.15%	0.87%
SO	2015	17,489.00	61,114.00	28.62%	11.38%	-14.97%
SO	2016	19,896.00	78,446.00	25.36%	28.36%	-11.37%
SO	2020-22	26,450.00	99,800.00	26.50%	27.22%	4.50%
WEC	2008 \$	4,431.00	\$ 8,517.00	52.03%		
WEC	2009	4,127.90	9,070.50	45.51%	6.50%	-12.53%
WEC	2010	4,202.50	9,601.50	43.77%	5.85%	-3.82%
WEC	2011	4,486.40	10,160.00	44.16%	5.82%	0.89%
WEC	2012	4,246.40	10,572.00	40.17%	4.06%	-9.04%
WEC	2013	4,519.00	10,907.00	41.43%	3.17%	3.15%
WEC	2014	4,997.10	11,258.00	44.39%	3.22%	7.13%
WEC	2015	5,926.10	19,190.00	30.88%	70.46%	-30.43%
WEC	2016	7,472.30	19,916.00	37.52%	3.78%	21.49%
WEC	2020-22	8,900.00	27,800.00	32.01%	39.59%	-14.67%
XEL	2008 \$	11,203.00	\$ 17,689.00	63.33%		
XEL	2009	9,644.30	18,508.00	52.11%	4.63%	-17.72%
XEL	2010	10,311.00	20,663.00	49.90%	11.64%	-4.24%
XEL	2011	10,655.00	22,353.00	47.67%	8.18%	-4.48%



Change in Net Plant and Asset Turnover  
Proxy Group - Individual Company Results

Ticker	Year	Revenue	Net Plant	Revenue/Net Plant	Change in Net Plant	Change in Revenue/Net Plant
XEL	2012	10,128.00	23,809.00	42.54%	6.51%	-10.76%
XEL	2013	10,915.00	26,122.00	41.78%	9.71%	-1.77%
XEL	2014	11,686.00	28,757.00	40.64%	10.09%	-2.75%
XEL	2015	11,024.00	31,206.00	35.33%	8.52%	-13.07%
XEL	2016	11,107.00	32,842.00	33.82%	5.24%	-4.27%
XEL	2020-22	13,100.00	42,200.00	31.04%	28.49%	-8.21%

Source: Value Line

Change in Net Plant and Asset Turnover  
Regression Analysis

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.324247105
R Square	0.105136185
Adjusted R Square	0.100350817
Standard Error	0.100147332
Observations	189

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.220351314	0.220351314	21.97034486	5.32216E-06
Residual	187	1.87551429	0.010029488		
Total	188	2.095865604			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-0.02499191	0.009851686	-2.536815411	0.012003668	-0.044426638	-0.005557182
Change in Net Plant	-0.326190413	0.069590948	-4.687253445	5.32216E-06	-0.463474637	-0.188906189

Kansas City Power & Light Company  
Capitalization  
June 30, 2018 Projected

(\$ in 000's)

CAPITAL COMPONENT	AMOUNT	PERCENT	REQUIRED RETURN	WEIGHTED RETURN	AFTER-TAX 21.00% WEIGHTED RETURN
KCP&L Long-Term Debt [1]	\$2,549,380	49.97%	5.06%	2.5259%	1.9955%
KCP&L Common Equity	2,552,787	50.03%	9.85%	4.9283%	4.9283%
Total KCP&L Capital	<u>\$5,102,167</u>	<u>100.00%</u>		<u>7.4542%</u>	<u>6.9238%</u>

[1] Excludes unamortized debt expenses and discounts. Includes current maturities of long-term debt.

Kansas City Power & Light Company  
Capitalization  
November 30, 2017 Actual

(\$ in 000's)

CAPITAL COMPONENT	AMOUNT	PERCENT	REQUIRED RETURN	WEIGHTED RETURN	AFTER-TAX 38.90% WEIGHTED RETURN
KCP&L Long-Term Debt [1]	\$2,599,380	50.73%	5.35%	2.7140%	1.6583%
KCP&L Common Equity	2,524,173	49.27%	9.50%	4.6803%	4.6803%
Total KCP&L Capital	<u>\$5,123,553</u>	<u>100.00%</u>		<u>7.3943%</u>	<u>6.3386%</u>

[1] Excludes unamortized debt expenses and discounts. Includes current maturities of long-term debt.

Kansas City Power & Light Company  
Weighted Average Cost of Long-Term Debt Capital  
June 30, 2018 (Projected)

Line	Issue	[a] Initial Offering	[b] Date of Offering	[c] Date of Maturity	[d] Price to Public	[e] Coupon	[f] Issuance Expense Amortization	[g] Issuance Discount Amortization	[h] Net Proceeds to Company	[i] Long-term Debt Capital Outstanding	[j] Annual Cost of Long-term Debt Capital
<b>Pledged General Mortgage Bonds</b>											
1	MATES Series 1993-A	\$40,000,000	12/7/1993	12/1/2023	\$40,000,000	2.95%	\$34,080	\$0	\$39,965,920	\$40,000,000	\$1,214,080
2	MATES Series 1993-B	\$39,480,000	12/7/1993	12/1/2023	\$39,480,000	2.95%	\$34,297	\$0	\$39,445,703	\$39,480,000	\$1,198,957
3	EIRR La Cygne 2005 Series - 4.65% Coupon	\$0	2/23/1994	9/1/2035	\$0	4.65%	\$0	\$0	\$0	\$0	\$0
4	Mortgage Bonds Series 2009A - 7.15%	\$400,000,000	3/24/2009	4/1/2019	\$400,000,000	7.15%	\$401,853	\$43,026	\$399,555,121	\$400,000,000	\$29,044,879
<b>Unsecured Notes</b>											
5	Senior Notes Due 2047 - 4.20% Coupon (1)	\$300,000,000	6/15/2017	6/15/2047	\$300,000,000	4.20%	\$99,806	\$27,025	\$299,873,169	\$300,000,000	\$12,726,831
6	Senior Notes Due 2035 - 6.05% Coupon (2)	\$250,000,000	11/17/2005	11/15/2035	\$250,000,000	6.05%	\$81,364	\$50,071	\$249,868,565	\$250,000,000	\$15,256,435
7	Senior Notes Due 2041 - 5.30% Coupon (3)	\$400,000,000	9/20/2011	10/1/2041	\$400,000,000	5.30%	\$129,595	\$85,471	\$399,784,934	\$400,000,000	\$21,415,066
8	Senior Notes Due 2023 - 3.15% Coupon (1)	\$300,000,000	3/14/2013	3/15/2023	\$300,000,000	3.15%	\$232,246	\$27,944	\$299,739,811	\$300,000,000	\$9,710,189
9	Senior Notes Due 2023 - 3.65% Coupon (1)	\$350,000,000	8/13/2015	8/15/2025	\$350,000,000	3.65%	\$292,838	\$124,135	\$349,583,027	\$350,000,000	\$13,191,973
10	2018 Series Due 2028 - 4.94% Coupon (4)	\$300,000,000	3/1/2018	3/1/2028	\$300,000,000	4.94%	\$225,000	\$0	\$299,775,000	\$300,000,000	\$15,045,000
<b>Environmental Improvement Revenue Refunding Bonds</b>											
11	2007 Series A Due 2035	\$73,250,000	9/19/2007	9/1/2035	\$73,250,000	2.70%	\$6,651	\$0	\$73,243,349	\$73,250,000	\$1,984,401
12	2007 Series B Due 2035	\$73,250,000	9/19/2007	9/1/2035	\$73,250,000	2.70%	\$6,651	\$0	\$73,243,349	\$73,250,000	\$1,984,401
13	2008 Series Due 2038	\$23,400,000	5/28/2008	5/1/2038	\$23,400,000	2.88%	\$8,593	\$0	\$23,391,407	\$23,400,000	\$681,343
<b>Other Long-Term Debt</b>											
14	Reacquired Bond Cost Amortizations										\$500,771
15	Interest Rate Hedging Expense Amortizations										\$4,922,884
16	<b>Total KCP&amp;L Long-Term Debt Capital</b>									<b>\$2,549,380,000</b>	<b>\$128,877,211</b>
17	<b>KCP&amp;L Weighted Avg. Cost of Long-Term Debt Capital</b>									<b>5.06%</b>	

**Notes:**

- (1) Expenses associated with the Senior Notes are being amortized over a 10 year period.
- (2) Expenses associated with the Senior Notes are being amortized over a 30 year period.
- (3) Expenses associated with the Senior Notes are being amortized over a 30 year period.
- (4) Projected Issuance Expense

Cost of Long-Term Debt Comparison

Line	Issue	Initial Offering	Date of Offering	Date of Maturity	Years to Maturity	Bloomberg Fair Value Curve			
						Coupon	BFV Term	A-Rated	BBB-Rated
<b>Pledged General Mortgage Bonds</b>									
1	MATES Series 1993-A	\$40,000,000	12/7/1993	12/1/2023	30	2.95%	30	6.81%	7.23%
2	MATES Series 1993-B	\$39,480,000	12/7/1993	12/1/2023	30	2.95%	30	6.81%	7.23%
3	EIRR La Cygne 2005 Series - 4.65% Coupon	\$0	2/23/1994	9/1/2035	42	4.65%	30	7.24%	7.57%
4	Mortgage Bonds Series 2009A - 7.15%	\$400,000,000	3/24/2009	4/1/2019	10	7.15%	10	5.38%	6.67%
<b>Unsecured Notes</b>									
5	Senior Notes Due 2047 - 4.20% Coupon	\$300,000,000	6/15/2017	6/15/2047	30	4.20%	30	3.95%	4.28%
6	Senior Notes Due 2035 - 6.05% Coupon	\$250,000,000	11/17/2005	11/15/2035	30	6.05%	30	5.57%	6.02%
7	Senior Notes Due 2041 - 5.30% Coupon	\$400,000,000	9/20/2011	10/1/2041	30	5.30%	30	4.44%	5.07%
8	Senior Notes Due 2023 - 3.15% Coupon	\$300,000,000	3/14/2013	3/15/2023	10	3.15%	10	3.05%	3.65%
9	Senior Notes Due 2023 - 3.65% Coupon	\$350,000,000	8/13/2015	8/15/2025	10	3.65%	10	3.45%	3.83%
10	2018 Series Due 2028 - 4.94% Coupon	\$300,000,000	3/1/2018	3/1/2028	10	4.94%	10	N/A [1]	N/A
<b>Environmental Improvement Revenue Refunding Bonds</b>									
11	2007 Series A Due 2035	\$73,250,000	9/19/2007	9/1/2035	28	2.70%	30	6.31%	6.44%
12	2007 Series B Due 2035	\$73,250,000	9/19/2007	9/1/2035	28	2.70%	30	6.31%	6.44%
13	2008 Series Due 2038	\$23,400,000	5/28/2008	5/1/2038	30	2.88%	30	6.13%	6.47%
<b>TOTAL</b>		\$2,549,380,000			Weighted Average	4.77%		4.01%	4.55%

Sources: Schedule RBH-10 and Bloomberg Professional

[1] Date of Offering in the future.

Proxy Group Capital Structure											
Company	Ticker	% Common Equity									
		2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	2016Q2	2016Q1	2015Q4	Average	
ALLETE, Inc.	ALE	61.03%	60.62%	60.29%	59.02%	59.28%	59.08%	58.63%	58.04%	59.52%	59.28%
Alliant Energy Corporation	LNT	51.03%	50.17%	49.77%	49.65%	49.61%	50.02%	50.41%	50.00%	50.08%	50.08%
Ameren Corporation	AEE	53.00%	52.55%	52.21%	52.06%	53.40%	52.52%	52.24%	51.66%	52.45%	52.45%
American Electric Power Company, Inc.	AEP	49.16%	49.40%	49.71%	49.90%	49.81%	49.66%	49.13%	48.82%	49.45%	49.45%
Black Hills Corporation	BKH	54.75%	53.84%	53.20%	52.81%	52.73%	52.55%	52.57%	52.51%	53.12%	53.12%
CMS Energy Corporation	CMS	53.09%	52.81%	51.93%	51.07%	51.13%	52.14%	51.13%	50.46%	51.74%	51.74%
Dominion Resources, Inc.	D	50.84%	50.92%	50.94%	52.83%	54.62%	53.48%	52.85%	53.03%	52.44%	52.44%
DTE Energy Company	DTE	50.50%	50.63%	50.50%	50.50%	50.13%	49.35%	50.53%	50.39%	50.31%	50.31%
Duke Energy Corporation	DUK	53.78%	54.62%	54.37%	54.66%	54.58%	54.85%	56.18%	56.81%	54.89%	54.89%
El Paso Electric Company	EE	49.81%	48.01%	47.48%	47.73%	47.73%	46.22%	45.95%	49.86%	47.95%	47.95%
Hawaiian Electric Industries, Inc.	HE	58.11%	57.76%	57.71%	57.70%	58.00%	57.67%	57.51%	57.48%	57.74%	57.74%
IDACORP, Inc.	IDA	54.22%	53.48%	53.22%	53.15%	53.15%	52.46%	50.70%	52.34%	52.84%	52.84%
NorthWestern Corporation	NWE	48.86%	48.61%	48.13%	47.72%	47.66%	47.54%	47.31%	48.05%	48.05%	48.05%
OGE Energy Corp.	OGE	53.05%	52.75%	53.46%	56.09%	56.23%	55.50%	55.17%	54.30%	54.57%	54.57%
Otter Tail Corporation	OTTR	57.24%	55.31%	55.31%	55.06%	54.80%	54.15%	53.10%	52.75%	54.71%	54.71%
Pinnacle West Capital Corporation	PNW	53.05%	53.32%	53.20%	54.59%	54.70%	53.13%	55.54%	55.50%	54.13%	54.13%
PNM Resources, Inc.	PNM	47.41%	46.71%	46.20%	45.84%	45.90%	44.71%	45.17%	45.14%	45.89%	45.89%
Portland General Electric Company	POR	50.17%	50.32%	50.28%	49.82%	49.72%	49.64%	50.89%	50.61%	50.18%	50.18%
Southern Company	SO	49.47%	49.51%	50.17%	49.82%	49.64%	48.00%	46.40%	47.93%	48.74%	48.74%
WEC Energy Group, Inc.	WEC	55.68%	55.34%	54.66%	56.12%	56.07%	55.74%	55.66%	55.25%	55.57%	55.57%
Xcel Energy Inc.	XEL	53.93%	54.37%	54.94%	54.37%	53.45%	54.17%	54.68%	54.43%	54.29%	54.29%
Mean		52.77%	52.43%	52.29%	52.42%	52.45%	52.03%	52.01%	52.12%	52.32%	52.32%

Proxy Group Capital Structure											
Company	Ticker	% Long-Term Debt									
		2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	2016Q2	2016Q1	2015Q4	Average	
ALLETE, Inc.	ALE	39.87%	39.38%	39.72%	40.98%	40.72%	40.92%	41.17%	41.98%	40.48%	40.48%
Alliant Energy Corporation	LNT	46.93%	47.76%	48.09%	48.21%	48.20%	47.61%	47.19%	47.19%	47.69%	47.69%
Ameren Corporation	AEE	45.95%	46.39%	46.73%	46.88%	45.52%	46.37%	46.68%	47.26%	46.47%	46.47%
American Electric Power Company, Inc.	AEP	50.84%	50.60%	50.29%	50.10%	50.19%	50.34%	50.87%	51.18%	50.55%	50.55%
Black Hills Corporation	BKH	45.25%	46.16%	46.80%	47.19%	47.27%	47.45%	47.43%	47.49%	46.88%	46.88%
CMS Energy Corporation	CMS	46.60%	46.88%	47.75%	48.61%	48.54%	47.53%	48.41%	49.20%	47.94%	47.94%
Dominion Resources, Inc.	D	49.16%	49.08%	49.06%	47.17%	45.38%	46.52%	47.15%	46.97%	47.56%	47.56%
DTE Energy Company	DTE	49.50%	49.37%	49.50%	49.50%	49.87%	50.65%	49.47%	49.61%	49.69%	49.69%
Duke Energy Corporation	DUK	46.22%	45.38%	45.63%	45.34%	45.42%	45.15%	43.82%	43.19%	45.02%	45.02%
El Paso Electric Company	EE	50.19%	51.99%	52.52%	52.27%	52.27%	53.78%	54.05%	50.14%	52.15%	52.15%
Hawaiian Electric Industries, Inc.	HE	41.89%	42.24%	42.29%	42.30%	42.00%	42.33%	42.49%	42.52%	42.26%	42.26%
IDACORP, Inc.	IDA	45.78%	46.52%	46.78%	46.85%	46.85%	47.54%	49.30%	47.66%	47.16%	47.16%
NorthWestern Corporation	NWE	51.14%	51.39%	51.39%	51.87%	52.28%	52.34%	52.46%	52.69%	51.95%	51.95%
OGE Energy Corp.	OGE	46.95%	47.25%	46.54%	43.91%	43.77%	44.50%	44.83%	45.70%	45.43%	45.43%
Otter Tail Corporation	OTTR	42.76%	44.69%	44.69%	44.94%	45.20%	45.85%	46.90%	47.25%	45.29%	45.29%
Pinnacle West Capital Corporation	PNW	46.95%	46.68%	46.80%	45.41%	45.30%	46.87%	44.46%	44.50%	45.87%	45.87%
PNM Resources, Inc.	PNM	52.23%	52.91%	53.42%	53.78%	53.73%	54.90%	54.44%	54.66%	53.73%	53.73%
Portland General Electric Company	POR	49.43%	49.68%	49.72%	50.18%	50.28%	50.36%	49.11%	49.39%	49.82%	49.82%
Southern Company	SO	49.18%	49.49%	47.56%	47.78%	49.01%	49.62%	51.28%	49.70%	49.20%	49.20%
WEC Energy Group, Inc.	WEC	44.07%	44.40%	45.09%	43.63%	43.89%	44.02%	44.10%	44.51%	44.19%	44.19%
Xcel Energy Inc.	XEL	46.07%	45.63%	45.06%	45.63%	46.55%	45.32%	45.32%	45.57%	45.71%	45.71%
Mean		46.97%	47.35%	47.40%	47.26%	47.24%	47.64%	47.68%	47.59%	47.38%	47.38%

Operating Company Capital Structure											
Operating Company	Parent	% Common Equity									
		2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	2016Q2	2016Q1	2015Q4	Average	
ALLETE (Minnesota Power)	ALE	59.73%	59.16%	58.71%	56.92%	56.90%	56.63%	56.60%	55.86%	57.57%	57.57%
Superior Water, Light and Power Company	ALE	62.33%	62.08%	61.85%	61.12%	61.65%	61.52%	61.06%	60.23%	61.48%	61.48%
Interstate Power and Light Company	LNT	49.68%	48.78%	48.08%	48.09%	46.84%	48.15%	49.04%	48.44%	48.39%	48.39%
Wisconsin Power and Light Company	LNT	52.38%	51.58%	51.45%	51.22%	52.38%	51.78%	51.58%	51.78%	51.78%	51.78%
Ameren Illinois Company	AEE	54.40%	53.96%	53.50%	52.85%	55.18%	54.47%	53.06%	52.81%	53.78%	53.78%
Union Electric Company	AEE	51.61%	51.14%	50.92%	51.27%	51.62%	50.56%	51.42%	50.51%	51.13%	51.13%
AEP Texas Central Company	AEP	NA	NA	NA	46.01%	45.44%	45.01%	44.18%	43.63%	44.85%	44.85%
AEP Texas North Company	AEP	NA	NA	NA	43.29%	43.17%	42.84%	42.64%	42.36%	42.86%	42.86%
Appalachian Power Company	AEP	48.30%	47.85%	48.17%	46.89%	46.68%	46.41%	47.20%	46.77%	47.28%	47.28%
Indiana Michigan Power Company	AEP	46.65%	46.27%	49.54%	49.11%	49.03%	48.50%	48.26%	52.65%	48.75%	48.75%
Kentucky Power Company	AEP	43.22%	43.30%	43.57%	43.45%	43.52%	43.50%	43.58%	43.26%	43.43%	43.43%
Kingsport Power Company	AEP	45.88%	50.58%	48.98%	65.24%	65.24%	64.34%	65.21%	59.70%	58.14%	58.14%
Ohio Power Company	AEP	57.64%	56.72%	56.75%	56.51%	56.08%	54.87%	50.03%	50.09%	54.84%	54.84%
Public Service Company of Oklahoma	AEP	45.85%	42.76%	46.95%	48.47%	48.52%	47.42%	46.80%	47.37%	46.88%	46.88%
Southwestern Electric Power Company	AEP	48.68%	48.14%	48.33%	46.35%	46.12%	49.68%	49.51%	49.59%	48.24%	48.24%
Wheeling Power Company	AEP	54.13%	54.10%	54.10%	54.12%	54.31%	54.08%	53.90%	53.73%	54.06%	54.06%
Black Hills Colorado Electric Utility Company, LP	BKH	54.96%	55.01%	53.08%	52.20%	51.85%	51.39%	51.06%	50.85%	52.55%	52.55%
Black Hills Power, Inc.	BKH	56.14%	53.26%	53.24%	52.88%	53.13%	53.13%	53.27%	53.35%	53.55%	53.55%
Cheyenne Light, Fuel and Power Company	BKH	53.16%	53.27%	53.29%	53.35%	53.22%	53.14%	53.36%	53.32%	53.26%	53.26%
Consumers Energy Company	CMS	53.09%	52.81%	51.93%	51.07%	51.13%	52.14%	51.25%	50.46%	51.74%	51.74%
Virginia Electric and Power Company	D	50.84%	50.92%	50.94%	52.83%	54.62%	53.48%	52.85%	53.03%	52.44%	52.44%
DTE Electric Company	DTE	50.50%	50.63%	50.50%	50.50%	50.13%	49.35%	50.53%	50.39%	50.31%	50.31%
Duke Energy Carolinas, LLC	DUK	53.98%	53.49%	53.32%	52.81%	53.59%	53.84%	54.59%	58.07%	54.21%	54.21%
Duke Energy Florida, LLC	DUK	49.46%	47.74%	46.95%	50.83%	50.52%	53.43%	55.81%	55.28%	51.25%	51.25%
Duke Energy Indiana, LLC	DUK	51.71%	51.89%	52.15%	51.59%	51.14%	49.35%	50.89%	50.27%	51.12%	51.12%
Duke Energy Kentucky, Inc.	DUK	50.69%	55.74%	55.43%	54.74%	54.87%	54.14%	53.94%	56.11%	54.46%	54.46%
Duke Energy Ohio, Inc.	DUK	65.79%	65.38%	65.36%	66.39%	65.96%	65.21%	69.15%	68.71%	66.49%	66.49%
Duke Energy Progress, LLC	DUK	51.06%	53.51%	52.99%	51.58%	51.37%	53.15%	52.70%	52.40%	52.35%	52.35%
El Paso Electric Company	EE	49.81%	48.01%	47.48%	47.73%	47.73%	46.22%	45.95%	49.86%	47.85%	47.85%
Hawaiian Electric Light Company, Inc.	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	58.11%	57.76%	57.71%	57.70%	58.00%	57.67%	57.51%	57.48%	57.74%	57.74%
Mau Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Idaho Power Co.	IDA	54.22%	53.48%	53.22%	53.15%	53.15%	52.46%	50.70%	52.34%	52.84%	52.84%
NorthWestern Corporation	NWE	48.86%	48.61%	48.61%	48.13%	47.72%	47.66%	47.54%	47.31%	48.05%	48.05%
Oklahoma Gas and Electric Company	OGE	53.05%	52.75%	53.46%	56.09%	56.23%	55.50%	55.17%	54.30%	54.57%	54.57%
Otter Tail Power Company	OTTR	57.24%	55.31%	55.31%	55.06%	54.80%	54.15%	53.10%	52.75%	54.71%	54.71%
Ameren Public Service Company	PNW	53.05%	53.32%	53.20%	54.59%	54.70%	53.13%	55.54%	55.50%	54.13%	54.13%
Public Service Company of New Mexico	PNM	47.41%	46.71%	46.20%	45.84%	45.90%	44.71%	45.17%	45.14%	45.89%	45.89%
Texas-New Mexico Power Company	PNM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Portland General Electric Company	POR	50.17%	50.32%	50.28%	49.82%	49.72%	49.64%	50.89%	50.61%	50.18%	50.18%
Alabama Power Company	SO	46.20%	46.32%	46.07%	46.00%	46.31%	45.61%	45.51%	45.49%	45.94%	45.94%
Georgia Power Company	SO	49.78%	50.94%	49.77%	51.01%	51.08%	49.86%	49.87%	50.43%	50.34%	50.34%
Gulf Power Company	SO	54.97%	54.41%	55.63%	52.94%	50.68%	50.32%	48.03%	48.06%	51.89%	51.89%
Mississippi Power Company	SO	46.93%	46.37%	49.22%	49.34%	46.50%	46.23%	42.18%	47.77%	46.82%	46.82%
Wisconsin Electric Power Company	WEC	55.69%	55.48%	55.30%	56.46%	56.99%	56.87%	56.87%	56.97%	56.30%	56.30%
Wisconsin Public Service Corporation	WEC	55.68%	55.21%	54.02%	55.78%	55.15%	54.61%	54.65%	53.53%	54.83%	54.83%
Northern States Power Company - WI	XEL	52.22%	52.78%	52.62%	52.31%	52.08%	51.86%	53.68%	53.26%	52.60%	52.60%
Northern States Power Company - MN	XEL	55.57%	55.22%	55.66%	54.93%	54.89%	54.57%	54.43%	54.27%	54.94%	54.94%
Public Service Company of Colorado	XEL	55.64%	54.88%	57.00%	56.32%	56.37%	55.93%	56.49%	56.34%	56.12%	56.12%
Southwestern Public Service Company	XEL	52.29%	54.61%	54.48%	53.93%	50.45%	54.30%	54.13%	53.83%	53.50%	53.50%
Mean		52.48%	52.40%	52.37%	52.31%	52.18%	51.98%	51.93%	52.02%	52.07%	52.07%

Operating Company Capital Structure											
Operating Company	Parent	% Long Term Debt									
		2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	2016Q2	2016Q1	2015Q4	Average	
ALLETE (Minnesota Power)	ALE	40.27%	40.84%	41.29%	43.08%	43.10%	43.37%	43.40%	44.14%	42.43%	42.43%
Superior Water, Light and Power Company	ALE	37.67%	37.92%	38.15%	38.88%	38.35%					