

**BEFORE THE STATE CORPORATION COMMISSION  
OF THE STATE OF KANSAS**

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**DIRECT TESTIMONY**

**OF**

**ROBERT B. HEVERT**

**ON BEHALF OF  
WESTAR ENERGY**

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**IN THE MATTER OF THE JOINT APPLICATION OF  
WESTAR ENERGY, INC. AND KANSAS GAS AND  
ELECTRIC COMPANY FOR APPROVAL TO MAKE  
CERTAIN CHANGES IN THEIR CHARGES FOR  
ELECTRIC SERVICE**

**DOCKET NO. 18-WSEE-328 -RTS**

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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.
Price/Earnings (“P/E”) ratio	The market price per share divided by the annual earnings per share.
Proxy Group	A group of publicly traded companies used as the “proxy” for the subject company (in this case, Westar Energy, Inc.). 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 increases with inflation and decreases 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.

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## I. INTRODUCTION

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

A: My name is Robert B. Hevert. I am a Partner of ScottMadden, Inc. (“ScottMadden”). My business address is 1900 West Park Drive, Suite 250, Westborough, MA 01581.

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

A: I am submitting this direct testimony (“Direct Testimony”) before the Kansas Corporation Commission (“Commission”) on behalf of Westar Energy, Inc. (“Westar” or the “Company”).

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

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

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

A: I have worked in regulated industries for over twenty-five years, having served as an executive and manager with consulting firms, a financial officer of a publicly-traded natural gas utility (at the time, Bay State Gas Company), and an analyst at a telecommunications utility. In my role as a consultant, I have advised numerous energy and utility clients on a wide range of financial and economic issues, including corporate and asset-based transactions, asset and enterprise valuation, transaction due diligence, and strategic matters. As an expert witness, I have provided testimony in over 200 proceedings regarding various financial and regulatory matters before numerous state utility regulatory agencies, the Federal Energy Regulatory Commission (“FERC”), and the Alberta Utilities

1 Commission. A summary of my professional and educational background, including a list  
2 of my testimony in prior proceedings, is included in Attachment A to my Direct Testimony.

## 3 II. PURPOSE AND OVERVIEW OF TESTIMONY

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

5 A: On behalf of Westar, my Direct Testimony presents evidence and provides a  
6 recommendation regarding the Company's ROE,<sup>1</sup> and assesses the reasonableness of the  
7 Company's cost of debt. My analyses and conclusions are supported by the data presented  
8 in Schedules RBH-1 through RBH-9, which have been prepared by me or under my  
9 direction.

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

12 A: My analyses indicate that the Company's Cost of Equity currently is in the range of  
13 9.75 percent to 10.50 percent. Based on the quantitative and qualitative analyses discussed  
14 throughout my Direct Testimony, and given the financial, operating, and regulatory risks  
15 to which the Company is exposed, I find Westar's requested ROE of 9.85 percent to be a  
16 reasonable and appropriate, if not conservative estimate of its Cost of Equity.

17 As to the Company's 4.65 percent cost of debt, I note the underlying debt issuances  
18 reflect the prevailing level of interest rates at the times the debt was issued. Additionally,  
19 and as discussed in Section VIII, the Company's staggered maturity profile mitigates its  
20 refinancing risk. As such, I conclude the Company's proposed cost of debt is reasonable  
21 and appropriate.

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

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

1 A: Because all financial models are subject to various assumptions and constraints, equity  
2 analysts and investors tend to use multiple methods to develop their required returns. I  
3 therefore relied on three widely accepted approaches to develop my ROE recommendation:  
4 (1) the Capital Asset Pricing Model (“CAPM”); (2) the Bond Yield Plus Risk Premium  
5 approach; and (3) the Discounted Cash Flow (“DCF”) model, including the Constant  
6 Growth and Multi-Stage forms.

7 In addition to the approaches noted above, my estimate takes into consideration:  
8 (1) risks associated with the Company’s generation portfolio; (2) the regulatory  
9 environment in which Westar operates; and (3) the need to account for flotation costs.  
10 Although I did not make explicit adjustments to my ROE estimates for those factors, I did  
11 take them into consideration in determining where the Company’s Cost of Equity falls  
12 within the range of analytical results.

13 **Q: What are the key factors considered in your analyses and upon which you base your**  
14 **estimated ROE?**

15 A: My analyses and estimate considered the following:

- 16 • The *Hope* and *Bluefield* decisions<sup>2</sup> that established the standards for determining a fair  
17 and reasonable allowed ROE including: (1) consistency of the allowed return with other  
18 businesses having similar risk; (2) adequacy of the return to provide access to capital  
19 and support credit quality; and (3) the principle that the end result must lead to just and  
20 reasonable rates;
- 21 • The effect of the current capital market conditions on investors’ return requirements,  
22 in particular, the Company’s continued need to access the capital markets; and

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<sup>2</sup> *Bluefield Waterworks & Improvement Co., v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

- 1 • The Company’s business risks relative to the proxy group of comparable companies,  
2 and the implications of those risks in arriving at the appropriate ROE.

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

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

5 Section III – Discusses the regulatory guidelines and financial considerations  
6 pertinent to the development of the cost of capital;

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

9 Section V – Explains my analyses and the analytical bases for my ROE estimate;

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

12 Section VII – Briefly discusses the current capital market conditions and the effect  
13 of those conditions on the Company’s Cost of Equity;

14 Section VIII – Reviews the reasonableness of the Company’s cost of debt;

15 Section IX – Summarizes my conclusions.  
16

### III. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS

17 **Q: Please provide a brief summary of the guidelines established by the U.S. Supreme**  
18 **Court for the purpose of determining the ROE.**

19 A: The Court established the guiding principles for establishing a fair return for capital in two  
20 cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm’n*;<sup>3</sup> and  
21 (2) *Federal Power Comm’n v. Hope Natural Gas Co.*<sup>4</sup> In *Bluefield*, the Court stated:

22 A public utility is entitled to such rates as will permit it to earn a return

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<sup>3</sup> *Bluefield*, 262 U.S. 679 (1923).

<sup>4</sup> *Hope*, 320 U.S. 591 (1944).



1 upon the value of the property which it employs for the convenience of  
2 the public equal to that generally being made at the same time and in the  
3 same general part of the country on investments in other business  
4 undertakings which are attended by corresponding risks and  
5 uncertainties; but it has no constitutional right to profits such as are  
6 realized or anticipated in highly profitable enterprises or speculative  
7 ventures.

8 The return should be reasonably sufficient to assure confidence in the  
9 financial soundness of the utility and should be adequate, under efficient  
10 and economical management, to maintain and support its credit and  
11 enable it to raise the money necessary for the proper discharge of its  
12 public duties.<sup>5</sup>

13 The U.S. Supreme Court therefore has recognized that: (1) a regulated public utility  
14 cannot remain financially sound unless the return it is allowed to earn on its invested capital  
15 is at least equal to the cost of capital (the principle relating to the demand for capital); and  
16 (2) a regulated public utility will not be able to attract the capital it needs to provide utility  
17 service to its customers if it does not offer investors an opportunity to earn a return on their  
18 investment equal to the return they expect to earn on other investments of similar risk (the  
19 principle relating to the supply of capital).

20 In *Hope*, the Court reiterated the *Bluefield* financial integrity and capital attraction  
21 principles:

22 From the investor or company point of view it is important that there be  
23 enough revenue not only for operating expenses but also for the capital  
24 costs of the business. These include service on the debt and dividends  
25 on the stock. . . . By that standard the return to the equity owner should  
26 be commensurate with returns on investments in other enterprises  
27 having corresponding risks. That return, moreover, should be sufficient  
28 to assure confidence in the financial integrity of the enterprise, so as to  
29 maintain its credit and to attract capital.<sup>6</sup>

30 In summary, the U.S. Supreme Court clearly has recognized that the fair rate of  
31 return on equity should be: (1) comparable to returns investors expect to earn on other

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<sup>5</sup> *Bluefield*, 262 U.S., page 692.

<sup>6</sup> *Hope*, 320 U.S., page 603.

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

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

5 A: Yes. In a prior order, the Commission cited the *Hope* and *Bluefield* decisions and  
6 acknowledged its authority and responsibility to set “a fair rate of return,” stating that:

7 In addition to Kansas' own statutes and case law on the subject, the U.S.  
8 Supreme Court has established certain principles for the Commission to  
9 follow when reviewing rate change applications. *Bluefield Waterworks*  
10 *& Imp. Co. v. Pub. Serv. Comm 'n of W Va.*, 262 U.S. 679 (1923), and  
11 *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944),  
12 provide what this Commission has referred to as the "capital attraction  
13 standard." ... These standards taken together stand for the general idea  
14 that the return provided to a utility's investors should (1) be consistent  
15 with other businesses having similar risks and (2) the adequacy of the  
16 return for servicing debt and paying dividends be able to support a  
17 utility's credit quality, access to capital, and financial integrity.<sup>7</sup>

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

21 **Q: Aside from the standards established by the courts, why is it important for a public**  
22 **utility to be allowed the opportunity to earn a return that is adequate to attract equity**  
23 **capital at reasonable terms?**

24 A: A return that is adequate to attract capital at reasonable terms, under varying market  
25 conditions, will enable the subject utility to provide safe and reliable electric service while  
26 maintaining its financial integrity. Although the “capital attraction” and “financial  
27 integrity” standards are important principles in normal economic conditions, the practical

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<sup>7</sup> *In the Matter of the Application of Westar Energy, Inc. and Kansas Gas and Electric Company to Make Certain Changes in Their Charges for Electric Service*, Docket No. 15-WSEE-115-RTS, Order on Westar’s Application for Rate Change at p. 25-26 (Sep. 24, 2015).

1 implications of those standards are even more pronounced when, as with Westar, the  
2 subject company has continuing capital investment plans. As discussed throughout my  
3 testimony, those capital requirements, together with uncertainty in the equity market,  
4 heighten the importance of maintaining a financial profile that will enable access to capital  
5 at reasonable rates, even under constrained market conditions.

#### IV. PROXY GROUP SELECTION

6 **Q: As a preliminary matter, why is it necessary to select a group of proxy companies to**  
7 **determine the Cost of Equity for Westar?**

8 A: First, it is important to bear in mind that the Cost of Equity for a given enterprise depends  
9 on the risks attendant to the business in which it is engaged. According to financial theory,  
10 the value of a given company is equal to the aggregate market value of its constituent  
11 business units. The value of the individual business units reflects the risks and  
12 opportunities inherent in the business sectors in which those units operate. In this  
13 proceeding, we are focused on estimating the Cost of Equity for Westar. Because the ROE  
14 is a market-based concept, it is necessary to establish a group of companies that are both  
15 publicly traded and comparable to Westar in certain fundamental respects to serve as its  
16 “proxy” in the ROE estimation process.

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

19 A: Not necessarily. The Constant Growth DCF approach, for example, defines the Cost of  
20 Equity as the sum of the expected dividend yield and projected long-term growth.  
21 Notwithstanding the care taken to ensure risk comparability, market expectations with  
22 respect to future risks and growth opportunities will vary from company to company.

1 Therefore, even within a group of similarly situated companies, it is common for analytical  
2 results to reflect a seemingly wide range. At issue, then, is how to determine where the  
3 ROE falls within that range. That determination necessarily must consider both empirical  
4 and qualitative information.

5 **Q: Please provide a summary profile of Westar.**

6 A: Westar provides electric generation, transmission, and distribution services to  
7 approximately 700,000 customers in central and northeastern Kansas.<sup>8</sup> Westar has  
8 corporate credit ratings of BBB+ (Outlook: Positive) and Baa1 (Outlook: Stable) from S&P  
9 and Moody's Investors Service ("Moody's"), respectively.

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

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

- 13 • I excluded companies that do not consistently pay quarterly cash dividends;
- 14 • I excluded companies that were not covered by at least two utility industry equity  
15 analysts;
- 16 • I excluded companies that do not have investment grade senior unsecured bond  
17 and/or corporate credit ratings from S&P;
- 18 • I excluded companies that were not vertically-integrated, *i.e.* utilities that own and  
19 operate regulated generation, transmission and distribution assets;
- 20 • I excluded any companies whose regulated operating income over the three most  
21 recently reported fiscal years comprised less than 60.00 percent of the respective  
22 totals for that company;

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<sup>8</sup> Westar Energy, Inc., SEC Form 10-K for the fiscal year ended December 31, 2016, at 7.

- 1           • I excluded any companies whose regulated electric operating income over the three  
2           most recently reported fiscal years represented less than 60.00 percent of total  
3           regulated operating income; and
- 4           • I eliminated companies that are currently known to be party to a merger, or other  
5           significant transaction.

6   **Q: Did you include Westar Energy, Inc. in your analysis?**

7   A: No. It has been my consistent practice to exclude the subject company (or its parent) from  
8   the proxy group. In any case, Westar would not have met my screening criteria due to its  
9   pending merger with Great Plains.

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

11 A: The criteria discussed above resulted in a proxy group of the following twenty-one  
12 companies:

**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 Resources, Inc.	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 property, plant and equipment. The overall rate of return (“ROR”) for a regulated utility  
5 is based on its weighted average cost of capital, in which the cost rates of the individual  
6 sources of capital are weighted by their respective book values. Whereas the cost of debt

1 and cost of preferred stock can be directly observed, the Cost of Equity is market-based  
2 and, therefore, must be estimated based on observable market information, and the  
3 application of various financial models.

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

5 A: The required ROE is estimated by using one or more analytical techniques that rely on  
6 market-based data to quantify investor expectations regarding required equity returns,  
7 adjusted for certain incremental costs and risks. By their nature, quantitative models  
8 produce a range of results from which the market required ROE must be estimated. As  
9 discussed throughout my Direct Testimony, that estimation must be based on a  
10 comprehensive review of relevant data and information, and does not necessarily lend itself  
11 to a strict mathematical solution. Consequently, the key consideration in determining the  
12 Cost of Equity is to ensure that the methods employed reasonably reflect investors' views  
13 of the financial markets in general, and the subject company (in the context of the proxy  
14 group) in particular.

15 **Q: What methods did you use to estimate the Company's Cost of Equity?**

16 A: I used the CAPM, Bond Yield Plus Risk Premium approach, and Constant Growth and  
17 Multi-Stage forms of the DCF model in developing my ROE estimate.

18 **Q: Why is it important to use more than one analytical approach?**

19 A: As noted earlier, the Cost of Equity is not directly observable and therefore must be  
20 estimated based on both quantitative and qualitative information. As a result, a number of  
21 models have been developed to estimate the Cost of Equity. As a practical matter, all  
22 models available to estimate the Cost of Equity are subject to limiting assumptions or other  
23 methodological constraints. When faced with the task of estimating the Cost of Equity,  
24 analysts and investors are inclined to gather and evaluate as much relevant data as

1 reasonably can be analyzed and, therefore, are inclined to rely on multiple analytical  
2 approaches. Consequently, many finance texts recommend using multiple approaches  
3 when estimating the Cost of Equity.

4 In essence, practitioners and academics recognize financial models simply are tools  
5 to be used in the ROE estimation process, and the strict adherence to any single approach,  
6 or to the specific results of any single approach, can lead to flawed or misleading  
7 conclusions. That position is consistent with the U.S. Supreme Court's holdings in *Hope*  
8 and *Bluefield* that it is the result reached, rather than the methodology employed, that is  
9 controlling in arriving at ROE determinations. A reasonable ROE estimate therefore  
10 considers alternative methods, and the reasonableness of their individual and collective  
11 results.

12 Consequently, it is both prudent and appropriate to use multiple methodologies in  
13 order to mitigate the effects of assumptions and inputs associated with relying exclusively  
14 on any single approach. Such use, however, must be tempered with due caution as to the  
15 results generated by each individual approach. Therefore, I have considered the Constant  
16 Growth and Multi-Stage forms of the DCF model, the CAPM, and the Bond Yield Plus  
17 Risk Premium approach in arriving at my ROE estimate. Lastly, for the reasons discussed  
18 above, I would view conclusions reached based on a single method, or by giving undue  
19 weight to a particular method, with considerable caution.

## 20 **A. Capital Asset Pricing Model Analysis**

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

22 A: The CAPM analysis is a risk premium approach that estimates the Cost of Equity for a  
23 given security as a function of a risk-free return plus a risk premium (to compensate  
24 investors for the non-diversifiable or "systematic" risk of that security). As shown in



1 Equation [1], the CAPM is defined by four components, each of which theoretically must  
2 be a forward-looking estimate:

$$3 \quad k = r_f + \beta(r_m - r_f) \quad [1]$$

4 where:

5  $k$  = the required market ROE;

6  $\beta$  = Beta coefficient of an individual security;

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

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

9 In Equation [1], the term  $(r_m - r_f)$  represents the Market Risk Premium. According to the  
10 theory underlying the CAPM, because unsystematic risk can be diversified away by adding  
11 securities to their investment portfolio, investors should be concerned only with systematic  
12 or non-diversifiable risk. Non-diversifiable risk is measured by the Beta coefficient, which  
13 is defined as:

$$14 \quad \beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} \quad [2]$$

15 where  $\sigma_j$  is the standard deviation of returns for company “j”;  $\sigma_m$  is the standard deviation  
16 of returns for the broad market (as measured, for example, by the S&P 500 Index), and  
17  $\rho_{j,m}$  is the correlation of returns in between company  $j$  and the broad market. The Beta  
18 coefficient therefore represents both relative volatility (*i.e.*, the standard deviation) of  
19 returns, and the correlation in returns between the subject company and the overall market.

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

1 A: Because utility assets represent long-term investments, I used two different estimates of  
2 the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (*i.e.*, 2.83  
3 percent); and (2) the near-term projected 30-year Treasury yield (*i.e.*, 3.30 percent).<sup>9</sup>

4 **Q: What Market Risk Premium did you use in your CAPM analysis?**

5 A: To reflect current market expectations, I developed two forward-looking (*ex-ante*)  
6 estimates of the Market Risk Premium.

7 **Q: Please describe your ex-ante approach to estimating the Market Risk Premium.**

8 A: The approach is based on the market required return, less the current 30-year Treasury  
9 bond yield. To estimate the market required return, I calculated the market capitalization  
10 weighted average ROE based on the Constant Growth DCF model (which is discussed  
11 below). To do so, I relied on data from both Bloomberg and Value Line. With respect to  
12 Bloomberg-derived growth estimates, I calculated the expected dividend yield (using the  
13 same one-half growth rate assumption described below), and combined that amount with  
14 the projected earnings growth rate to arrive at the market capitalization weighted average  
15 DCF result. I performed that calculation for each S&P 500 company for which Bloomberg  
16 provided consensus growth rates. I then subtracted the current 30-year Treasury yield from  
17 that amount to arrive at the market DCF-derived *ex-ante* Market Risk Premium estimate.  
18 In the case of Value Line, I performed the same calculation, again using all companies for  
19 which five-year earnings growth rates were available. The results of those calculations are  
20 provided in Schedule RBH-2.

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

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<sup>9</sup> Blue Chip Financial Forecasts, Vol. 36, No. 12, December 1, 2017, page 2.

1 A: I relied on each of the *ex-ante* Market Risk Premiums discussed above, together with the  
2 current and near-term projected 30-year Treasury bond yields as inputs to my CAPM  
3 analyses.

4 **Q: What Beta coefficients did you use in your CAPM analysis?**

5 A: My analysis includes reported Beta coefficients from Bloomberg and Value Line (*see*  
6 Schedule RBH-3). Although both services adjust their calculated (or “raw”) Beta  
7 coefficients to reflect the tendency of the Beta coefficient to regress to the market mean of  
8 1.00, Value Line calculates the Beta coefficient over a five-year period, whereas  
9 Bloomberg’s calculation is based on two years of data.

10 **Q: What are the results of your CAPM analyses?**

11 A: The results of my CAPM analysis are summarized in Table 2, below (*see also* Schedule  
12 RBH-1).

13 **Table 2: Summary of CAPM Results**

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.83%)	9.10%	9.58%
Near Term Projected 30-Year Treasury (3.30%)	9.57%	10.05%
<i>Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.83%)	10.55%	11.15%
Near Term Projected 30-Year Treasury (3.30%)	11.02%	11.62%

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15 **B. Bond Yield Plus Risk Premium Approach**

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

17 A: In general terms, this approach is based on the fundamental principle that equity investors  
18 bear the residual risk associated with ownership and therefore require a premium over the

1 return they would have earned as a bondholder. That is, because returns to equity holders  
2 are more risky than returns to bondholders, equity investors must be compensated for  
3 bearing that risk. Risk premium approaches, therefore, estimate the Cost of Equity as the  
4 sum of the Equity Risk Premium and the yield on a particular class of bonds. As noted in  
5 my discussion of the CAPM, because the Equity Risk Premium is not directly observable,  
6 it typically is estimated using a variety of approaches, some of which incorporate *ex-ante*,  
7 or forward-looking estimates of the Cost of Equity, and others that consider historical, or  
8 *ex-post*, estimates. An alternative approach is to use actual authorized returns for electric  
9 utilities to estimate the Equity Risk Premium.

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

11 A: As discussed above, I first defined the Risk Premium as the difference between the  
12 authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yields.  
13 I then gathered data from approximately 1,530 electric utility rate proceedings between  
14 January 1980 and November 30, 2017. In addition to the authorized ROE, I calculated the  
15 average period between the filing of the case and the date of the final order (the “lag  
16 period”). In order to reflect the prevailing level of interest rates during the pendency of the  
17 proceedings, I calculated the average 30-year Treasury yield over the average lag period  
18 (approximately 200 days).

19 Because the data covers a number of economic cycles,<sup>10</sup> the analysis also may be  
20 used to assess the stability of the Equity Risk Premium. Prior research, for example, has  
21 shown that the Equity Risk Premium is inversely related to the level of interest rates,<sup>11</sup>

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<sup>10</sup> National Bureau of Economic Research, U.S. Business Cycle Expansion and Contractions.

<sup>11</sup> See, e.g., Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, pages 63-70; 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, pages 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Autumn 1995, pages 89-95.

1 which also explains why the cost of equity and debt for utilities do not move in lockstep.  
2 That analysis is particularly relevant given the historically low level of current Treasury  
3 yields.

4 **Q: How did you model the relationship between interest rates and the Equity Risk**  
5 **Premium?**

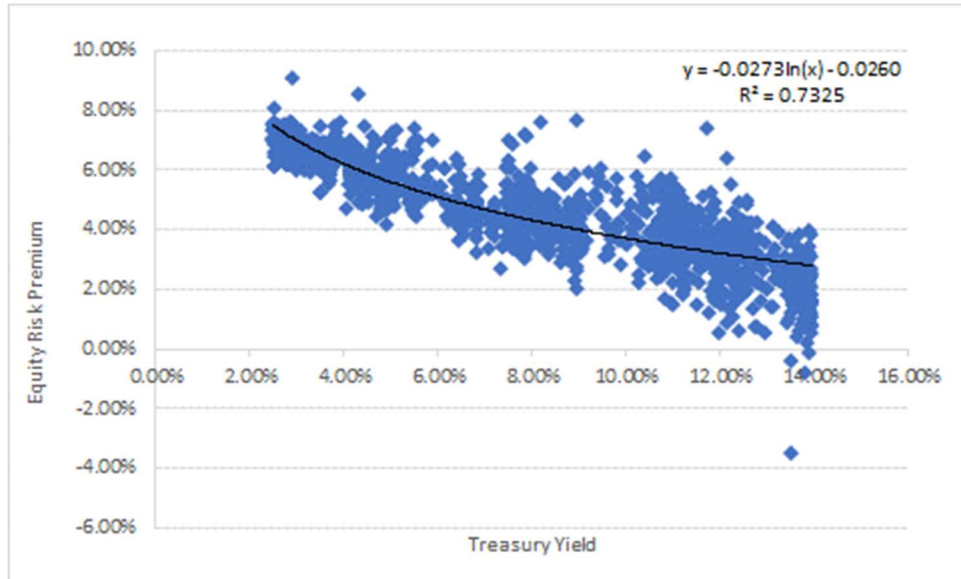
6 A: The basic method used was regression analysis, in which the observed Equity Risk  
7 Premium is the dependent variable, and the average 30-year Treasury yield is the  
8 independent variable. Because the analytical period includes interest rates and authorized  
9 ROEs that during one period (*i.e.*,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

13 
$$RP = \alpha + \beta(\text{LN}(T_{30})) \quad [3]$$

14 As shown on Chart 1 (below), the semi-log form is useful when measuring an absolute  
15 change in the dependent variable (in this case, the Risk Premium) relative to a proportional  
16 change in the independent variable (the 30-year Treasury yield).

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**Chart 1: Equity Risk Premium**



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As Chart 1 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 4.60 percent (see Schedule RBH-4) would significantly understate the Cost of Equity. Assuming the current projected 30-year Treasury yield of 2.83 percent, for example, the simple average Equity Risk Premium would suggest an ROE of 7.43 percent. That, of course, is well below any reasonable estimate. Based on the regression coefficients in Chart 1, however, the implied ROE is between 9.97 percent and 10.26 percent (see Schedule RBH-4).

11

**Table 3: Summary of Bond Yield Plus Risk Premium Results**

Current 30-Year Treasury (2.83%)	9.97%
Near Term Projected 30-Year Treasury (3.30%)	10.02%
Long Term Projected 30-Year Treasury (4.20%)	10.26%

12

13

**C. Constant Growth DCF Model**

14

**Q: Please describe the DCF approach.**

1 A: The DCF approach is based on the theory that a stock's current price represents the present  
2 value of all expected future cash flows. In its simplest form, the DCF model expresses the  
3 Cost of Equity as the sum of the expected dividend yield and long-term growth rate, and is  
4 expressed as follows:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [4]$$

5 Where  $P$  represents the current stock price,  $D_1 \dots D_\infty$  represent expected future dividends,  
6 and  $k$  is the discount rate, or required ROE. Equation [4] is a standard present value  
7 calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D_0(1+g)}{P} + g \quad [5]$$

9 Equation [5] often is referred to as the "Constant Growth DCF" model, in which  $D_0$  is the  
10 expected dividend yield and  $g$  is the expected long-term annual growth rate.

11 **Q: What simplifying assumptions are required for the Constant Growth DCF model?**

12 A: The Constant Growth DCF model requires the following assumptions: (1) a constant  
13 average annual growth rate for earnings and dividends; (2) a stable dividend payout ratio;  
14 (3) a constant Price/Earnings multiple; and (4) a discount rate greater than the expected  
15 growth rate.

16 **Q: What market data did you use to calculate the dividend yield component of your DCF  
17 model?**

18 A: The dividend yield is based on the proxy companies' current annualized dividend, and  
19 average closing stock prices over the 30-, 90- and 180-trading day periods as of November  
20 30, 2017.

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

22 A: I did so to ensure that the model's results are not skewed by anomalous events that may  
23 affect stock prices on any given trading day. At the same time, the averaging period should

1 be reasonably representative of expected capital market conditions over the long term. In  
2 my view, the use of the 30-, 90- and 180-day averaging periods reasonably balances those  
3 concerns.

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

6 A: Yes, I did. Because utility companies tend to increase their quarterly dividends at different  
7 times throughout the year, it is reasonable to assume that dividend increases will be evenly  
8 distributed over calendar quarters, rather than as a single, year-end payment (as the  
9 Constant Growth model assumes). One method of reflecting the quarterly payment  
10 schedule is to apply one-half of the long-term growth rate to the current dividend yield.<sup>12</sup>

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

13 A: Yes. In its Constant Growth form, the DCF model (*i.e.*, as presented in Equation [5] above)  
14 assumes a single growth estimate in perpetuity. In order to reduce the long-term growth  
15 rate to a single measure, one must assume a constant payout ratio, and that earnings per  
16 share (“EPS”), dividends per share (“DPS”) and book value per share all grow at the same,  
17 constant rate in perpetuity. Over the long term, however, dividend growth can only be  
18 sustained by earnings growth. Consequently, it is important to incorporate measures of  
19 long-term earnings growth into the Constant Growth DCF model.

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

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

---

<sup>12</sup> See Schedule RBH-5.



1                   • The average daily closing prices for the 30 trading days, 90 trading days and  
2                   180 trading days ended November 30, 2017, for the term  $P_0$ ; and

3                   • The annualized dividend per share as of November 30, 2017, for the term  $D_0$ .

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

5                   • The Zacks consensus long-term earnings growth estimates;

6                   • The First Call consensus long-term earnings growth estimates; and

7                   • The Value Line long-term earnings growth estimates.

8 **Q: How did you calculate the high and low DCF results?**

9 A: I calculated the proxy group mean high DCF result using the maximum EPS growth rate  
10 reported by Value Line, Zacks, and First Call, combined with the dividend yield for each  
11 proxy company. The average mean high result then reflects the average maximum DCF  
12 result for the proxy group as a whole. Likewise, the median high result reflects the median  
13 of the maximum DCF results for the proxy group as a whole. I used a similar approach to  
14 calculate the proxy group mean and median low results, using instead the minimum growth  
15 rate reported by Value Line, Zacks and First Call for each proxy company.

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

17 A: My Constant Growth DCF results are summarized in Table 4, below (*see* also Schedule  
18 RBH-5).

1

**Table 4: Constant Growth DCF Results**

	<i>Low Growth Rate</i>	<i>Mean Growth Rate</i>	<i>High Growth Rate</i>
30-Day Average	7.35%	8.20%	9.03%
90-Day Average	7.42%	8.27%	9.10%
180-Day Average	7.50%	8.35%	9.18%

2

The Constant Growth DCF model is predicated on a number of simplifying assumptions, one of which is that the Price/Earnings ratio will remain constant, in perpetuity. Because the utility sector P/E ratios have expanded to the point that they recently have exceeded both their long-term average and the market P/E ratio, Constant Growth DCF model results should be viewed with caution, as they may, under current circumstances, understate the true cost of capital, as implied in these results relative to the results from other methods I employed.

9

Further, the model assumes the return estimated today will be the same return required in the future, even though, for example, the Federal Reserve only recently has begun its move toward monetary policy normalization. That process of normalization, together with the uncertainty surrounding the “unwinding” of the assets put on the Federal Reserve’s balance sheet during its “Quantitative Easing” initiatives, introduces both a degree of risk and a likelihood of increasing interest rates not present in the current market. As discussed above, other methods more directly reflect changing capital market conditions and the risk premium required by investors in response to such risks.

17

As a practical matter, the mean Constant Growth DCF results are well below a highly observable and relevant benchmark—the returns authorized for vertically integrated electric utilities. On balance, it is my view that the Constant Growth DCF method should be given less weight than other methods in establishing the Company’s ROE.

20

1       **D. Multi-Stage DCF Model**

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

3       A:     To address limiting assumptions underlying the Constant Growth form of the DCF model,  
4             I also applied the Multi-Stage (three-stage) Discounted Cash Flow Model. The Multi-  
5             Stage DCF model, which is an extension of the Constant Growth form and has been applied  
6             in regulatory proceedings, enables the analyst to specify growth rates over three distinct  
7             stages. As with the Constant Growth form of the DCF model, the Multi-Stage form defines  
8             the Cost of Equity as the discount rate setting the current price equal to the discounted  
9             value of future cash flows. Unlike the Constant Growth form, however, the Multi-Stage  
10            model must be solved in an iterative fashion.

11      **Q:     Is the Multi-Stage form of the DCF method commonly considered in regulatory**  
12            **proceedings?**

13      A:     Yes, it is. In my experience, forms of the Multi-Stage DCF approach have been presented  
14             and accepted in regulatory proceedings. For example, the Colorado Public Utilities  
15             Commission found the Multi-Stage DCF approach to be “a rational, model-based approach  
16             supported by the evidence.”<sup>13</sup>

17      **Q:     Please summarize why you have included the Multi-Stage DCF model among those**  
18            **used to estimate the Cost of Equity.**

19      A:     First, it is both prudent and appropriate to use multiple methodologies to mitigate the  
20             effects of assumptions and inputs associated with any single approach. Second, the  
21             Constant Growth DCF model assumes earnings, dividends, and book value will grow at  
22             the same, constant rate in perpetuity; that the payout ratio will remain constant in

---

<sup>13</sup> Colorado Public Utilities Commission, Proceeding No. 12-AL-1268G, Decision No. C13-15687, at P 36 (December 11, 2013). *See also*, Colorado Public Utilities Commission, Proceeding No. 12-AL-1268G, Recommended Decision of ALJ, Decision No. R13-1307, at PP 318 and 321 (October 22, 2013).

1 perpetuity; and that the Price/Earnings ratio will remain constant; all things we know to be  
2 over-simplifying assumptions. The model further assumes that the return required today  
3 will be the same return required every year in the future. Those assumptions, however, are  
4 not likely to hold. In particular, it is reasonable to expect that over time, payout ratios will  
5 increase from their current levels toward the industry long-term average and, to the extent  
6 long-term interest rates increase over the next few years, it is likely the Cost of Equity also  
7 will increase. In my view, the Multi-Stage DCF model enables analysts to consider those  
8 issues, and to address the limiting and likely unrealistic assumptions underlying the  
9 Constant Growth form of the model.

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

11 A: As noted above, the model sets the subject company's stock price equal to the present value  
12 of future cash flows received over three "stages." In the first two stages, "cash flows" are  
13 defined as projected dividends. In the third stage, "cash flows" equal both dividends and  
14 the expected price at which the stock will be sold at the end of the period (*i.e.*, the "terminal  
15 price"). I calculated the terminal price alternately using (1) the Gordon model, which  
16 defines the price as the expected dividend divided by the difference between the Cost of  
17 Equity (*i.e.*, the discount rate) and the long-term expected growth rate; and (2) a terminal  
18 P/E value. In essence, the terminal price is defined by the present value of the remaining  
19 "cash flows" in perpetuity. In each stage, the dividend is the product of the projected  
20 earnings per share and the expected dividend payout ratio. A summary description of the  
21 model is provided in Table 5 (below).

1

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

<b>Stage</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
Cash Flow Component	Initial Stock Price	Expected Dividend	Expected Dividend	Expected Dividend + Horizon Value
Inputs	Stock Price; EPS; DPS	Expected EPS; Expected Payout Ratio	Expected EPS; Expected Payout Ratio	Expected EPS; Expected DPS; Horizon Value
Assumptions	30-, 90-, and 180-day average stock price	EPS Growth Rate; Expected Payout Ratio	Growth Rate Change; Payout Ratio Change	Long-term Growth Rate; Long-term Payout Ratio; P/E Ratio

2

3 **Q: What are the analytical benefits of your three-stage model?**

4 A: The principal benefits relate to the flexibility provided by the model’s structure. Because  
5 it provides the ability to specify near-term, intermediate, and long-term growth rates, for  
6 example, the model avoids the sometimes-limiting assumption that the subject company  
7 will grow at the same, constant rate in perpetuity. In addition, by calculating the dividend  
8 as the product of earnings and the payout ratio, the model enables analysts to reflect  
9 assumptions regarding the timing and extent of changes in the payout ratio to reflect, for  
10 example, increases or decreases in expected capital spending, or transition from current  
11 payout levels to long-term expected levels. In that regard, because the model is not limited  
12 to a single provider, such as Value Line, for all inputs, it mitigates the potential bias  
13 associated with relying on a single source of growth rate projections.<sup>14</sup>

14 The Multi-Stage model also enables the analyst to assess the reasonableness of the  
15 inputs and results by reference to certain market-based metrics. For example, the terminal

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<sup>14</sup> See, for example, Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts’ Growth Forecasts*, Financial Management, 21 (Summer 1992).

1 stock price can be divided by the expected earnings per share in the terminal year to  
 2 calculate the expected P/E ratio. Similarly, the terminal P/E ratio can be divided by the  
 3 terminal growth rate to develop a Price to Earnings Growth (“PEG”) ratio. To the extent  
 4 the projected P/E or PEG ratios are inconsistent with historical experience, it may indicate  
 5 incorrect or inconsistent assumptions within the balance of the model.

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

7 A: I applied the Multi-Stage model to the proxy group described earlier in my Direct  
 8 Testimony. My assumptions with respect to the various model inputs are described in  
 9 Table 6 (below).

10 **Table 6: Multi-Stage DCF Model Assumptions**

<b>Stage</b>	<b>Initial</b>	<b>First</b>	<b>Second</b>	<b>Third</b>
Stock Price	30-, 90-, and 180-day average stock price as of November 30 , 2017			
Earnings Growth	2016 actual EPS escalated by Period 1 growth rate	EPS growth as average of: (1) Value Line; (2) Zacks; (3) First Call	Transition to Long-term GDP growth	Long-term GDP growth
Payout Ratio		Value Line company-specific	Transition to long-term industry payout ratio	Long-term expected payout ratio
Terminal Value				Gordon model; or P/E ratio

11  
 12 **Q: How did you calculate the long-term GDP growth rate?**

13 A: The long-term growth rate of 5.37 percent is based on the real GDP growth rate of 3.22  
 14 percent from 1929 through 2016, and an inflation rate of 2.08 percent. The GDP growth

1 rate is calculated as the compound growth rate in the chain-weighted GDP for the period  
2 from 1929 through 2016.<sup>15</sup> The rate of inflation of 2.08 percent is an average of two  
3 components: (1) the compound annual forward rate starting in ten years (*i.e.*, 2027, which  
4 is the beginning of the terminal period) based on the 30-day average spread between yields  
5 on long-term nominal Treasury Securities and long-term Treasury Inflation Protected  
6 Securities, known as the “TIPS spread” of 1.96 percent;<sup>16</sup> and (2) and the projected Blue  
7 Chip Financial Forecast of the CPI for 2024 – 2028 of 2.20 percent.<sup>17</sup>

8 The real GDP growth rate projection is based on the assumption that, absent  
9 specific knowledge to the contrary, it is reasonable to assume that over time, real GDP  
10 growth will revert to its long-term mean. In addition, because estimating the Cost of Equity  
11 is a market-based exercise, it is important to reflect, to the extent possible, the sentiments  
12 and expectations of investors; those expectations are directly captured in the market-based  
13 measure of inflation. In that important respect, the TIPS spread represents the collective  
14 views of investors regarding long-term inflation expectations. Equally important, by using  
15 forward yields, we are able to infer the level of long-term inflation expected by investors  
16 as of the terminal period of the Multi-Stage model (that is, ten years in the future).

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

18 A: As noted in Table 6, for the first two periods I relied on the first year and long-term  
19 projected payout ratios reported by Value Line<sup>18</sup> for each of the proxy group companies. I

---

<sup>15</sup> See, Bureau of Economic Analysis, “Current-Dollar and ‘Real’ Gross Domestic Product,” November 30, 2017 update. Chain-weighted real GDP is measured by continually shifting the base year forward, and is used by the BEA to account for the changing value and quality of goods over time.

<sup>16</sup> See, Board of Governors of the Federal Reserve System, “Table H.15 Selected Interest Rates.”

<sup>17</sup> *Blue Chip Financial Forecasts*, December 1, 2017, at 14.

<sup>18</sup> As reported in the Value Line Investment Survey as “All Div’ds to Net Prof.”

1 then assumed that, by the end of the second period (*i.e.*, the end of year 10), the payout  
2 ratio will converge to the long-term industry average of 65.91 percent.<sup>19</sup>

3 **Q: What was your principal assumption regarding the horizon value?**

4 A: Although I performed a series of analyses in which the horizon value (*i.e.*, the terminal  
5 price at which the stock is assumed to be sold) is calculated based on the assumed long-  
6 term nominal GDP growth rate,<sup>20</sup> I also performed a series of analyses in which the horizon  
7 value is based on the current P/E ratio.<sup>21</sup> The results of that analysis are shown in Table 7,  
8 below.

9 **Table 7: Multi-Stage DCF Results, Terminal P/E Method<sup>22</sup>**

	<i>Low</i>	<i>Mean</i>	<i>High</i>
30-Day Average	8.86%	9.38%	9.87%
90-Day Average	9.07%	9.59%	10.09%
180-Day Average	9.29%	9.81%	10.31%

10  
11 **Q: What are the implications of Price/Book Ratios in excess of unity for the DCF model?**

12 A: It is important to recall that traditional cost of service-based regulation, in which the  
13 market-based Cost of Equity is applied to the book value of net assets (generally speaking,  
14 the rate base), presumes that Price-to-Book (“P/B”, sometimes referred to as Market-to-  
15 Book, or “M/B”) ratios are at unity. That is, the approach assumes that the market value  
16 of equity equals the book value of equity. However, that is rarely the case. As Dr. Roger  
17 Morin, the author of a widely referenced treatise regarding regulatory finance, states:

18 The third and perhaps most important reason for caution and skepticism  
19 is that application of the DCF model produces estimates of common

---

<sup>19</sup> Source: Bloomberg Professional. The assumption of mean reversion in payout ratios is consistent with published texts. As noted by Morin, “Most firms, including utilities, tend to maintain a fixed payout ratio when it is averaged over several years.” See Roger A. Morin, PhD, New Regulatory Finance, Public Utilities Reports, June 2006, at 258.

<sup>20</sup> See, Schedule RBH-6, pages 1 to 27.

<sup>21</sup> Defined as the 30-day average of the proxy group P/E ratio, calculated as an index.

<sup>22</sup> See, Schedule RBH-6, pages 28 to 54.



1 equity cost that are consistent with investors' expected return only when  
2 stock price and book value are reasonably similar, that is, when the M/B  
3 is close to unity. As shown below, application of the standard DCF  
4 model to utility stocks *understates* the investor's expected return when  
5 the market-to-book (M/B) ratio of a given stock exceeds unity. This  
6 was particularly relevant in the capital market environment of the 1990s  
7 and 2000s where utility stocks were trading at M/B ratios well above  
8 unity and have been for nearly two decades. The converse is also true,  
9 that is, the DCF model overstates the investor's return when the stock's  
10 M/B ratio is less than unity. The reason for the distortion is that the  
11 DCF market return is applied to a book value rate base by the regulator,  
12 that is, a utility's earnings are limited to earnings on a book value rate  
13 base.<sup>23</sup>

14 Because the Constant Growth DCF model traditionally used in rate regulation  
15 assumes a P/B ratio of unity, it understates/overstates investors' required return rate when  
16 market value exceeds or is less than book value. It does so because investors evaluate and  
17 receive their returns on the market value of a utility's equity, whereas regulators authorize  
18 returns on book common equity. Consequently, the market-based DCF model will result  
19 in a total annual dollar return on book common equity equal to the total annual dollar return  
20 expected by investors only when market and book values are equal, a rare and unlikely  
21 situation.

22 The under- or over-statement of investors' required rate of return on the market by  
23 the Constant Growth DCF model is demonstrated mathematically on Schedule RBH-7.  
24 Using a market-based hypothetical DCF cost rate of 10.00 percent results in an  
25 understatement of approximately 445 basis points (4.45 percent) when applied to a book  
26 value rate base with a hypothetical market-to-book ratio of 180.00 percent. Conversely,  
27 with a hypothetical market-to-book ratio of 80.00 percent, the 10.00 percent market-based  
28 DCF cost rate results in an overstatement of the investor required return by 250 basis points  
29 (2.50 percent).

---

<sup>23</sup> Roger A. Morin, *New Regulatory Finance* (Public Utility Reports, Inc., 2006), at 434 [emphasis added].

1           Although the P/B ratios are often viewed as informative in assessing the market-  
2 required Cost of Equity, it is also true that market values diverge from book values for  
3 many reasons, including, but not limited to, the long life of utility assets in relation to price  
4 inflation over time, growth expectations, and recent or expected transactions. The finding  
5 that regulation may not necessarily result in P/B ratios approaching unity has long been  
6 observed. As noted by Phillips:

7           Many question the assumption that market price should equal book  
8 value, believing that ‘the earnings of utilities should be sufficiently high  
9 to achieve market-to-book ratios which are consistent with those  
10 prevailing for stocks of unregulated companies.’<sup>24</sup>

11          In addition, Bonbright states:

12           In the first place, commissions cannot forecast, except within wide  
13 limits, the effect their rate orders will have on the market prices of the  
14 stocks of the companies they regulate. In the second place, whatever  
15 the initial market prices may be, they are sure to change not only with  
16 the changing prospects for earnings, but with the changing outlook of  
17 an inherently volatile stock market. In short, market prices are beyond  
18 the control, though not beyond the influence, of rate regulation.  
19 Moreover, even if a commission did possess the power of control, any  
20 attempt to exercise it ... would result in harmful, uneconomic shifts in  
21 public utility rate levels.<sup>25</sup>

22          Similarly, Stewart Myers came to the following conclusion:

23           In short, a straightforward application of the cost of capital to a book  
24 value rate base does not automatically imply that the market and book  
25 values will be equal. This is an obvious but important point. If  
26 straightforward approaches did imply equality of market and book  
27 values, then there would be no need to estimate the cost of capital. It  
28 would suffice to lower (raise) allowed earnings whenever markets were  
29 above (below) book.<sup>26</sup>

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<sup>24</sup> Charles F. Phillips, The Regulation of Public Utilities – Theory and Practice (Public Utility Reports, Inc., 1993) at 395.

<sup>25</sup> James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

<sup>26</sup> Stewart C. Myers, The Application of Finance Theory to Public Utility Rate Cases, The Bell Journal of Economics and Management Science, Vol. 3, No. 1 (Spring 1972), at 58-97.

1 Even though P/B ratios may be a general indicator of financial well-being for the  
2 purpose of establishing the Return on Equity, it remains important to review the ratio itself,  
3 and to bear in mind what it does, and does not indicate. In very general terms, the P/B ratio  
4 equals the market value (or stock price) per share, divided by the total common equity (or  
5 the book equity) per share. Book value is an accounting construct, which reflects historical  
6 costs. In contrast, market value per share, *i.e.*, the stock price, is forward-looking, and is a  
7 function of many variables, including (but not limited to) expected earnings and cash flow  
8 growth, expected payout ratios, measures of “earnings quality,” the regulatory climate, the  
9 equity ratio, expected capital expenditures, and the expected return on book equity.<sup>27</sup> The  
10 difference between book value and market value is exacerbated over time as inflation  
11 increases the cost of property, plant and equipment, even for items that serve the same  
12 current function. It follows, therefore, that the P/B ratio likewise is a function of numerous  
13 variables in addition to the historical or expected Return on Common Equity.

14 In the context of rate-setting, the P/B ratio often is discussed relative to the Constant  
15 Growth DCF model. Under certain restrictive assumptions, that model can be rewritten to  
16 express the P/B ratio as follows<sup>28</sup>

$$\frac{P}{B} = \frac{ROE - G}{R - G} \quad [6]$$

17 where ROE is the return on book equity, R is the risk-adjusted discount rate, and G is the  
18 long-term growth rate in dividends per share. Taking Equation [6] at face value, if P/B  
19 exceeds unity, then ROE exceeds R. Branch et al. (2014) point out that P/B is generally  
20 greater than or equal to one because the value of the firm as a going concern (price per  
21

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<sup>27</sup> See for example, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 366. Dr. Morin cites several academic articles that address the various factors that affect the Market-to-Book ratio for utilities.

<sup>28</sup> B. Branch, A. Sharma, C. Chawla, and F. Tu, An Updated Model of Price-to-Book, Journal of Applied Finance, No. 1 (2014).

1 share) generally exceeds the liquidation value (book value per share) and "...firms having  
2 going concern values greater than their liquidation values (most firms) and firms having  
3 finite prices (all firms) should have  $ROE > R > G$ ."<sup>29</sup>

4 Any inferences drawn as to the relationship among P/B, ROE, and R from Equation  
5 [6] rely on the acceptance of all the simplifying assumptions of the Constant Growth DCF  
6 model, including a constant dividend growth rate in perpetuity. Equally important,  
7 Equation [6] only can be solved from the Constant Growth DCF model if we further  
8 assume: (1) a constant dividend payout ratio in perpetuity; (2) no stock issuances or  
9 repurchases; and (3) that the firm is in a steady state, in which the book equity growth rate  
10 equals the dividend growth rate. Taken together, those assumptions are quite restrictive,  
11 and call into question a definitive linkage between P/B, ROE, and R.

12 A P/B ratio in excess of unity simply means that the firm is worth more as a going  
13 concern than the book value of its assets. This is consistent with U.S. Generally Accepted  
14 Accounting Principles ("GAAP") which requires firms to carry the value of long-term  
15 tangible assets on their books at the historical cost of those assets; only under specific  
16 circumstances may the value of certain financial investments be carried at market value.<sup>30</sup>

17 As a result:

18 ...given market efficiency, the [P/B] ratio is intrinsically an accounting  
19 phenomenon; that is, on first order, [P/B] is determined by how  
20 accountants measure book value... If all assets and liabilities were  
21 accounted for using unbiased mark-to-market or "fair value"  
22 accounting, [P/B] ratios would be equal to unity for all levels of  
23 risk....A good example is a pure investment fund where "net asset  
24 value" typically equals market value, since accountants apply mark-to-  
25 market accounting to these funds....For most other firms, accountants  
26 do not mark the net assets involved with operations to market. The  
27 application of historical cost accounting, exacerbated by the application  
28 of conservative accounting, introduces a difference between price and

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<sup>29</sup> *Ibid*, at 78. [clarification added]

<sup>30</sup> *See, for example*, CFA Curriculum 2011, Level 1, Volume 3, at 216-218.

1 book value.<sup>31</sup>

## 2 3 **VI. BUSINESS RISKS AND OTHER CONSIDERATIONS**

4 **Q: Do the mean CAPM, Risk Premium, and DCF results for the proxy group provide an**  
5 **appropriate estimate of the Cost of Equity for Westar?**

6 A: No, they simply inform judgment. There are additional factors that, along with these  
7 results, must be taken into consideration when determining where the Company's Cost of  
8 Equity falls within the range of results. Those factors include: (1) the Company's  
9 generation portfolio and the risks associated with environmental regulations; (2) the  
10 regulatory environment in which Westar operates; and (3) the need to account for flotation  
11 costs. Those risk factors, which are discussed below, should be considered with respect to  
12 their overall effect on the Westar's risk profile and therefore its Cost of Equity.

### 13 **A. Generation Portfolio**

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

15 A: Although Westar recently has expanded its renewable sources, its operations still are  
16 significantly reliant on coal-fired generation, which represented approximately 47.00  
17 percent of its electric utility 2016 net generation. By comparison, the proxy group average  
18 was 37.00 percent. Natural gas and nuclear generation makes up nearly all of the rest of  
19 the Company's generation portfolio.<sup>32</sup>

20 **Q: Please briefly describe the risks associated with electric generation portfolios.**

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<sup>31</sup> S. H. Penman, S.A. Richardson, and I. Tuna, *The Book-to-Price Effect in Stock Returns: Accounting for Leverage*, *Journal of Accounting Research*, 45:2, May 2007. The authors use the reciprocal of the M/B and different notation. In the quote above, I have replaced B/P (where P denotes price per share) with M/B for ease of exposition.

<sup>32</sup> Source: S&P Global Market Intelligence.

1 A: In general, highly capital-intensive generation assets, such as coal-fired or nuclear  
2 generation facilities, are subject to certain risks including changes in market structure  
3 related to low gas prices, the entry of smaller, more flexible units, and subsidized  
4 renewables. They also are susceptible to issues that arise from plant failure, such as the  
5 timely recovery of replacement power and repair costs in the event of extended or  
6 unplanned outage. In addition, federal environmental and safety regulations related to  
7 coal-fired and nuclear generation present a substantial risk of requiring investors to commit  
8 new capital to comply with new regulations, operation restrictions, or possibly closure.

9 In the current regulatory environment, investors, utilities, and the economy as a  
10 whole face uncertainty with the change in administration following the 2016 election, and,  
11 in particular, the uncertain fate of Obama-era environmental regulations targeting  
12 greenhouse gas emissions and climate change in general, such as the Clean Power Plan,  
13 which is currently being challenged in the courts. With regard to nuclear generation,  
14 nuclear generating resources are regulated by the U.S. Nuclear Regulatory Commission  
15 (“NRC”). As such, Westar is subject to NRC mandates to meet licensing and safety related  
16 standards that may require increased capital spending and incremental operating costs.  
17 Because investors consider those risks in establishing their return requirements, the  
18 Commission likewise should consider the effect of the additional risk associated with  
19 Westar’s generating portfolio in determining its authorized ROE.

20 **Q: Are there any other concerns for investors with respect to coal generation?**

21 A: Yes. On January 25, 2016, California Insurance Commissioner Dave Jones introduced a  
22 new requirement for the disclosure of carbon-based investments held by insurance  
23 companies, and called on California insurance companies to divest investments in coal and

1 companies that use coal, including electrical utilities.<sup>33</sup> Although California’s is the first  
2 insurance commission to call for such divestitures, it is the largest insurance commission  
3 in the United States, and sixth largest insurance commission in the world.<sup>34</sup> In addition,  
4 there has been a movement toward Environmental, Social and Governance (“ESG”)  
5 investing by both the largest institutional money management firms, and the largest proxy  
6 advisory firms. Institutional firms, representing over \$10 trillion in funds AUM,<sup>35</sup> have  
7 signed on to the Principles of Responsible Investing, which include: “[w]e will incorporate  
8 ESG issues into investment analysis and decision-making processes.”<sup>36</sup> In that regard,  
9 money management firm Allianz has noted, “[w]ith its proprietary assets, Allianz stopped  
10 financing coal-based business models by divesting equity stakes in coal-based business  
11 models.”<sup>37</sup>

12 Closely mirroring the position of Allianz is that of Norway’s Government Pension  
13 Fund Global, and its management (the Norges Bank Executive Board). A Ministry of  
14 Finance guideline, effective February 1, 2016, stated that if coal is a “significant part of a  
15 company’s business activities, the company may be excluded from the fund.”<sup>38</sup> Since the  
16 guideline went into effect, the fund has had three separate rounds of divestment, including  
17 Otter Tail Power.<sup>39</sup> Given the large percentage of institutional ownership among utilities,<sup>40</sup>  
18 the potential of divestiture represents a significant source of risk for investors.

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<sup>33</sup> California Department of Insurance, January 25, 2016 Press Release.

<sup>34</sup> *Ibid.*

<sup>35</sup> Bloomberg Professional Services.

<sup>36</sup> <https://www.unpri.org/about/the-six-principles>

<sup>37</sup> Allianz defines coal-based business models as “Electric utilities deriving 30% or more of their generated electricity from thermal coal.” Allianz ESG Integration Framework, approved September 29, 2017.

<sup>38</sup> “The criterion states that coal power companies and mining companies who themselves, or through other operations they control, base 30 percent or more of their activities on coal, and/or derive 30 percent of their revenues from coal, may be excluded from the GPF. Coal in this case refers to thermal coal.” Norges Bank, Grounds for decision – Product based coal exclusions, March 7, 2017.

<sup>39</sup> *Ibid.*

<sup>40</sup> For example, Westar’s institutional ownership is nearly 75.00 percent. Source: S&P Global Market Intelligence.

1 **Q: Are there examples of the increased risk of new regulatory requirements that nuclear**  
2 **generation plant operators face?**

3 A: Yes. One example is the increased oversight and regulatory requirements put in place  
4 following a March 11, 2011 earthquake and tsunami, which caused significant damage to  
5 the Fukushima Daiichi nuclear complex and threatened the public health. After the  
6 Fukushima accident, the NRC assembled a task force to assess current regulation and  
7 determine if new measures were required to ensure safety. The task force issued a report  
8 in July 2011 that included a set of recommendations for NRC consideration. Those  
9 recommendations continue to be modified and expanded by the NRC staff, and the first  
10 related regulatory requirements were issued in March 2012 with implementation guidance  
11 issued on August 30, 2012.<sup>41</sup> The evolving nature of these requirements from the NRC put  
12 nuclear operators at risk of incurring costly future capital expenditures.

13 Another example of nuclear risk is the ongoing and long-term uncertainty in regard  
14 to nuclear waste disposal. On June 8, 2012, the U.S. Court of Appeals vacated the NRC's  
15 rulemaking regarding storage and permanent disposal of nuclear waste. The Court of  
16 Appeals found the NRC rulemaking was deficient in that: (1) it "did not calculate the  
17 environmental effects of failing to secure permanent storage," and (2) "in determining that  
18 spent fuel can safely be stored on site at nuclear plants for sixty years after the expiration  
19 of a plant's license, the [NRC] failed to properly examine future dangers and key  
20 consequences."<sup>42</sup> The NRC approved a new rule addressing the environmental effects of  
21 spent nuclear fuel storage on August 26, 2014, however, it did not "authorize, license or

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<sup>41</sup> See, [www.nrc.gov/reactors/operating/ops-experience/japan/japan-timeline.html](http://www.nrc.gov/reactors/operating/ops-experience/japan/japan-timeline.html).

<sup>42</sup> U.S. Court of Appeals For the District of Columbia Circuit, *On Petitions for Review of Orders of the Nuclear Regulatory Commission*, Case No. 11-1045, Decided June 8, 2012, at 3.



1 otherwise permit nuclear power plant licensees to store spent fuel for any length of time.”<sup>43</sup>  
2 Consequently, uncertainty about long-term waste storage remains and nuclear operators  
3 therefore face future capital expenditures related to expansion of nuclear waste storage,  
4 and may face additional costs to meet safety standards that may be required.

5 To the extent further mandates are promulgated by the NRC, additional spending  
6 may be required, and this is in addition to the market challenges to base load plants,  
7 generally. Absent full and timely recovery, increases in the Company’s capital investment  
8 requirements will place additional pressure on its free cash flow and credit metrics.

9 **Q: What are your conclusions regarding risks associated with the Company’s generating**  
10 **portfolio?**

11 A: The Company’s generating portfolio consists of a high percentage of coal and nuclear  
12 power plants that face certain inherent risks associated with capital intensive assets such as  
13 the risk of an extended forced outage, changing market dynamics, and new regulations. In  
14 particular, the Company and its investors are faced with the risk that federal environmental  
15 and safety regulations will require it to expend additional capital or face closure or  
16 curtailment of generating capacity. As the Company noted, “[i]f we fail to comply with  
17 [environmental] laws, regulations and permits, or fail to obtain and maintain necessary  
18 permits, we could be fined or otherwise sanctioned by regulators, and such fines or the cost  
19 of sanctions may not be recoverable in our prices.”<sup>44</sup> Because investors consider such risks  
20 in establishing their return requirements, the Commission likewise should consider the  
21 effect of the additional risk associated with the Company’s generating portfolio in  
22 determining Westar’s authorized ROE.

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<sup>43</sup> United States Nuclear Regulatory Commission, August 26, 2014 Press Release.

<sup>44</sup> See Westar Energy, Inc., SEC Form 10-K at 16 (Dec. 31, 2016).

1       **B. Regulatory Environment**

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

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

16             However, investors recognize that an authorized ROE that is reasonable, but subject  
17      to earnings attrition due to unfavorable regulatory or economic factors, does not provide  
18      any assurance that the utility will have a reasonable opportunity to recover its costs, or to  
19      earn a reasonable return. The authorized ROE affects not only the cash flow-related  
20      metrics that measure financial strength, but also provides an indication of the degree of  
21      regulatory support, as well as risk associated with a given utility and jurisdiction.  
22      Therefore, it is an important measure of regulatory support and financial integrity from  
23      several perspectives.

1 **Q: As a point of reference, how is the Kansas regulatory environment perceived by**  
2 **equity investors?**

3 A: Regulatory Research Associates (“RRA”) rates the Kansas regulatory environment as  
4 “Below Average / 1” from an investor viewpoint.<sup>45</sup> As RRA notes:

5 Kansas regulation is relatively restrictive from an investor perspective.  
6 Although base rate proceedings in Kansas are typically resolved via  
7 “black box” settlements that do not specify any rate-of-return  
8 parameters, the KCC's most recent equity return authorization, **a 9.3%**  
9 **ROE approved in a September 2015 electric rate case decision, was**  
10 **significantly below prevailing industry averages at the time**  
11 **established. In addition, the KCC generally relies on historical test**  
12 **periods, a situation that can lead to regulatory lag, even with**  
13 **updates for certain known and measurable changes, making it**  
14 **challenging for the utility to earn its authorized return.** However,  
15 state law allows the utilities to file “abbreviated” rate cases within 12  
16 months of a KCC rate order, and abbreviated rate proceedings have been  
17 filed on several occasions in recent years. The electric utilities have  
18 energy cost adjustment mechanisms in place to facilitate recovery of  
19 variations in fuel and purchased power costs. Cost recovery mechanisms  
20 are also in place for certain other expenditures and several utilities  
21 recover energy-efficiency-related lost revenues through a rider.<sup>46</sup>

22 Although the Company remains exposed to regulatory lag associated with the use  
23 of historical test years, the Commission allows adjustments for known and measurable  
24 changes, and certain regulatory mechanisms to provide more timely recovery of costs. At  
25 the same time, the Commission recently rejected the proposed transaction between  
26 Westar’s parent company, Westar Energy, Inc., and Great Plains Energy. Although a  
27 revised transaction has been announced, the Commission’s decision is not expected until

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<sup>45</sup> Source: Regulatory Research Associates, Regulatory Focus, “State Regulatory Evaluations, Assessments of Regulatory Climates for Energy Utilities,” November 15, 2017, at 2. RRA rates regulatory jurisdictions from the perspective of investors, and assigns ratings of “Above Average,” “Average,” or “Below Average.” RRA further distinguishes jurisdictions within those respective categories by applying ratings of 1, 2 or 3, with a rating of “1” being the strongest.

<sup>46</sup> Regulatory Research Associates, Kansas Corporation Commission Profile, section updated September 19, 2017 [Emphasis added].

1 June 2018.<sup>47</sup> In May 2017, RRA downgraded Kansas, noting among other things “the  
2 state’s gradual shift toward a more ‘consumerist’ approach to ratemaking.”<sup>48</sup>

3 Regarding authorized returns, Table 8 (below) compares returns for electric utilities  
4 in Kansas over the past five years to the national average.<sup>49</sup> As Table 8 indicates, returns  
5 authorized in Kansas generally have fallen far below those authorized for vertically  
6 integrated electric utilities throughout the U.S.

7 **Table 8: Vertically Integrated Authorized ROEs – Kansas vs. National Average**<sup>50</sup>

<b>Docket No.</b>	<b>Decision Date</b>	<b>Authorized ROE</b>	<b>U.S. 12-Month Average ROE</b>	<b>Kansas ROE Percent Rank in U.S</b>
12-KCPE-764-RTS	12/13/2012	9.50%	10.10%	2.20%
13-WSEE-629-RTS	11/21/2013	10.00%	10.03%	41.90%
15-KCPE-116-RTS	9/10/2015	9.30%	9.83%	0.00%
17-KCPE-201-RTS	6/6/2017	9.30%	9.74%	2.20%

8  
9 **Q: What are your conclusions regarding the regulatory risk faced by the Company, and  
10 how that risk weighs in your ROE recommendation?**

11 A: Although the Company does have certain rate mechanisms in place, they do not make the  
12 Company so less risky than its peers that its return should be set below prevailing industry  
13 levels. Rather, the Company is not able to take advantage of regulatory lag-reducing  
14 mechanisms, such as forecast test years and infrastructure cost recovery riders, that are  
15 available to many of its peers. On balance, it appears the Company faces somewhat higher

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<sup>47</sup> Kansas Corporation Commission, Docket No. 18-KCPE-095-MER, Order Nunc Pro Tunc Setting Procedural Schedule.

<sup>48</sup> Regulatory Research Associates, Kansas Corporation Commission Profile, section updated September 19, 2017 [Emphasis added].

<sup>49</sup> The national average is calculated as the 12-month average at the time of the order.

<sup>50</sup> Source: Regulatory Research Associates. Excludes limited-issue riders. Excludes cases that did not report an authorized ROE. The reported authorized ROE for Docket No. 17-KCPE-201-RTS is based on the cost of capital adopted in the previous case (Commission's 15-116 order).

1 regulatory risks than its peers. In my view, therefore, the regulatory risks discussed above  
2 further support the reasonableness of my ROE recommendation.

### 3 **C. Flotation Costs**

4 **Q: What are flotation costs?**

5 A: Flotation costs are incurred with the sale of new issues of common stock, including out-of-  
6 pocket expenditures for preparation, filing, underwriting, and other costs of issuance.

7 **Q: Are flotation costs part of the utility's invested costs or part of the utility's expenses?**

8 A: Flotation costs are part of capital costs, which are properly reflected on the balance sheet  
9 under "paid in capital" rather than current expenses on the income statement. Flotation  
10 costs are incurred over time, just as investments in rate base or debt issuance costs. As a  
11 result, the great majority of flotation costs are incurred prior to the test year, but remain  
12 part of the cost structure during the test year and beyond.

13 **Q: How did you calculate the flotation cost recovery adjustment?**

14 A: I modified the DCF calculation to provide a dividend yield that would reimburse investors  
15 for issuance costs. My flotation cost adjustment recognizes the costs of issuing equity that  
16 were incurred by Westar and the proxy companies in their most recent two issuances. As  
17 shown in Schedule RBH-8, an adjustment of 0.10% (*i.e.*, 10 basis points) reasonably  
18 represents flotation costs for the Company.

19 **Q: Is the need to consider flotation costs recognized by the academic and financial  
20 communities?**

21 A: Yes. The need to reimburse investors for equity issuance costs is recognized by the  
22 academic and financial communities in the same spirit that investors are reimbursed for the  
23 costs of issuing debt. For example, Dr. Morin notes that "[t]he costs of issuing [common  
24 stock] are just as real as operating and maintenance expenses or costs incurred to build

1 utility plants, and fair regulatory treatment must permit the recovery of these costs.”<sup>51</sup>  
2 Dr. Morin further notes that “equity capital raised in a given stock issue remains on the  
3 utility’s common equity account and continues to provide benefits to ratepayers  
4 indefinitely.”<sup>52</sup> This treatment is consistent with the philosophy of a fair rate of return. As  
5 explained by Dr. Shannon Pratt:

6 Flotation costs occur when a company issues new stock. The business  
7 usually incurs several kinds of flotation or transaction costs, which  
8 reduce the actual proceeds received by the business. Some of these are  
9 direct out-of-pocket outlays, such as fees paid to underwriters, legal  
10 expenses, and prospectus preparation costs. Because of this reduction  
11 in proceeds, the business’s required returns must be greater to  
12 compensate for the additional costs. Flotation costs can be accounted  
13 for either by amortizing the cost, thus reducing the net cash flow to  
14 discount, or by incorporating the cost into the cost of equity capital.  
15 Since flotation costs typically are not applied to operating cash flow,  
16 they must be incorporated into the cost of equity capital.<sup>53</sup>

17 Similarly, Morningstar has commented on the need to reflect flotation costs in the cost of  
18 capital:

19 Although the cost of capital estimation techniques set forth later in this  
20 book are applicable to rate setting, certain adjustments may be  
21 necessary. One such adjustment is for flotation costs (amounts that  
22 must be paid to underwriters by the issuer to attract and retain capital).<sup>54</sup>

23 **Q: Are you proposing to adjust your recommended ROE by 10 basis points to reflect the**  
24 **effect of flotation costs on Westar’s ROE?**

25 A: No. Rather, I have considered the effect of flotation costs, in addition to the Company’s  
26 other business risks, in determining where the Company’s ROE falls within the range of  
27 results.

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<sup>51</sup> Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 321.

<sup>52</sup> *Ibid.*, at 327.

<sup>53</sup> Shannon P. Pratt, Roger J. Grabowski, Cost of Capital: Applications and Examples, 4th ed. (John Wiley & Sons, Inc., 2010), page 586.

<sup>54</sup> Morningstar, Inc. Ibbotson SBBI 2013 Valuation Yearbook, at 25.

## VII. CAPITAL MARKET ENVIRONMENT

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

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

10 **Q: Do you have any general observations regarding the relationship between Federal**  
11 **Reserve monetary policy, capital market conditions, and Westar's Cost of Equity?**

12 A: Yes, I do. Much has been reported about the Federal Reserve's Quantitative Easing policy  
13 and its effect on interest rates. Although the Federal Reserve completed its Quantitative  
14 Easing initiative in October 2014, it was not until December 2015 that it raised the Federal  
15 Funds rate, and began the process of rate normalization.<sup>55</sup> Therefore, a significant issue is  
16 how investors will react as that process continues, and eventually is completed. A viable  
17 outcome is that investors will perceive greater prospects of macroeconomic growth, which  
18 will increase the growth rates included in the DCF model. At the same time, higher growth  
19 and the absence of Federal Reserve market intervention could provide the opportunity for  
20 interest rates to increase, thereby increasing the dividend yield portion of the DCF model.  
21 In that case, both terms of the Constant Growth DCF model would increase, producing  
22 increased ROE estimates.

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<sup>55</sup> See Federal Reserve Press Release, December 16, 2015.

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

11 **Q: Please summarize the effect of Federal Reserve policies on interest rates and the cost**  
12 **of capital over the past decade.**

13 A: Beginning in 2008, the Federal Reserve proceeded on a steady path of initiatives intended  
14 to lower long-term Treasury yields.<sup>56</sup> The Federal Reserve's policy actions "were designed  
15 to put downward pressure on longer-term interest rates by having the Federal Reserve take  
16 onto its balance sheet some of the duration and prepayment risks that would otherwise have  
17 been borne by private investors."<sup>57</sup> Under that policy, "Securities held outright" on the  
18 Federal Reserve's balance sheet increased from approximately \$489 billion at the  
19 beginning of October 2008 to \$4.24 trillion by November 2017.<sup>58</sup> To put that increase in  
20 context, the securities held by the Federal Reserve represented approximately 3.29 percent  
21 of Gross Domestic Product (GDP) at the end of September 2008, and had risen to

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<sup>56</sup> See Federal Reserve Press Release, June 19, 2013.

<sup>57</sup> Federal Reserve Bank of New York, *Domestic Open Market Operations During 2012*, April 2013, page 29.

<sup>58</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 approximately 21.71 percent of GDP in November 2017.<sup>59</sup> As such, the Federal Reserve  
2 provided a significant source of liquidity, and had a substantial effect on capital markets.  
3 Now, the Federal Reserve has discussed its plans to unwind its asset holdings in an orderly  
4 fashion, “normalizing” the “easy” monetary policy in place during Quantitative Easing.

5 **Q: Does your recommendation consider the future interest rate environment, that is, the**  
6 **environment expected during the period which new rates would be in effect?**

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

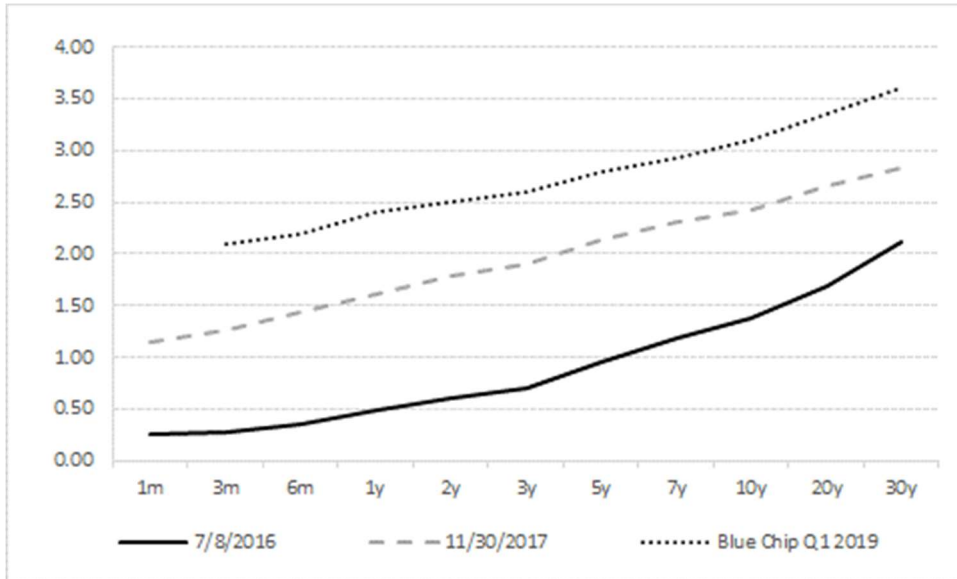
15 Although the Federal Reserve’s market intervention policies have kept interest rates  
16 historically low, since July 8, 2016 (when the 30-year Treasury yield hit an all-time low of  
17 2.11 percent), rates have risen. Quite intentionally, as the Federal Reserve increased the  
18 Federal Funds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

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<sup>59</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 2  
2 below).<sup>60</sup>

3 **Chart 2: Treasury Yield Curve: 7/8/2016, 11/30/2017 and Projected Q1 2019<sup>61</sup>**



4  
5 Lastly, on September 20, 2017, the Federal Reserve announced that it will “initiate  
6 the balance sheet normalization program described in the June 2017 Addendum to the  
7 Committee’s Policy Normalization Principles and Plans.”<sup>62</sup> Quite simply, the  
8 unprecedented \$4.24 trillion Federal Reserve balance sheet additions now must be  
9 unwound. The Federal Reserve’s “Principles and Plans” call for reducing the reinvestment  
10 of principal payments received from its holdings of Treasury securities by up to \$30 billion  
11 per month, and mortgage-backed securities by up to \$20 billion per month.<sup>63</sup> At the same  
12 time, the Federal Reserve will continue considering increases to the Federal Funds target

<sup>60</sup> Federal Reserve Board Schedule H.15. 6-month and 1-year Treasury yields increased by 108 basis points and 114 basis points, respectively, July 8, 2016 to November 30, 2017. The 10-year and 30-year Treasury yields increased by 105 basis points and 72 basis points, respectively, by November 30, 2017.

<sup>61</sup> Sources: Federal Reserve Board Schedule H.15.; Blue Chip Financial Forecasts, Vol. 36, No. 12, December 1, 2017, page 2. 3-year, 7-year and 20-year projected Treasury yields interpolated.

<sup>62</sup> Federal Reserve Press Release, September 20, 2017.

<sup>63</sup> Federal Reserve Addendum to the Policy Normalization Principles and Plans As adopted effective June 13, 2017.

1 rate; as noted below, current market data indicate a nearly 90.00 percent likelihood of  
2 further rate increases by November 2018.

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

5 A: Yes. Forward Treasury yields implied by the slope of the yield curve and published  
6 projections by sources such as *Blue Chip Financial Forecasts* (which provides consensus  
7 estimates from approximately 50 professional economists) indicate investors expect long-  
8 term interest rates to increase. Similarly, investors' expectations for increased long-term  
9 Treasury yields are apparent in the prices investors are willing to pay today for the option  
10 to buy or sell long-term Government bonds, at today's price, in the future. Because the  
11 value of bonds falls as interest rates increase, the option to sell bonds at today's price  
12 becomes more valuable when interest rates are expected to increase.<sup>64</sup> Currently option  
13 prices show that investors are willing to pay approximately 25.00 percent more for the  
14 option to sell bonds in the future (at today's price) than they are willing to pay for the  
15 option to buy those bonds.<sup>65</sup> That market-based data tells us that investors consider an  
16 increase in interest rates as likely.

17 Looking to short-term interest rates, data compiled by CME Group indicates that  
18 investors see a high likelihood of further Federal Funds rate increases, even after the four  
19 increases between December 14, 2016 and December 14, 2017. As shown in Table 9

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<sup>64</sup> In other words, if there is a high probability that interest rates will increase and bond prices will fall, there is value in the option to sell those bonds in the future at today's price. Conversely, if there is a strong probability that interest rates will decrease (price of bonds will increase), there is value in the option to buy those bonds in the future at today's price.

<sup>65</sup> The option to sell the TLT index in January 2019 at today's price is approximately twenty five percent higher than the value of the option to buy the fund. Source: <http://www.nasdaq.com/symbol/tlt/option-chain?dateindex=7> accessed December 12, 2017.

1 (below), the market now sees an approximately 90.00 percent likelihood of additional rate  
2 increases by November 2018.

3 **Table 9: Probability of Federal Funds Rate Increases**<sup>66</sup>

Target Rate (bps)	Federal Reserve Meeting Date						
	Jan-18	Mar-18	May-18	Jun-18	Aug-18	Sep-18	Nov-18
125-150	99.00%	46.00%	42.60%	20.30%	18.80%	11.40%	10.80%
150-175	1.00%	53.50%	52.90%	47.50%	45.60%	35.00%	33.80%
175-200	0.00%	0.60%	4.40%	29.90%	31.10%	36.90%	36.80%
200-225		0.00%	0.00%	2.30%	4.20%	14.90%	16.00%
225-250		0.00%	0.00%	0.00%	0.20%	1.80%	2.50%
250-275		0.00%	0.00%	0.00%	0.00%	0.10%	0.20%

4  
5 Lastly, we can view the market's expectations of future interest rates based on the  
6 current yield curve. Those expected rates, often referred to as "forward yields" are derived  
7 from the "Expectations" theory, which states that (for example) the current 30-year  
8 Treasury yield equals the combination of the current one-year Treasury yield, and the 29-  
9 year Treasury yield expected in one year. That is, an investor would be indifferent to (1)  
10 holding a 30-year Treasury to maturity, or (2) holding a one-year Treasury to maturity,  
11 then a 29-year Treasury bond, also to maturity.<sup>67</sup> Chart 3, below, shows the difference  
12 between the forward and spot Treasury yields over time. As Chart 3 indicates, since 2006  
13 the implied forward 29- and 28- year yields (one and two years hence, respectively)  
14 consistently exceeded the (interpolated) spot yields. That is, just as economists'  
15 projections implied increased interest rates, so did observable Treasury yields.

<sup>66</sup> Source: <http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>, accessed December 14, 2017.

<sup>67</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.

1 **Chart 3: Forward vs. Interpolated Treasury Yields**<sup>68</sup>



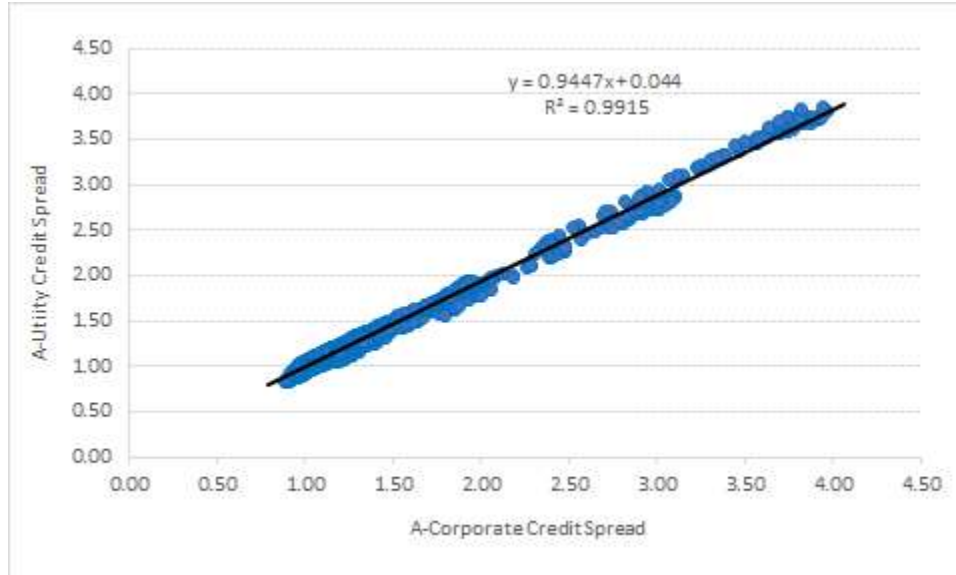
4 **Q: Have you also reviewed the relationship between credit spreads for A-rated utility**  
5 **debt relative to A-rated corporate debt?**

6 **A:** Yes, I have. Given the historical volatility in the spread between corporate and utility A-  
7 rated debt, there is no reason to conclude that utility yields are different than those of their  
8 corporate counterparts. That conclusion is consistent with the finding that over time, there  
9 has been a nearly one-to-one relationship between credit spreads on A-rated corporate and  
10 utility bonds. In fact, a regression analysis in which corporate credit spreads are the  
11 explanatory variable and utility credit spreads are the dependent variable shows that slope  
12 is approximately 1.00 and highly significant (see Chart 4, below). Because the intercept  
13 term is nearly zero, we can conclude that there has been no material difference between the  
14 two, and there certainly is no meaningful difference in the current market.

<sup>68</sup> Source: Federal Reserve Schedule H.15. Spot yields are interpolated.

1

**Chart 4: Corporate and Utility Credit Spreads (A-Rated)<sup>69</sup>**



2

3

4 **Q: What do you conclude from those analyses?**

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

11 Lastly, it is important to keep in mind that although estimating the Cost of Equity  
12 is an empirical exercise, the rote application of a specific analysis, or the mechanical use  
13 of specific model inputs, may produce misleading results. Consequently, the methods used  
14 to estimate the Cost of Equity, and the weight given to any one method, may change from  
15 case to case as market conditions evolve. Even as those factors change, the returns

<sup>69</sup> Source: Federal Reserve Schedule H.15.

1 authorized in other jurisdictions provide a relevant, observable, and verifiable benchmark  
2 for assessing the reasonableness of analytical assumptions, results, and conclusions.

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

5 A: Yes. For example, between July and December 2016, the S&P Electric Utility Index lost  
6 approximately 9.00 percent of its value. At the same time, the S&P 500 increased by  
7 approximately 7.00 percent, indicating that the utility sector under-performed the market  
8 by about 16.00 percent. Also during that time, the 30-year Treasury yield increased by  
9 approximately 95 basis points (an increase of nearly 45.00 percent). The point simply is  
10 that as interest rates increased, utility valuations fell. Because (as noted above) investors  
11 see the strong likelihood of further interest rate increases, there is a continuing risk of losses  
12 in the utility sector.

13 **Q: What conclusions do you draw from your analyses of the current capital market**  
14 **environment, and their effect on your ROE recommendation?**

15 A: In my view, we cannot conclude that the recent levels of utility valuations are due to a  
16 fundamental change in the risk perceptions of utility investors. As noted earlier, for  
17 example, there is no measurable difference between credit spreads of A-rated utility debt,  
18 and A-rated corporate debt. That is, based on analyses of credit spreads, there is no reason  
19 to conclude that investors see utilities as less risky relative to either historical levels or to  
20 their corporate counterparts.

21 From a broad analytical perspective, it is important that the inputs and assumptions  
22 used to arrive at an ROE determination, including assessments of capital market conditions,  
23 are consistent with the conclusion itself. Although all analyses require an element of  
24 judgment, the application of that judgment must be made in the context of the quantitative

1 and qualitative information available to the analyst and the capital market environment in  
2 which the analyses were undertaken. Because the application of financial models and  
3 interpretation of their results often is the subject of differences among analysts in regulatory  
4 proceedings, I believe it is important to review and consider a variety of data points; doing  
5 so enables us to put in context both quantitative analyses and the associated  
6 recommendations.

7 Because not all models used to estimate the Cost of Equity adequately reflect those  
8 changing market dynamics, it is important to give appropriate weight to the methods and  
9 to their results. Moreover, because those models produce a range of results, it is important  
10 to consider the type of data discussed above in determining where the Companies' ROE  
11 falls within that range. As described in Section V, on balance, I believe the DCF-based  
12 results should be viewed very carefully, and that somewhat more weight should be afforded  
13 the Risk Premium-based methods. Carefully considering market data and model results  
14 support my recommended ROE range of 9.75 percent to 10.50 percent, and the Company's  
15 9.85 percent requested ROE.

## VIII. COST OF DEBT

17 **Q: What is the Company's proposed cost of debt?**

18 A: The Company's proposed cost of debt is 4.65 percent. Based on my independent analysis,  
19 I conclude the Company's cost of debt is reasonable relative to the prevailing yield on  
20 equivalent long-term debt at the time of issuance.

21 **Q: Please discuss your analysis of the Company's cost of long-term debt.**

22 A: To test the reasonableness of the Company's proposed cost of debt, I reviewed the  
23 prevailing yield on Bloomberg Fair Value Curves for A-rated and BBB-rated utility debt



1 concurrent with the date of issuance of the Company's debt instruments. As shown in  
2 Schedule RBH-9, the Company's coupon rates for debt issuances were consistent with the  
3 prevailing yields at the times of issuance. Because the Company's cost of debt reflects  
4 market rates when issued, its proposed 4.65 percent cost cost rate is reasonable.

5 **Q: Is there a general financing practice typically used by utility companies?**

6 A: Yes, there is. Utilities invest in, and therefore must finance, both long-term assets such as  
7 property, plant, and equipment, and short-term assets such as net working capital  
8 requirements. A common financing practice, sometimes referred to as “maturity  
9 matching,” involves matching the lives of the assets being financed with the maturity (or  
10 duration) of the securities issued to finance those assets. In practice, the weighted average  
11 maturity of outstanding long-term capital is matched with the expected life of the  
12 underlying assets, such that the income produced from the assets over its life can cover the  
13 debt service payments used to finance the asset.<sup>70</sup> As noted by Brigham and Houston,  
14 “[t]his strategy minimizes the risk that the firm will be unable to pay off its maturing  
15 obligations.”<sup>71</sup> Thus, the term structure of debt is an important financing consideration.

16 A useful means of assessing the term structure is to view debt maturities over time.  
17 Doing so provides a useful perspective on two points: (1) whether there is a “maturity cliff”  
18 that requires a significant portion of existing indebtedness to be refinanced within a  
19 relatively compressed period; and (2) the extent to which the term structure corresponds to  
20 the useful lives of the assets being financed. Chart 5 below, which summarizes Westar's  
21 existing indebtedness by maturity date, indicates that debt is reasonably staggered with no

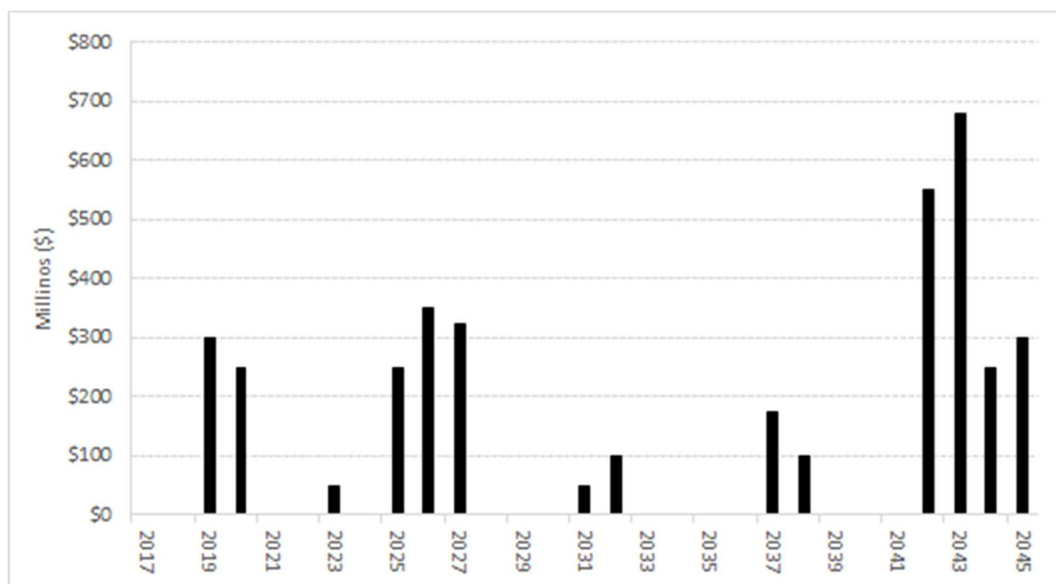
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<sup>70</sup> A variant of this approach is to match the “duration” of the debt with the life of the long-term assets being financed. While this approach is computationally different, the intent is the same; matching the tenor of the financing with the life of the asset being financed reduces interest rate risk.

<sup>71</sup> Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, Concise 4th Ed., Thomson South-Western, 2004, page 574.

1 near-term maturity cliff. Chart 5 also indicates that approximately 41.00 percent of  
2 Westar's existing debt matures between 2019 and 2027; approximately 59.00 percent  
3 matures between 2031 and 2045.

4 **Chart 5: Westar Debt Maturity Profile<sup>72</sup>**



5  
6 The weighted average maturity of the Company's debt is approximately 17 years.  
7 In essence, Westar has extended the weighted average maturity of its debt while reducing  
8 the risks associated with refinancing multiple maturing issues within a compressed period.  
9 That strategy is consistent with Westar's discussion in its 2016 SEC Form 10-K, which  
10 notes diversifying maturity dates of debt obligations as a method of managing interest rate  
11 risk.<sup>73</sup>

## IX. CONCLUSIONS AND RECOMMENDATION

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

<sup>72</sup> Source: Bloomberg Professional.

<sup>73</sup> Westar Energy, Inc., SEC Form 10-K for the fiscal year ended December 31, 2016, at 54.

1 A: As discussed throughout my testimony, it is important to consider a variety of empirical  
2 and qualitative information in reviewing analytical results and arriving at ROE  
3 recommendations. Here, we have a situation in which the proxy companies have traded at  
4 Price/Earnings ratios in excess of their historical average, and, for a time, in excess of the  
5 market. Because that condition is unlikely to persist, it violates a principal assumption of  
6 the Constant Growth DCF model, *i.e.*, that the P/E ratio will not change, ever. As a  
7 practical matter, the Constant Growth DCF results are well below a highly observable and  
8 relevant benchmark: the returns authorized for vertically integrated electric utilities. A  
9 more balanced approach therefore would be to consider multiple methods, including the  
10 Multi-Stage DCF model, the CAPM approach, and the Bond Yield Plus Risk Premium  
11 model.

12 I conclude that a rate of return on common equity in the range of 9.75 percent to  
13 10.50 percent represents the range of equity investors' required rate of return for  
14 investment in integrated electric utilities similar to Westar in today's capital markets. It is  
15 my view that the Company's 9.85 percent requested ROE is a reasonable, if not  
16 conservative, estimate of the Company's Cost of Equity. My estimated ROE range  
17 considers the Company's risk profile relative to the proxy group analytical results with  
18 respect to: (1) the Company's generation portfolio; (2) the regulatory environment in  
19 which Westar operates; and (3) the need to account for flotation costs. Tables 10 and 11  
20 summarize my analytical results.

1

**Table 10: Summary of Risk-Premium Based Method Results**

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>CAPM - Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.83%)	9.10%	9.58%
Near Term Projected 30-Year Treasury (3.30%)	9.57%	10.05%
<i>CAPM - Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.83%)	10.55%	11.15%
Near Term Projected 30-Year Treasury (3.30%)	11.02%	11.62%
<i>Bond Yield Plus Risk Premium Approach</i>		
Current 30-Year Treasury (2.83%)	9.97%	
Near Term Projected 30-Year Treasury (3.30%)	10.02%	
Long Term Projected 30-Year Treasury (4.20%)	10.26%	

2

3

**Table 11: Summary of DCF Results**

	<i>Mean Low</i>	<i>Mean</i>	<i>Mean High</i>
<i>Constant Growth</i>			
30-Day Average Price	7.35%	8.20%	9.03%
90-Day Average Price	7.42%	8.27%	9.10%
180-Day Average Price	7.50%	8.35%	9.18%
<i>Multi-Stage (Terminal P/E Method)</i>			
30-Day Average Price	8.86%	9.38%	9.87%
90-Day Average Price	9.07%	9.59%	10.09%
180-Day Average Price	9.29%	9.81%	10.31%

4

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

6 **A:** Yes, it does.



Resume of:  
**Robert B. Hevert**  
 Partner

### *Summary*

Bob Hevert is a financial and economic consultant with more than 30 years of broad experience in the energy and utility industries. He has an extensive background in the areas of corporate finance, mergers and acquisitions, project finance, asset and business unit valuation, rate and regulatory matters, energy market assessment, and corporate strategic planning. He has provided expert testimony on a wide range of financial, strategic, and economic matters on more than 200 occasions at the state, provincial, and federal levels.

Prior to joining ScottMadden, Bob served as managing partner at Sussex Economic Advisors, LLC. Throughout the course of his career, he has worked with numerous leading energy companies and financial institutions throughout North America. He has provided expert testimony and support of litigation in various regulatory proceedings on a variety of energy and economic issues. Bob earned a B.S. in business and economics from the University of Delaware and an M.B.A. with a concentration in finance from the University of Massachusetts at Amherst. Bob also holds the Chartered Financial Analyst designation.

### *Areas of Specialization*

- Regulation and rates
- Utilities
- Fossil/hydro generation
- Markets and RTOs
- Nuclear generation
- Mergers and acquisitions
- Regulatory strategy and rate case support
- Capital project planning
- Strategic and business planning

### *Recent Expert Testimony Submission/Appearance*

- Federal Energy Regulatory Commission – Return on Equity
- New Jersey Board of Public Utilities – Merger Approval
- New Mexico Public Regulation Commission – Cost of Capital and Financial Integrity
- United States District Court – PURPA and FERC Regulations
- Alberta Utilities Commission – Return on Equity and Capital Structure

### *Recent Assignments*

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies, the Alberta Utilities Commission, and the Federal Energy Regulatory Commission
- For an independent electric transmission provider in Texas, prepared an expert report on the economic damages with respect to failure to meet guaranteed completion dates. The report was filed as part of an arbitration proceeding and included a review of the ratemaking implications of economic damages
- Advised the board of directors of a publicly traded electric and natural gas combination utility on dividend policy issues, earnings payout trends and related capital market considerations
- Assisted a publicly traded utility with a strategic buy-side evaluation of a gas utility with more than \$1 billion in assets. The assignment included operational performance benchmarking, calculation of merger synergies, risk analysis, and review of the regulatory implications of the transaction
- Provided testimony before the Arkansas Public Service Commission in support of the acquisition of SourceGas LLC by Black Hills Corporation. The testimony addressed certain balance sheet capitalization and credit rating issues
- For the State of Maine Public Utility Commission, prepared a report that summarized the Northeast and Atlantic Canada natural gas power markets and analyzed the potential benefits and costs associated with natural gas pipeline expansions. The independent report was filed at the Maine Public Utility Commission

Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Regulatory Commission of Alaska</b>				
ENSTAR Natural Gas Company	06/16	ENSTAR Natural Gas Company	Matter No. TA 285-4	Return on Equity
ENSTAR Natural Gas Company	08/14	ENSTAR Natural Gas Company	Matter No. TA 262-4	Return on Equity
<b>Alberta Utilities Commission</b>				
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc., and FortisAlberta Inc.	10/17	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc., and FortisAlberta Inc.	2018 General Cost of Capital, Proceeding ID. 22570	Rate of Return
EPCOR Energy Alberta G.P. Inc.	01/17	EPCOR Energy Alberta G.P. Inc.	Proceeding 22357	Energy Price Setting Plan
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	02/16	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	2016 General Cost of Capital, Proceeding ID. 20622	Rate of Return
<b>Arizona Corporation Commission</b>				
Southwest Gas Corporation	05/16	Southwest Gas Corporation	Docket No. G-01551A-16-017	Return on Equity
Southwest Gas Corporation	11/10	Southwest Gas Corporation	Docket No. G-01551A-10-0458	Return on Equity
<b>Arkansas Public Service Commission</b>				
Oklahoma Gas and Electric Company	09/16	Oklahoma Gas and Electric Company	Docket No. 16-052-U	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	11/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	Docket No. 15-098-U	Return on Equity
SourceGas Arkansas, Inc.	03/15	SourceGas Arkansas, Inc.	Docket No. 15-011-U	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	01/07	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	Docket No. 06-161-U	Return on Equity
<b>California Public Utilities Commission</b>				
Southwest Gas Corporation	12/12	Southwest Gas Corporation	Docket No. A-12-12-024	Return on Equity
<b>Colorado Public Utilities Commission</b>				
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Return on Equity
Xcel Energy, Inc.	03/15	Public Service Company of Colorado	Docket No. 15AL-0135G	Return on Equity (gas)
Xcel Energy, Inc.	06/14	Public Service Company of Colorado	Docket No. 14AL-0660E	Return on Equity (electric)
Xcel Energy, Inc.	12/12	Public Service Company of Colorado	Docket No. 12AL-1268G	Return on Equity (gas)
Xcel Energy, Inc.	11/11	Public Service Company of Colorado	Docket No. 11AL-947E	Return on Equity (electric)
Xcel Energy, Inc.	12/10	Public Service Company of Colorado	Docket No. 10AL-963G	Return on Equity (electric)

Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Atmos Energy Corporation	07/09	Atmos Energy Colorado-Kansas Division	Docket No. 09AL-507G	Return on Equity (gas)
Xcel Energy, Inc.	12/06	Public Service Company of Colorado	Docket No. 06S-656G	Return on Equity (gas)
Xcel Energy, Inc.	04/06	Public Service Company of Colorado	Docket No. 06S-234EG	Return on Equity (electric)
Xcel Energy, Inc.	08/05	Public Service Company of Colorado	Docket No. 05S-369ST	Return on Equity (steam)
Xcel Energy, Inc.	05/05	Public Service Company of Colorado	Docket No. 05S-246G	Return on Equity (gas)
<b>Connecticut Public Utilities Regulatory Authority</b>				
Connecticut Light and Power Company	06/14	Connecticut Light and Power Company	Docket No. 14-05-06	Return on Equity
Southern Connecticut Gas Company	09/08	Southern Connecticut Gas Company	Docket No. 08-08-17	Return on Equity
Southern Connecticut Gas Company	12/07	Southern Connecticut Gas Company	Docket No. 05-03-17PH02	Return on Equity
Connecticut Natural Gas Corporation	12/07	Connecticut Natural Gas Corporation	Docket No. 06-03-04PH02	Return on Equity
<b>Delaware Public Service Commission</b>				
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0977 (Electric)	Return on Equity
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0978 (Gas)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-649 (Electric)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-650 (Gas)	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 13-115	Return on Equity
Delmarva Power & Light Company	12/12	Delmarva Power & Light Company	Case No. 12-546	Return on Equity
Delmarva Power & Light Company	03/12	Delmarva Power & Light Company	Case No. 11-528	Return on Equity
<b>District of Columbia Public Service Commission</b>				
Potomac Electric Power Company	07/16	Potomac Electric Power Company	Formal Case No. FC1139	Return on Equity
Washington Gas Light Company	02/16	Washington Gas Light Company	Formal Case No. FC1137	Return on Equity
Potomac Electric Power Company	03/13	Potomac Electric Power Company	Formal Case No. FC1103-2013-E	Return on Equity
Potomac Electric Power Company	07/11	Potomac Electric Power Company	Formal Case No. FC1087	Return on Equity
<b>Federal Energy Regulatory Commission</b>				
Sabine Pipeline, LLC	09/15	Sabine Pipeline, LLC	Docket No. RP15-1322-000	Return on Equity
NextEra Energy Transmission West, LLC	07/15	NextEra Energy Transmission West, LLC	Docket No. ER15-2239-000	Return on Equity
Maritimes & Northeast Pipeline, LLC	05/15	Maritimes & Northeast Pipeline, LLC	Docket No. RP15-1026-000	Return on Equity

Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Public Service Company of New Mexico	12/12	Public Service Company of New Mexico	Docket No. ER13-685-000	Return on Equity
Public Service Company of New Mexico	10/10	Public Service Company of New Mexico	Docket No. ER11-1915-000	Return on Equity
Portland Natural Gas Transmission System	05/10	Portland Natural Gas Transmission System	Docket No. RP10-729-000	Return on Equity
Florida Gas Transmission Company, LLC	10/09	Florida Gas Transmission Company, LLC	Docket No. RP10-21-000	Return on Equity
Maritimes and Northeast Pipeline, LLC	07/09	Maritimes and Northeast Pipeline, LLC	Docket No. RP09-809-000	Return on Equity
Spectra Energy	02/08	Saltville Gas Storage	Docket No. RP08-257-000	Return on Equity
Panhandle Energy Pipelines	08/07	Panhandle Energy Pipelines	Docket No. PL07-2-000	Response to draft policy statement regarding inclusion of MLPs in proxy groups for determination of gas pipeline ROEs
Southwest Gas Storage Company	08/07	Southwest Gas Storage Company	Docket No. RP07-541-000	Return on Equity
Southwest Gas Storage Company	06/07	Southwest Gas Storage Company	Docket No. RP07-34-000	Return on Equity
Sea Robin Pipeline LLC	06/07	Sea Robin Pipeline LLC	Docket No. RP07-513-000	Return on Equity
Transwestern Pipeline Company	09/06	Transwestern Pipeline Company	Docket No. RP06-614-000	Return on Equity
GPU International and Aquila	11/00	GPU International	Docket No. EC01-24-000	Market Power Study
<b>Florida Public Service Commission</b>				
Florida Power & Light Company	03/16	Florida Power & Light Company	Docket No. 160021-EI	Return on Equity
Tampa Electric Company	04/13	Tampa Electric Company	Docket No. 130040-EI	Return on Equity
<b>Georgia Public Service Commission</b>				
Atlanta Gas Light Company	05/10	Atlanta Gas Light Company	Docket No. 31647-U	Return on Equity
<b>Hawaii Public Utilities Commission</b>				
Maui Electric Company, Limited	10/17	Maui Electric Company, Limited	Docket No. 2017-0150	Return on Equity
Hawaiian Electric Company, Inc.	12/16	Hawaiian Electric Company, Inc.	Docket No. 2016-0328	Return on Equity
Hawai'i Electric Light Company, Inc.	09/16	Hawai'i Electric Light Company, Inc.	Docket No. 2015-0170	Return on Equity
Maui Electric Company, Limited	12/14	Maui Electric Company, Limited	Docket No. 2014-0318	Return on Equity
Hawaiian Electric Company, Inc.	06/14	Hawaiian Electric Company, Inc.	Docket No. 2013-0373	Return on Equity
Hawai'i Electric Light Company, Inc.	08/12	Hawai'i Electric Light Company, Inc.	Docket No. 2012-0099	Return on Equity



Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Illinois Commerce Commission</b>				
Ameren Illinois Company d/b/a Ameren Illinois	01/15	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 15-0142	Return on Equity
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	03/14	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Docket No. 14-0371	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	01/13	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 13-0192	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0279	Return on Equity (electric)
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0282	Return on Equity (gas)
<b>Indiana Utility Regulatory Commission</b>				
Indiana Michigan Power Company	7/17	Indiana Michigan Power Company	Cause No. 44967	Return on Equity
Duke Energy Indiana, Inc.	12/15	Duke Energy Indiana, Inc.	Cause No. 44720	Return on Equity
Duke Energy Indiana, Inc.	12/14	Duke Energy Indiana, Inc.	Cause No. 44526	Return on Equity
Northern Indiana Public Service Company	05/09	Northern Indiana Public Service Company	Cause No. 43894	Assessment of Valuation Approaches
<b>Kansas Corporation Commission</b>				
Kansas City Power & Light Company	01/15	Kansas City Power & Light Company	Docket No. 15-KCPE-116-RTS	Return on Equity
<b>Maine Public Utilities Commission</b>				
Northern Utilities, Inc.	05/17	Northern Utilities, Inc.	Docket No. 2017-00065	Return on Equity
Central Maine Power Company	06/11	Central Maine Power Company	Docket No. 2010-327	Response to Bench Analysis provided by Commission Staff relating to the Company's credit and collections processes
<b>Maryland Public Service Commission</b>				
Delmarva Power & Light Company	07/17	Delmarva Power & Light Company	Case No. 9455	Return on Equity
Potomac Electric Power Company	03/17	Potomac Electric Power Company	Case No. 9443	Return on Equity
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Case No. 9424	Return on Equity

Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Case No. 9418	Return on Equity
Potomac Electric Power Company	12/13	Potomac Electric Power Company	Case No. 9336	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 9317	Return on Equity
Potomac Electric Power Company	11/12	Potomac Electric Power Company	Case No. 9311	Return on Equity
Potomac Electric Power Company	12/11	Potomac Electric Power Company	Case No. 9286	Return on Equity
Delmarva Power & Light Company	12/11	Delmarva Power & Light Company	Case No. 9285	Return on Equity
Delmarva Power & Light Company	12/10	Delmarva Power & Light Company	Case No. 9249	Return on Equity
<b>Massachusetts Department of Public Utilities</b>				
Boston Gas Company, Colonial Gas Company each d/b/a National Grid	11/17	Boston Gas Company, Colonial Gas Company each d/b/a National Grid	DPU 17-170	Return on Equity
NSTAR Electric Company Western and Massachusetts Electric Company each d/b/a Eversource Energy	01/17	NSTAR Electric Company Western Massachusetts Electric Company each d/b/a Eversource Energy	DPU 17-05	Return on Equity
National Grid	11/15	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 15-155	Return on Equity
Fitchburg Gas and Electric Light Company d/b/a Until	06/15	Fitchburg Gas and Electric Light Company d/b/a Until	DPU 15-80	Return on Equity
NSTAR Gas Company	12/14	NSTAR Gas Company	DPU 14-150	Return on Equity
Fitchburg Gas and Electric Light Company d/b/a Until	07/13	Fitchburg Gas and Electric Light Company d/b/a Until	DPU 13-90	Return on Equity
Bay State Gas Company d/b/a Columbia Gas of Massachusetts	04/12	Bay State Gas Company d/b/a Columbia Gas of Massachusetts	DPU 12-25	Capital Cost Recovery
National Grid	08/09	Massachusetts Electric Company d/b/a National Grid	DPU 09-39	Revenue Decoupling and Return on Equity
National Grid	08/09	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 09-38	Return on Equity – Solar Generation
Bay State Gas Company	04/09	Bay State Gas Company	DPU 09-30	Return on Equity

Resume of:  
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**Partner**



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
NSTAR Electric	09/04	NSTAR Electric	DTE 04-85	Divestiture of Power Purchase Agreement
NSTAR Electric	08/04	NSTAR Electric	DTE 04-78	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-68	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-61	Divestiture of Power Purchase Agreement
NSTAR Electric	06/04	NSTAR Electric	DTE 04-60	Divestiture of Power Purchase Agreement
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Bay State Gas Company	01/93	Bay State Gas Company	DPU 93-14	Divestiture of Shelf Registration
Bay State Gas Company	01/91	Bay State Gas Company	DPU 91-25	Divestiture of Shelf Registration
<b>Michigan Public Service Commission</b>				
Indiana Michigan Power Company	05/17	Indiana Michigan Power Company	Case No. U-18370	Return on Equity
<b>Minnesota Public Utilities Commission</b>				
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/17	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-17-285	Return on Equity
ALLETE, Inc., d/b/a Minnesota Power Inc.	11/16	ALLETE, Inc., d/b/a Minnesota Power Inc.	Docket No. E015/GR-16-664	Return on Equity
Otter Tail Power Corporation	02/16	Otter Tail Power Company	Docket No. E017/GR-15-1033	Return on Equity
Minnesota Energy Resources Corporation	09/15	Minnesota Energy Resources Corporation	Docket No. G-011/GR-15-736	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-15-424	Return on Equity
Xcel Energy, Inc.	11/13	Northern States Power Company	Docket No. E002/GR-13-868	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/13	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-13-316	Return on Equity
Xcel Energy, Inc.	11/12	Northern States Power Company	Docket No. E002/GR-12-961	Return on Equity
Otter Tail Power Corporation	04/10	Otter Tail Power Company	Docket No. E-017/GR-10-239	Return on Equity

Resume of:  
**Robert B. Hevert**  
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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Minnesota Power a division of ALLETE, Inc.	11/09	Minnesota Power	Docket No. E-015/GR-09-1151	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	11/08	CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-08-1075	Return on Equity
Otter Tail Power Corporation	10/07	Otter Tail Power Company	Docket No. E-017/GR-07-1178	Return on Equity
Xcel Energy, Inc.	11/05	Northern States Power Company -Minnesota	Docket No. E-002/GR-05-1428	Return on Equity (electric)
Xcel Energy, Inc.	09/04	Northern States Power Company - Minnesota	Docket No. G-002/GR-04-1511	Return on Equity (gas)
<b>Mississippi Public Service Commission</b>				
CenterPoint Energy Resources, Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Mississippi Gas	07/09	CenterPoint Energy Mississippi Gas	Docket No. 09-UN-334	Return on Equity
<b>Missouri Public Service Commission</b>				
Laclede Gas Company and Missouri Gas Energy	11/17	Laclede Gas Company and Missouri Gas Energy	Case No. GR-2017-0215 Case No. GR-2017-0216	Goodwill Adjustment on Capital Structure
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	09/17	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	Case No. GR-2018-0013	New Ratemaking Mechanisms
Union Electric Company d/b/a Ameren Missouri	07/16	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2016-0179	Return on Equity (electric)
Kansas City Power & Light Company	07/16	Kansas City Power & Light Company	Case No. ER-2016-0285	Return on Equity (electric)
Kansas City Power & Light Company	02/16	Kansas City Power & Light Company	Case No. ER-2016-0156	Return on Equity (electric)
Kansas City Power & Light Company	10/14	Kansas City Power & Light Company	Case No. ER-2014-0370	Return on Equity (electric)
Union Electric Company d/b/a Ameren Missouri	07/14	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2014-0258	Return on Equity (electric)
Union Electric Company d/b/a Ameren Missouri	06/14	Union Electric Company d/b/a Ameren Missouri	Case No. EC-2014-0223	Return on Equity (electric)
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	02/14	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Case No. GR-2014-0152	Return on Equity
Laclede Gas Company	12/12	Laclede Gas Company	Case No. GR-2013-0171	Return on Equity
Union Electric Company d/b/a Ameren Missouri	02/12	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2012-0166	Return on Equity (electric)
Union Electric Company d/b/a AmerenUE	09/10	Union Electric Company d/b/a AmerenUE	Case No. ER-2011-0028	Return on Equity (electric)

Resume of:

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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Union Electric Company d/b/a AmerenUE	06/10	Union Electric Company d/b/a AmerenUE	Case No. GR-2010-0363	Return on Equity (gas)
<b>Montana Public Service Commission</b>				
Northwestern Corporation	09/12	Northwestern Corporation d/b/a Northwestern Energy	Docket No. D2012.9.94	Return on Equity (gas)
<b>Nevada Public Utilities Commission</b>				
Southwest Gas Corporation	04/12	Southwest Gas Corporation	Docket No. 12-04005	Return on Equity (gas)
Nevada Power Company	06/11	Nevada Power Company	Docket No. 11-06006	Return on Equity (electric)
<b>New Hampshire Public Utilities Commission</b>				
Northern Utilities, Inc.	06/17	Northern Utilities, Inc.	Docket No. DG 17-070	Return on Equity
Liberty Utilities d/b/a EnergyNorth Natural Gas	04/17	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 17-048	Return on Equity
Unitil Energy Systems, Inc.	04/16	Unitil Energy Systems, Inc.	Docket No. DE 16-384	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	04/16	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 16-383	Return on Equity
Liberty Utilities d/b/a EnergyNorth Natural Gas	08/14	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 14-180	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	03/13	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 13-063	Return on Equity
EnergyNorth Natural Gas d/b/a National Grid NH	02/10	EnergyNorth Natural Gas d/b/a National Grid NH	Docket No. DG 10-017	Return on Equity
Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
<b>New Jersey Board of Public Utilities</b>				
Atlantic City Electric Company	03/17	Atlantic City Electric Company	Docket No. ER17030308	Return on Equity

Resume of:  
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**Partner**



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Pivotal Utility Holdings, Inc.	08/16	Elizabethtown Gas	Docket No. GR16090826	Return on Equity
The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	04/16	The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	BPU Docket No. GM15101196	Merger Approval
Atlantic City Electric Company	03/16	Atlantic City Electric Company	Docket No. ER16030252	Return on Equity
Pepco Holdings, Inc.	04/14	Atlantic City Electric Company	Docket No. ER14030245	Return on Equity
Orange and Rockland Utilities	11/13	Rockland Electric Company	Docket No. ER13111135	Return on Equity
Atlantic City Electric Company	12/12	Atlantic City Electric Company	Docket No. ER12121071	Return on Equity
Atlantic City Electric Company	08/11	Atlantic City Electric Company	Docket No. ER11080469	Return on Equity
Pepco Holdings, Inc.	09/06	Atlantic City Electric Company	Docket No. EM06090638	Divestiture and Valuation of Electric Generating Assets
Pepco Holdings, Inc.	12/05	Atlantic City Electric Company	Docket No. EM05121058	Market Value of Electric Generation Assets; Auction
Conectiv	06/03	Atlantic City Electric Company	Docket No. EO03020091	Market Value of Electric Generation Assets; Auction Process
<b>New Mexico Public Regulation Commission</b>				
Public Service Company of New Mexico	12/16	Public Service Company of New Mexico	Case No. 16-00276-UT	Return on Equity (electric)
Public Service Company of New Mexico	08/15	Public Service Company of New Mexico	Case No. 15-00261-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 14-00332-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 13-00390-UT	Cost of Capital and Financial Integrity
Southwestern Public Service Company	02/11	Southwestern Public Service Company	Case No. 10-00395-UT	Return on Equity (electric)
Public Service Company of New Mexico	06/10	Public Service Company of New Mexico	Case No. 10-00086-UT	Return on Equity (electric)
Public Service Company of New Mexico	09/08	Public Service Company of New Mexico	Case No. 08-00273-UT	Return on Equity (electric)
Xcel Energy, Inc.	07/07	Southwestern Public Service Company	Case No. 07-00319-UT	Return on Equity (electric)
<b>New York State Public Service Commission</b>				
Consolidated Edison Company of New York, Inc.	01/15	Consolidated Edison Company of New York, Inc.	Case No. 15-E-0050	Return on Equity (electric)

Resume of:

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Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Orange and Rockland Utilities, Inc.	11/14	Orange and Rockland Utilities, Inc.	Case Nos. 14-E-0493 and 14-G-0494	Return on Equity (electric and gas)
Consolidated Edison Company of New York, Inc.	01/13	Consolidated Edison Company of New York, Inc.	Case No. 13-E-0030	Return on Equity (electric)
Niagara Mohawk Corporation d/b/a National Grid for Electric Service	04/12	Niagara Mohawk Corporation d/b/a National Grid for Electric Service	Case No. 12-E-0201	Return on Equity (electric)
Niagara Mohawk Corporation d/b/a National Grid for Gas Service	04/12	Niagara Mohawk Corporation d/b/a National Grid for Gas Service	Case No. 12-G-0202	Return on Equity (gas)
Orange and Rockland Utilities, Inc.	07/11	Orange and Rockland Utilities, Inc.	Case No. 11-E-0408	Return on Equity (electric)
Orange and Rockland Utilities, Inc.	07/10	Orange and Rockland Utilities, Inc.	Case No. 10-E-0362	Return on Equity (electric)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-G-0795	Return on Equity (gas)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-S-0794	Return on Equity (steam)
Niagara Mohawk Power Corporation	07/01	Niagara Mohawk Power Corporation	Case No. 01-E-1046	Power Purchase and Sale Agreement; Standard Offer Service Agreement
<b>North Carolina Utilities Commission</b>				
Duke Energy Carolinas, LLC	08/17	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1146	Return on Equity
Duke Energy Progress, LLC	06/17	Duke Energy Progress, LLC	Docket No. E-2, Sub 1142	Return on Equity
Public Service Company of North Carolina, Inc.	03/16	Public Service Company of North Carolina, Inc.	Docket No. G-5, Sub 565	Return on Equity
Dominion North Carolina Power	03/16	Dominion North Carolina Power	Docket No. E-22, Sub 532	Return on Equity
Duke Energy Carolinas, LLC	02/13	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1026	Return on Equity
Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	10/12	Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	Docket No. E-2, Sub 1023	Return on Equity
Virginia Electric and Power Company d/b/a Dominion North Carolina Power	03/12	Virginia Electric and Power Company d/b/a Dominion North Carolina Power	Docket No. E-22, Sub 479	Return on Equity (electric)
Duke Energy Carolinas, LLC	07/11	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 989	Return on Equity (electric)

Resume of:  
**Robert B. Hevert**  
 Partner



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>North Dakota Public Service Commission</b>				
Otter Tail Power Company	11/08	Otter Tail Power Company	Docket No. 08-862	Return on Equity (electric)
<b>Oklahoma Corporation Commission</b>				
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/16	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	Cause No. PUD201600094	Return on Equity
Oklahoma Gas & Electric Company	12/15	Oklahoma Gas & Electric Company	Cause No. PUD201500273	Return on Equity
Public Service Company of Oklahoma	07/15	Public Service Company of Oklahoma	Cause No. PUD201500208	Return on Equity
Oklahoma Gas & Electric Company	07/11	Oklahoma Gas & Electric Company	Cause No. PUD201100087	Return on Equity
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/09	CenterPoint Energy Oklahoma Gas	Cause No. PUD200900055	Return on Equity
<b>Pennsylvania Public Utility Commission</b>				
Pike County Light & Power Company	01/14	Pike County Light & Power Company	Docket No. R-2013-2397237	Return on Equity (electric & gas)
Veolia Energy Philadelphia, Inc.	12/13	Veolia Energy Philadelphia, Inc.	Docket No. R-2013-2386293	Return on Equity (steam)
<b>Rhode Island Public Utilities Commission</b>				
The Narragansett Electric Company d/b/a National Grid	11/17	The Narragansett Electric Company d/b/a National Grid	Docket No. 4770	Return on Equity (electric & gas)
The Narragansett Electric Company d/b/a National Grid	04/12	The Narragansett Electric Company d/b/a National Grid	Docket No. 4323	Return on Equity (electric & gas)
National Grid RI – Gas	08/08	National Grid RI – Gas	Docket No. 3943	Revenue Decoupling and Return on Equity
<b>South Carolina Public Service Commission</b>				
Duke Energy Progress, LLC	07/16	Duke Energy Progress, LLC	Docket No. 2016-227-E	Return on Equity
Duke Energy Carolinas, LLC	03/13	Duke Energy Carolinas, LLC	Docket No. 2013-59-E	Return on Equity
South Carolina Electric & Gas	06/12	South Carolina Electric & Gas	Docket No. 2012-218-E	Return on Equity
Duke Energy Carolinas, LLC	08/11	Duke Energy Carolinas, LLC	Docket No. 2011-271-E	Return on Equity
South Carolina Electric & Gas	03/10	South Carolina Electric & Gas	Docket No. 2009-489-E	Return on Equity



Resume of:

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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>South Dakota Public Utilities Commission</b>				
Otter Tail Power Company	08/10	Otter Tail Power Company	Docket No. EL10-011	Return on Equity (electric)
Northern States Power Company	06/09	South Dakota Division of Northern States Power	Docket No. EL09-009	Return on Equity (electric)
Otter Tail Power Company	10/08	Otter Tail Power Company	Docket No. EL08-030	Return on Equity (electric)
<b>Texas Public Utility Commission</b>				
Southwestern Public Service Company	08/17	Southwestern Public Service Company	Docket No. 47527	Return on Equity
Oncor Electric Delivery Company, LLC	03/17	Oncor Electric Delivery Company, LLC	Docket No. 46957	Return on Equity
El Paso Electric Company	02/17	El Paso Electric Company	Docket No. 46831	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Docket No. 46449	Return on Equity (electric)
Sharyland Utilities, L.P.	12/16	Sharyland Utilities, L.P.	Docket No. 45414	Return on Equity
Southwestern Public Service Company	02/16	Southwestern Public Service Company	Docket No. 44524	Return on Equity (electric)
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Return on Equity
Cross Texas Transmission	12/14	Cross Texas Transmission	Docket No. 43950	Return on Equity
Southwestern Public Service Company	12/14	Southwestern Public Service Company	Docket No. 43695	Return on Equity (electric)
Sharyland Utilities, L.P.	05/13	Sharyland Utilities, L.P.	Docket No. 41474	Return on Equity
Wind Energy Texas Transmission, LLC	08/12	Wind Energy Texas Transmission, LLC	Docket No. 40606	Return on Equity
Southwestern Electric Power Company	07/12	Southwestern Electric Power Company	Docket No. 40443	Return on Equity
Oncor Electric Delivery Company, LLC	01/11	Oncor Electric Delivery Company, LLC	Docket No. 38929	Return on Equity
Texas-New Mexico Power Company	08/10	Texas-New Mexico Power Company	Docket No. 38480	Return on Equity (electric)
CenterPoint Energy Houston Electric LLC	06/10	CenterPoint Energy Houston Electric LLC	Docket No. 38339	Return on Equity
Xcel Energy, Inc.	05/10	Southwestern Public Service Company	Docket No. 38147	Return on Equity (electric)
Texas-New Mexico Power Company	08/08	Texas-New Mexico Power Company	Docket No. 36025	Return on Equity (electric)
Xcel Energy, Inc.	05/06	Southwestern Public Service Company	Docket No. 32766	Return on Equity (electric)
<b>Texas Railroad Commission</b>				
Atmos Pipeline - Texas	01/17	Atmos Pipeline - Texas	Docket No. 10580	Return on Equity

Resume of:  
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Partner



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	12/16	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	D-GUD-10567	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10432	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/12	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10182	Return on Equity
Atmos Energy Corporation – West Texas Division	06/12	Atmos Energy Corporation – West Texas Division	GUD 10175	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/12	Atmos Energy Corporation – Mid-Texas Division	GUD 10171	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	12/10	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10038	Return on Equity
Atmos Pipeline – Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/09	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 9902	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	03/08	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	GUD 9791	Return on Equity
<b>Utah Public Service Commission</b>				
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Return on Equity
<b>Vermont Public Service Board</b>				
Central Vermont Public Service Corporation; Green Mountain Power	02/12	Central Vermont Public Service Corporation; Green Mountain Power	Docket No. 7770	Merger Policy
Central Vermont Public Service Corporation	12/10	Central Vermont Public Service Corporation	Docket No. 7627	Return on Equity (electric)
Green Mountain Power	04/06	Green Mountain Power	Docket Nos. 7175 and 7176	Return on Equity (electric)
Vermont Gas Systems, Inc.	12/05	Vermont Gas Systems	Docket Nos. 7109 and 7160	Return on Equity (gas)

Resume of:

**Robert B. Hevert**  
Partner

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Virginia State Corporation Commission</b>				
Virginia Electric and Power Company	03/17	Virginia Electric and Power Company	Case No. PUR-2017-00038	Return on Equity
Virginia Natural Gas, Inc.	03/17	Virginia Natural Gas, Inc.	Case No. PUE-2016-00143	Return on Equity
Virginia Electric and Power Company	10/16	Virginia Electric and Power Company	Case No. PUE-2016-00112; PUE-2016-00113; PUE-2016-00136	Return on Equity
Washington Gas Light Company	07/16	Washington Gas Light Company	Case No. PUE-2016-00001	Return on Equity
Virginia Electric and Power Company	06/16	Virginia Electric and Power Company	Case Nos. PUE-2016-00063; PUE-2016-00062; PUE-2016-00061; PUE-2016-00060; PUE-2016-00059	Return on Equity
Virginia Electric and Power Company	12/15	Virginia Electric and Power Company	Case Nos. PUE-2015-0058; PUE-2015-0059; PUE-2015-0060; PUE-2015-0061; PUE-2015-0075; PUE-2015-0089; PUE-2015-0102; PUE-2015-0104	Return on Equity
Virginia Electric and Power Company	03/15	Virginia Electric and Power Company	Case No. PUE-2015-00027	Return on Equity
Virginia Electric and Power Company	03/13	Virginia Electric and Power Company	Case No. PUE-2013-00020	Return on Equity
Virginia Natural Gas, Inc.	02/11	Virginia Natural Gas, Inc.	Case No. PUE-2010-00142	Capital Structure
Columbia Gas of Virginia, Inc.	06/06	Columbia Gas of Virginia, Inc.	Case No. PUE-2005-00098	Merger Synergies
Dominion Resources	10/01	Virginia Electric and Power Company	Case No. PUE000584	Corporate Structure and Electric Generation Strategy

**Expert Report**

<b>United States District Court, Western District of Texas, Austin Division</b>				
Southwestern Public Service Company	02/12	Southwestern Public Service Company	C.A. No. A-09-CA-917-SS	PURPA and FERC regulations

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 BLOOMBERG BETA COEFFICIENT</b>						
Current 30-Year Treasury (30-day average) [7]	2.83%	0.574	10.92%	11.76%	9.10%	9.58%
Near-Term Projected 30-Year Treasury [8]	3.30%	0.574	10.92%	11.76%	9.57%	10.05%
Mean					9.33%	9.82%

	[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 VALUE LINE AVERAGE BETA COEFFICIENT</b>						
Current 30-Year Treasury (30-day average) [7]	2.83%	0.707	10.92%	11.76%	10.55%	11.15%
Near-Term Projected 30-Year Treasury [8]	3.30%	0.707	10.92%	11.76%	11.02%	11.62%
Mean					10.79%	11.38%

Notes:

[2] Source: Schedule RBH-3

[3] Source: Schedule RBH-2

[4] Source: Schedule RBH-2

[5] Equals Col. [1] + (Col. [2] x Col. [3])

[6] Equals Col. [1] + (Col. [2] x Col. [4])

[7] Source: Bloomberg Professional

[8] Source: Blue Chip Financial Forecasts, Vol. 36, No. 12, December 1, 2017, at 2.

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

		[1]	[2]	[3]				
		Current 30- Year						
		S&P 500 Est. Required Market Return	Treasury (30-day average)	Implied Market Risk Premium				
		13.75%	2.83%	10.92%				
		[4]	[5]	[6]	[7]	[8]	[9]	
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result	
AGILENT TECHNOLOGIES INC	A	22,295.28	0.09%	0.87%	4.93%	5.81%	0.0054%	
AMERICAN AIRLINES GROUP INC	AAL	24,159.42	0.10%	0.83%	-1.14%	-0.31%	-0.0003%	
ADVANCE AUTO PARTS INC	AAP	7,463.70	0.03%	0.25%	13.40%	13.67%	0.0043%	
APPLE INC	AAPL	882,331.52	3.69%	1.53%	10.17%	11.77%	0.4347%	
ABBVIE INC	ABBV	154,725.97	0.65%	2.67%	9.88%	12.68%	0.0821%	
AMERISOURCEBERGEN CORP	ABC	18,497.72	0.08%	1.83%	6.76%	8.65%	0.0067%	
ABBOTT LABORATORIES	ABT	98,117.66	0.41%	1.90%	11.78%	13.79%	0.0566%	
ACCENTURE PLC-CL A	ACN	95,033.59	0.40%	1.79%	10.63%	12.52%	0.0498%	
ADOBE SYSTEMS INC	ADBE	89,454.37	0.37%	0.00%	19.82%	19.82%	0.0742%	
ANALOG DEVICES INC	ADI	31,743.23	0.13%	2.13%	9.75%	11.98%	0.0159%	
ARCHER-DANIELS-MIDLAND CO	ADM	22,302.90	0.09%	3.17%	8.50%	11.80%	0.0110%	
AUTOMATIC DATA PROCESSING	ADP	50,761.83	0.21%	2.07%	10.60%	12.78%	0.0271%	
ALLIANCE DATA SYSTEMS CORP	ADS	13,219.35	0.06%	0.87%	14.00%	14.93%	0.0083%	
AUTODESK INC	ADSK	24,045.39	0.10%	0.00%	90.84%	90.84%	0.0914%	
AMEREN CORPORATION	AEE	15,518.92	0.06%	2.80%	7.01%	9.91%	0.0064%	
AMERICAN ELECTRIC POWER	AEP	38,185.06	0.16%	3.07%	4.34%	7.47%	0.0119%	
AES CORP	AES	6,986.89	0.03%	4.33%	8.23%	12.73%	0.0037%	
AETNA INC	AET	58,756.70	0.25%	1.06%	11.71%	12.84%	0.0316%	
AFLAC INC	AFL	34,455.63	0.14%	2.78%	2.85%	5.67%	0.0082%	
ALLERGAN PLC	AGN	57,812.92	0.24%	1.61%	9.75%	11.44%	0.0277%	
AMERICAN INTERNATIONAL GROUP	AIG	53,901.60	0.23%	2.13%	11.00%	13.25%	0.0299%	
APARTMENT INVT & MGMT CO -A	AIV	6,923.16	0.03%	3.29%	6.80%	10.20%	0.0030%	
ASSURANT INC	AIZ	5,427.99	N/A	2.13%	N/A	N/A	N/A	
ARTHUR J GALLAGHER & CO	AJG	11,902.00	0.05%	2.37%	10.83%	13.33%	0.0066%	
AKAMAI TECHNOLOGIES INC	AKAM	9,435.28	0.04%	0.00%	12.53%	12.53%	0.0049%	
ALBEMARLE CORP	ALB	14,841.78	0.06%	0.95%	12.60%	13.61%	0.0085%	
ALIGN TECHNOLOGY INC	ALGN	20,916.76	N/A	0.00%	N/A	N/A	N/A	
ALASKA AIR GROUP INC	ALK	8,511.02	0.04%	1.73%	-0.18%	1.55%	0.0006%	
ALLSTATE CORP	ALL	36,957.60	0.15%	1.43%	16.27%	17.81%	0.0275%	
ALLEGION PLC	ALLE	7,996.89	0.03%	0.70%	12.99%	13.73%	0.0046%	
ALEXION PHARMACEUTICALS INC	ALXN	24,532.61	0.10%	0.00%	18.81%	18.81%	0.0193%	
APPLIED MATERIALS INC	AMAT	56,278.53	0.24%	0.76%	12.62%	13.42%	0.0316%	
ADVANCED MICRO DEVICES	AMD	10,506.66	0.04%	0.00%	8.00%	8.00%	0.0035%	
AMETEK INC	AME	16,799.91	0.07%	0.51%	11.75%	12.29%	0.0086%	
AFFILIATED MANAGERS GROUP	AMG	11,042.46	0.05%	0.40%	14.89%	15.33%	0.0071%	
AMGEN INC	AMGN	127,513.45	0.53%	2.56%	5.39%	8.03%	0.0428%	
AMERIPRISE FINANCIAL INC	AMP	24,146.62	0.10%	1.99%	8.80%	10.88%	0.0110%	
AMERICAN TOWER CORP	AMT	61,725.30	0.26%	1.82%	19.71%	21.71%	0.0561%	
AMAZON.COM INC	AMZN	567,043.08	2.37%	0.00%	27.03%	27.03%	0.6414%	
ANDEAVOR	ANDV	16,453.04	0.07%	2.15%	19.29%	21.65%	0.0149%	
ANSYS INC	ANSS	12,575.47	0.05%	0.00%	10.38%	10.38%	0.0055%	
ANTHEM INC	ANTM	60,328.45	0.25%	1.14%	10.18%	11.37%	0.0287%	
AON PLC	AON	35,040.66	0.15%	1.01%	11.93%	12.99%	0.0191%	
SMITH (A.O.) CORP	AOS	10,903.77	0.05%	0.88%	15.00%	15.95%	0.0073%	
APACHE CORP	APA	15,934.83	0.07%	2.39%	-17.48%	-15.30%	-0.0102%	
ANADARKO PETROLEUM CORP	APC	26,312.81	0.11%	0.42%	-1.91%	-1.50%	-0.0016%	
AIR PRODUCTS & CHEMICALS INC	APD	35,643.54	0.15%	2.35%	10.73%	13.20%	0.0197%	
AMPHENOL CORP-CL A	APH	27,660.67	0.12%	0.75%	12.22%	13.01%	0.0151%	
ALEXANDRIA REAL ESTATE EQUIT	ARE	12,161.91	0.05%	2.68%	6.57%	9.33%	0.0048%	
ARCONIC INC	ARNC	11,845.39	0.05%	1.30%	17.50%	18.91%	0.0094%	
ACTIVISION BLIZZARD INC	ATVI	47,180.61	0.20%	0.48%	12.63%	13.14%	0.0259%	
AVALONBAY COMMUNITIES INC	AVB	25,039.47	0.10%	3.13%	6.45%	9.67%	0.0101%	
BROADCOM LTD	AVGO	113,393.78	0.47%	1.47%	14.48%	16.05%	0.0762%	
AVERY DENNISON CORP	AVY	10,046.71	0.04%	1.56%	7.80%	9.42%	0.0040%	
AMERICAN WATER WORKS CO INC	AWK	16,332.05	0.07%	1.77%	8.53%	10.38%	0.0071%	
AMERICAN EXPRESS CO	AXP	84,811.91	0.35%	1.37%	10.17%	11.61%	0.0412%	
ACUITY BRANDS INC	AYI	7,225.85	0.03%	0.31%	16.67%	17.00%	0.0051%	
AUTOZONE INC	AZO	18,880.76	0.08%	0.00%	12.96%	12.96%	0.0102%	
BOEING CO/THE	BA	164,856.14	0.69%	2.06%	15.37%	17.58%	0.1213%	
BANK OF AMERICA CORP	BAC	293,830.39	1.23%	1.38%	12.65%	14.12%	0.1736%	
BAXTER INTERNATIONAL INC	BAX	35,702.84	0.15%	0.92%	13.45%	14.43%	0.0216%	

BB&T CORP	BBT	38,988.48	0.16%	2.55%	8.65%	11.31%	0.0184%
BEST BUY CO INC	BBY	17,834.39	0.07%	2.26%	12.35%	14.75%	0.0110%
CR BARD INC	BCR	24,487.46	0.10%	0.30%	8.73%	9.05%	0.0093%
BECTON DICKINSON AND CO	BDX	52,026.93	0.22%	1.36%	12.80%	14.24%	0.0310%
FRANKLIN RESOURCES INC	BEN	24,011.91	0.10%	1.99%	10.00%	12.09%	0.0122%
BROWN-FORMAN CORP-CLASS B	BF/B	23,065.63	0.10%	1.28%	9.72%	11.06%	0.0107%
BRIGHTHOUSE FINANCIAL INC	BHF	7,041.46	0.03%	0.00%	8.00%	8.00%	0.0024%
BAKER HUGHES A GE CO	BHGE	34,049.38	0.14%	1.88%	7.57%	9.51%	0.0136%
BIOGEN INC	BIIB	68,131.52	0.29%	0.00%	4.87%	4.87%	0.0139%
BANK OF NEW YORK MELLON CORP	BK	56,054.98	0.23%	1.57%	7.50%	9.13%	0.0214%
BLACKROCK INC	BLK	81,152.19	0.34%	2.00%	14.03%	16.17%	0.0549%
BALL CORP	BLL	13,970.75	0.06%	0.81%	1.27%	2.08%	0.0012%
BRISTOL-MYERS SQUIBB CO	BMJ	103,423.05	0.43%	2.47%	8.07%	10.63%	0.0460%
BERKSHIRE HATHAWAY INC-CL B	BRK/B	477,686.99	2.00%	0.00%	6.60%	6.60%	0.1319%
BOSTON SCIENTIFIC CORP	BSX	36,087.58	0.15%	0.00%	10.33%	10.33%	0.0156%
BORGWARNER INC	BWA	11,739.49	0.05%	1.01%	7.20%	8.24%	0.0040%
BOSTON PROPERTIES INC	BXP	19,348.93	0.08%	2.41%	5.56%	8.03%	0.0065%
CITIGROUP INC	C	199,622.15	0.84%	1.28%	11.75%	13.10%	0.1094%
CA INC	CA	13,841.23	0.06%	3.11%	2.97%	6.12%	0.0035%
CONAGRA BRANDS INC	CAG	15,249.24	0.06%	2.23%	7.00%	9.31%	0.0059%
CARDINAL HEALTH INC	CAH	18,621.39	0.08%	3.13%	12.30%	15.62%	0.0122%
CATERPILLAR INC	CAT	83,974.88	0.35%	2.24%	10.00%	12.36%	0.0434%
CHUBB LTD	CB	70,612.81	0.30%	1.86%	8.73%	10.67%	0.0315%
CBRE GROUP INC - A	CBG	14,718.95	0.06%	0.00%	13.00%	13.00%	0.0080%
CBOE GLOBAL MARKETS INC	CBOE	14,004.10	0.06%	0.84%	22.16%	23.10%	0.0135%
CBS CORP-CLASS B NON VOTING	CBS	22,471.24	0.09%	1.31%	14.98%	16.39%	0.0154%
CROWN CASTLE INTL CORP	CCI	45,909.09	0.19%	3.45%	21.03%	24.85%	0.0477%
CARNIVAL CORP	CCL	46,960.59	0.20%	2.37%	12.11%	14.62%	0.0287%
CADENCE DESIGN SYS INC	CDNS	12,398.43	0.05%	0.00%	12.00%	12.00%	0.0062%
CELGENE CORP	CELG	79,385.17	0.33%	0.00%	18.95%	18.95%	0.0629%
CERNER CORP	CERN	23,498.41	0.10%	0.00%	12.00%	12.00%	0.0118%
CF INDUSTRIES HOLDINGS INC	CF	8,740.25	0.04%	3.20%	6.00%	9.30%	0.0034%
CITIZENS FINANCIAL GROUP	CFG	20,024.05	0.08%	1.57%	15.14%	16.83%	0.0141%
CHURCH & DWIGHT CO INC	CHD	11,768.98	0.05%	1.62%	9.01%	10.71%	0.0053%
CHESAPEAKE ENERGY CORP	CHK	3,698.35	0.02%	0.00%	-13.30%	-13.30%	-0.0021%
C.H. ROBINSON WORLDWIDE INC	CHRW	12,079.47	0.05%	2.10%	9.28%	11.47%	0.0058%
CHARTER COMMUNICATIONS INC-A	CHTR	91,066.94	0.38%	0.00%	22.44%	22.44%	0.0855%
CIGNA CORP	CI	52,201.97	0.22%	0.02%	12.61%	12.63%	0.0276%
CINCINNATI FINANCIAL CORP	CINF	12,261.08	N/A	3.01%	N/A	N/A	N/A
COLGATE-PALMOLIVE CO	CL	63,618.72	0.27%	2.20%	7.53%	9.80%	0.0261%
CLOROX COMPANY	CLX	17,959.85	0.08%	2.42%	6.35%	8.84%	0.0066%
COMERICA INC	CMA	14,488.86	0.06%	1.31%	18.50%	19.93%	0.0121%
COMCAST CORP-CLASS A	CMCSA	175,453.39	0.73%	1.67%	9.00%	10.75%	0.0789%
CME GROUP INC	CME	50,887.64	0.21%	3.88%	12.29%	16.41%	0.0349%
CHIPOTLE MEXICAN GRILL INC	CMG	8,593.82	0.04%	0.00%	46.98%	46.98%	0.0169%
CUMMINS INC	CMI	27,782.96	0.12%	2.50%	11.23%	13.86%	0.0161%
CMS ENERGY CORP	CMS	14,075.97	0.06%	2.66%	6.28%	9.02%	0.0053%
CENTENE CORP	CNC	17,617.32	0.07%	0.00%	12.48%	12.48%	0.0092%
CENTERPOINT ENERGY INC	CNP	12,935.32	0.05%	3.58%	7.32%	11.04%	0.0060%
CAPITAL ONE FINANCIAL CORP	COF	44,596.46	0.19%	1.74%	7.25%	9.06%	0.0169%
CABOT OIL & GAS CORP	COG	13,389.62	0.06%	0.59%	38.02%	38.71%	0.0217%
ROCKWELL COLLINS INC	COL	21,553.91	0.09%	1.14%	9.30%	10.49%	0.0095%
COOPER COS INC/THE	COO	11,805.58	0.05%	0.02%	9.75%	9.78%	0.0048%
CONOCOPHILLIPS	COP	60,827.85	0.25%	2.08%	6.00%	8.15%	0.0207%
COSTCO WHOLESALE CORP	COST	80,593.99	0.34%	1.13%	10.02%	11.20%	0.0378%
COTY INC-CL A	COTY	12,913.74	0.05%	2.87%	17.13%	20.25%	0.0109%
CAMPBELL SOUP CO	CPB	14,816.06	0.06%	2.97%	4.06%	7.10%	0.0044%
SALESFORCE.COM INC	CRM	75,350.34	0.32%	0.00%	28.30%	28.30%	0.0892%
CISCO SYSTEMS INC	CSCO	184,397.11	0.77%	3.28%	4.80%	8.16%	0.0629%
CSRA INC	CSRA	4,738.15	0.02%	1.38%	7.30%	8.73%	0.0017%
CSX CORP	CSX	49,825.06	0.21%	1.40%	13.28%	14.78%	0.0308%
CINTAS CORP	CTAS	16,736.56	0.07%	0.94%	11.98%	12.97%	0.0091%
CENTURYLINK INC	CTL	15,596.76	0.07%	14.80%	-14.57%	-0.84%	-0.0006%
COGNIZANT TECH SOLUTIONS-A	CTSH	42,619.59	0.18%	0.69%	14.20%	14.93%	0.0266%
CITRIX SYSTEMS INC	CTXS	13,203.69	0.06%	0.00%	11.67%	11.67%	0.0064%
CVS HEALTH CORP	CVS	77,595.22	0.32%	2.65%	13.77%	16.60%	0.0539%
CHEVRON CORP	CVX	226,006.50	0.95%	3.64%	42.64%	47.06%	0.4451%
CONCHO RESOURCES INC	CXO	20,796.63	N/A	0.00%	N/A	N/A	N/A
DOMINION ENERGY INC	D	54,140.16	0.23%	3.61%	5.98%	9.70%	0.0220%
DELTA AIR LINES INC	DAL	37,730.54	0.16%	1.91%	5.00%	6.95%	0.0110%
DEERE & CO	DE	48,149.55	0.20%	1.66%	8.67%	10.40%	0.0209%
DISCOVER FINANCIAL SERVICES	DFS	25,654.67	0.11%	1.82%	6.40%	8.28%	0.0089%
DOLLAR GENERAL CORP	DG	24,068.65	0.10%	1.18%	8.05%	9.27%	0.0093%
QUEST DIAGNOSTICS INC	DGX	13,420.04	0.06%	1.83%	7.87%	9.76%	0.0055%
DR HORTON INC	DHI	19,126.93	0.08%	0.91%	17.20%	18.18%	0.0146%
DANAHER CORP	DHR	65,637.31	0.27%	0.58%	9.05%	9.65%	0.0265%
WALT DISNEY CO/THE	DIS	158,310.92	0.66%	1.65%	7.63%	9.35%	0.0619%
DISCOVERY COMMUNICATIONS-A	DISCA	10,647.43	0.04%	0.00%	5.05%	5.05%	0.0023%
DISH NETWORK CORP-A	DISH	23,621.00	0.10%	0.00%	-7.26%	-7.26%	-0.0072%

DELPHI AUTOMOTIVE PLC	DLPH	27,825.45	0.12%	1.13%	12.23%	13.43%	0.0156%
DIGITAL REALTY TRUST INC	DLR	24,255.62	0.10%	3.19%	5.76%	9.04%	0.0092%
DOLLAR TREE INC	DLTR	24,364.04	0.10%	0.00%	13.98%	13.98%	0.0143%
DOVER CORP	DOV	15,222.35	0.06%	1.88%	15.53%	17.55%	0.0112%
DR PEPPER SNAPPLE GROUP INC	DPS	16,283.03	0.07%	2.57%	8.58%	11.27%	0.0077%
DUKE REALTY CORP	DRE	10,018.24	0.04%	6.09%	3.71%	9.92%	0.0042%
DARDEN RESTAURANTS INC	DRI	10,428.13	0.04%	2.99%	9.57%	12.70%	0.0055%
DTE ENERGY COMPANY	DTE	20,732.14	0.09%	2.87%	5.67%	8.62%	0.0075%
DUKE ENERGY CORP	DUK	62,426.00	0.26%	3.95%	5.05%	9.10%	0.0238%
DAVITA INC	DVA	11,192.30	0.05%	0.00%	1.45%	1.45%	0.0007%
DEVON ENERGY CORP	DVN	20,247.52	0.08%	0.62%	16.95%	17.63%	0.0149%
DOWDUPONT INC	DWDP	168,385.70	0.70%	2.22%	7.43%	9.73%	0.0685%
DXC TECHNOLOGY CO	DXC	27,425.74	0.11%	0.74%	15.00%	15.80%	0.0181%
ELECTRONIC ARTS INC	EA	32,747.87	0.14%	0.00%	13.50%	13.50%	0.0185%
EBAY INC	EBAY	36,215.28	0.15%	0.00%	8.93%	8.93%	0.0135%
ECOLAB INC	ECL	39,269.23	0.16%	1.10%	12.95%	14.13%	0.0232%
CONSOLIDATED EDISON INC	ED	27,608.53	0.12%	3.10%	2.00%	5.13%	0.0059%
EQUIFAX INC	EFX	13,703.46	0.06%	1.37%	10.00%	11.44%	0.0066%
EDISON INTERNATIONAL	EIX	26,478.68	0.11%	2.70%	6.30%	9.08%	0.0101%
ESTEE LAUDER COMPANIES-CL A	EL	45,967.04	0.19%	1.21%	12.00%	13.28%	0.0255%
EASTMAN CHEMICAL CO	EMN	13,276.75	0.06%	2.22%	7.43%	9.74%	0.0054%
EMERSON ELECTRIC CO	EMR	41,602.76	0.17%	3.00%	8.33%	11.45%	0.0199%
EOG RESOURCES INC	EOG	59,163.39	0.25%	0.66%	-10.86%	-10.23%	-0.0253%
EQUINIX INC	EQIX	36,338.77	0.15%	1.73%	30.37%	32.36%	0.0492%
EQUITY RESIDENTIAL	EQR	24,555.33	0.10%	3.02%	5.30%	8.40%	0.0086%
EQT CORP	EQT	15,359.83	0.06%	0.20%	17.50%	17.72%	0.0114%
EVERSOURCE ENERGY	ES	20,550.04	0.09%	2.93%	5.94%	8.96%	0.0077%
EXPRESS SCRIPTS HOLDING CO	ESRX	36,916.19	0.15%	0.00%	12.78%	12.78%	0.0197%
ESSEX PROPERTY TRUST INC	ESS	16,310.49	0.07%	2.84%	6.23%	9.16%	0.0063%
E*TRADE FINANCIAL CORP	ETFC	12,901.25	0.05%	0.00%	17.57%	17.57%	0.0095%
EATON CORP PLC	ETN	34,269.87	0.14%	3.08%	9.82%	13.05%	0.0187%
ENTERGY CORP	ETR	15,588.14	0.07%	4.07%	0.14%	4.21%	0.0027%
ENVISION HEALTHCARE CORP	EVHC	3,863.08	0.02%	0.00%	2.74%	2.74%	0.0004%
EDWARDS LIFESCIENCES CORP	EW	24,801.85	0.10%	0.00%	16.35%	16.35%	0.0170%
EXELON CORP	EXC	40,045.27	0.17%	3.16%	1.08%	4.26%	0.0071%
EXPEDITORS INTL WASH INC	EXPD	11,511.59	0.05%	1.30%	8.50%	9.85%	0.0047%
EXPEDIA INC	EXPE	18,650.87	0.08%	0.93%	14.60%	15.60%	0.0122%
EXTRA SPACE STORAGE INC	EXR	10,756.03	0.05%	3.68%	6.85%	10.65%	0.0048%
FORD MOTOR CO	F	49,733.22	0.21%	4.94%	-7.57%	-2.82%	-0.0059%
FASTENAL CO	FAST	15,056.38	0.06%	2.45%	15.75%	18.40%	0.0116%
FACEBOOK INC-A	FB	517,086.57	2.16%	0.00%	28.81%	28.81%	0.6233%
FORTUNE BRANDS HOME & SECURI	FBHS	10,386.21	0.04%	1.05%	11.61%	12.72%	0.0055%
FREEPORT-MCMORAN INC	FCX	20,150.46	0.08%	0.00%	26.81%	26.81%	0.0226%
FEDEX CORP	FDX	62,065.46	0.26%	0.87%	12.72%	13.64%	0.0354%
FIRSTENERGY CORP	FE	15,187.45	0.06%	4.22%	-0.62%	3.58%	0.0023%
F5 NETWORKS INC	FFIV	8,400.05	0.04%	0.00%	8.93%	8.93%	0.0031%
FIDELITY NATIONAL INFO SERV	FIS	31,493.82	0.13%	1.21%	12.00%	13.28%	0.0175%
FISERV INC	FISV	27,394.10	0.11%	0.00%	10.80%	10.80%	0.0124%
FIFTH THIRD BANCORP	FITB	21,527.28	0.09%	1.97%	4.80%	6.81%	0.0061%
FOOT LOCKER INC	FL	5,312.06	0.02%	2.74%	0.90%	3.65%	0.0008%
FLIR SYSTEMS INC	FLIR	6,454.79	N/A	1.20%	N/A	N/A	N/A
FLUOR CORP	FLR	6,771.36	0.03%	1.77%	8.46%	10.30%	0.0029%
FLOWSERVE CORP	FLS	5,562.44	0.02%	1.74%	8.99%	10.80%	0.0025%
FMC CORP	FMC	12,674.31	0.05%	0.71%	12.85%	13.61%	0.0072%
TWENTY-FIRST CENTURY FOX-A	FOXA	58,538.97	0.24%	1.25%	8.53%	9.83%	0.0241%
FEDERAL REALTY INVS TRUST	FRT	9,591.42	0.04%	3.01%	4.68%	7.76%	0.0031%
TECHNIPFMC PLC	FTI	13,358.53	0.06%	0.97%	4.56%	5.56%	0.0031%
FORTIVE CORP	FTV	25,945.28	0.11%	0.37%	10.20%	10.59%	0.0115%
GENERAL DYNAMICS CORP	GD	61,854.43	0.26%	1.59%	8.48%	10.14%	0.0262%
GENERAL ELECTRIC CO	GE	158,612.43	0.66%	4.89%	8.17%	13.26%	0.0880%
GGP INC	GGP	22,230.46	0.09%	3.88%	5.02%	8.99%	0.0084%
GILEAD SCIENCES INC	GILD	97,682.80	0.41%	2.86%	3.62%	6.54%	0.0267%
GENERAL MILLS INC	GIS	32,145.22	0.13%	3.52%	9.57%	13.26%	0.0178%
CORNING INC	GLW	28,148.77	0.12%	1.93%	9.65%	11.67%	0.0137%
GENERAL MOTORS CO	GM	61,205.36	0.26%	3.54%	8.94%	12.64%	0.0324%
ALPHABET INC-CL A	GOOGL	714,427.61	2.99%	0.00%	17.97%	17.97%	0.5373%
GENUINE PARTS CO	GPC	13,630.66	0.06%	2.90%	9.47%	12.51%	0.0071%
GLOBAL PAYMENTS INC	GPN	16,003.36	0.07%	0.04%	14.50%	14.55%	0.0097%
GAP INC/THE	GPS	12,563.97	0.05%	2.86%	6.20%	9.15%	0.0048%
GARMIN LTD	GRMN	11,640.00	0.05%	3.29%	5.78%	9.16%	0.0045%
GOLDMAN SACHS GROUP INC	GS	97,026.07	0.41%	1.18%	8.08%	9.31%	0.0378%
GOODYEAR TIRE & RUBBER CO	GT	7,973.61	N/A	1.29%	N/A	N/A	N/A
WW GRAINGER INC	GWW	12,610.95	0.05%	2.28%	11.80%	14.22%	0.0075%
HALLIBURTON CO	HAL	36,454.76	0.15%	1.72%	74.00%	76.36%	0.1165%
HASBRO INC	HAS	11,586.16	0.05%	2.45%	9.70%	12.27%	0.0059%
HUNTINGTON BANCSHARES INC	HBAN	15,565.63	0.07%	2.43%	10.27%	12.83%	0.0084%
HANESBRANDS INC	HBI	7,616.16	0.03%	2.87%	8.56%	11.56%	0.0037%
HCA HEALTHCARE INC	HCA	30,094.46	0.13%	0.00%	11.05%	11.05%	0.0139%
WELLTOWER INC	HCN	24,984.27	0.10%	5.17%	2.21%	7.43%	0.0078%

HCP INC	HCP	12,403.23	0.05%	5.61%	-3.92%	1.58%	0.0008%
HOME DEPOT INC	HD	209,984.56	0.88%	1.98%	13.81%	15.93%	0.1400%
HESS CORP	HES	14,578.55	0.06%	2.22%	-14.90%	-12.85%	-0.0078%
HARTFORD FINANCIAL SVCS GRP	HIG	20,489.92	0.09%	1.67%	9.50%	11.25%	0.0096%
HILTON WORLDWIDE HOLDINGS IN	HLT	24,815.43	0.10%	0.77%	16.88%	17.71%	0.0184%
HARLEY-DAVIDSON INC	HOG	8,448.42	0.04%	2.93%	8.97%	12.03%	0.0043%
HOLOGIC INC	HOLX	11,501.52	0.05%	0.00%	8.82%	8.82%	0.0042%
HONEYWELL INTERNATIONAL INC	HON	118,813.88	0.50%	1.75%	8.93%	10.76%	0.0535%
HELMERICH & PAYNE	HP	6,362.11	N/A	4.78%	N/A	N/A	N/A
HEWLETT PACKARD ENTERPRISE	HPE	22,250.25	0.09%	2.09%	1.13%	3.23%	0.0030%
HP INC	HPQ	35,826.96	0.15%	2.63%	5.60%	8.30%	0.0124%
H&R BLOCK INC	HRB	5,473.19	0.02%	3.67%	11.00%	14.88%	0.0034%
HORMEL FOODS CORP	HRL	19,239.34	0.08%	2.05%	6.15%	8.27%	0.0067%
HARRIS CORP	HRS	17,224.48	N/A	1.58%	N/A	N/A	N/A
HENRY SCHEIN INC	HSIC	11,214.39	0.05%	0.00%	4.67%	4.67%	0.0022%
HOST HOTELS & RESORTS INC	HST	14,646.35	0.06%	4.11%	3.80%	7.99%	0.0049%
HERSHEY CO/THE	HSY	23,372.44	0.10%	2.30%	8.00%	10.40%	0.0102%
HUMANA INC	HUM	37,266.48	0.16%	0.61%	12.68%	13.34%	0.0208%
INTL BUSINESS MACHINES CORP	IBM	142,544.10	0.60%	3.80%	1.58%	5.41%	0.0323%
INTERCONTINENTAL EXCHANGE IN	ICE	41,800.12	0.17%	1.12%	11.49%	12.68%	0.0222%
IDEXX LABORATORIES INC	IDXX	13,641.88	0.06%	0.00%	11.16%	11.16%	0.0064%
INTL FLAVORS & FRAGRANCES	IFF	12,276.21	0.05%	0.00%	5.10%	5.10%	0.0026%
ILLUMINA INC	ILMN	33,584.38	0.14%	0.00%	15.02%	15.02%	0.0211%
INCYTE CORP	INCY	20,890.58	0.09%	0.00%	43.10%	43.10%	0.0377%
IHS MARKIT LTD	INFO	17,798.62	0.07%	0.00%	13.06%	13.06%	0.0097%
INTEL CORP	INTC	209,851.20	0.88%	2.43%	8.56%	11.09%	0.0974%
INTUIT INC	INTU	40,193.28	0.17%	0.99%	14.82%	15.89%	0.0267%
INTERNATIONAL PAPER CO	IP	23,375.87	0.10%	3.27%	7.18%	10.56%	0.0103%
INTERPUBLIC GROUP OF COS INC	IPG	7,686.68	0.03%	3.63%	4.57%	8.28%	0.0027%
IQVIA HOLDINGS INC	IQV	21,216.84	0.09%	0.00%	14.64%	14.64%	0.0130%
INGERSOLL-RAND PLC	IR	21,893.42	0.09%	1.92%	9.90%	11.90%	0.0109%
IRON MOUNTAIN INC	IRM	10,909.72	N/A	5.20%	N/A	N/A	N/A
INTUITIVE SURGICAL INC	ISRG	44,794.48	0.19%	0.00%	11.83%	11.83%	0.0222%
GARTNER INC	IT	10,958.85	0.05%	0.00%	17.50%	17.50%	0.0080%
ILLINOIS TOOL WORKS	ITW	57,984.88	0.24%	1.65%	9.70%	11.43%	0.0277%
INVESCO LTD	IVZ	14,724.03	0.06%	3.20%	13.39%	16.80%	0.0104%
HUNT (JB) TRANSPRT SVCS INC	JBHT	12,197.83	0.05%	0.82%	13.40%	14.28%	0.0073%
JOHNSON CONTROLS INTERNATION	JCI	34,833.37	0.15%	2.89%	11.93%	14.99%	0.0219%
JACOBS ENGINEERING GROUP INC	JEC	7,906.19	0.03%	0.91%	9.16%	10.11%	0.0033%
JOHNSON & JOHNSON	JNJ	374,312.84	1.57%	2.41%	7.10%	9.59%	0.1503%
JUNIPER NETWORKS INC	JNPR	10,408.01	0.04%	1.46%	5.98%	7.48%	0.0033%
JPMORGAN CHASE & CO	JPM	362,655.72	1.52%	2.03%	8.87%	10.98%	0.1667%
NORDSTROM INC	JWN	7,571.17	0.03%	3.32%	8.75%	12.21%	0.0039%
KELLOGG CO	K	22,856.47	0.10%	3.20%	6.31%	9.61%	0.0092%
KEYCORP	KEY	20,411.09	0.09%	2.00%	12.32%	14.45%	0.0123%
KRAFT HEINZ CO/THE	KHC	99,146.73	0.41%	3.02%	7.01%	10.14%	0.0421%
KIMCO REALTY CORP	KIM	7,883.10	0.03%	5.96%	17.33%	23.80%	0.0078%
KLA-TENCOR CORP	KLAC	16,021.82	0.07%	2.26%	8.05%	10.40%	0.0070%
KIMBERLY-CLARK CORP	KMB	42,126.45	0.18%	3.22%	6.03%	9.34%	0.0165%
KINDER MORGAN INC	KMI	38,478.72	0.16%	2.90%	15.75%	18.88%	0.0304%
CARMAX INC	KMX	12,564.36	0.05%	0.00%	13.27%	13.27%	0.0070%
COCA-COLA CO/THE	KO	195,010.74	0.82%	3.22%	5.58%	8.89%	0.0726%
MICHAEL KORS HOLDINGS LTD	KORS	8,887.48	0.04%	0.00%	14.39%	14.39%	0.0053%
KROGER CO	KR	23,003.04	0.10%	1.95%	2.97%	4.95%	0.0048%
KOHL'S CORP	KSS	8,086.78	0.03%	4.59%	4.95%	9.65%	0.0033%
KANSAS CITY SOUTHERN	KSU	11,611.33	0.05%	1.24%	14.55%	15.88%	0.0077%
LOEWS CORP	L	16,925.81	N/A	0.50%	N/A	N/A	N/A
L BRANDS INC	LB	15,915.27	0.07%	4.28%	8.45%	12.91%	0.0086%
LEGGETT & PLATT INC	LEG	6,358.87	0.03%	2.92%	17.40%	20.58%	0.0055%
LENNAR CORP-A	LEN	14,479.57	0.06%	0.25%	12.46%	12.73%	0.0077%
LABORATORY CRP OF AMER HLDGS	LH	16,111.89	0.07%	0.00%	10.50%	10.50%	0.0071%
LKQ CORP	LKQ	12,182.52	0.05%	0.00%	12.75%	12.75%	0.0065%
L3 TECHNOLOGIES INC	LLL	15,518.25	0.06%	1.54%	5.77%	7.35%	0.0048%
ELI LILLY & CO	LLY	93,196.66	0.39%	2.48%	9.93%	12.54%	0.0489%
LOCKHEED MARTIN CORP	LMT	91,502.61	0.38%	2.32%	10.63%	13.06%	0.0500%
LINCOLN NATIONAL CORP	LNC	16,751.39	0.07%	1.56%	9.25%	10.88%	0.0076%
ALLIANT ENERGY CORP	LNT	10,429.63	0.04%	2.79%	6.43%	9.31%	0.0041%
LOWE'S COS INC	LOW	69,431.55	0.29%	1.88%	14.56%	16.58%	0.0482%
LAM RESEARCH CORP	LRCX	31,147.12	0.13%	0.94%	11.33%	12.33%	0.0161%
LEUCADIA NATIONAL CORP	LUK	9,373.54	0.04%	1.37%	18.00%	19.49%	0.0076%
SOUTHWEST AIRLINES CO	LUV	36,000.83	0.15%	0.75%	6.98%	7.76%	0.0117%
LYONDELLBASELL INDU-CL A	LYB	41,299.99	0.17%	3.39%	8.00%	11.53%	0.0199%
MACY'S INC	M	7,249.48	0.03%	6.51%	0.03%	6.55%	0.0020%
MASTERCARD INC - A	MA	159,297.12	0.67%	0.59%	17.85%	18.48%	0.1232%
MID-AMERICA APARTMENT COMM	MAA	11,639.95	N/A	3.42%	N/A	N/A	N/A
MACERICH CO/THE	MAC	9,115.04	0.04%	4.75%	7.91%	12.84%	0.0049%
MARRIOTT INTERNATIONAL -CL A	MAR	46,301.82	0.19%	1.02%	14.03%	15.12%	0.0293%
MASCO CORP	MAS	13,498.00	0.06%	0.95%	15.44%	16.47%	0.0093%
MATTEL INC	MAT	6,273.06	0.03%	4.88%	10.37%	15.50%	0.0041%



MCDONALD'S CORP	MCD	137,092.01	0.57%	2.22%	9.86%	12.19%	0.0699%
MICROCHIP TECHNOLOGY INC	MCHP	20,347.43	0.09%	1.67%	14.18%	15.96%	0.0136%
MCKESSON CORP	MCK	30,800.02	0.13%	0.88%	18.50%	19.46%	0.0251%
MOODY'S CORP	MCO	29,012.80	0.12%	1.00%	8.00%	9.04%	0.0110%
MONDELEZ INTERNATIONAL INC-A	MDLZ	64,169.05	0.27%	1.86%	11.64%	13.61%	0.0365%
MEDTRONIC PLC	MDT	111,170.51	0.47%	2.27%	5.96%	8.30%	0.0386%
METLIFE INC	MET	56,487.42	0.24%	2.98%	9.00%	12.11%	0.0286%
MGM RESORTS INTERNATIONAL	MGM	19,316.64	0.08%	1.29%	7.47%	8.80%	0.0071%
MOHAWK INDUSTRIES INC	MHK	21,008.71	0.09%	0.00%	8.35%	8.35%	0.0073%
MCCORMICK & CO-NON VTG SHRS	MKC	13,380.89	0.06%	1.83%	9.60%	11.52%	0.0065%
MARTIN MARIETTA MATERIALS	MLM	13,099.30	0.05%	0.82%	19.41%	20.31%	0.0111%
MARSH & MCLENNAN COS	MMC	42,834.25	0.18%	1.72%	12.86%	14.69%	0.0263%
3M CO	MMM	144,816.16	0.61%	1.93%	8.60%	10.62%	0.0643%
MONSTER BEVERAGE CORP	MNST	35,343.58	0.15%	0.00%	20.30%	20.30%	0.0300%
ALTRIA GROUP INC	MO	129,432.51	0.54%	3.79%	8.06%	12.01%	0.0650%
MONSANTO CO	MON	52,093.26	0.22%	1.97%	8.10%	10.15%	0.0221%
MOSAIC CO/THE	MOS	8,527.00	0.04%	2.47%	11.70%	14.31%	0.0051%
MARATHON PETROLEUM CORP	MPC	30,589.25	0.13%	2.44%	12.47%	15.06%	0.0193%
MERCK & CO. INC.	MRK	150,579.62	0.63%	3.18%	5.19%	8.46%	0.0533%
MARATHON OIL CORP	MRO	12,609.01	0.05%	1.35%	5.00%	6.38%	0.0034%
MORGAN STANLEY	MS	93,305.68	0.39%	1.74%	15.84%	17.72%	0.0692%
MICROSOFT CORP	MSFT	649,337.06	2.72%	1.98%	10.32%	12.40%	0.3370%
MOTOROLA SOLUTIONS INC	MSI	15,245.80	0.06%	2.08%	4.35%	6.47%	0.0041%
M & T BANK CORP	MTB	25,429.57	0.11%	1.78%	9.02%	10.88%	0.0116%
METTLER-TOLEDO INTERNATIONAL	MTD	16,094.64	0.07%	0.00%	12.16%	12.16%	0.0082%
MICRON TECHNOLOGY INC	MU	48,886.49	0.20%	0.39%	8.83%	1.23%	0.0025%
MYLAN NV	MYL	19,596.02	0.08%	0.00%	3.03%	3.03%	0.0025%
NAVIENT CORP	NAVI	3,316.58	N/A	5.08%	N/A	N/A	N/A
NOBLE ENERGY INC	NBL	12,797.77	0.05%	1.52%	3.72%	5.26%	0.0028%
NORWEGIAN CRUISE LINE HOLDIN	NCLH	12,373.61	0.05%	0.00%	14.33%	14.33%	0.0074%
NASDAQ INC	NDAQ	13,158.47	0.06%	1.84%	9.82%	11.75%	0.0065%
NEXTERA ENERGY INC	NEE	74,341.63	0.31%	2.49%	7.04%	9.61%	0.0299%
NEWMONT MINING CORP	NEM	19,728.12	0.08%	0.72%	-11.20%	-10.52%	-0.0087%
NETFLIX INC	NFLX	81,171.71	0.34%	0.00%	39.94%	39.94%	0.1357%
NEWFIELD EXPLORATION CO	NFX	6,174.21	0.03%	0.00%	12.36%	12.36%	0.0032%
NISOURCE INC	NI	9,271.93	0.04%	2.54%	7.50%	10.13%	0.0039%
NIKE INC -CL B	NKE	98,576.34	0.41%	1.27%	8.00%	9.32%	0.0384%
NIELSEN HOLDINGS PLC	NLSN	13,078.49	0.05%	3.72%	9.50%	13.40%	0.0073%
NORTHROP GRUMMAN CORP	NOC	53,511.74	0.22%	1.26%	7.81%	9.11%	0.0204%
NATIONAL OILWELL VARCO INC	NOV	12,750.08	N/A	0.60%	N/A	N/A	N/A
NRG ENERGY INC	NRG	8,755.15	0.04%	0.51%	23.53%	24.10%	0.0088%
NORFOLK SOUTHERN CORP	NSC	39,668.80	0.17%	1.77%	13.70%	15.59%	0.0259%
NETAPP INC	NTAP	15,076.40	0.06%	1.42%	12.15%	13.65%	0.0086%
NORTHERN TRUST CORP	NTRS	22,237.24	0.09%	1.64%	11.02%	12.75%	0.0119%
NUCOR CORP	NUE	18,280.21	0.08%	2.63%	12.00%	14.79%	0.0113%
NVIDIA CORP	NVDA	121,630.26	0.51%	0.28%	12.00%	12.30%	0.0626%
NEWELL BRANDS INC	NWL	15,178.40	0.06%	2.84%	4.42%	7.32%	0.0047%
NEWS CORP - CLASS A	NWSA	9,463.08	0.04%	1.41%	19.03%	20.58%	0.0081%
REALTY INCOME CORP	O	15,582.73	0.07%	4.59%	4.18%	8.87%	0.0058%
ONEOK INC	OKE	19,900.36	0.08%	5.46%	12.75%	18.56%	0.0155%
OMNICOM GROUP	OMC	16,469.25	0.07%	3.16%	6.87%	10.14%	0.0070%
ORACLE CORP	ORCL	204,729.98	0.86%	1.44%	8.45%	9.95%	0.0853%
O'REILLY AUTOMOTIVE INC	ORLY	20,084.39	0.08%	0.00%	15.26%	15.26%	0.0128%
OCCIDENTAL PETROLEUM CORP	OXY	53,949.80	0.23%	4.34%	-3.50%	0.76%	0.0017%
PAYCHEX INC	PAYX	24,163.93	0.10%	2.94%	8.33%	11.40%	0.0115%
PEOPLE'S UNITED FINANCIAL	PBCT	6,585.71	0.03%	3.62%	2.00%	5.66%	0.0016%
PACCAR INC	PCAR	24,728.74	0.10%	2.57%	7.50%	10.16%	0.0105%
P G & E CORP	PCG	27,902.29	0.12%	3.84%	5.15%	9.09%	0.0106%
PRICELINE GROUP INC/THE	PCLN	84,844.87	0.36%	0.00%	16.96%	16.96%	0.0602%
PATTERSON COS INC	PDCO	3,497.94	0.01%	2.95%	6.25%	9.29%	0.0014%
PUBLIC SERVICE ENTERPRISE GP	PEG	26,850.42	0.11%	3.24%	2.25%	5.52%	0.0062%
PEPSICO INC	PEP	165,708.14	0.69%	2.71%	6.21%	9.00%	0.0624%
PFIZER INC	PFE	216,135.25	0.90%	3.50%	7.02%	10.65%	0.0963%
PRINCIPAL FINANCIAL GROUP	PFG	20,440.94	0.09%	2.64%	10.40%	13.17%	0.0113%
PROCTER & GAMBLE CO/THE	PG	228,300.86	0.96%	3.14%	7.31%	10.57%	0.1009%
PROGRESSIVE CORP	PGR	30,929.49	0.13%	1.49%	11.93%	13.52%	0.0175%
PARKER HANNIFIN CORP	PH	24,978.55	0.10%	1.42%	11.49%	12.99%	0.0136%
PULTEGROUP INC	PHM	10,033.12	0.04%	0.96%	20.04%	21.10%	0.0089%
PACKAGING CORP OF AMERICA	PKG	11,189.97	0.05%	2.08%	8.50%	10.67%	0.0050%
PERKINELMER INC	PKI	8,121.40	0.03%	0.38%	53.04%	53.52%	0.0182%
PROLOGIS INC	PLD	35,072.74	0.15%	2.63%	7.49%	10.22%	0.0150%
PHILIP MORRIS INTERNATIONAL	PM	159,591.57	0.67%	4.11%	9.39%	13.69%	0.0914%
PNC FINANCIAL SERVICES GROUP	PNC	66,878.60	0.28%	1.85%	10.09%	12.03%	0.0337%
PENTAIR PLC	PNR	12,922.47	0.05%	1.94%	8.18%	10.20%	0.0055%
PINNACLE WEST CAPITAL	PNW	10,257.91	0.04%	2.90%	4.25%	7.21%	0.0031%
PPG INDUSTRIES INC	PPG	29,735.51	0.12%	1.45%	7.65%	9.15%	0.0114%
PPL CORP	PPL	25,233.84	0.11%	4.31%	-0.10%	4.20%	0.0044%
PERRIGO CO PLC	PRGO	12,282.72	0.05%	0.75%	6.43%	7.20%	0.0037%
PRUDENTIAL FINANCIAL INC	PRU	49,116.16	0.21%	2.62%	8.00%	10.72%	0.0220%

PUBLIC STORAGE	PSA	37,091.66	0.16%	3.78%	4.92%	8.79%	0.0136%
PHILLIPS 66	PSX	49,437.60	0.21%	2.78%	-18.41%	-15.88%	-0.0329%
PVH CORP	PVH	10,417.46	0.04%	0.13%	10.92%	11.05%	0.0048%
QUANTA SERVICES INC	PWR	5,882.34	N/A	0.00%	N/A	N/A	N/A
PRAXAIR INC	PX	44,068.12	0.18%	2.05%	11.77%	13.93%	0.0257%
PIONEER NATURAL RESOURCES CO	PXD	26,552.59	0.11%	0.05%	20.00%	20.06%	0.0223%
PAYPAL HOLDINGS INC	PYPL	91,020.67	0.38%	0.00%	20.77%	20.77%	0.0791%
QUALCOMM INC	QCOM	97,796.08	0.41%	3.52%	10.47%	14.17%	0.0580%
QORVO INC	QRVO	9,737.00	0.04%	0.00%	14.02%	14.02%	0.0057%
ROYAL CARIBBEAN CRUISES LTD	RCL	26,521.34	0.11%	1.73%	20.43%	22.33%	0.0248%
EVEREST RE GROUP LTD	RE	9,018.90	0.04%	2.31%	10.00%	12.42%	0.0047%
REGENCY CENTERS CORP	REG	11,546.43	0.05%	3.11%	9.33%	12.59%	0.0061%
REGENERON PHARMACEUTICALS	REGN	38,878.10	0.16%	0.00%	18.04%	18.04%	0.0293%
REGIONS FINANCIAL CORP	RF	19,243.93	0.08%	1.92%	11.88%	13.92%	0.0112%
ROBERT HALF INTL INC	RHI	7,149.95	0.03%	1.68%	8.90%	10.65%	0.0032%
RED HAT INC	RHT	22,429.82	0.09%	0.00%	17.00%	17.00%	0.0160%
RAYMOND JAMES FINANCIAL INC	RJF	12,750.57	0.05%	1.14%	17.00%	18.24%	0.0097%
RALPH LAUREN CORP	RL	7,733.42	0.03%	2.12%	3.57%	5.73%	0.0019%
RESMED INC	RMD	12,118.59	0.05%	1.76%	13.40%	15.27%	0.0077%
ROCKWELL AUTOMATION INC	ROK	24,811.34	0.10%	1.67%	10.79%	12.55%	0.0130%
ROPER TECHNOLOGIES INC	ROP	27,352.20	0.11%	0.52%	12.83%	13.38%	0.0153%
ROSS STORES INC	ROST	29,316.57	0.12%	0.84%	13.50%	14.40%	0.0177%
RANGE RESOURCES CORP	RRC	4,471.47	0.02%	0.44%	29.16%	29.67%	0.0056%
REPUBLIC SERVICES INC	RSG	21,704.54	0.09%	2.01%	10.78%	12.90%	0.0117%
RAYTHEON COMPANY	RTN	55,258.98	0.23%	1.64%	8.71%	10.42%	0.0241%
SBA COMMUNICATIONS CORP	SBAC	19,952.87	0.08%	0.00%	22.70%	22.70%	0.0190%
STARBUCKS CORP	SBUX	82,266.30	0.34%	2.11%	16.07%	18.35%	0.0632%
SCANA CORP	SCG	6,156.74	0.03%	5.68%	-1.67%	3.96%	0.0010%
SCHWAB (CHARLES) CORP	SCHW	65,406.72	0.27%	0.66%	18.82%	19.54%	0.0535%
SEALED AIR CORP	SEE	8,667.56	0.04%	1.32%	6.37%	7.73%	0.0028%
SHERWIN-WILLIAMS CO/THE	SHW	37,351.33	0.16%	0.85%	11.24%	12.14%	0.0190%
SIGNET JEWELERS LTD	SIG	3,158.32	0.01%	2.34%	4.17%	6.55%	0.0009%
JM SMUCKER CO/THE	SJM	13,253.43	0.06%	2.69%	4.85%	7.60%	0.0042%
SCHLUMBERGER LTD	SLB	87,063.70	0.36%	3.18%	44.17%	48.05%	0.1751%
SL GREEN REALTY CORP	SLG	10,198.77	0.04%	3.07%	-2.57%	0.46%	0.0002%
SNAP-ON INC	SNA	9,658.73	0.04%	1.93%	10.75%	12.78%	0.0052%
SCRIPPS NETWORKS INTER-CL A	SNI	10,632.29	0.04%	1.43%	5.75%	7.22%	0.0032%
SYNOPSIS INC	SNPS	13,597.22	0.06%	0.00%	9.12%	9.12%	0.0052%
SOUTHERN CO/THE	SO	51,173.07	0.21%	4.51%	4.00%	8.60%	0.0184%
SIMON PROPERTY GROUP INC	SPG	50,281.67	0.21%	4.44%	6.80%	11.39%	0.0240%
S&P GLOBAL INC	SPGI	42,197.40	0.18%	0.99%	10.00%	11.04%	0.0195%
STERICYCLE INC	SRCL	5,661.08	0.02%	0.23%	7.63%	7.86%	0.0019%
SEMPRA ENERGY	SRE	30,377.88	0.13%	2.72%	12.41%	15.29%	0.0194%
SUNTRUST BANKS INC	STI	29,337.93	0.12%	2.15%	9.38%	11.64%	0.0143%
STATE STREET CORP	STT	35,359.28	0.15%	1.68%	13.07%	14.86%	0.0220%
SEAGATE TECHNOLOGY	STX	11,156.12	0.05%	6.65%	10.40%	17.39%	0.0081%
CONSTELLATION BRANDS INC-A	STZ	42,573.01	0.18%	0.96%	16.51%	17.54%	0.0313%
STANLEY BLACK & DECKER INC	SWK	26,013.05	0.11%	1.43%	11.00%	12.51%	0.0136%
SKYWORKS SOLUTIONS INC	SWKS	19,187.28	0.08%	1.22%	13.17%	14.47%	0.0116%
SYNCHRONY FINANCIAL	SYF	28,087.21	0.12%	1.56%	9.08%	10.71%	0.0126%
STRYKER CORP	SYK	58,381.07	0.24%	1.09%	8.61%	9.75%	0.0238%
SYMANTEC CORP	SYMC	17,960.88	0.08%	1.10%	11.24%	12.40%	0.0093%
SYSCO CORP	SYI	30,080.58	0.13%	2.35%	9.94%	12.40%	0.0156%
AT&T INC	T	223,336.82	0.93%	5.41%	5.10%	10.65%	0.0995%
MOLSON COORS BREWING CO -B	TAP	16,842.68	0.07%	2.10%	6.96%	9.13%	0.0064%
TRANSDIGM GROUP INC	TDG	14,745.64	0.06%	0.00%	11.00%	11.00%	0.0068%
TE CONNECTIVITY LTD	TEL	33,208.62	0.14%	1.72%	7.01%	8.80%	0.0122%
TARGET CORP	TGT	32,560.00	0.14%	4.15%	-1.04%	3.09%	0.0042%
TIFFANY & CO	TIF	11,744.22	0.05%	2.03%	10.48%	12.62%	0.0062%
TJX COMPANIES INC	TJX	47,770.45	0.20%	1.61%	12.65%	14.36%	0.0287%
TORCHMARK CORP	TMK	10,257.45	0.04%	0.67%	8.00%	8.69%	0.0037%
THERMO FISHER SCIENTIFIC INC	TMO	77,295.87	0.32%	0.31%	12.50%	12.83%	0.0415%
TAPESTRY INC	TPR	11,855.60	0.05%	3.30%	11.60%	15.09%	0.0075%
TRIPADVISOR INC	TRIP	4,808.00	0.02%	0.00%	12.82%	12.82%	0.0026%
T ROWE PRICE GROUP INC	TROW	24,938.55	0.10%	2.22%	12.94%	15.29%	0.0160%
TRAVELERS COS INC/THE	TRV	37,104.95	0.16%	2.09%	6.95%	9.11%	0.0141%
TRACTOR SUPPLY COMPANY	TSCO	8,568.51	0.04%	1.55%	12.40%	14.05%	0.0050%
TYSON FOODS INC-CL A	TSN	32,859.44	0.14%	1.41%	9.60%	11.08%	0.0152%
TOTAL SYSTEM SERVICES INC	TSS	13,670.80	0.06%	0.62%	12.75%	13.41%	0.0077%
TIME WARNER INC	TWX	71,249.04	0.30%	1.81%	8.30%	10.18%	0.0304%
TEXAS INSTRUMENTS INC	TXN	95,885.19	0.40%	2.18%	10.74%	13.04%	0.0523%
TEXTRON INC	TXT	14,675.15	0.06%	0.15%	8.81%	8.97%	0.0055%
UNDER ARMOUR INC-CLASS A	UA	5,544.66	0.02%	0.00%	10.44%	10.44%	0.0024%
UNITED CONTINENTAL HOLDINGS	UAL	19,263.55	0.08%	0.00%	-0.39%	-0.39%	-0.0003%
UDR INC	UDR	10,530.85	0.04%	3.15%	6.00%	9.25%	0.0041%
UNIVERSAL HEALTH SERVICES-B	UHS	10,246.10	0.04%	0.28%	7.97%	8.26%	0.0035%
ULTA BEAUTY INC	ULTA	13,522.62	0.06%	0.00%	22.00%	22.00%	0.0124%
UNITEDHEALTH GROUP INC	UNH	221,112.12	0.93%	1.26%	12.40%	13.74%	0.1272%
UNUM GROUP	UNM	12,704.91	0.05%	1.52%	5.00%	6.56%	0.0035%

UNION PACIFIC CORP	UNP	99,576.86	0.42%	1.93%	11.80%	13.85%	0.0577%
UNITED PARCEL SERVICE-CL B	UPS	104,657.27	0.44%	2.73%	9.18%	12.03%	0.0527%
UNITED RENTALS INC	URI	13,487.96	0.06%	0.00%	14.17%	14.17%	0.0080%
US BANCORP	USB	91,520.94	0.38%	2.10%	7.93%	10.12%	0.0388%
UNITED TECHNOLOGIES CORP	UTX	96,986.32	0.41%	2.28%	8.82%	11.21%	0.0455%
VISA INC-CLASS A SHARES	V	233,246.24	0.98%	0.69%	15.33%	16.07%	0.1568%
VARIAN MEDICAL SYSTEMS INC	VAR	10,238.19	0.04%	0.00%	6.40%	6.40%	0.0027%
VF CORP	VFC	28,830.08	0.12%	2.35%	8.50%	10.96%	0.0132%
VIACOM INC-CLASS B	VIAB	11,675.19	0.05%	2.88%	3.02%	5.94%	0.0029%
VALERO ENERGY CORP	VLO	37,465.72	0.16%	3.27%	10.94%	14.39%	0.0226%
VULCAN MATERIALS CO	VMC	16,621.55	0.07%	0.80%	20.44%	21.32%	0.0148%
VORNADO REALTY TRUST	VNO	14,738.32	0.06%	3.28%	-1.96%	1.30%	0.0008%
VERISK ANALYTICS INC	VRSK	15,879.59	0.07%	0.00%	8.58%	8.58%	0.0057%
VERISIGN INC	VRSN	11,345.42	0.05%	0.00%	10.50%	10.50%	0.0050%
VERTEX PHARMACEUTICALS INC	VRTX	36,491.35	0.15%	0.00%	70.84%	70.84%	0.1082%
VENTAS INC	VTR	22,798.05	0.10%	4.87%	2.91%	7.85%	0.0075%
VERIZON COMMUNICATIONS INC	VZ	207,602.74	0.87%	4.59%	2.21%	6.85%	0.0595%
WATERS CORP	WAT	15,681.52	0.07%	0.00%	8.37%	8.37%	0.0055%
WALGREENS BOOTS ALLIANCE INC	WBA	72,058.28	0.30%	2.22%	11.22%	13.56%	0.0409%
WESTERN DIGITAL CORP	WDC	23,325.73	0.10%	2.56%	1.60%	4.18%	0.0041%
WEC ENERGY GROUP INC	WEC	21,929.35	0.09%	2.99%	5.42%	8.49%	0.0078%
WELLS FARGO & CO	WFC	278,073.04	1.16%	2.73%	22.22%	25.25%	0.2938%
WHIRLPOOL CORP	WHR	12,113.91	0.05%	2.51%	7.23%	9.83%	0.0050%
WILLIS TOWERS WATSON PLC	WLTW	21,231.84	0.09%	1.31%	10.00%	11.38%	0.0101%
WASTE MANAGEMENT INC	WM	35,714.28	0.15%	2.07%	10.35%	12.53%	0.0187%
WILLIAMS COS INC	WMB	24,016.99	0.10%	4.13%	2.30%	6.48%	0.0065%
WAL-MART STORES INC	WMT	290,445.62	1.22%	2.10%	5.46%	7.62%	0.0926%
WESTROCK CO	WRK	15,890.49	0.07%	2.77%	9.03%	11.93%	0.0079%
WESTERN UNION CO	WU	9,043.47	0.04%	3.56%	8.00%	11.70%	0.0044%
WEYERHAEUSER CO	WY	26,705.86	0.11%	3.52%	7.40%	11.05%	0.0123%
WYNDHAM WORLDWIDE CORP	WYN	11,388.06	0.05%	2.07%	13.65%	15.86%	0.0076%
WYNN RESORTS LTD	WYNN	16,247.86	0.07%	1.28%	32.40%	33.89%	0.0230%
CIMAREX ENERGY CO	XEC	11,060.74	0.05%	0.28%	63.22%	63.58%	0.0294%
XCEL ENERGY INC	XEL	26,205.64	0.11%	2.79%	5.97%	8.84%	0.0097%
XL GROUP LTD	XL	9,938.50	0.04%	2.17%	20.45%	22.84%	0.0095%
XILINX INC	XLNX	17,443.74	0.07%	2.01%	8.30%	10.40%	0.0076%
EXXON MOBIL CORP	XOM	352,908.57	1.48%	3.68%	16.27%	20.24%	0.2990%
DENTSPLY SIRONA INC	XRAY	15,391.05	0.06%	0.50%	12.00%	12.53%	0.0081%
XEROX CORP	XRX	7,551.02	0.03%	3.37%	2.90%	6.32%	0.0020%
XYLEM INC	XYL	12,453.46	0.05%	1.04%	14.90%	16.02%	0.0083%
YUM! BRANDS INC	YUM	28,128.86	0.12%	1.37%	12.98%	14.44%	0.0170%
ZIMMER BIOMET HOLDINGS INC	ZBH	23,709.60	0.10%	0.83%	6.97%	7.83%	0.0078%
ZIONS BANCORPORATION	ZION	9,897.30	0.04%	0.89%	9.00%	9.93%	0.0041%
ZOETIS INC	ZTS	35,226.07	0.15%	0.59%	15.14%	15.77%	0.0232%
		23,897,208.70					13.75%

[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 - Bloomberg

[1]	[2]	[3]
	Current 30-	Implied
S&P 500	Year	Market
Est. Required	Treasury	Risk
Market Return	(30-day	Premium
14.59%	average)	
	2.83%	11.76%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
AGILENT TECHNOLOGIES INC	A	22,118.18	0.11%	0.87%	7.00%	7.90%	0.0083%
AMERICAN AIRLINES GROUP INC	AAL	23,356.80	0.11%	0.82%	1.00%	1.82%	0.0020%
ADVANCE AUTO PARTS INC	AAP	6,622.74	0.03%	0.27%	9.50%	9.78%	0.0031%
APPLE INC	AAPL	904,505.00	4.30%	1.51%	11.00%	12.59%	0.5418%
ABBVIE INC	ABBV	150,785.70	0.72%	3.01%	11.50%	14.68%	0.1053%
AMERISOURCEBERGEN CORP	ABC	17,829.53	0.08%	1.87%	9.50%	11.46%	0.0097%
ABBOTT LABORATORIES	ABT	97,125.54	0.46%	1.90%	8.50%	10.48%	0.0484%
ACCENTURE PLC-CL A	ACN	93,574.90	0.45%	1.81%	9.00%	10.89%	0.0485%
ADOBE SYSTEMS INC	ADBE	90,146.65	0.43%	0.00%	33.00%	33.00%	0.1415%
ANALOG DEVICES INC	ADI	32,593.77	0.16%	2.03%	16.00%	18.19%	0.0282%
ARCHER-DANIELS-MIDLAND CO	ADM	21,935.16	0.10%	3.26%	3.50%	6.82%	0.0071%
AUTOMATIC DATA PROCESSING	ADP	48,933.24	0.23%	2.29%	10.00%	12.40%	0.0289%
ALLIANCE DATA SYSTEMS CORP	ADS	12,266.09	0.06%	0.94%	11.50%	12.49%	0.0073%
AUTODESK INC	ADSK	28,006.16	N/A	0.00%	N/A	N/A	N/A
AMEREN CORPORATION	AEE	15,264.39	0.07%	2.91%	6.00%	9.00%	0.0065%
AMERICAN ELECTRIC POWER	AEP	37,670.18	0.18%	3.24%	4.00%	7.30%	0.0131%
AES CORP	AES	7,052.93	N/A	4.49%	N/A	N/A	N/A
AETNA INC	AET	58,529.30	0.28%	1.14%	9.00%	10.19%	0.0284%
AFLAC INC	AFL	33,679.71	0.16%	2.12%	4.00%	6.16%	0.0099%
ALLERGAN PLC	AGN	58,410.70	0.28%	1.60%	10.00%	11.68%	0.0324%
AMERICAN INTERNATIONAL GROUP	AIG	53,507.97	0.25%	2.16%	27.00%	29.45%	0.0750%
APARTMENT INVT & MGMT CO -A	AIV	-	N/A	3.23%	N/A	N/A	N/A
ASSURANT INC	AIZ	5,320.54	0.03%	2.28%	4.00%	6.33%	0.0016%
ARTHUR J GALLAGHER & CO	AJG	12,044.89	0.06%	2.34%	15.50%	18.02%	0.0103%
AKAMAI TECHNOLOGIES INC	AKAM	9,452.10	0.04%	0.00%	11.00%	11.00%	0.0049%
ALBEMARLE CORP	ALB	14,944.45	0.07%	0.95%	9.50%	10.50%	0.0075%
ALIGN TECHNOLOGY INC	ALGN	20,395.17	0.10%	0.00%	23.50%	23.50%	0.0228%
ALASKA AIR GROUP INC	ALK	8,091.72	0.04%	1.83%	5.50%	7.38%	0.0028%
ALLSTATE CORP	ALL	35,847.30	0.17%	1.49%	7.50%	9.05%	0.0154%
ALLEGION PLC	ALLE	7,902.36	0.04%	0.77%	10.00%	10.81%	0.0041%
ALEXION PHARMACEUTICALS INC	ALXN	23,994.80	0.11%	0.00%	23.50%	23.50%	0.0268%
APPLIED MATERIALS INC	AMAT	61,486.88	0.29%	0.80%	21.00%	21.88%	0.0640%
ADVANCED MICRO DEVICES	AMD	10,972.05	N/A	0.00%	N/A	N/A	N/A
AMETEK INC	AME	16,233.66	0.08%	0.51%	5.50%	6.02%	0.0047%
AFFILIATED MANAGERS GROUP	AMG	10,563.44	0.05%	0.42%	7.00%	7.43%	0.0037%
AMGEN INC	AMGN	123,492.90	0.59%	2.88%	8.00%	11.00%	0.0646%
AMERIPRISE FINANCIAL INC	AMP	23,671.78	0.11%	2.08%	12.00%	14.20%	0.0160%
AMERICAN TOWER CORP	AMT	62,373.45	0.30%	2.01%	10.50%	12.62%	0.0374%
AMAZON.COM INC	AMZN	557,269.10	2.65%	0.00%	58.50%	58.50%	1.5506%
ANDEAVOR	ANDV	16,215.68	0.08%	2.27%	6.50%	8.84%	0.0068%
ANSYS INC	ANSS	12,765.82	0.06%	0.00%	9.50%	9.50%	0.0058%
ANTHEM INC	ANTM	56,737.21	0.27%	1.27%	11.00%	12.34%	0.0333%
AON PLC	AON	34,921.39	0.17%	1.03%	9.50%	10.58%	0.0176%
SMITH (A.O.) CORP	AOS	10,463.66	0.05%	0.92%	11.50%	12.47%	0.0062%
APACHE CORP	APA	15,824.17	0.08%	2.41%	20.00%	22.65%	0.0170%
ANADARKO PETROLEUM CORP	APC	26,718.21	N/A	0.41%	N/A	N/A	N/A
AIR PRODUCTS & CHEMICALS INC	APD	35,226.21	0.17%	2.35%	9.00%	11.46%	0.0192%
AMPHENOL CORP-CL A	APH	27,449.97	0.13%	0.85%	8.50%	9.39%	0.0123%
ALEXANDRIA REAL ESTATE EQUIT	ARE	N/A	N/A	0.00%	N/A	N/A	N/A
ARCONIC INC	ARNC	11,431.45	N/A	1.01%	N/A	N/A	N/A
ACTIVISION BLIZZARD INC	ATVI	49,249.55	0.23%	0.52%	9.00%	9.54%	0.0224%
AVALONBAY COMMUNITIES INC	AVB	-	N/A	3.26%	N/A	N/A	N/A
BROADCOM LTD	AVGO	112,227.90	0.53%	1.48%	44.00%	45.81%	0.2445%
AVERY DENNISON CORP	AVY	9,785.80	0.05%	1.73%	10.00%	11.82%	0.0055%
AMERICAN WATER WORKS CO INC	AWK	15,814.64	0.08%	1.95%	8.50%	10.53%	0.0079%
AMERICAN EXPRESS CO	AXP	81,717.23	0.39%	1.49%	6.00%	7.53%	0.0293%
ACUITY BRANDS INC	AYI	6,757.87	0.03%	0.32%	16.50%	16.85%	0.0054%
AUTOZONE INC	AZO	17,969.65	0.09%	0.00%	11.50%	11.50%	0.0098%
BOEING CO/THE	BA	158,387.60	0.75%	2.38%	11.00%	13.51%	0.1018%
BANK OF AMERICA CORP	BAC	263,350.60	1.25%	1.95%	17.00%	19.12%	0.2394%
BAXTER INTERNATIONAL INC	BAX	34,877.78	0.17%	1.00%	4.00%	5.02%	0.0083%

BB&T CORP	BBT	36,676.94	0.17%	2.97%	5.50%	8.55%	0.0149%
BEST BUY CO INC	BBY	16,947.00	0.08%	2.62%	9.00%	11.74%	0.0095%
CR BARD INC	BCR	24,431.94	0.12%	0.32%	10.00%	10.34%	0.0120%
BECTON DICKINSON AND CO	BDX	51,026.90	0.24%	1.43%	9.00%	10.49%	0.0255%
FRANKLIN RESOURCES INC	BEN	23,099.54	0.11%	2.13%	5.00%	7.18%	0.0079%
BROWN-FORMAN CORP-CLASS B	BF/B	22,545.18	0.11%	1.35%	10.00%	11.42%	0.0122%
BRIGHTHOUSE FINANCIAL INC	BHF	N/A	N/A	0.00%	N/A	N/A	N/A
BAKER HUGHES A GE CO	BHGE	13,082.46	N/A	2.35%	N/A	N/A	N/A
BIOGEN INC	BIIB	65,515.57	0.31%	0.00%	7.00%	7.00%	0.0218%
BANK OF NEW YORK MELLON CORP	BK	53,689.47	0.26%	1.83%	8.50%	10.41%	0.0266%
BLACKROCK INC	BLK	76,883.28	0.37%	2.09%	10.50%	12.70%	0.0464%
BALL CORP	BLL	13,826.11	0.07%	1.01%	15.00%	16.09%	0.0106%
BRISTOL-MYERS SQUIBB CO	BMJ	100,067.80	0.48%	2.55%	14.50%	17.23%	0.0820%
BERKSHIRE HATHAWAY INC-CL B	BRK/B	-	N/A	0.00%	N/A	N/A	N/A
BOSTON SCIENTIFIC CORP	BSX	39,081.80	0.19%	0.00%	18.50%	18.50%	0.0344%
BORGWARNER INC	BWA	11,151.22	0.05%	1.29%	8.00%	9.34%	0.0050%
BOSTON PROPERTIES INC	BXP	-	N/A	2.40%	N/A	N/A	N/A
CITIGROUP INC	C	196,876.40	0.94%	1.77%	11.00%	12.87%	0.1205%
CA INC	CA	13,425.12	0.06%	3.21%	6.00%	9.31%	0.0059%
CONAGRA BRANDS INC	CAG	14,505.76	0.07%	2.39%	3.00%	5.43%	0.0037%
CARDINAL HEALTH INC	CAH	17,945.55	0.09%	3.39%	12.00%	15.59%	0.0133%
CATERPILLAR INC	CAT	82,106.84	0.39%	2.26%	10.00%	12.37%	0.0483%
CHUBB LTD	CB	68,991.84	0.33%	1.92%	8.00%	10.00%	0.0328%
CBRE GROUP INC - A	CBG	14,423.61	0.07%	0.00%	8.50%	8.50%	0.0058%
CBOE GLOBAL MARKETS INC	CBOE	13,541.21	0.06%	0.91%	13.00%	13.97%	0.0090%
CBS CORP-CLASS B NON VOTING	CBS	22,496.00	0.11%	1.28%	13.50%	14.87%	0.0159%
CROWN CASTLE INTL CORP	CCI	45,437.80	0.22%	3.85%	8.50%	12.51%	0.0270%
CARNIVAL CORP	CCL	48,155.59	0.23%	2.70%	12.50%	15.37%	0.0352%
CADENCE DESIGN SYS INC	CDNS	12,609.04	0.06%	0.00%	10.00%	10.00%	0.0060%
CELGENE CORP	CELG	82,771.44	0.39%	0.00%	25.00%	25.00%	0.0984%
CERNER CORP	CERN	23,271.88	0.11%	0.00%	9.50%	9.50%	0.0105%
CF INDUSTRIES HOLDINGS INC	CF	8,469.56	0.04%	3.50%	9.50%	13.17%	0.0053%
CITIZENS FINANCIAL GROUP	CFG	18,896.28	0.09%	2.12%	10.50%	12.73%	0.0114%
CHURCH & DWIGHT CO INC	CHD	11,177.24	0.05%	1.70%	7.00%	8.76%	0.0047%
CHESAPEAKE ENERGY CORP	CHK	3,598.17	N/A	0.00%	N/A	N/A	N/A
C.H. ROBINSON WORLDWIDE INC	CHRW	11,083.38	0.05%	2.27%	6.00%	8.34%	0.0044%
CHARTER COMMUNICATIONS INC-A	CHTR	83,102.87	0.40%	0.00%	26.00%	26.00%	0.1028%
CIGNA CORP	CI	50,536.88	0.24%	0.02%	12.00%	12.02%	0.0289%
CINCINNATI FINANCIAL CORP	CINF	11,908.97	0.06%	2.75%	6.50%	9.34%	0.0053%
COLGATE-PALMOLIVE CO	CL	63,004.04	0.30%	2.23%	11.00%	13.35%	0.0400%
CLOROX COMPANY	CLX	17,398.29	0.08%	2.49%	7.50%	10.08%	0.0083%
COMERICA INC	CMA	13,831.34	0.07%	1.51%	13.50%	15.11%	0.0099%
COMCAST CORP-CLASS A	CMCSA	170,172.10	0.81%	1.73%	11.00%	12.83%	0.1038%
CME GROUP INC	CME	48,110.67	0.23%	1.86%	8.50%	10.44%	0.0239%
CHIPOTLE MEXICAN GRILL INC	CMG	7,956.29	0.04%	0.00%	11.00%	11.00%	0.0042%
CUMMINS INC	CMI	27,220.78	0.13%	2.64%	8.00%	10.75%	0.0139%
CMS ENERGY CORP	CMS	13,911.04	0.07%	2.83%	6.50%	9.42%	0.0062%
CENTENE CORP	CNC	16,730.27	0.08%	0.00%	14.00%	14.00%	0.0111%
CENTERPOINT ENERGY INC	CNP	12,564.26	0.06%	3.77%	6.00%	9.88%	0.0059%
CAPITAL ONE FINANCIAL CORP	COF	42,270.49	0.20%	1.83%	4.00%	5.87%	0.0118%
CABOT OIL & GAS CORP	COG	13,616.21	N/A	0.68%	N/A	N/A	N/A
ROCKWELL COLLINS INC	COL	21,532.81	0.10%	1.03%	8.00%	9.07%	0.0093%
COOPER COS INC/THE	COO	11,706.10	0.06%	0.03%	16.50%	16.53%	0.0092%
CONOCOPHILLIPS	COP	59,882.28	0.28%	2.15%	59.00%	61.78%	0.1760%
COSTCO WHOLESALE CORP	COST	75,663.36	0.36%	1.16%	10.00%	11.22%	0.0404%
COTY INC-CL A	COTY	12,724.81	0.06%	2.95%	6.00%	9.04%	0.0055%
CAMPBELL SOUP CO	CPB	14,077.77	0.07%	2.99%	4.00%	7.05%	0.0047%
SALESFORCE.COM INC	CRM	76,778.72	N/A	0.00%	N/A	N/A	N/A
CISCO SYSTEMS INC	CSCO	182,177.10	0.87%	3.18%	7.00%	10.29%	0.0892%
CSRA INC	CSRA	4,672.51	N/A	1.40%	N/A	N/A	N/A
CSX CORP	CSX	45,588.81	0.22%	1.57%	11.50%	13.16%	0.0285%
CINTAS CORP	CTAS	15,646.68	0.07%	1.10%	12.50%	13.67%	0.0102%
CENTURYLINK INC	CTL	7,882.04	0.04%	15.06%	6.50%	22.05%	0.0083%
COGNIZANT TECH SOLUTIONS-A	CTSH	42,308.90	0.20%	0.84%	12.50%	13.39%	0.0270%
CITRIX SYSTEMS INC	CTXS	13,056.52	0.06%	0.00%	5.50%	5.50%	0.0034%
CVS HEALTH CORP	CVS	72,409.23	0.34%	2.80%	9.00%	11.93%	0.0411%
CHEVRON CORP	CVX	220,156.50	1.05%	3.78%	15.00%	19.06%	0.1996%
CONCHO RESOURCES INC	CXO	20,861.12	0.10%	0.00%	24.50%	24.50%	0.0243%
DOMINION ENERGY INC	D	51,760.80	0.25%	4.04%	6.50%	10.67%	0.0263%
DELTA AIR LINES INC	DAL	35,940.97	0.17%	2.42%	10.50%	13.05%	0.0223%
DEERE & CO	DE	46,668.39	0.22%	1.65%	8.00%	9.72%	0.0216%
DISCOVER FINANCIAL SERVICES	DFS	23,975.82	0.11%	2.14%	5.00%	7.19%	0.0082%
DOLLAR GENERAL CORP	DG	23,836.38	0.11%	1.19%	9.50%	7.19%	0.0122%
QUEST DIAGNOSTICS INC	DGX	12,582.72	0.06%	1.95%	9.50%	11.54%	0.0069%
DR HORTON INC	DHI	18,554.03	0.09%	1.01%	12.00%	13.07%	0.0115%
DANAHER CORP	DHR	65,210.07	0.31%	0.60%	9.00%	9.63%	0.0299%
WALT DISNEY CO/THE	DIS	164,384.00	0.78%	1.52%	8.50%	10.08%	0.0788%
DISCOVERY COMMUNICATIONS-A	DISCA	6,743.39	0.03%	0.00%	13.50%	13.50%	0.0043%
DISH NETWORK CORP-A	DISH	23,518.18	0.11%	0.00%	2.50%	2.50%	0.0028%

DELPHI AUTOMOTIVE PLC	DLPH	26,791.25	0.13%	1.23%	13.50%	14.81%	0.0189%
DIGITAL REALTY TRUST INC	DLR	-	N/A	3.40%	N/A	N/A	N/A
DOLLAR TREE INC	DLTR	23,655.17	0.11%	0.00%	17.00%	17.00%	0.0191%
DOVER CORP	DOV	14,754.97	0.07%	1.99%	8.00%	10.07%	0.0071%
DR PEPPER SNAPPLE GROUP INC	DPS	15,607.29	0.07%	2.76%	7.50%	10.36%	0.0077%
DUKE REALTY CORP	DRE	-	0.00%	2.74%	33.50%	36.70%	0.0000%
DARDEN RESTAURANTS INC	DRI	9,864.16	0.05%	3.16%	11.00%	14.33%	0.0067%
DTE ENERGY COMPANY	DTE	20,202.90	0.10%	3.13%	6.00%	9.22%	0.0089%
DUKE ENERGY CORP	DUK	62,041.00	0.30%	4.11%	4.50%	8.70%	0.0257%
DAVITA INC	DVA	10,481.56	0.05%	0.00%	10.00%	10.00%	0.0050%
DEVON ENERGY CORP	DVN	19,944.75	0.09%	0.63%	14.50%	15.18%	0.0144%
DOWDUPONT INC	DWDP	-	N/A	2.41%	N/A	N/A	N/A
DXC TECHNOLOGY CO	DXC	27,839.73	0.13%	0.74%	18.00%	18.81%	0.0249%
ELECTRONIC ARTS INC	EA	33,054.56	0.16%	0.00%	13.00%	13.00%	0.0204%
EBAY INC	EBAY	37,701.06	0.18%	0.00%	10.00%	10.00%	0.0179%
ECOLAB INC	ECL	38,422.67	0.18%	1.11%	8.50%	9.66%	0.0176%
CONSOLIDATED EDISON INC	ED	26,864.60	0.13%	3.28%	2.50%	5.82%	0.0074%
EQUIFAX INC	EFX	13,177.20	0.06%	1.42%	8.00%	9.48%	0.0059%
EDISON INTERNATIONAL	EIX	26,113.75	0.12%	2.90%	4.00%	6.96%	0.0086%
ESTEE LAUDER COMPANIES-CL A	EL	46,374.93	0.22%	1.21%	11.50%	12.78%	0.0282%
EASTMAN CHEMICAL CO	EMN	13,060.78	0.06%	2.24%	10.00%	12.35%	0.0077%
EMERSON ELECTRIC CO	EMR	39,601.16	0.19%	3.14%	5.00%	8.22%	0.0155%
EOG RESOURCES INC	EOG	58,777.03	0.28%	0.72%	29.00%	29.82%	0.0834%
EQUINIX INC	EQIX	36,955.39	0.18%	1.69%	23.00%	24.88%	0.0437%
EQUITY RESIDENTIAL	EQR	-	N/A	3.02%	N/A	N/A	N/A
EQT CORP	EQT	10,085.10	0.05%	0.21%	22.00%	22.23%	0.0107%
EVERSOURCE ENERGY	ES	20,220.49	0.10%	3.17%	6.50%	9.77%	0.0094%
EXPRESS SCRIPTS HOLDING CO	ESRX	35,184.77	0.17%	0.00%	14.50%	14.50%	0.0243%
ESSEX PROPERTY TRUST INC	ESS	-	N/A	2.84%	N/A	N/A	N/A
E*TRADE FINANCIAL CORP	ETFC	12,305.92	0.06%	0.00%	15.50%	15.50%	0.0091%
EATON CORP PLC	ETN	33,582.53	0.16%	3.15%	7.00%	10.26%	0.0164%
ENTERGY CORP	ETR	15,359.82	0.07%	4.16%	-3.50%	0.59%	0.0004%
ENVISION HEALTHCARE CORP	EVHC	3,633.92	N/A	0.00%	N/A	N/A	N/A
EDWARDS LIFESCIENCES CORP	EW	23,023.11	0.11%	0.00%	17.00%	17.00%	0.0186%
EXELON CORP	EXC	39,875.36	0.19%	3.23%	7.00%	10.34%	0.0196%
EXPEDITORS INTL WASH INC	EXPD	10,621.58	0.05%	1.40%	8.00%	9.46%	0.0048%
EXPEDIA INC	EXPE	19,332.96	0.09%	0.95%	19.00%	20.04%	0.0184%
EXTRA SPACE STORAGE INC	EXR	-	N/A	3.84%	N/A	N/A	N/A
FORD MOTOR CO	F	47,945.68	0.23%	4.97%	2.50%	7.53%	0.0172%
FASTENAL CO	FAST	14,009.92	0.07%	2.63%	4.00%	6.68%	0.0045%
FACEBOOK INC-A	FB	525,608.20	2.50%	0.00%	31.50%	31.50%	0.7875%
FORTUNE BRANDS HOME & SECURI	FBHS	9,844.30	0.05%	1.11%	12.00%	13.18%	0.0062%
FREEPORT-MCMORAN INC	FCX	20,619.52	N/A	0.00%	N/A	N/A	N/A
FEDEX CORP	FDX	58,410.68	0.28%	0.92%	11.00%	11.97%	0.0333%
FIRSTENERGY CORP	FE	15,368.90	0.07%	4.21%	12.00%	16.46%	0.0120%
F5 NETWORKS INC	FFIV	7,753.64	0.04%	0.00%	10.00%	10.00%	0.0037%
FIDELITY NATIONAL INFO SERV	FIS	30,499.47	0.15%	1.27%	7.50%	8.82%	0.0128%
FISERV INC	FISV	26,665.85	0.13%	0.00%	9.00%	9.00%	0.0114%
FIFTH THIRD BANCORP	FITB	20,049.57	0.10%	2.29%	5.00%	7.35%	0.0070%
FOOT LOCKER INC	FL	5,314.79	0.03%	3.06%	6.50%	9.66%	0.0024%
FLIR SYSTEMS INC	FLIR	6,483.31	0.03%	1.47%	7.50%	9.03%	0.0028%
FLUOR CORP	FLR	6,611.77	0.03%	1.78%	2.00%	3.80%	0.0012%
FLOWSERVE CORP	FLS	5,145.15	0.02%	1.93%	2.50%	4.45%	0.0011%
FMC CORP	FMC	12,509.19	0.06%	0.74%	8.00%	8.77%	0.0052%
TWENTY-FIRST CENTURY FOX-A	FOXA	56,660.82	0.27%	1.18%	11.50%	12.75%	0.0344%
FEDERAL REALTY INVS TRUST	FRT	-	N/A	3.04%	N/A	N/A	N/A
TECHNIPFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
FORTIVE CORP	FTV	25,020.00	N/A	0.39%	N/A	N/A	N/A
GENERAL DYNAMICS CORP	GD	59,728.55	0.28%	1.68%	5.50%	7.23%	0.0205%
GENERAL ELECTRIC CO	GE	157,141.70	0.75%	2.65%	13.50%	16.33%	0.1220%
GGP INC	GGP	-	N/A	4.11%	N/A	N/A	N/A
GILEAD SCIENCES INC	GILD	95,175.75	0.45%	2.86%	-1.00%	1.85%	0.0084%
GENERAL MILLS INC	GIS	30,483.93	0.14%	3.69%	3.50%	7.25%	0.0105%
CORNING INC	GLW	27,634.20	0.13%	2.01%	11.50%	13.63%	0.0179%
GENERAL MOTORS CO	GM	62,006.00	0.29%	3.43%	5.50%	9.02%	0.0266%
ALPHABET INC-CL A	GOOGL	N/A	N/A	0.00%	N/A	N/A	N/A
GENUINE PARTS CO	GPC	12,742.14	0.06%	3.11%	7.00%	10.22%	0.0062%
GLOBAL PAYMENTS INC	GPN	16,262.09	0.08%	0.04%	12.00%	12.04%	0.0093%
GAP INC/THE	GPS	11,434.64	0.05%	3.15%	0.50%	3.66%	0.0020%
GARMIN LTD	GRMN	11,536.88	0.05%	3.36%	5.00%	8.44%	0.0046%
GOLDMAN SACHS GROUP INC	GS	91,785.20	0.44%	1.27%	9.50%	10.83%	0.0473%
GOODYEAR TIRE & RUBBER CO	GT	7,549.74	0.04%	1.83%	10.00%	11.92%	0.0043%
WW GRAINGER INC	GWW	11,419.39	0.05%	2.56%	4.50%	7.12%	0.0039%
HALLIBURTON CO	HAL	36,126.96	0.17%	1.74%	21.50%	23.43%	0.0403%
HASBRO INC	HAS	11,836.46	0.06%	2.40%	10.50%	13.03%	0.0073%
HUNTINGTON BANCSHARES INC	HBAN	14,758.82	0.07%	3.25%	10.00%	13.41%	0.0094%
HANESBRANDS INC	HBI	7,225.82	0.03%	3.23%	9.00%	12.38%	0.0043%
HCA HEALTHCARE INC	HCA	27,512.45	0.13%	0.00%	10.50%	10.50%	0.0137%
WELLTOWER INC	HCN	-	N/A	5.24%	N/A	N/A	N/A

HCP INC	HCP	-	N/A	5.65%	N/A	N/A	N/A
HOME DEPOT INC	HD	200,966.10	0.96%	2.33%	10.50%	12.95%	0.1238%
HESS CORP	HES	13,810.32	N/A	2.30%	N/A	N/A	N/A
HARTFORD FINANCIAL SVCS GRP	HIG	20,238.10	0.10%	1.79%	12.50%	14.40%	0.0139%
HILTON WORLDWIDE HOLDINGS IN	HLT	24,287.22	0.12%	0.79%	7.00%	7.82%	0.0090%
HARLEY-DAVIDSON INC	HOG	8,024.31	0.04%	3.06%	8.00%	11.18%	0.0043%
HOLOGIC INC	HOLX	11,455.72	0.05%	0.00%	27.00%	27.00%	0.0147%
HONEYWELL INTERNATIONAL INC	HON	113,504.00	0.54%	2.00%	8.50%	10.59%	0.0571%
HELMERICH & PAYNE	HP	6,146.83	0.03%	4.95%	4.50%	9.56%	0.0028%
HEWLETT PACKARD ENTERPRISE	HPE	21,274.40	0.10%	2.29%	1.50%	3.81%	0.0039%
HP INC	HPQ	35,637.80	N/A	2.62%	N/A	N/A	N/A
H&R BLOCK INC	HRB	5,404.12	0.03%	3.71%	8.00%	11.86%	0.0030%
HORMEL FOODS CORP	HRL	18,085.65	0.09%	2.19%	10.50%	12.80%	0.0110%
HARRIS CORP	HRS	16,966.44	0.08%	1.62%	10.50%	12.21%	0.0098%
HENRY SCHEIN INC	HSIC	10,978.86	0.05%	0.00%	10.50%	10.50%	0.0055%
HOST HOTELS & RESORTS INC	HST	-	N/A	4.15%	N/A	N/A	N/A
HERSHEY CO/THE	HSY	22,777.53	0.11%	2.42%	6.50%	9.00%	0.0097%
HUMANA INC	HUM	34,438.40	0.16%	0.67%	10.00%	10.70%	0.0175%
INTL BUSINESS MACHINES CORP	IBM	141,440.50	N/A	4.09%	N/A	N/A	N/A
INTERCONTINENTAL EXCHANGE IN	ICE	39,648.76	0.19%	1.18%	12.00%	13.25%	0.0250%
IDEXX LABORATORIES INC	IDXX	13,449.59	0.06%	0.00%	15.00%	15.00%	0.0096%
INTL FLAVORS & FRAGRANCES	IFF	11,923.95	0.06%	1.87%	7.50%	9.44%	0.0054%
ILLUMINA INC	ILMN	31,441.10	0.15%	0.00%	17.00%	17.00%	0.0254%
INCYTE CORP	INCY	20,890.88	0.10%	0.00%	69.50%	69.50%	0.0691%
IHS MARKIT LTD	INFO	17,324.23	0.08%	0.00%	14.50%	14.50%	0.0119%
INTEL CORP	INTC	208,962.00	0.99%	2.44%	7.50%	10.03%	0.0997%
INTUIT INC	INTU	38,766.79	0.18%	1.03%	14.50%	15.60%	0.0288%
INTERNATIONAL PAPER CO	IP	22,606.28	0.11%	3.47%	18.50%	22.29%	0.0240%
INTERPUBLIC GROUP OF COS INC	IPG	7,476.77	0.04%	3.85%	10.00%	14.04%	0.0050%
IQVIA HOLDINGS INC	IQV	21,965.99	0.10%	0.00%	12.00%	12.00%	0.0125%
INGERSOLL-RAND PLC	IR	21,189.79	0.10%	2.13%	11.00%	13.25%	0.0134%
IRON MOUNTAIN INC	IRM	10,876.59	0.05%	5.71%	11.00%	17.02%	0.0088%
INTUITIVE SURGICAL INC	ISRG	44,418.08	0.21%	0.00%	15.50%	15.50%	0.0327%
GARTNER INC	IT	10,514.03	0.05%	0.00%	16.00%	16.00%	0.0080%
ILLINOIS TOOL WORKS	ITW	54,685.81	0.26%	1.96%	10.00%	12.06%	0.0314%
INVESCO LTD	IVZ	14,342.13	0.07%	3.29%	5.50%	8.88%	0.0061%
HUNT (JB) TRANSPRT SVCS INC	JBHT	11,415.30	0.05%	0.91%	9.00%	9.95%	0.0054%
JOHNSON CONTROLS INTERNATION	JCI	34,302.96	0.16%	2.72%	0.50%	3.23%	0.0053%
JACOBS ENGINEERING GROUP INC	JEC	7,790.90	0.04%	0.96%	8.00%	9.00%	0.0033%
JOHNSON & JOHNSON	JNJ	368,621.20	1.75%	2.54%	9.50%	12.16%	0.2132%
JUNIPER NETWORKS INC	JNPR	10,188.17	0.05%	1.63%	8.00%	9.70%	0.0047%
JPMORGAN CHASE & CO	JPM	347,110.60	1.65%	2.31%	6.50%	8.89%	0.1467%
NORDSTROM INC	JWN	6,840.79	0.03%	3.60%	2.00%	5.64%	0.0018%
KELLOGG CO	K	22,324.95	0.11%	3.37%	7.00%	10.49%	0.0111%
KEYCORP	KEY	19,595.35	0.09%	2.48%	11.00%	13.62%	0.0127%
KRAFT HEINZ CO/THE	KHC	97,220.77	N/A	3.17%	N/A	N/A	N/A
KIMCO REALTY CORP	KIM	-	N/A	6.07%	N/A	N/A	N/A
KLA-TENCOR CORP	KLAC	16,371.29	0.08%	2.26%	16.00%	18.44%	0.0144%
KIMBERLY-CLARK CORP	KMB	40,821.40	0.19%	3.34%	10.50%	14.02%	0.0272%
KINDER MORGAN INC	KMI	38,152.63	0.18%	2.92%	24.00%	27.27%	0.0495%
CARMAX INC	KMX	12,367.65	0.06%	0.00%	10.00%	10.00%	0.0059%
COCA-COLA CO/THE	KO	195,370.10	0.93%	3.36%	4.50%	7.94%	0.0737%
MICHAEL KORS HOLDINGS LTD	KORS	8,608.51	0.04%	0.00%	3.00%	3.00%	0.0012%
KROGER CO	KR	20,664.02	0.10%	2.25%	3.50%	5.79%	0.0057%
KOHL'S CORP	KSS	7,523.73	0.04%	5.27%	7.00%	12.45%	0.0045%
KANSAS CITY SOUTHERN	KSU	10,986.49	0.05%	1.36%	9.50%	10.92%	0.0057%
LOEWS CORP	L	16,614.63	0.08%	0.51%	15.00%	15.55%	0.0123%
L BRANDS INC	LB	13,956.80	0.07%	4.92%	0.50%	5.43%	0.0036%
LEGGETT & PLATT INC	LEG	6,149.26	0.03%	3.09%	7.50%	10.71%	0.0031%
LENNAR CORP-A	LEN	14,544.52	0.07%	0.26%	10.50%	10.77%	0.0075%
LABORATORY CRP OF AMER HLDGS	LH	15,510.01	0.07%	0.00%	9.00%	9.00%	0.0066%
LKQ CORP	LKQ	11,785.95	0.06%	0.00%	11.50%	11.50%	0.0064%
L3 TECHNOLOGIES INC	LLL	14,771.98	0.07%	1.59%	10.00%	11.67%	0.0082%
ELI LILLY & CO	LLY	92,139.63	0.44%	2.49%	11.00%	13.63%	0.0597%
LOCKHEED MARTIN CORP	LMT	90,283.93	0.43%	2.54%	10.00%	12.67%	0.0544%
LINCOLN NATIONAL CORP	LNC	16,354.42	0.08%	1.79%	7.00%	8.85%	0.0069%
ALLIANT ENERGY CORP	LNT	10,216.91	0.05%	2.85%	6.50%	9.44%	0.0046%
LOWE'S COS INC	LOW	66,591.72	0.32%	2.06%	13.50%	15.70%	0.0497%
LAM RESEARCH CORP	LRCX	35,281.21	0.17%	0.93%	20.50%	21.53%	0.0361%
LEUCADIA NATIONAL CORP	LUK	9,032.98	0.04%	1.58%	30.00%	31.82%	0.0137%
SOUTHWEST AIRLINES CO	LUV	32,689.74	0.16%	0.91%	10.50%	11.46%	0.0178%
LYONDELLBASELL INDU-CL A	LYB	40,794.85	0.19%	3.48%	4.00%	7.55%	0.0146%
MACY'S INC	M	6,283.05	0.03%	7.32%	2.00%	9.39%	0.0028%
MASTERCARD INC - A	MA	160,325.00	0.76%	0.58%	13.00%	13.62%	0.1038%
MID-AMERICA APARTMENT COMM	MAA	N/A	N/A	0.00%	N/A	N/A	N/A
MACERICH CO/THE	MAC	-	N/A	4.61%	N/A	N/A	N/A
MARRIOTT INTERNATIONAL -CL A	MAR	46,079.39	0.22%	1.04%	15.00%	16.12%	0.0353%
MASCO CORP	MAS	12,441.31	0.06%	1.05%	14.00%	15.12%	0.0089%
MATTEL INC	MAT	6,465.00	0.03%	0.00%	4.50%	4.50%	0.0014%

MCDONALD'S CORP	MCD	134,766.70	0.64%	2.39%	9.50%	12.00%	0.0769%
MICROCHIP TECHNOLOGY INC	MCHP	21,038.43	0.10%	1.64%	13.00%	14.75%	0.0148%
MCKESSON CORP	MCK	30,395.51	0.14%	0.93%	11.00%	11.98%	0.0173%
MOODY'S CORP	MCO	28,547.50	0.14%	1.02%	9.50%	10.57%	0.0143%
MONDELEZ INTERNATIONAL INC-A	MDLZ	63,299.39	0.30%	2.13%	10.00%	12.24%	0.0368%
MEDTRONIC PLC	MDT	111,537.00	0.53%	2.28%	6.00%	8.35%	0.0443%
METLIFE INC	MET	54,991.82	0.26%	3.27%	7.00%	10.38%	0.0272%
MGM RESORTS INTERNATIONAL	MGM	18,915.77	0.09%	1.32%	41.50%	43.09%	0.0388%
MOHAWK INDUSTRIES INC	MHK	20,369.36	0.10%	0.00%	8.50%	8.50%	0.0082%
MCCORMICK & CO-NON VTH SHRS	MKC	12,970.11	0.06%	1.93%	9.00%	11.02%	0.0068%
MARTIN MARIETTA MATERIALS	MLM	13,019.99	0.06%	0.85%	17.50%	18.42%	0.0114%
MARSH & MCLENNAN COS	MMC	42,247.12	0.20%	1.82%	10.00%	11.91%	0.0239%
3M CO	MMM	137,930.90	0.66%	2.03%	8.00%	10.11%	0.0663%
MONSTER BEVERAGE CORP	MNST	34,553.77	0.16%	0.00%	12.00%	12.00%	0.0197%
ALTRIA GROUP INC	MO	125,061.10	0.59%	4.03%	10.00%	14.23%	0.0847%
MONSANTO CO	MON	51,926.95	0.25%	1.83%	6.00%	7.88%	0.0195%
MOSAIC CO/THE	MOS	8,386.58	0.04%	0.42%	3.00%	3.43%	0.0014%
MARATHON PETROLEUM CORP	MPC	30,880.98	0.15%	2.71%	6.50%	9.30%	0.0137%
MERCK & CO. INC.	MRK	148,234.60	0.71%	3.46%	5.50%	9.06%	0.0638%
MARATHON OIL CORP	MRO	12,648.00	N/A	1.34%	N/A	N/A	N/A
MORGAN STANLEY	MS	90,304.88	0.43%	2.04%	10.50%	12.65%	0.0543%
MICROSOFT CORP	MSFT	641,609.20	3.05%	2.02%	8.50%	10.61%	0.3237%
MOTOROLA SOLUTIONS INC	MSI	14,876.46	0.07%	2.27%	10.50%	12.89%	0.0091%
M & T BANK CORP	MTB	24,394.04	0.12%	1.88%	8.00%	9.96%	0.0116%
METTLER-TOLEDO INTERNATIONAL	MTD	16,021.41	0.08%	0.00%	11.00%	11.00%	0.0084%
MICRON TECHNOLOGY INC	MU	54,545.40	0.26%	0.00%	25.50%	25.50%	0.0662%
MYLAN NV	MYL	19,995.13	0.10%	0.00%	10.00%	10.00%	0.0095%
NAVIENT CORP	NAVI	3,274.50	0.02%	5.14%	6.00%	11.29%	0.0018%
NOBLE ENERGY INC	NBL	12,681.20	N/A	1.55%	N/A	N/A	N/A
NORWEGIAN CRUISE LINE HOLDIN	NCLH	12,636.07	0.06%	0.00%	21.50%	21.50%	0.0129%
NASDAQ INC	NDAQ	12,856.14	0.06%	1.97%	9.50%	11.56%	0.0071%
NEXTERA ENERGY INC	NEE	72,996.36	0.35%	2.78%	7.00%	9.88%	0.0343%
NEWMONT MINING CORP	NEM	19,578.76	0.09%	0.82%	9.00%	9.86%	0.0092%
NETFLIX INC	NFLX	84,953.75	0.40%	0.00%	44.50%	44.50%	0.1798%
NEWFIELD EXPLORATION CO	NFX	6,120.04	0.03%	0.00%	18.00%	18.00%	0.0052%
NISOURCE INC	NI	9,104.13	0.04%	2.59%	5.50%	8.16%	0.0035%
NIKE INC -CL B	NKE	96,373.77	0.46%	1.35%	14.00%	15.44%	0.0708%
NIELSEN HOLDINGS PLC	NLSN	13,032.19	0.06%	3.72%	2.50%	6.27%	0.0039%
NORTHROP GRUMMAN CORP	NOC	52,575.04	0.25%	1.32%	8.00%	9.37%	0.0234%
NATIONAL OILWELL VARCO INC	NOV	12,138.86	0.06%	0.63%	3.00%	3.64%	0.0021%
NRG ENERGY INC	NRG	9,252.19	N/A	0.41%	N/A	N/A	N/A
NORFOLK SOUTHERN CORP	NSC	36,979.04	0.18%	1.89%	8.00%	9.97%	0.0175%
NETAPP INC	NTAP	15,133.50	0.07%	1.46%	12.50%	14.05%	0.0101%
NORTHERN TRUST CORP	NTRS	21,466.27	0.10%	1.78%	7.50%	9.35%	0.0095%
NUCOR CORP	NUE	17,851.04	0.08%	2.69%	20.50%	23.47%	0.0199%
NVIDIA CORP	NVDA	130,247.60	0.62%	0.28%	19.50%	19.81%	0.1227%
NEWELL BRANDS INC	NWL	13,820.82	0.07%	3.26%	23.50%	27.14%	0.0178%
NEWS CORP - CLASS A	NWSA	9,187.71	N/A	1.27%	N/A	N/A	N/A
REALTY INCOME CORP	O	-	N/A	4.67%	N/A	N/A	N/A
ONEOK INC	OKE	19,285.40	0.09%	5.89%	18.50%	24.93%	0.0229%
OMNICOM GROUP	OMC	15,876.81	0.08%	3.34%	7.50%	10.97%	0.0083%
ORACLE CORP	ORCL	202,627.20	0.96%	1.56%	8.00%	9.62%	0.0927%
O'REILLY AUTOMOTIVE INC	ORLY	18,659.15	0.09%	0.00%	11.00%	11.00%	0.0098%
OCCIDENTAL PETROLEUM CORP	OXY	52,212.66	0.25%	4.54%	25.00%	30.11%	0.0748%
PAYCHEX INC	PAYX	23,213.65	0.11%	3.19%	8.50%	11.83%	0.0131%
PEOPLE'S UNITED FINANCIAL	PBCT	6,271.72	0.03%	3.79%	10.50%	14.49%	0.0043%
PACCAR INC	PCAR	23,856.30	0.11%	2.65%	6.50%	9.24%	0.0105%
P G & E CORP	PCG	27,687.23	0.13%	4.12%	9.50%	13.82%	0.0182%
PRICELINE GROUP INC/THE	PCLN	86,300.58	0.41%	0.00%	15.00%	15.00%	0.0616%
PATTERSON COS INC	PDCO	3,377.36	0.02%	3.12%	13.00%	16.32%	0.0026%
PUBLIC SERVICE ENTERPRISE GP	PEG	25,972.15	0.12%	3.46%	1.00%	4.48%	0.0055%
PEPSICO INC	PEP	163,758.80	0.78%	2.84%	7.50%	10.45%	0.0814%
PFIZER INC	PFE	210,714.60	1.00%	3.61%	11.00%	14.81%	0.1484%
PRINCIPAL FINANCIAL GROUP	PFG	19,740.24	0.09%	2.87%	4.50%	7.43%	0.0070%
PROCTER & GAMBLE CO/THE	PG	224,089.50	1.07%	3.13%	10.00%	13.29%	0.1416%
PROGRESSIVE CORP	PGR	30,026.08	0.14%	1.86%	8.00%	9.93%	0.0142%
PARKER HANNIFIN CORP	PH	24,588.57	0.12%	1.43%	7.50%	8.98%	0.0105%
PULTEGROUP INC	PHM	9,652.86	0.05%	1.16%	16.50%	17.76%	0.0082%
PACKAGING CORP OF AMERICA	PKG	10,579.41	0.05%	2.25%	8.50%	10.85%	0.0055%
PERKINELMER INC	PKI	8,049.52	0.04%	0.38%	8.00%	8.40%	0.0032%
PROLOGIS INC	PLD	-	N/A	2.63%	N/A	N/A	N/A
PHILIP MORRIS INTERNATIONAL	PM	160,817.80	0.76%	4.13%	7.50%	11.78%	0.0901%
PNC FINANCIAL SERVICES GROUP	PNC	63,327.04	0.30%	2.26%	5.50%	7.82%	0.0236%
PENTAIR PLC	PNR	12,622.81	0.06%	1.99%	11.50%	13.60%	0.0082%
PINNACLE WEST CAPITAL	PNW	9,968.74	0.05%	3.11%	5.50%	8.70%	0.0041%
PPG INDUSTRIES INC	PPG	29,333.45	0.14%	1.56%	10.50%	12.14%	0.0169%
PPL CORP	PPL	24,814.07	0.12%	4.55%	1.50%	6.08%	0.0072%
PERRIGO CO PLC	PRGO	12,207.36	0.06%	0.80%	-0.50%	0.30%	0.0002%
PRUDENTIAL FINANCIAL INC	PRU	46,846.73	0.22%	2.74%	5.50%	8.32%	0.0185%



PUBLIC STORAGE	PSA	-	N/A	4.00%	N/A	N/A	N/A
PHILLIPS 66	PSX	47,273.77	0.22%	3.23%	5.00%	8.31%	0.0187%
PVH CORP	PVH	10,493.43	0.05%	0.11%	7.50%	7.61%	0.0038%
QUANTA SERVICES INC	PWR	5,514.52	0.03%	0.00%	15.00%	15.00%	0.0039%
PRAXAIR INC	PX	43,438.20	0.21%	2.22%	8.00%	10.31%	0.0213%
PIONEER NATURAL RESOURCES CO	PXD	26,219.02	0.12%	0.05%	37.50%	37.56%	0.0468%
PAYPAL HOLDINGS INC	PYPL	93,239.15	N/A	0.00%	N/A	N/A	N/A
QUALCOMM INC	QCOM	100,559.90	0.48%	3.35%	3.00%	6.40%	0.0306%
QORVO INC	QRVO	10,121.38	0.05%	0.00%	28.00%	28.00%	0.0135%
ROYAL CARIBBEAN CRUISES LTD	RCL	26,855.71	0.13%	1.91%	12.50%	14.53%	0.0186%
EVEREST RE GROUP LTD	RE	9,003.09	0.04%	2.45%	3.50%	5.99%	0.0026%
REGENCY CENTERS CORP	REG	N/A	N/A	0.00%	N/A	N/A	N/A
REGENERON PHARMACEUTICALS	REGN	42,340.68	0.20%	0.00%	23.00%	23.00%	0.0463%
REGIONS FINANCIAL CORP	RF	18,125.53	0.09%	2.51%	9.50%	12.13%	0.0105%
ROBERT HALF INTL INC	RHI	6,842.69	0.03%	1.87%	4.50%	6.41%	0.0021%
RED HAT INC	RHT	22,399.21	0.11%	0.00%	19.50%	19.50%	0.0208%
RAYMOND JAMES FINANCIAL INC	RJF	12,223.19	0.06%	1.11%	11.50%	12.67%	0.0074%
RALPH LAUREN CORP	RL	7,474.72	0.04%	2.18%	1.50%	3.70%	0.0013%
RESMED INC	RMD	12,130.85	0.06%	1.64%	10.00%	11.72%	0.0068%
ROCKWELL AUTOMATION INC	ROK	24,526.97	0.12%	1.75%	5.50%	7.30%	0.0085%
ROPER TECHNOLOGIES INC	ROP	26,673.49	0.13%	0.54%	7.50%	8.06%	0.0102%
ROSS STORES INC	ROST	27,878.30	0.13%	0.95%	9.00%	9.99%	0.0133%
RANGE RESOURCES CORP	RRC	4,389.30	0.02%	0.45%	23.50%	24.00%	0.0050%
REPUBLIC SERVICES INC	RSG	20,912.19	0.10%	2.26%	8.50%	10.86%	0.0108%
RAYTHEON COMPANY	RTN	53,597.94	0.25%	1.72%	8.00%	9.79%	0.0250%
SBA COMMUNICATIONS CORP	SBAC	19,775.11	0.09%	0.00%	87.50%	87.50%	0.0823%
STARBUCKS CORP	SBUX	82,607.30	0.39%	2.19%	15.00%	17.35%	0.0682%
SCANA CORP	SCG	6,214.72	0.03%	5.63%	3.50%	9.23%	0.0027%
SCHWAB (CHARLES) CORP	SCHW	61,373.38	0.29%	0.76%	14.00%	14.81%	0.0432%
SEALED AIR CORP	SEE	8,173.65	0.04%	1.41%	12.00%	13.49%	0.0052%
SHERWIN-WILLIAMS CO/THE	SHW	36,522.83	0.17%	0.89%	13.50%	14.45%	0.0251%
SIGNET JEWELERS LTD	SIG	3,620.58	0.02%	2.49%	2.00%	4.51%	0.0008%
JM SMUCKER CO/THE	SJM	12,802.72	0.06%	2.78%	6.00%	8.86%	0.0054%
SCHLUMBERGER LTD	SLB	86,080.18	0.41%	3.22%	17.50%	21.00%	0.0860%
SL GREEN REALTY CORP	SLG	-	N/A	3.23%	N/A	N/A	N/A
SNAP-ON INC	SNA	9,199.22	0.04%	2.03%	9.00%	11.12%	0.0049%
SCRIPPS NETWORKS INTER-CL A	SNI	10,498.11	0.05%	1.49%	6.50%	8.04%	0.0040%
SYNOPSIS INC	SNPS	13,422.26	0.06%	0.00%	9.50%	9.50%	0.0061%
SOUTHERN CO/THE	SO	51,546.34	0.25%	4.63%	3.50%	8.21%	0.0201%
SIMON PROPERTY GROUP INC	SPG	-	N/A	4.67%	N/A	N/A	N/A
S&P GLOBAL INC	SPGI	41,621.10	0.20%	1.08%	11.50%	12.64%	0.0250%
STERICYCLE INC	SRCL	5,361.81	0.03%	0.00%	4.50%	4.50%	0.0011%
SEMPRA ENERGY	SRE	29,783.66	0.14%	2.94%	7.50%	10.55%	0.0149%
SUNTRUST BANKS INC	STI	27,427.18	0.13%	2.78%	7.00%	9.88%	0.0129%
STATE STREET CORP	STT	34,365.84	0.16%	1.85%	7.50%	9.42%	0.0154%
SEAGATE TECHNOLOGY	STX	11,665.90	0.06%	6.35%	4.50%	10.99%	0.0061%
CONSTELLATION BRANDS INC-A	STZ	43,114.95	0.21%	0.98%	13.50%	14.55%	0.0298%
STANLEY BLACK & DECKER INC	SWK	25,454.90	0.12%	1.52%	9.50%	11.09%	0.0134%
SKYWORKS SOLUTIONS INC	SWKS	19,938.80	0.09%	1.18%	14.50%	15.77%	0.0150%
SYNCHRONY FINANCIAL	SYF	26,349.60	0.13%	1.78%	8.00%	9.85%	0.0123%
STRYKER CORP	SYK	57,891.46	0.28%	1.10%	15.00%	16.18%	0.0446%
SYMANTEC CORP	SYMC	17,616.17	0.08%	1.06%	10.50%	11.62%	0.0097%
SYSCO CORP	SYO	28,639.24	0.14%	2.62%	10.50%	13.26%	0.0181%
AT&T INC	T	214,078.60	1.02%	5.71%	5.50%	11.37%	0.1157%
MOLSON COORS BREWING CO -B	TAP	17,132.91	0.08%	2.20%	14.00%	16.35%	0.0133%
TRANSDIGM GROUP INC	TDG	13,957.08	0.07%	0.00%	12.00%	12.00%	0.0080%
TE CONNECTIVITY LTD	TEL	33,427.14	0.16%	1.69%	8.50%	10.26%	0.0163%
TARGET CORP	TGT	31,269.56	0.15%	4.31%	4.50%	8.91%	0.0132%
TIFFANY & CO	TIF	11,714.21	0.06%	2.23%	8.00%	10.32%	0.0057%
TJX COMPANIES INC	TJX	44,901.86	0.21%	1.77%	10.50%	12.36%	0.0264%
TORCHMARK CORP	TMK	9,901.78	0.05%	0.70%	7.50%	8.23%	0.0039%
THERMO FISHER SCIENTIFIC INC	TMO	77,291.79	0.37%	0.31%	10.50%	10.83%	0.0398%
TAPESTRY INC	TPR	11,660.73	0.06%	3.29%	8.00%	11.42%	0.0063%
TRIPADVISOR INC	TRIP	4,746.84	0.02%	0.00%	4.50%	4.50%	0.0010%
T ROWE PRICE GROUP INC	TROW	23,669.15	0.11%	2.40%	8.00%	10.50%	0.0118%
TRAVELERS COS INC/THE	TRV	35,869.76	0.17%	2.22%	1.00%	3.23%	0.0055%
TRACTOR SUPPLY COMPANY	TSCO	8,145.21	0.04%	1.67%	10.00%	11.75%	0.0046%
TYSON FOODS INC-CL A	TSN	28,587.17	0.14%	1.28%	10.50%	11.85%	0.0161%
TOTAL SYSTEM SERVICES INC	TSS	13,580.17	0.06%	0.71%	11.00%	11.75%	0.0076%
TIME WARNER INC	TWX	70,117.79	0.33%	1.79%	9.50%	11.38%	0.0379%
TEXAS INSTRUMENTS INC	TXN	96,741.90	0.46%	2.53%	9.50%	12.15%	0.0559%
TEXTRON INC	TXT	14,099.80	0.07%	0.15%	12.00%	12.16%	0.0082%
UNDER ARMOUR INC-CLASS A	UA	5,780.94	0.03%	0.00%	10.00%	10.00%	0.0027%
UNITED CONTINENTAL HOLDINGS	UAL	17,683.28	0.08%	0.00%	1.00%	1.00%	0.0008%
UDR INC	UDR	-	N/A	3.13%	N/A	N/A	N/A
UNIVERSAL HEALTH SERVICES-B	UHS	9,546.25	0.05%	0.40%	9.50%	9.92%	0.0045%
ULTA BEAUTY INC	ULTA	13,087.23	0.06%	0.00%	20.00%	20.00%	0.0124%
UNITEDHEALTH GROUP INC	UNH	204,672.20	0.97%	1.42%	13.00%	14.51%	0.1413%
UNUM GROUP	UNM	12,186.90	0.06%	1.71%	11.00%	12.80%	0.0074%

UNION PACIFIC CORP	UNP	93,089.95	0.44%	2.26%	8.00%	10.35%	0.0458%
UNITED PARCEL SERVICE-CL B	UPS	98,069.74	0.47%	3.05%	10.00%	13.20%	0.0616%
UNITED RENTALS INC	URI	12,962.35	0.06%	0.00%	8.50%	8.50%	0.0052%
US BANCORP	USB	86,521.88	0.41%	2.31%	5.00%	7.37%	0.0303%
UNITED TECHNOLOGIES CORP	UTX	93,240.77	0.44%	2.40%	7.50%	9.99%	0.0443%
VISA INC-CLASS A SHARES	V	231,613.80	1.10%	0.76%	11.50%	12.30%	0.1355%
VARIAN MEDICAL SYSTEMS INC	VAR	9,976.04	0.05%	0.00%	7.00%	7.00%	0.0033%
VF CORP	VFC	28,936.80	0.14%	2.51%	8.50%	11.12%	0.0153%
VIACOM INC-CLASS B	VIAB	10,736.03	0.05%	3.00%	2.00%	5.03%	0.0026%
VALERO ENERGY CORP	VLO	36,066.59	0.17%	3.51%	5.00%	8.60%	0.0147%
VULCAN MATERIALS CO	VMC	16,250.72	0.08%	0.81%	20.50%	21.39%	0.0165%
VORNADO REALTY TRUST	VNO	14,573.14	0.07%	3.13%	-0.50%	2.62%	0.0018%
VERISK ANALYTICS INC	VRSK	15,434.99	0.07%	0.00%	10.50%	10.50%	0.0077%
VERISIGN INC	VRSN	11,445.60	0.05%	0.00%	10.50%	10.50%	0.0057%
VERTEX PHARMACEUTICALS INC	VRTX	37,154.51	N/A	0.00%	N/A	N/A	N/A
VENTAS INC	VTR	-	N/A	5.17%	N/A	N/A	N/A
VERIZON COMMUNICATIONS INC	VZ	192,141.70	0.91%	5.01%	2.00%	7.06%	0.0645%
WATERS CORP	WAT	15,631.64	0.07%	0.00%	8.50%	8.50%	0.0063%
WALGREENS BOOTS ALLIANCE INC	WBA	76,329.95	0.36%	2.24%	11.00%	13.36%	0.0485%
WESTERN DIGITAL CORP	WDC	27,408.45	0.13%	2.31%	13.50%	15.97%	0.0208%
WEC ENERGY GROUP INC	WEC	21,544.38	0.10%	3.16%	6.00%	9.25%	0.0095%
WELLS FARGO & CO	WFC	266,400.70	1.27%	2.94%	5.00%	8.01%	0.1015%
WHIRLPOOL CORP	WHR	11,998.08	0.06%	2.64%	9.50%	12.27%	0.0070%
WILLIS TOWERS WATSON PLC	WLTW	21,005.22	N/A	1.34%	N/A	N/A	N/A
WASTE MANAGEMENT INC	WM	34,849.37	0.17%	2.12%	8.50%	10.71%	0.0178%
WILLIAMS COS INC	WMB	22,921.50	0.11%	4.32%	18.50%	23.22%	0.0253%
WAL-MART STORES INC	WMT	288,555.20	1.37%	2.14%	5.50%	7.70%	0.1057%
WESTROCK CO	WRK	14,926.78	N/A	2.93%	N/A	N/A	N/A
WESTERN UNION CO	WU	8,979.32	0.04%	3.58%	5.50%	9.18%	0.0039%
WEYERHAEUSER CO	WY	27,252.92	0.13%	3.54%	14.50%	18.30%	0.0237%
WYNDHAM WORLDWIDE CORP	WYN	11,098.97	0.05%	2.31%	7.50%	9.90%	0.0052%
WYNN RESORTS LTD	WYNN	16,310.63	0.08%	1.26%	14.00%	15.35%	0.0119%
CIMAREX ENERGY CO	XEC	10,994.07	0.05%	0.28%	31.00%	31.32%	0.0164%
XCEL ENERGY INC	XEL	25,657.26	0.12%	2.97%	4.50%	7.54%	0.0092%
XL GROUP LTD	XL	10,208.50	0.05%	2.30%	13.00%	15.45%	0.0075%
XILINX INC	XLNX	18,128.85	0.09%	1.94%	8.00%	10.02%	0.0086%
EXXON MOBIL CORP	XOM	343,620.70	1.63%	3.85%	10.50%	14.55%	0.2378%
DENTSPLY SIRONA INC	XRAY	15,518.66	0.07%	0.52%	8.50%	9.04%	0.0067%
XEROX CORP	XRX	7,202.24	0.03%	3.54%	4.00%	7.61%	0.0026%
XYLEM INC	XYL	12,096.06	0.06%	1.07%	14.00%	15.14%	0.0087%
YUM! BRANDS INC	YUM	26,858.97	0.13%	1.67%	6.50%	8.22%	0.0105%
ZIMMER BIOMET HOLDINGS INC	ZBH	22,885.37	0.11%	0.96%	11.00%	12.01%	0.0131%
ZIONS BANCORPORATION	ZION	9,256.65	0.04%	1.81%	13.50%	15.43%	0.0068%
ZOETIS INC	ZTS	34,670.22	0.16%	0.59%	0.12	12.63%	0.0208%
		21,024,681					14.59%

[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] x (1 + (0.5 x [7]))) + [7]

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

### Bloomberg and Value Line Beta Coefficients

		[1]	[2]
Company	Ticker	Bloomberg	Value Line
ALLETE, Inc.	ALE	0.734	0.750
Alliant Energy Corporation	LNT	0.488	0.700
Ameren Corporation	AEE	0.496	0.650
American Electric Power Company, Inc.	AEP	0.537	0.650
Black Hills Corporation	BKH	0.548	0.900
CMS Energy Corporation	CMS	0.474	0.650
Dominion Energy, Inc.	D	0.516	0.650
DTE Energy Company	DTE	0.545	0.650
Duke Energy Corporation	DUK	0.464	0.600
El Paso Electric Company	EE	0.778	0.800
Hawaiian Electric Industries, Inc.	HE	0.537	0.700
IDACORP, Inc.	IDA	0.707	0.700
NorthWestern Corporation	NWE	0.618	0.700
OGE Energy Corp.	OGE	0.655	0.950
Otter Tail Corporation	OTTR	0.862	0.900
Pinnacle West Capital Corporation	PNW	0.572	0.700
PNM Resources, Inc.	PNM	0.636	0.750
Portland General Electric Company	POR	0.492	0.700
Southern Company	SO	0.537	0.550
WEC Energy Group, Inc.	WEC	0.466	0.600
Xcel Energy Inc.	XEL	0.395	0.600
Mean		0.574	0.707

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]	
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity	
-2.60%	-2.73%				
		Current 30-Year Treasury	2.83%	7.14%	9.97%
		Near-Term Projected 30-Year Treasury	3.30%	6.72%	10.02%
		Long-Term Projected 30-Year Treasury	4.20%	6.06%	10.26%



Notes:

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional,  
Near Term Projected = Blue Chip Financial Forecasts, Vol. 36, No. 12, December 1, 2017, 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: SNL Financial
- [7] Source: SNL Financial
- [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%
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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%
4/11/1984	15.72%	11.78%	3.94%
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%
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7/31/1984	16.00%	12.43%	3.57%
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8/17/1984	14.30%	12.49%	1.81%
8/20/1984	15.00%	12.49%	2.51%
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8/31/1984	15.55%	12.52%	3.03%
9/6/1984	16.00%	12.53%	3.47%
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9/13/1984	15.00%	12.55%	2.45%
9/17/1984	17.38%	12.56%	4.82%
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9/28/1984	15.00%	12.57%	2.43%
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10/9/1984	14.75%	12.58%	2.17%

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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%
3/25/2011	9.80%	4.18%	5.62%
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%
12/22/2011	10.40%	3.75%	6.65%
12/23/2011	10.19%	3.74%	6.45%
1/25/2012	10.50%	3.57%	6.93%
1/27/2012	10.50%	3.56%	6.94%
2/15/2012	10.20%	3.47%	6.73%
2/23/2012	9.90%	3.44%	6.46%

2/27/2012	10.25%	3.43%	6.82%
2/29/2012	10.40%	3.41%	6.99%
3/29/2012	10.37%	3.32%	7.05%
4/4/2012	10.00%	3.30%	6.70%
4/26/2012	10.00%	3.21%	6.79%
5/2/2012	10.00%	3.18%	6.82%
5/7/2012	9.80%	3.17%	6.63%
5/15/2012	10.00%	3.14%	6.86%
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%
6/26/2012	10.10%	3.04%	7.06%
6/29/2012	10.00%	3.04%	6.96%
7/9/2012	10.20%	3.03%	7.17%
7/16/2012	9.80%	3.02%	6.78%
7/20/2012	9.31%	3.01%	6.30%
7/20/2012	9.81%	3.01%	6.80%
9/13/2012	9.80%	2.94%	6.86%
9/19/2012	9.80%	2.94%	6.86%
9/19/2012	10.05%	2.94%	7.11%
9/26/2012	9.50%	2.94%	6.56%
10/12/2012	9.60%	2.93%	6.67%
10/23/2012	9.75%	2.93%	6.82%
10/24/2012	10.30%	2.93%	7.37%
11/9/2012	10.30%	2.92%	7.38%
11/28/2012	10.40%	2.90%	7.50%
11/29/2012	9.75%	2.89%	6.86%
11/29/2012	9.88%	2.89%	6.99%
12/5/2012	9.71%	2.89%	6.82%
12/5/2012	10.40%	2.89%	7.51%
12/12/2012	9.80%	2.88%	6.92%
12/13/2012	9.50%	2.88%	6.62%
12/13/2012	10.50%	2.88%	7.62%
12/14/2012	10.40%	2.88%	7.52%
12/19/2012	9.71%	2.87%	6.84%
12/19/2012	10.25%	2.87%	7.38%
12/20/2012	9.50%	2.87%	6.63%
12/20/2012	9.80%	2.87%	6.93%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.30%	2.87%	7.43%
12/20/2012	10.40%	2.87%	7.53%
12/20/2012	10.45%	2.87%	7.58%
12/21/2012	10.20%	2.87%	7.33%
12/26/2012	9.80%	2.86%	6.94%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/16/2013	9.60%	2.84%	6.76%
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2/22/2013	9.75%	2.85%	6.90%
2/27/2013	10.00%	2.86%	7.14%
3/14/2013	9.30%	2.88%	6.42%
3/27/2013	9.80%	2.90%	6.90%
5/1/2013	9.84%	2.94%	6.90%
5/15/2013	10.30%	2.96%	7.34%
5/30/2013	10.20%	2.98%	7.22%
5/31/2013	9.00%	2.98%	6.02%
6/11/2013	10.00%	3.00%	7.00%

6/21/2013	9.75%	3.02%	6.73%
6/25/2013	9.80%	3.03%	6.77%
7/12/2013	9.36%	3.07%	6.29%
8/8/2013	9.83%	3.14%	6.69%
8/14/2013	9.15%	3.16%	5.99%
9/11/2013	10.20%	3.26%	6.94%
9/11/2013	10.25%	3.26%	6.99%
9/24/2013	10.20%	3.31%	6.89%
10/3/2013	9.65%	3.33%	6.32%
11/6/2013	10.20%	3.41%	6.79%
11/21/2013	10.00%	3.44%	6.56%
11/26/2013	10.00%	3.45%	6.55%
12/3/2013	10.25%	3.47%	6.78%
12/4/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.48%	6.72%
12/9/2013	8.72%	3.48%	5.24%
12/9/2013	9.75%	3.48%	6.27%
12/13/2013	9.75%	3.50%	6.25%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	10.12%	3.50%	6.62%
12/17/2013	9.50%	3.51%	5.99%
12/17/2013	10.95%	3.51%	7.44%
12/18/2013	8.72%	3.51%	5.21%
12/18/2013	9.80%	3.51%	6.29%
12/19/2013	10.15%	3.51%	6.64%
12/30/2013	9.50%	3.54%	5.96%
2/20/2014	9.20%	3.68%	5.52%
2/26/2014	9.75%	3.69%	6.06%
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3/26/2014	9.40%	3.73%	5.67%
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7/10/2014	9.95%	3.63%	6.32%
7/23/2014	9.75%	3.61%	6.14%
7/29/2014	9.45%	3.60%	5.85%
7/31/2014	9.90%	3.60%	6.30%
8/20/2014	9.75%	3.57%	6.18%
8/25/2014	9.60%	3.56%	6.04%
8/29/2014	9.80%	3.54%	6.26%
9/11/2014	9.60%	3.51%	6.09%
9/15/2014	10.25%	3.51%	6.74%
10/9/2014	9.80%	3.45%	6.35%
11/6/2014	9.56%	3.37%	6.19%
11/6/2014	10.20%	3.37%	6.83%
11/14/2014	10.20%	3.35%	6.85%
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12/4/2014	9.68%	3.31%	6.37%
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12/11/2014	10.07%	3.29%	6.78%
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5/1/2015	9.60%	2.85%	6.75%
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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%
12/3/2015	10.00%	2.90%	7.10%
12/9/2015	9.14%	2.90%	6.24%
12/9/2015	9.14%	2.90%	6.24%
12/11/2015	10.30%	2.90%	7.40%
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%
1/6/2016	9.50%	2.94%	6.56%
2/23/2016	9.75%	2.94%	6.81%
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6/3/2016	9.75%	2.80%	6.95%
6/8/2016	9.48%	2.80%	6.68%
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9/1/2016	9.50%	2.59%	6.91%
9/8/2016	10.00%	2.58%	7.42%
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9/30/2016	9.90%	2.53%	7.37%
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%
12/14/2016	9.10%	2.53%	6.57%
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12/22/2016	9.90%	2.55%	7.35%
12/28/2016	9.50%	2.55%	6.95%
1/18/2017	9.45%	2.58%	6.87%
1/24/2017	9.00%	2.59%	6.41%
1/31/2017	10.10%	2.60%	7.50%
2/15/2017	9.60%	2.62%	6.98%
2/22/2017	9.60%	2.64%	6.96%
2/24/2017	9.75%	2.64%	7.11%
2/28/2017	10.10%	2.64%	7.46%
3/2/2017	9.41%	2.65%	6.76%
3/20/2017	9.50%	2.68%	6.82%
4/4/2017	10.25%	2.71%	7.54%

4/12/2017	9.40%	2.74%	6.66%
4/20/2017	9.50%	2.76%	6.74%
5/3/2017	9.50%	2.79%	6.71%
5/11/2017	9.20%	2.81%	6.39%
5/18/2017	9.50%	2.83%	6.67%
5/23/2017	9.70%	2.84%	6.86%
6/16/2017	9.65%	2.89%	6.76%
6/22/2017	9.70%	2.90%	6.80%
6/22/2017	9.70%	2.90%	6.80%
7/24/2017	9.50%	2.95%	6.55%
8/15/2017	10.00%	2.97%	7.03%
9/22/2017	9.60%	2.93%	6.67%
9/28/2017	9.80%	2.92%	6.88%
10/20/2017	9.50%	2.91%	6.59%
10/26/2017	10.25%	2.91%	7.34%
10/26/2017	10.20%	2.91%	7.29%
10/26/2017	10.30%	2.91%	7.39%
11/6/2017	10.25%	2.90%	7.35%
11/15/2017	11.95%	2.89%	9.06%
11/30/2017	10.00%	2.88%	7.12%
11/30/2017	10.00%	2.88%	7.12%

# of Cases:	1530
Average:	4.60%

Constant Growth Discounted Cash Flow Model  
30 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	\$78.21	2.74%	2.81%	6.10%	5.00%	6.00%	5.70%	7.80%	8.51%	8.92%
Alliant Energy Corporation	LNT	\$1.26	\$44.03	2.86%	2.95%	6.20%	7.05%	6.00%	6.42%	8.95%	9.37%	10.01%
Ameren Corporation	AEE	\$1.83	\$62.67	2.92%	3.02%	6.70%	7.00%	6.00%	6.57%	9.01%	9.58%	10.02%
American Electric Power Company, Inc.	AEP	\$2.48	\$75.34	3.29%	3.36%	4.80%	2.77%	4.00%	3.86%	6.11%	7.21%	8.17%
Black Hills Corporation	BKH	\$1.90	\$61.16	3.11%	3.20%	5.60%	4.26%	7.50%	5.79%	7.43%	8.98%	10.72%
CMS Energy Corporation	CMS	\$1.33	\$48.97	2.72%	2.81%	6.50%	7.44%	6.50%	6.81%	9.30%	9.62%	10.26%
Dominion Energy, Inc.	D	\$3.08	\$81.43	3.78%	3.88%	5.60%	3.64%	6.50%	5.25%	7.49%	9.13%	10.41%
DTE Energy Company	DTE	\$3.53	\$112.58	3.14%	3.22%	6.00%	4.91%	6.00%	5.64%	8.12%	8.86%	9.23%
Duke Energy Corporation	DUK	\$3.56	\$88.70	4.01%	4.09%	4.00%	3.23%	4.50%	3.91%	7.31%	8.00%	8.60%
El Paso Electric Company	EE	\$1.34	\$58.67	2.28%	2.34%	5.20%	5.30%	5.00%	5.17%	7.34%	7.51%	7.64%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$36.57	3.39%	3.45%	4.20%	4.50%	1.50%	3.40%	4.92%	6.85%	7.97%
IDACORP, Inc.	IDA	\$2.36	\$94.69	2.49%	2.54%	4.50%	4.00%	3.50%	4.00%	6.04%	6.54%	7.05%
NorthWestern Corporation	NWE	\$2.10	\$60.63	3.46%	3.51%	1.50%	2.25%	4.50%	2.75%	4.99%	6.26%	8.04%
OGE Energy Corp.	OGE	\$1.33	\$35.89	3.71%	3.80%	4.60%	3.90%	6.00%	4.83%	7.68%	8.63%	9.82%
Otter Tail Corporation	OTTR	\$1.28	\$46.35	2.76%	2.84%	NA	5.20%	6.50%	5.85%	8.03%	8.69%	9.35%
Pinnacle West Capital Corporation	PNW	\$2.78	\$89.36	3.11%	3.18%	3.20%	5.46%	5.50%	4.72%	6.36%	7.90%	8.70%
PNM Resources, Inc.	PNM	\$0.97	\$43.62	2.22%	2.29%	5.50%	6.00%	7.50%	6.33%	7.78%	8.63%	9.81%
Portland General Electric Company	POR	\$1.36	\$47.96	2.84%	2.90%	3.80%	3.97%	6.00%	4.59%	6.69%	7.49%	8.92%
Southern Company	SO	\$2.32	\$51.84	4.48%	4.55%	3.80%	2.60%	3.50%	3.30%	7.13%	7.85%	8.36%
WEC Energy Group, Inc.	WEC	\$2.08	\$67.99	3.06%	3.14%	5.30%	5.27%	6.00%	5.52%	8.41%	8.67%	9.15%
Xcel Energy Inc.	XEL	\$1.44	\$50.18	2.87%	2.94%	5.50%	N/A	4.50%	5.00%	7.43%	7.94%	8.45%
PROXY GROUP MEAN				3.11%	3.18%	4.93%	4.69%	5.38%	5.02%	7.35%	8.20%	9.03%
PROXY GROUP MEDIAN				3.06%	3.14%	5.25%	4.71%	6.00%	5.17%	7.43%	8.51%	8.92%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-trading day average as of November 30, 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	\$77.14	2.77%	2.85%	6.10%	5.00%	6.00%	5.70%	7.84%	8.55%	8.96%
Alliant Energy Corporation	LNT	\$1.26	\$42.79	2.94%	3.04%	6.20%	7.05%	6.00%	6.42%	9.03%	9.46%	10.10%
Ameren Corporation	AEE	\$1.83	\$60.21	3.04%	3.14%	6.70%	7.00%	6.00%	6.57%	9.13%	9.71%	10.15%
American Electric Power Company, Inc.	AEP	\$2.48	\$73.16	3.39%	3.45%	4.80%	2.77%	4.00%	3.86%	6.21%	7.31%	8.27%
Black Hills Corporation	BKH	\$1.90	\$66.64	2.85%	2.93%	5.60%	4.26%	7.50%	5.79%	7.17%	8.72%	10.46%
CMS Energy Corporation	CMS	\$1.33	\$47.97	2.77%	2.87%	6.50%	7.44%	6.50%	6.81%	9.36%	9.68%	10.32%
Dominion Energy, Inc.	D	\$3.08	\$79.21	3.89%	3.99%	5.60%	3.64%	6.50%	5.25%	7.60%	9.24%	10.51%
DTE Energy Company	DTE	\$3.53	\$110.66	3.19%	3.28%	6.00%	4.91%	6.00%	5.64%	8.18%	8.92%	9.29%
Duke Energy Corporation	DUK	\$3.56	\$86.97	4.09%	4.17%	4.00%	3.23%	4.50%	3.91%	7.39%	8.08%	8.69%
El Paso Electric Company	EE	\$1.34	\$56.22	2.38%	2.44%	5.20%	5.30%	5.00%	5.17%	7.44%	7.61%	7.75%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$34.55	3.59%	3.65%	4.20%	4.50%	1.50%	3.40%	5.12%	7.05%	8.17%
IDACORP, Inc.	IDA	\$2.36	\$90.62	2.60%	2.66%	4.50%	4.00%	3.50%	4.00%	6.15%	6.66%	7.16%
NorthWestern Corporation	NWE	\$2.10	\$59.65	3.52%	3.57%	1.50%	2.25%	4.50%	2.75%	5.05%	6.32%	8.10%
OGE Energy Corp.	OGE	\$1.33	\$36.00	3.69%	3.78%	4.60%	3.90%	6.00%	4.83%	7.67%	8.62%	9.81%
Otter Tail Corporation	OTTR	\$1.28	\$43.86	2.92%	3.00%	NA	5.20%	6.50%	5.85%	8.19%	8.85%	9.51%
Pinnacle West Capital Corporation	PNW	\$2.78	\$88.42	3.14%	3.22%	3.20%	5.46%	5.50%	4.72%	6.39%	7.94%	8.73%
PNM Resources, Inc.	PNM	\$0.97	\$42.18	2.30%	2.37%	5.50%	6.00%	7.50%	6.33%	7.86%	8.71%	9.89%
Portland General Electric Company	POR	\$1.36	\$46.88	2.90%	2.97%	3.80%	3.97%	6.00%	4.59%	6.76%	7.56%	8.99%
Southern Company	SO	\$2.32	\$50.04	4.64%	4.71%	3.80%	2.60%	3.50%	3.30%	7.30%	8.01%	8.52%
WEC Energy Group, Inc.	WEC	\$2.08	\$65.70	3.17%	3.25%	5.30%	5.27%	6.00%	5.52%	8.52%	8.78%	9.26%
Xcel Energy Inc.	XEL	\$1.44	\$49.05	2.94%	3.01%	5.50%	N/A	4.50%	5.00%	7.50%	8.01%	8.52%
PROXY GROUP MEAN				3.18%	3.26%	4.93%	4.69%	5.38%	5.02%	7.42%	8.27%	9.10%
PROXY GROUP MEDIAN				3.04%	3.14%	5.25%	4.71%	6.00%	5.17%	7.50%	8.55%	8.99%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-trading day average as of November 30, 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

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	\$73.88	2.90%	2.98%	6.10%	5.00%	6.00%	5.70%	7.97%	8.68%	9.09%
Alliant Energy Corporation	LNT	\$1.26	\$41.56	3.03%	3.13%	6.20%	7.05%	6.00%	6.42%	9.12%	9.55%	10.19%
Ameren Corporation	AEE	\$1.83	\$57.79	3.17%	3.27%	6.70%	7.00%	6.00%	6.57%	9.26%	9.84%	10.28%
American Electric Power Company, Inc.	AEP	\$2.48	\$71.12	3.49%	3.55%	4.80%	2.77%	4.00%	3.86%	6.31%	7.41%	8.37%
Black Hills Corporation	BKH	\$1.90	\$67.53	2.81%	2.89%	5.60%	4.26%	7.50%	5.79%	7.13%	8.68%	10.42%
CMS Energy Corporation	CMS	\$1.33	\$47.00	2.83%	2.93%	6.50%	7.44%	6.50%	6.81%	9.42%	9.74%	10.38%
Dominion Energy, Inc.	D	\$3.08	\$78.67	3.92%	4.02%	5.60%	3.64%	6.50%	5.25%	7.63%	9.26%	10.54%
DTE Energy Company	DTE	\$3.53	\$108.19	3.26%	3.35%	6.00%	4.91%	6.00%	5.64%	8.25%	8.99%	9.36%
Duke Energy Corporation	DUK	\$3.56	\$85.39	4.17%	4.25%	4.00%	3.23%	4.50%	3.91%	7.47%	8.16%	8.76%
El Paso Electric Company	EE	\$1.34	\$53.99	2.48%	2.55%	5.20%	5.30%	5.00%	5.17%	7.54%	7.71%	7.85%
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$33.83	3.67%	3.73%	4.20%	4.50%	1.50%	3.40%	5.19%	7.13%	8.25%
IDACORP, Inc.	IDA	\$2.36	\$87.94	2.68%	2.74%	4.50%	4.00%	3.50%	4.00%	6.23%	6.74%	7.24%
NorthWestern Corporation	NWE	\$2.10	\$60.10	3.49%	3.54%	1.50%	2.25%	4.50%	2.75%	5.02%	6.29%	8.07%
OGE Energy Corp.	OGE	\$1.33	\$35.51	3.75%	3.84%	4.60%	3.90%	6.00%	4.83%	7.72%	8.67%	9.86%
Otter Tail Corporation	OTTR	\$1.28	\$41.48	3.09%	3.18%	NA	5.20%	6.50%	5.85%	8.37%	9.03%	9.69%
Pinnacle West Capital Corporation	PNW	\$2.78	\$87.05	3.19%	3.27%	3.20%	5.46%	5.50%	4.72%	6.44%	7.99%	8.78%
PNM Resources, Inc.	PNM	\$0.97	\$40.05	2.42%	2.50%	5.50%	6.00%	7.50%	6.33%	7.99%	8.83%	10.01%
Portland General Electric Company	POR	\$1.36	\$46.30	2.94%	3.00%	3.80%	3.97%	6.00%	4.59%	6.79%	7.59%	9.03%
Southern Company	SO	\$2.32	\$49.85	4.65%	4.73%	3.80%	2.60%	3.50%	3.30%	7.31%	8.03%	8.54%
WEC Energy Group, Inc.	WEC	\$2.08	\$63.65	3.27%	3.36%	5.30%	5.27%	6.00%	5.52%	8.62%	8.88%	9.37%
Xcel Energy Inc.	XEL	\$1.44	\$47.45	3.03%	3.11%	5.50%	N/A	4.50%	5.00%	7.60%	8.11%	8.62%
PROXY GROUP MEAN				3.25%	3.33%	4.93%	4.69%	5.38%	5.02%	7.50%	8.35%	9.18%
PROXY GROUP MEDIAN				3.17%	3.27%	5.25%	4.71%	6.00%	5.17%	7.60%	8.67%	9.09%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-trading day average as of November 30, 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 - Gordon Growth Horizon Value  
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]
Company	Ticker	Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal	
		Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.43%	22.69	4.23
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.39%	23.00	4.28
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	8.83%	20.06	3.73
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.22%	18.03	3.36
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.59%	21.58	4.02
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.70%	20.88	3.89
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.73%	20.69	3.85
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.65%	21.18	3.94
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.35%	23.32	4.34
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.33%	23.46	4.37
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	9.67%	16.16	3.01
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.20%	24.59	4.58
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	8.90%	19.67	3.66
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	8.86%	19.89	3.70
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.06%	25.82	4.81
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.56%	21.80	4.06
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	8.00%	26.40	4.92
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.54%	21.91	4.08
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	9.08%	18.70	3.48
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.72%	20.75	3.86
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.62%	21.37	3.98

DCF Result		
Mean	8.64%	21.52
Max	9.67%	26.40
Min	8.00%	16.16

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	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$168.48
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$94.38
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$135.10
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$158.06
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$135.04
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	\$105.74
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	\$4.67	\$4.93	\$5.19	\$162.90
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$240.82
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$179.96
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$127.65
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$74.20
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$202.82
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	\$4.27	\$127.56
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$74.71
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$98.73
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$189.87
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$95.31
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$103.36
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$105.36
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$143.42
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	\$106.23

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

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	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$173.37
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$97.08
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$139.54
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$163.83
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$139.16
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$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	\$109.08
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$168.09
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$248.32
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$185.04
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$131.23
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$77.22
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$208.26
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.18	\$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	\$131.84
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$77.18
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$101.25
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$195.61
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$97.69
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$106.47
Southern Company	SO	(\$51.84)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$109.07
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$147.98
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$109.51

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

Inputs	[1] Stock	[2] [3] [4] [5] EPS Growth Rate Estimates				[6] Long-Term Growth	[7] [8] [9] Payout Ratio			[10] Iterative Solution Proof	[11] IRR	[12] Terminal P/E Ratio	[13] Terminal PEG Ratio	
		Price	Zacks	First Call	Value Line		High Growth	2017	2021					2027
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.51%	22.10	4.12
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.52%	22.06	4.11
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	8.93%	19.50	3.63
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.47%	16.94	3.15
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.96%	19.34	3.60
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.83%	20.05	3.73
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.03%	18.99	3.54
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.73%	20.68	3.85
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.47%	22.39	4.17
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.36%	23.26	4.33
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	10.00%	15.01	2.80
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.29%	23.77	4.43
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.34%	17.50	3.26
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.14%	18.40	3.43
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.18%	24.73	4.60
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.73%	20.70	3.85
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.21%	24.46	4.55
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.85%	19.97	3.72
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	9.21%	18.08	3.37
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.82%	20.11	3.74
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.73%	20.67	3.85

DCF Result			
Mean	8.82%	20.42	3.80
Max	10.00%	24.73	4.60
Min	8.18%	15.01	2.80

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	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$168.82
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$94.66
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$135.43
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$158.88
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	\$4.41	\$4.65	\$136.51
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$106.10
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$163.48
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$241.26
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$180.25
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$127.73
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	\$74.61
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$203.27
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	\$4.14	\$4.37	\$4.60	\$4.85	\$128.76
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$75.10
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$99.00
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$190.58
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$95.85
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	\$104.16
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$105.58
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$143.74
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	\$3.39	\$106.48

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

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	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$173.85
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$97.49
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$140.00
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$165.06
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$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	\$4.41	\$141.16
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$109.58
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$169.15
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$248.94
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$185.56
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$131.35
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.16	\$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	\$77.89
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$208.91
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$133.61
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$77.79
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$101.64
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$196.65
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$98.43
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$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	\$107.59
Southern Company	SO	(\$51.84)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$109.42
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$148.45
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$109.87

Multi-Stage Growth Discounted Cash Flow Model - Gordon Growth Horizon Value  
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
														Price	Zacks	First Call	Value	Low	Growth	2017	2021	2027	Proof
Company	Ticker																						
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	5.00%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.29%	23.77	4.43									
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	6.00%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.31%	23.64	4.40									
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	6.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	8.71%	20.81	3.87									
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	2.77%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	8.95%	19.40	3.61									
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	4.26%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.28%	23.86	4.44									
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	6.50%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.63%	21.31	3.97									
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	3.64%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.37%	23.13	4.31									
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	4.91%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.49%	22.23	4.14									
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	3.23%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.21%	24.45	4.55									
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.00%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.30%	23.73	4.42									
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	1.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	9.14%	18.41	3.43									
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	3.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.10%	25.44	4.74									
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	1.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	8.61%	21.43	3.99									
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	3.90%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	8.65%	21.19	3.95									
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	5.20%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	7.95%	26.98	5.02									
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	3.20%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.24%	24.17	4.50									
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	5.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	7.86%	27.90	5.20									
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	3.80%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.38%	23.10	4.30									
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	2.60%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	8.91%	19.63	3.65									
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	5.27%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.66%	21.11	3.93									
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	4.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.51%	22.10	4.12									

DCF Result		
Mean	8.46%	22.75
Max	9.14%	27.90
Min	7.86%	18.41

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	\$6.70	\$7.06
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	\$3.98
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	\$6.14	\$6.47
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	\$8.10
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	\$5.05	\$5.32	\$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	\$4.23	\$4.46	\$4.70	\$4.95
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	\$9.72	\$10.24	\$10.79
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	\$6.97	\$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	\$4.59	\$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	\$3.79	\$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	\$6.45	\$6.80	\$7.17	\$7.55	\$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	\$2.70	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51
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	\$3.46	\$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	\$1.46	\$1.54	\$1.63	\$1.71	\$1.81	\$1.91	\$2.01	\$2.12	\$2.24	\$2.36	\$2.49	\$2.62	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40
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	\$4.01	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.98	\$3.06	\$3.14	\$3.22	\$3.32	\$3.43	\$3.57	\$3.73	\$3.91	\$4.12	\$4.34	\$4.58	\$4.82	\$5.08	\$5.35
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	\$6.11	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$167.91	
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$94.20	
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	\$134.70	
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$157.20	
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	\$133.88	
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	\$3.26	\$105.57	
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$162.30		
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$240.00	
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.81	\$3.93	\$4.14	\$4.36	\$4.60	\$179.64	
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	\$3.03	\$3.19	\$3.36	\$3.54	\$127.54		
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	\$2.63	\$73.58	
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$202.39	
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	\$126.82	
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$74.43	
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$98.48	
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$188.63	
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$94.95	
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	\$102.95	
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$105.08	
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$143.26	
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	\$106.00	



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

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	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$172.57
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$96.83
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.15	\$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	\$138.96
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$162.54
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$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	\$137.58
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$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	\$108.83
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.25	\$3.01	\$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	\$166.93
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$247.12
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$184.48
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$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	\$131.08
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.15	\$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	\$76.22
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$207.63
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.18	\$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	\$130.72
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$76.74
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$100.88
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$193.77
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$97.19
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$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	\$105.89
Southern Company	SO	(\$51.84)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$108.61
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$147.73
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$109.16

Multi-Stage Growth Discounted Cash Flow Model - Gordon Growth Horizon Value  
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]
Company	Ticker	Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
		Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.47%	22.39	4.17
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.48%	22.35	4.16
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	8.97%	19.27	3.59
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.34%	17.50	3.26
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.33%	23.47	4.37
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.77%	20.45	3.81
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.83%	20.09	3.74
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.71%	20.82	3.88
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.41%	22.84	4.25
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.46%	22.50	4.19
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	9.93%	15.22	2.83
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.32%	23.53	4.38
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	8.96%	19.35	3.60
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	8.85%	19.95	3.72
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.21%	24.43	4.55
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.59%	21.57	4.02
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	8.09%	25.54	4.76
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.61%	21.42	3.99
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	9.22%	18.02	3.36
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.84%	20.04	3.73
Xcel Energy Inc.	XEL	\$49.05	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.70%	20.88	3.89

DCF Result		
Mean	8.72%	21.03
Max	9.93%	25.54
Min	8.09%	15.22

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	\$3.32	\$3.51	\$3.71	\$3.92	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$166.18	
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$91.71	
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$129.82	
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$153.39	
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$146.84	
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	\$103.58	
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	\$4.67	\$4.93	\$5.19	\$158.17	
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$236.70	
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$176.26	
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$122.38	
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$69.88	
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$194.09	
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	\$4.27	\$125.46	
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$74.95	
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$93.39	
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$187.85	
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$92.21	
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$101.05	
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$101.52	
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$138.50	
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	\$103.81	

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

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	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$171.08
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$94.42
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$134.26
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$159.16
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$150.97
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$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	\$106.92
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$163.36
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$244.20
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$181.35
El Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$125.96
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$72.91
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$199.52
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.18	\$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	\$129.73
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$77.42
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$95.91
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$193.59
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$94.59
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$104.16
Southern Company	SO	(\$50.04)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$105.23
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$143.06
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$107.08

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

Inputs	[1] Stock	[2]-[5] EPS Growth Rate Estimates				[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	
		Price	Zacks	First Call	Value Line	High Growth	Long-Term Growth	2017	2021	2027	Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.56%	21.80	4.06
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.61%	21.44	3.99
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.08%	18.74	3.49
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.59%	16.44	3.06
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.68%	21.01	3.91
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.91%	19.64	3.66
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.14%	18.45	3.43
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.79%	20.33	3.79
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.54%	21.93	4.08
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.49%	22.30	4.15
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	10.28%	14.14	2.63
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.42%	22.75	4.24
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.40%	17.21	3.21
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.13%	18.46	3.44
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.34%	23.40	4.36
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.76%	20.48	3.81
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.30%	23.67	4.41
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.93%	19.52	3.64
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	9.36%	17.42	3.24
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.95%	19.42	3.62
Xcel Energy Inc.	XEL	\$49.05	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.81%	20.20	3.76

DCF Result		
Mean	8.91%	19.94
Max	10.28%	23.67
Min	8.30%	14.14

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	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2032	Value
ALLETE, Inc.	ALE	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$5.03	\$166.52
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$2.83	\$92.00
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$4.58	\$130.15
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$6.18	\$154.21
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	\$4.41	\$4.65	\$4.65	\$148.33
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$3.49	\$103.94
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$5.67	\$158.75
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$7.69	\$237.13
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$5.31	\$176.56
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$3.62	\$122.46
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	\$70.30
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$5.64	\$194.54
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	\$4.14	\$4.37	\$4.60	\$4.85	\$4.85	\$126.65
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$2.69	\$75.34
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$2.64	\$93.65
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$6.07	\$188.56
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$2.58	\$92.74
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	\$101.85
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$3.85	\$101.73
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$4.71	\$138.82
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	\$3.39	\$3.39	\$104.05

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

Projected Annual Data		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Investor Cash Flows		Initial																	
Company	Ticker	Outflow	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$171.55
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$94.82
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$134.73
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$160.39
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$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	\$4.41	\$152.98
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$107.42
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$164.43
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$244.82
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$181.86
El Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$126.08
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.16	\$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	\$73.57
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$200.17
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$131.50
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$78.03
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$96.29
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$194.63
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$95.33
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$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	\$105.29
Southern Company	SO	(\$50.04)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$105.58
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$143.53
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$107.44

Multi-Stage Growth Discounted Cash Flow Model - Gordon Growth Horizon Value  
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		Value				Long-Term	Payout Ratio						
Company	Ticker	Price	Zacks	First Call	Line	Low Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio			
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	5.00%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.33%	23.45	4.37			
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	6.00%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.39%	22.97	4.28			
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	6.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	8.84%	20.00	3.72			
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	2.77%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.06%	18.83	3.51			
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	4.26%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.05%	25.97	4.83			
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	6.50%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.70%	20.88	3.89			
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	3.64%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.46%	22.45	4.18			
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	4.91%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.55%	21.85	4.07			
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	3.23%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.27%	23.95	4.46			
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.00%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.42%	22.75	4.24			
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	1.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	9.38%	17.33	3.23			
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	3.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.22%	24.34	4.53			
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	1.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	8.67%	21.08	3.92			
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	3.90%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	8.64%	21.26	3.96			
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	5.20%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.09%	25.51	4.75			
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	3.20%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.28%	23.91	4.45			
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	5.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	7.94%	26.99	5.03			
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	3.80%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.45%	22.58	4.20			
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	2.60%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	9.04%	18.91	3.52			
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	5.27%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.78%	20.38	3.80			
Xcel Energy Inc.	XEL	\$49.05	5.50%	N/A	4.50%	4.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.59%	21.59	4.02			

DCF Result		
Mean	8.53%	22.24
Max	9.38%	26.99
Min	7.94%	17.33

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	\$6.70	\$7.06
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	\$3.98
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	\$6.14	\$6.47
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	\$8.10
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	\$5.05	\$5.32	\$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	\$4.23	\$4.46	\$4.70	\$4.95
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	\$9.72	\$10.24	\$10.79
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	\$6.97	\$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	\$4.59	\$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	\$3.79	\$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	\$6.45	\$6.80	\$7.17	\$7.55	\$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	\$2.70	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51
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	\$3.46	\$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	\$1.46	\$1.54	\$1.63	\$1.71	\$1.81	\$1.91	\$2.01	\$2.12	\$2.24	\$2.36	\$2.49	\$2.62	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40
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	\$4.01	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.98	\$3.06	\$3.14	\$3.22	\$3.32	\$3.43	\$3.57	\$3.73	\$3.91	\$4.12	\$4.34	\$4.58	\$4.82	\$5.08	\$5.35
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	\$6.11	\$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



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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$4.65	\$165.62
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$2.63	\$91.54
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	\$129.42
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$5.34	\$152.53
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	\$145.68
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	\$3.26	\$3.26	\$103.41
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	\$157.58
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$7.11	\$235.88
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$4.84	\$175.95
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	\$3.54	\$3.54	\$122.27
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	\$2.63	\$2.63	\$69.27
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$5.24	\$193.66
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	\$124.72
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$2.32	\$74.67
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$93.13
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$5.14	\$186.61
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$2.24	\$91.85
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	\$100.65
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.53	\$101.24
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.47	\$138.34
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	\$103.57

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

Projected Annual Data		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Investor Cash Flows		Initial																	
Company	Ticker	Outflow	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$170.27
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$94.16
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.15	\$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	\$133.69
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$157.87
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$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	\$149.37
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$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	\$106.67
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.25	\$3.01	\$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	\$162.20
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$243.00
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$180.79
El Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$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	\$125.82
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.15	\$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	\$71.90
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$198.90
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.18	\$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	\$128.62
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$76.98
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$95.54
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$191.75
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$94.09
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$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	\$103.58
Southern Company	SO	(\$50.04)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$104.77
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$142.81
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$106.73

Multi-Stage Growth Discounted Cash Flow Model - Gordon Growth Horizon Value  
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	Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal	
		Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$73.88	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.61%	21.44	3.99
Alliant Energy Corporation	LNT	\$41.56	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.57%	21.70	4.04
Ameren Corporation	AEE	\$57.79	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.12%	18.50	3.44
American Electric Power Company, Inc.	AEP	\$71.12	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.46%	17.00	3.17
Black Hills Corporation	BKH	\$67.53	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.29%	23.78	4.43
CMS Energy Corporation	CMS	\$47.00	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.84%	20.04	3.73
Dominion Energy, Inc.	D	\$78.67	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.85%	19.94	3.71
DTE Energy Company	DTE	\$108.19	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.78%	20.36	3.79
Duke Energy Corporation	DUK	\$85.39	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.47%	22.40	4.17
El Paso Electric Company	EE	\$53.99	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.58%	21.61	4.02
Hawaiian Electric Industries, Inc.	HE	\$33.83	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	10.04%	14.88	2.77
IDACORP, Inc.	IDA	\$87.94	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.41%	22.83	4.25
NorthWestern Corporation	NWE	\$60.10	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	8.93%	19.50	3.63
OGE Energy Corp.	OGE	\$35.51	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	8.90%	19.67	3.66
Otter Tail Corporation	OTTR	\$41.48	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.38%	23.09	4.30
Pinnacle West Capital Corporation	PNW	\$87.05	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.64%	21.23	3.95
PNM Resources, Inc.	PNM	\$40.05	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.23%	24.27	4.52
Portland General Electric Company	POR	\$46.30	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.65%	21.15	3.94
Southern Company	SO	\$49.85	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	\$0.00	9.24%	17.95	3.34
WEC Energy Group, Inc.	WEC	\$63.65	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	8.95%	19.41	3.61
Xcel Energy Inc.	XEL	\$47.45	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.81%	20.19	3.76

DCF Result		
Mean	8.80%	20.52
Max	10.04%	24.27
Min	8.23%	14.88

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	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$159.16
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$89.07
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$124.63
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$149.01
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$148.76
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	\$101.50
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	\$4.67	\$4.93	\$5.19	\$157.01
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$231.41
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$172.90
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$117.58
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$68.33
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$188.33
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	\$4.27	\$126.42
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$73.90
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$88.29
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$184.93
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$87.63
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$99.81
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$101.10
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$134.12
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	\$100.38

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$164.06
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$91.78
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$129.07
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$154.79
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$152.88
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$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	\$104.84
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$162.20
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$238.90
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$177.98
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$121.17
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$71.36
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$193.76
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.18	\$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	\$130.69
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$76.38
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$90.81
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$190.66
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$90.01
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$102.92
Southern Company	SO	(\$49.85)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$104.81
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$138.67
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$103.66

Multi-Stage Growth Discounted Cash Flow Model - Gordon Growth Horizon Value  
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]
Company	Ticker	Stock Price	EPS Growth Rate Estimates			Long-Term Growth	Payout Ratio			Iterative Solution		Terminal P/E Ratio	Terminal PEG Ratio	
			Zacks	First Call	Value Line		High Growth	2017	2021	2027	Proof			IRR
ALLETE, Inc.	ALE	\$73.88	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.70%	20.89	3.89
Alliant Energy Corporation	LNT	\$41.56	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.71%	20.82	3.88
Ameren Corporation	AEE	\$57.79	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.23%	17.99	3.35
American Electric Power Company, Inc.	AEP	\$71.12	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	9.72%	15.97	2.97
Black Hills Corporation	BKH	\$67.53	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.63%	21.29	3.96
CMS Energy Corporation	CMS	\$47.00	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	8.98%	19.25	3.58
Dominion Energy, Inc.	D	\$78.67	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.16%	18.31	3.41
DTE Energy Company	DTE	\$108.19	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	8.86%	19.88	3.70
Duke Energy Corporation	DUK	\$85.39	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.60%	21.51	4.01
El Paso Electric Company	EE	\$53.99	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.61%	21.43	3.99
Hawaiian Electric Industries, Inc.	HE	\$33.83	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	10.39%	13.83	2.58
IDACORP, Inc.	IDA	\$87.94	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.52%	22.08	4.11
NorthWestern Corporation	NWE	\$60.10	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.37%	17.35	3.23
OGE Energy Corp.	OGE	\$35.51	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.19%	18.20	3.39
Otter Tail Corporation	OTTR	\$41.48	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.51%	22.12	4.12
Pinnacle West Capital Corporation	PNW	\$87.05	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.81%	20.16	3.75
PNM Resources, Inc.	PNM	\$40.05	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.46%	22.50	4.19
Portland General Electric Company	POR	\$46.30	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.97%	19.29	3.59
Southern Company	SO	\$49.85	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	\$0.00	9.37%	17.35	3.23
WEC Energy Group, Inc.	WEC	\$63.65	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.06%	18.81	3.50
Xcel Energy Inc.	XEL	\$47.45	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	8.93%	19.53	3.64

DCF Result		
Mean	8.99%	19.45
Max	10.39%	22.50
Min	8.46%	13.83

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	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$159.50
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$89.35
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$124.95
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$149.83
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	\$4.41	\$4.65	\$150.24
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$101.86
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$157.59
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$231.84
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$173.19
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$117.67
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	\$68.75
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$188.77
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	\$4.14	\$4.37	\$4.60	\$4.85	\$127.61
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$74.29
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$88.56
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$185.63
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$88.16
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	\$100.60
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$101.32
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$134.44
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	\$3.39	\$100.63

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$164.53
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$92.18
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$129.53
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$156.01
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$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	\$4.41	\$154.90
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$105.34
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$163.26
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$239.53
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$178.50
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$121.29
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.16	\$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	\$72.02
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$194.41
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$132.46
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$76.98
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$91.19
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$191.70
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$90.75
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$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	\$104.04
Southern Company	SO	(\$49.85)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$105.16
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$139.15
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$104.02





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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$158.60
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$88.90
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	\$124.23
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$148.15
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	\$147.59
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	\$3.26	\$101.33
Dominion Energy, Inc.	D	\$2.96	\$3.10	\$3.26	\$3.41	\$3.58	\$3.57	\$3.56	\$3.56	\$3.56	\$3.56	\$3.75	\$3.95	\$4.17	\$4.39	\$4.63	\$156.41	
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$230.59
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.83	\$3.93	\$4.14	\$4.36	\$4.60	\$172.58
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	\$3.03	\$3.19	\$3.36	\$3.54	\$117.48	
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	\$2.63	\$67.72
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$187.90
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	\$125.68
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$73.62
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$88.04
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$183.68
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$87.28
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	\$99.40
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$100.82
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$133.96
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	\$100.15

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$163.26
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$91.52
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.15	\$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	\$128.49
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$153.49
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$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	\$151.29
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$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	\$104.60
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.25	\$3.01	\$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	\$161.04
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$237.70
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$177.42
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$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	\$121.02
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.15	\$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	\$70.35
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$193.14
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.18	\$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	\$129.58
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$75.94
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$90.44
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$188.83
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$89.52
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$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	\$102.34
Southern Company	SO	(\$49.85)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$104.35
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$138.43
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$103.31

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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]
Company	Ticker	Stock	EPS Growth Rate Estimates			Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal		
		Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.83%	24.27	4.52
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.71%	24.27	4.52
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.96%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	10.94%	24.27	4.52
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	9.29%	24.27	4.52
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.59%	24.27	4.52
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.65%	24.27	4.52
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.45%	24.27	4.52
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.58%	24.27	4.52
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.53%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	11.97%	24.27	4.52
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.12%	24.27	4.52
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	10.13%	24.27	4.52
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	10.02%	24.27	4.52
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	7.69%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.19%	24.27	4.52
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	\$0.00	7.49%	24.27	4.52
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	9.15%	24.27	4.52
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	10.58%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.64%	24.27	4.52
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.37%	24.27	4.52

DCF Result

Mean	9.38%	24.27	4.52
Max	11.97%	24.27	4.52
Min	7.49%	24.27	4.52

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	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$180.17
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$99.60
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$163.50
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$212.73
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$151.84
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	\$122.91
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	\$4.67	\$4.93	\$5.19	\$191.12
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$275.90
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$187.30
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$132.03
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$111.43
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$200.20
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	\$4.27	\$157.36
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$91.16
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$92.79
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$211.36
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$87.62
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$114.51
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$136.71
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$167.72
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	\$120.64

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

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	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$185.06
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$102.31
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$167.94
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$218.51
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$155.96
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$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	\$126.25
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$196.31
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$283.39
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$192.38
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$135.62
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$114.46
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$205.64
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.18	\$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	\$161.63
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$93.64
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$95.31
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$217.10
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$89.99
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$117.62
Southern Company	SO	(\$51.84)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$140.43
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$172.28
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$123.92

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

Inputs	[1] Stock	[2]	[3]			[4]		[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
			EPS Growth Rate Estimates					Value High	Long-Term Growth	Payout Ratio			Iterative Solution		Terminal	Terminal
			Price	Zacks	First Call	Line	Growth			2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	9.07%	24.27	4.52		
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.09%	24.27	4.52		
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.22%	24.27	4.52		
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	11.54%	24.27	4.52		
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	10.31%	24.27	4.52		
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.96%	24.27	4.52		
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	10.43%	24.27	4.52		
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.67%	24.27	4.52		
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.95%	24.27	4.52		
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.61%	24.27	4.52		
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	12.69%	24.27	4.52		
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.42%	24.27	4.52		
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	11.23%	24.27	4.52		
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	10.74%	24.27	4.52		
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.07%	24.27	4.52		
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.66%	24.27	4.52		
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	8.16%	24.27	4.52		
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	10.00%	24.27	4.52		
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	10.90%	24.27	4.52		
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.93%	24.27	4.52		
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.67%	24.27	4.52		

DCF Result		
Mean	9.87%	24.27 4.52
Max	12.69%	24.27 4.52
Min	8.07%	24.27 4.52

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	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$185.35
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$104.14
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$168.56
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$227.64
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	\$4.41	\$4.65	\$171.31
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$128.43
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$208.88
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$283.10
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$195.41
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$133.29
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	\$120.62
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$207.53
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	\$4.14	\$4.37	\$4.60	\$4.85	\$178.56
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$99.06
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$97.15
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$223.45
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$95.10
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	\$126.60
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$141.74
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$173.49
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	\$3.39	\$125.02



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

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	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$190.38
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$106.97
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$173.14
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$233.82
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$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	\$4.41	\$175.97
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$131.92
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$214.55
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$290.79
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$200.72
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$136.91
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.16	\$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	\$123.89
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$213.16
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$183.40
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$101.74
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$99.79
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$229.52
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$97.68
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$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	\$130.04
Southern Company	SO	(\$51.84)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$145.59
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$178.20
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$128.41

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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									
Company	Ticker	Price	Zacks	First Call	Line	Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$78.21	6.10%	5.00%	6.00%	5.00%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.42%	24.27	4.52
Alliant Energy Corporation	LNT	\$44.03	6.20%	7.05%	6.00%	6.00%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.47%	24.27	4.52
Ameren Corporation	AEE	\$62.67	6.70%	7.00%	6.00%	6.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.62%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$75.34	4.80%	2.77%	4.00%	2.77%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	10.26%	24.27	4.52
Black Hills Corporation	BKH	\$61.16	5.60%	4.26%	7.50%	4.26%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.38%	24.27	4.52
CMS Energy Corporation	CMS	\$48.97	6.50%	7.44%	6.50%	6.50%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.40%	24.27	4.52
Dominion Energy, Inc.	D	\$81.43	5.60%	3.64%	6.50%	3.64%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.66%	24.27	4.52
DTE Energy Company	DTE	\$112.58	6.00%	4.91%	6.00%	4.91%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.01%	24.27	4.52
Duke Energy Corporation	DUK	\$88.70	4.00%	3.23%	4.50%	3.23%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.17%	24.27	4.52
El Paso Electric Company	EE	\$58.67	5.20%	5.30%	5.00%	5.00%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.43%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$36.57	4.20%	4.50%	1.50%	1.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	10.73%	24.27	4.52
IDACORP, Inc.	IDA	\$94.69	4.50%	4.00%	3.50%	3.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	7.82%	24.27	4.52
NorthWestern Corporation	NWE	\$60.63	1.50%	2.25%	4.50%	1.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.34%	24.27	4.52
OGE Energy Corp.	OGE	\$35.89	4.60%	3.90%	6.00%	3.90%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.44%	24.27	4.52
Otter Tail Corporation	OTTR	\$46.35	NA	5.20%	6.50%	5.20%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	7.31%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$89.36	3.20%	5.46%	5.50%	3.20%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.27%	24.27	4.52
PNM Resources, Inc.	PNM	\$43.62	5.50%	6.00%	7.50%	5.50%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	7.01%	24.27	4.52
Portland General Electric Company	POR	\$47.96	3.80%	3.97%	6.00%	3.80%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.67%	24.27	4.52
Southern Company	SO	\$51.84	3.80%	2.60%	3.50%	2.60%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	10.14%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$67.99	5.30%	5.27%	6.00%	5.27%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.48%	24.27	4.52
Xcel Energy Inc.	XEL	\$50.18	5.50%	N/A	4.50%	4.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.07%	24.27	4.52

DCF Result		
Mean	8.86%	24.27
Max	10.73%	24.27
Min	7.01%	24.27

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	<b>2022</b>	2023	2024	2025	2026	<b>2027</b>	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	\$6.70	\$7.06
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	\$3.98
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	\$6.14	\$6.47
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	\$8.10
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	\$5.05	\$5.32	\$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	\$4.23	\$4.46	\$4.70	\$4.95
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	\$9.72	\$10.24	\$10.79
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	\$6.97	\$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	\$4.59	\$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	\$3.79	\$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	\$6.45	\$6.80	\$7.17	\$7.55	\$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	\$2.70	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51
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	\$3.46	\$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	\$1.46	\$1.54	\$1.63	\$1.71	\$1.81	\$1.91	\$2.01	\$2.12	\$2.24	\$2.36	\$2.49	\$2.62	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40
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	\$4.01	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.98	\$3.06	\$3.14	\$3.22	\$3.32	\$3.43	\$3.57	\$3.73	\$3.91	\$4.12	\$4.34	\$4.58	\$4.82	\$5.08	\$5.35
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	\$6.11	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2032	Value
ALLETE, Inc.	ALE	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$4.65	\$171.41
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$2.63	\$96.71
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	\$157.08
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$5.34	\$196.63
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	\$136.16
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	\$3.26	\$3.26	\$120.23
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	\$170.32
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$7.11	\$261.98
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$4.84	\$178.32
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	\$3.54	\$3.54	\$130.47
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	\$2.63	\$2.63	\$97.01
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$5.24	\$193.11
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	\$143.61
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$2.32	\$85.26
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$88.60
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$5.14	\$189.44
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$2.24	\$82.59
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	\$108.19
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.53	\$129.94
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.47	\$164.73
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	\$116.40

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

Projected Annual Data		[64]	[65]	[66]	[67]	[68]	[69]	[70]	[71]	[72]	[73]	[74]	[75]	[76]	[77]	[78]	[79]	[80]	[81]
Investor Cash Flows		Initial																	
Company	Ticker	Outflow	11/30/17	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	(\$78.21)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$176.07
Alliant Energy Corporation	LNT	(\$44.03)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$99.34
Ameren Corporation	AEE	(\$62.67)	\$0.00	\$0.15	\$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	\$161.35
American Electric Power Company, Inc.	AEP	(\$75.34)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$201.97
Black Hills Corporation	BKH	(\$61.16)	\$0.00	\$0.12	\$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	\$139.86
CMS Energy Corporation	CMS	(\$48.97)	\$0.00	\$0.11	\$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	\$123.49
Dominion Energy, Inc.	D	(\$81.43)	\$0.00	\$0.25	\$3.01	\$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	\$174.94
DTE Energy Company	DTE	(\$112.58)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$269.09
Duke Energy Corporation	DUK	(\$88.70)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$183.16
El Paso Electric Company	EE	(\$58.67)	\$0.00	\$0.11	\$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	\$134.01
Hawaiian Electric Industries, Inc.	HE	(\$36.57)	\$0.00	\$0.15	\$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	\$99.64
IDACORP, Inc.	IDA	(\$94.69)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$198.35
NorthWestern Corporation	NWE	(\$60.63)	\$0.00	\$0.18	\$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	\$147.51
OGE Energy Corp.	OGE	(\$35.89)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$87.57
Otter Tail Corporation	OTTR	(\$46.35)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$91.00
Pinnacle West Capital Corporation	PNW	(\$89.36)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$194.59
PNM Resources, Inc.	PNM	(\$43.62)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$84.83
Portland General Electric Company	POR	(\$47.96)	\$0.00	\$0.11	\$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	\$111.12
Southern Company	SO	(\$51.84)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$133.46
WEC Energy Group, Inc.	WEC	(\$67.99)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$169.20
Xcel Energy Inc.	XEL	(\$50.18)	\$0.00	\$0.12	\$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	\$119.56

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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]
Company	Ticker	Stock	EPS Growth Rate Estimates				Long-Term	Payout Ratio			Iterative Solution		Terminal	Terminal
		Price	Zacks	First Call	Line	Average	Growth	2017	2021	2027	Proof	IRR	P/E Ratio	PEG Ratio
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.96%	24.27	4.52
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.97%	24.27	4.52
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.33%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	11.22%	24.27	4.52
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.53%	24.27	4.52
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.78%	24.27	4.52
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.92%	24.27	4.52
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.61%	24.27	4.52
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.77%	24.27	4.52
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.91%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	12.55%	24.27	4.52
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.51%	24.27	4.52
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	10.28%	24.27	4.52
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.99%	24.27	4.52
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.18%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.29%	24.27	4.52
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	7.78%	24.27	4.52
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	9.36%	24.27	4.52
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	10.93%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.96%	24.27	4.52
Xcel Energy Inc.	XEL	\$49.05	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.58%	24.27	4.52

DCF Result		
Mean	9.59%	24.27
Max	12.55%	24.27
Min	7.78%	24.27

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	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$180.17
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$99.60
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$163.50
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$212.73
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$151.84
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	\$122.91
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	\$4.67	\$4.93	\$5.19	\$191.12
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$275.90
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$187.30
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$132.03
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$111.43
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$200.20
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	\$4.27	\$157.36
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$91.16
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$92.79
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$211.36
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$87.62
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$114.51
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$136.71
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$167.72
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	\$120.64

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

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	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$185.06
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$102.31
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$167.94
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$218.51
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$155.96
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$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	\$126.25
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$196.31
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$283.39
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$192.38
EI Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$135.62
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$114.46
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$205.64
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.18	\$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	\$161.63
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$93.64
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$95.31
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$217.10
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$89.99
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$117.62
Southern Company	SO	(\$50.04)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$140.43
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$172.28
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$123.92

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

Inputs	[1] Stock	[2] [3] [4] [5] [6]					[7] [8] [9]			[10]	[11]	[12]	[13]	
		EPS Growth Rate Estimates					Long-Term	Payout Ratio			Iterative Solution	Terminal	Terminal	
		Ticker	Price	Zacks	First Call	Value Line	High Growth	Growth	2017	2021	2027	Proof	IRR	P/E Ratio
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	9.19%	24.27	4.52
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.35%	24.27	4.52
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.59%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	11.82%	24.27	4.52
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	9.54%	24.27	4.52
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	10.15%	24.27	4.52
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	10.70%	24.27	4.52
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.83%	24.27	4.52
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	9.13%	24.27	4.52
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.99%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	13.28%	24.27	4.52
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.81%	24.27	4.52
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	11.39%	24.27	4.52
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	10.72%	24.27	4.52
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.56%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.76%	24.27	4.52
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.46%	24.27	4.52
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	10.21%	24.27	4.52
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	11.25%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	10.25%	24.27	4.52
Xcel Energy Inc.	XL	\$49.05	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.89%	24.27	4.52

DCF Result		
Mean	10.09%	24.27 4.52
Max	13.28%	24.27 4.52
Min	8.46%	24.27 4.52

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	<b>2022</b>	2023	2024	2025	2026	<b>2027</b>	2028	2029	2030	2031	2032
ALLETE, Inc.	ALE	\$3.14	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$7.15
Xcel Energy Inc.	XL	\$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



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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$185.35
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$104.14
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$168.56
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$227.64
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	\$4.41	\$4.65	\$171.31
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$128.43
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$208.88
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$283.10
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$195.41
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$133.29
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	\$120.62
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$207.53
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	\$4.14	\$4.37	\$4.60	\$4.85	\$178.56
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$99.06
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$97.15
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$223.45
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$95.10
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	\$126.60
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$141.74
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$173.49
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	\$3.39	\$125.02

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

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	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$190.38
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$106.97
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$173.14
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$233.82
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$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	\$4.41	\$175.97
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$131.92
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$214.55
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$290.79
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$200.72
El Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$136.91
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.16	\$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	\$123.89
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$213.16
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$183.40
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$101.74
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$99.79
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$229.52
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$97.68
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$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	\$130.04
Southern Company	SO	(\$50.04)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$145.59
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$178.20
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$128.41

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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]
Company	Ticker	Stock Price	EPS Growth Rate Estimates			Long-Term Growth	Payout Ratio			Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio	
			Zacks	First Call	Value Line		Low Growth	2017	2021					2027
ALLETE, Inc.	ALE	\$77.14	6.10%	5.00%	6.00%	5.00%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.54%	24.27	4.52
Alliant Energy Corporation	LNT	\$42.79	6.20%	7.05%	6.00%	6.00%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.72%	24.27	4.52
Ameren Corporation	AEE	\$60.21	6.70%	7.00%	6.00%	6.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	9.98%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$73.16	4.80%	2.77%	4.00%	2.77%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	10.54%	24.27	4.52
Black Hills Corporation	BKH	\$66.64	5.60%	4.26%	7.50%	4.26%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	7.64%	24.27	4.52
CMS Energy Corporation	CMS	\$47.97	6.50%	7.44%	6.50%	6.50%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.59%	24.27	4.52
Dominion Energy, Inc.	D	\$79.21	5.60%	3.64%	6.50%	3.64%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.92%	24.27	4.52
DTE Energy Company	DTE	\$110.66	6.00%	4.91%	6.00%	4.91%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.17%	24.27	4.52
Duke Energy Corporation	DUK	\$86.97	4.00%	3.23%	4.50%	3.23%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.35%	24.27	4.52
El Paso Electric Company	EE	\$56.22	5.20%	5.30%	5.00%	5.00%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	8.81%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$34.55	4.20%	4.50%	1.50%	1.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	11.30%	24.27	4.52
IDACORP, Inc.	IDA	\$90.62	4.50%	4.00%	3.50%	3.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.21%	24.27	4.52
NorthWestern Corporation	NWE	\$59.65	1.50%	2.25%	4.50%	1.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.50%	24.27	4.52
OGE Energy Corp.	OGE	\$36.00	4.60%	3.90%	6.00%	3.90%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.42%	24.27	4.52
Otter Tail Corporation	OTTR	\$43.86	NA	5.20%	6.50%	5.20%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	7.79%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$88.42	3.20%	5.46%	5.50%	3.20%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.37%	24.27	4.52
PNM Resources, Inc.	PNM	\$42.18	5.50%	6.00%	7.50%	5.50%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	7.30%	24.27	4.52
Portland General Electric Company	POR	\$46.88	3.80%	3.97%	6.00%	3.80%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.88%	24.27	4.52
Southern Company	SO	\$50.04	3.80%	2.60%	3.50%	2.60%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	10.48%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$65.70	5.30%	5.27%	6.00%	5.27%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	9.80%	24.27	4.52
Xcel Energy Inc.	XEL	\$49.05	5.50%	N/A	4.50%	4.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.28%	24.27	4.52

DCF Result		
Mean	9.07%	24.27
Max	11.30%	24.27
Min	7.30%	24.27

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	\$6.70	\$7.06
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	\$3.98
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	\$6.14	\$6.47
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	\$8.10
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	\$5.05	\$5.32	\$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	\$4.23	\$4.46	\$4.70	\$4.95
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	\$9.72	\$10.24	\$10.79
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	\$6.97	\$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	\$4.59	\$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	\$3.79	\$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	\$6.45	\$6.80	\$7.17	\$7.55	\$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	\$2.70	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51
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	\$3.46	\$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	\$1.46	\$1.54	\$1.63	\$1.71	\$1.81	\$1.91	\$2.01	\$2.12	\$2.24	\$2.36	\$2.49	\$2.62	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40
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	\$4.01	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.98	\$3.06	\$3.14	\$3.22	\$3.32	\$3.43	\$3.57	\$3.73	\$3.91	\$4.12	\$4.34	\$4.58	\$4.82	\$5.08	\$5.35
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	\$6.11	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$171.41
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$96.71
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	\$157.08
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$196.63
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	\$136.16
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	\$3.26	\$120.23
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	\$170.32
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$261.98
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.83	\$3.93	\$4.14	\$4.36	\$4.60	\$178.32
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	\$3.54	\$130.47
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	\$2.63	\$97.01
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$193.11
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	\$143.61
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$85.26
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$88.60
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$189.44
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$82.59
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	\$108.19
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$129.94
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$164.73
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	\$116.40

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

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	11/30/17	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	(\$77.14)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$176.07
Alliant Energy Corporation	LNT	(\$42.79)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$99.34
Ameren Corporation	AEE	(\$60.21)	\$0.00	\$0.15	\$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	\$161.35
American Electric Power Company, Inc.	AEP	(\$73.16)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$201.97
Black Hills Corporation	BKH	(\$66.64)	\$0.00	\$0.12	\$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	\$139.86
CMS Energy Corporation	CMS	(\$47.97)	\$0.00	\$0.11	\$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	\$123.49
Dominion Energy, Inc.	D	(\$79.21)	\$0.00	\$0.25	\$3.01	\$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	\$174.94
DTE Energy Company	DTE	(\$110.66)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$269.09
Duke Energy Corporation	DUK	(\$86.97)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$183.16
El Paso Electric Company	EE	(\$56.22)	\$0.00	\$0.11	\$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	\$134.01
Hawaiian Electric Industries, Inc.	HE	(\$34.55)	\$0.00	\$0.15	\$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	\$99.64
IDACORP, Inc.	IDA	(\$90.62)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$198.35
NorthWestern Corporation	NWE	(\$59.65)	\$0.00	\$0.18	\$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	\$147.51
OGE Energy Corp.	OGE	(\$36.00)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$87.57
Otter Tail Corporation	OTTR	(\$43.86)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$91.00
Pinnacle West Capital Corporation	PNW	(\$88.42)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$194.59
PNM Resources, Inc.	PNM	(\$42.18)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$84.83
Portland General Electric Company	POR	(\$46.88)	\$0.00	\$0.11	\$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	\$111.12
Southern Company	SO	(\$50.04)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$133.46
WEC Energy Group, Inc.	WEC	(\$65.70)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$169.20
Xcel Energy Inc.	XEL	(\$49.05)	\$0.00	\$0.12	\$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	\$119.56

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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	Stock Price	EPS Growth Rate Estimates			Long-Term Growth	Payout Ratio			Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio	
			Zacks	First Call	Line Value		Average	2017	2021					2027
ALLETE, Inc.	ALE	\$73.88	6.10%	5.00%	6.00%	5.70%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	9.35%	24.27	4.52
Alliant Energy Corporation	LNT	\$41.56	6.20%	7.05%	6.00%	6.42%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.23%	24.27	4.52
Ameren Corporation	AEE	\$57.79	6.70%	7.00%	6.00%	6.57%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.71%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$71.12	4.80%	2.77%	4.00%	3.86%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	11.50%	24.27	4.52
Black Hills Corporation	BKH	\$67.53	5.60%	4.26%	7.50%	5.79%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	8.41%	24.27	4.52
CMS Energy Corporation	CMS	\$47.00	6.50%	7.44%	6.50%	6.81%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.96%	24.27	4.52
Dominion Energy, Inc.	D	\$78.67	5.60%	3.64%	6.50%	5.25%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	9.99%	24.27	4.52
DTE Energy Company	DTE	\$108.19	6.00%	4.91%	6.00%	5.64%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.82%	24.27	4.52
Duke Energy Corporation	DUK	\$85.39	4.00%	3.23%	4.50%	3.91%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.94%	24.27	4.52
El Paso Electric Company	EE	\$53.99	5.20%	5.30%	5.00%	5.17%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	9.27%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$33.83	4.20%	4.50%	1.50%	3.40%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	12.77%	24.27	4.52
IDACORP, Inc.	IDA	\$87.94	4.50%	4.00%	3.50%	4.00%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.78%	24.27	4.52
NorthWestern Corporation	NWE	\$60.10	1.50%	2.25%	4.50%	2.75%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	10.21%	24.27	4.52
OGE Energy Corp.	OGE	\$35.51	4.60%	3.90%	6.00%	4.83%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	10.12%	24.27	4.52
Otter Tail Corporation	OTTR	\$41.48	NA	5.20%	6.50%	5.85%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.67%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$87.05	3.20%	5.46%	5.50%	4.72%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.43%	24.27	4.52
PNM Resources, Inc.	PNM	\$40.05	5.50%	6.00%	7.50%	6.33%	5.37%	48.00%	57.00%	65.91%	\$0.00	8.23%	24.27	4.52
Portland General Electric Company	POR	\$46.30	3.80%	3.97%	6.00%	4.59%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	9.47%	24.27	4.52
Southern Company	SO	\$49.85	3.80%	2.60%	3.50%	3.30%	5.37%	75.00%	73.00%	65.91%	\$0.00	10.97%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$63.65	5.30%	5.27%	6.00%	5.52%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	10.25%	24.27	4.52
Xcel Energy Inc.	XEL	\$47.45	5.50%	N/A	4.50%	5.00%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.89%	24.27	4.52

DCF Result		
Mean	9.81%	24.27
Max	12.77%	24.27
Min	8.23%	24.27

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	\$4.14	\$4.38	\$4.62	\$4.88	\$5.14	\$5.42	\$5.71	\$6.02	\$6.35	\$6.69	\$7.05	\$7.42
Alliant Energy Corporation	LNT	\$1.65	\$1.76	\$1.87	\$1.99	\$2.12	\$2.25	\$2.39	\$2.54	\$2.69	\$2.84	\$3.00	\$3.16	\$3.33	\$3.51	\$3.70	\$3.89	\$4.10
Ameren Corporation	AEE	\$2.68	\$2.86	\$3.04	\$3.24	\$3.46	\$3.68	\$3.92	\$4.16	\$4.41	\$4.66	\$4.92	\$5.19	\$5.46	\$5.76	\$6.07	\$6.39	\$6.74
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	\$6.40	\$6.75	\$7.11	\$7.49	\$7.89	\$8.32	\$8.77
Black Hills Corporation	BKH	\$2.63	\$2.78	\$2.94	\$3.11	\$3.29	\$3.48	\$3.68	\$3.89	\$4.11	\$4.33	\$4.57	\$4.82	\$5.07	\$5.35	\$5.63	\$5.94	\$6.26
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	\$5.06
Dominion Energy, Inc.	D	\$3.44	\$3.62	\$3.81	\$4.01	\$4.22	\$4.44	\$4.68	\$4.92	\$5.18	\$5.46	\$5.75	\$6.06	\$6.39	\$6.73	\$7.09	\$7.47	\$7.87
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	\$7.32	\$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	\$3.97	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$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	\$3.35	\$3.53	\$3.72	\$3.92	\$4.14	\$4.36	\$4.59
IDACORP, Inc.	IDA	\$3.94	\$4.10	\$4.26	\$4.43	\$4.61	\$4.79	\$5.00	\$5.22	\$5.46	\$5.73	\$6.03	\$6.35	\$6.69	\$7.05	\$7.43	\$7.83	\$8.25
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	\$6.15	\$6.48
OGE Energy Corp.	OGE	\$1.69	\$1.77	\$1.86	\$1.95	\$2.04	\$2.14	\$2.25	\$2.36	\$2.48	\$2.61	\$2.74	\$2.89	\$3.05	\$3.21	\$3.38	\$3.56	\$3.76
Otter Tail Corporation	OTTR	\$1.60	\$1.69	\$1.79	\$1.90	\$2.01	\$2.13	\$2.25	\$2.38	\$2.51	\$2.65	\$2.79	\$2.94	\$3.10	\$3.27	\$3.44	\$3.63	\$3.82
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.14	\$4.33	\$4.54	\$4.75	\$4.97	\$5.21	\$5.47	\$5.75	\$6.04	\$6.36	\$6.70	\$7.06	\$7.44	\$7.84	\$8.26	\$8.71
PNM Resources, Inc.	PNM	\$1.46	\$1.55	\$1.65	\$1.76	\$1.87	\$1.98	\$2.11	\$2.23	\$2.36	\$2.50	\$2.64	\$2.78	\$2.93	\$3.09	\$3.25	\$3.43	\$3.61
Portland General Electric Company	POR	\$2.16	\$2.26	\$2.36	\$2.47	\$2.58	\$2.70	\$2.83	\$2.97	\$3.12	\$3.28	\$3.45	\$3.63	\$3.83	\$4.03	\$4.25	\$4.48	\$4.72
Southern Company	SO	\$2.83	\$2.92	\$3.02	\$3.12	\$3.22	\$3.33	\$3.45	\$3.59	\$3.74	\$3.92	\$4.12	\$4.34	\$4.57	\$4.81	\$5.07	\$5.35	\$5.63
WEC Energy Group, Inc.	WEC	\$2.96	\$3.12	\$3.30	\$3.48	\$3.67	\$3.87	\$4.09	\$4.31	\$4.54	\$4.79	\$5.05	\$5.32	\$5.61	\$5.91	\$6.22	\$6.56	\$6.91
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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.12	\$2.19	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$4.89	\$180.17
Alliant Energy Corporation	LNT	\$1.11	\$1.18	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$2.70	\$99.60
Ameren Corporation	AEE	\$1.83	\$1.92	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$4.44	\$163.50
American Electric Power Company, Inc.	AEP	\$2.99	\$3.05	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$5.78	\$212.73
Black Hills Corporation	BKH	\$1.42	\$1.50	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$4.12	\$151.84
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	\$122.91
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	\$4.67	\$4.93	\$5.19	\$191.12
DTE Energy Company	DTE	\$2.96	\$3.21	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$7.49	\$275.90
Duke Energy Corporation	DUK	\$3.12	\$3.22	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$5.09	\$187.30
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$3.59	\$132.03
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	\$2.45	\$2.59	\$2.73	\$2.87	\$3.03	\$111.43
IDACORP, Inc.	IDA	\$2.21	\$2.38	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$5.44	\$200.20
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	\$4.27	\$157.36
OGE Energy Corp.	OGE	\$1.15	\$1.24	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$2.48	\$91.16
Otter Tail Corporation	OTTR	\$1.25	\$1.27	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$2.52	\$92.79
Pinnacle West Capital Corporation	PNW	\$2.61	\$2.73	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$5.74	\$211.36
PNM Resources, Inc.	PNM	\$0.75	\$0.83	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$2.38	\$87.62
Portland General Electric Company	POR	\$1.33	\$1.38	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$3.11	\$114.51
Southern Company	SO	\$2.19	\$2.25	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$3.71	\$136.71
WEC Energy Group, Inc.	WEC	\$2.09	\$2.21	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$4.55	\$167.72
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	\$120.64

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.18	\$2.26	\$2.33	\$2.40	\$2.60	\$2.80	\$3.02	\$3.25	\$3.50	\$3.77	\$3.97	\$4.18	\$4.41	\$4.64	\$185.06
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.14	\$1.25	\$1.33	\$1.42	\$1.52	\$1.62	\$1.73	\$1.84	\$1.96	\$2.08	\$2.19	\$2.31	\$2.44	\$2.57	\$102.31
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.16	\$1.89	\$2.01	\$2.11	\$2.21	\$2.39	\$2.58	\$2.77	\$2.98	\$3.20	\$3.42	\$3.60	\$3.79	\$4.00	\$4.21	\$167.94
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.25	\$3.04	\$3.10	\$3.16	\$3.22	\$3.38	\$3.55	\$3.74	\$3.96	\$4.19	\$4.45	\$4.69	\$4.94	\$5.20	\$5.48	\$218.51
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$1.46	\$1.59	\$1.68	\$1.78	\$1.97	\$2.18	\$2.40	\$2.64	\$2.90	\$3.17	\$3.34	\$3.52	\$3.71	\$3.91	\$155.96
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$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	\$126.25
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.26	\$3.08	\$3.41	\$3.63	\$3.86	\$3.90	\$3.94	\$3.96	\$3.98	\$3.99	\$4.00	\$4.21	\$4.44	\$4.67	\$4.93	\$196.31
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.04	\$3.47	\$3.76	\$4.07	\$4.32	\$4.58	\$4.85	\$5.14	\$5.45	\$5.77	\$6.08	\$6.40	\$6.75	\$7.11	\$283.39
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.27	\$3.18	\$3.33	\$3.44	\$3.55	\$3.60	\$3.65	\$3.70	\$3.77	\$3.84	\$3.92	\$4.13	\$4.35	\$4.58	\$4.83	\$192.38
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.75	\$1.89	\$2.04	\$2.20	\$2.37	\$2.56	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40	\$135.62
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.15	\$1.85	\$1.86	\$1.88	\$1.89	\$1.95	\$2.01	\$2.07	\$2.15	\$2.23	\$2.33	\$2.45	\$2.59	\$2.73	\$2.87	\$114.46
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.26	\$2.55	\$2.73	\$2.92	\$3.09	\$3.27	\$3.47	\$3.68	\$3.92	\$4.19	\$4.41	\$4.65	\$4.90	\$5.16	\$205.64
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.18	\$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	\$161.63
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.18	\$1.33	\$1.43	\$1.54	\$1.59	\$1.65	\$1.71	\$1.77	\$1.84	\$1.91	\$2.01	\$2.12	\$2.23	\$2.35	\$93.64
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.29	\$1.28	\$1.29	\$1.30	\$1.39	\$1.49	\$1.59	\$1.70	\$1.82	\$1.94	\$2.04	\$2.15	\$2.27	\$2.39	\$95.31
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.67	\$2.86	\$2.99	\$3.13	\$3.31	\$3.50	\$3.70	\$3.93	\$4.16	\$4.42	\$4.66	\$4.91	\$5.17	\$5.45	\$217.10
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.77	\$0.92	\$1.02	\$1.13	\$1.23	\$1.34	\$1.45	\$1.57	\$1.70	\$1.83	\$1.93	\$2.03	\$2.14	\$2.26	\$89.99
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$1.36	\$1.43	\$1.49	\$1.54	\$1.66	\$1.78	\$1.91	\$2.06	\$2.22	\$2.39	\$2.52	\$2.66	\$2.80	\$2.95	\$117.62
Southern Company	SO	(\$49.85)	\$0.00	\$0.19	\$2.23	\$2.31	\$2.37	\$2.43	\$2.48	\$2.53	\$2.60	\$2.68	\$2.76	\$2.86	\$3.01	\$3.17	\$3.34	\$3.52	\$140.43
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.15	\$2.33	\$2.46	\$2.59	\$2.73	\$2.87	\$3.02	\$3.17	\$3.34	\$3.51	\$3.69	\$3.89	\$4.10	\$4.32	\$172.28
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$123.92



Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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]
Company	Ticker	Stock Price	EPS Growth Rate Estimates			Long-Term Growth	Payout Ratio			Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio	
			Zacks	First Call	Value Line		High Growth	2017	2021					2027
ALLETE, Inc.	ALE	\$73.88	6.10%	5.00%	6.00%	6.10%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	9.59%	24.27	4.52
Alliant Energy Corporation	LNT	\$41.56	6.20%	7.05%	6.00%	7.05%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.61%	24.27	4.52
Ameren Corporation	AEE	\$57.79	6.70%	7.00%	6.00%	7.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.97%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$71.12	4.80%	2.77%	4.00%	4.80%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	12.10%	24.27	4.52
Black Hills Corporation	BKH	\$67.53	5.60%	4.26%	7.50%	7.50%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	9.42%	24.27	4.52
CMS Energy Corporation	CMS	\$47.00	6.50%	7.44%	6.50%	7.44%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	10.34%	24.27	4.52
Dominion Energy, Inc.	D	\$78.67	5.60%	3.64%	6.50%	6.50%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	10.77%	24.27	4.52
DTE Energy Company	DTE	\$108.19	6.00%	4.91%	6.00%	6.00%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	10.04%	24.27	4.52
Duke Energy Corporation	DUK	\$85.39	4.00%	3.23%	4.50%	4.50%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	9.30%	24.27	4.52
El Paso Electric Company	EE	\$53.99	5.20%	5.30%	5.00%	5.30%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	9.35%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$33.83	4.20%	4.50%	1.50%	4.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	13.50%	24.27	4.52
IDACORP, Inc.	IDA	\$87.94	4.50%	4.00%	3.50%	4.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	9.08%	24.27	4.52
NorthWestern Corporation	NWE	\$60.10	1.50%	2.25%	4.50%	4.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	11.31%	24.27	4.52
OGE Energy Corp.	OGE	\$35.51	4.60%	3.90%	6.00%	6.00%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	10.85%	24.27	4.52
Otter Tail Corporation	OTTR	\$41.48	NA	5.20%	6.50%	6.50%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	9.06%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$87.05	3.20%	5.46%	5.50%	5.50%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	9.91%	24.27	4.52
PNM Resources, Inc.	PNM	\$40.05	5.50%	6.00%	7.50%	7.50%	5.37%	48.00%	57.00%	65.91%	(\$0.00)	8.91%	24.27	4.52
Portland General Electric Company	POR	\$46.30	3.80%	3.97%	6.00%	6.00%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	10.32%	24.27	4.52
Southern Company	SO	\$49.85	3.80%	2.60%	3.50%	3.80%	5.37%	75.00%	73.00%	65.91%	(\$0.00)	11.29%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$63.65	5.30%	5.27%	6.00%	6.00%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	10.55%	24.27	4.52
Xcel Energy Inc.	XEL	\$47.45	5.50%	N/A	4.50%	5.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	10.19%	24.27	4.52

DCF Result		
Mean	10.31%	24.27
Max	13.50%	24.27
Min	8.91%	24.27

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	\$3.33	\$3.53	\$3.75	\$3.98	\$4.22	\$4.47	\$4.74	\$5.01	\$5.29	\$5.58	\$5.88	\$6.20	\$6.53	\$6.88	\$7.25	\$7.64
Alliant Energy Corporation	LNT	\$1.65	\$1.77	\$1.89	\$2.02	\$2.17	\$2.32	\$2.48	\$2.64	\$2.80	\$2.97	\$3.13	\$3.30	\$3.48	\$3.67	\$3.86	\$4.07	\$4.29
Ameren Corporation	AEE	\$2.68	\$2.87	\$3.07	\$3.28	\$3.51	\$3.76	\$4.01	\$4.27	\$4.53	\$4.80	\$5.07	\$5.35	\$5.63	\$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	\$8.90	\$9.38
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	\$5.43	\$5.73	\$6.03	\$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	\$4.52	\$4.77	\$5.02	\$5.29
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	\$7.75	\$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	\$9.46	\$9.97	\$10.51	\$11.07	\$11.66
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	\$7.25	\$7.64	\$8.05
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	\$4.69	\$4.95	\$5.21	\$5.49
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	\$4.12	\$4.30	\$4.50	\$4.70	\$4.91	\$5.14	\$5.38	\$5.65	\$5.94	\$6.25	\$6.58	\$6.94	\$7.31	\$7.70	\$8.11	\$8.55
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	\$5.66	\$5.97	\$6.29	\$6.63	\$6.98	\$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	\$3.87	\$4.08
Otter Tail Corporation	OTTR	\$1.60	\$1.70	\$1.81	\$1.93	\$2.06	\$2.19	\$2.33	\$2.47	\$2.62	\$2.77	\$2.92	\$3.08	\$3.25	\$3.42	\$3.61	\$3.80	\$4.00
Pinnacle West Capital Corporation	PNW	\$3.95	\$4.17	\$4.40	\$4.64	\$4.89	\$5.16	\$5.45	\$5.74	\$6.05	\$6.38	\$6.73	\$7.09	\$7.47	\$7.87	\$8.29	\$8.74	\$9.21
PNM Resources, Inc.	PNM	\$1.46	\$1.57	\$1.69	\$1.81	\$1.95	\$2.10	\$2.25	\$2.40	\$2.55	\$2.71	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.72	\$3.92
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	\$2.94	\$3.05	\$3.17	\$3.29	\$3.41	\$3.55	\$3.70	\$3.87	\$4.06	\$4.27	\$4.50	\$4.74	\$4.99	\$5.26	\$5.54	\$5.84
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	\$6.78	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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	\$2.13	\$2.21	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$5.03	\$185.35
Alliant Energy Corporation	LNT	\$1.11	\$1.19	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$2.83	\$104.14
Ameren Corporation	AEE	\$1.84	\$1.93	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$4.58	\$168.56
American Electric Power Company, Inc.	AEP	\$3.01	\$3.10	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$6.18	\$227.64
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	\$4.41	\$4.65	\$171.31
CMS Energy Corporation	CMS	\$1.30	\$1.39	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$3.49	\$128.43
Dominion Energy, Inc.	D	\$3.04	\$3.28	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$5.67	\$208.88
DTE Energy Company	DTE	\$2.97	\$3.23	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$7.69	\$283.10
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	\$4.30	\$4.54	\$4.78	\$5.04	\$5.31	\$195.41
El Paso Electric Company	EE	\$1.26	\$1.37	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$3.62	\$133.29
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	\$120.62
IDACORP, Inc.	IDA	\$2.22	\$2.40	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$5.64	\$207.53
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	\$4.14	\$4.37	\$4.60	\$4.85	\$178.56
OGE Energy Corp.	OGE	\$1.16	\$1.27	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$2.69	\$99.06
Otter Tail Corporation	OTTR	\$1.26	\$1.28	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$2.64	\$97.15
Pinnacle West Capital Corporation	PNW	\$2.63	\$2.77	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$6.07	\$223.45
PNM Resources, Inc.	PNM	\$0.75	\$0.85	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$2.58	\$95.10
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	\$126.60
Southern Company	SO	\$2.20	\$2.27	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$3.85	\$141.74
WEC Energy Group, Inc.	WEC	\$2.10	\$2.23	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$4.71	\$173.49
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	\$3.39	\$125.02

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.20	\$2.29	\$2.37	\$2.45	\$2.65	\$2.87	\$3.10	\$3.35	\$3.60	\$3.87	\$4.08	\$4.30	\$4.53	\$4.78	\$190.38
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.15	\$1.28	\$1.37	\$1.46	\$1.57	\$1.69	\$1.81	\$1.93	\$2.05	\$2.18	\$2.29	\$2.42	\$2.55	\$2.68	\$106.97
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.16	\$1.90	\$2.04	\$2.14	\$2.26	\$2.45	\$2.65	\$2.85	\$3.07	\$3.29	\$3.52	\$3.71	\$3.91	\$4.12	\$4.34	\$173.14
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.26	\$3.09	\$3.19	\$3.28	\$3.37	\$3.56	\$3.77	\$3.99	\$4.23	\$4.48	\$4.76	\$5.01	\$5.28	\$5.57	\$5.87	\$233.82
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$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	\$4.41	\$175.97
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$1.35	\$1.50	\$1.61	\$1.73	\$1.88	\$2.03	\$2.19	\$2.35	\$2.52	\$2.68	\$2.83	\$2.98	\$3.14	\$3.31	\$131.92
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.26	\$3.14	\$3.53	\$3.81	\$4.10	\$4.18	\$4.25	\$4.31	\$4.34	\$4.37	\$4.37	\$4.60	\$4.85	\$5.11	\$5.38	\$214.55
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.06	\$3.51	\$3.81	\$4.14	\$4.40	\$4.68	\$4.97	\$5.27	\$5.59	\$5.92	\$6.24	\$6.57	\$6.92	\$7.30	\$290.79
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.27	\$3.21	\$3.39	\$3.52	\$3.65	\$3.72	\$3.78	\$3.85	\$3.93	\$4.01	\$4.09	\$4.30	\$4.54	\$4.78	\$5.04	\$200.72
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$1.29	\$1.49	\$1.62	\$1.76	\$1.91	\$2.06	\$2.22	\$2.40	\$2.58	\$2.79	\$2.94	\$3.09	\$3.26	\$3.44	\$136.91
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.16	\$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	\$123.89
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.27	\$2.59	\$2.78	\$3.00	\$3.18	\$3.37	\$3.59	\$3.82	\$4.07	\$4.34	\$4.57	\$4.82	\$5.08	\$5.35	\$213.16
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.19	\$2.25	\$2.40	\$2.51	\$2.62	\$2.77	\$2.93	\$3.11	\$3.30	\$3.51	\$3.73	\$3.93	\$4.14	\$4.37	\$4.60	\$183.40
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.20	\$1.38	\$1.50	\$1.63	\$1.70	\$1.77	\$1.85	\$1.92	\$2.00	\$2.07	\$2.18	\$2.30	\$2.42	\$2.55	\$101.74
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.30	\$1.30	\$1.32	\$1.34	\$1.44	\$1.55	\$1.66	\$1.78	\$1.90	\$2.03	\$2.14	\$2.26	\$2.38	\$2.50	\$99.79
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.70	\$2.92	\$3.08	\$3.25	\$3.46	\$3.67	\$3.90	\$4.14	\$4.40	\$4.67	\$4.92	\$5.19	\$5.47	\$5.76	\$229.52
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.78	\$0.95	\$1.07	\$1.19	\$1.31	\$1.44	\$1.57	\$1.70	\$1.84	\$1.99	\$2.09	\$2.21	\$2.33	\$2.45	\$97.68
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$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	\$130.04
Southern Company	SO	(\$49.85)	\$0.00	\$0.19	\$2.25	\$2.34	\$2.41	\$2.49	\$2.55	\$2.61	\$2.69	\$2.77	\$2.86	\$2.96	\$3.12	\$3.29	\$3.47	\$3.65	\$145.59
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.17	\$2.36	\$2.50	\$2.65	\$2.80	\$2.96	\$3.12	\$3.28	\$3.45	\$3.63	\$3.82	\$4.03	\$4.24	\$4.47	\$178.20
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$128.41

Multi-Stage Growth Discounted Cash Flow Model - P/E Horizon Value  
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]
Company	Ticker	Stock Price	EPS Growth Rate Estimates			Long-Term Growth	Payout Ratio			Iterative Solution Proof	IRR	Terminal P/E Ratio	Terminal PEG Ratio	
			Zacks	First Call	Value Line		Low Growth	2017	2021					2027
ALLETE, Inc.	ALE	\$73.88	6.10%	5.00%	6.00%	5.00%	5.37%	64.00%	58.00%	65.91%	(\$0.00)	8.93%	24.27	4.52
Alliant Energy Corporation	LNT	\$41.56	6.20%	7.05%	6.00%	6.00%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.98%	24.27	4.52
Ameren Corporation	AEE	\$57.79	6.70%	7.00%	6.00%	6.00%	5.37%	64.00%	60.00%	65.91%	(\$0.00)	10.36%	24.27	4.52
American Electric Power Company, Inc.	AEP	\$71.12	4.80%	2.77%	4.00%	2.77%	5.37%	68.00%	63.00%	65.91%	(\$0.00)	10.81%	24.27	4.52
Black Hills Corporation	BKH	\$67.53	5.60%	4.26%	7.50%	4.26%	5.37%	51.00%	51.00%	65.91%	(\$0.00)	7.52%	24.27	4.52
CMS Energy Corporation	CMS	\$47.00	6.50%	7.44%	6.50%	6.50%	5.37%	61.00%	61.00%	65.91%	(\$0.00)	9.78%	24.27	4.52
Dominion Energy, Inc.	D	\$78.67	5.60%	3.64%	6.50%	3.64%	5.37%	83.00%	87.00%	65.91%	(\$0.00)	8.98%	24.27	4.52
DTE Energy Company	DTE	\$108.19	6.00%	4.91%	6.00%	4.91%	5.37%	58.00%	64.00%	65.91%	(\$0.00)	9.38%	24.27	4.52
Duke Energy Corporation	DUK	\$85.39	4.00%	3.23%	4.50%	3.23%	5.37%	81.00%	79.00%	65.91%	(\$0.00)	8.52%	24.27	4.52
El Paso Electric Company	EE	\$53.99	5.20%	5.30%	5.00%	5.00%	5.37%	50.00%	57.00%	65.91%	(\$0.00)	9.17%	24.27	4.52
Hawaiian Electric Industries, Inc.	HE	\$33.83	4.20%	4.50%	1.50%	1.50%	5.37%	77.00%	70.00%	65.91%	(\$0.00)	11.51%	24.27	4.52
IDACORP, Inc.	IDA	\$87.94	4.50%	4.00%	3.50%	3.50%	5.37%	54.00%	61.00%	65.91%	(\$0.00)	8.48%	24.27	4.52
NorthWestern Corporation	NWE	\$60.10	1.50%	2.25%	4.50%	1.50%	5.37%	62.00%	62.00%	65.91%	(\$0.00)	9.43%	24.27	4.52
OGE Energy Corp.	OGE	\$35.51	4.60%	3.90%	6.00%	3.90%	5.37%	65.00%	72.00%	65.91%	(\$0.00)	9.54%	24.27	4.52
Otter Tail Corporation	OTTR	\$41.48	NA	5.20%	6.50%	5.20%	5.37%	74.00%	61.00%	65.91%	(\$0.00)	8.29%	24.27	4.52
Pinnacle West Capital Corporation	PNW	\$87.05	3.20%	5.46%	5.50%	3.20%	5.37%	63.00%	63.00%	65.91%	(\$0.00)	8.51%	24.27	4.52
PNM Resources, Inc.	PNM	\$40.05	5.50%	6.00%	7.50%	5.50%	5.37%	48.00%	57.00%	65.91%	\$0.00	7.74%	24.27	4.52
Portland General Electric Company	POR	\$46.30	3.80%	3.97%	6.00%	3.80%	5.37%	59.00%	57.00%	65.91%	(\$0.00)	8.99%	24.27	4.52
Southern Company	SO	\$49.85	3.80%	2.60%	3.50%	2.60%	5.37%	75.00%	73.00%	65.91%	\$0.00	10.52%	24.27	4.52
WEC Energy Group, Inc.	WEC	\$63.65	5.30%	5.27%	6.00%	5.27%	5.37%	67.00%	67.00%	65.91%	(\$0.00)	10.10%	24.27	4.52
Xcel Energy Inc.	XEL	\$47.45	5.50%	N/A	4.50%	4.50%	5.37%	62.00%	66.00%	65.91%	(\$0.00)	9.58%	24.27	4.52

DCF Result		
Mean	9.29%	24.27
Max	11.51%	24.27
Min	7.52%	24.27

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	\$6.70	\$7.06
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	\$3.98
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	\$6.14	\$6.47
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	\$8.10
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	\$5.05	\$5.32	\$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	\$4.23	\$4.46	\$4.70	\$4.95
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	\$9.72	\$10.24	\$10.79
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	\$6.97	\$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	\$4.59	\$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	\$3.79	\$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	\$6.45	\$6.80	\$7.17	\$7.55	\$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	\$2.70	\$2.85	\$3.00	\$3.16	\$3.33	\$3.51
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	\$3.46	\$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	\$1.46	\$1.54	\$1.63	\$1.71	\$1.81	\$1.91	\$2.01	\$2.12	\$2.24	\$2.36	\$2.49	\$2.62	\$2.76	\$2.91	\$3.06	\$3.23	\$3.40
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	\$4.01	\$4.23	\$4.46
Southern Company	SO	\$2.83	\$2.90	\$2.98	\$3.06	\$3.14	\$3.22	\$3.32	\$3.43	\$3.57	\$3.73	\$3.91	\$4.12	\$4.34	\$4.58	\$4.82	\$5.08	\$5.35
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	\$6.11	\$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

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

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	64.00%	62.50%	61.00%	59.50%	58.00%	59.32%	60.64%	61.95%	63.27%	64.59%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Alliant Energy Corporation	LNT	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%
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	68.00%	66.75%	65.50%	64.25%	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	58.00%	59.50%	61.00%	62.50%	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	65.00%	66.75%	68.50%	70.25%	72.00%	70.98%	69.97%	68.95%	67.94%	66.92%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
Otter Tail Corporation	OTTR	74.00%	70.75%	67.50%	64.25%	61.00%	61.82%	62.64%	63.45%	64.27%	65.09%	65.91%	65.91%	65.91%	65.91%	65.91%	65.91%
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	67.00%	67.00%	67.00%	67.00%	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]	Terminal Value
Company	Ticker	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032		
ALLETE, Inc.	ALE	\$2.11	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$4.65	\$4.65	\$171.41
Alliant Energy Corporation	LNT	\$1.10	\$1.17	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$2.63	\$2.63	\$96.71
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	\$157.08
American Electric Power Company, Inc.	AEP	\$2.96	\$2.98	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$5.34	\$5.34	\$196.63
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	\$136.16
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	\$3.26	\$3.26	\$120.23
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	\$170.32
DTE Energy Company	DTE	\$2.94	\$3.16	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$7.11	\$7.11	\$261.98
Duke Energy Corporation	DUK	\$3.10	\$3.18	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$4.84	\$4.84	\$178.32
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	\$3.54	\$3.54	\$130.47
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	\$2.63	\$2.63	\$97.01
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	\$4.25	\$4.48	\$4.72	\$4.98	\$5.24	\$5.24	\$193.11
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	\$143.61
OGE Energy Corp.	OGE	\$1.14	\$1.22	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$2.32	\$2.32	\$85.26
Otter Tail Corporation	OTTR	\$1.25	\$1.25	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$2.41	\$2.41	\$88.60
Pinnacle West Capital Corporation	PNW	\$2.57	\$2.65	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$5.14	\$5.14	\$189.44
PNM Resources, Inc.	PNM	\$0.74	\$0.82	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$2.24	\$2.24	\$82.59
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	\$108.19
Southern Company	SO	\$2.18	\$2.22	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$3.53	\$3.53	\$129.94
WEC Energy Group, Inc.	WEC	\$2.09	\$2.20	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$4.47	\$4.47	\$164.73
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	\$116.40

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

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	11/30/17	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	(\$73.88)	\$0.00	\$0.18	\$2.16	\$2.22	\$2.27	\$2.32	\$2.50	\$2.68	\$2.88	\$3.10	\$3.33	\$3.58	\$3.78	\$3.98	\$4.19	\$4.42	\$176.07
Alliant Energy Corporation	LNT	(\$41.56)	\$0.00	\$0.09	\$1.13	\$1.24	\$1.31	\$1.39	\$1.48	\$1.58	\$1.68	\$1.79	\$1.90	\$2.02	\$2.13	\$2.24	\$2.37	\$2.49	\$99.34
Ameren Corporation	AEE	(\$57.79)	\$0.00	\$0.15	\$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	\$161.35
American Electric Power Company, Inc.	AEP	(\$71.12)	\$0.00	\$0.25	\$3.00	\$3.01	\$3.03	\$3.06	\$3.18	\$3.32	\$3.48	\$3.66	\$3.87	\$4.11	\$4.33	\$4.56	\$4.81	\$5.07	\$201.97
Black Hills Corporation	BKH	(\$67.53)	\$0.00	\$0.12	\$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	\$139.86
CMS Energy Corporation	CMS	(\$47.00)	\$0.00	\$0.11	\$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	\$123.49
Dominion Energy, Inc.	D	(\$78.67)	\$0.00	\$0.25	\$3.01	\$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	\$174.94
DTE Energy Company	DTE	(\$108.19)	\$0.00	\$0.25	\$3.01	\$3.40	\$3.66	\$3.93	\$4.14	\$4.38	\$4.62	\$4.89	\$5.17	\$5.48	\$5.77	\$6.08	\$6.41	\$6.75	\$269.09
Duke Energy Corporation	DUK	(\$85.39)	\$0.00	\$0.26	\$3.15	\$3.26	\$3.35	\$3.44	\$3.46	\$3.50	\$3.54	\$3.59	\$3.65	\$3.73	\$3.93	\$4.14	\$4.36	\$4.60	\$183.16
El Paso Electric Company	EE	(\$53.99)	\$0.00	\$0.11	\$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	\$134.01
Hawaiian Electric Industries, Inc.	HE	(\$33.83)	\$0.00	\$0.15	\$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	\$99.64
IDACORP, Inc.	IDA	(\$87.94)	\$0.00	\$0.19	\$2.24	\$2.51	\$2.68	\$2.85	\$3.00	\$3.17	\$3.35	\$3.56	\$3.78	\$4.04	\$4.25	\$4.48	\$4.72	\$4.98	\$198.35
NorthWestern Corporation	NWE	(\$60.10)	\$0.00	\$0.18	\$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	\$147.51
OGE Energy Corp.	OGE	(\$35.51)	\$0.00	\$0.10	\$1.16	\$1.30	\$1.38	\$1.47	\$1.51	\$1.56	\$1.61	\$1.66	\$1.72	\$1.78	\$1.88	\$1.98	\$2.09	\$2.20	\$87.57
Otter Tail Corporation	OTTR	(\$41.48)	\$0.00	\$0.11	\$1.28	\$1.26	\$1.26	\$1.26	\$1.34	\$1.43	\$1.53	\$1.63	\$1.74	\$1.85	\$1.95	\$2.06	\$2.17	\$2.28	\$91.00
Pinnacle West Capital Corporation	PNW	(\$87.05)	\$0.00	\$0.22	\$2.61	\$2.74	\$2.82	\$2.91	\$3.04	\$3.18	\$3.34	\$3.53	\$3.73	\$3.96	\$4.17	\$4.40	\$4.63	\$4.88	\$194.59
PNM Resources, Inc.	PNM	(\$40.05)	\$0.00	\$0.06	\$0.76	\$0.90	\$0.99	\$1.09	\$1.18	\$1.27	\$1.38	\$1.48	\$1.60	\$1.73	\$1.82	\$1.92	\$2.02	\$2.13	\$84.83
Portland General Electric Company	POR	(\$46.30)	\$0.00	\$0.11	\$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	\$111.12
Southern Company	SO	(\$49.85)	\$0.00	\$0.18	\$2.21	\$2.26	\$2.30	\$2.35	\$2.38	\$2.42	\$2.48	\$2.55	\$2.62	\$2.72	\$2.86	\$3.02	\$3.18	\$3.35	\$133.46
WEC Energy Group, Inc.	WEC	(\$63.65)	\$0.00	\$0.18	\$2.14	\$2.31	\$2.44	\$2.56	\$2.69	\$2.83	\$2.97	\$3.12	\$3.28	\$3.44	\$3.63	\$3.82	\$4.03	\$4.25	\$169.20
Xcel Energy Inc.	XEL	(\$47.45)	\$0.00	\$0.12	\$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	\$119.56

Multi-Stage DCF Notes:

- [1] Source: Bloomberg; based on 30-, 90-, and 180-day historical average as of November 30, 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
- [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: SNL Financial)
- [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 [42] - Column [35]) / 6)
- [37] Equals Column [36] + ((Column [42] - Column [35]) / 6)
- [38] Equals Column [37] + ((Column [42] - Column [35]) / 6)
- [39] Equals Column [38] + ((Column [42] - Column [35]) / 6)
- [40] Equals Column [39] + ((Column [42] - 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 - 11/30/2017) / 365
- [67] Equals Column [47] + (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]

Hypothetical Example of the Inadequacy of  
A DCF Return Rate Related to Book Value  
When Market Value is Greater / Less than Book Value

	<u>Market Value</u>	<u>Book Value with Market to Book Ratio of 180%</u>	<u>Book Value with Market to Book Ratio of 80%</u>
Per Share	\$ 24.00	\$ 13.33	\$ 30.00
DCF Cost Rate [1]	10.00%	10.00%	10.00%
Return in Dollars	\$ 2.400	\$ 1.333	\$ 3.000
Dividends [2]	\$ 0.840	\$ 0.840	\$ 0.840
Growth in Dollars	\$ 1.560	\$ 0.493	\$ 2.160
Return on Market Valu	10.00%	5.55% [3]	12.50% [4]
Rate of Growth on Mai	6.50% [5]	2.05% [6]	9.00% [7]

Notes:

[1] Comprised of 3.5% dividend yield and 6.5% growth.

[2]  $\$24.00 \times 3.5\% \text{ yield} = \$0.840$ .

[3]  $\$1.333 / \$24.00 \text{ market value} = 5.55\%$ .

[4]  $\$3.000 / \$24.00 \text{ market value} = 12.50\%$ .

[5] Expected rate of growth per market based DCF model.

[6] Actual rate of growth when DCF cost rate is applied to book value ( $\$1.333 \text{ possible earnings} - \$0.840 \text{ dividends} = \$0.493 \text{ for growth} / \$24.00 \text{ market value} = 2.05\%$ ).

[7] Actual rate of growth when DCF cost rate is applied to book value ( $\$3.000 \text{ possible earnings} - \$0.840 \text{ dividends} = \$2.160 \text{ for growth} / \$24.00 \text{ market value} = 9.00\%$ ).



Flotation Cost Adjustment

Two most recent open market common stock issuances per company, if available

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Company	Date	Shares Issued	Offering Price	Underwriting Discount	Offering Expense	Net Proceeds Per Share	Total Flotation Costs	Gross Equity Issue Before Costs	Net Proceeds	Flotation Cost Percentage
Westar Energy, Inc.	9/24/2013	8,916,000	\$31.15	\$1.0903	\$250,000	\$30.03	\$9,970,669	\$277,733,400	\$267,762,731	3.590%
Westar Energy, Inc.	11/4/2010	8,625,000	\$25.54	\$0.8939	\$250,000	\$24.62	\$7,959,888	\$220,282,500	\$212,322,613	3.613%
ALLETE, Inc.	2/27/2014	3,220,000	\$49.75	\$1.7413	\$450,000	\$47.87	\$6,056,825	\$160,195,000	\$154,138,175	3.781%
ALLETE, Inc.	5/25/2001	7,475,000	\$23.68	\$0.9472	\$350,000	\$22.69	\$7,430,320	\$177,008,000	\$169,577,680	4.198%
Alliant Energy Corporation	7/1/2003	17,250,000	\$19.25	\$0.7700	\$370,000	\$18.46	\$13,652,500	\$332,062,500	\$318,410,000	4.111%
Alliant Energy Corporation	11/8/2001	9,775,000	\$28.00	\$1.0500	\$425,000	\$26.91	\$10,688,750	\$273,700,000	\$263,011,250	3.905%
Ameren Corporation	9/9/2009	21,850,000	\$25.25	\$0.7575	\$450,000	\$24.47	\$17,001,375	\$551,712,500	\$534,711,125	3.082%
Ameren Corporation	6/30/2004	10,925,000	\$42.00	\$1.2600	\$400,000	\$40.70	\$14,165,500	\$458,850,000	\$444,684,500	3.087%
American Electric Power Company, Inc.	4/1/2009	69,000,000	\$24.50	\$0.7350	\$400,000	\$23.76	\$51,115,000	\$1,690,500,000	\$1,639,385,000	3.024%
American Electric Power Company, Inc.	2/27/2003	57,500,000	\$20.95	\$0.6285	\$550,000	\$20.31	\$36,688,750	\$1,204,625,000	\$1,167,936,250	3.046%
Black Hills Corporation	11/19/2015	5,980,000	\$40.25	\$1.4088	\$1,200,000	\$38.64	\$9,624,325	\$240,695,000	\$231,070,675	3.999%
Black Hills Corporation	12/7/2010	4,600,000	\$29.75	\$1.0413	\$276,650	\$28.65	\$5,066,400	\$136,850,000	\$131,783,600	3.702%
CMS Energy Corporation	3/30/2005	23,000,000	\$12.25	\$0.4288	\$325,000	\$11.81	\$10,187,400	\$281,750,000	\$271,562,600	3.616%
CMS Energy Corporation	10/7/2004	32,775,000	\$9.10	\$0.3185	\$325,000	\$8.77	\$10,763,838	\$298,252,500	\$287,488,663	3.609%
Dominion Energy, Inc.	4/4/2016	10,200,000	\$74.16	\$0.4200	\$200,000	\$73.72	\$4,484,000	\$756,432,000	\$751,948,000	0.593%
Dominion Energy, Inc.	5/20/2015	2,800,000	\$71.96	\$0.0000	\$200,000	\$71.89	\$200,000	\$201,488,000	\$201,288,000	0.099%
DTE Energy Company	6/19/2002	6,325,000	\$43.25	\$1.4056	\$250,000	\$41.80	\$9,140,420	\$273,556,250	\$264,415,830	3.341%
Duke Energy Corporation	3/2/2016	10,637,500	\$72.00	\$2.1600	\$400,000	\$69.80	\$23,377,000	\$765,900,000	\$742,523,000	3.052%
Hawaiian Electric Industries, Inc	3/19/2013	7,000,000	\$26.75	\$1.0031	\$450,000	\$25.68	\$7,471,840	\$187,250,000	\$179,778,160	3.990%
Hawaiian Electric Industries, Inc	12/2/2008	5,000,000	\$23.00	\$0.8625	\$300,000	\$22.08	\$4,612,500	\$115,000,000	\$110,387,500	4.011%
IDACORP, Inc.	12/9/2004	4,025,000	\$30.00	\$1.2000	\$300,000	\$28.73	\$5,130,000	\$120,750,000	\$115,620,000	4.248%
NorthWestern Corporation	9/29/2015	1,100,000	\$51.81	\$1.3300	\$1,000,000	\$49.57	\$2,463,000	\$56,991,000	\$54,528,000	4.322%
NorthWestern Corporation	11/5/2014	7,766,990	\$51.50	\$1.8025	\$1,000,000	\$49.57	\$14,999,999	\$399,999,985	\$384,999,986	3.750%
OGE Energy Corp.	8/21/2003	5,324,074	\$21.60	\$0.7900	\$325,000	\$20.75	\$4,531,018	\$114,999,998	\$110,468,980	3.940%
Otter Tail Corporation	9/18/2008	5,175,000	\$30.00	\$1.0875	\$400,000	\$28.84	\$6,027,813	\$155,250,000	\$149,222,188	3.883%
Otter Tail Corporation	12/7/2004	3,335,000	\$25.45	\$0.9500	\$300,000	\$24.41	\$3,468,250	\$84,875,750	\$81,407,500	4.086%
Pinnacle West Capital Corporation	4/8/2010	6,900,000	\$38.00	\$1.3300	\$190,000	\$36.64	\$9,367,000	\$262,200,000	\$252,833,000	3.572%
Pinnacle West Capital Corporation	4/27/2005	6,095,000	\$42.00	\$1.3650	\$250,000	\$40.59	\$8,569,675	\$255,990,000	\$247,420,325	3.348%
PNM Resources, Inc.	12/6/2006	5,750,000	\$30.79	\$1.0780	\$250,000	\$29.67	\$6,448,500	\$177,042,500	\$170,594,000	3.642%
PNM Resources, Inc.	3/23/2005	3,910,000	\$26.76	\$0.8697	\$200,000	\$25.84	\$3,600,527	\$104,631,600	\$101,031,073	3.441%
Portland General Electric Company	6/11/2013	12,765,000	\$29.50	\$0.9588	\$600,000	\$28.49	\$12,838,444	\$376,567,500	\$363,729,056	3.409%
Portland General Electric Company	3/5/2009	12,477,500	\$14.10	\$0.4935	\$375,000	\$13.58	\$6,532,646	\$175,932,750	\$169,400,104	3.713%
Southern Company	8/16/2016	32,500,000	\$51.13	\$1.6600	\$557,000	\$49.45	\$54,507,000	\$1,661,562,500	\$1,607,055,500	3.280%
Southern Company	5/5/2016	18,300,000	\$50.95	\$2.0200	\$395,000	\$48.91	\$37,361,000	\$932,385,000	\$895,024,000	4.007%
Wisconsin Energy Corporation	11/16/2005	5,290,000	\$53.70	\$1.7450	\$0	\$51.96	\$9,231,050	\$284,073,000	\$274,841,950	3.250%
Wisconsin Energy Corporation	11/20/2003	4,025,000	\$43.00	\$1.5050	\$0	\$41.50	\$6,057,625	\$173,075,000	\$167,017,375	3.500%
Xcel Energy Inc.	8/3/2010	21,850,000	\$21.50	\$0.6450	\$600,000	\$20.83	\$14,693,250	\$469,775,000	\$455,081,750	3.128%
Xcel Energy Inc.	9/9/2008	17,250,000	\$20.25	\$0.1500	\$600,000	\$20.07	\$3,187,500	\$349,312,500	\$346,125,000	0.913%

Mean \$12,333,463 \$388,401,493  
 WEIGHTED AVERAGE FLOTATION COSTS: 3.175% [10]

Constant Growth Discounted Cash Flow Model Adjusted for Flotation Costs - 30 Day Average Stock Price

Company	Ticker	[11]	[12]	[13]	[14]		[15]	[16]	[17]	[18]	[19]	[20]	[21]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Current	Dividend Yield Adjusted for Flot. Costs	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	DCF k(e)	Flotation Adjusted DCF k(e)	
ALLETE, Inc.	ALE	\$2.14	\$78.21	2.74%	2.81%	2.91%	6.10%	5.00%	6.00%	5.70%	8.51%	8.61%	
Alliant Energy Corporation	LNT	\$1.26	\$44.03	2.86%	2.95%	3.05%	6.20%	7.05%	6.00%	6.42%	9.37%	9.47%	
Ameren Corporation	AEE	\$1.83	\$62.67	2.92%	3.02%	3.12%	6.70%	7.00%	6.00%	6.57%	9.58%	9.68%	
American Electric Power Company, Inc.	AEP	\$2.48	\$75.34	3.29%	3.36%	3.47%	4.80%	2.77%	4.00%	3.86%	7.21%	7.32%	
Black Hills Corporation	BKH	\$1.90	\$61.16	3.11%	3.20%	3.30%	5.60%	4.26%	7.50%	5.79%	8.98%	9.09%	
CMS Energy Corporation	CMS	\$1.33	\$48.97	2.72%	2.81%	2.90%	6.50%	7.44%	6.50%	6.81%	9.62%	9.71%	
Dominion Energy, Inc.	D	\$3.08	\$81.43	3.78%	3.88%	4.01%	5.60%	3.64%	6.50%	5.25%	9.13%	9.26%	
DTE Energy Company	DTE	\$3.53	\$112.58	3.14%	3.22%	3.33%	6.00%	4.91%	6.00%	5.64%	8.86%	8.97%	
Duke Energy Corporation	DUK	\$3.56	\$88.70	4.01%	4.09%	4.23%	4.00%	3.23%	4.50%	3.91%	8.00%	8.14%	
El Paso Electric Company	EE	\$1.34	\$58.67	2.28%	2.34%	2.42%	5.20%	5.30%	5.00%	5.17%	7.51%	7.59%	
Hawaiian Electric Industries, Inc.	HE	\$1.24	\$36.57	3.39%	3.45%	3.56%	4.20%	4.50%	1.50%	3.40%	6.85%	6.96%	
IDACORP, Inc.	IDA	\$2.36	\$94.69	2.49%	2.54%	2.63%	4.50%	4.00%	3.50%	4.00%	6.54%	6.63%	
NorthWestern Corporation	NWE	\$2.10	\$60.63	3.46%	3.51%	3.63%	1.50%	2.25%	4.50%	2.75%	6.26%	6.38%	
OGE Energy Corp.	OGE	\$1.33	\$35.89	3.71%	3.80%	3.92%	4.60%	3.90%	6.00%	4.83%	8.63%	8.75%	
Otter Tail Corporation	OTTR	\$1.28	\$46.35	2.76%	2.84%	2.94%	NA	5.20%	6.50%	5.85%	8.69%	8.79%	
Pinnacle West Capital Corporation	PNW	\$2.78	\$89.36	3.11%	3.18%	3.29%	3.20%	5.46%	5.50%	4.72%	7.90%	8.01%	
PNM Resources, Inc.	PNM	\$0.97	\$43.62	2.22%	2.29%	2.37%	5.50%	6.00%	7.50%	6.33%	8.63%	8.70%	
Portland General Electric Company	POR	\$1.36	\$47.96	2.84%	2.90%	3.00%	3.80%	3.97%	6.00%	4.59%	7.49%	7.59%	
Southern Company	SO	\$2.32	\$51.84	4.48%	4.55%	4.70%	3.80%	2.60%	3.50%	3.30%	7.85%	8.00%	
WEC Energy Group, Inc.	WEC	\$2.08	\$67.99	3.06%	3.14%	3.25%	5.30%	5.27%	6.00%	5.52%	8.67%	8.77%	
Xcel Energy Inc.	XEL	\$1.44	\$50.18	2.87%	2.94%	3.04%	5.50%	N/A	4.50%	5.00%	7.94%	8.04%	

PROXY GROUP MEAN

8.20% 8.31%

DCF Result Adjusted For Flotation Costs: 8.31%  
 DCF Result Unadjusted For Flotation Costs: 8.20%  
 Difference (Flotation Cost Adjustment): 0.10% [22]

Notes:

The proxy group DCF result is adjusted for flotation costs by dividing each company's expected dividend yield by (1 - flotation cost). The flotation cost adjustment is derived as the difference between the unadjusted DCF result and the DCF result adjusted for flotation costs.

- [1] Source: SEC Form 424B
- [2] Source: SEC Form 424B
- [3] Source: SEC Form 424B
- [4] Source: SEC Form 424B
- [5] Equals [8] / [1]
- [6] Equals [4] + ([1] x [3])
- [7] Equals [1] x [2]
- [8] Equals [7] - [6]
- [9] Equals [6] / [7]
- [10] Equals average [6] / average [7]
- [11] Source: Bloomberg Professional
- [12] Source: Bloomberg Professional
- [13] Equals [11] / [12]
- [14] Equals [3] x (1 + 0.5 x [19])
- [15] Equals [4] / (1 - 0.0318)
- [16] Source: Zacks
- [17] Source: Yahoo! Finance
- [18] Source: Value Line
- [19] Equals Average([16], [17], [18])
- [20] Equals [14] + [19]
- [21] Equals [15] + [19]
- [22] Equals average [21] - average [20]

Cost of Long-Term Debt Comparison

Issue	Initial Offering	Date of Offering	Date of Maturity	Years to Maturity	Yield	Bloomberg Fair Value Curve		
						BFV Term	A-Rated	BBB-Rated
WR MATES Series due 2032	\$45,000,000	4/28/1994	4/15/2032	38	1.86%	30	7.76%	8.11%
WR MATES Series due 2032	\$30,500,000	4/28/1994	4/15/2032	38	1.98%	30	7.76%	8.11%
KGE MATES Series due 2027	\$21,940,000	4/28/1994	4/15/2027	33	1.88%	30	7.76%	8.11%
KGE MATES Series due 2032	\$14,500,000	4/28/1994	4/15/2032	38	1.79%	30	7.76%	8.11%
KGE MATES Series due 2032	\$10,000,000	4/28/1994	4/15/2032	38	1.82%	30	7.76%	8.11%
WR 5.10% Series, due 2020	\$250,000,000	6/30/2005	7/15/2020	15	5.86%	15	4.92%	5.23%
KGE 6.53% Series due 2037	\$175,000,000	10/15/2007	12/15/2037	30	6.58%	30	6.21%	6.33%
KGE 6.15% Series due 2023	\$50,000,000	5/15/2008	5/15/2023	15	6.24%	15	5.99%	6.44%
KGE 6.64% Series due 2038	\$100,000,000	5/15/2008	5/15/2038	30	6.63%	30	6.16%	6.34%
KGE 6.70% Series due 2019	\$300,000,000	6/11/2009	6/15/2019	10	6.88%	10	5.42%	6.85%
WR 4.125% Series due 2042	\$550,000,000	3/1/2012	3/1/2042	30	4.55%	30	4.20%	4.71%
WR 4.10% Series due 2043	\$430,000,000	3/28/2013	4/1/2043	30	4.28%	30	4.09%	4.44%
WR 4.625% Series due 2043	\$250,000,000	8/19/2013	9/1/2043	30	4.71%	30	4.56%	5.02%
KGE 4.30% Series due 2044	\$250,000,000	7/2/2014	7/15/2044	30	4.39%	30	4.26%	4.60%
WR 3.25% Series due 2025	\$250,000,000	11/13/2015	12/1/2025	10	3.35%	10	3.44%	3.87%
WR 4.25% Series due 2045	\$300,000,000	11/13/2015	12/1/2045	30	5.83%	30	4.34%	4.78%
KGE 2.50% Series due 2031	\$50,000,000	6/1/2016	6/1/2031	15	2.83%	15	3.54%	4.08%
WR 2.55% Series due 2026	\$350,000,000	6/13/2016	7/1/2026	10	2.71%	10	2.92%	3.46%
WR 3.10% Series Due 2027	\$300,000,000	2/27/2017	4/1/2027	10	3.25%	10	3.36%	3.76%

Offerings

**TOTAL** \$3,726,940,000

Sources: Company data and Bloomberg Professional  
 Bloomberg Fair Value Curve yields are 30-day averages.  
 Indicated yields are inclusive of company financing costs.