

Rebuttal Testimony and Schedules
Dylan W. D'Ascendis

Before the North Dakota Public Service Commission
State of North Dakota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in North Dakota

Case No. PU-20-441
Exhibit ___(DWD-2)

Rate of Return

June 1, 2021

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Schedule 2	Corrected Griffing DCF Model Analysis
Schedule 3	GDP Value Added by Industry – 1947 to 2020
Schedule 4	Review of Griffing Constant Growth Market Return Analysis
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Schedule 6	“Comparable Earnings: New Life for an Old Precept”, <i>Financial Quarterly Review</i> , Summer 1994
Schedule 7	Excerpt from <i>Investments: Analysis and Management</i>
Schedule 8	Authorized Returns on Common Equity

1 Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

2 A. I have updated my ROE analyses as of April 30, 2021. Based on these updated
3 analyses, my range of reasonable ROEs attributable to NSPM is between
4 10.24% and 11.21% (unadjusted) and 10.50% to 11.47% (adjusted).
5 Therefore, my specific ROE recommendation of 10.20% for NSPM in this
6 case continues to be reasonable, if not conservative.

7

8 Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR RECOMMENDATION?

9 A. Yes. Exhibit__(DWD-2), Schedules 1 through 8, were prepared by me or
10 under my direction.

11

12 Q. HOW IS THE REMAINDER OF YOUR REBUTTAL TESTIMONY ORGANIZED?

13 A. The remainder of my Rebuttal Testimony is organized as follows:

- 14 • Section II – Summarizes my updated analytical models;
- 15 • Section III – Summarizes the current capital market conditions;
- 16 • Section IV – Provides my response to Staff Witness Griffing;
- 17 • Section V – Provides my response to Walmart Witness Chriss; and
- 18 • Section VI – Presents my conclusions.

19

20

II. UPDATED ANALYSIS

21

22 Q. HAVE YOU UPDATED YOUR UTILITY PROXY GROUP FOR YOUR UPDATED
23 ANALYSES?

24 A. Yes, I have. On October 21, 2020, PNM Resources (PNM) agreed to combine
25 with AVANGRID in a strategic merger transaction, so I eliminated them from
26 my proxy group.

1 Q. HAVE YOU APPLIED YOUR COST OF COMMON EQUITY MODELS TO YOUR
2 UPDATED PROXY GROUP CONSISTENT WITH HOW YOU APPLIED THEM IN YOUR
3 DIRECT ANALYSES?

4 A. Yes, I have.

5

6 Q. WHAT ARE THE RESULTS OF YOUR UPDATED ANALYSES?

7 A. Using data available as of April 30, 2021, my updated results are presented in
8 page 2 of Exhibit__(DWD-2), Schedule 1 and in Table 1, below.

9

10

Table 1

11

Summary of Common Equity Cost Rates

12

Discounted Cash Flow Model	9.26%
Risk Premium Model	10.82%
Capital Asset Pricing Model	12.60%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	12.17%
Indicated Range of Common Equity Cost Rates Before Adjustments	10.24% - 11.21%
Size Adjustment	0.20%
Credit Risk Adjustment	-0.09%
Flotation Cost Adjustment	0.15%
Indicated Range of Common Equity Cost Rates after Adjustment	10.50% - 11.47%
Recommended Cost of Common Equity	10.20%

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In view of the unadjusted and adjusted ranges of ROE, I maintain my original ROE recommendation of 10.20%. Upon reviewing my updated results, two items became apparent: 1) the indicated results of my ROE models have

1 increased from my analyses presented in my Direct Testimony, which is a
2 directional indicator that the investor-required return has increased since my
3 Direct Testimony; and 2) my recommended ROE of 10.20% is below both
4 indicated ranges of ROEs and should be viewed as a conservative measure of
5 the Company's ROE.

7 **III. CAPITAL MARKET CONDITIONS**

8
9 Q. HOW HAVE CAPITAL MARKET CONDITIONS CHANGED SINCE YOU FILED YOUR
10 DIRECT TESTIMONY?

11 A. Capital market conditions as of the analytical period in my Direct Testimony
12 were characterized by high levels of volatility and an increased correlation
13 between utilities and market indices.¹ Although, as discussed below, measures
14 of volatility are somewhat lower in the current market environment, other
15 factors, such as rising inflation, increasing consumer confidence, and higher
16 interest rates have put upward pressure on the Cost of Equity. The effect of
17 those factors is evident in my updated analytical results, which have increased
18 since my Direct Testimony, pointing to a directionally higher ROE.

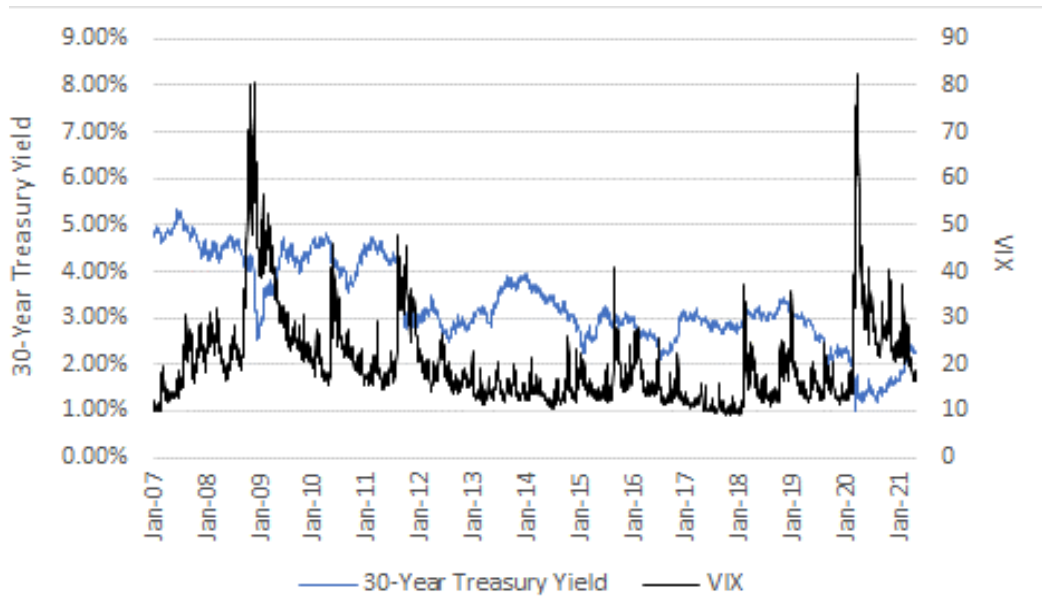
19
20 Q. PLEASE SUMMARIZE HOW VOLATILITY HAS CHANGED SINCE YOU FILED
21 DIRECT TESTIMONY.

22 A. As shown in Chart 1, below, since the filing of my Direct Testimony, volatility
23 has declined somewhat in conjunction with increases in interest rates.

¹ D'Ascendis Direct Testimony, at 65-69.

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Chart 1
30-Year Treasury Yields vs. VIX²



In addition, as shown in Table 2, below, although expected volatility has also decreased somewhat since the filing of my Direct Testimony, it remains above the long-term historical average of 19.54.³

² Source: Bloomberg Professional Service.

³ Source: Bloomberg Professional Service.

Table 2
CBOE Term Structure of Volatility⁴

Date	Projected VIX
June 2021	19.77
July 2021	21.30
August 2021	22.58
September 2021	23.32
October 2021	23.99
November 2021	24.38
December 2021	24.87
January 2022	24.79
February 2022	25.39

15 Q. HAS THE FEDERAL RESERVE CHANGED ITS LONG-STANDING INFLATION
16 POLICY?

17 A. Yes, it has. On August 27, 2020, Federal Reserve Chair Jerome H. Powell
18 released a statement noting that the Federal Open Market Committee will
19 adopt an approach towards inflation that “could be viewed as a flexible form
20 of average inflation targeting,” meaning that following periods in which
21 inflation has run below 2.00%, “appropriate monetary policy will likely aim to
22 achieve inflation moderately above 2 percent for some time.”⁵

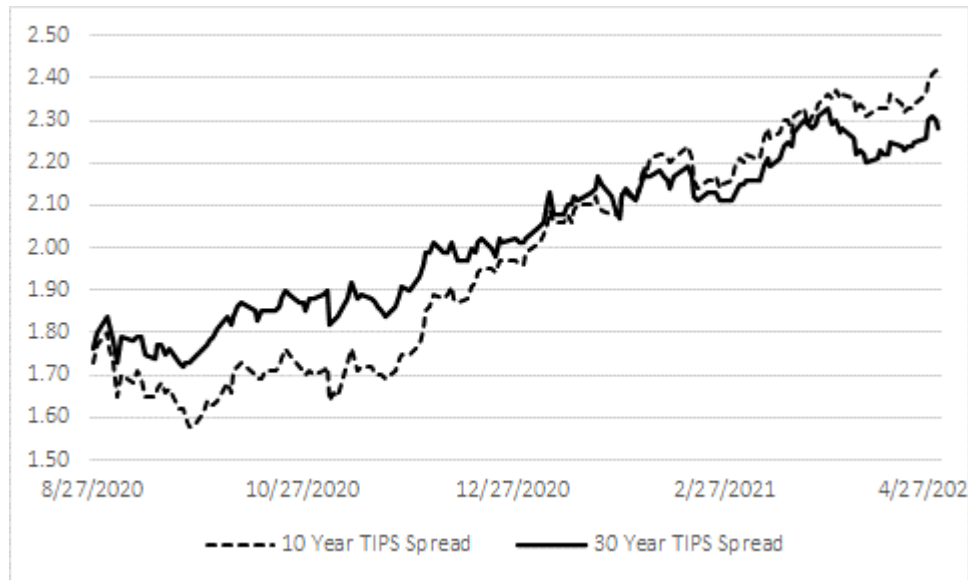
23
24 Since Mr. Powell’s remarks, the breakeven inflation rate, represented as the
25 ten-year and 30-year TIPS spreads, has increased from 1.73% and 1.76%,

⁴ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>, as of April 30, 2020.

⁵ *New Economic Challenges and the Fed’s Monetary Policy Review*, Remarks by Jerome H. Powell, Chair Board of Governors of the Federal Reserve System, August 27, 2020.

1 respectively, to 2.41% and 2.28% respectively, as of April 30, 2021. Further,
2 as shown in Chart 2 below, breakeven inflation has trended upward since the
3 Federal Reserve's policy change at a relative consistent pace.
4

5 **Chart 2**
6 **Breakeven Inflation Since August 27, 2020⁶**



20 Increasing and sustained levels of inflation are consistent with a directionally
21 higher ROE for the Company.
22

23 Q. HOW HAVE INTEREST RATES CHANGED SINCE YOU FILED YOUR DIRECT
24 TESTIMONY?

25 A. There is no question that interest rates have increased from the low levels
26 experienced in 2020. It also is clear that market-based data indicate investors'
27 expectations of rising interest rates in the near- and longer-term. The

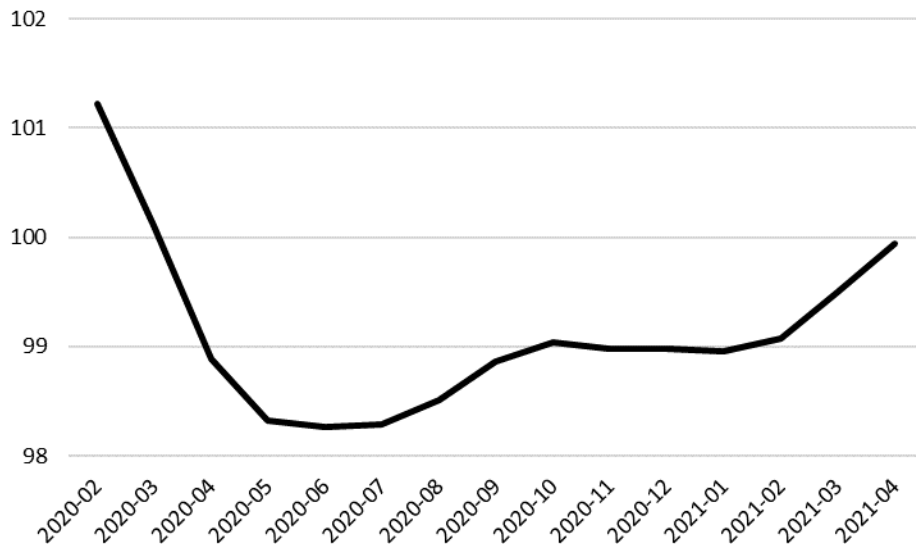
⁶ Source: Federal Reserve (<https://www.federalreserve.gov/datadownload/>).

1 observation that interest rates have increased, in combination with the
2 optimism in the market, indicates that the financial community sees the strong
3 prospect of increased growth throughout the economy.

4
5 Q. HAVE YOU CONSIDERED OTHER DATA POINTS IN YOUR ASSESSMENT OF
6 CURRENT MARKET CONDITIONS?

7 A. Yes. As interest rates and inflation expectations increased, confidence and
8 optimism in the economy also have increased as the rollout of COVID-19
9 vaccines and opening of businesses have continued. For example, as shown
10 in Chart 3 below, the Consumer Confidence Survey shows consumer
11 confidence is at its highest levels since the beginning of the COVID-19
12 pandemic.

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14 **Chart 3**
15 **Consumer Confidence Index, February 2020 – April 2021⁷**



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⁷ Source: OECD (<https://data.oecd.org/leadind/consumer-confidence-index-cci.htm>).

1 Moreover, the S&P 500 reached new highs in the wake of the rollout of the
2 COVID-19 vaccine, with the index closing at an all-time high on May 7, 2020.⁸
3 This increase in consumer confidence and record market performance is likely
4 to drive investors to demand higher Return on Equity values for utilities to
5 compete with market returns.

7 **IV. RESPONSE TO STAFF WITNESS GRIFFING**

8
9 Q. PLEASE SUMMARIZE STAFF’S ROE RECOMMENDATION.

10 A. Dr. Griffing applies single stage and Multi-Stage DCF models, and a CAPM
11 to a proxy group of 16 electric utilities. The results of these models are
12 summarized in Table 3, below.

13
14 **Table 3**
15 **Summary of Dr. Griffing’s ROE Results⁹**

16

17 Model	Constant Growth	Multi-Stage
18 Mean		
19 DCF	9.83%	9.26%
20 CAPM	11.71%	9.60%
21 Median		
22 DCF	9.60%	9.19%
CAPM	11.61%	9.47%

23

24 Dr. Griffing derives his 9.50% recommended ROE based “mostly on the
25 multistage analyses,”¹⁰ while excluding the constant growth CAPM results
26 which he states are not consistent with recently authorized returns.¹¹

⁸ Source: Bloomberg Professional.

⁹ Griffing Direct Testimony, at 39-40.

¹⁰ *Ibid.*, at 40.

¹¹ *Ibid.*, at 41.

1 Q. PLEASE SUMMARIZE THE AREAS OF AGREEMENT BETWEEN YOU AND DR.
2 GRIFFING.

3 A. I generally agree with Dr. Griffing on several of his methodologies and
4 assumptions. In particular, Dr. Griffing's application of the Constant Growth
5 DCF model is largely similar to the Constant Growth DCF model presented
6 in my Direct Testimony and updated in Schedule 1. In addition, I agree with
7 his flotation cost and size adjustments.

8

9 Q. PLEASE SUMMARIZE THE KEY AREAS IN WHICH YOU DISAGREE WITH DR.
10 GRIFFING'S ANALYSES AND RECOMMENDATIONS.

11 A. The key areas in which Dr. Griffing and I disagree are:

- 12 1. His selection criteria for his proxy group;
- 13 2. The applicability of the Multi-Stage DCF models in his analysis; and
- 14 3. Certain assumptions included in his CAPM analysis, including the use of
15 a current risk-free rate and the exclusion of companies in the market
16 return estimate.

17

18 **A. Proxy Group Selection**

19 Q. PLEASE SUMMARIZE THE PROCESS BY WHICH DR. GRIFFING SELECTED HIS
20 PROXY GROUP.

21 A. Dr. Griffing developed his proxy group of 16 companies by applying the
22 following criteria:

- 23 1. U.S. firm based in the continental 48 states;
- 24 2. Publicly traded;
- 25 3. Continuous record of paying dividends;
- 26 4. Not party to a merger or acquisition or engaged in an unusual regulatory
27 proceeding;

- 1 5. Has a credit rating of BBB+ to A- from Standard & Poor's (S&P);
- 2 6. Has a positive projected analyst growth rate; and
- 3 7. At least 65% or more of net operating income, net income, or operating
- 4 revenue derived from regulated electric operations.¹²

5

6 Q. DO YOU AGREE WITH DR. GRIFFING'S SELECTION CRITERIA AND HIS

7 ULTIMATE PROXY GROUP?

8 A. Not entirely. Although several of Dr. Griffing's screening criteria overlap with

9 mine, Dr. Griffing includes electric distribution-only companies in his proxy

10 group. As noted in my Direct Testimony, because NSPM is vertically

11 integrated, it is reasonable and appropriate to exclude companies that do not

12 own and operate electric generation assets.¹³ Including such companies results

13 in a proxy group that may not be entirely risk-comparable to NSPM. As such,

14 I disagree with Dr. Griffing's inclusion of Consolidated Edison, Inc. and

15 Eversource Energy in his proxy group, because neither company is vertically

16 integrated.

17

18 **B. Application of Constant Growth Discounted Cash Flow Model**

19 Q. PLEASE SUMMARIZE DR. GRIFFING'S CONSTANT GROWTH DCF ANALYSIS.

20 A. Dr. Griffing's Constant Growth DCF relies on four-week average stock prices

21 and the most recently available dividend to calculate the dividend yield, which

22 he then adjusts using the mean EPS growth rate and an estimate of flotation

23 costs. That expected dividend yield adjusted for flotation costs is then

24 summed with the mean projected EPS growth rate from Zacks, Yahoo!

25 Finance, and Value Line to arrive at the Constant Growth DCF results.¹⁴

¹² *Ibid.*, at 15.

¹³ D'Ascendis Direct Testimony, at 16.

¹⁴ *Ibid.*, at 24-28.

1 Q. DO YOU HAVE ANY GENERAL COMMENTS REGARDING DR. GRIFFING'S
2 APPLICATION OF THE DCF MODEL?

3 A. Yes, I do. I generally agree with the assumptions and inputs used by Dr.
4 Griffing in his Constant Growth DCF analysis. As I mentioned above, I
5 disagree with his inclusion of electric distribution-only companies in his proxy
6 group. Additionally, while Dr. Griffing did consistently apply flotation costs
7 to his DCF model and CAPM results, he did not consistently apply his size
8 adjustment to both his DCF model and CAPM results. For purposes of
9 consistency across his analyses, I believe he should apply both adjustments to
10 both models. Had Dr. Griffing included a size adjustment to his DCF model
11 similar to the methodology he used for his CAPM results, his average DCF
12 model results would increase by 31 basis points.¹⁵

13
14 Q. DO YOU HAVE ANY SUGGESTED CHANGES TO DR. GRIFFING'S CONSTANT
15 GROWTH DCF ANALYSIS?

16 A. Excluding the electric distribution-only companies from Dr. Griffing's proxy
17 group and applying a consistent size adjustment of 0.31% to his Constant
18 Growth DCF model increases the average results from 9.83% to 10.34% and
19 median results from 9.60% to 9.91%, as shown on Exhibit___(DWD-2),
20 Schedule 2.

21
22 **C. Application of Multi-Stage Discounted Cash Flow Model**

23 Q. PLEASE SUMMARIZE DR. GRIFFING'S MULTI-STAGE DCF MODEL.

24 A. Dr. Griffing's Multi-Stage DCF model is structured similarly to his Constant
25 Growth DCF model and largely relies on similar inputs. The difference
26 between his Constant Growth DCF and Multi-Stage DCF models is the

¹⁵ For example, as shown in Attachment___MFG-18, Schedule 9, the average size adjustment is 0.31%.

1 growth rate estimate. In his Multi-Stage DCF model, Dr. Griffing assumes a
2 growth rate equal to a weighted average of analyst growth rates from Zacks,
3 Yahoo! Finance, and Value Line, which he gives two-thirds weight, and an
4 estimate of Gross Domestic Product (GDP) growth, which he gives one-third
5 weight.¹⁶ Dr. Griffing's weighted average growth rate implies a transition
6 between the analyst growth rates to the expected growth rate in GDP at some
7 point in the future.

8
9 Q. IS DR. GRIFFING'S MULTI-STAGE DCF MODEL AN APPROPRIATE APPROACH
10 TO ESTIMATING THE COMPANY'S ROE?

11 A. I do not believe so. The Multi-Stage DCF model and its growth rates reflect
12 the company/industry life cycle, which is typically described in three stages:
13 (1) the growth stage, which is characterized by rapidly expanding sales, profits,
14 and earnings. In the growth stage, dividend payout ratios are low in order to
15 grow the firm; (2) the transition stage, which is characterized by slower growth
16 in sales, profits, and earnings.¹⁷ In the transition stage, dividend payout ratios
17 increase, as their need for exponential growth diminishes; and (3) the maturity
18 (steady-state) stage, which is characterized by limited, slightly attractive
19 investment opportunities, and steady earnings growth, dividend payout ratios,
20 and returns on equity. The economics of the public utility business indicate
21 that the industry is in the steady-state, or constant-growth stage of a Multi-
22 Stage DCF.

23
24 Q. ARE THERE EXAMPLES IN BASIC FINANCE TEXTS THAT SUPPORT YOUR
25 POSITION?

¹⁶ Griffing Direct Testimony, at 32.

¹⁷ Dr. Griffing's weighted growth rate approach does not assume a transition stage.

1 A. Yes. For example, in *Investments*, life cycles and Multi-Stage growth models are
2 discussed:

3
4 As useful as the constant-growth DDM (dividend discount
5 model) formula is, you need to remember that it is based on
6 a simplifying assumption, namely, that the dividend growth
7 rate will be constant forever. In fact, firms typically pass
8 through life cycles with very different dividend profiles in
9 different phases. In early years, there are ample opportunities
10 for profitable reinvestment in the company. Payout ratios are
11 low, and growth is correspondingly rapid. In later years, the
12 firm matures, production capacity is sufficient to meet
13 market demand, competitors enter the market, and attractive
14 opportunities for reinvestment may become harder to find.
15 In this mature phase, the firm may choose to increase the
16 dividend payout ratio, rather than retain earnings. The
17 dividend level increases, but thereafter it grows at a slower
18 pace because the company has fewer growth opportunities.

19
20 Table 18.2 illustrates this pattern. It gives Value Line's
21 forecasts of return on assets, dividend payout ratio, and 3-
22 year growth in earnings per share for a sample of the firms in
23 the computer software industry versus those of east coast
24 electric utilities...

25
26 By in large, the software firms have attractive investment
27 opportunities. The median return on assets of these firms is
28 forecast to be 19.5%, and the firms have responded with high
29 plowback ratios. Most of these firms pay no dividends at all.
30 The high return on assets and high plowback result in rapid
31 growth. The median growth rate of earnings per share in this
32 group is projected at 17.6%.

33
34 In contrast, the electric utilities are *more representative of mature*
35 *firms*. Their median return on assets is lower, 6.5%; dividend
36 payout is higher, 68%; and median growth is lower, 4.6%.

37
38 ***

1 To value companies with temporarily high growth, analysts
2 use a multistage version of the dividend discount model.
3 Dividends in the early high-growth period are forecast and
4 their combined present value is calculated. Then, once the
5 firm is projected to settle down to *a steady-growth phase, the*
6 *constant-growth DDM is applied to value the remaining stream of*
7 *dividends.*¹⁸ (Clarification and emphasis added)
8

9 In view of the above, Dr. Griffing should not apply a Multi-Stage DCF model,
10 as it is not applicable to utilities, and instead exclusively rely on the three- to
11 five-year projected growth rates for each company and not apply the GDP
12 growth rate to his company-specific growth rate, because it is not a company-
13 specific growth rate, and it is not an upper bound for growth.
14

15 Q. WHY IS LONG-TERM GROWTH GDP NOT AN UPPER BOUND FOR GROWTH. AS
16 DR. GRIFFING CONTENDS?¹⁹

17 A. First, GDP is not a market measure – rather it is a measure of the value of the
18 total output of goods and services, excluding inflation, in an economy. While
19 I understand that EPS growth is also not a market measure, it is well
20 established in the financial literature that projected growth in EPS is the
21 superior measure of dividend growth in a DCF model.²⁰ Furthermore, GDP
22 is simply the sum of all private industry and government output in the United
23 States, and its growth rate is simply an average of the value of those industries.
24 To illustrate, Exhibit___(DWD-2), Schedule 3 presents the compound
25 growth rate of the industries that comprise GDP from 1947 to 2020. Of the

¹⁸ Z. Bodie, A. Kane, and A. J. Marcus, *Investments*, 7th Edition, McGraw-Hill Irwin, 2008, at 616-617.

¹⁹ Griffing Direct Testimony, at 30.

²⁰ Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management, Spring 1986; Christofi, Christofi, Lori and Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing, Spring 1999; Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988.

1 15 industries represented, seven industries, including utilities, grew faster than
2 the overall GDP, and eight industries grew slower than the overall GDP.²¹

3
4 Q. IS THERE A REALISTIC POSSIBILITY THAT A SINGLE INDUSTRY WOULD BECOME
5 THE ENTIRE ECONOMY WITH A PERPETUAL, SUSTAINABLE GROWTH RATE
6 HIGHER THAN THE GDP GROWTH RATE?

7 A. No, and even if one assumed it was realistically possible, it would take an
8 extraordinary amount of time to do so. To illustrate, I used the value added
9 by industry from 1947 to 2020 in Schedule 3 and used the compound annual
10 growth rates for the highest growth rate industry (Educational Services,
11 Healthcare, and Social Assistance, 8.53% / year) to see when that industry
12 would comprise the entire economy. In the year 2272, or 325 years from the
13 1947 starting point, the industry would comprise 50% of GDP, and in the year
14 5770, 3,823 years after the 1947 starting point, the industry would comprise
15 100% of GDP.²²

16
17 Q. AS A PRACTICAL MATTER, DOES DR. GRIFFING EXPLAIN THE TIMING OF THE
18 LONG-TERM GROWTH ESTIMATE IN HIS MULTI-STAGE DCF ANALYSIS?

19 A. No, he does not. As Dr. Griffing explains, his Multi-Stage DCF method is
20 applied in a manner similar to the Constant Growth DCF model. The only
21 difference is that the growth rate is a weighted average of analysts' earnings
22 growth projections, and nominal GDP growth rate projections. Dr. Griffing
23 has not calculated the implied transition year between those two estimates.

²¹ Source of Information: Bureau of Economic Analysis.

²² To put the amount of time that will take these two milestones to happen in perspective, 302 years ago, in the year 1719, France and Spain were at war in New France (now Louisiana), and approximately 3,478 years ago, in the year 1457 BC, the first recorded battle in military history, the Battle of Megiddo, was waged between the Egyptians, led by Pharaoh Thutmose III against Kadesh, Canaanite, Mitanni, and Amurru forces. *See also, Zager and Evans, In the Year 2525, on 2525 (Exordium & Terminus) (RCA 1968).*

1 That is, Dr. Griffing has not considered in what year his Multi-Stage DCF
2 model transitions between the initial and final growth stages, or how it
3 corresponds to the forecast horizon of his analysis. As such, it is difficult to
4 determine the appropriateness of the model's growth assumptions.

5
6 **D. Capital Asset Pricing Model**

7 Q. PLEASE SUMMARIZE DR. GRIFFING'S CAPITAL ASSET PRICING MODEL.

8 A. Dr. Griffing develops two CAPM estimates. The first analysis combines an
9 estimate of the market risk premium (MRP) of 12.63%, *Value Line* Beta
10 coefficients, and his current risk-free rate of 2.37%, to calculate unadjusted
11 CAPM results, to which Dr. Griffing applies a size adjustment. The average
12 and median size adjusted CAPM estimates are 11.71% and 11.61%,
13 respectively. Dr. Griffing's second CAPM estimate is based on the same risk-
14 free rate, Beta coefficients, and size adjustment as his first analysis, but relies
15 on an estimate of the MRP of 10.19%, which produces average and median
16 CAPM results of 9.60% and 9.47%, respectively.²³

17
18 Dr. Griffing's first MRP estimate is based on the weighted average DCF result
19 on the S&P 500, using the Constant Growth DCF model. Dr. Griffing's
20 second MRP estimate is based on the weighted average DCF result on the
21 S&P 500, using his Multi-Stage DCF model.²⁴

22
23 Q. DO YOU AGREE WITH DR. GRIFFING'S APPLICATION OF THE CAPM?

24 A. No, I do not. Dr. Griffing's CAPM analysis is flawed in at least four respects:
25 1) While Dr. Griffing agrees that the cost of capital is a prospective measure,

²³ Griffing Direct Testimony, at 35-40.

²⁴ *Ibid.*

1 he does not use projected interest rates in his CAPM analysis; 2) Dr. Griffing
2 incorrectly excludes companies in his market DCF model; 3) Dr. Griffing
3 incorrectly applies a Multi-Stage market DCF model as a measure of MRP;
4 and 4) Dr. Griffing does not apply an Empirical CAPM (ECAPM) analysis.

5
6 Q. DO YOU AGREE WITH DR. GRIFFING'S USE OF CURRENT, AND NOT
7 PROJECTED, INTEREST RATES IN THE CAPM ANALYSIS?

8 A. No, I do not. The use of expected interest rates is consistent with both the
9 cost of capital and ratemaking. The cost of capital, including the ROE, is
10 expectational, as it reflects investors' expectations of future capital markets,
11 including an expectation of interest rate levels, as well as risks. Ratemaking is
12 expectational, as the rates set in this proceeding will be in effect for a period
13 of time in the future.

14
15 Throughout his testimony, Dr. Griffing has acknowledged the expectational
16 nature of the cost of capital. On pages 22 and 23 of his Direct Testimony,
17 Dr. Griffing notes that the growth rate in the DCF model represents expected
18 growth. In addition, on page 9 of his Direct Testimony, Dr. Griffing notes
19 that his ROE analysis is "forward-looking because it relies on investors'
20 current assessment of what is likely to happen with their investments."
21 Therefore, consistent with Dr. Griffing's own statements, and the forward-
22 looking nature of the cost of capital and ratemaking, the use of expected
23 interest rates is appropriate for cost of capital purposes.

24
25 Q. DO YOU HAVE ANY CONCERNS WITH DR. GRIFFING'S MARKET RETURN
26 ESTIMATES?

1 A. Yes, I do. Although the methodology Dr. Griffing relies on to develop his
2 market return estimate based on the Constant Growth DCF model is similar
3 to one of the approaches in my Direct Testimony, I do not agree with Dr.
4 Griffing's exclusion of companies with growth rates below 0% and above
5 20%. Nor do I agree with Dr. Griffing's removal of non-dividend paying
6 companies.

7
8 First, the expected market return is meant to reflect just that – all companies
9 in the market. At any given time, there are companies that have both high
10 and low growth rates. Excluding companies with growth rates outside a
11 certain band causes the estimate of the market return to no longer reflect the
12 overall market, but rather an arbitrary subset of companies within the market.

13
14 In addition, investors recognize the market includes both dividend and non-
15 dividend paying companies. Some of the largest companies, based on market
16 capitalization, are excluded from the Dr. Griffing's calculation because they
17 do not pay dividends. For example, based in Dr. Griffing's
18 Attachment___MFG-18, Schedule 4, he excluded 201 companies from the
19 market return calculation, which comprise 40.5% of the entire S&P 500
20 market capitalization. As shown on Exhibit___(DWD-2), Schedule 4, of the
21 201 companies that were excluded, 118 do not pay dividends and comprise
22 almost 30% of the S&P 500 market capitalization. Excluding those companies
23 has a significant effect on the calculated expected market return and
24 subsequently the MRP. That is, because the companies Dr. Griffing removes
25 tend to have higher growth rates, his methodology biases the estimate of the
26 market return downward. More important, the resulting estimate does not
27 represent an estimate of the market as a whole.

1 Beyond that, my methodological concern is with internal consistency in the
2 model's application. A fundamental assumption of the CAPM is that the
3 required return is proportional to the risk of the investment. Under the
4 CAPM, the Beta coefficient is the measure of risk, and is calculated by
5 comparing the subject security's returns to the overall market returns. Because
6 the Beta coefficient is calculated relative to the overall market, which includes
7 both dividend paying and non-dividend paying companies, it is important that
8 the expected market return also reflects the overall market. As noted above,
9 Dr. Griffing's estimate of the market return includes less than 60% of the
10 overall S&P 500 on both an absolute and market capitalization basis. As such,
11 I do not believe it is appropriate to combine Beta coefficients calculated
12 relative to the entire market with a MRP calculated using only a subset of the
13 market (i.e., dividend paying companies with growth rates within a range of
14 0% to 20%).

15
16 If Dr. Griffing chooses to remove non-dividend paying companies and
17 companies with growth rates below 0% and above 20% from the expected
18 market return, he likewise should remove them from the index used to
19 calculate the Beta coefficient. Because Beta coefficients are a positive function
20 of the correlation of returns between the subject company and the index,
21 removing those companies may increase the correlation, thereby increasing
22 the Beta coefficient.

23
24 In addition, dividend paying companies may have lower volatility than non-
25 dividend paying companies. Because the Beta coefficient also reflects relative
26 volatility (i.e., subject company relative to the index), if the volatility of the
27 index falls, the relative volatility will increase, again increasing the Beta

1 coefficient. Dr. Griffing's position inherently assumes the proxy companies'
2 correlation coefficients and relative volatility would remain constant, and their
3 Beta coefficients would remain unchanged if non-dividend paying companies
4 are removed from the market index. But he has not shown that to be the case.
5

6 Q. WAS IT PROPER FOR DR. GRIFFING TO USE HIS MULTI-STAGE DCF FOR HIS
7 MARKET RETURN?

8 A. No, it was not. Dr. Griffing's reason for performing his Multi-Stage DCF on
9 the market was that analyst growth rates are "unsustainably high" due to an
10 anticipated rebound in the market.²⁵
11

12 Dr. Griffing further states that he bases his CAPM analysis on the Federal
13 Energy Regulatory Commission's (FERC) methodology outlined in Opinion
14 569.²⁶ However, he has arbitrarily ignored the concerns regarding the use of
15 the Two-Step DCF model to estimate the market return raised by FERC in
16 that same opinion.
17

18 The FERC has found the DCF-based growth rates used to calculate the MRP
19 in the CAPM need not meet a sustainability threshold because, although an
20 individual company may not be expected to sustain high short-term growth
21 rates in perpetuity, the same cannot be said for a stock index like the S&P 500
22 that is regularly updated to contain only companies with high market
23 capitalization. FERC found two issues with using a Multi-Stage DCF model
24 in the calculation of the market return based on long-term growth projections
25 of GDP. First, FERC noted that the S&P 500 is regularly updated to reflect

²⁵ Griffing Direct Testimony, at 38.

²⁶ Griffing Direct Testimony, at 33.

1 high market capitalization companies and to be representative of the overall
2 market. Second, the companies included in the S&P 500 represent companies
3 in various growth stages. As such, the analyst growth estimates of companies
4 in mature industries are likely to be lower than growth rates for companies in
5 younger industries, which negates the need for the use of a long-term GDP
6 growth rate.²⁷ FERC ultimately concluded in Opinion 569 (on which Dr.
7 Griffing states that he based his CAPM analysis²⁸):

8
9 In summary, while it may be unreasonable to expect an
10 individual company to sustain high short-term growth rates
11 in perpetuity, the same cannot be said for a broad
12 representative market index that is regularly updated to
13 include new companies. Put differently, a portfolio of
14 companies behaves differently than an individual company.
15 Accordingly, the rationale for incorporating a long-term
16 growth rate estimate in conducting a two-step DCF analysis
17 of a specific utility or group of utilities for purposes of
18 directly estimating cost of equity does not apply to the DCF
19 analysis of a broad representative market index with a wide
20 variety of companies that is regularly updated to include new
21 companies for purposes of determining the required return
22 to the overall market.²⁹

23
24 As such, Dr. Griffing's use of the Multi-Stage DCF model (or as FERC
25 describes it, the Two-Step DCF) and his exclusion of companies with growth
26 rates of less than 0% and greater than 20% to calculate the market return are
27 misplaced.

²⁷ Docket No. EL14-12-003 and EL15-45-000, *Opinion 569 Order on Briefs, Rehearing, and Initial Decision*, 169 FERC 61,129 (November 21, 2019), at Para. 264-265.

²⁸ Griffing Direct Testimony, at 33.

²⁹ Docket No. EL14-12-003 and EL15-45-000, *Opinion 569 Order on Briefs, Rehearing, and Initial Decision*, 169 FERC 61,129 (November 21, 2019), at Para. 266.

1 Q. DOES DR. GRIFFING PERFORM AN ECAPM IN HIS ANALYSIS?

2 A. No. Dr. Griffing failed to consider the ECAPM, despite the fact that
3 numerous tests of the CAPM have confirmed the ECAPM's validity by
4 showing that the empirical Security Market Line (SML) described by the
5 traditional CAPM is not as steeply sloped as the predicted SML. While the
6 results of these tests support the notion that Beta coefficients are related to
7 security returns, the empirical SML described by the CAPM formula is not as
8 steeply sloped as the predicted SML,³⁰ as discussed on pages 46 to 47 of my
9 Direct Testimony.

10

11 Q. WHAT WOULD THE RESULTS BE IF DR. GRIFFING EMPLOYED THE ECAPM?

12 A. Exhibit___(DWD-2), Schedule 5 presents the results of the ECAPM for Dr.
13 Griffing's proxy group. The average and median constant growth ECAPM
14 results range from 12.05% to 11.93%, and the average and median Multi-Stage
15 ECAPM results range from 9.86% to 9.72%.

16

17 Q. DO YOU AGREE WITH DR. GRIFFING'S EXCLUSION OF HIS CONSTANT GROWTH
18 CAPM RESULTS IN DETERMINING HIS RECOMMENDED ROE?

19 A. No, I do not. I disagree with Dr. Griffing's conclusion that the CAPM results
20 based on the Constant Growth DCF should be disregarded in their entirety.
21 Although I recognize that Dr. Griffing only relies on his review of recent
22 authorized returns as a check on the reasonableness of his analytical results, I
23 do not believe that review should negate considering his constant growth
24 CAPM results. As discussed in more detail in response to Mr. Chriss, given
25 the currently unstable market economic environment, it is likely that
26 authorized returns from past periods understate the current investor-required

³⁰ Morin, at 175.

1 return. Lastly, as discussed above, the use of the Multi-Stage (or Two-Step)
2 DCF model to calculate the market return is inappropriate.

3
4 **E. Response to Dr. Griffing's Critique of Company Analysis**

5 Q. WHAT ARE DR. GRIFFING'S CONCERNS WITH YOUR ANALYSES?

6 A. Dr. Griffing does not agree with: (1) the calculation of one of the market
7 returns in my CAPM analysis; and (2) my Non-Price Regulated Proxy Group.
8 I have already addressed the calculation of the market return in my response
9 to Dr. Griffing's CAPM above and will not repeat that discussion here.

10
11 Q. WHAT IS YOUR RESPONSE TO DR. GRIFFING'S CONCERN WITH YOUR NON-
12 REGULATED PROXY GROUP?

13 A. As discussed in my Direct Testimony, the selection criteria for my non-
14 regulated proxy group were based on a range of unadjusted Beta coefficients
15 (a measure of systematic risk) and a range of standard errors of the regression
16 (a measure of unsystematic risk), which gave rise to those Beta coefficients,
17 and together measure total risk.³¹

18
19 As to the comparability of my Non-Price Regulated and Utility Proxy Groups,
20 the selection criteria for my non-price regulated proxy groups were based on
21 ranges of two measures of risk, the unadjusted Beta of the proxy group, which
22 measures systematic, or market risk, and the standard error of the regression,
23 which gave rise to those Betas, measuring non-systematic or diversifiable risk.
24 Systematic plus non-systematic risk is one definition of total risk.³²

³¹ D'Ascendis Direct Testimony, at 52-53.

³² Business risk plus financial risk is a second definition of total risk.

1 Business and financial risks may vary between companies and proxy groups,
2 but if the collective average Betas and standard errors of the regression of the
3 group are similar, then the total, or aggregate, non-diversifiable market risks
4 and diversifiable risks are similar, as noted in “Comparable Earnings: New
5 Life for an Old Precept” provided in Exhibit___(DWD-2), Schedule 6. Thus,
6 because the non-price regulated companies are selected based on analyses of
7 market data, they are comparable in total risk (even though individual risks
8 may vary) to the Utility Proxy Group. This is demonstrated clearly on page
9 273 of Jack C. Francis’ *Investments: Analysis and Management* (page 3 of
10 Exhibit___(DWD-2), Schedule 7), which shows that total risk can be
11 “partitioned into its systematic and unsystematic components.” Essentially,
12 companies that have similar betas and standard errors of regression have
13 similar total investment risk. Therefore, it is entirely appropriate to rely on
14 the results of the application of the DCF, RPM and CAPM analyses to the
15 Non-Price Regulated Proxy Group.

16
17 Q. IS THERE A SPECIFIC ADVANTAGE TO USING YOUR SELECTION CRITERIA,
18 WHICH USES MEASURES OF SYSTEMATIC AND UNSYSTEMATIC RISK, INSTEAD OF
19 USING THE COMBINATION OF BUSINESS AND FINANCIAL RISK?

20 A. Yes. Value Line unadjusted Beta coefficients and the standard error of the
21 regressions giving rise to those Beta coefficients are measurable objective
22 values, whereas total business risk³³ and financial risk measures are more
23 subjective. In view of all of the above, Dr. Griffing’s concerns regarding my
24 Non-Price Regulated Proxy Group should be dismissed by the Commission.

³³ Business risk in excess of size risk, which is measurable, as discussed previously.

1 **V. RESPONSE TO WALMART WITNESS CHRISS**

2
3 Q. PLEASE SUMMARIZE MR. CHRISS’ TESTIMONY REGARDING THE COMPANY’S
4 ROE.

5 A. Mr. Chriss opposes the Company’s proposed ROE based on his review of
6 authorized ROEs since 2017 nationwide and within North Dakota. He
7 recommends the Commission “closely examine” the Company’s proposed
8 ROE:

9
10 In light of: (1) the customer impact of the resulting revenue
11 requirement increase as discussed above; (2) the ability of the
12 Company to implement an interim rate increase which has
13 allowed the Company to increase rates and revenue by
14 approximately \$16.4 million prior to the full examination of
15 their proposals in this case; (3) the proposed use of a future
16 test year, which reduces regulatory lag and, therefore utility
17 risk, by allowing the utility to include projected cost increases
18 in its rates at the time they will be in effect; (4) recent rate
19 case ROEs approved by the Commission; and (5) recent rate
20 case ROEs approved by commissions nationwide.

21
22 However, Mr. Chriss did not undertake an independent, market-based analysis
23 of the Company’s Cost of Equity.

24
25 Q. ARE THERE OTHER DISTINCTIONS THAT ARE IMPORTANT TO CONSIDER WHEN
26 REVIEWING AUTHORIZED RETURNS?

27 A. Yes, there are. The primary issue with Mr. Chriss’ analysis is that while
28 authorized ROEs may be reasonable benchmarks of acceptable ROEs in more
29 normal economic conditions, they understate the investor-required return in
30 the current unstable economic environment. The reason why historical
31 authorized returns understate the investor-required return in volatile markets

1 is because authorized ROEs are a lagging indicator of investor-required
2 returns; i.e., authorized ROEs are based on market data presented in an
3 evidentiary record, which spans a period before the decision, sometimes
4 lasting over a year in some cases. When markets are disjointed, as they are
5 now, historical authorized returns do not completely reflect the investor
6 required return, because the economic conditions in the past are not
7 representative of economic conditions now. Dr. Griffing notes similar
8 concerns with using authorized returns as a substitute for an independent
9 ROE analysis.³⁴

10
11 In addition, the regulatory environment is one of the most important factors
12 debt and equity investors factor in their assessment of risk. Further, utility
13 credit ratings and outlooks depend substantially on the extent to which rating
14 agencies view the regulatory environment credit supportive, or not. For
15 example, Moody's finds the regulatory environment to be so important that
16 50.00% of the factors that weigh in its ratings determination are determined
17 by the nature of regulation.³⁵ Given the Company's need to access external
18 capital and the weight rating agencies place on the nature of the regulatory
19 environment, I believe it is important to consider the extent to which the
20 jurisdictions that recently have authorized ROEs for electric utilities are
21 viewed as having constructive regulatory environments.

22
23 Q. HAVE YOU REVIEWED AND UPDATED THE INFORMATION CONTAINED IN MR.
24 CHRISS' EXHIBIT 3?

³⁴ Griffing Direct Testimony, at 41-42.

³⁵ See, Moody's Investors Service Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

1 A. Yes. First, Mr. Chriss' average authorized ROE reported in his Chriss Exhibit
2 SWC-2 for the 2017 to 2021 period includes all electric utilities, including
3 distribution-only utilities and ROEs authorized as part of the Illinois Formula
4 Rate Plan ("FRP") proceedings.³⁶ The Illinois FRP has resulted in the lowest
5 ROEs since at least 1980 and biases his calculated average downward.
6 Because NSPM is vertically integrated, distribution-only utility authorized
7 returns are not a relevant benchmark.

8
9 Further, as shown in Table 4 (below; *see also* Exhibit____(DWD-2), Schedule
10 8), I analyzed the authorized ROE for electric utilities based on the
11 jurisdiction's ranking by Regulatory Research Associates (RRA). RRA, which
12 is the source of Mr. Chriss' data, provides an assessment of the extent to which
13 regulatory jurisdictions are constructive from investors' perspectives, or not.
14 As RRA explains, less constructive environments are associated with higher
15 levels of risk:

16
17 RRA maintains three principal rating categories, Above
18 Average, Average and Below Average, with Above Average
19 indicating a relatively more constructive, lower-risk
20 regulatory environment from an investor viewpoint and
21 Below Average indicating a less constructive, higher-risk
22 regulatory climate. Within each principal rating categories,
23 the numbers 1, 2 and 3 indicate relative position. The
24 designation 1 indicates a stronger or more constructive rating
25 from an investor viewpoint; 2, a midrange rating; and 3, a less
26 constructive rating. Hence, if you were to assign numeric
27 values to each of the nine resulting categories, with a "1"
28 being the most constructive from an investor viewpoint and

³⁶ In Illinois, statutes require the ROEs for Commonwealth Edison and Ameren Illinois to be re-set annually, under a formula rate plan ratemaking paradigm where the allowed ROE is set by application of a 580 basis-point premium to the 12-month average 30-year Treasury Bond yield. In the historically low interest rate environment, this framework has resulted in the lowest ROEs in at least 30 years. Source: Regulatory Research Associates.

1 a “9” being the least constructive from an investor viewpoint,
2 then Above Average/1 would be a “1” and Below Average/3
3 would be a “9.”³⁷

4
5 The Commission currently is ranked “Average/1”, which falls in the top third
6 of the 53 jurisdictions ranked by RRA.

7
8 Across the 106 vertically integrated rate cases for which RRA reports an
9 authorized ROE since 2017, there was a 25-basis point difference between the
10 median return for jurisdictions ranked in the top third of all jurisdictions and
11 jurisdictions ranked in the bottom third of all jurisdictions (the higher-ranked
12 jurisdictions providing the higher authorized returns, *see* Table 4, below). As
13 Table 4 indicates, authorized ROEs for vertically integrated electric utilities in
14 jurisdictions rated in the top third of all jurisdictions, including North Dakota,
15 range 9.20% to 10.50%, with an average of 9.85%, and a median of 9.90%.

16
17 **Table 4**
18 **Vertically Integrated Authorized ROE by RRA Ranking³⁸**

19
20

Authorized ROE (%)			
Vertically Integrated Electric Utilities			
RRA Ranking	Top Third	Middle Third	Bottom Third
Mean	9.85%	9.56%	9.57%
Median	9.90%	9.50%	9.50%
Maximum	10.50%	10.30%	11.95%
Minimum	9.20%	8.75%	9.06%

21
22
23
24
25

³⁷ Regulatory Research Associates, *RRA Regulatory Focus: State Regulatory Evaluations*, March 3, 2021, at 8.

³⁸ Source: Regulatory Research Associates. “Top Third” includes Above Average/1,2,3 and Average/1; “Middle Third” includes Average/2; “Bottom Third” includes Average/3 and Below Average/1,2,3. The “Top Third” and “Bottom Third” groups each include 19 (of the 53 total) jurisdictions. The “Middle Third” group includes 15 jurisdictions. *See also*, Exhibit____(DWD-2), Schedule 8. Excludes limited issue riders and Illinois formula rate proceedings.

1 My recommended ROE, 10.20%, is consistent with the returns authorized in
2 more constructive jurisdictions.

3
4 Q. HAS MR. CHRISS CONSIDERED THE EFFECT OF HIS RECOMMENDATION ON
5 THE COMPANY'S FINANCIAL PROFILE?

6 A. No, he has not. As Company Witness Ms. Sarah W. Soong addresses in her
7 Rebuttal Testimony, the financial community carefully monitors utility
8 companies' financial conditions, both current and expected, as well as the
9 regulatory environment in which those companies operate. Here, Mr. Chriss
10 suggests the Commission should reduce the Company's ROE by some
11 unspecified amount without the benefit of market-based, comparative
12 analyses to support that recommendation. The consequence of doing so
13 would indicate an increased degree of regulatory risk.

14 15 VI. CONCLUSION

16
17 Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

18 A. In this Rebuttal Testimony, I updated my ROE models with market data as
19 of April 30, 2021. The results of the ROE models produced indicated ranges
20 of ROEs from 10.24% to 11.21% (unadjusted) and from 10.50% to 11.47%
21 (adjusted). Given these ranges, I maintain my initial recommendation of
22 10.20%, which, in light of the updated results, is reasonable, if not
23 conservative.

24
25 Q. SHOULD ANY OR ALL OF THE ARGUMENTS MADE BY THE OPPOSING WITNESSES
26 PERSUADE THE COMMISSION TO LOWER THE RETURN ON COMMON EQUITY IT
27 APPROVES FOR NSPM BELOW YOUR RECOMMENDATION?

1 A. No, they should not. My recommended cost of common equity of 10.20% is
2 both reasonable and conservative. It will provide the Company with sufficient
3 earnings to enable it to attract necessary new capital efficiently and at a
4 reasonable cost, to the benefit of both customers and investors.

5

6 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?


7 A. Yes, it does.

1 STATE OF NORTH DAKOTA
2 BEFORE THE
3 PUBLIC SERVICE COMMISSION
4
5

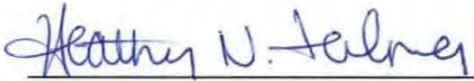
6 In the Matter of the Application of Northern)
7 States Power Company, a Minnesota Corporation)
8 For Authority to Increase Rates for Electric Service) Case No. PU-20-441
9 in North Dakota)
10
11
12

13 **AFFIDAVIT OF**
14 **Dylan W. D'Ascendis**
15
16

17 I, the undersigned, being duly sworn, depose and say that the foregoing is the
18 Rebuttal Testimony of the undersigned, and that such Rebuttal Testimony and the
19 exhibits or schedules sponsored by me to the best of my knowledge, information
20 and belief, are true, correct, accurate and complete, and I hereby adopt said testimony
21 as if given by me in formal hearing, under oath.
22

23 
24 _____
25 Dylan W. D'Ascendis
26
27
28
29

30 Subscribed and sworn to before me, this 26th day of May, 2021.
31

32 
33 _____

34 Notary Public

35 My Commission Expires:
36



Northern States Power Company, a Minnesota Corporation
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Fourteen Electric Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	9.26%
2.	Risk Premium Model (RPM) (2)	10.82%
3.	Capital Asset Pricing Model (CAPM) (3)	12.60%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.17%</u>
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Company-Specific Risk	10.24% - 11.21%
6.	Size Risk Adjustment (5)	0.20%
7.	Credit Risk Adjustment (6)	-0.09%
8.	Flotation Cost Adjustment (7)	<u>0.15%</u>
9.	Indicated Range of Common Equity Cost Rates after Adjustment	<u>10.50% - 11.47%</u>
10.	Recommended Common Equity Cost Rate	<u>10.20%</u>

- Notes:
- (1) From page 2 of this Schedule.
 - (2) From page 17 of this Schedule.
 - (3) From page 30 of this Schedule.
 - (4) From page 35 of this Schedule.
 - (5) Adjustment to reflect the Company's greater business risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. D'Ascendis' direct testimony.
 - (6) Company-specific risk adjustment to reflect NSP's lower risk due to a higher long-term issuer rating relative to the average Utility Proxy Group company as detailed in Mr. D'Ascendis' direct testimony.
 - (7) From page 43 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Fourteen Electric Companies

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
Proxy Group of Fourteen Electric Companies	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Zack's Five Year Projected Growth Rate in EPS	Bloomberg's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (3)	Adjusted Dividend Yield (4)	Indicated Common Equity Cost Rate (5)
ALLETE, Inc.	3.74 %	6.00 %	6.00 %	6.33 %	7.00 %	6.33 %	3.86 %	10.19 %
Alliant Energy Corporation	3.10	5.50	5.60	5.96	5.50	5.64	3.19	8.83
Ameren Corporation	2.82	6.00	7.30	7.64	7.50	7.11	2.92	10.03
Duke Energy Corporation	4.11	5.00	5.20	4.90	5.00	5.02	4.21	9.23
Edison International	4.53	NMF	4.60	4.25	4.50	4.45	4.63	9.08
Energy Corporation	3.88	3.00	5.10	2.79	5.80	4.17	3.96	8.13
Evergy, Inc.	3.66	8.00	5.90	8.20	5.80	6.98	3.79	10.77
IDACORP, Inc.	2.98	4.00	3.80	3.08	3.00	3.47	3.03	6.50
NorthWestern Corporation	3.93	3.00	4.90	4.93	4.46	4.32	4.01	8.33
OGF Energy Corporation	5.02	4.00	4.40	4.08	3.80	4.07	5.12	9.19
Otter Tail Corporation	3.50	7.00	4.70	5.35	9.00	6.51	3.61	10.12
Pinnacle West Capital Corporation	4.18	5.00	4.00	3.56	3.50	4.02	4.26	8.28
Portland General Electric Company	3.71	8.50	8.80	5.89	12.90	9.02	3.88	12.90
Xcel Energy, Inc.	2.82	6.00	6.20	6.54	6.30	6.26	2.91	9.17
							Average	9.34 %
							Median	9.18 %
							Average of Mean and Median	9.26 %

NA= Not Available
NMF= Not Meaningful Figure

Notes:

(1) Indicated dividend at 04/30/2021 divided by the average closing price of the last 60 trading days ending 04/30/2021 for each company.

(2) From pages 3 through 16 of this Schedule.

(3) Average of columns 2 through 5 excluding negative growth rates.

(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for ALLETE, Inc., $3.74\% \times (1 + (1/2 \times 6.33\%)) = 3.86\%$.

(5) Column 6 + column 7.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 04/30/2021
www.yahoo.com Downloaded on 04/30/2021
Bloomberg Professional Services

ALLIANT ENERGY NDQ-LNT		RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE										
		47.09	19.5 (Trailing: 19.1; Median: 19.0)	0.91	3.4%											
TIMELINESS 4 Lowered 3/5/21	High: 18.8 22.2 23.8 27.1 34.9 35.4 41.0 45.6 46.6															
SAFETY 2 Raised 9/28/07	Low: 14.6 17.0 20.9 21.9 25.0 27.1 30.4 36.6 36.8															
TECHNICAL 3 Raised 3/12/21																
BETA .85 (1.00 = Market)	LEGENDS 0.90 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 5/16 Options: Yes Shaded area indicates recession															
18-Month Target Price Range	Target Price Range 2024 2025 2026 80 60 50 40 30 25 20 15 10 7.5															
Low-High Midpoint (% to Mid)	\$38-\$85 \$62 (30%)															
2024-26 PROJECTIONS	Price Gain Ann'l Total Return High 60 (+25%) 10% Low 45 (-5%) 3%															
Institutional Decisions	2Q2020 3Q2020 4Q2020 to Buy 227 249 261 to Sell 258 219 241 Hld's (\$000) 186056 182149 181812 Percent shares traded 24 16 8															
© VALUE LINE PUB. LLC 24-26	% TOT. RETURN 2/21 THIS STOCK INDEX 1 yr. -8.8 50.1 3 yr. 29.7 45.4 5 yr. 57.3 108.8															
Alliant Energy, formerly called Interstate Energy Corporation, was formed on April 21, 1998 through the merger of WPL Holdings, IES Industries, and Interstate Power. WPL stockholders received one share of Interstate Energy stock for each WPL share, IES stockholders received 1.14 Interstate Energy shares for each IES share, and Interstate Power stockholders received 1.11 Interstate Energy shares for each Interstate Power share.	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Revenues per sh	15.50		
	16.51	13.94	14.77	15.10	14.34	14.58	14.62	14.97	14.89	13.67	14.30	14.60	"Cash Flow" per sh	5.90		
	2.75	2.95	3.34	3.44	3.45	3.45	3.10	4.32	4.59	4.92	5.10	5.35	Earnings per sh A	3.25		
	1.38	1.53	1.65	1.74	1.69	1.65	1.99	2.19	2.33	2.47	2.60	2.75	Div'd Decl'd per sh B	2.05		
	.85	.90	.94	1.02	1.10	1.18	1.26	1.34	1.42	1.52	1.61	1.70	Cap'l Spending per sh	5.55		
	3.03	5.22	3.32	3.78	4.25	5.26	6.34	6.34	6.28	5.17	5.25	5.40	Book Value per sh C	30.00		
	13.57	14.12	14.79	15.54	16.41	16.96	17.21	19.43	21.24	22.76	24.35	25.80	Common Shs Outst'g D	270.00		
	222.04	221.97	221.87	221.87	226.92	227.67	231.35	236.06	245.02	249.87	255.00	260.00	Avg Ann'l P/E Ratio	16.0		
	14.5	14.5	15.3	16.6	18.1	22.3	20.6	19.1	21.2	21.2	21.2	21.2	Relative P/E Ratio	.90		
	.91	.92	.86	.87	.91	1.17	1.04	1.03	1.13	1.02	1.02	1.02	Avg Ann'l Div'd Yield	3.9%		
	4.3%	4.1%	3.7%	3.5%	3.6%	3.2%	3.1%	3.2%	2.9%	2.9%	2.9%	2.9%				
CAPITAL STRUCTURE as of 12/31/20	3665.3	3094.5	3276.8	3350.3	3253.6	3320.0	3382.2	3534.5	3647.7	3416.0	3650	3800	Revenues (\$mill)	4180		
Total Debt \$7166.0 mill. Due in 5 Yrs \$1950.0 mill.	304.4	337.8	382.1	385.5	380.7	373.8	455.9	512.1	557.2	614.0	655	705	Net Profit (\$mill)	865		
LT Debt \$6769.0 mill. LT Interest \$270.0 mill. (LT interest earned: 3.1x)	19.0%	21.5%	12.4%	10.1%	15.3%	13.4%	12.5%	8.4%	10.8%	NMF	NMF	NMF	Income Tax Rate	11.0%		
	--	--	--	--	6.5%	7.0%	7.6%	7.8%	7.8%	7.6%	8.0%	8.0%	AFUDC % to Net Profit	8.0%		
Pension Assets-12/20 \$984.0 mill. Oblig. \$1351.0 mill.	45.7%	48.4%	46.1%	49.7%	48.6%	52.8%	49.0%	53.4%	51.5%	54.3%	54.0%	54.0%	Long-Term Debt Ratio	54.0%		
Pfd Stock \$400.0 mill. Pfd Div'd \$10.2 mill. 16,000,000 shs.	50.9%	48.4%	50.8%	47.5%	51.4%	47.2%	48.6%	46.6%	48.5%	45.7%	46.0%	46.0%	Common Equity Ratio	46.0%		
	5921.2	6476.6	6461.0	7257.2	7246.3	8177.6	8192.8	9832.0	10738	11362	11500	12200	Total Capital (\$mill)	14500		
	7037.1	7838.0	7147.3	6442.0	8970.2	9809.9	10798	12031	13087	13884	14500	15100	Net Plant (\$mill)	18150		
Common Stock 249,868,415 shs.	6.4%	6.3%	7.0%	6.3%	6.3%	5.6%	6.8%	6.3%	6.4%	5.5%	5.5%	6.0%	Return on Total Cap'l	6.0%		
	9.5%	10.1%	11.0%	10.6%	10.2%	9.7%	10.9%	11.2%	10.7%	10.8%	10.5%	10.5%	Return on Shr. Equity	10.5%		
	9.5%	10.3%	11.3%	10.9%	10.2%	9.7%	6.4%	11.2%	10.7%	10.8%	10.5%	10.5%	Return on Com Equity E	10.5%		
MARKET CAP: \$11.8 billion (Large Cap)	3.3%	3.9%	4.9%	4.3%	3.6%	2.8%	4.0%	4.4%	4.2%	4.2%	4.0%	4.0%	Retained to Com Eq	4.0%		
	67%	64%	57%	61%	65%	71%	63%	61%	61%	62%	62%	62%	All Div'ds to Net Prof	63%		
ELECTRIC OPERATING STATISTICS	2018	2019	2020													
% Change Retail Sales (KWH)	+2.0	-2.2	-2.3													
Avg. Indust. Use (MWH)	11830	11448	11134													
Avg. Indust. Revs. per KWH (¢)	7.25	6.98	7.55													
Capacity at Peak (Mw)	5459	5626	5496													
Peak Load, Summer (Mw)	5459	5626	5496													
Annual Load Factor (%)	NA	NA	NA													
% Change Customers (yr-end)	+4	+6	+6													
Fixed Charge Cov. (%)	322	324	342													
ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26													
Revenues	-5.5%	5.5%	1.0%													
"Cash Flow"	5.5%	4.5%	4.0%													
Earnings	6.0%	6.0%	5.5%													
Dividends	7.0%	7.0%	6.0%													
Book Value	4.5%	5.5%	6.0%													
QUARTERLY REVENUES (\$ mill.)	Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year										
2018	916.3	816.1	928.6	873.5	3534.5											
2019	987.2	790.2	990.2	880.1	3647.7											
2020	915.7	763.1	920.0	817.2	3416.0											
2021	950	800	975	925	3650											
2022	980	835	1015	970	3800											
EARNINGS PER SHARE A	Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year										
2018	.52	.43	.87	.37	2.19											
2019	.53	.40	.94	.46	2.33											
2020	.72	.54	.94	.26	2.47											
2021	.62	.53	1.00	.45	2.60											
2022	.66	.56	1.05	.48	2.75											
QUARTERLY DIVIDENDS PAID B	Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year										
2017	.315	.315	.315	.315	1.26											
2018	.335	.335	.335	.335	1.34											
2019	.355	.355	.355	.355	1.42											
2020	.38	.38	.38	.38	1.52											
2021	.403															

(A) Diluted EPS. May not sum due to changes in share count. Excl. nonrecr. gains (losses): '11, (1¢); '12, (8¢). Next earnings rpt. due early May. (B) Dividends historically paid in mid-

Feb., May, Aug., and Nov. ■ Div'd reinvest. plan avail. † Shareholder invest. plan avail. (C) Incl. deferred chgs. In '20: \$73.0 mill., \$0.29/sh. (D) In millions, adjusted for split. (E)

Rate base: Orig. costs. Rates all'd on com. eq. in IA in '20: 10.0%; in WI in '20 Regul. Clm.: WI, Above Avg.; IA, Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	75
Earnings Predictability	90

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Alliant continues make progress toward its clean energy goals. Natural gas and coal comprised just 49% of electric energy generation at IPL last year, down from 58% in 2019. Wind, nuclear, and solar (including purchased power) made up the remaining portion. At WPL, wind generation rose 65%, to 2,353 mw, while coal's share fell from 31% to 28%. Going forward, leadership plans to double down on renewables. It intends to add 400 mw of solar generation in Iowa by 2023. When combined with the 1,300 mw of owned wind and existing solar farms, that puts it on track to have more than 50% of Iowa power come from renewables by 2030. In Wisconsin, the utility plans to add at least 1000 mw of new wind and solar generation by 2023. It will also retire two existing coal-fired facilities—Columbia Energy Center in 2022 and the Edgewater Generating Station by the end of 2024. **These untimely shares do not stand out at present.** The dividend yield (3.4%) is below average for an electric utility, and total return potential is uninspiring at the recent quotation. *Daniel Henigson, CFA March 12, 2021*

DUKE ENERGY NYSE-DUK				RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE													
TIMELINESS 3 New 2/12/21 SAFETY 2 New 6/1/07 TECHNICAL 4 New 2/12/21 BETA .85 (1.00 = Market)				93.16	22.5 (Trailing: 18.8; Median: 18.0)	1.10	4.2%														
18-Month Target Price Range Low-High Midpoint (% to Mid) \$64-\$142 \$103 (10%)				High: 55.8 Low: 46.4	66.4 50.6	71.1 59.6	75.5 64.2	87.3 67.1	90.0 65.5	87.8 70.2	91.8 76.1	91.4 72.0	97.4 82.5	103.8 62.1	94.6 87.6	Target Price Range 2024 2025 2026					
2024-26 PROJECTIONS Price 120 (+30%) Gain 90 (-5%) Ann'l Total Return 10% High Low 90 4%														% TOT. RETURN 1/21 THIS STOCK VL ARITH. INDEX 1 yr. -0.5 26.6 3 yr. 35.2 28.4 5 yr. 53.3 99.1							
Institutional Decisions 1Q2020 2Q2020 3Q2020 to Buy 682 699 686 to Sell 723 666 702 Hi's(000) 473369 471851 464090														© VALUE LINE PUB. LLC 24-26							
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Revenues per sh	36.50		
--	25.32	30.24	31.15	29.18	32.22	32.63	27.88	34.84	33.84	34.10	32.49	33.66	33.73	34.21	31.40	32.40	33.30	"Cash Flow" per sh	15.50		
--	7.86	8.11	7.34	7.58	8.49	8.68	6.80	8.56	9.11	9.40	9.20	10.01	10.49	12.13	11.05	12.70	13.35	Earnings per sh A	6.25		
--	2.76	3.60	3.03	3.39	4.02	4.14	3.71	3.98	4.13	4.10	3.71	4.22	4.13	5.07	4.05	5.15	5.45	Div'd Decl'd per sh B	4.25		
--	--	2.58	2.70	2.82	2.91	2.97	3.03	3.09	3.15	3.24	3.36	3.49	3.64	3.75	3.82	3.90	3.98	Cap'l Spending per sh	14.00		
--	8.07	7.43	10.35	9.85	10.84	9.80	7.81	7.83	7.62	9.83	11.29	11.50	12.91	15.17	15.50	14.80	14.60	Book Value per sh C	68.75		
--	62.30	50.40	49.51	49.85	50.84	51.14	58.04	58.54	57.81	57.74	58.62	59.63	60.27	61.20	60.65	61.95	63.40	Common Shs Outst'g D	764.00		
--	418.96	420.62	423.96	436.29	442.96	445.29	704.00	706.00	707.00	688.00	700.00	700.00	727.00	733.00	764.00	764.00	764.00	Avg Ann'l P/E Ratio	17.0		
--	--	16.1	17.3	13.3	12.7	13.8	17.5	17.4	17.9	18.2	21.3	19.9	19.4	17.7	21.7	21.7	21.7	Relative P/E Ratio	.95		
--	--	.85	1.04	.89	.81	.87	1.11	.98	.94	.92	1.12	1.00	1.05	.94	1.10	1.10	1.10	Avg Ann'l Div'd Yield	4.0%		
--	--	4.4%	5.2%	6.2%	5.7%	5.2%	4.7%	4.4%	4.3%	4.3%	4.2%	4.2%	4.5%	4.4%	4.4%	4.4%	4.4%	Revenues (\$mill)	27800		
CAPITAL STRUCTURE as of 9/30/20 Total Debt \$64143 mill. Due in 5 Yrs \$21030 mill. LT Debt \$56049 mill. LT Interest \$2186 mill. Incl. \$969 mill. capitalized leases. (LT interest earned: 2.7x) Leases, Uncapitalized Annual rentals \$268 mill. Pension Assets-12/19 \$8910 mill. Oblig \$8231 mill.				14529	19624	24598	23925	23459	22743	23565	24521	25079	24000	24750	25450	25450	25450	25450	Net Profit (\$mill)	4880	
Pfd Stock \$1962 mill. Pfd Div'd \$58 mill. 40 mill. shs. 5.75% cum., \$25 liq. value, redeemable at \$25.50 prior to 6/15/24; 1 mill. shs. 4.875% cum., \$1000 liq. value. Common Stock 735,958,560 shs. as of 10/31/20 MARKET CAP: \$69 billion (Large Cap)				1839.0	2136.0	2813.0	2934.0	2854.0	2560.0	2963.0	2928.0	3755.0	3080	4065	4255	4255	4255	4255	4255	Income Tax Rate	12.0%
ELECTRIC OPERATING STATISTICS 2017 2018 2019 % Change Retail Sales (KWH) -2.0 +3.9 -9 Avg. Indust. Use (MWH) 2914 2953 2934 Avg. Indust. Revs. per KWH (c) NA NA NA Capacity at Peak (Mw) NA NA NA Peak Load, Summer (Mw) NA NA NA Annual Load Factor (%) NA NA NA % Change Customers (avg.) +1.3 +1.4 +1.5				31.3%	30.2%	32.6%	30.6%	32.2%	31.0%	30.4%	14.2%	12.7%	9.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	AFUDC % to Net Profit	8.0%
Fixed Charge Cov. (%) 272 218 233				23.2%	22.3%	8.8%	7.2%	9.2%	11.7%	12.3%	13.0%	7.9%	11.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	Long-Term Debt Ratio	55.0%
ANNUAL RATES Past Past Est'd '17-'19 of change (per sh) 10 Yrs. 5 Yrs. to '24-'26 Revenues 1.0% 1.0% 1.0% "Cash Flow" 3.5% 6.0% 5.0% Earnings 3.0% 2.5% 5.0% Dividends 3.0% 3.0% 2.5% Book Value 2.0% 1.0% 2.0%				45.1%	47.0%	48.0%	47.7%	48.6%	52.6%	54.0%	53.8%	54.0%	44.1%	44.5%	44.5%	44.0%	44.5%	44.5%	44.0%	Common Equity Ratio	43.5%
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year				54.9%	52.9%	52.0%	52.3%	51.4%	47.4%	46.0%	46.2%	44.1%	44.5%	44.5%	44.0%	44.5%	44.5%	44.0%	44.0%	Total Capital (\$mill)	121600
2018 6135 5643 6628 6115 24521 2019 6163 5873 6940 6103 25079 2020 5949 5421 6721 5909 24000 2021 6200 5650 6850 6050 24750 2022 6350 5800 7100 6200 25450				41451	77307	79482	78088	77222	86609	90774	94940	101807	103825	106900	110225	110225	110225	110225	110225	Net Plant (\$mill)	132200
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year				42661	68558	69490	70046	75709	82520	86391	91694	102127	108475	114050	119175	119175	119175	119175	119175	Return on Total Cap'l	5.0%
2018 1.17 .71 1.63 .61 4.13 2019 1.24 1.12 1.82 .89 5.07 2020 1.24 1.08 1.74 d.01 4.05 2021 1.25 1.10 1.80 1.00 5.15 2022 1.35 1.15 1.90 1.05 5.45				2.2%	.9%	1.5%	1.7%	1.5%	.6%	1.2%	1.0%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	Return on Shr. Equity	8.5%
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year				72%	82%	78%	76%	79%	91%	83%	84%	71%	77%	76%	74%	74%	74%	74%	74%	Return on Com Equity E	8.5%
2017 .855 .855 .89 .89 3.49 2018 .89 .89 .9275 .9275 3.64 2019 .9275 .9275 .945 .945 3.75 2020 .945 .945 .965 .965 3.82 2021 .965				BUSINESS: Duke Energy Corporation is a holding company for utilities with 7.6 mill. elec. customers in NC, FL, IN, SC, OH, & KY, and 1.6 mill. gas customers in OH, KY, NC, SC, and TN. Owns independent power plants & has 25% stake in National Methanol in Saudi Arabia. Acq'd Progress Energy 7/12; Piedmont Natural Gas 10/16; discontinued most int'l ops. in '16. Elec. rev. breakdown: residential, 44%; commercial, 28%; industrial, 14%; other, 14%. Generating sources: gas, 29%; nuclear, 29%; coal, 22%; other, 1%; purchased, 19%. Fuel costs: 30% of revs. '19 reported deprec. rate: 3.1%. Has 28,800 employees. Chairman, President & CEO: Lynn J. Good, Inc.: DE. Address: 550 South Tryon St., Charlotte, NC 28202-1803. Tel.: 704-382-3853. Internet: www.duke-energy.com.													ROE for the remainder. The company expects to take a \$1 billion pretax charge against fourth-quarter results, which is included in our earnings presentation. Profits should return to a more-typical level in 2021 and 2022. Without this item, we figure Duke would have earned \$5.10 a share last year. In 2021, the company should benefit from rate relief and the absence of the coal ash charge. However, dilution from a \$2.5 billion forward equity sale, which was settled in late 2020, will be a negative factor. Additional rate relief should produce bottom-line growth in 2022. Our figures do not reflect the pending deal with Duke Indiana. Duke reached a settlement in Florida. If approved by the regulators, rates will be raised by \$67 million, \$49 million, and \$79 million in 2022, 2023, and 2024, respectively, based on a 9.85% ROE and a 53% common-equity ratio. A ruling is expected in the second quarter. The stock has an above-average dividend yield for a utility. However, dividend growth potential through 2024-2026 is half the industry norm. Paul E. Debbas, CFA February 12, 2021				
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year				ROE for the remainder. The company expects to take a \$1 billion pretax charge against fourth-quarter results, which is included in our earnings presentation. Profits should return to a more-typical level in 2021 and 2022. Without this item, we figure Duke would have earned \$5.10 a share last year. In 2021, the company should benefit from rate relief and the absence of the coal ash charge. However, dilution from a \$2.5 billion forward equity sale, which was settled in late 2020, will be a negative factor. Additional rate relief should produce bottom-line growth in 2022. Our figures do not reflect the pending deal with Duke Indiana. Duke reached a settlement in Florida. If approved by the regulators, rates will be raised by \$67 million, \$49 million, and \$79 million in 2022, 2023, and 2024, respectively, based on a 9.85% ROE and a 53% common-equity ratio. A ruling is expected in the second quarter. The stock has an above-average dividend yield for a utility. However, dividend growth potential through 2024-2026 is half the industry norm. Paul E. Debbas, CFA February 12, 2021																	
2017 .855 .855 .89 .89 3.49 2018 .89 .89 .9275 .9275 3.64 2019 .9275 .9275 .945 .945 3.75 2020 .945 .945 .965 .965 3.82 2021 .965				THE COMPANY REACHED A SETTLEMENT REGARDING THE REGULATORY TREATMENT OF COAL ASH REMEDIATION COSTS. If this is approved by the North Carolina commission, Duke will write off \$1 billion of these costs, and will earn a return on equity that is 1.5 percentage points below its allowed																	

(A) Dil. EPS. Excl. nonrec. losses: '12, 70¢; '13, 24¢; '14, 67¢; '17, 15¢; '18, 41¢; '20, \$2.21; losses on disc. ops.: '14, 80¢; '16, 60¢; '18 EPS don't sum due to rounding. Next eps. report due early May. (B) Div'ds paid mid-Mar., June, Sept., & Dec. (C) Incl. intang. In '19: \$44.37/sh. (D) In mill., adj. for rev. split. (E) Rate base: Net orig. cost. Rate all'd on com. eq. in '18 in NC: 9.9%; in '19 in SC: 9.5%; in '20 in FL: 9.5%-11.5%; in '20 in IN: 9.7%; earn. on avg. com. eq., '19: 8.3%. Reg. Clim.: NC, SC Avg., OH, IN Above Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	95

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EDISON INTERNAT'L NYSE-EIX				RECENT PRICE	P/E RATIO					RELATIVE P/E RATIO		DIV/D YLD		VALUE LINE					
				59.84	14.0 (Trailing: 34.8; Median: 15.0)					0.63		4.5%							
TIMELINESS 3 Lowered 1/22/21	High: 39.4	41.6	48.0	54.2	68.7	69.6	78.7	83.4	71.0	76.4	78.9	63.6	Target Price Range						
SAFETY 3 Lowered 11/23/18	Low: 30.4	32.6	39.6	44.3	44.7	55.2	58.0	62.7	45.5	53.4	43.6	53.9	2024	2025	2026				
TECHNICAL 5 Lowered 4/9/21	LEGENDS 0.70 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																		
BETA .95 (1.00 = Market)	18-Month Target Price Range Low-High Midpoint (% to Mid) \$45-\$116 \$81 (35%)																		
2024-26 PROJECTIONS Price Gain Ann'l Total High 100 (+65%) 17% Low 65 (+10%) 7%																			
Institutional Decisions 2020 2020 2020 to Buy 294 269 303 to Sell 264 264 238 Hld's(000) 329959 334110 329568																			
2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022																			
36.38	38.74	40.25	43.31	37.98	38.09	39.16	36.41	38.61	41.17	35.37	36.43	37.81	38.85	34.11	35.83	36.35	38.30	Revenues per sh	44.50
6.99	7.25	7.60	8.08	7.96	8.41	9.03	9.63	8.80	9.95	10.35	10.43	11.03	4.69	9.15	7.94	10.60	11.20	"Cash Flow" per sh	13.25
3.34	3.28	3.32	3.68	3.24	3.35	3.23	4.55	3.78	4.33	4.15	3.94	4.51	d1.26	3.98	1.72	4.10	4.35	Earnings per sh ^A	5.25
1.02	1.10	1.18	1.23	1.25	1.27	1.29	1.31	1.37	1.48	1.73	1.98	2.23	2.43	2.48	2.58	2.68	2.78	Div'd Decl'd per sh ^B	3.10
5.73	7.78	8.67	8.67	10.07	13.94	14.76	12.73	11.05	11.99	12.97	11.46	11.75	13.84	13.47	14.47	14.30	13.75	Cap'l Spending per sh	14.25
20.30	23.66	25.92	29.21	30.20	32.44	30.86	28.95	30.50	33.64	34.89	36.82	35.82	32.10	36.75	37.08	38.90	40.50	Book Value per sh ^C	46.50
325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	325.81	361.99	378.91	385.00	385.00	Common Shs Outst'g ^D	385.00
11.7	13.0	16.0	12.4	9.7	10.3	11.8	9.7	12.7	13.0	14.8	17.9	17.2	--	16.7	34.9	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	15.5
.62	.70	.85	.75	.65	.66	.74	.62	.71	.68	.75	.94	.87	--	.89	1.81			Relative P/E Ratio	.85
2.6%	2.6%	2.2%	2.7%	4.0%	3.7%	3.4%	3.0%	2.8%	2.6%	2.8%	2.8%	2.9%	3.8%	3.7%	4.3%			Avg Ann'l Div'd Yield	3.8%
CAPITAL STRUCTURE as of 12/31/20				12760	11862	12581	13413	11524	11869	12320	12657	12347	13578	14000	14750	14750	17100	Revenues (\$mill)	17100
Total Debt \$23059 mill. Due in 5 Yrs \$7726 mill.				11120	15940	13440	15390	14800	14220	16030	d2900	14770	7750	1735	1845	1735	2235	Net Profit (\$mill)	2235
LT Debt \$19632 mill. LT Interest \$891 mill.				25.7% 14.3% 25.2% 22.4% 6.6% 11.1% 5.0% -- -- -- NMF Nil															
(LT interest earned: 1.3x)				14.8% 8.5% 7.8% 5.8% 8.0% 6.8% 7.2% -- -- -- 11.1% 22.5% 10.0% 9.0%															
Leases, Uncapitalized Annual rentals \$39 mill.				55.3% 45.2% 45.7% 44.1% 45.0% 41.8% 45.6% 53.6%															
Pension Assets-12/20 \$4171 mill.				40.6% 46.2% 46.2% 47.2% 46.7% 49.2% 45.8% 38.3%															
Oblig \$4476 mill.				24773 20422 21516 23216 24352 24362 25506 27284															
Pfd Stock \$1901 mill. Pfd Div'd \$106 mill.				32116 30273 30455 32981 35085 37000 39050 41348															
350,000 sh. 6.25%, \$1000 liq. value; 638,020 sh.				6.0% 8.9% 7.3% 7.7% 7.1% 6.9% 7.3% .1%															
5.0%-5.75%, \$2500 liq. value, all cumulative.				10.0% 14.2% 11.5% 11.9% 11.1% 10.0% 11.6% NMF															
Common Stock 379,283,328 shs. as of 2/18/21				10.5% 15.9% 12.5% 13.0% 12.0% 10.8% 12.7% NMF															
MARKET CAP: \$23 billion (Large Cap)				6.3% 11.4% 8.1% 8.8% 7.2% 5.6% 6.6% NMF															
ELECTRIC OPERATING STATISTICS				43% 32% 40% 37% 44% 53% 52% NMF															
2018 2019 2020				BUSINESS: Edison International (formerly SCECorp) is a holding company for Southern California Edison Company (SCE), which supplies electricity to 5.2 mill. customers in a 50,000-sq.-mi. area in central, coastal, & southern CA (excl. Los Angeles & San Diego). Edison Energy is an energy svcs. co. Disc. Edison Mission Energy (independent power producer) in '12. Elec. rev. breakdown: residential, 42%; commercial, 40%; industrial, 4%; other, 14%. Generating sources: nuclear, 8%; gas, 5%; hydro, 4%; purchased, 83%. Fuel costs: 36% of revs. '20 reported depr. rate: 3.6%. Has 13,400 empls. Chairman: William P. Sullivan. Pres. & CEO: Pedro J. Pizarro. Inc.: CA. Address: 2244 Walnut Grove Ave., P.O. Box 976, Rosemead, CA 91770. Tel.: 626-302-2222. Web: www.edison.com.															
% Change Retail Sales (KWH)				-4 -2.7 +7															
Avg. Indust. Use (MWH)				667 657 589															
Avg. Indust. Revs. per KWH (c)				NA NA NA															
Capacity at Peak (Mw)				NA NA NA															
Peak Load, Summer (Mw)				23766 22009 23133															
Annual Load Factor (%)				48.0 49.6 46.7															
% Change Customers (yr-end)				+6 +5 +6															
Fixed Charge Cov. (%)				NMF 172 NMF															
ANNUAL RATES Past Past Est'd '18-'20				of change (per sh) 10 Yrs. 5 Yrs. to '24-'20															
Revenues				-1.0% -1.0% 3.5%															
"Cash Flow"				-1.0% -5.5% 10.5%															
Earnings				-8.0% -18.5% NMF															
Dividends				7.0% 10.5% 3.5%															
Book Value				1.5% 1.5% 4.5%															
Cal-endar				QUARTERLY REVENUES (\$mill.) Full Year															
Mar.31 Jun.30 Sep.30 Dec.31				2018 2564 2815 4269 3009 12657															
2019 2824 2812 3741 2970 12347				2020 2790 2987 4644 3157 13578															
2021 2900 3100 4800 3200 14000				2022 3100 3250 5050 3350 14750															
Cal-endar				EARNINGS PER SHARE ^A Full Year															
Mar.31 Jun.30 Sep.30 Dec.31				2018 .82 .84 1.57 d4.49 d1.26															
2019 .64 1.57 1.35 .45 d4.49				2020 .50 .85 d.76 1.13 1.72															
2021 .65 1.10 1.40 .95 4.10				2022 .70 1.15 1.50 1.00 4.35															
Cal-endar				QUARTERLY DIVIDENDS PAID ^B Full Year															
Mar.31 Jun.30 Sep.30 Dec.31				2017 .5425 .5425 .5425 .5425 2.17															
2018 .605 .605 .605 .605 2.42				2019 .6125 .6125 .6125 .6125 2.45															
2020 .6375 .6375 .6375 .6375 2.55				2021 .6625															

(A) Dil. EPS. Excl. nonrec. gains (losses): '09, (64c); '10, 54c; '11, (\$3.33); '13, (\$1.12); '15, (\$1.18); '17, (\$1.37); '18, (15c); '19, (21c); '20, 25c; gains (loss) from disc. ops.: '12, (\$5.11); '13, 11c; '14, 57c; '15, 11c; '18, 10c. '19 EPS don't sum due to chng. in shs. Next earnings report due late Apr. (B) Div'ds paid late Jan., Apr., July, & Oct. = Div'd reinv. plan avail. (C) Incl. def'd charges. In '20: \$18.79/sh. (D) In mill. (E) Rate base: net org. cost. Rate all'd on com. eq. in '20: 10.3%; earned on avg. com. eq., '20: 4.7%. Regulatory Climate: Average.

Company's Financial Strength B+
Stock's Price Stability 75
Price Growth Persistence 45
Earnings Predictability 5

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ENTERGY CORP. NYSE-ETR										RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE														
TIMELINESS 4 Lowered 2/5/21 SAFETY 2 Raised 12/13/19 TECHNICAL 3 Raised 3/12/21 BETA .95 (1.00 = Market)										87.76	12.2 (Trailing: 12.7; Median: 13.0)	0.57	4.5%															
18-Month Target Price Range Low-High Midpoint (% to Mid) \$68-\$157 \$113 (30%)										High: 84.3 Low: 68.7	74.5 57.6	74.5 61.6	72.6 60.2	92.0 60.4	90.3 61.3	82.1 65.4	87.9 69.6	90.8 71.9	122.1 83.2	135.5 75.2	100.1 86.8	Target Price Range 2024 2025 2026						
2024-26 PROJECTIONS Price Gain Ann'l Total High Low 150 110 (+70%) (+25%) 17% 10%																				% TOT. RETURN 2/21 THIS STOCK VL ARITH. INDEX 1 yr. 22.9 50.1 3 yr. 27.4 45.4 5 yr. 46.5 108.8								
Institutional Decisions 2020 2020 2020 to Buy 283 262 312 to Sell 315 303 276 Hi's (\$000) 173722 173339 174980										Percent shares traded 30 20																		
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC 24-26										
46.61	53.94	59.47	69.15	56.82	64.27	63.67	57.94	63.86	69.71	64.54	60.55	61.35	58.23	54.63	50.51	50.75	50.95	Revenues per sh	55.50									
8.18	10.69	11.73	12.89	13.29	16.54	17.53	15.98	16.25	17.68	17.71	18.72	16.70	16.50	17.19	18.21	17.95	18.95	"Cash Flow" per sh	22.75									
4.40	5.36	5.60	6.20	6.30	6.66	7.55	6.02	4.96	5.77	5.81	6.88	5.19	5.88	6.30	6.90	5.95	6.35	Earnings per sh A	7.50									
2.16	2.16	2.58	3.00	3.00	3.24	3.32	3.32	3.32	3.32	3.34	3.42	3.50	3.58	3.66	3.74	3.86	4.08	Div'd Decl'd per sh B = †	4.80									
6.72	9.44	10.29	13.92	12.99	13.33	15.21	18.18	15.73	14.82	16.79	17.28	22.07	22.45	21.72	24.52	17.15	17.30	Cap'l Spending per sh	19.00									
35.71	40.45	40.71	42.07	45.54	47.53	50.81	51.73	54.00	55.83	51.89	45.12	44.28	46.78	51.34	54.56	57.45	60.30	Book Value per sh C	68.50									
216.83	202.67	193.12	189.36	189.12	178.75	176.36	177.81	178.37	179.24	178.39	179.13	180.52	189.06	199.15	200.24	200.00	206.00	Common Shs Outst'g D	210.00									
16.3	14.3	19.3	16.6	12.0	11.6	9.1	11.2	13.2	12.9	12.5	10.9	15.0	13.8	16.5	15.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.5									
.87	.77	1.02	1.00	.80	.74	.57	.71	.74	.68	.63	.57	.75	.75	.88	.78			Relative P/E Ratio	.95									
3.0%	2.8%	2.4%	2.9%	4.0%	4.2%	4.9%	4.9%	5.1%	4.5%	4.6%	4.6%	4.5%	4.4%	3.5%	3.6%			Avg Ann'l Div'd Yield	3.7%									
CAPITAL STRUCTURE as of 12/31/20 Total Debt \$23997 mill. Due in 5 Yrs \$9103.6 mill. LT Debt \$21206 mill. LT Interest \$723.0 mill. Incl. \$174.6 mill. of securitization bonds. (LT interest earned: 2.4x) Leases, Uncapitalized Annual rentals \$65.7 mill. Pension Assets-12/20 \$6854.4 mill. Oblig \$9143.7 mill. Pfd Stock \$254.4 mill. Pfd Div'd \$18.3 mill. 200,000 shs. 6.25%-7.5%, \$100 par; 250,000 shs. 8.75%, 1.4 mill. shs. 5.375%; all cum., without sinking fund. Common Stock 200,479,995 shs. as of 1/29/21 MARKET CAP: \$18 billion (Large Cap)										11229	10302	11391	12495	11513	10846	11074	11009	10879	10114	10300	10500	11675	12675	12225	1320	1320	Revenues (\$mill)	11675
										1367.4	1091.9	904.5	1060.0	1061.2	1249.8	950.7	1092.1	1258.2	1406.7	1406.7	1225	1320	1320	1320	1320	Net Profit (\$mill)	1610	
										17.3%	13.0%	26.7%	37.8%	2.2%	11.3%	1.8%	--	1.8%	NMF	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	Income Tax Rate	22.0%	
										8.9%	11.9%	10.1%	9.3%	7.4%	8.1%	14.7%	17.5%	16.7%	12.2%	14.0%	12.0%	12.0%	12.0%	12.0%	12.0%	AFUDC % to Net Profit	11.0%	
										52.2%	55.8%	55.1%	54.9%	57.8%	63.6%	63.2%	62.0%	62.0%	65.5%	65.0%	64.0%	64.0%	64.0%	64.0%	64.0%	64.0%	Long-Term Debt Ratio	64.0%
										46.4%	42.9%	43.6%	43.8%	40.8%	35.5%	35.5%	35.9%	37.1%	33.7%	34.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	Common Equity Ratio	35.5%
										19324	21432	22109	22842	22714	22777	22528	24602	27557	32386	34175	35400	40500	40500	40500	40500	40500	Total Capital (\$mill)	40500
										25609	27299	27882	28723	27824	27921	29664	31974	35183	38853	39975	40975	44800	44800	44800	44800	44800	Net Plant (\$mill)	44800
										8.5%	6.4%	5.4%	6.0%	6.0%	6.9%	5.7%	5.8%	5.9%	5.6%	4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	Return on Total Cap'l	5.0%
										14.8%	11.5%	9.1%	10.3%	11.1%	15.1%	11.6%	12.0%	12.0%	12.6%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	Return on Shr. Equity	11.0%
										15.0%	11.6%	9.2%	10.4%	11.2%	15.2%	11.7%	12.2%	12.1%	12.7%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	Return on Com Equity E	11.0%
										8.4%	5.2%	3.0%	4.4%	4.8%	7.7%	3.9%	4.9%	5.2%	5.9%	3.5%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	Retained to Com Eq	4.0%
										45%	56%	68%	58%	58%	50%	68%	61%	58%	55%	65%	65%	65%	65%	65%	65%	65%	All Div'ds to Net Prof	64%
ELECTRIC OPERATING STATISTICS 2018 2019 2020 % Change Retail Sales (KWH) +4.1 -1.4 -4.1 Avg. Indust. Use (MWH) 946 1070 1017 Avg. Indust. Revs. per KWH(c) 5.16 5.24 4.95 Capacity at Peak (Mw) 23121 23887 NA Peak Load, Summer (Mw) 21587 21598 NA Annual Load Factor (%) 65 64 % Change Customers (yr-end) +6 +8 +1.0										BUSINESS: Entergy Corporation supplies electricity to 2.9 million customers through subsidiaries in Arkansas, Louisiana, Mississippi, Texas, and New Orleans (regulated separately from Louisiana). Distributes gas to 202,000 customers in Louisiana. Has a nonutility subsidiary that owns four nuclear units (two no longer operating). Electric revenue breakdown: residential, 39%; commercial, 25%; industrial, 26%; other, 10%. Generating sources: gas, 47%; nuclear, 29%; coal, 3%; purchased, 21%. Fuel costs: 24% of revenues. '20 reported depreciation rate: 2.8%. Has 13,000 employees. Chairman & CEO: Leo P. Denault. Incorporated: Delaware. Address: 639 Loyola Avenue, P.O. Box 61000, New Orleans, Louisiana 70161. Telephone: 504-576-4000. Internet: www.entergy.com.																		
Fixed Charge Cov. (%) NMF 165 202										Investors should not be alarmed by the earnings decline we estimate for Entergy in 2021. In the fourth quarter of 2020, the company benefited from a \$396 million tax credit as a result of an IRS settlement. Entergy has booked similar credits in recent years, which is why its tax rate is usually low or negative. We are not assuming any such income in our 2021 estimate, which is within the company's guidance of \$5.80-\$6.10 a share. The utility should benefit from rate relief and growth in kilowatt-hour sales resulting from an improving economy. These factors point to higher profits in 2022, within Entergy's preliminary expectation of \$6.15-\$6.45 a share.																		
ANNUAL RATES Past Past Est'd '18-'20 of change (per sh) 10 Yrs. 5 Yrs. to '24-'26 Revenues -1.5% -4.0% .5% "Cash Flow" 2.0% -- 4.5% Earnings -- 3.0% 3.0% Dividends 1.5% 2.0% 4.5% Book Value 1.0% -1.0% 5.0%										We assume the company's utilities will be able to recover these expenses through the fuel-adjustment clause. They will work with the regulators on a recovery plan, given the magnitude of these costs. Entergy received a disappointing rate order in Arkansas. The utility sought an increase of \$73 million under the state's Formula Rate Plan (FRP), but was granted just \$1 million. The commission agreed to a rehearing. Entergy also wants a five-year extension of the FRP. The regulators' decision is expected later this month. Other regulatory matters are pending. Entergy Louisiana is asking the state commission for an extension of its FRP. Entergy Texas has filed to update its generation cost recovery rider to include new gas-fired generating assets. Untimely Entergy stock has been one of the worst-performing electric utility issues in 2021. The price has declined 12%, and there doesn't appear to be a specific reason for the underperformance. The dividend yield is above the utility average, and the equity has appeal for the 18-month and 3- to 5-year periods.																		
Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year																							
	Mar.31	Jun.30	Sep.30	Dec.31																								
2018	2724	2669	3104	2512	11009																							
2019	2610	2666	3141	2462	10878																							
2020	2427	2413	2904	2370	10114																							
2021	2600	2500	2900	2300	10300																							
2022	2700	2600	2900	2300	10500																							
Cal-endar	EARNINGS PER SHARE A				Full Year																							
	Mar.31	Jun.30	Sep.30	Dec.31																								
2018	.73	1.34	3.42	.39	5.88																							
2019	1.32	1.22	1.82	1.94	6.30																							
2020	.59	1.79	2.59	1.93	6.90																							
2021	1.15	1.50	2.60	.70	5.95																							
2022	1.25	1.60	2.75	.75	6.35																							
Cal-endar	QUARTERLY DIVIDENDS PAID B = †				Full Year																							
	Mar.31	Jun.30	Sep.30	Dec.31																								
2017	.87	.87	.87	.89	3.50																							
2018	.89	.89	.89	.91	3.58																							
2019	.91	.91	.91	.93	3.66																							
2020	.93	.93	.93	.95	3.74																							
2021	.95																											

(A) Diluted EPS. Excl. nonrec. losses: '05, 21¢; '12, \$1.26; '13, \$1.14; '14, 56¢; '15, \$6.99; '16, \$10.14; '17, \$2.91; '18, \$1.25. Next earnings report due early May. (B) Div'ds historically paid in early Mar., June, Sept., & Dec. (C) Div'd reinvestment plan avail. † Shareholder investment plan avail. (D) In millions. (E) Rate base: Net original cost. Allowed ROE (blended): 9.95%; earned on avg. com. eq., '20: 13.1%. Regulatory Climate: Average.

Company's Financial Strength B++
 Stock's Price Stability 90
 Price Growth Persistence 35
 Earnings Predictability 65

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EVERGY, INC. NYSE-EVRG		RECENT PRICE	P/E RATIO	Trailing: 19.8 (Median: NMF)	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE						
TIMELINESS 4 Lowered 11/13/20		53.96	16.5	61.1 50.9	67.8 54.6	76.6 42.0	55.6 51.9						
SAFETY 2 New 9/14/18													
TECHNICAL 3 Raised 3/12/21													
BETA .95 (1.00 = Market)													
18-Month Target Price Range													
Low-High Midpoint (% to Mid)													
\$39-\$97 \$68 (25%)													
2024-26 PROJECTIONS													
High Price Gain Ann'l Total													
Low 60 (+10%) 7%													
Institutional Decisions													
2020 3Q20 4Q20													
to Buy 216 260 268													
to Sell 312 279 291													
Hds(000) 184926 181645 188200													
Percent shares traded	36	24	12										
% TOT. RETURN 2/21													
THIS STOCK INDEX	-15.0	50.1	108.8										
1 yr. 3 yr. 5 yr.		45.4											
© VALUE LINE PUB. LLC													
2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022													
Revenues per sh	16.75	22.71	21.66	22.15	22.60	25.00	226.64	226.84	226.84	230.00	230.00	230.00	25.00
"Cash Flow" per sh	4.89	7.18	7.06	7.80	8.05	9.25	22.7	21.7	21.7	21.7	21.7	21.7	9.25
Earnings per sh ^A	2.50	2.79	2.72	3.40	3.55	4.25	22.7	21.7	21.7	21.7	21.7	21.7	4.25
Div'd Decl'd per sh ^B	1.74	1.93	2.05	2.17	2.29	2.65	22.7	21.7	21.7	21.7	21.7	21.7	2.65
Cap'l Spending per sh	4.19	5.34	6.88	8.15	8.00	8.00	22.7	21.7	21.7	21.7	21.7	21.7	8.00
Book Value per sh ^C	39.28	37.82	38.50	39.75	41.00	45.25	22.7	21.7	21.7	21.7	21.7	21.7	45.25
Common Shs Outst'g ^D	255.33	226.64	226.84	226.84	230.00	230.00	22.7	21.7	21.7	21.7	21.7	21.7	230.00
Avg Ann'l P/E Ratio	22.7	21.8	21.7	21.7	21.7	21.7	22.7	21.7	21.7	21.7	21.7	21.7	17.0
Relative P/E Ratio	1.23	1.16	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	.95
Avg Ann'l Div'd Yield	3.1%	3.2%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.7%
Revenues (\$mill)	4275.9	5147.8	4913.4	5100	5200	5750	5147.8	4913.4	5100	5200	5750	5750	5750
Net Profit (\$mill)	535.8	669.9	618.3	795	830	975	669.9	618.3	795	830	975	975	975
Income Tax Rate	9.8%	12.6%	14.1%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
AFUDC % to Net Profit	2.5%	2.5%	5.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Long-Term Debt Ratio	40.0%	50.6%	51.3%	51.0%	51.5%	51.5%	51.0%	51.3%	51.0%	51.5%	51.5%	51.5%	51.5%
Common Equity Ratio	60.0%	49.4%	48.7%	49.0%	48.5%	48.5%	49.0%	48.7%	49.0%	48.5%	48.5%	48.5%	48.5%
Total Capital (\$mill)	16716	17337	17924	18750	19375	21500	17337	17924	18750	19375	21500	21500	21500
Net Plant (\$mill)	18952	19346	20106	20975	21775	23900	19346	20106	20975	21775	23900	23900	23900
Return on Total Cap'l	4.0%	4.8%	4.5%	5.0%	5.0%	5.5%	4.8%	4.5%	5.0%	5.0%	5.5%	5.5%	5.5%
Return on Shr. Equity	5.3%	7.8%	7.1%	8.5%	8.5%	9.0%	7.8%	7.1%	8.5%	8.5%	9.0%	9.0%	9.0%
Return on Com Equity ^E	5.3%	7.8%	7.1%	8.5%	8.5%	9.0%	7.8%	7.1%	8.5%	8.5%	9.0%	9.0%	9.0%
Retained to Com Eq	.6%	2.4%	1.8%	3.0%	3.0%	3.5%	2.4%	1.8%	3.0%	3.0%	3.5%	3.5%	3.5%
All Div'ds to Net Prof	89%	69%	75%	62%	63%	62%	69%	75%	62%	63%	62%	62%	62%
<p>BUSINESS: Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Through its subsidiaries (now doing business under the Evergy name), provides electric service to 1.6 million customers in Kansas and Missouri, including the greater Kansas City area. Electric revenue breakdown: residential, 39%; commercial, 33%; industrial, 12%; wholesale, 5%; other, 11%. Generating sources: coal, 54%; nuclear, 17%; purchased, 29%. Fuel costs: 22% of revenues. '20 reported deprec. rate: 3%. Has 5,100 employees. Chairman: Mark A. Ruelle. President & Chief Executive Officer: David A. Campbell. Incorporated: Missouri. Address: 1200 Main Street, Kansas City, Missouri 64105. Telephone: 816-556-2200. Internet: www.evergy.com.</p>													
<p>We have raised our 2021 earnings estimate for Evergy by \$0.25 a share, to \$3.40. Our previous estimate of \$3.15 a share was near the low end of the company's guidance (on a GAAP basis) of \$3.14-\$3.24. Evergy has a nonregulated energy-marketing subsidiary that typically contributes \$0.03-\$0.07 a share to annual income. During the cold spell in Texas, this unit had a long position that benefited from the surge in gas and power prices. Potentially, Evergy might have earned about three times the upper end of its yearly range. We will include this benefit in our earnings presentation even though this is not included in management's guidance. Gas and purchased-power costs for Evergy's utilities rose sharply, but we assume that all of these will be recoverable through the fuel-adjustment clause. Other positive factors include an assumed return to normal weather patterns, volume growth as the economy improves, earnings from additional investment in the utility's transmission system, and effective expense control. Most of these factors should produce higher profits in 2022, despite a tough comparison in the first quarter.</p>													
<p>Evergy reached an agreement with two investor groups, Bluescape Energy Partners and Elliott Investment Management. The investors had been pushing the company to look for a buyer. Indeed, in November, Reuters reported that the company turned down an offer from NextEra Energy. Instead, Bluescape will invest about \$115 million in Evergy (through the purchase of newly issued stock) and will get warrants. Evergy appointed the head of Bluescape to its board, along with another board member. Bluescape and Elliott signed standstill agreements with Evergy, effective through the date of the 2022 annual meeting.</p>													
<p>The company is proceeding with its Sustainability Transformation Plan. Evergy's capital budget for 2021 through 2025 is \$9.2 billion. This includes \$675 million for renewable-energy projects in 2023 and 2024.</p>													
<p>This stock is untimely, but may interest income-oriented accounts. The dividend yield is about average for a utility. Total return potential is above average for the 18-month and 3- to 5-year periods.</p>													
<p><i>Paul E. Debbas, CFA March 12, 2021</i></p>													
Fixed Charge Cov. (%)	322	305	286										
ANNUAL RATES	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26										
Revenues	--	--	3.5%										
"Cash Flow"	--	--	6.5%										
Earnings	--	--	8.0%										
Dividends	--	--	5.5%										
Book Value	--	--	2.5%										
Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year								
	Mar.31	Jun.30	Sep.30	Dec.31									
2018	600.2	893.4	1582	1199	4275.9								
2019	1216	1221	1577	1131	5147.8								
2020	1116	1184	1517	1094	4913.4								
2021	1250	1200	1550	1100	5100								
2022	1250	1250	1600	1100	5200								
Cal-endar	EARNINGS PER SHARE ^A				Full Year								
	Mar.31	Jun.30	Sep.30	Dec.31									
2018	.42	.56	1.32	.07	2.50								
2019	.39	.57	1.56	.28	2.79								
2020	.31	.59	1.60	.22	2.72								
2021	.60	.70	1.75	.35	3.40								
2022	.50	.75	1.85	.40	3.55								
Cal-endar	QUARTERLY DIVIDENDS PAID ^B				Full Year								
	Mar.31	Jun.30	Sep.30	Dec.31									
2017	--	--	--	--	--								
2018	.40	.40	.46	.475	1.74								
2019	.475	.475	.475	.505	1.93								
2020	.505	.505	.505	.535	2.05								
2021	.535												
(A) Diluted EPS. '18 EPS don't sum to full-year total due to change in shares, '19 due to rounding. Next earnings report due early May.													
(B) Dividends paid in mid-March, June, Sep-													
tember, and December. ■ Dividend reinvestment plan available. (C) Incl. intangibles. In '20: \$4204.8 mill., \$18.54/sh. (D) In millions. (E) Rate base: Original cost depreciated. Rate													
allowed on common equity in Missouri in '18: none specified; in Kansas in '18: 9.3%. Earned on average common equity, '20: 7.1%. Regulatory Climate: Average.													
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Company's Financial Strength	B++												
Stock's Price Stability	B5												
Price Growth Persistence	NMF												
Earnings Predictability	NMF												
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OTTER TAIL CORP. NDC-OTTR										RECENT PRICE	P/E RATIO			RELATIVE P/E RATIO			DIV'D YLD	VALUE LINE																																									
										41.29	17.2 (Trailing: 17.6; Median: 21.0)			0.80			3.8%																																										
										High: 25.4	23.5	25.3	31.9	32.7	33.4	42.6	48.7	51.9	57.7	56.9	44.0	Target Price Range																																					
										Low: 18.2	17.5	20.7	25.2	26.5	24.8	25.8	35.7	39.0	45.9	31.0	39.4	2024	2025	2026																																			
TIMELINESS 4 Lowered 2/26/21 SAFETY 2 Raised 6/17/16 TECHNICAL 4 Lowered 2/19/21 BETA .85 (1.00 = Market) 18-Month Target Price Range Low-High Midpoint (% to Mid) \$33-\$75 \$54 (30%) 2024-26 PROJECTIONS Price Gain Ann'l Total High Low 65 (+55%) 15% 45 (+10%) 6% Institutional Decisions 2020 3Q20 4Q20 to Buy 75 71 89 to Sell 82 74 63 Hld's(000) 18869 19002 19252 Percent shares traded 9 6 3										LEGENDS — 0.61 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																				% TOT. RETURN 2/21 THIS STOCK VL ARITH. INDEX 1 yr. -13.5 50.1 3 yr. 11.0 45.4 5 yr. 72.9 108.8																													
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC 24-26																																									
35.59	37.43	41.50	37.06	29.03	31.08	29.86	23.76	24.63	21.48	20.60	20.42	21.47	23.10	22.90	21.46	22.60	23.75	Revenues per sh	27.75																																								
3.35	3.39	3.55	2.81	2.76	2.60	2.36	2.71	3.02	3.09	3.14	3.44	3.70	3.96	4.11	4.29	4.55	4.80	"Cash Flow" per sh	5.75																																								
1.78	1.69	1.78	1.09	.71	.38	.45	1.05	1.37	1.55	1.56	1.60	1.86	2.06	2.17	2.34	2.45	2.60	Earnings per sh A	3.25																																								
1.12	1.15	1.17	1.19	1.19	1.19	1.19	1.19	1.19	1.21	1.23	1.25	1.28	1.34	1.40	1.48	1.56	1.64	Div'd Decl'd per sh B	1.95																																								
2.04	2.35	5.43	7.51	4.95	2.38	2.04	3.20	4.53	4.40	4.23	4.10	3.36	2.66	5.16	8.96	3.20	5.55	Cap'l Spending per sh	2.75																																								
15.80	16.67	17.55	19.14	18.78	17.57	15.83	14.43	14.75	15.39	15.98	17.03	17.62	18.38	19.46	21.00	21.85	22.80	Book Value per sh C	26.00																																								
29.40	29.52	29.85	35.38	35.81	36.00	36.10	36.17	36.27	37.22	37.86	39.35	39.56	39.66	40.16	41.47	41.60	41.70	Common Shs Outst'g D	42.00																																								
15.4	17.3	19.0	30.1	31.2	55.1	47.5	21.7	21.1	18.8	18.2	20.2	22.1	22.2	23.5	18.3	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.0																																								
.82	.93	1.01	1.81	2.08	3.51	2.98	1.38	1.19	.99	.92	1.06	1.11	1.20	1.25	.94			Relative P/E Ratio	.95																																								
4.1%	3.9%	3.5%	3.6%	5.4%	5.7%	5.6%	5.2%	4.1%	4.1%	4.3%	3.9%	3.1%	2.9%	2.7%	3.5%			Avg Ann'l Div'd Yield	3.5%																																								
CAPITAL STRUCTURE as of 12/31/20 Total Debt \$845.5 mill. Due in 5 Yrs \$251.1 mill. LT Debt \$624.4 mill. LT Interest \$35.1 mill. (LT interest earned: 4.6x)										1077.9	859.2	893.3	799.3	779.8	803.5	849.4	916.4	919.5	940	990	Revenues (\$mill)	1165																																					
Leases, Uncapitalized Annual rentals \$5.4 mill. Pension Assets-12/20 \$360.7 mill. Oblig \$428.4 mill.										16.4	39.0	50.2	56.9	58.6	62.0	73.9	82.3	86.8	95.9	100	110	Net Profit (\$mill)	135																																				
Pfd Stock None Common Stock 41,510,455 shs. as of 2/16/21 MARKET CAP: \$1.7 billion (Mid Cap)										14.5%	5.2%	21.3%	22.5%	27.0%	24.5%	25.5%	15.0%	16.7%	17.4%	17.5%	17.5%	Income Tax Rate	17.5%																																				
ELECTRIC OPERATING STATISTICS 2018 2019 2020 % Change Retail Sales (KWH) +3.4 -2 -3.9 Avg. Indust. Use (MWH) NA NA NA Avg. Indust. Revs. per KWH (c) 5.97 NA NA Capacity at Peak (Mw) NA NA NA Peak Load, Winter (Mw) 912 NA NA Annual Load Factor (%) NA NA NA % Change Customers (yr-end) +2 +1 NA										3.8%	1.7%	5.6%	3.9%	3.5%	2.2%	2.3%	4.1%	4.9%	6.4%	4.0%	5.0%	AFUDC % to Net Profit	2.0%																																				
Fixed Charge Cov. (%) 409 407 405										44.6%	44.0%	42.1%	46.5%	42.4%	43.0%	41.3%	44.7%	46.9%	41.8%	44.5%	46.5%	Long-Term Debt Ratio	40.5%																																				
ANNUAL RATES Past Past Est'd '18-'20 of change (per sh) 10 Yrs. 5 Yrs. to '24-'26 Revenues -3.5% - - 3.5% "Cash Flow" 4.0% 6.0% 5.5% Earnings 11.5% 8.0% 7.0% Dividends 1.5% 3.0% 5.5% Book Value .5% 5.0% 5.0%										54.0%	54.4%	57.9%	53.5%	57.6%	57.0%	58.7%	55.3%	53.1%	58.2%	55.5%	53.5%	Common Equity Ratio	59.5%																																				
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 241.2 226.3 227.7 221.2 916.4 2019 246.0 229.2 228.6 215.7 919.5 2020 234.7 192.8 235.8 226.8 890.1 2021 245 230 240 225 940 2022 260 240 250 240 990										1058.9	959.2	924.4	1071.3	1051.0	1175.4	1187.3	1318.9	1471.1	1495.4	1645	1775	Total Capital (\$mill)	1825																																				
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 .66 .47 .58 .35 2.06 2019 .66 .39 .62 .51 2.17 2020 .60 .42 .87 .45 2.34 2021 .68 .47 .80 .50 2.45 2022 .72 .50 .85 .53 2.60										1077.5	1049.5	1167.0	1268.5	1387.8	1477.2	1539.6	1581.1	1753.8	2049.3	2095	2235	Net Plant (\$mill)	2325																																				
Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2017 .32 .32 .32 .32 1.28 2018 .335 .335 .335 .335 1.34 2019 .35 .35 .35 .35 1.40 2020 .37 .37 .37 .37 1.48 2021 .39										3.2%	5.7%	6.8%	6.7%	6.8%	6.5%	7.3%	7.3%	7.0%	7.4%	7.0%	7.0%	Return on Total Cap'l	8.5%																																				
(A) Dil. EPS. Excl. nonrec. gains (loss): '10, (44c); '11, 26c; '13, 2c; gains (losses) from disc. ops.: '05, 33c; '06, 1c; '11, (\$1.11); '12, (\$1.22); '13, 2c; '14, 2c; '15, 2c; '16, 1c; '17, 1c. '19 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds histor. pd. in early Mar., Jun., Sept., & Dec. (C) Div'd reinv. plan avail. (D) Incl. intang. in '20: \$5.21/sh. (E) In mill. (F) Rate all'd on com. eq. in MN in '17: 9.41%; in ND in '18: 9.77%; in SD in '19: 8.75%; earn. avg. com. eq., '20: 11.6%. Reg. Clim.: MN, ND, Avg.; SD, Above Avg.										2.7%	7.3%	9.3%	9.9%	9.7%	9.3%	10.6%	11.3%	11.1%	11.0%	11.5%	11.5%	Return on Shr. Equity E	12.5%																																				
(A) Dil. EPS. Excl. nonrec. gains (loss): '10, (44c); '11, 26c; '13, 2c; gains (losses) from disc. ops.: '05, 33c; '06, 1c; '11, (\$1.11); '12, (\$1.22); '13, 2c; '14, 2c; '15, 2c; '16, 1c; '17, 1c. '19 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds histor. pd. in early Mar., Jun., Sept., & Dec. (C) Div'd reinv. plan avail. (D) Incl. intang. in '20: \$5.21/sh. (E) In mill. (F) Rate all'd on com. eq. in MN in '17: 9.41%; in ND in '18: 9.77%; in SD in '19: 8.75%; earn. avg. com. eq., '20: 11.6%. Reg. Clim.: MN, ND, Avg.; SD, Above Avg.										NMF	NMF	1.2%	2.2%	2.0%	2.1%	3.3%	4.0%	4.0%	4.1%	4.0%	4.5%	Returned to Com Eq	5.0%																																				
(A) Dil. EPS. Excl. nonrec. gains (loss): '10, (44c); '11, 26c; '13, 2c; gains (losses) from disc. ops.: '05, 33c; '06, 1c; '11, (\$1.11); '12, (\$1.22); '13, 2c; '14, 2c; '15, 2c; '16, 1c; '17, 1c. '19 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds histor. pd. in early Mar., Jun., Sept., & Dec. (C) Div'd reinv. plan avail. (D) Incl. intang. in '20: \$5.21/sh. (E) In mill. (F) Rate all'd on com. eq. in MN in '17: 9.41%; in ND in '18: 9.77%; in SD in '19: 8.75%; earn. avg. com. eq., '20: 11.6%. Reg. Clim.: MN, ND, Avg.; SD, Above Avg.										NMF	113%	87%	78%	79%	78%	69%	65%	64%	63%	63%	62%	All Div'ds to Net Prof	61%																																				
BUSINESS: Otter Tail Corporation is the parent of Otter Tail Power Company, which supplies electricity to 133,000 customers in Minnesota (53% of retail electric revenues), North Dakota (38%), and South Dakota (9%). Electric rev. breakdown: residential, 32%; commercial & farms, 36%; industrial, 30%; other, 2%. Generating sources: coal, 38%; wind & other, 18%; purchased, 44%. Fuel costs: 12% of revenues. Also has operations in manufacturing and plastics (30% of '20 operating income). '20 deprec. rate: 2.7%. Has 2,100 employees. Chairman: Nathan I. Partain. President & CEO: Charles S. MacFarlane, Inc.: Minnesota. Address: 215 South Cascade St., P.O. Box 496, Fergus Falls, Minnesota 56538-0496. Tel.: 866-410-8780. Internet: www.ottertail.com.										Otter Tail Corporation's earnings are likely to advance this year, following a surprisingly good showing in 2020. Last year, when the company reported first-quarter results, management cut its earnings guidance due to the expected effects of the weak economy on commercial and industrial volume at Otter Tail Power and income at the nonutility operations (which typically generate 25% of corporate profits). This hurt the stock price, which never recovered, falling 17% for the year. However, business conditions improved as the year went on, and the Plastics segment turned in a better-than-expected showing. The full-year tally wound up near the upper end of management's original targeted range of \$2.22-\$2.37 a share. This year, the utility has received interim rate relief in Minnesota (see below). The Manufacturing division should benefit from more-favorable business conditions. Our 2021 estimate of \$2.45 a share is within Otter Tail's targeted range of \$2.39-\$2.54. We think further improvement in the economy will produce additional profit growth in 2022. We look for a 6% earnings increase, to \$2.60 a share.										A rate case is pending in Minnesota. Otter Tail filed for an increase of \$14.5 million (6.8%), based on a 10.2% return on equity and a 52.5% common-equity ratio. An interim increase of \$6.9 million (3.2%) took effect in January. A final order is expected by November.										A large capital project began commercial operation in December, and another is expected to be completed in the current quarter. A 150-megawatt wind farm became operating at a cost of \$260 million. This was the utility's largest project ever. A 245-mw gas-fired plant is on schedule for completion this quarter at an expected cost of \$152.5 million.										The board of directors raised the dividend in the first quarter. The increase was two cents a share (5.4%) quarterly, the same as last year. Otter Tail's goals for the disbursement are annual increases of 5%-7% (in line with its target for profit growth) and a payout ratio of 60%-70%.										This untimely stock's dividend yield is average, for a utility. Total return potential is attractive for the next 18 months and average for the 3- to 5-year period.									
(A) Dil. EPS. Excl. nonrec. gains (loss): '10, (44c); '11, 26c; '13, 2c; gains (losses) from disc. ops.: '05, 33c; '06, 1c; '11, (\$1.11); '12, (\$1.22); '13, 2c; '14, 2c; '15, 2c; '16, 1c; '17, 1c. '19 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds histor. pd. in early Mar., Jun., Sept., & Dec. (C) Div'd reinv. plan avail. (D) Incl. intang. in '20: \$5.21/sh. (E) In mill. (F) Rate all'd on com. eq. in MN in '17: 9.41%; in ND in '18: 9.77%; in SD in '19: 8.75%; earn. avg. com. eq., '20: 11.6%. Reg. Clim.: MN, ND, Avg.; SD, Above Avg.										Paul E. Debbas, CFA March 12, 2021										Company's Financial Strength A Stock's Price Stability 100 Price Growth Persistence 70 Earnings Predictability 90																																							

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PINNACLE WEST NYSE-PNW				RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO		DIV/D YLD		VALUE LINE								
				82.55	18.2 (Trailing: 16.9; Median: 17.0)		0.82		4.1%										
TIMELINESS 3 Lowered 3/5/21	High: 42.7	48.9	54.7	61.9	71.1	73.3	82.8	92.5	92.6	99.8	105.5	83.8	Target Price Range 2024 2025 2026						
SAFETY 1 Raised 5/3/13	Low: 32.3	37.3	45.9	51.5	51.2	56.0	62.5	75.8	73.4	81.6	60.1	69.9							
TECHNICAL 5 Lowered 4/9/21																			
BETA .90 (1.00 = Market)	LEGENDS — 0.58 x Dividends p sh divided by Interest Rate Relative Price Strength Opts: Yes Shaded area indicates recession																		
18-Month Target Price Range	2024-26 PROJECTIONS High Price Gain Ann'l Total Low 125 (+50%) 14% Return 105 (+25%) 10%																		
Institutional Decisions	2020 3Q2020 4Q2020 to Buy 229 237 238 to Sell 245 229 222 Hld's(000) 95025 93145 93836 Percent shares traded 30 20 20																		
% TOT. RETURN 3/21 THIS STOCK VL ARITH. INDEX 1 yr. 11.8 99.7 3 yr. 12.6 51.6 5 yr. 27.8 100.0																			
© VALUE LINE PUB. LLC 24-26																			
2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Revenues per sh	36.00
30.16	34.03	35.07	33.37	32.50	30.01	29.67	30.09	31.35	31.58	31.50	31.42	31.90	32.93	30.87	31.81	32.30	32.20	"Cash Flow" per sh	14.25
5.76	9.70	9.29	8.13	8.08	6.85	7.52	7.92	8.15	8.09	9.09	9.39	9.79	11.41	11.13	10.86	11.80	12.00	Earnings per sh A	6.50
2.24	3.17	2.96	2.12	2.26	3.08	2.99	3.50	3.66	3.58	3.92	3.95	4.43	4.54	4.77	4.87	5.05	5.40	Div'd Decl'd per sh B	4.25
1.93	2.03	2.10	2.10	2.10	2.10	2.10	2.10	2.23	2.33	2.44	2.56	2.70	2.87	3.04	3.23	3.42	3.63	Cap'l Spending per sh	12.00
6.39	7.59	9.37	9.46	7.64	7.03	8.26	8.24	9.36	8.38	9.84	11.64	12.80	10.73	10.76	11.93	13.90	13.30	Book Value per sh C	58.00
34.57	34.48	35.15	34.16	32.69	33.86	34.98	36.20	38.07	39.50	41.30	43.15	44.80	46.59	48.30	49.96	51.50	54.25	Common Shs Outst'g D	118.00
99.08	99.96	100.49	100.89	101.43	108.77	109.25	109.74	110.18	110.57	110.98	111.34	111.75	112.10	112.44	112.76	113.00	118.00	Avg Ann'l P/E Ratio	17.5
19.2	13.7	14.9	16.1	13.7	12.6	14.6	14.3	15.3	15.9	16.0	18.7	19.3	17.8	19.4	16.7	Bold figures are Value Line estimates		Relative P/E Ratio	.95
1.02	.74	.79	.97	.91	.80	.92	.91	.86	.84	.81	.98	.97	.96	1.03	.85			Avg Ann'l Div'd Yield	3.7%
4.5%	4.7%	4.8%	6.2%	6.8%	5.4%	4.8%	5.3%	4.0%	4.1%	3.9%	3.5%	3.2%	3.5%	3.3%	4.0%				
CAPITAL STRUCTURE as of 12/31/20				Total Debt \$6483.3 mill. Due in 5 Yrs \$1573.0 mill. LT Debt \$6314.3 mill. LT Interest \$232.9 mill. Incl. \$13.4 mill. Palo Verde sale leaseback lessor notes. (LT interest earned: 3.8x) Leases, Uncapitalized Annual rentals \$14.5 mill. Pension Assets-12/20 \$3886.5 mill. Oblig \$3902.9 mill.															
Pfd Stock None				3241.4 3301.8 3454.6 3491.6 3495.4 3498.7 3565.3 3691.2 3471.2 3587.0 3650 3800 328.2 387.4 406.1 397.6 437.3 442.0 497.8 511.0 538.3 550.6 570 625 34.0% 36.2% 34.4% 34.2% 34.3% 33.9% 32.5% 20.2% 20.2% 12.1% 12.0% 12.0% 12.8% 9.7% 10.0% 11.6% 11.8% 14.1% 13.9% 15.2% 9.3% 9.5% 12.0% 11.0% 44.1% 44.6% 40.0% 41.0% 43.0% 45.6% 48.9% 47.0% 47.1% 52.8% 55.5% 55.0% 55.9% 55.4% 60.0% 59.0% 57.0% 54.4% 51.1% 53.0% 52.9% 47.2% 44.5% 45.0%															
Common Stock 112,743,312 shs. as of 3/11/21				6840.9 7171.9 6990.9 7398.7 8046.3 8825.4 9796.4 9861.1 10263 11948 13125 14225 9962.3 10396 10889 11194 11809 12714 13445 14030 14523 15159 15975 16750 6.4% 6.8% 7.1% 6.4% 6.4% 6.0% 6.1% 6.2% 6.3% 5.5% 5.5% 5.5% 8.6% 9.8% 9.7% 9.1% 9.5% 9.2% 9.9% 9.8% 9.9% 9.8% 10.0% 10.0% 8.6% 9.8% 9.7% 9.1% 9.5% 9.2% 9.9% 9.8% 9.9% 9.8% 10.0% 10.0%															
MARKET CAP: \$9.3 billion (Large Cap)				2.8% 4.1% 4.1% 3.5% 3.9% 3.5% 4.2% 3.9% 3.8% 3.5% 3.0% 3.0% 68% 58% 58% 62% 59% 62% 58% 60% 61% 64% 67% 67%															
ELECTRIC OPERATING STATISTICS				2018 2019 2020 % Change Retail Sales (KWH) -3 -3 NA Avg. Indust. Use (MWH) 662 714 NA Avg. Indust. Revs. per KWH (¢) 8.40 7.88 NA Capacity at Peak (Mw) 8643 8241 NA Peak Load, Summer (Mw) 7320 7115 NA Annual Load Factor (%) 47.0 47.1 NA % Change Customers (yr-end) +2.0 +2.0 +2.3															
Fixed Charge Cov. (%)				318 286 318															
ANNUAL RATES				Past Past Est'd '18-'20 of change (per sh) 10 Yrs. 5 Yrs. to '24-'26 Revenues -- -- 2.0% "Cash Flow" 4.0% 5.5% 3.5% Earnings 6.5% 5.0% 5.0% Dividends 4.0% 5.5% 5.5% Book Value 3.5% 4.0% 3.5%															
QUARTERLY REVENUES (\$ mill.)				Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 692.7 974.1 1268.0 756.4 3691.2 2019 740.5 869.5 1190.8 760.4 3471.2 2020 661.9 929.6 1254.5 741.0 3587.0 2021 750 900 1250 750 3650 2022 775 950 1300 775 3800															
EARNINGS PER SHARE A				Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 .03 1.48 2.80 .23 4.54 2019 .16 1.28 2.77 .57 4.77 2020 .27 1.71 3.07 d.17 4.87 2021 .20 1.50 3.00 .35 5.05 2022 .20 1.65 3.20 .35 5.40															
QUARTERLY DIVIDENDS PAID B				Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2017 .655 .655 .655 .695 2.66 2018 .695 .695 .695 .737 2.82 2019 .7375 .7375 .7375 .7825 3.00 2020 .7825 .7825 .7825 .83 3.18 2021 .83															
BUSINESS: Pinnacle West Capital Corporation is a holding company for Arizona Public Service Company (APS), which supplies electricity to 1.3 million customers in most of Arizona, except about half of the Phoenix metro area, the Tucson metro area, and Mohave County in northwestern Arizona. Discontinued SunCor real estate subsidiary in '10. Electric revenue breakdown: residential, 51%; commercial, 38%; industrial, 5%; other, 6%. Generating sources: nuclear, 28%; gas & other, 28%; coal, 24%; purchased, 20%. Fuel costs: 28% of revenues. '20 reported deprec. rate: 2.8%. Has 6,000 employees. Chairman, President & CEO: Jeffrey B. Guldner, Inc. AZ. Address: 400 North Fifth St., P.O. Box 53999, Phoenix, AZ 85072-3999. Tel.: 602-250-1000. Internet: www.pinnaclewest.com.				<p>Pinnacle West's utility subsidiary is awaiting a decision on its general rate case. Arizona Public Service is seeking an increase of \$169 million (5.1%), based on a return on equity of 10% and a common-equity ratio of 54.7%. The utility also wants the Arizona Corporation Commission (ACC) to grant regulatory mechanisms for the recovery of clean-energy investments and certain expenses, such as property taxes. The staff of the ACC recommended a hike of \$59.8 million (1.8%), based on a ROE of 9.4% and a common-equity ratio of 54.7%. However, the most important recommendation will come from an administrative law judge in the second quarter. There is no statutory time frame in which the ACC must issue an order, but it appears all but certain that this will occur well after the start of the seasonally strong third quarter.</p> <p>There is more uncertainty than usual to our earnings estimates for 2021 and 2022. To a large extent, profits will be affected by the amount (and the timing, this year) of the rate order. In fact, management will not provide earnings guidance for 2021 until after the rate order is received. We have cut our 2021 earnings estimate from \$5.15 a share to \$5.00 because the rate order is likely to come later than we had thought three months ago.</p> <p>A few things are known that will affect the year-to-year comparisons. The second and third quarters benefited from hotter-than-normal weather in 2020. On the other hand, the fourth-quarter comparison will be easy because Pinnacle West took a \$0.17-a-share charge for a regulatory refund and because the company accelerated some expenses into late 2020 thanks to the headroom that the favorable weather patterns provided.</p> <p>Finances are strong. The company's fixed-charge coverage is well above the industry average. The common-equity ratio is sound. Pinnacle West has consistently earned a healthy ROE. Its Financial Strength rating is A+, our second highest. This high-quality stock is attractive for income-oriented investors. The dividend yield is above average, even by utility standards. The equity's prospects are attractive for the 18-month and 3- to 5-year periods.</p> <p><i>Paul E. Debbas, CFA April 23, 2021</i></p>															
(A) Diluted EPS. Excl. nonrec. gain (loss): '09, (\$1.45); '17, 8¢; gains (losses) from discount ops.: '05, (36¢); '06, 10¢; '08, 28¢; '09, (13¢); '10, 18¢; '11, 10¢; '12, (5¢). '19, '20 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds historically paid in early Mar., June, Sept., & Dec. There were 5 declarations in '12. ■ Div'd reinvestment plan avail.				(C) Incl. deferred charges. In '20: \$19.31/sh. (D) In mill. (E) Rate base. Fair value. Rate allowed on com. eq. in '17: 10.0%; earned on avg. com. eq.: '20: 10.0%. Regul. Climate: Avg.				Company's Financial Strength A+ Stock's Price Stability 90 Price Growth Persistence 65 Earnings Predictability 95											

PORTLAND GENERAL NYSE-POR										RECENT PRICE	P/E RATIO					RELATIVE P/E RATIO		DIV'D YLD	VALUE LINE				
										49.02	19.8 (Trailing: 28.5; Median: 18.0)					0.89		3.5%					
TIMELINESS 5 Lowered 3/5/21	High: 22.7	26.0	28.1	33.3	40.3	41.0	45.2	50.1	50.4	58.4	63.1	49.0			Target Price Range								
SAFETY 3 Lowered 9/4/20	Low: 17.5	21.3	24.3	27.4	29.0	33.0	35.3	42.4	39.0	44.0	32.0	40.8			2024	2025	2026						
TECHNICAL 5 Lowered 4/9/21	LEGENDS 0.63 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																128						
BETA .90 (1.00 = Market)																	96						
18-Month Target Price Range																	80						
Low-High Midpoint (% to Mid)																	64						
\$32-\$79 \$56 (15%)																	48						
2024-26 PROJECTIONS																	40						
High Price 70 Gain (+45%) Ann'l Total Return 12% Low Price 45 Gain (-10%) Return 2%																	32						
Institutional Decisions																	24						
2020to Buy 157 3020to 147 4020to 165 to Sell 158 180 140 Hld's(000) 90761 81534 82680																	16						
Percent shares traded 21 2020 14 2021 7																	12						
2005F 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022																	% TOT. RETURN 3/21						
23.14 24.32 27.87 27.89 23.99 23.67 24.06 23.89 23.18 24.29 21.38 21.62 22.54 22.30 23.75 23.96 24.55 25.35																	THIS STOCK INDEX 3.0 99.7						
4.75 4.64 5.21 4.71 4.07 4.82 4.96 5.15 4.93 6.08 5.37 5.78 6.16 6.65 6.97 6.80 7.35 7.65																	1 yr. 29.5						
1.02 1.14 2.33 1.39 1.31 1.66 1.95 1.87 1.77 2.18 2.04 2.16 2.29 2.37 2.39 1.72 2.65 2.75																	3 yr. 51.6						
-- .68 .93 .97 1.01 1.04 1.06 1.08 1.10 1.12 1.18 1.26 1.34 1.43 1.52 1.59 1.70 1.80																	5 yr. 100.0						
4.08 5.94 7.28 6.12 9.25 5.97 3.98 4.01 8.40 12.87 6.73 6.57 5.77 6.67 6.78 8.76 7.55 6.30																	© VALUE LINE PUB. LLC 24-26						
19.15 19.58 21.05 21.64 20.50 21.14 22.07 22.87 23.30 24.43 25.43 26.35 27.11 28.07 28.99 29.18 30.10 31.00																	Revenues per sh 28.25						
62.50 62.50 62.53 62.58 75.21 75.32 75.36 75.56 78.09 78.23 88.79 88.95 89.11 89.27 89.39 89.54 89.65 89.80																	"Cash Flow" per sh 9.00						
-- 23.4 11.9 16.3 14.4 12.0 12.4 14.0 16.9 15.3 17.7 19.1 20.0 18.4 22.3 26.6																	Earnings per sh A 3.50						
-- 1.26 .63 .98 .96 .76 .78 .89 .95 .81 .89 1.00 1.01 .99 1.19 1.36																	Div'd Decl'd per sh B + 2.10						
-- 2.5% 3.3% 4.3% 5.4% 5.2% 4.4% 4.1% 3.7% 3.3% 3.1% 2.9% 3.3%																	Cap'l Spending per sh 6.25						
CAPITAL STRUCTURE as of 12/31/20																		Book Value per sh C 34.50					
Total Debt \$3341 mill. Due in 5 Yrs \$463 mill.										1813.0	1805.0	1810.0	1900.0	1898.0	1923.0	2009.0	1991.0	2123.0	2145.0	2200	2275	Revenues (\$mill) 2550	
LT Debt \$3015 mill. LT Interest \$124 mill.										147.0	141.0	137.0	175.0	172.0	193.0	204.0	212.0	214.0	155.0	240	245	Net Profit (\$mill) 315	
Incl. \$129 mill. finance leases.										28.3%	31.4%	23.2%	26.0%	20.7%	20.6%	25.3%	7.4%	11.2%	--	11.0%	11.0%	Income Tax Rate 11.0%	
(LT interest earned: 2.0x)										5.4%	7.1%	14.6%	33.7%	19.8%	16.6%	8.8%	8.0%	7.0%	15.5%	8.0%	7.0%	AFUDC % to Net Profit 5.0%	
Leases, Uncapitalized Annual rentals \$8 mill.										49.6%	47.1%	51.3%	52.7%	47.8%	48.4%	50.1%	46.5%	51.3%	53.6%	53.5%	53.5%	Long-Term Debt Ratio 52.5%	
Pension Assets-12/20 \$753 mill.										50.4%	52.9%	48.7%	47.3%	52.2%	51.6%	49.9%	53.5%	48.7%	46.4%	46.5%	46.5%	Common Equity Ratio 47.5%	
Pfd Stock None										3298.0	3264.0	3735.0	4037.0	4329.0	4544.0	4842.0	4684.0	5323.0	5628.0	5815	6000	Total Capital (\$mill) 6550	
Oblig \$1010 mill.										4285.0	4392.0	4880.0	5679.0	6012.0	6434.0	6741.0	6887.0	7161.0	7539.0	7795	7920	Net Plant (\$mill) 8175	
Common Stock 89,575,693 shs. as of 3/1/21										6.2%	5.9%	5.1%	5.8%	5.4%	5.6%	5.5%	5.8%	5.1%	4.0%	5.0%	5.0%	5.0%	Return on Total Cap'l 6.0%
MARKET CAP: \$4.4 billion (Mid Cap)										8.8%	8.2%	7.5%	9.2%	7.6%	8.2%	8.4%	8.5%	8.3%	5.9%	9.0%	9.0%	9.0%	Return on Shr. Equity 10.0%
ELECTRIC OPERATING STATISTICS										8.8%	8.2%	7.5%	9.2%	7.6%	8.2%	8.4%	8.5%	8.3%	5.9%	9.0%	9.0%	9.0%	Return on Com Equity E 10.0%
2018 2019 2020										4.1%	3.5%	2.9%	4.6%	3.3%	3.5%	3.6%	3.5%	3.1%	.6%	3.0%	3.0%	3.0%	Retained to Com Eq 4.0%
% Change Retail Sales (KWH)										54%	57%	61%	50%	56%	57%	58%	59%	63%	90%	64%	66%	66%	All Div'ds to Net Prof 60%
Avg. Indust. Use (MWH)										BUSINESS: Portland General Electric Company (PGE) provides electricity to 908,000 customers in 51 cities in a 4,000-square-mile area of Oregon, including Portland and Salem. The company is in the process of decommissioning the Trojan nuclear plant, which it closed in 1993. Electric revenue breakdown: residential, 49%; commercial, 29%; industrial, 10%; other, 12%. Generating sources: gas, 33%; coal, 13%; wind, 9%; hydro, 5%; purchased, 40%. Fuel costs: 33% of revenues. '20 reported depreciation rate: 3.5%. Has 2,900 full-time employees. Chairman: Jack E. Davis. President and Chief Executive Officer: Maria M. Pope. Incorporated: Oregon. Address: 121 S.W. Salmon Street, Portland, Oregon 97204. Telephone: 503-464-8000. Internet: www.portlandgeneral.com.													
Avg. Indust. Revs. per KWH (c)										Portland General Electric's earnings should return to a more-typical level in 2021. In the third quarter of 2020, an energy-trading loss hurt the bottom line by \$1.03 a share. Adding this back to the reported profits of \$1.72 a share results in a total of \$2.75, but PGE's 2021 earnings guidance of \$2.55-\$2.70 a share is short of this mark. This is because the utility isn't expected to see the favorable swing in power-supply costs that it did last year, and will probably have lower production tax credits from wind generation, as 2020 was a better-than-normal year for wind production (up 23% from 2019). We are sticking with our 2021 earnings estimate of \$2.65 a share.													
Capacity at Peak (Mw)										The utility is evaluating its need to file a general rate case. PGE's last rate hike was at the start of 2019. We note that the company has deferred \$15 million of wildfire-related costs and \$10 million of coronavirus-related costs (mostly bad-debt expense), for which it will need recovery eventually.													
Peak Load, Summer (Mw)										We estimate a 4% earnings increase in 2022. PGE should benefit from modest load growth and effective expense manage-													
Annual Load Factor (%)										ment. Our estimate of \$2.75 a share might well prove conservative if the company files a rate case and gets some rate relief next year.													
% Change Customers (yr-end)										We think the board of directors raised the dividend shortly after our report went to press. Last year, the usual second-period dividend review was postponed one quarter due to the recession. Management has indicated that the board will resume its usual practice this year. We estimate an increase of \$0.09 a share (5.5%) in the annual disbursement. PGE's goals for the dividend are a yearly growth rate of 5%-7% and a payout ratio of 60%-70%.													
Fixed Charge Cov. (%)										A large capital project should be completed this year. PGE is building an integrated operations center at an expected cost of \$200 million. This is one reason why the capital budget was and is higher than usual in 2020 and 2021.													
ANNUAL RATES Past Past Est'd '18-'20										The dividend yield of this untimely equity is about average for a utility. Total return prospects for the next 18 months are good, but are only average for the 3- to 5-year period.													
of change (per sh) 10 Yrs. 5 Yrs. to '24-'26										Paul E. Debbas, CFA April 23, 2021													
Revenues -1.0% .5% 3.0%																							
"Cash Flow" 4.0% 4.5% 5.0%																							
Earnings 4.0% 1.5% 8.5%																							
Dividends 4.0% 6.0% 5.5%																							
Book Value 3.0% 3.5% 3.0%																							
Cal-endar																							
QUARTERLY REVENUES (\$ mill.)																							
Mar.31 Jun.30 Sep.30 Dec.31 Full Year																							
2018 493.0 449.0 525.0 524.0 1991.0																							
2019 573.0 460.0 542.0 548.0 2123.0																							
2020 573.0 469.0 547.0 556.0 2145.0																							
2021 580 475 570 575 2200																							
2022 600 490 590 595 2275																							
Cal-endar																							
EARNINGS PER SHARE A																							
Mar.31 Jun.30 Sep.30 Dec.31 Full Year																							
2018 .72 .51 .59 .55 2.37																							
2019 .82 .28 .61 .68 2.39																							
2020 .91 .43 d.19 .57 1.72																							
2021 .85 .45 .60 .75 2.65																							
2022 .88 .47 .62 .78 2.75																							
Cal-endar																							
QUARTERLY DIVIDENDS PAID B + 1																							
Mar.31 Jun.30 Sep.30 Dec.31 Full Year																							
2017 .32 .32 .34 .34 1.32																							
2018 .34 .34 .3625 .3625 1.41																							
2019 .3625 .3625 .385 .385 1.50																							
2020 .385 .385 .385 .4075 1.56																							
2021 .4075 .4075																							

(A) Diluted EPS. Excl. nonrecurring losses: '13, 42c; '17, 19c. Next earnings report due late April. (B) Div'ds paid mid-Jan., Apr., July, and Oct. (C) Div'd reinvestment plan avail. + Shareholder investment plan avail. (D) Incl. deferred charges. In '20: \$569 mill., \$6.35/sh. (E) In mill. outstanding when stock began trading in '06. (F) '05 per-share data are pro forma, based on shs. (G) Rate base: Net orig. cost. Rate allowed on com. eq. in '19: 9.5%; earned on avg. com. eq., '20: 6.0%. Regulatory Climate: Average. (H) '05 Company's Financial Strength B++ Stock's Price Stability 90 Price Growth Persistence 70 Earnings Predictability 90

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XCEL ENERGY NDQ-XEL		RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE																
TIMELINESS 3 Lowered 3/19/21 SAFETY 1 Raised 5/1/15 TECHNICAL 5 Lowered 4/9/21 BETA .80 (1.00 = Market)		67.91	23.5 (Trailing: 24.4; Median: 17.0)	1.06	2.7%																	
18-Month Target Price Range Low-High Midpoint (% to Mid) \$46-\$99 \$73 (5%)						Target Price Range 2024 2025 2026 160 120 100 80 60 50 40 30 20 15																
2024-26 PROJECTIONS Price Gain Ann'l Total High Low (+10%) (-10%) 5% Return 75 60 Nil Nil						% TOT. RETURN 3/21 THIS STOCK INDEX 1 yr. 13.3 99.7 3 yr. 59.2 51.6 5 yr. 84.6 100.0																
Institutional Decisions 2020 2020 4Q2020 to Buy 343 356 411 to Sell 366 362 350 Hld's(000) 412864 407854 405434		Percent shares traded 30 20 10																				
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26	
		23.86	24.16	23.40	24.69	21.08	21.38	21.90	20.76	21.92	23.11	21.72	21.90	22.46	22.44	21.98	21.45	22.20	23.00	Revenues per sh	25.25	
		3.28	3.61	3.45	3.50	3.48	3.51	3.79	4.00	4.10	4.28	4.56	5.04	5.47	5.92	6.25	6.61	7.15	7.70	"Cash Flow" per sh	9.25	
		1.20	1.35	1.35	1.46	1.49	1.56	1.72	1.85	1.91	2.03	2.10	2.21	2.30	2.47	2.64	2.79	2.95	3.10	Earnings per sh A	3.75	
		.85	.88	.91	.94	.97	1.00	1.03	1.07	1.11	1.20	1.28	1.36	1.44	1.52	1.62	1.72	1.83	1.94	Div'd Decl'd per sh B	2.30	
		3.25	4.00	4.89	4.66	3.91	4.60	4.53	5.27	6.82	6.33	7.26	6.42	6.54	7.70	8.05	9.99	8.30	8.70	Cap'l Spending per sh	8.50	
		13.37	14.28	14.70	15.35	15.92	16.76	17.44	18.19	19.21	20.20	20.89	21.73	22.56	23.78	25.24	27.12	28.45	29.85	Book Value per sh C	34.25	
		403.39	407.30	428.78	453.79	457.51	482.33	486.49	487.96	497.97	505.73	507.54	507.22	507.76	514.04	524.54	537.44	540.00	544.00	Common Shs Outst'g D	553.00	
		15.4	14.8	16.7	13.7	12.7	14.1	14.2	14.8	15.0	15.4	16.5	18.5	20.2	18.9	22.3	23.9	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	18.0	
		.82	.80	.89	.82	.85	.90	.89	.94	.84	.81	.83	.97	1.02	1.02	1.19	1.22			Relative P/E Ratio	1.00	
		4.6%	4.4%	4.0%	4.7%	5.1%	4.5%	4.2%	3.9%	3.9%	3.8%	3.7%	3.3%	3.1%	3.3%	2.7%	2.6%			Avg Ann'l Div'd Yield	3.4%	
CAPITAL STRUCTURE as of 12/31/20 Total Debt \$20650 mill. Due in 5 Yrs \$4411 mill. LT Debt \$19645 mill. LT Interest \$759 mill. Incl. \$73 mill. finance leases. (LT interest earned: 2.7x)		10655	10128	10915	11686	11024	11107	11404	11537	11529	11526	12000	12500	Revenues (\$mill)	14000							
		841.4	905.2	948.2	1021.3	1063.6	1123.4	1171.0	1261.0	1372.0	1473.0	1585	1690	Net Profit (\$mill)	2035							
		35.8%	33.2%	33.8%	33.9%	35.8%	34.1%	30.7%	12.6%	8.5%	--	NMF	NMF	Income Tax Rate	NMF							
		9.4%	10.8%	13.4%	12.5%	7.7%	7.8%	9.4%	12.4%	8.3%	10.7%	7.0%	7.0%	AFUDC % to Net Profit	7.0%							
		51.1%	53.3%	53.3%	53.0%	54.1%	56.3%	55.9%	56.4%	56.8%	57.4%	58.0%	57.5%	Long-Term Debt Ratio	58.0%							
Leases, Uncapitalized Annual rentals \$273 mill. Pension Assets-12/20 \$3599 mill.		48.9%	46.7%	46.7%	47.0%	45.9%	43.7%	44.1%	43.6%	43.2%	42.6%	42.0%	42.5%	Common Equity Ratio	42.0%							
		17331	19018	20477	21714	23092	25216	25975	28025	30646	34220	36425	38100	Total Capital (\$mill)	45100							
		22353	23809	26122	28757	31206	32842	34329	36944	39483	42950	45150	47400	Net Plant (\$mill)	52900							
Pfd Stock None		6.5%	6.1%	6.0%	6.0%	5.8%	5.7%	5.8%	5.7%	5.6%	5.4%	5.5%	5.5%	Return on Total Cap'l	5.5%							
Common Stock 537,648,833 shs. as of 2/11/21		9.9%	10.2%	9.9%	10.0%	10.0%	10.2%	10.3%	10.4%	10.4%	10.1%	10.5%	10.5%	Return on Shr. Equity	10.5%							
MARKET CAP: \$37 billion (Large Cap)		9.9%	10.2%	9.9%	10.0%	10.0%	10.2%	10.3%	10.4%	10.4%	10.1%	10.5%	10.5%	Return on Com Equity E	10.5%							
		4.3%	4.7%	4.5%	4.5%	4.3%	4.0%	3.9%	4.3%	4.4%	4.2%	4.0%	4.0%	Retained to Com Eq	4.0%							
		56%	54%	54%	55%	57%	61%	62%	58%	58%	58%	62%	62%	All Div'ds to Net Prof	62%							
ELECTRIC OPERATING STATISTICS		2018	2019	2020	BUSINESS: Xcel Energy Inc. is the parent of Northern States Power, which supplies electricity to Minnesota, Wisconsin, North Dakota, South Dakota & Michigan & gas to Minnesota, Wisconsin, North Dakota & Michigan; P.S. of Colorado, which supplies electricity & gas to Colorado; & Southwestern Public Service, which supplies electricity to Texas & New Mexico. Customers: 3.7 mill. elec., 2.1 mill. gas. Elec. rev. breakdown: res'l, 31%; sm. comm'l & ind'l, 36%; lg. comm'l & ind'l, 18%; other, 15%. Generating sources not avail. Fuel costs: 36% of revs. '20 reported depr. rate: 3.4%. Has 11,400 empls. Chairman & CEO: Ben Fowke. President & COO: Bob Frenzel. Inc.: MN. Address: 414 Nicollet Mall, Minneapolis, MN 55401. Tel.: 612-330-5500. Internet: www.xcelenergy.com.																	
% Change Retail Sales (KWH) +3.2 -1.2 -2.3 Large C & I Use (MWH) 23004 NA NA Large C & I Revs. per KWH (¢) 5.91 5.96 5.78 Capacity at Peak (Mw) NA NA NA Peak Load, Summer (Mw) 20293 20146 19665 Annual Load Factor (%) NA NA NA % Change Customers (yr-end) +1.1 +1.0 NA		281	272	252	We expect Xcel Energy to continue to post steady earnings growth in 2021 and 2022. The company's utilities are active in the regulatory arena, and Xcel benefits annually from rate increases granted that year and a full year's effect of hikes the utilities received in the previous year. Our 2021 earnings estimate is at the midpoint of the company's targeted range of \$2.90-\$3.00 a share. We estimate 5% earnings growth, to \$3.10 a share, in 2022. Xcel's goal for annual profit growth is 5%-7%. Additional rate relief will be needed in the coming years as Xcel's utilities add renewable-energy projects.																	
Fixed Charge Cov. (%)		281	272	252	Dakota, Northern States Power requested \$19 million, based on a 10.2% ROE and a 52.5% common-equity ratio. A ruling is expected in the second half of 2021. Public Service of Colorado is asking the state commission for a rider on customers' bills to recover \$325 million of wildfire-related costs from 2021 through 2025. An administrative law judge has recommended allowing the utility to defer the costs for future recovery, but no rider. An order is expected later in the current quarter. Finally, the company is seeking to recover \$970 million of excess power costs stemming from a cold spell in February.																	
ANNUAL RATES Past Past Est'd '18-'20 of change (per sh) 10 Yrs. 5 Yrs. to '24-'26		281	272	252	The board of directors raised the dividend, effective with the April payment. The increase was \$0.11 a share (6.4%) annually. Xcel's goals are 5%-7% yearly growth in the disbursement and a payout ratio of 60%-70%.																	
		Revenues	--	-5%	6.5%	This high-quality equity has a high valuation. The dividend yield is nearly a percentage point below the utility average. The recent quotation is well within our 2024-2026 Target Price Range, so total return potential over that time frame is low.																
		"Cash Flow"	6.0%	7.5%	6.5%	Paul E. Debbas, CFA April 23, 2021																
		Earnings	6.0%	5.5%	6.0%																	
		Dividends	5.5%	6.0%	6.0%																	
		Book Value	4.5%	5.0%	5.0%																	
QUARTERLY REVENUES (\$ mill.)		2018	2019	2020	2021	2022																
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																	
2018	2951	2658	3048	2880	11537																	
2019	3141	2577	3013	2798	11529																	
2020	2811	2586	3182	2947	11526																	
2021	3100	2700	3150	3050	12000																	
2022	3250	2750	3300	3200	12500																	
EARNINGS PER SHARE A		2018	2019	2020	2021	2022																
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																	
2018	.57	.52	.96	.42	2.47																	
2019	.61	.46	1.01	.56	2.64																	
2020	.56	.54	1.14	.54	2.79																	
2021	.65	.55	1.15	.60	2.95																	
2022	.70	.55	1.20	.65	3.10																	
QUARTERLY DIVIDENDS PAID B		2017	2018	2019	2020	2021																
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																	
2017	.34	.36	.36	.36	1.42																	
2018	.36	.38	.38	.38	1.50																	
2019	.38	.405	.405	.405	1.60																	
2020	.405	.43	.43	.43	1.70																	
2021	.43	.4575																				
Company's Financial Strength		A+ Stock's Price Stability 95 Price Growth Persistence 65 Earnings Predictability 100																				
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(A) Diluted EPS. Excl. nonrecurring gain (losses): '10, 5¢; '15, (16¢); '17, (5¢); gains (loss) on discontinued ops.: '05, 3¢; '06, 1¢; '09, (1¢); '10, 1¢. '20 EPS don't sum due to rounding. Next earnings report due late April. (B) Div'ds historically paid mid-Jan., Apr., July, and Oct. ■ Div'd reinvestment plan available. (C) Incl. intangibles. In '20: \$2373 mill., \$4.42/sh. (D) In mill. (E) Rate base: Varies. Rate allowed on com. eq. (blended): 9.6%; earned on avg. com. eq., '20: 10.6%. Regulatory Climate: Average.

Northern States Power Company, a Minnesota Corporation
Summary of Risk Premium Models for the
Proxy Group of Fourteen Electric Companies

	<u>Proxy Group of Fourteen Electric Companies</u>
Predictive Risk Premium Model (PRPM) (1)	10.84 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.80 %</u>
Average	<u><u>10.82 %</u></u>

Notes:

- (1) From page 18 of this Schedule.
- (2) From page 19 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Fourteen Electric Companies	L.T. Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)
ALLETE, Inc.	0.29%	0.37%	0.29%	2.1809	7.73%	2.76%	10.49%
Alliant Energy Corporation	0.27%	0.63%	0.27%	2.6876	9.14%	2.76%	11.90%
Ameren Corporation	0.23%	0.48%	0.23%	2.0215	5.76%	2.76%	8.52%
Duke Energy Corporation	0.31%	0.45%	0.31%	1.8316	7.12%	2.76%	9.88%
Edison International	0.43%	0.63%	0.43%	1.4796	7.95%	2.76%	10.71%
Energy Corporation	0.40%	0.71%	0.40%	2.2325	11.35%	2.76%	14.11%
Energy, Inc.	0.23%	-0.64%	0.23%	1.6574	4.63%	2.76%	7.39%
IDACORP, Inc.	0.29%	0.56%	0.29%	2.2006	7.89%	2.76%	10.65%
NorthWestern Corporation	0.35%	0.73%	0.35%	2.5201	11.01%	2.76%	13.77%
OGE Energy Corporation	0.31%	0.37%	0.31%	2.1672	8.33%	2.76%	11.09%
Otter Tail Corporation	0.37%	0.64%	0.37%	1.6443	7.64%	2.76%	10.40%
Pinnacle West Capital Corporation	0.60%	0.97%	0.60%	1.2639	9.54%	2.76%	12.30%
Portland General Electric Company	0.28%	0.52%	0.28%	2.1444	7.43%	2.76%	10.19%
Xcel Energy, Inc.	0.28%	0.54%	0.28%	2.8279	9.78%	2.76%	12.54%
						Average	11.00%
						Median	10.68%
						Average of Mean and Median	10.84%

Notes:

- (1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.
- (2) Given current market conditions, I recommend using average of the the long-term average predicted variance and the spot variance.
- (3) $(1 + (\text{Column [3]} * \text{Column [4]}^{12}) - 1)$.
- (4) From note 2 on page 31 of this Schedule.
- (5) $\text{Column [5]} + \text{Column [6]}$.

Northern States Power Company, a Minnesota Corporation
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Fourteen Electric Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.46 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	<u>0.40</u> (2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.86 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.14</u> (3)
5.	Adjusted Prospective Bond Yield	4.00 %
6.	Equity Risk Premium (4)	<u>6.80</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.80</u></u> %

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 26-27 of this Schedule).
 - (2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.40% from page 20 of this Schedule.
 - (3) Adjustment to reflect the A3/Baa1 Moody's LT issuer rating of the Utility Proxy Group as shown on page 21 of this Schedule. The 0.14% upward adjustment is derived by taking 1/2 of the spread between A2 and Baa2 Public Utility Bonds ($1/2 * 0.27\% = 0.14\%$) as derived from page 20 of this Schedule.
 - (4) From page 23 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A2 Rated Public Utility Bond</u>	<u>Baa2 Rated Public Utility Bond</u>
Apr-2021	2.90 %	3.30 %	3.57 %
Mar-2021	3.04	3.44	3.72
Feb-2021	<u>2.70</u>	<u>3.09</u>	<u>3.37</u>
Average	<u>2.88 %</u>	<u>3.28 %</u>	<u>3.55 %</u>

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:

0.40 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:

0.27 % (2)

Notes:

(1) Column [2] - Column [1].

(2) Column [3] - Column [2].

Source of Information:

Bloomberg Professional Service

Northern States Power Company, a Minnesota CorporationComparison of Long-Term Issuer Ratings for
Proxy Group of Fourteen Electric Companies

Proxy Group of Fourteen Electric Companies	Moody's		Standard & Poor's	
	Long-Term Issuer Rating		Long-Term Issuer Rating	
	April 2021		April 2021	
	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
ALLETE, Inc.	Baa1	8.0	NR	--
Alliant Energy Corporation	A3/Baa1	7.5	A/A-	6.5
Ameren Corporation	A3	7.0	BBB+	8.0
Duke Energy Corporation	A3	7.0	BBB+	8.0
Edison International	Baa2	9.0	BBB	9.0
Entergy Corporation	Baa1/Baa2	8.5	BBB+	8.0
Eversource Energy, Inc.	Baa1	8.0	A-	7.0
IDACORP, Inc.	A3	7.0	BBB	9.0
NorthWestern Corporation	Baa2	9.0	BBB	9.0
OGE Energy Corporation	A3	7.0	A-	7.0
Otter Tail Corporation	A3	7.0	BBB+	8.0
Pinnacle West Capital Corporation	A2	6.0	A-	7.0
Portland General Electric Company	A3	7.0	BBB+	8.0
Xcel Energy, Inc.	A3	7.0	A-	7.0
Average	<u>A3/Baa1</u>	<u>7.5</u>	<u>BBB+</u>	<u>7.8</u>

Notes:

- (1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 22 of this Schedule.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard & Poor's Bond Rating</u>
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Northern States Power Company, a Minnesota Corporation
Judgment of Equity Risk Premium for
Proxy Group of Fourteen Electric Companies

<u>Line No.</u>		<u>Proxy Group of Fourteen Electric Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	8.95 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.67
3.	Predicted Equity Risk Premium Based on Regression Analysis of 1178 Fully-Litigated Electric Utility Rate Cases	<u>5.78</u>
4.	Average equity risk premium	<u><u>6.80</u></u> %

Notes: (1) From page 24 of this Schedule.
(2) From page 28 of this Schedule.
(3) From page 29 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Fourteen Electric Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Fourteen Electric Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.81
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.87
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.96
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.72
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>14.50</u>
7.	Conclusion of Equity Risk Premium	9.13 %
8.	Adjusted Beta (7)	<u>0.98</u>
9.	Forecasted Equity Risk Premium	<u><u>8.95 %</u></u>

Notes provided on page 25 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Fourteen Electric Companies

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2021 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2020.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through April 2021.
- (4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.46% (from page 19 of this Schedule) from the projected 3-5 year total annual market return of 8.42% (described fully in note 1 on page 31 of this Schedule).
- (5) Using data from Value Line for the S&P 500, an expected total return of 14.18% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.46% results in an expected equity risk premium of 10.72%.
- (6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 17.96% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.46% results in an expected equity risk premium of 14.50%.
- (7) Average of mean and median beta from page 30 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2020 and May 4, 2021
Bloomberg Professional Service

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ MAY 4, 2021

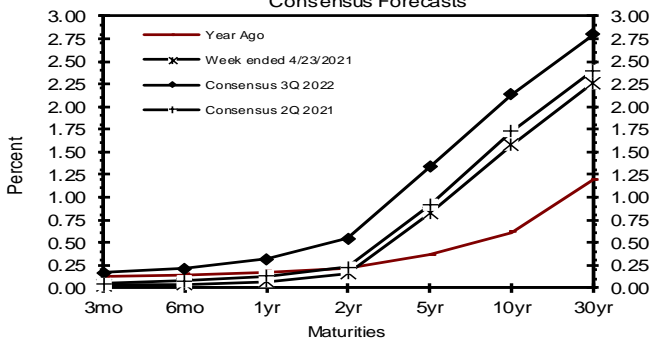
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

Interest Rates	-----History-----								Consensus Forecasts-Quarterly Avg.						
	-----Average For Week Ending-----				----Average For Month---				Latest Qtr	2Q	3Q	4Q	1Q	2Q	3Q
	Apr 23	Apr 16	Apr 9	Apr 2	Mar	Feb	Jan	1Q 2021	2021	2021	2021	2022	2022	2022	
Federal Funds Rate	0.07	0.07	0.07	0.07	0.07	0.08	0.09	0.08	0.1	0.1	0.1	0.1	0.1	0.1	
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.3	3.3	3.3	3.3	3.3	3.3	
LIBOR, 3-mo.	0.18	0.19	0.19	0.20	0.19	0.19	0.22	0.20	0.2	0.2	0.3	0.3	0.3	0.3	
Commercial Paper, 1-mo.	0.04	0.05	0.05	0.06	0.07	0.06	0.08	0.07	0.1	0.1	0.1	0.1	0.2	0.2	
Treasury bill, 3-mo.	0.03	0.02	0.02	0.02	0.03	0.04	0.08	0.05	0.0	0.1	0.1	0.1	0.1	0.2	
Treasury bill, 6-mo.	0.04	0.04	0.04	0.04	0.05	0.06	0.09	0.07	0.1	0.1	0.1	0.1	0.2	0.2	
Treasury bill, 1 yr.	0.07	0.06	0.06	0.06	0.08	0.07	0.10	0.08	0.1	0.2	0.2	0.2	0.3	0.3	
Treasury note, 2 yr.	0.16	0.16	0.16	0.16	0.15	0.12	0.13	0.13	0.2	0.3	0.3	0.4	0.5	0.5	
Treasury note, 5 yr.	0.82	0.85	0.88	0.92	0.82	0.54	0.45	0.60	0.9	1.0	1.1	1.2	1.2	1.3	
Treasury note, 10 yr.	1.58	1.62	1.68	1.72	1.61	1.26	1.08	1.32	1.7	1.8	1.9	2.0	2.1	2.1	
Treasury note, 30 yr.	2.26	2.29	2.34	2.38	2.34	2.04	1.82	2.07	2.4	2.5	2.6	2.7	2.7	2.8	
Corporate Aaa bond	3.02	3.02	3.07	3.16	3.15	2.84	2.64	2.88	3.0	3.2	3.3	3.3	3.4	3.4	
Corporate Baa bond	3.49	3.49	3.54	3.63	3.62	3.30	3.14	3.35	3.9	4.0	4.2	4.2	4.3	4.3	
State & Local bonds	2.63	2.66	2.71	2.74	2.74	2.63	2.65	2.68	2.7	2.8	2.9	3.0	2.9	3.0	
Home mortgage rate	2.97	3.04	3.13	3.18	3.08	2.81	2.74	2.88	3.2	3.3	3.4	3.5	3.6	3.7	

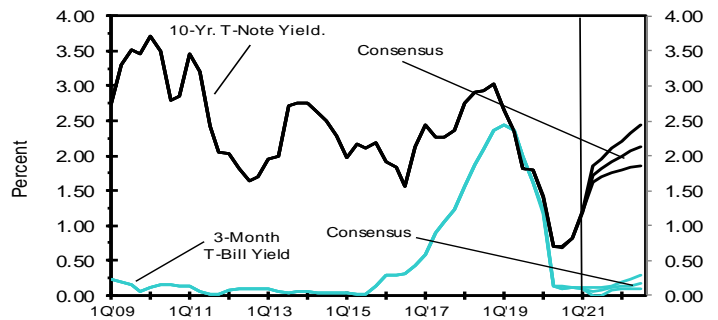
Key Assumptions	-----History-----								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2022	2022	2022	2022
Fed's AFE \$ Index	110.4	110.6	110.5	111.4	112.4	107.3	105.2	103.4	103.9	103.9	104.1	104.0	104.2	104.2
Real GDP	1.5	2.6	2.4	-5.0	-31.4	33.4	4.3	6.4	9.0	7.1	4.9	3.8	3.1	2.6
GDP Price Index	2.5	1.5	1.4	1.4	-1.8	3.5	2.0	4.1	2.4	2.2	2.1	2.2	2.2	2.2
Consumer Price Index	3.5	1.3	2.6	1.0	-3.1	4.7	2.4	3.7	2.8	2.4	2.2	2.2	2.2	2.2
PCE Price Index	2.5	1.4	1.5	1.3	-1.6	3.7	1.5	3.5	2.5	2.2	2.1	2.1	2.1	2.1

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

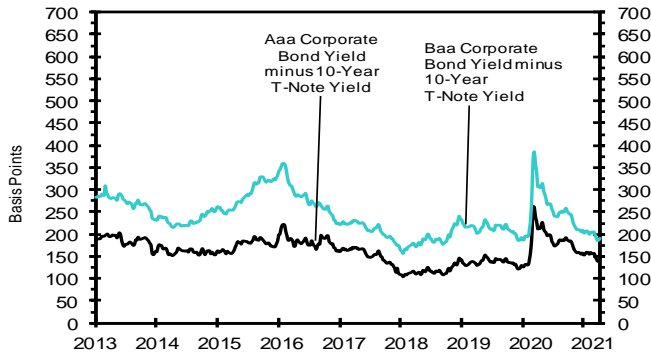
U.S. Treasury Yield Curve
 Week ended April 23, 2021 & Year Ago vs.
 2Q 2021 & 3Q 2022
 Consensus Forecasts



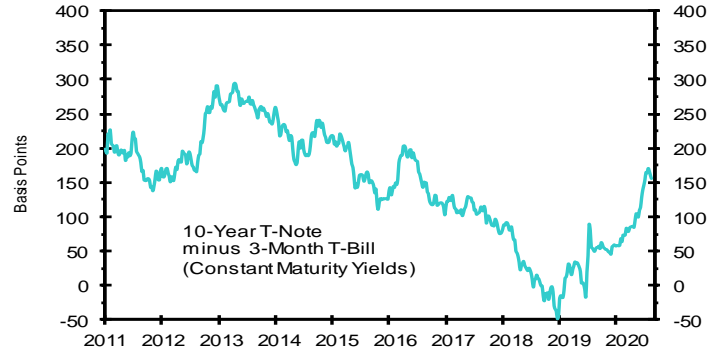
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
 (Quarterly Average) Forecast



Corporate Bond Spreads
 As of week ended April 23, 2020



U.S. Treasury Yield Curve
 As of week ended April 23, 2020



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Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2026 and averages for the five-year periods 2022-2026 and 2027-2031. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

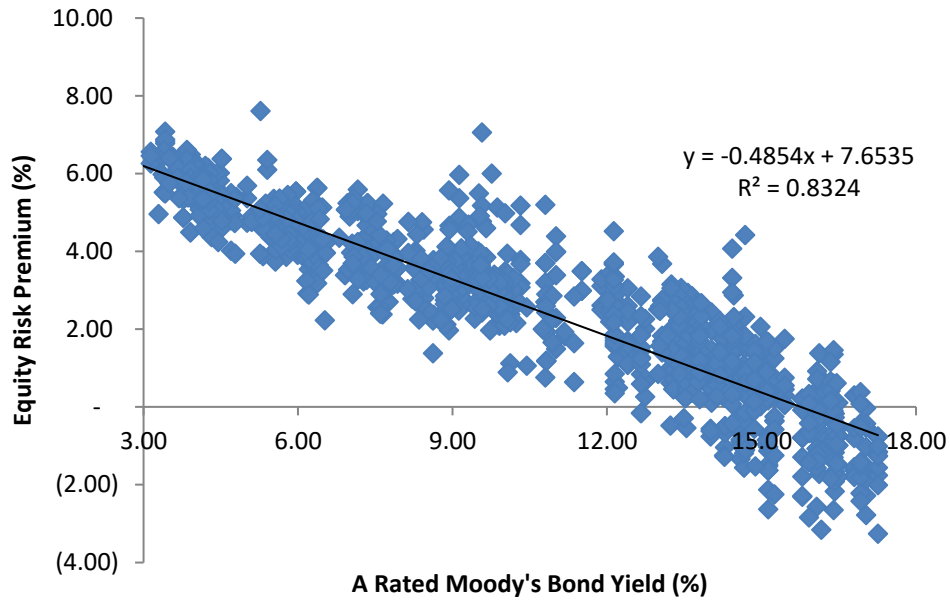
		Average For The Year					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
1. Federal Funds Rate	CONSENSUS	0.1	0.3	0.7	1.2	1.5	0.8	1.8
	Top 10 Average	0.2	0.7	1.4	2.0	2.4	1.3	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.4	0.6	0.3	1.2
2. Prime Rate	CONSENSUS	3.3	3.5	3.9	4.3	4.6	3.9	4.9
	Top 10 Average	3.4	3.7	4.4	5.0	5.4	4.4	5.4
	Bottom 10 Average	3.2	3.2	3.3	3.5	3.8	3.4	4.5
3. LIBOR, 3-Mo.	CONSENSUS	0.4	0.6	1.1	1.5	1.8	1.1	2.2
	Top 10 Average	0.5	1.0	1.7	2.2	2.6	1.6	2.7
	Bottom 10 Average	0.3	0.3	0.5	0.8	1.1	0.6	1.6
4. Commercial Paper, 1-Mo	CONSENSUS	0.3	0.7	1.2	1.6	1.9	1.1	2.1
	Top 10 Average	0.4	0.9	1.6	2.1	2.4	1.5	2.5
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.5	0.8	1.7
5. Treasury Bill Yield, 3-Mo	CONSENSUS	0.2	0.4	0.8	1.2	1.5	0.8	1.9
	Top 10 Average	0.3	0.7	1.5	2.0	2.4	1.4	2.5
	Bottom 10 Average	0.1	0.1	0.2	0.5	0.7	0.3	1.3
6. Treasury Bill Yield, 6-Mo	CONSENSUS	0.2	0.5	0.9	1.3	1.6	0.9	2.0
	Top 10 Average	0.3	0.8	1.6	2.1	2.5	1.5	2.6
	Bottom 10 Average	0.1	0.2	0.3	0.5	0.8	0.4	1.4
7. Treasury Bill Yield, 1-Yr	CONSENSUS	0.3	0.6	1.0	1.4	1.8	1.0	2.1
	Top 10 Average	0.5	1.0	1.7	2.3	2.6	1.6	2.7
	Bottom 10 Average	0.2	0.3	0.4	0.7	0.9	0.5	1.6
8. Treasury Note Yield, 2-Yr	CONSENSUS	0.4	0.8	1.2	1.6	1.9	1.2	2.3
	Top 10 Average	0.7	1.2	1.9	2.4	2.8	1.8	2.9
	Bottom 10 Average	0.2	0.3	0.6	0.8	1.1	0.6	1.7
9. Treasury Note Yield, 5-Yr	CONSENSUS	0.8	1.2	1.6	2.0	2.3	1.5	2.5
	Top 10 Average	1.1	1.6	2.3	2.8	3.1	2.1	3.1
	Bottom 10 Average	0.5	0.7	1.0	1.2	1.4	1.0	1.9
10. Treasury Note Yield, 10-Yr	CONSENSUS	1.3	1.7	2.0	2.4	2.6	2.0	2.8
	Top 10 Average	1.7	2.2	2.7	3.1	3.4	2.6	3.5
	Bottom 10 Average	0.9	1.2	1.4	1.7	1.8	1.4	2.2
11. Treasury Bond Yield, 30-Yr	CONSENSUS	2.1	2.4	2.8	3.1	3.4	2.8	3.6
	Top 10 Average	2.5	3.0	3.5	4.0	4.2	3.4	4.3
	Bottom 10 Average	1.6	1.9	2.2	2.4	2.6	2.1	2.9
12. Corporate Aaa Bond Yield	CONSENSUS	2.8	3.2	3.6	4.0	4.2	3.6	4.5
	Top 10 Average	3.1	3.6	4.2	4.6	4.9	4.1	5.0
	Bottom 10 Average	2.4	2.8	3.0	3.3	3.6	3.0	3.9
13. Corporate Baa Bond Yield	CONSENSUS	3.9	4.3	4.7	5.0	5.2	4.6	5.4
	Top 10 Average	4.3	4.7	5.2	5.6	5.9	5.1	6.0
	Bottom 10 Average	3.5	3.9	4.1	4.3	4.5	4.1	4.9
14. State & Local Bonds Yield	CONSENSUS	2.8	3.1	3.4	3.6	3.8	3.3	3.9
	Top 10 Average	3.1	3.5	3.8	4.1	4.3	3.8	4.3
	Bottom 10 Average	2.5	2.8	2.9	3.2	3.4	2.9	3.6
15. Home Mortgage Rate	CONSENSUS	3.2	3.5	3.9	4.2	4.5	3.9	4.7
	Top 10 Average	3.5	3.9	4.4	4.9	5.2	4.4	5.2
	Bottom 10 Average	2.9	3.2	3.4	3.6	3.8	3.4	4.2
A. Fed's AFE Nominal \$ Index	CONSENSUS	107.2	107.0	106.5	106.4	106.6	106.7	106.7
	Top 10 Average	109.0	108.9	108.8	108.9	109.5	109.0	110.2
	Bottom 10 Average	105.4	105.2	104.4	103.8	103.7	104.5	103.0
		----- Year-Over-Year, % Change -----					Five-Year Averages	
		2022	2023	2024	2025	2026	2022-2026	2027-2031
B. Real GDP	CONSENSUS	3.2	2.5	2.3	2.2	2.1	2.4	2.1
	Top 10 Average	3.8	3.0	2.6	2.5	2.4	2.9	2.4
	Bottom 10 Average	2.6	2.1	1.9	1.9	1.8	2.1	1.8
C. GDP Chained Price Index	CONSENSUS	1.9	2.0	2.1	2.1	2.1	2.0	2.1
	Top 10 Average	2.2	2.3	2.3	2.3	2.3	2.3	2.3
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9
D. Consumer Price Index	CONSENSUS	2.1	2.2	2.2	2.1	2.2	2.1	2.2
	Top 10 Average	2.4	2.4	2.4	2.4	2.4	2.4	2.4
	Bottom 10 Average	1.8	1.9	1.9	1.9	1.9	1.9	1.9
E. PCE Price Index	CONSENSUS	1.9	2.0	2.1	2.1	2.1	2.0	2.1
	Top 10 Average	2.2	2.2	2.2	2.2	2.3	2.2	2.4
	Bottom 10 Average	1.7	1.8	1.9	1.9	1.9	1.8	1.9

Northern States Power Company, a Minnesota Corporation
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.45
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.64
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	6.77
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>5.32</u>
6.	Average Equity Risk Premium (6)	<u><u>5.67 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - April 2021.
- (4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.63% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 19 of this Schedule results in an equity risk premium of 6.77%. (10.63% - 3.86% = 6.77%)
- (5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.18% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.86%, calculated on line 3 of page 19 of this Schedule results in an equity risk premium of 5.32%. (9.18% - 3.86% = 5.32%)
- (6) Average of lines 1 through 5.

Northern States Power Company, a Minnesota Corporation
Prediction of Equity Risk Premiums Relative to
Moody's A Rated Utility Bond Yields



		Prospective A2 Rated Utility Bond (1)	Prospective Equity Risk Premium
<u>Constant</u>	<u>Slope</u>	<u>3.86 %</u>	<u>5.78 %</u>
7.653541 %	-0.4854		

Notes:

(1) From line 3 of page 19 of this Schedule.

Source of Information: Regulatory Research Associates

Northern States Power Company, a Minnesota Corporation
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Fourteen Electric Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
ALLETE, Inc.	0.90	1.07	0.99	9.99 %	2.76 %	12.65 %	12.67 %	12.66 %
Alliant Energy Corporation	0.85	1.01	0.93	9.99	2.76	12.05	12.22	12.14
Ameren Corporation	0.80	0.95	0.87	9.99	2.76	11.45	11.77	11.61
Duke Energy Corporation	0.85	0.98	0.91	9.99	2.76	11.85	12.07	11.96
Edison International	0.95	1.09	1.02	9.99	2.76	12.95	12.90	12.92
Energy Corporation	0.95	1.17	1.06	9.99	2.76	13.35	13.20	13.27
Eversource Energy, Inc.	0.95	1.05	1.00	9.99	2.76	12.75	12.75	12.75
IDACORP, Inc.	0.80	1.04	0.92	9.99	2.76	11.95	12.15	12.05
NorthWestern Corporation	0.95	1.25	1.10	9.99	2.76	13.75	13.50	13.62
OGE Energy Corporation	1.05	1.25	1.15	9.99	2.76	14.25	13.87	14.06
Otter Tail Corporation	0.85	1.07	0.96	9.99	2.76	12.35	12.45	12.40
Pinnacle West Capital Corporation	0.90	1.13	1.01	9.99	2.76	12.85	12.82	12.84
Portland General Electric Company	0.90	1.05	0.97	9.99	2.76	12.45	12.52	12.49
Xcel Energy, Inc.	0.80	0.98	0.89	9.99	2.76	11.65	11.92	11.79
Mean			0.98			12.59 %	12.63 %	12.61 %
Median			0.98			12.55 %	12.60 %	12.58 %
Average of Mean and Median			0.98			12.57 %	12.62 %	12.60 %

Notes on page 31 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

- (1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05
MRP based on Ibbotson Historical Data:	<u>7.15 %</u>

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2020)

9.51 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - April 2021)

10.98 %Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending April 30, 2021)

Total projected return on the market 3-5 years hence*:	8.42 %
Projected Risk-Free Rate (see note 2):	2.76
MRP based on Value Line Summary & Index:	<u>5.66 %</u>

*Forecasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.18 %
Projected Risk-Free Rate (see note 2):	2.76
MRP based on Value Line data	<u>11.42 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	17.96 %
Projected Risk-Free Rate (see note 2):	2.76
MRP based on Bloomberg data	<u>15.20 %</u>

Average of Value Line, Ibbotson, and Bloomberg MRP: 9.99 %

- (2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 26-27 of this Schedule.) The projection of the risk-free rate is illustrated below:

Second Quarter 2021	2.40 %
Third Quarter 2021	2.50
Fourth Quarter 2021	2.60
First Quarter 2022	2.70
Second Quarter 2022	2.70
Third Quarter 2022	2.80
2022-2026	2.80
2027-2031	3.60
	<u>2.76 %</u>

- (3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2020 and May 4, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBF Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Northern States Power Company
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.66 – 0.94 and residual standard error of the regression range of 2.5544 – 3.0468 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Gas Utility Proxy Group's residual standard error of the regression is 0.1231. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1231 = \frac{2.8006}{\sqrt{518}} = \frac{2.8006}{22.7596}$$

Source of Information: Value Line, Inc., March 2021
Value Line Investment Survey (Standard Edition)

Northern States Power Company, a Minnesota Corporation
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Fourteen Electric Companies</u>	<u>Value Line Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
ALLETE, Inc.	0.90	0.79	2.7853	0.0695
Alliant Energy Corporation	0.85	0.70	2.7878	0.0696
Ameren Corporation	0.80	0.68	2.6125	0.0652
Duke Energy Corporation	0.85	0.75	2.7871	0.0695
Edison International	0.95	0.91	3.2791	0.0818
Entergy Corporation	0.95	0.87	2.6764	0.0668
Evergy, Inc.	0.95	0.91	3.3442	0.0892
IDACORP, Inc.	0.80	0.68	2.5678	0.0641
NorthWestern Corporation	0.95	0.87	2.8342	0.0707
OGE Energy Corporation	1.05	1.04	2.7132	0.0677
Otter Tail Corporation	0.85	0.77	2.4704	0.0616
Pinnacle West Capital Corporation	0.90	0.82	2.7915	0.0697
Portland General Electric Company	0.90	0.77	2.8436	0.0710
Xcel Energy, Inc.	0.80	0.65	2.7151	0.0677
Average	<u>0.89</u>	<u>0.80</u>	<u>2.8006</u>	<u>0.0703</u>
Beta Range (+/- 2 std. Devs. of Beta) 2 std. Devs. of Beta	0.66 0.14	0.94		
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.5544	3.0468		
Std. dev. of the Res. Std. Err.	0.1231			
2 std. devs. of the Res. Std. Err.	0.2462			

Source of Information: Valueline Proprietary Database, March 2021

Northern States Power Company, a Minnesota Corporation
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]
<u>Proxy Group of Forty-Five Non-Price Regulated Companies</u>	<u>VL Adjusted Beta</u>	<u>Unadjusted Beta</u>	<u>Residual Standard Error of the Regression</u>	<u>Standard Deviation of Beta</u>
Abbot Laboratories	0.95	0.88	2.7401	0.0684
Analog Devices	0.95	0.88	2.6493	0.0661
Assurant Inc.	0.90	0.84	2.9537	0.0737
ANSYS, Inc.	0.85	0.74	2.8841	0.0720
Smith (A.O.)	0.85	0.77	2.6911	0.0672
Brown-Forman	0.90	0.77	2.7453	0.0685
Broadridge Fin'l	0.85	0.70	2.7332	0.0682
Brady Corp	1.00	0.93	3.0007	0.0749
Cadence Design Sys.	0.90	0.79	3.0338	0.0757
Cerner Corp.	0.90	0.84	2.7309	0.0681
Chemed Corp.	0.85	0.71	2.5922	0.0647
Cooper Cos.	0.95	0.90	2.7184	0.0678
CSW Industrials	0.90	0.81	2.8884	0.0721
Quest Diagnostics	0.85	0.75	2.7411	0.0684
Dolby Labs.	0.95	0.86	2.6998	0.0674
Estee Lauder	0.95	0.85	2.8216	0.0704
Exponent, Inc.	0.90	0.79	2.9131	0.0727
Gentex Corporation	0.95	0.91	2.7546	0.0687
Hershey Co.	0.85	0.73	2.7004	0.0674
Ingredion Inc.	0.90	0.78	2.8793	0.0718
Hunt (J.B.)	0.95	0.86	2.8344	0.0707
J & J Snack Foods Corp.	0.90	0.84	2.9208	0.0729
Jack Henry & Associates, Inc.	0.85	0.71	2.7734	0.0692
Lennox Int'l	1.00	0.93	2.6499	0.0661
MAXIMUS, Inc.	0.80	0.67	2.6635	0.0665
Altria Group	0.90	0.83	2.9215	0.0729
MSA Safety	1.00	0.94	3.0076	0.0750
MSCI Inc.	0.95	0.87	2.9662	0.0740
Motorola Solutions, Inc.	0.90	0.80	2.7926	0.0697
Maxim Integrated	0.95	0.87	2.9404	0.0734
Northrop Grumman	0.85	0.71	2.9032	0.0724
PerkinElmer, Inc.	0.95	0.86	2.8896	0.0721
Post Holdings, Inc.	0.95	0.86	3.0105	0.0751
Rollins, Inc.	0.85	0.73	2.9697	0.0741
The Sherwin-Williams Company	0.90	0.84	2.6989	0.0673
Selective Ins. Group	0.85	0.77	3.0004	0.0749
Sirius XM Holdings	0.95	0.91	2.7995	0.0699
Sensient Technologies Corporation	0.90	0.81	2.5553	0.0638
Tetra Tech	0.90	0.84	3.0245	0.0755
AMERCO	0.95	0.91	2.6511	0.0662
UniFirst Corporation	1.00	0.94	2.6748	0.0667
Verisign	0.90	0.82	2.6587	0.0663
Waters Corp.	0.95	0.86	2.7531	0.0687
Watsco, Inc.	0.85	0.73	2.7166	0.0678
Western Union	0.80	0.67	2.7346	0.0682
Average	<u>0.91</u>	<u>0.82</u>	<u>2.8100</u>	<u>0.0700</u>
Proxy Group of Fourteen Electric Companies	<u>0.89</u>	<u>0.80</u>	<u>2.8006</u>	<u>0.0703</u>

Source of Information:

Valueline Proprietary Database, March 2021

Northern States Power Company, a Minnesota Corporation
Summary of Cost of Equity Models Applied to
Proxy Group of Forty-Five Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

<u>Principal Methods</u>	<u>Proxy Group of Forty-Five Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	11.86 %
Risk Premium Model (RPM) (2)	12.85
Capital Asset Pricing Model (CAPM) (3)	12.08
	12.26 %
	12.08 %
	12.17 %

Notes:

- (1) From page 36 of this Schedule.
- (2) From page 37 of this Schedule.
- (3) From page 40 of this Schedule.

Northern States Power Company, a Minnesota Corporation
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Five Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Bloomberg's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Abbot Laboratories	1.48 %	12.00 %	13.80 %	14.22 %	16.32 %	14.09 %	1.58 %	15.67 %
Analog Devices	1.78	8.50	12.30	11.60	11.78	11.05	1.88	12.93
Assurant Inc.	1.89	11.50	NA	NA	19.40	15.45	2.04	17.49
ANSYS, Inc.	-	10.00	12.20	12.11	8.00	10.58	-	NA
Smith (A.O.)	1.60	8.50	9.00	10.00	8.00	8.88	1.67	10.55
Brown-Forman	0.98	11.00	NA	5.39	7.53	7.97	1.02	8.99
Broadridge Fin'l	1.53	10.50	NA	10.70	10.00	10.40	1.61	12.01
Brady Corp	1.63	7.50	7.00	7.33	7.00	7.21	1.69	8.90
Cadence Design Sys.	-	13.00	14.40	11.60	14.40	13.35	-	NA
Cerner Corp.	1.20	8.00	12.00	8.61	11.51	10.03	1.26	11.29
Chemed Corp.	0.29	8.50	7.40	7.38	7.35	7.66	0.30	7.96
Cooper Cos.	0.02	14.50	11.00	10.50	10.00	11.50	0.02	11.52
CSW Industrials	0.45	8.50	NA	NA	12.00	10.25	0.47	10.72
Quest Diagnostics	1.99	10.00	26.50	(6.93)	3.26	13.25	2.12	15.37
Dolby Labs.	0.89	9.50	13.00	NA	16.00	12.83	0.95	13.78
Estee Lauder	0.72	11.00	10.70	17.60	21.10	15.10	0.77	15.87
Exponent, Inc.	0.83	12.00	NA	13.30	15.00	13.43	0.89	14.32
Gentex Corporation	1.35	10.50	8.40	12.30	15.80	11.75	1.43	13.18
Hershey Co.	2.08	5.50	7.70	7.35	7.67	7.06	2.15	9.21
Ingredion Inc.	2.84	7.50	NA	11.00	1.90	6.80	2.94	9.74
Hunt (J.B.)	0.75	6.50	15.00	18.00	21.53	15.26	0.81	16.07
J & J Snack Foods Corp.	1.44	10.00	NA	NA	6.00	8.00	1.50	9.50
Jack Henry & Associates, Inc.	1.19	10.50	10.90	12.47	10.02	10.97	1.26	12.23
Lennox Int'l	1.00	7.50	NA	10.60	12.44	10.18	1.05	11.23
MAXIMUS, Inc.	1.28	10.50	NA	5.00	12.50	9.33	1.34	10.67
Altria Group	7.22	6.00	4.00	2.70	4.47	4.29	7.37	11.66
MSA Safety	1.07	6.50	NA	9.00	18.00	11.17	1.13	12.30
MSCI Inc.	0.72	18.00	NA	15.00	14.46	15.82	0.78	16.60
Motorola Solutions, Inc.	1.54	7.00	9.00	11.30	7.37	8.67	1.61	10.28
Maxim Integrated	-	8.00	10.00	11.95	18.44	12.10	-	NA
Northrop Grumman	1.83	7.00	NA	5.51	5.12	5.88	1.88	7.76
PerkinElmer, Inc.	0.21	17.50	19.50	(6.87)	19.50	18.83	0.23	19.06
Post Holdings, Inc.	-	11.00	NA	20.30	31.20	20.83	-	NA
Rollins, Inc.	0.92	11.50	NA	NA	8.20	9.85	0.97	10.82
The Sherwin-Williams Company	0.89	10.00	11.00	5.24	9.95	9.05	0.93	9.98
Selective Ins. Group	1.38	8.50	NA	NA	5.10	6.80	1.43	8.23
Sirius XM Holdings	0.95	35.50	13.30	40.65	10.75	25.05	1.07	26.12
Sensient Technologies Corporation	1.98	2.50	NA	10.40	3.80	5.57	2.04	7.61
Tetra Tech	0.60	13.50	15.00	13.85	15.00	14.34	0.64	14.98
AMERCO	-	8.00	NA	13.00	15.00	12.00	-	NA
UniFirst Corporation	0.43	4.00	NA	10.00	10.00	8.00	0.45	8.45
Verisign	-	9.50	NA	4.50	8.00	7.33	-	NA
Waters Corp.	-	6.00	8.80	9.03	8.85	8.17	-	NA
Watsco, Inc.	2.99	7.00	NA	NA	15.00	11.00	3.15	14.15
Western Union	3.81	6.00	NA	4.57	9.27	6.61	3.94	10.55
							Mean	<u>12.31 %</u>
							Median	<u>11.41 %</u>
						Average of Mean and Median		<u>11.86 %</u>

NA= Not Available
NMF= Not Meaningful Figure

- (1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of April 30, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, Bloomberg Professional Services, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information: Value Line Investment Survey
www.zacks.com Downloaded on 04/30/2021
www.yahoo.com Downloaded on 04/30/2021
Bloomberg Professional Services

Northern States Power Company, a Minnesota Corporation
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>	<u>Proxy Group of Forty- Five Non-Price Regulated Companies</u>
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1) 4.36 %
2.	Equity Risk Premium (2) 8.49
3.	Risk Premium Derived Common Equity Cost Rate 12.85 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated December 1, 2020 and May 4, 2021 (see pages 26-27 of this Schedule). The estimates are detailed below.

Second Quarter 2021	3.90 %
Third Quarter 2021	4.00
Fourth Quarter 2021	4.20
First Quarter 2022	4.20
Second Quarter 2022	4.30
Third Quarter 2022	4.30
2022-2026	4.60
2027-2031	5.40
Average	4.36 %

(2) From page 39 of this Schedule.

Northern States Power Company, a Minnesota Corporation
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Forty-Five Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Fourteen Electric Companies

Proxy Group of Forty-Five Non-Price Regulated Companies	Moody's Long-Term Issuer Rating April 2021		Standard & Poor's Long-Term Issuer Rating April 2021	
	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Abbot Laboratories	A3	7.0	A	6.0
Analog Devices	Baa1	8.0	BBB	9.0
Assurant Inc.	Baa3	10.0	BBB	9.0
ANSYS, Inc.	NR	--	NR	--
Smith (A.O.)	NR	--	NR	--
Brown-Forman	A1	5.0	A-	7.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp	NR	--	NR	--
Cadence Design Sys.	Baa2	9.0	BBB+	8.0
Cerner Corp.	NR	--	NR	--
Chemed Corp.	WR	--	NR	--
Cooper Cos.	WR	--	NR	--
CSW Industrials	NR	--	NR	--
Quest Diagnostics	Baa2	9.0	BBB+	8.0
Dolby Labs.	NR	--	NR	--
Estee Lauder	A1	5.0	A+	5.0
Exponent, Inc.	NR	--	NR	--
Gentex Corporation	NR	--	NR	--
Hershey Co.	A1	5.0	A	6.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J & J Snack Foods Corp.	NR	--	NR	--
Jack Henry & Associates, Inc.	NR	--	NR	--
Lennox Int'l	Baa3	10.0	BBB	9.0
MAXIMUS, Inc.	NR	--	NR	--
Altria Group	A3	7.0	BBB	9.0
MSA Safety	NR	--	NR	--
MSCI Inc.	Ba1	11.0	BB+	11.0
Motorola Solutions, Inc.	Baa3	10.0	BBB-	10.0
Maxim Integrated	Baa1	8.0	BBB+	8.0
Northrop Grumman	Baa2	9.0	BBB+	8.0
PerkinElmer, Inc.	Baa3	10.0	BBB	9.0
Post Holdings, Inc.	B2	15.0	B+	14.0
Rollins, Inc.	NR	--	NR	--
The Sherwin-Williams Company	Baa2	9.0	BBB	9.0
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NR	--	BB	12.0
Sensient Technologies Corporation	WR	--	NR	--
Tetra Tech	NR	--	NR	--
AMERCO	WR	--	NR	--
UniFirst Corporation	NR	--	NR	--
Verisign	Baa3	10.0	BBB	9.0
Waters Corp.	NR	--	NR	--
Watsco, Inc.	NR	--	NR	--
Western Union	Baa2	9.0	BBB	9.0
Average	Baa2	8.7	BBB	8.7

Notes:

(1) From page 22 of this Schedule.

Source of Information:

Bloomberg Professional Services

Northern States Power Company, a Minnesota Corporation
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Forty-Five Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Fourteen Electric Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Forty-Five Non- Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.81
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.87
4.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	4.96
5.	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	10.72
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>14.50</u>
7.	Conclusion of Equity Risk Premium	9.13 %
8.	Adjusted Beta (7)	<u>0.93</u>
9.	Forecasted Equity Risk Premium	<u><u>8.49 %</u></u>

Notes:

- (1) From note 1 of page 25 of this Schedule.
- (2) From note 2 of page 25 of of this Schedule.
- (3) From note 3 of page 25 of of this Schedule.
- (4) From note 4 of page 25 of of this Schedule.
- (5) From note 5 of page 25 of of this Schedule.
- (6) From note 6 of page 25 of of this Schedule.
- (7) Average of mean and median beta from page 40 of this Schedule.

Sources of Information:

Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2020 and May 4, 2021
Bloomberg Professional Services

Northern States Power Company, a Minnesota Corporation
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Fourteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Five Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Abbot Laboratories	0.95	0.85	0.90	9.99 %	2.76 %	11.75 %	12.00 %	11.87 %
Analog Devices	0.95	1.05	1.00	9.99	2.76	12.75	12.75	12.75
Assurant Inc.	0.95	0.98	0.97	9.99	2.76	12.45	12.52	12.49
ANSYS, Inc.	0.85	0.97	0.91	9.99	2.76	11.85	12.07	11.96
Smith (A.O.)	0.85	1.02	0.94	9.99	2.76	12.15	12.30	12.22
Brown-Forman	0.90	0.98	0.94	9.99	2.76	12.15	12.30	12.22
Broadridge Fin'l	0.85	0.82	0.84	9.99	2.76	11.15	11.55	11.35
Brady Corp	1.00	1.05	1.02	9.99	2.76	12.95	12.90	12.92
Cadence Design Sys.	0.90	0.98	0.94	9.99	2.76	12.15	12.30	12.22
Cerner Corp.	0.90	0.88	0.89	9.99	2.76	11.65	11.92	11.79
Chemed Corp.	0.85	0.90	0.88	9.99	2.76	11.55	11.85	11.70
Cooper Cos.	0.95	0.93	0.94	9.99	2.76	12.15	12.30	12.22
CSW Industrials	0.90	1.03	0.97	9.99	2.76	12.45	12.52	12.49
Quest Diagnostics	0.85	0.95	0.90	9.99	2.76	11.75	12.00	11.87
Dolby Labs.	0.95	0.94	0.95	9.99	2.76	12.25	12.37	12.31
Estee Lauder	0.95	1.01	0.98	9.99	2.76	12.55	12.60	12.57
Exponent, Inc.	0.90	0.94	0.92	9.99	2.76	11.95	12.15	12.05
Gentex Corporation	0.95	1.06	1.00	9.99	2.76	12.75	12.75	12.75
Hershey Co.	0.85	0.82	0.84	9.99	2.76	11.15	11.55	11.35
Ingredion Inc.	0.90	0.92	0.91	9.99	2.76	11.85	12.07	11.96
Hunt (J.B.)	0.95	0.92	0.93	9.99	2.76	12.05	12.22	12.14
J & J Snack Foods Corp.	0.90	0.77	0.83	9.99	2.76	11.05	11.47	11.26
Jack Henry & Associates, Inc.	0.85	0.89	0.87	9.99	2.76	11.45	11.77	11.61
Lennox Int'l	1.00	1.02	1.01	9.99	2.76	12.85	12.82	12.84
MAXIMUS, Inc.	0.80	0.90	0.85	9.99	2.76	11.25	11.62	11.44
Altria Group	0.90	0.89	0.89	9.99	2.76	11.65	11.92	11.79
MSA Safety	1.00	1.00	1.00	9.99	2.76	12.75	12.75	12.75
MSCI Inc.	0.95	0.93	0.94	9.99	2.76	12.15	12.30	12.22
Motorola Solutions, Inc.	0.90	0.95	0.92	9.99	2.76	11.95	12.15	12.05
Maxim Integrated	0.95	0.99	0.97	9.99	2.76	12.45	12.52	12.49
Northrop Grumman	0.85	0.79	0.82	9.99	2.76	10.95	11.40	11.18
PerkinElmer, Inc.	0.95	0.84	0.90	9.99	2.76	11.75	12.00	11.87
Post Holdings, Inc.	0.95	0.89	0.92	9.99	2.76	11.95	12.15	12.05
Rollins, Inc.	0.85	0.69	0.77	9.99	2.76	10.45	11.03	10.74
The Sherwin-Williams Company	0.90	1.02	0.96	9.99	2.76	12.35	12.45	12.40
Selective Ins. Group	0.85	0.96	0.91	9.99	2.76	11.85	12.07	11.96
Sirius XM Holdings	0.95	1.10	1.03	9.99	2.76	13.05	12.97	13.01
Sensient Technologies Corporation	0.90	0.95	0.93	9.99	2.76	12.05	12.22	12.14
Tetra Tech	0.90	1.05	0.97	9.99	2.76	12.45	12.52	12.49
AMERCO	0.95	1.06	1.00	9.99	2.76	12.75	12.75	12.75
UniFirst Corporation	1.00	1.10	1.05	9.99	2.76	13.25	13.12	13.19
Verisign	0.95	0.79	0.87	9.99	2.76	11.45	11.77	11.61
Waters Corp.	0.95	0.86	0.91	9.99	2.76	11.85	12.07	11.96
Watsco, Inc.	0.85	0.80	0.83	9.99	2.76	11.05	11.47	11.26
Western Union	0.80	1.04	0.92	9.99	2.76	11.95	12.15	12.05
		Mean	0.93			12.00 %	12.19 %	12.10 %
		Median	0.92			11.95 %	12.15 %	12.05 %
		Average of Mean and Median	0.93			11.98 %	12.17 %	12.08 %

Notes:

- (1) From note 1 of page 31 of this Schedule.
- (2) From note 2 of page 31 of this Schedule.
- (3) Average of CAPM and ECAPM cost rates.

Northern States Power Company, a Minnesota Corporation
 Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.	[1]	[2]	[3]	[4]	
	Market Capitalization on April 30, 2021 (1) (millions) (times larger)	Applicable Decile of the NYSE/AMEX/NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)	
1.	Northern States Power Company, a Minnesota Corporation \$ 759,511	8	1.46%		
2.	Proxy Group of Fourteen Electric Companies \$ 17,064,410	22.5 x	0.49%	0.97%	
		[A]	[C]	[D]	
		Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*	
		Decile			
		1	\$ 29,025,803	\$ 1,966,078,882	-0.22%
		2	13,178,743	28,808,073	0.49%
		3	6,743,361	13,177,828	0.71%
		4	3,861,858	6,710,676	0.75%
		5	2,445,693	3,836,536	1.09%
		6	1,591,865	2,444,745	1.37%
		7	911,586	1,591,765	1.54%
		8	451,955	911,103	1.46%
		9	190,019	451,800	2.29%
		10	2,194	189,831	5.01%
			*From 2021 Duff & Phelps Cost of Capital Navigator		

Notes:

- (1) From page 42 of this Schedule.
- (2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
- (3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
- (4) Line No. 1 Column [3] - Line No. 2 Column [3]. For example, the 0.97% in Column [4], Line No. 2 is derived as follows 0.97% = 1.46% - 0.49%.

Northern States Power Company, a Minnesota Corporation
Market Capitalization of Northern States Power Company, a Minnesota Corporation and the
Proxy Group of Fourteen Electric Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2019 (millions)	[2] Book Value per Share at Fiscal Year End 2019 (1)	[3] Total Common Equity at Fiscal Year End 2019 (millions)	[4] Closing Stock Market Price on April 30, 2021	[5] Market-to-Book Ratio on April 30, 2021 (2)	[6] Market Capitalization on April 30, 2021 (3) (millions)
Northern States Power Company, a Minnesota Corporation		NA	NA	377,491 (4)	NA		
Based upon Proxy Group of Fourteen Electric Companies					201.2 (5)	\$ 759,511 (6)	
Proxy Group of Fourteen Electric Companies							
ALLETE, Inc.	NYSE	51,696	\$ 43.173	\$ 2,231,900	\$ 70.360	163.0 %	\$ 3,637,366
Alliant Energy Corporation	NASDAQ	245,023	21.243	5,205,100	56.170	264.4	13,762,931
Ameren Corporation	NYSE	246,232	32.729	8,059,000	84.840	259.2	20,890,298
Duke Energy Corporation	NYSE	733,322	63.849	46,822,000	100.690	157.7	73,838,189
Edison International	NYSE	361,985	36.750	13,303,000	59.450	161.8	21,520,016
Energy Corporation	NYSE	199,727	51.188	10,223,675	109,290	213.5	21,828,135
Energy, Inc.	NYSE	226,641	37.821	8,571,900	63.970	169.1	14,498,253
IDACORP, Inc.	NYSE	50,410	48.892	2,464,628	102.480	209.6	5,166,007
NorthWestern Corporation	NASDAQ	53,999	37.762	2,039,094	68.030	180.2	3,673,565
OG Energy Corporation	NYSE	200,177	20.679	4,139,500	33.560	162.3	6,717,952
Otter Tail Corporation	NASDAQ	40,158	19.460	781,482	47.230	242.7	1,896,643
Pinnacle West Capital Corporation	NYSE	112,540	48.255	5,430,648	84.650	175.4	9,526,522
Portland General Electric Company	NYSE	89,387	28.986	2,591,000	50.860	175.5	4,546,229
Xcel Energy, Inc.	NASDAQ	524,539	25.239	13,239,000	71.300	282.5	37,399,631
Average		223,988	\$ 36.859	\$ 8,935,852	\$ 71.634	201.2 %	\$ 17,064,410

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.

(4) Projected rate base for 2021 multiplied by the requested common equity ratio.
(5) The market-to-book ratio of Northern States Power Company, a Minnesota Corporation on April 30, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Fourteen Electric Companies on April 30, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2019 Annual Forms 10K
yahoo.finance.com
Bloomberg Professional

Northern States Power Company, a Minnesota Corporation
 Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances

Date	Issuing Company	[Column 1] Shares Issued (1)	[Column 2] Market Price per Share (1)	[Column 3] Average Offering Price per Share (1)	[Column 4] Underwriting Discount (1)	[Column 5] Total Offering Expense per Share (1)	[Column 6] Net Proceeds per Share (2)	[Column 7] Total Flotation Costs (3)	[Column 8] Gross Equity Issue before Costs (4)	[Column 9] Net Proceeds (5)	[Column 10] Flotation Cost Percentage (6)
11/16/1949	Northern States Power	1,584,238	\$ 10.75	\$ 10.25	\$ 0.12	\$ 0.137	\$ 9,989	\$ 1,205,605	\$ 17,030,559	\$ 15,824,953	7.079%
6/4/1952	Northern States Power	1,108,966	\$ 10.50	\$ 10.50	\$ 0.10	\$ 0.162	\$ 10,240	\$ 288,331	\$ 11,644,143	\$ 11,355,812	2.476%
4/14/1954	Northern States Power	1,219,856	\$ 15.25	\$ 14.00	\$ 0.06	\$ 0.124	\$ 13,816	\$ 1,749,274	\$ 18,602,804	\$ 16,853,530	9.403%
2/29/1956	Northern States Power	670,920	\$ 17.83	\$ 16.75	\$ 0.05	\$ 0.221	\$ 16,479	\$ 903,058	\$ 11,959,149	\$ 11,056,091	7.551%
7/22/1959	Northern States Power	952,033	\$ 23.38	\$ 22.00	\$ 0.07	\$ 0.191	\$ 21,740	\$ 1,556,574	\$ 22,253,771	\$ 20,697,197	6.995%
7/28/1965	Northern States Power	772,008	\$ 35.25	\$ 33.00	\$ 0.09	\$ 0.225	\$ 32,683	\$ 1,981,745	\$ 27,213,282	\$ 25,231,537	7.282%
1/22/1969	Northern States Power	1,080,811	\$ 29.00	\$ 27.00	\$ 0.12	\$ 0.187	\$ 26,694	\$ 2,492,350	\$ 31,343,519	\$ 28,851,169	7.952%
10/21/1970	Northern States Power	1,729,298	\$ 23.13	\$ 21.50	\$ 0.18	\$ 0.149	\$ 21,176	\$ 3,370,402	\$ 39,990,016	\$ 36,619,614	8.428%
7/26/1972	Northern States Power	1,902,228	\$ 25.00	\$ 23.50	\$ 0.13	\$ 0.166	\$ 23,205	\$ 3,414,499	\$ 47,555,700	\$ 44,141,201	7.180%
10/10/1973	Northern States Power	2,092,451	\$ 25.83	\$ 24.50	\$ 0.13	\$ 0.153	\$ 24,219	\$ 3,360,476	\$ 54,037,547	\$ 50,677,071	6.219%
11/20/1974	Northern States Power	2,300,000	\$ 17.63	\$ 17.50	\$ 0.91	\$ 0.069	\$ 16,521	\$ 2,539,200	\$ 40,537,500	\$ 37,998,300	6.264%
8/14/1975	Northern States Power	1,750,000	\$ 23.00	\$ 23.00	\$ 0.74	\$ 0.077	\$ 22,183	\$ 1,429,750	\$ 40,250,000	\$ 38,820,250	3.552%
6/3/1976	Northern States Power	2,000,000	\$ 24.00	\$ 24.00	\$ 0.72	\$ 0.064	\$ 23,216	\$ 1,568,000	\$ 48,000,000	\$ 46,432,000	3.267%
5/31/1993	Northern States Power	3,041,955	\$ 44.13	\$ 43.63	\$ 1.20	\$ 0.048	\$ 42,377	\$ 5,317,337	\$ 134,226,264	\$ 128,908,927	3.961%
9/23/1997	Northern States Power	4,500,000	\$ 49.94	\$ 49.56	\$ 1.23	\$ 0.133	\$ 48,200	\$ 7,821,000	\$ 224,721,000	\$ 216,900,000	3.480%
9/29/1997	Northern States Power	400,000	\$ 50.50	\$ 49.56	\$ 1.23	\$ 0.133	\$ 48,200	\$ 920,000	\$ 20,200,000	\$ 19,280,000	4.554%
2/25/2002	Xcel Energy, Inc.	20,000,000	\$ 22.95	\$ 22.50	\$ 0.73	\$ 0.015	\$ 17,755	\$ 23,900,000	\$ 459,000,000	\$ 435,100,000	5.207%
9/9/2008	Xcel Energy, Inc.	17,250,000	\$ 20.86	\$ 20.20	\$ 0.10	\$ 0.006	\$ 20,094	\$ 13,218,352	\$ 359,835,000	\$ 346,616,648	3.673%
8/3/2010	Xcel Energy, Inc.	21,850,000	\$ 22.10	\$ 21.50	\$ 0.65	\$ 0.013	\$ 20,571	\$ 33,407,927	\$ 482,885,000	\$ 449,477,073	6.918%
March 2013	Xcel Energy, Inc.	7,757,449	\$ 29.06	\$ 29.06	\$ 0.29	\$ 0.052	\$ 28,714	\$ 2,657,558	\$ 225,407,642	\$ 222,750,085	1.179%
June 2014	Xcel Energy, Inc.	5,693,946	\$ 30.66	\$ 30.66	\$ 0.31	\$ 0.030	\$ 30,326	\$ 1,915,210	\$ 174,592,340	\$ 172,677,130	1.097%
September 2018	Xcel Energy, Inc.	4,733,435	\$ 47.89	\$ 47.89	\$ 0.41	\$ 0.073	\$ 47,405	\$ 2,271,040	\$ 226,661,287	\$ 224,390,247	1.002%
8/29/2019	Xcel Energy, Inc.	9,359,103	\$ 48.42	\$ 48.42	\$ 0.17	\$ 0.030	\$ 48,213	\$ 1,901,526	\$ 453,132,797	\$ 451,231,271	0.420%
	Total Public Issuances						\$ 119,189,213	\$ 3,171,079,321	\$ 3,051,890,108		3.759%

Flotation Cost Adjustment

[Column 11] Average Dividend Yield (7)	[Column 12] Average Projected EPS Growth Rate (7)	[Column 13] Adjusted Dividend Yield (8)	[Column 14] Average DCF Cost Rate Unadjusted for Flotation (9)	[Column 15] DCF Cost Rate Adjusted for Flotation (10)	[Column 16] Flotation Cost Adjustment (11)
3.71 %	5.53 %	3.81 %	9.34 %	9.49 %	0.15 %

Proxy Group of
 Fourteen Electric
 Companies

Notes:

- (1) Company provided
- (2) Col. 3 - Col. 4 - Col. 5
- (3) (Col. 2 - Col. 6) x Col. 1
- (4) Col. 1 x Col. 2
- (5) Col. 1 x Col. 6
- (6) Col. 7 / Col. 8
- (7) From page 2 of this Schedule
- (8) Col. 11 x (1 + 0.5 x Col. 12)
- (9) Col. 12 x Col. 13
- (10) (Col. 13 / (1 - Col. 10)) + Col. 12
- (11) Col. 15 - Col. 14

Dr. Griffing Constant Growth DCF Model - Adjusted

Company	Ticker	Zacks	Yahoo!	VL	Mean	Avg Price	Dividend
Alliant Energy Corporation	LNT	5.82%	5.70%	5.50%	5.67%	\$53.46	\$1.61
Ameren Corporation	AEE	7.26%	7.50%	6.00%	6.92%	\$80.37	\$2.24
American Electric Power Co.	AEP	5.69%	6.15%	6.50%	6.11%	\$84.72	\$3.04
CMS Energy Corporation	CMS	6.95%	7.20%	7.50%	7.22%	\$60.19	\$1.77
Consolidated Edison, Inc.	ED	2.00%	2.95%	2.50%	2.48%	\$73.85	\$3.10
Dominion Energy	D	6.72%	2.78%	7.00%	5.50%	\$75.11	\$2.52
Duke Energy Corporation	DUK	5.23%	5.00%	5.00%	5.08%	\$95.22	\$3.90
Entergy Corporation	ETR	5.10%	5.50%	3.00%	4.53%	\$99.26	\$3.92
Evergy, Inc.	EVRG	5.90%	5.65%	8.00%	6.52%	\$59.71	\$2.20
Eversource Energy	ES	6.78%	7.05%	6.50%	6.78%	\$85.14	\$2.41
NextEra Energy	NEE	7.83%	8.49%	10.50%	8.94%	\$74.72	\$1.54
OGE Energy Corporation	OGE	4.41%	3.80%	4.00%	4.07%	\$32.51	\$1.64
Pinnacle West Capital Corporation	PNW	3.37%	3.50%	4.50%	3.79%	\$80.89	\$3.42
Portland General Electric Co.	POR	13.36%	13.40%	4.00%	10.25%	\$47.69	\$1.72
Southern Co.	SO	5.03%	6.49%	3.50%	5.01%	\$61.56	\$2.62
WEC Energy Group, Inc.	WEC	6.07%	6.10%	6.50%	6.22%	\$91.72	\$2.76
Mean		6.10%	6.08%	5.66%	5.94%	\$72.26	\$2.53
Median		5.86%	5.90%	5.75%	5.89%	\$74.92	\$2.47

Company	Ticker	Div Yield	Flotation			DCF Result
			Exp Div Yield	Adj Div Yield	DCF	
Alliant Energy Corporation	LNT	3.01%	3.18%	3.31%	8.98%	
Ameren Corporation	AEE	2.79%	2.98%	3.10%	10.02%	
American Electric Power Co.	AEP	3.59%	3.81%	3.96%	10.07%	
CMS Energy Corporation	CMS	2.94%	3.15%	3.28%	10.49%	
Consolidated Edison, Inc.	ED	4.20%	4.30%	4.47%		[1]
Dominion Energy	D	3.36%	3.54%	3.68%	9.18%	
Duke Energy Corporation	DUK	4.10%	4.30%	4.47%	9.55%	
Entergy Corporation	ETR	3.95%	4.13%	4.29%	8.82%	
Evergy, Inc.	EVRG	3.68%	3.92%	4.08%	10.59%	
Eversource Energy	ES	2.83%	3.02%	3.14%		[1]
NextEra Energy	NEE	2.06%	2.25%	2.33%	11.27%	
OGE Energy Corporation	OGE	5.04%	5.25%	5.45%	9.52%	
Pinnacle West Capital Corporation	PNW	4.23%	4.39%	4.56%	8.35%	
Portland General Electric Co.	POR	3.61%	3.98%	4.13%	14.39%	
Southern Co.	SO	4.26%	4.47%	4.64%	9.65%	
WEC Energy Group, Inc.	WEC	3.01%	3.20%	3.32%	9.54%	
Mean		3.54%	3.74%	3.89%	10.03%	
Median		3.60%	3.87%	4.02%	9.60%	

Size Adjustment	0.31% [2]
Mean + Size Adjustment	10.34%
Median + Size Adjustment	9.91%

Notes: [1] Electric distribution-only companies removed

[2] Average size adjustment from Attachment__MFG-17, Schedules 9 and 10

Source: Attachment__MFG-17, Schedule 1

Gross Domestic Product by Industry

Industry	1947	2020	CAGR
Agriculture, forestry, fishing, and hunting	19.9	175.8	3.03%
Mining	5.8	192.5	4.91%
Utilities	3.5	336.9	6.46%
Construction	8.9	897.6	6.52%
Manufacturing	63.4	2,269.2	5.02%
Wholesale trade	15.6	1,217.7	6.15%
Retail trade	23.2	1,200.9	5.56%
Transportation and warehousing	14.1	595.9	5.26%
Information	7.7	1,161.4	7.11%
Finance, insurance, real estate, rental, and leasing	25.8	4,660.2	7.38%
Professional and business services	8.2	2,673.6	8.25%
Educational services, health care, and social assistance	4.6	1,807.5	8.53%
Arts, entertainment, recreation, accommodation, and food services	8.0	679.7	6.27%
Other services, except government	7.5	421.9	5.68%
Government	33.5	2,645.7	6.17%
Total Gross domestic product	249.7	20,936.5	6.25%

Industry	Gross Domestic Product	1947-2020 CAGR	Beginning Year	Ending Year	Gross Domestic Product	
					In Ending Year	% of Total
Agriculture, forestry, fishing, and hunting	175.8	3.03%	1	251	3.E+05	
Mining	192.5	4.91%	1	251	3.E+07	
Utilities	336.9	6.46%	1	251	2.E+09	
Construction	897.6	6.52%	1	251	7.E+09	
Manufacturing	2,269.2	5.02%	1	251	5.E+08	
Wholesale trade	1,217.7	6.15%	1	251	4.E+09	
Retail trade	1,200.9	5.56%	1	251	9.E+08	
Transportation and warehousing	595.9	5.26%	1	251	2.E+08	
Information	1,161.4	7.11%	1	251	4.E+10	
Finance, insurance, real estate, rental, and leasing	4,660.2	7.38%	1	251	3.E+11	
Professional and business services	2,673.6	8.25%	1	251	1.E+12	
Educational services, health care, and social assistance	1,807.5	8.53%	1	251	1.E+12	50.00%
Arts, entertainment, recreation, accommodation, and food services	679.7	6.27%	1	251	3.E+09	
Other services, except government	421.9	5.68%	1	251	4.E+08	
Government	2,645.7	6.17%	1	251	9.E+09	
Total Gross domestic product	20,936.5				3.E+12	

Industry	Gross Domestic Product	1947-2020 CAGR	Beginning Year	Ending Year	Gross Domestic Product	
					In Ending Year	% of Total
Agriculture, forestry, fishing, and hunting	175.8	3.03%	1	3749	7.E+50	
Mining	192.5	4.91%	1	3749	2.E+80	
Utilities	336.9	6.46%	1	3749	2.E+104	
Construction	897.6	6.52%	1	3749	7.E+105	
Manufacturing	2,269.2	5.02%	1	3749	1.E+83	
Wholesale trade	1,217.7	6.15%	1	3749	2.E+100	
Retail trade	1,200.9	5.56%	1	3749	1.E+91	
Transportation and warehousing	595.9	5.26%	1	3749	2.E+86	
Information	1,161.4	7.11%	1	3749	9.E+114	
Finance, insurance, real estate, rental, and leasing	4,660.2	7.38%	1	3749	4.E+119	
Professional and business services	2,673.6	8.25%	1	3749	3.E+132	
Educational services, health care, and social assistance	1,807.5	8.53%	1	3749	3.E+136	99.99%
Arts, entertainment, recreation, accommodation, and food services	679.7	6.27%	1	3749	8.E+101	
Other services, except government	421.9	5.68%	1	3749	3.E+92	
Government	2,645.7	6.17%	1	3749	7.E+100	
Total Gross domestic product	20,936.5				3.E+136	

Source: Bureau of Economic Analysis

Dr. Griffing Constant Growth Market Return

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)	
ABIOMED Inc.	ABMD	17.10	0.00	0.00	17.10	14,500	0.00065	0.0111	0.04%	[1]
Adobe Inc.	ADBE	17.50	0.00	0.00	17.50	236,343	0.01054	0.1845	0.63%	[1]
Advanced Micro Dev.	AMD	26.31	0.00	0.00	26.31	99,544	0.00444	0.1169	0.26%	[1]
Akamai Technologies	AKAM	12.00	0.00	0.00	12.00	16,676	0.00074	0.0089	0.04%	[1]
Alaska Air Group	ALK	-18.50	0.00	0.00	-18.50	8,988	0.00040	-0.0074	0.02%	[1]
Alexion Pharmac.	ALXN	8.78	0.00	0.00	8.78	33,441	0.00149	0.0131	0.09%	[1]
Align Techn.	ALGN	24.14	0.00	0.00	24.14	43,569	0.00194	0.0469	0.12%	[1]
Alphabet Inc.	GOOG	16.95	0.00	0.00	16.95	1,519,034	0.06777	1.1488	4.03%	[1]
Alphabet Inc. 'A'	GOOGL	16.95	0.00	0.00	16.95	1,525,261	0.06805	1.1535	4.05%	[1]
Amazon.com	AMZN	37.20	0.00	0.00	37.20	1,649,533	0.07360	2.7378	4.38%	[1]
Amer. Airlines	AAL	-45.70	0.00	0.00	-45.70	14,872	0.00066	-0.0303	0.04%	[1]
ANSYS, Inc.	ANSS	8.00	0.00	0.00	8.00	30,763	0.00137	0.0110	0.08%	[1]
Aptiv PLC	APTIV	43.37	0.00	0.00	43.37	37,995	0.00170	0.0735	0.10%	[1]
Arista Networks	ANET	6.60	0.00	0.00	6.60	23,448	0.00105	0.0069	0.06%	[1]
Autodesk, Inc.	ADSK	35.58	0.00	0.00	35.58	62,861	0.00280	0.0998	0.17%	[1]
AutoZone Inc.	AZO	6.70	0.00	0.00	6.70	31,572	0.00141	0.0094	0.08%	[1]
Bio-Rad Labs. 'A'	BIO	17.80	0.00	0.00	17.80	17,209	0.00077	0.0137	0.05%	[1]
Biogen	BIIB	-10.08	0.00	0.00	-10.08	41,248	0.00184	-0.0186	0.11%	[1]
Boeing	BA	12.33	0.00	0.00	12.33	147,082	0.00656	0.0809	0.39%	[1]
Booking Holdings	BKNG	135.59	0.00	0.00	135.59	98,725	0.00440	0.5972	0.26%	[1]
Boston Scientific	BSX	6.55	0.00	0.00	6.55	55,628	0.00248	0.0163	0.15%	[1]
Cadence Design Sys.	CDNS	11.10	0.00	0.00	11.10	39,766	0.00177	0.0197	0.11%	[1]
CarMax, Inc.	KMX	6.34	0.00	0.00	6.34	20,559	0.00092	0.0058	0.05%	[1]
Carnival Corp.	CCL	-72.42	0.00	0.00	-72.42	30,740	0.00137	-0.0993	0.08%	[1]
Catalent, Inc.	CTLT	15.97	0.00	0.00	15.97	18,061	0.00081	0.0129	0.05%	[1]
CBRE Group	CBRE	11.00	0.00	0.00	11.00	26,308	0.00117	0.0129	0.07%	[1]
Centene Corp.	CNC	10.53	0.00	0.00	10.53	36,412	0.00162	0.0171	0.10%	[1]
Charter Communic.	CHTR	33.74	0.00	0.00	33.74	118,491	0.00529	0.1784	0.31%	[1]
Chipotle Mex. Grill	CMG	52.78	0.00	0.00	52.78	41,969	0.00187	0.0988	0.11%	[1]
Copart, Inc.	CPRT	22.30	0.00	0.00	22.30	26,802	0.00120	0.0267	0.07%	[1]
DaVita Inc.	DVA	13.83	0.00	0.00	13.83	11,729	0.00052	0.0072	0.03%	[1]
Delta Air Lines	DAL	-26.15	0.00	0.00	-26.15	32,037	0.00143	-0.0374	0.09%	[1]
DexCom Inc.	DXCM	23.60	0.00	0.00	23.60	35,462	0.00158	0.0373	0.09%	[1]
Discovery Commun. 'C'	DISCK	12.90	0.00	0.00	12.90	19,425	0.00087	0.0112	0.05%	[1]
Discovery, Inc.	DISCA	9.92	0.00	0.00	9.92	21,131	0.00094	0.0094	0.06%	[1]
Dish Network 'A'	DISH	-23.01	0.00	0.00	-23.01	19,857	0.00089	-0.0204	0.05%	[1]
Disney (Walt)	DIS	48.53	0.00	0.00	48.53	334,044	0.01490	0.7233	0.89%	[1]
Dollar Tree, Inc.	DLTR	9.78	0.00	0.00	9.78	27,343	0.00122	0.0119	0.07%	[1]
DXC Technology	DXC	-8.82	0.00	0.00	-8.82	7,937	0.00035	-0.0031	0.02%	[1]
Edwards Lifesciences	EW	12.99	0.00	0.00	12.99	52,516	0.00234	0.0304	0.14%	[1]
Enphase Energy	ENPH	37.70	0.00	0.00	37.70	18,942	0.00085	0.0319	0.05%	[1]
Etsy, Inc.	ETSY	48.10	0.00	0.00	48.10	25,673	0.00115	0.0551	0.07%	[1]
Expedia Group	EXPE	-15.06	0.00	0.00	-15.06	24,331	0.00109	-0.0163	0.06%	[1]
F5 Networks	FFIV	6.04	0.00	0.00	6.04	12,998	0.00058	0.0035	0.03%	[1]
Facebook Inc.	FB	21.50	0.00	0.00	21.50	891,994	0.03980	0.8556	2.37%	[1]
Fiserv Inc.	FISV	18.81	0.00	0.00	18.81	82,527	0.00368	0.0693	0.22%	[1]
FleetCor Technologies	FLT	12.04	0.00	0.00	12.04	23,533	0.00105	0.0126	0.06%	[1]
Ford Motor	F	27.66	0.00	0.00	27.66	49,743	0.00222	0.0614	0.13%	[1]
Fortinet Inc.	FTNT	15.00	0.00	0.00	15.00	31,335	0.00140	0.0210	0.08%	[1]
Gap (The), Inc.	GPS	4.90	0.00	0.00	4.90	11,482	0.00051	0.0025	0.03%	[1]
Gartner Inc.	IT	9.95	0.00	0.00	9.95	16,728	0.00075	0.0074	0.04%	[1]
Gen'l Motors	GM	11.84	0.00	0.00	11.84	87,066	0.00388	0.0460	0.23%	[1]
Generac Holdings	GNRC	8.00	0.00	0.00	8.00	23,477	0.00105	0.0084	0.06%	[1]
Hilton Worldwide Hldgs.	HLT	-6.25	0.00	0.00	-6.25	34,566	0.00154	-0.0096	0.09%	[1]
Hologic, Inc.	HOLX	10.47	0.00	0.00	10.47	18,768	0.00084	0.0088	0.05%	[1]
Host Hotels & Resorts	HST	28.40	0.00	0.00	28.40	12,359	0.00055	0.0157	0.03%	[1]
Howmet Aerospace	HWM	27.53	0.00	0.00	27.53	13,789	0.00062	0.0169	0.04%	[1]
IDEXX Labs.	IDXX	16.09	0.00	0.00	16.09	41,735	0.00186	0.0300	0.11%	[1]
Illumina Inc.	ILMN	21.50	0.00	0.00	21.50	58,480	0.00261	0.0561	0.16%	[1]
Incyte Corp.	INCY	20.89	0.00	0.00	20.89	17,891	0.00080	0.0167	0.05%	[1]
Ingersoll Rand Inc.	IR	15.99	0.00	0.00	15.99	20,990	0.00094	0.0150	0.06%	[1]
Intuitive Surgical	ISRG	9.15	0.00	0.00	9.15	89,420	0.00399	0.0365	0.24%	[1]
IPG Photonics	IPGP	45.60	0.00	0.00	45.60	11,751	0.00052	0.0239	0.03%	[1]
IQVIA Holdings	IQV	14.85	0.00	0.00	14.85	38,647	0.00172	0.0256	0.10%	[1]
Keysight Technologies	KEYS	12.41	0.00	0.00	12.41	26,818	0.00120	0.0148	0.07%	[1]
Laboratory Corp.	LH	10.93	0.00	0.00	10.93	24,574	0.00110	0.0120	0.07%	[1]
Las Vegas Sands	LVS	-6.25	0.00	0.00	-6.25	47,458	0.00212	-0.0132	0.13%	[1]
Live Nation Entertain.	LYV	80.30	0.00	0.00	80.30	18,820	0.00084	0.0674	0.05%	[1]
LKQ Corp.	LKQ	33.50	0.00	0.00	33.50	13,337	0.00060	0.0199	0.04%	[1]
Marriott Int'l	MAR	612.60	0.00	0.00	612.60	48,274	0.00215	1.3194	0.13%	[1]
Maxim Integrated	MXIM	18.44	0.00	0.00	18.44	25,554	0.00114	0.0210	0.07%	[1]
Mettler-Toledo Int'l	MTD	13.80	0.00	0.00	13.80	28,163	0.00126	0.0173	0.07%	[1]
Micron Technology	MU	60.47	0.00	0.00	60.47	105,329	0.00470	0.2842	0.28%	[1]
Mohawk Inds.	MHK	4.00	0.00	0.00	4.00	13,897	0.00062	0.0025	0.04%	[1]
Monster Beverage	MNST	15.35	0.00	0.00	15.35	49,763	0.00222	0.0341	0.13%	[1]
Netflix, Inc.	NFLX	44.43	0.00	0.00	44.43	242,259	0.01081	0.4802	0.64%	[1]
Norwegian Cruise Line	NCLH	-24.13	0.00	0.00	-24.13	9,883	0.00044	-0.0106	0.03%	[1]
NOV Inc.	NOV	18.90	0.00	0.00	18.90	5,252	0.00023	0.0044	0.01%	[1]
NVR, Inc.	NVR	4.80	0.00	0.00	4.80	17,654	0.00079	0.0038	0.05%	[1]
O'Reilly Automotive	ORLY	10.07	0.00	0.00	10.07	36,461	0.00163	0.0164	0.10%	[1]
Paycom Software	PAYC	27.10	0.00	0.00	27.10	21,479	0.00096	0.0260	0.06%	[1]
PayPal Holdings	PYPL	22.24	0.00	0.00	22.24	299,563	0.01337	0.2972	0.80%	[1]
Penn Nat'l Gaming	PENN	141.92	0.00	0.00	141.92	15,893	0.00071	0.1006	0.04%	[1]
PVH Corp.	PVH	-4.87	0.00	0.00	-4.87	7,326	0.00033	-0.0016	0.02%	[1]
Qorvo Inc.	QRVO	16.50	0.00	0.00	16.50	21,945	0.00098	0.0162	0.06%	[1]
Ralph Lauren	RL	4.97	0.00	0.00	4.97	9,038	0.00040	0.0020	0.02%	[1]
Regeneron Pharmac.	REGN	11.11	0.00	0.00	11.11	50,637	0.00226	0.0251	0.13%	[1]
Ross Stores	ROST	46.74	0.00	0.00	46.74	43,989	0.00196	0.0917	0.12%	[1]
Royal Caribbean	RCL	58.70	0.00	0.00	58.70	21,613	0.00096	0.0566	0.06%	[1]
salesforce.com	CRM	12.92	0.00	0.00	12.92	201,802	0.00900	0.1163	0.54%	[1]

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)
Schein (Henry)	HSIC	14.43	0.00	0.00	14.43	9,781	0.00044	0.0063	[1]
ServiceNow, Inc.	NOW	23.50	0.00	0.00	23.50	99,618	0.00444	0.1044	[1]
Southwest Airlines	LUV	-21.00	0.00	0.00	-21.00	37,507	0.00167	-0.0351	[1]
SVB Fin'l Group	SIVB	8.00	0.00	0.00	8.00	25,096	0.00112	0.0090	[1]
Synopsys, Inc.	SNPS	11.50	0.00	0.00	11.50	39,158	0.00175	0.0201	[1]
T-Mobile US	TMUS	38.46	0.00	0.00	38.46	161,460	0.00720	0.2771	[1]
Take-Two Interactive	TTWO	17.21	0.00	0.00	17.21	21,135	0.00094	0.0162	[1]
Tapestry Inc.	TPR	48.12	0.00	0.00	48.12	11,970	0.00053	0.0257	[1]
Teledyne Technologies	TDY	12.80	0.00	0.00	12.80	15,337	0.00068	0.0088	[1]
Tesla, Inc.	TSLA	32.10	0.00	0.00	32.10	636,080	0.02838	0.9110	[1]
TransDigm Group	TDG	15.48	0.00	0.00	15.48	33,146	0.00148	0.0229	[1]
Trimble Inc.	TRMB	10.00	0.00	0.00	10.00	19,999	0.00089	0.0089	[1]
Twitter Inc.	TWTR	0.43	0.00	0.00	0.43	54,809	0.00245	0.0011	[1]
Tyler Technologies	TYL	10.00	0.00	0.00	10.00	17,516	0.00078	0.0078	[1]
Ulta Beauty	ULTA	41.80	0.00	0.00	41.80	17,784	0.00079	0.0332	[1]
Under Armour 'A'	UAA	-4.50	0.00	0.00	-4.50	10,380	0.00046	-0.0021	[1]
Under Armour 'C'	UA	21.80	0.00	0.00	21.80	8,557	0.00038	0.0083	[1]
United Airlines Hldgs.	UAL	-25.40	0.00	0.00	-25.40	17,334	0.00077	-0.0196	[1]
United Rentals	URI	8.60	0.00	0.00	8.60	23,247	0.00104	0.0089	[1]
Varian Medical Sys.	VAR	9.90	0.00	0.00	9.90	16,098	0.00072	0.0071	[1]
VeriSign Inc.	VRSN	8.00	0.00	0.00	8.00	23,190	0.00103	0.0083	[1]
Vertex Pharm.	VRTX	18.33	0.00	0.00	18.33	55,284	0.00247	0.0452	[1]
Viatrix Inc.	VTRS	-3.65	0.00	0.00	-3.65	-	-	0.0000	[1]
Waters Corp.	WAT	7.17	0.00	0.00	7.17	18,381	0.00082	0.0059	[1]
Western Digital	WDC	-22.00	0.00	0.00	-22.00	22,099	0.00099	-0.0217	[1]
Wynn Resorts	WYNN	-1.10	0.00	0.00	-1.10	14,315	0.00064	-0.0007	[1]
Xilinx Inc.	XLNX	9.00	0.00	0.00	9.00	32,288	0.00144	0.0130	[1]
Zebra Techn. 'A'	ZBRA	10.00	0.00	0.00	10.00	25,946	0.00116	0.0116	[1]
Allstate Corp.	ALL	-0.40	2.78	2.77	2.37	35,380	0.00158	0.0037	[2]
AMETEK, Inc.	AME	-1.20	0.62	0.61	-0.59	29,864	0.00133	-0.0008	[2]
APA Corp.	APA	-24.00	0.56	0.43	-23.57	6,800	0.00030	-0.0072	[2]
Caterpillar Inc.	CAT	-1.11	1.79	1.77	0.66	125,643	0.00561	0.0037	[2]
CenterPoint Energy	CNP	-5.88	2.78	2.62	-3.26	12,880	0.00057	-0.0019	[2]
CF Industries	CF	-5.21	2.65	2.51	-2.70	9,864	0.00044	-0.0012	[2]
Chevron Corp.	CVX	-4.90	4.95	4.71	-0.19	200,585	0.00895	-0.0017	[2]
Citizens Fin'l Group	CFG	-2.76	3.47	3.37	0.61	19,220	0.00086	0.0005	[2]
Comerica Inc.	CMA	-10.70	3.79	3.38	-7.32	10,002	0.00045	-0.0033	[2]
ConocoPhillips	COP	-8.50	3.28	3.00	-5.50	55,944	0.00250	-0.0137	[2]
Dow Inc.	DOW	-5.43	4.45	4.21	-1.22	47,557	0.00212	-0.0026	[2]
Edison Int'l	EIX	-0.50	4.47	4.45	3.95	22,719	0.00101	0.0040	[2]
Exelon Corp.	EXC	-0.34	3.40	3.39	3.05	43,871	0.00196	0.0060	[2]
Fifth Third Bancorp	FITB	-2.98	2.81	2.73	-0.25	27,370	0.00122	-0.0003	[2]
FirstEnergy Corp.	FE	-1.97	4.45	4.36	2.39	19,025	0.00085	0.0020	[2]
Hess Corp.	HES	-23.40	1.37	1.05	-22.35	22,420	0.00100	-0.0224	[2]
HollyFrontier Corp.	HFC	-10.70	4.02	3.59	-7.11	5,985	0.00027	-0.0019	[2]
Huntington Bancshs.	HBAN	-2.15	3.72	3.64	1.49	16,418	0.00073	0.0011	[2]
Kraft Heinz Co.	KHC	-2.88	3.94	3.83	0.95	49,703	0.00222	0.0021	[2]
LyondellBasell Inds.	LYB	-4.07	4.10	3.89	-0.18	34,604	0.00154	-0.0003	[2]
Marathon Oil Corp.	MRO	-19.63	1.05	0.88	-18.75	8,632	0.00039	-0.0072	[2]
Marathon Petroleum	MPC	-6.76	4.30	4.01	-2.75	35,040	0.00156	-0.0043	[2]
MGM Resorts Int'l	MGM	-39.13	0.02	0.01	-39.12	20,312	0.00091	-0.0354	[2]
Newmont Corp.	NEM	-1.24	3.55	3.51	2.27	49,608	0.00221	0.0050	[2]
NRG Energy	NRG	-12.70	3.41	2.98	-9.72	9,314	0.00042	-0.0040	[2]
Occidental Petroleum	OXY	-5.15	0.32	0.30	-4.85	23,564	0.00105	-0.0051	[2]
ONEOK Inc.	OKE	-1.60	7.53	7.41	5.81	22,751	0.00102	0.0059	[2]
Phillips 66	PSX	-7.75	4.62	4.26	-3.49	34,944	0.00156	-0.0054	[2]
PNC Financial Serv.	PNC	-1.62	2.58	2.54	0.92	75,578	0.00337	0.0031	[2]
PPL Corp.	PPL	-16.20	5.76	4.83	-11.37	22,298	0.00099	-0.0113	[2]
Progressive Corp.	PGR	-9.11	0.42	0.38	-8.73	56,097	0.00250	-0.0218	[2]
Prologis	PLD	-6.05	2.34	2.20	-3.85	81,058	0.00362	-0.0139	[2]
Regions Financial	RF	-21.60	2.94	2.30	-19.30	20,285	0.00091	-0.0175	[2]
Smucker (I.M.)	SJM	-0.42	2.86	2.85	2.43	14,037	0.00063	0.0015	[2]
Truist Fin'l	TFC	-9.10	3.03	2.75	-6.35	80,169	0.00358	-0.0227	[2]
UDR, Inc.	UDR	-34.21	3.29	2.16	-32.05	13,235	0.00059	-0.0189	[2]
Valero Energy	VLO	-13.00	5.27	4.58	-8.42	30,389	0.00136	-0.0114	[2]
Ventas, Inc.	VTR	-0.50	3.39	3.37	2.87	20,416	0.00091	0.0026	[2]
ViacomCBS Inc.	VIAC	-4.20	2.19	2.10	-2.10	27,036	0.00121	-0.0025	[2]
Zions Bancorp.	ZION	-32.40	2.45	1.66	-30.74	9,115	0.00041	-0.0125	[2]
Albemarle Corp.	ALB	25.61	1.09	1.37	26.98	15,353	0.00069	0.0185	[2]
Applied Materials	AMAT	21.28	0.69	0.84	22.12	127,683	0.00570	0.1260	[2]
Berkley (W.R.)	WRB	23.47	0.61	0.75	24.22	13,973	0.00062	0.0151	[2]
Cabot Oil & Gas 'A'	COG	43.75	2.60	3.74	47.49	7,371	0.00033	0.0156	[2]
Celanese Corp.	CE	21.06	1.80	2.18	23.24	17,702	0.00079	0.0184	[2]
Chubb Ltd.	CB	22.88	1.94	2.38	25.26	72,545	0.00324	0.0818	[2]
Darden Restaurants	DRI	36.64	2.41	3.29	39.93	19,070	0.00085	0.0340	[2]
Deere & Co.	DE	34.00	0.96	1.29	35.29	117,474	0.00524	0.1849	[2]
Dentsply Sirona	XRAY	24.08	0.63	0.78	24.86	13,971	0.00062	0.0155	[2]
Devon Energy	DVN	25.00	1.95	2.44	27.44	8,625	0.00038	0.0106	[2]
Diamondback Energy	FANG	49.13	2.10	3.13	52.26	12,046	0.00054	0.0281	[2]
Digital Realty Trust	DLR	30.98	3.29	4.31	35.29	40,053	0.00179	0.0631	[2]
DuPont de Nemours	DD	29.80	1.61	2.09	31.89	55,506	0.00248	0.0790	[2]
EOG Resources	EOG	58.35	2.25	3.56	61.91	42,776	0.00191	0.1182	[2]
Equinix, Inc.	EQIX	28.95	1.72	2.22	31.17	61,008	0.00272	0.0848	[2]
Everest Re Group Ltd.	RE	62.70	2.46	4.00	66.70	10,226	0.00046	0.0304	[2]
FedEx Corp.	FDX	29.41	0.93	1.20	30.61	74,060	0.00330	0.1012	[2]
Freep't-McMoRan Inc.	FCX	41.83	0.94	1.33	43.16	49,543	0.00221	0.0954	[2]
Gen'l Electric	GE	322.80	0.30	1.27	324.07	117,370	0.00524	1.6970	[2]
Hunt (I.B.)	JBHT	20.73	0.68	0.82	21.55	17,893	0.00080	0.0172	[2]
Int'l Paper	IP	25.83	3.73	4.69	30.52	21,597	0.00096	0.0294	[2]
Lam Research	LRCX	22.97	0.83	1.02	23.99	94,341	0.00421	0.1010	[2]
Lauder (Estee)	EL	21.10	0.75	0.91	22.01	107,024	0.00478	0.1051	[2]
Lincoln Nat'l Corp.	LNC	24.92	2.73	3.41	28.33	12,267	0.00055	0.0155	[2]
Monolithic Power Sys.	MPWR	25.00	0.64	0.80	25.80	16,890	0.00075	0.0194	[2]

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)	
News Corp. 'A'	NWSA	49.01	0.76	1.13	50.14	15,607	0.00070	0.0349	0.04%	[2]
NIKE, Inc. 'B'	NKE	34.55	0.81	1.09	35.64	215,597	0.00962	0.3428	0.57%	[2]
NortonLifeLock Inc.	NLOK	21.90	2.30	2.80	24.70	12,767	0.00057	0.0141	0.03%	[2]
NVIDIA Corp.	NVDA	25.19	0.11	0.14	25.33	350,759	0.01565	0.3964	0.93%	[2]
PACCAR Inc.	PCAR	22.24	3.57	4.36	26.60	32,050	0.00143	0.0380	0.09%	[2]
Pioneer Natural Res.	PXD	91.92	1.47	2.82	94.74	25,252	0.00113	0.1067	0.07%	[2]
Qualcomm Inc.	QCOM	24.48	1.95	2.43	26.91	158,392	0.00707	0.1902	0.42%	[2]
Raytheon Technologies	RTX	23.66	2.47	3.05	26.71	117,908	0.00526	0.1405	0.31%	[2]
ResMed Inc.	RMD	22.10	0.79	0.96	23.06	28,682	0.00128	0.0295	0.08%	[2]
SBA Communications	SBAC	104.68	0.82	1.68	106.36	31,671	0.00141	0.1503	0.08%	[2]
Schlumberger Ltd.	SLB	41.84	1.83	2.60	44.44	38,080	0.00170	0.0755	0.10%	[2]
Starbucks Corp.	SBUX	50.81	1.68	2.53	53.34	133,247	0.00595	0.3171	0.35%	[2]
Sysco Corp.	SY	23.41	2.23	2.75	26.16	41,131	0.00184	0.0480	0.11%	[2]
Textron, Inc.	TXT	23.76	0.14	0.17	23.93	12,923	0.00058	0.0138	0.03%	[2]
TXI Companies	TXI	63.31	1.53	2.50	65.81	81,379	0.00363	0.2389	0.22%	[2]
Wells Fargo	WFC	112.99	1.00	2.13	115.12	165,259	0.00737	0.8488	0.44%	[2]
West Pharm. Svcs.	WST	22.60	0.23	0.28	22.88	21,370	0.00095	0.0218	0.06%	[2]
WestRock Co.	WRK	24.38	1.51	1.88	26.26	13,900	0.00062	0.0163	0.04%	[2]
3M Company	MMM	8.04	3.04	3.28	11.32	112,451	0.00502	0.0568	0.30%	
Abbott Labs.	ABT	15.58	1.50	1.73	17.31	212,878	0.00950	0.1644	0.57%	
AbbVie Inc.	ABBV	4.10	4.94	5.14	9.24	185,710	0.00829	0.0766	0.49%	
Accenture Plc	ACN	9.75	1.30	1.43	11.18	179,762	0.00802	0.0896	0.48%	
Activision Blizzard	ATVI	17.83	0.49	0.58	18.41	74,976	0.00335	0.0616	0.20%	
Advance Auto Parts	AAP	14.01	0.55	0.63	14.64	12,119	0.00054	0.0079	0.03%	
AES Corp.	AES	8.15	2.21	2.39	10.54	18,018	0.00080	0.0085	0.05%	
Aflac Inc.	AFL	6.11	2.63	2.79	8.90	35,814	0.00160	0.0142	0.10%	
Agilent Technologies	A	10.80	0.60	0.66	11.46	39,449	0.00176	0.0202	0.10%	
Air Products & Chem.	APD	9.01	2.12	2.31	11.32	62,509	0.00279	0.0316	0.17%	
Alexandria Real Estate	ARE	0.10	2.57	2.57	2.67	18,872	0.00084	0.0023	0.05%	
Allegion plc	ALLE	4.20	1.10	1.15	5.35	11,982	0.00053	0.0029	0.03%	
Alliant Energy	LNT	5.70	2.96	3.13	8.83	13,590	0.00061	0.0054	0.04%	
Altria Group	MO	4.42	6.73	7.03	11.45	95,021	0.00424	0.0485	0.25%	
Amcor plc	AMCR	7.64	4.04	4.35	11.99	18,829	0.00084	0.0101	0.05%	
Amer. Elec. Power	AEP	6.15	3.51	3.73	9.88	43,051	0.00192	0.0190	0.11%	
Amer. Express	AXP	15.60	1.22	1.41	17.01	118,440	0.00528	0.0899	0.31%	
Amer. Int'l Group	AIG	17.30	2.72	3.19	20.49	40,562	0.00181	0.0371	0.11%	
Amer. Tower 'A'	AMT	17.31	2.21	2.59	19.90	108,732	0.00485	0.0966	0.29%	
Amer. Water Works	AWK	8.60	1.57	1.71	10.31	27,726	0.00124	0.0127	0.07%	
Ameren Corp.	AEE	7.50	2.76	2.97	10.47	20,593	0.00092	0.0096	0.05%	
Ameriprise Fin'l	AMP	10.11	1.75	1.93	12.04	27,797	0.00124	0.0149	0.07%	
AmerisourceBergen	ABC	9.20	1.51	1.65	10.85	23,788	0.00106	0.0115	0.06%	
Amgen	AMGN	6.86	2.91	3.11	9.97	143,488	0.00640	0.0638	0.38%	
Amphenol Corp.	APH	11.20	0.86	0.96	12.16	40,280	0.00180	0.0218	0.11%	
Analog Devices	ADI	11.78	1.73	1.93	13.71	58,820	0.00262	0.0360	0.16%	
Anthem, Inc.	ANTM	13.59	1.28	1.45	15.04	86,428	0.00386	0.0580	0.23%	
Aon plc	AON	10.41	0.78	0.86	11.27	54,153	0.00242	0.0272	0.14%	
Apple Inc.	AAPL	14.69	0.69	0.79	15.48	2,151,695	0.09600	1.4862	5.71%	
Archer Daniels Mid'l'd	ADM	4.30	2.63	2.74	7.04	32,159	0.00143	0.0101	0.09%	
Assurant Inc.	AIZ	19.40	1.81	2.16	21.56	8,439	0.00038	0.0081	0.02%	
AT&T Inc.	T	1.89	6.72	6.85	8.74	220,378	0.00983	0.0859	0.59%	
Atmos Energy	ATO	7.17	2.65	2.84	10.01	12,588	0.00056	0.0056	0.03%	
Automatic Data Proc.	ADP	10.26	2.08	2.29	12.55	79,545	0.00355	0.0446	0.21%	
AvalonBay Communities	AVB	2.54	3.44	3.53	6.07	26,200	0.00117	0.0071	0.07%	
Avery Dennison	AVY	7.84	1.40	1.40	9.24	15,849	0.00071	0.0065	0.04%	
Baker Hughes	BKR	3.25	3.36	3.47	6.72	15,515	0.00069	0.0047	0.04%	
Ball Corp.	BLL	13.60	0.69	0.78	14.38	28,346	0.00126	0.0182	0.08%	
Bank of America	BAC	1.11	1.80	1.82	2.93	346,465	0.01546	0.0453	0.92%	
Bank of New York Mellon	BK	12.59	2.59	2.92	15.51	42,423	0.00189	0.0293	0.11%	
Baxter Int'l Inc.	BAX	9.00	1.16	1.26	10.26	43,259	0.00193	0.0198	0.11%	
Becton, Dickinson	BDX	12.00	1.38	1.55	13.55	70,902	0.00316	0.0429	0.19%	
Best Buy Co.	BBY	9.63	2.32	2.54	12.17	31,112	0.00139	0.0169	0.08%	
BlackRock, Inc.	BLK	11.61	2.10	2.34	13.95	120,167	0.00536	0.0748	0.32%	
BorgWarner	BWA	19.41	1.50	1.79	21.20	11,126	0.00050	0.0105	0.03%	
Boston Properties	BXP	7.00	3.81	4.08	11.08	16,304	0.00073	0.0081	0.04%	
Bristol-Myers Squibb	BMY	7.35	3.16	3.39	10.74	139,263	0.00621	0.0667	0.37%	
Broadcom Inc.	AVGO	8.60	2.98	3.24	11.84	196,844	0.00878	0.1040	0.52%	
Broadridge Fin'l	BR	10.00	1.49	1.64	11.64	17,912	0.00080	0.0093	0.05%	
Brown-Forman 'B'	BF/B	7.53	1.02	1.10	8.63	33,688	0.00150	0.0130	0.09%	
C.H. Robinson	CHRW	9.94	2.16	2.37	12.31	13,083	0.00058	0.0072	0.03%	
Campbell Soup	CPB	8.64	3.01	3.27	11.91	14,914	0.00067	0.0079	0.04%	
Capital One Fin'l	COF	4.19	1.20	1.25	5.44	60,820	0.00271	0.0148	0.16%	
Cardinal Health	CAH	7.57	3.23	3.47	11.04	17,846	0.00080	0.0088	0.05%	
Carrier Global	CARR	5.53	1.12	1.18	6.71	37,048	0.00165	0.0111	0.10%	
Choe Global Markets	CBOE	1.80	1.68	1.71	3.51	10,758	0.00048	0.0017	0.03%	
CDW Corp.	CDW	11.59	0.94	1.05	12.64	24,168	0.00108	0.0136	0.06%	
Cerner Corp.	CERN	11.51	1.22	1.36	12.87	22,101	0.00099	0.0127	0.06%	
Church & Dwight	CHD	8.71	1.15	1.25	9.96	21,557	0.00096	0.0096	0.06%	
Cigna Corp.	CI	10.35	1.66	1.83	12.18	88,206	0.00394	0.0479	0.23%	
Cincinnati Financial	CINF	7.92	2.39	2.58	10.50	16,935	0.00076	0.0079	0.04%	
Cintas Corp.	CTAS	12.85	0.86	0.97	13.82	36,795	0.00164	0.0227	0.10%	
Cisco Systems	CSCO	6.60	2.86	3.05	9.65	218,521	0.00975	0.0941	0.58%	
Citigroup Inc.	C	1.28	2.81	2.85	4.13	151,338	0.00675	0.0279	0.40%	
Citrix Sys.	CTXS	10.70	1.04	1.15	11.85	17,481	0.00078	0.0092	0.05%	
Clorox Co.	CLX	5.07	2.29	2.41	7.48	24,390	0.00109	0.0081	0.06%	
CME Group	CME	4.87	1.76	1.85	6.72	73,177	0.00326	0.0219	0.19%	
CMS Energy Corp.	CMS	7.20	2.89	3.10	10.30	17,666	0.00079	0.0081	0.05%	
Coca-Cola	KO	6.14	3.15	3.34	9.48	229,211	0.01023	0.0970	0.61%	
Cognizant Technology	CTSH	3.40	1.21	1.25	4.65	41,981	0.00187	0.0087	0.11%	
Colgate-Palmolive	CL	7.46	2.26	2.43	9.89	67,668	0.00302	0.0299	0.18%	
Comcast Corp.	CMCSA	14.57	1.83	2.10	16.67	250,104	0.01116	0.1860	0.66%	
Conagra Brands	CAG	6.33	3.03	3.22	9.55	17,873	0.00080	0.0076	0.05%	
Consol. Edison	ED	2.95	4.12	4.24	7.19	25,778	0.00115	0.0083	0.07%	
Constellation Brands	STZ	9.35	1.28	1.40	10.75	45,409	0.00203	0.0218	0.12%	

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)
Cooper Cos.	COO	10.00	0.02	0.02	10.02	18,790	0.00084	0.0084	0.05%
Corning Inc.	GLW	12.75	2.17	2.45	15.20	33,882	0.00151	0.0230	0.09%
Corteva, Inc.	CTVA	18.25	1.22	1.44	19.69	34,757	0.00155	0.0305	0.09%
Costco Wholesale	COST	8.64	0.82	0.89	9.53	158,829	0.00709	0.0675	0.42%
Crown Castle Int'l	CCI	19.60	3.17	3.79	23.39	75,968	0.00339	0.0793	0.20%
CSX Corp.	CSX	15.34	1.15	1.33	16.67	73,927	0.00330	0.0550	0.20%
Cummins Inc.	CMI	14.98	2.09	2.40	17.38	38,235	0.00171	0.0297	0.10%
CVS Health	CVS	3.77	2.68	2.78	6.55	97,507	0.00435	0.0285	0.26%
Danaher Corp.	DHR	12.19	0.37	0.42	12.61	160,736	0.00717	0.0904	0.43%
Discover Fin'l Svcs.	DFS	6.27	1.78	1.89	8.16	30,292	0.00135	0.0110	0.08%
Dollar General	DG	13.57	0.82	0.93	14.50	49,537	0.00221	0.0321	0.13%
Dominion Energy	D	2.78	3.31	3.40	6.18	61,433	0.00274	0.0169	0.16%
Domino's Pizza	DPZ	10.43	0.98	1.08	11.51	14,859	0.00066	0.0076	0.04%
Dover Corp.	DOV	9.50	1.42	1.55	11.05	20,042	0.00089	0.0099	0.05%
DTE Energy	DTE	4.65	3.29	3.44	8.09	26,295	0.00117	0.0095	0.07%
Duke Energy	DUK	4.99	3.99	4.19	9.18	75,224	0.00336	0.0308	0.20%
Duke Realty Corp.	DRE	6.00	2.46	2.61	8.61	16,054	0.00072	0.0062	0.04%
Eastman Chemical	EMN	3.83	2.47	2.56	6.39	15,154	0.00068	0.0043	0.04%
Eaton Corp. plc	ETN	15.69	2.17	2.51	18.20	55,955	0.00250	0.0454	0.15%
eBay Inc.	EBAY	18.79	1.17	1.39	20.18	42,244	0.00188	0.0380	0.11%
Ecolab Inc.	ECL	17.07	0.89	1.04	18.11	61,328	0.00274	0.0496	0.16%
Electronic Arts	EA	14.52	0.49	0.56	15.08	40,962	0.00183	0.0276	0.11%
Emerson Electric	EMR	9.63	2.23	2.44	12.07	54,636	0.00244	0.0294	0.15%
Energy Corp.	ETR	5.50	3.85	4.06	9.56	20,369	0.00091	0.0087	0.05%
Equifax, Inc.	EFX	10.63	0.86	0.95	11.58	22,081	0.00099	0.0114	0.06%
Equity Residential	EQR	6.10	3.33	3.53	9.63	26,932	0.00120	0.0116	0.07%
Essex Property Trust	ESS	7.90	2.96	3.19	11.09	18,384	0.00082	0.0091	0.05%
Evergy, Inc.	EVRG	5.65	3.59	3.79	9.44	13,896	0.00062	0.0059	0.04%
Eversource Energy	ES	7.05	2.75	2.94	9.99	30,043	0.00134	0.0134	0.08%
Expeditors Int'l	EXPD	4.20	0.97	1.01	5.21	18,211	0.00081	0.0042	0.05%
Extra Space Storage	EXR	6.00	2.91	3.08	9.08	18,075	0.00081	0.0073	0.05%
Exxon Mobil Corp.	XOM	10.59	6.15	6.80	17.39	239,545	0.01069	0.1859	0.64%
Fastenal Co.	FAST	7.94	2.24	2.42	10.36	28,668	0.00128	0.0132	0.08%
Federal Rlty. Inv. Trust	FRT	6.70	4.07	4.34	11.04	8,060	0.00036	0.0040	0.02%
Fidelity Nat'l Info.	FIS	13.97	1.06	1.21	15.18	91,066	0.00406	0.0617	0.24%
First Republic Bank	FRC	10.99	0.50	0.55	11.54	29,102	0.00130	0.0150	0.08%
FLIR Systems	FLIR	6.40	1.19	1.27	7.67	7,522	0.00034	0.0026	0.02%
FMC Corp.	FMC	9.00	1.74	1.90	10.90	14,427	0.00064	0.0070	0.04%
Fortive Corp.	FTV	7.05	0.39	0.42	7.47	24,076	0.00107	0.0080	0.06%
Fortune Brands Home	FBHS	9.25	1.06	1.16	10.41	13,639	0.00061	0.0063	0.04%
Franklin Resources	BEN	5.64	3.68	3.89	9.53	15,392	0.00069	0.0065	0.04%
Gallagher (Arthur J.)	AJG	9.67	1.48	1.62	11.29	25,148	0.00112	0.0127	0.07%
Garmin Ltd.	GRMN	6.37	1.98	2.11	8.48	25,804	0.00115	0.0098	0.07%
Gen'l Dynamics	GD	4.83	2.58	2.70	7.53	52,899	0.00236	0.0178	0.14%
Gen'l Mills	GIS	4.16	3.37	3.51	7.67	37,558	0.00168	0.0129	0.10%
Genuine Parts	GPC	4.60	2.79	2.92	7.52	16,836	0.00075	0.0056	0.04%
Gilead Sciences	GILD	3.26	4.33	4.47	7.73	82,262	0.00367	0.0284	0.22%
Global Payments	GNP	9.73	0.37	0.41	10.14	62,755	0.00280	0.0284	0.17%
Globe Life Inc.	GL	7.37	0.80	0.86	8.23	10,389	0.00046	0.0038	0.03%
Goldman Sachs	GS	18.20	1.53	1.81	20.01	112,362	0.00501	0.1003	0.30%
Grainger (W.W.)	GWV	12.65	1.55	1.75	14.40	20,943	0.00093	0.0135	0.06%
Halliburton Co.	HAL	15.50	0.84	0.97	16.47	18,957	0.00085	0.0139	0.05%
Hanesbrands, Inc.	HBI	4.66	3.01	3.15	7.81	6,938	0.00031	0.0024	0.02%
Hartford Fin'l Svcs.	HIG	4.41	2.05	2.14	6.55	24,414	0.00109	0.0071	0.06%
Hasbro, Inc.	HAS	17.50	2.80	3.29	20.79	13,318	0.00059	0.0124	0.04%
HCA Healthcare	HCA	12.39	1.03	1.16	13.55	63,395	0.00283	0.0383	0.17%
Healthpeak Properties	PEAK	2.50	3.68	3.77	6.27	17,568	0.00078	0.0049	0.05%
Henry (Jack) & Assoc.	JKHY	10.02	1.19	1.31	11.33	11,731	0.00052	0.0059	0.03%
Hershey Co.	HSY	7.60	2.06	2.22	9.82	33,435	0.00149	0.0146	0.09%
Hewlett Packard Ent.	HPE	12.51	3.02	3.40	15.91	20,678	0.00092	0.0147	0.05%
Home Depot	HD	8.37	2.11	2.29	10.66	336,218	0.01500	0.1599	0.89%
Honeywell Int'l	HON	11.98	1.70	1.90	13.88	152,251	0.00679	0.0943	0.40%
Hormel Foods	HLR	3.70	2.10	2.18	5.88	25,673	0.00115	0.0067	0.07%
Horton D.R.	DHI	17.90	0.88	1.04	18.94	33,517	0.00150	0.0283	0.09%
HP Inc.	HPQ	15.07	2.42	2.78	17.85	40,447	0.00180	0.0322	0.11%
Humana Inc.	HUM	12.28	0.68	0.76	13.04	54,399	0.00243	0.0317	0.14%
Huntington Ingalls	HII	0.38	2.22	2.23	2.61	8,304	0.00037	0.0010	0.02%
IDEX Corp.	IEX	11.50	0.93	1.04	12.54	16,213	0.00072	0.0091	0.04%
IHS Markit	INFO	11.45	0.81	0.90	12.35	39,393	0.00176	0.0217	0.10%
Illinois Tool Works	ITW	7.50	2.07	2.23	9.73	69,614	0.00311	0.0302	0.18%
Int'l Business Mach.	IBM	6.09	4.83	5.12	11.21	120,446	0.00537	0.0603	0.32%
Int'l Flavors & Frag.	IFF	10.00	2.25	2.48	12.48	14,810	0.00066	0.0082	0.04%
Intel Corp.	INTC	5.43	2.10	2.21	7.64	269,108	0.01201	0.0918	0.71%
Intercontinental Exch.	ICE	10.20	1.15	1.27	11.47	64,375	0.00287	0.0329	0.17%
Interpublic Group	IPG	5.05	3.66	3.84	8.89	11,539	0.00051	0.0046	0.03%
Intuit Inc.	INTU	12.30	0.62	0.70	13.00	105,018	0.00469	0.0609	0.28%
Invesco Ltd.	IVZ	3.21	2.39	2.47	5.68	11,920	0.00053	0.0030	0.03%
Iron Mountain	IRM	1.70	6.58	6.69	8.39	10,861	0.00048	0.0041	0.03%
Jacobs Engineering	J	12.49	0.64	0.72	13.21	17,093	0.00076	0.0101	0.05%
Johnson & Johnson	JNJ	8.14	2.47	2.67	10.81	430,649	0.01921	0.2077	1.14%
Johnson Cntrl. Int'l plc	JCI	14.31	1.80	2.06	16.37	43,324	0.00193	0.0316	0.12%
JP Morgan Chase	JPM	1.28	2.32	2.35	3.63	472,449	0.02108	0.0765	1.25%
Juniper Networks	JNPR	6.65	3.23	3.44	10.09	8,330	0.00037	0.0038	0.02%
Kansas City South'n	KSU	16.61	0.82	0.96	17.57	24,037	0.00107	0.0188	0.06%
Kellogg	K	2.93	3.66	3.77	6.70	21,895	0.00098	0.0065	0.06%
KeyCorp	KEY	11.40	3.60	4.01	15.41	20,042	0.00089	0.0138	0.05%
Kimberly-Clark	KMB	3.65	3.33	3.45	7.10	46,385	0.00207	0.0147	0.12%
Kimco Realty	KIM	4.60	4.12	4.31	8.91	8,391	0.00037	0.0033	0.02%
Kinder Morgan Inc.	KMI	1.13	6.20	6.27	7.40	38,334	0.00171	0.0127	0.10%
KLA Corp.	KLAC	14.90	1.03	1.18	16.08	53,654	0.00239	0.0385	0.14%
Kroger Co.	KR	7.60	2.10	2.26	9.86	28,160	0.00126	0.0124	0.07%
L Brands	LB	14.02	0.93	1.06	15.08	17,873	0.00080	0.0120	0.05%
L3Harris Technologies	LHX	11.49	1.96	2.19	13.68	45,255	0.00202	0.0276	0.12%

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)
Lamb Weston Holdings	LW	10.65	1.22	1.35	12.00	11,390	0.00051	0.0061	0.03%
Leggett & Platt	LEG	5.20	3.44	3.62	8.82	6,167	0.00028	0.0024	0.02%
Leidos Hldgs.	LDOS	9.93	1.38	1.52	11.45	13,991	0.00062	0.0071	0.04%
Lennar Corp.	LEN	10.70	0.99	1.10	11.80	32,401	0.00145	0.0171	0.09%
Lilly (Eli)	LLY	11.60	1.87	2.09	13.69	174,406	0.00778	0.1065	0.46%
Linde plc	LIN	11.71	1.54	1.72	13.43	147,669	0.00659	0.0885	0.39%
Lockheed Martin	LMT	6.08	2.79	2.96	9.04	106,073	0.00473	0.0428	0.28%
Loews Corp.	L	14.03	0.47	0.54	14.57	14,370	0.00064	0.0093	0.04%
Lowe's Cos.	LOW	13.74	1.29	1.47	15.21	145,640	0.00650	0.0988	0.39%
Lumen Technologies	LUMN	3.00	7.42	7.64	10.64	14,787	0.00066	0.0070	0.04%
M&T Bank Corp.	MTB	13.40	2.85	3.23	16.63	19,788	0.00088	0.0147	0.05%
MarketAxess Holdings	MKTX	10.29	0.51	0.56	10.85	19,801	0.00088	0.0096	0.05%
Marsh & McLennan	MMC	8.93	1.53	1.67	10.60	62,480	0.00279	0.0295	0.17%
Martin Marietta	MLM	8.85	0.69	0.75	9.60	21,007	0.00094	0.0090	0.06%
Masco Corp.	MAS	10.25	1.54	1.70	11.95	15,776	0.00070	0.0084	0.04%
MasterCard Inc.	MA	14.91	0.47	0.54	15.45	369,225	0.01647	0.2545	0.98%
McCormick & Co.	MKC	6.00	1.54	1.63	7.63	23,809	0.00106	0.0081	0.06%
McDonald's Corp.	MCD	18.20	2.24	2.65	20.85	173,387	0.00774	0.1613	0.46%
McKesson Corp.	MCK	10.35	0.87	0.96	11.31	30,761	0.00137	0.0155	0.08%
Medtronic plc	MDT	9.08	1.99	2.17	11.25	162,545	0.00725	0.0816	0.43%
Merck & Co.	MRK	8.70	3.42	3.72	12.42	192,601	0.00859	0.1067	0.51%
MetLife Inc.	MET	4.20	2.98	3.11	7.31	55,946	0.00250	0.0182	0.15%
Microchip Technology	MCHP	11.80	0.98	1.10	12.90	43,003	0.00192	0.0247	0.11%
Microsoft Corp.	MSFT	18.17	0.90	1.06	19.23	1,885,745	0.08414	1.6182	5.01%
Mid-America Apartment	MAA	7.00	2.77	2.96	9.96	16,943	0.00076	0.0075	0.04%
Molson Coors Beverage	TAP	2.74	2.22	2.28	5.02	11,208	0.00050	0.0025	0.03%
Mondelez Int'l	MDLZ	9.45	2.28	2.50	11.95	84,001	0.00375	0.0448	0.22%
Moody's Corp.	MCO	9.28	0.81	0.89	10.17	57,837	0.00258	0.0262	0.15%
Morgan Stanley	MS	4.33	1.77	1.85	6.18	143,033	0.00638	0.0394	0.38%
Mosaic Company	MOS	7.00	0.97	1.04	8.04	11,676	0.00052	0.0042	0.03%
Motorola Solutions	MSI	5.88	1.50	1.59	7.47	32,174	0.00144	0.0107	0.09%
MSCI Inc.	MSCI	14.37	0.78	0.89	15.26	36,327	0.00162	0.0247	0.10%
Nasdaq, Inc.	NDAQ	6.37	1.30	1.38	7.75	24,869	0.00111	0.0086	0.07%
NetApp, Inc.	NTAP	7.66	2.82	3.04	10.70	16,428	0.00073	0.0078	0.04%
Newell Brands	NWL	2.03	3.40	3.47	5.50	11,480	0.00051	0.0028	0.03%
NextEra Energy	NEE	8.59	1.99	2.16	10.75	151,724	0.00677	0.0728	0.40%
Nielsen Hldgs. plc	NLSN	5.30	0.96	1.01	6.31	8,957	0.00040	0.0025	0.02%
NiSource Inc.	NI	4.37	3.57	3.73	8.10	9,436	0.00042	0.0034	0.03%
Norfolk Southern	NSC	13.87	1.46	1.66	15.53	68,439	0.00305	0.0474	0.18%
Northern Trust Corp.	NTRS	7.05	2.62	2.80	9.85	22,234	0.00099	0.0098	0.06%
Northrop Grumman	NOC	5.44	1.74	1.83	7.27	55,678	0.00248	0.0181	0.15%
Nucor Corp.	NUE	8.22	2.03	2.20	10.42	24,097	0.00108	0.0112	0.06%
NXP Semiconductors NV	NXPI	16.76	1.06	1.24	18.00	59,500	0.00265	0.0478	0.16%
Old Dominion Freight	ODFL	15.89	0.34	0.39	16.28	28,558	0.00127	0.0207	0.08%
Omnicom Group	OMC	9.80	3.61	3.96	13.76	16,693	0.00074	0.0103	0.04%
Oracle Corp.	ORCL	12.20	1.73	1.94	14.14	214,433	0.00957	0.1353	0.57%
Otis Worldwide	OTIS	8.99	1.15	1.25	10.24	30,178	0.00135	0.0138	0.08%
Packaging Corp.	PKG	5.97	2.90	3.07	9.04	13,091	0.00058	0.0053	0.03%
Parker-Hannifin	PH	13.73	1.11	1.26	14.99	40,898	0.00182	0.0274	0.11%
Paychex, Inc.	PAYX	4.85	2.79	2.93	7.78	34,160	0.00152	0.0119	0.09%
Pentair plc	PNR	7.90	1.30	1.40	9.30	10,213	0.00046	0.0042	0.03%
People's United Fin'l	PBCT	13.73	4.06	4.62	18.35	7,640	0.00034	0.0063	0.02%
PepsiCo, Inc.	PEP	9.27	3.00	3.28	12.55	197,906	0.00883	0.1108	0.53%
PerkinElmer Inc.	PKI	17.20	0.22	0.26	17.46	14,564	0.00065	0.0113	0.04%
Perrigo Co. plc	PRGO	10.00	2.40	2.64	12.64	5,379	0.00024	0.0030	0.01%
Pfizer, Inc.	PFE	10.07	4.34	4.78	14.85	199,911	0.00892	0.1324	0.53%
Philip Morris Int'l	PM	11.12	5.44	6.04	17.16	137,485	0.00613	0.1053	0.37%
Pinnacle West Capital	PNW	3.50	4.16	4.31	7.81	9,276	0.00041	0.0032	0.02%
Pool Corp.	POOL	17.00	0.65	0.76	17.76	14,349	0.00064	0.0114	0.04%
PPG Inds.	PPG	8.56	1.46	1.58	10.14	35,022	0.00156	0.0159	0.09%
Price (T. Rowe) Group	TROW	13.43	2.44	2.77	16.20	40,057	0.00179	0.0289	0.11%
Principal Fin'l Group	PFG	9.77	3.61	3.96	13.73	17,019	0.00076	0.0104	0.05%
Procter & Gamble	PG	9.13	2.31	2.52	11.65	336,719	0.01502	0.1750	0.89%
Prudential Fin'l	PRU	6.34	4.90	5.21	11.55	37,151	0.00166	0.0191	0.10%
Public Serv. Enterprise	PEG	2.55	3.33	3.41	5.96	30,860	0.00138	0.0082	0.08%
Public Storage	PSA	17.00	3.15	3.69	20.69	44,644	0.00199	0.0412	0.12%
PulteGroup, Inc.	PHM	13.80	1.07	1.22	15.02	14,264	0.00064	0.0096	0.04%
Quanta Services	PWR	14.96	0.26	0.30	15.26	12,599	0.00056	0.0086	0.03%
Quest Diagnostics	DGX	9.22	1.94	2.12	11.34	16,989	0.00076	0.0086	0.05%
Raymond James Fin'l	RJF	18.66	1.23	1.46	20.12	17,490	0.00078	0.0157	0.05%
Realty Income Corp.	O	5.45	4.39	4.63	10.08	23,683	0.00106	0.0107	0.06%
Regency Centers Corp.	REG	9.10	4.08	4.45	13.55	9,764	0.00044	0.0059	0.03%
Republic Services	RSG	7.70	1.71	1.84	9.54	36,283	0.00162	0.0154	0.10%
Robert Half Int'l	RHI	2.70	1.95	2.00	4.70	9,003	0.00040	0.0019	0.02%
Rockwell Automation	ROK	10.60	1.66	1.84	12.44	30,337	0.00135	0.0168	0.08%
Rollins, Inc.	ROL	8.20	0.93	1.01	9.21	16,951	0.00076	0.0070	0.05%
Roper Tech.	ROP	9.70	0.54	0.59	10.29	43,506	0.00194	0.0200	0.12%
S&P Global	SPGI	10.96	0.85	0.94	11.90	87,049	0.00388	0.0462	0.23%
Schwab (Charles)	SCHW	14.19	1.12	1.28	15.47	120,778	0.00539	0.0834	0.32%
Seagate Technology	STX	6.74	3.39	3.62	10.36	18,931	0.00084	0.0087	0.05%
Sealed Air	SEE	7.60	1.42	1.53	9.13	7,003	0.00031	0.0029	0.02%
Sempra Energy	SRE	5.20	3.37	3.55	8.75	38,517	0.00172	0.0150	0.10%
Sherwin-Williams	SHW	9.70	0.91	1.00	10.70	67,626	0.00302	0.0323	0.18%
Simon Property Group	SPG	8.60	4.44	4.82	13.42	38,437	0.00171	0.0230	0.10%
Skyworks Solutions	SWKS	11.95	1.07	1.20	13.15	30,874	0.00138	0.0181	0.08%
Smith (A.O.)	AOS	8.00	1.54	1.66	9.66	10,903	0.00049	0.0047	0.03%
Snap-on Inc.	SNA	7.95	2.16	2.33	10.28	12,725	0.00057	0.0058	0.03%
Southern Co.	SO	6.49	4.17	4.44	10.93	66,346	0.00296	0.0324	0.18%
Stanley Black & Decker	SWK	9.92	1.41	1.55	11.47	35,423	0.00158	0.0181	0.09%
State Street Corp.	STT	16.00	2.45	2.84	18.84	29,926	0.00134	0.0252	0.08%
STERIS plc	STE	10.00	0.83	0.91	10.91	16,537	0.00074	0.0081	0.04%
Stryker Corp.	SYK	12.41	1.02	1.15	13.56	92,988	0.00415	0.0562	0.25%
Synchrony Financial	SYF	3.05	2.07	2.13	5.18	24,804	0.00111	0.0057	0.07%

Company Name	Ticker	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Rate of Return on Equity (%)	Market Cap Weight (Overall)
Target Corp.	TGT	9.94	1.33	1.46	11.40	102,379	0.00457	0.0521	0.27%
TE Connectivity	TEL	11.00	1.54	1.71	12.71	42,880	0.00191	0.0243	0.11%
Teleflex Inc.	TFX	11.00	0.32	0.36	11.36	19,587	0.00087	0.0099	0.05%
Teradyne Inc.	TER	12.76	0.30	0.34	13.10	21,881	0.00098	0.0128	0.06%
Texas Instruments	TXN	10.00	2.11	2.32	12.32	177,518	0.00792	0.0976	0.47%
Thermo Fisher Sci.	TMO	4.12	0.22	0.23	4.35	184,843	0.00825	0.0359	0.49%
Tractor Supply	TSCO	11.08	1.17	1.30	12.38	20,583	0.00092	0.0114	0.05%
Trane Technologies plc	TT	12.56	1.42	1.60	14.16	39,762	0.00177	0.0251	0.11%
Travelers Cos.	TRV	5.97	2.23	2.36	8.33	38,438	0.00171	0.0143	0.10%
Tyson Foods 'A'	TSN	4.45	2.35	2.45	6.90	27,638	0.00123	0.0085	0.07%
U.S. Bancorp	USB	6.00	2.96	3.14	9.14	85,619	0.00382	0.0349	0.23%
Union Pacific	UNP	12.94	1.75	1.98	14.92	148,597	0.00663	0.0989	0.39%
United Parcel Serv.	UPS	10.06	2.44	2.69	12.75	148,496	0.00663	0.0844	0.39%
UnitedHealth Group	UNH	12.41	1.37	1.54	13.95	346,992	0.01548	0.2160	0.92%
Universal Health 'B'	UHS	5.98	0.59	0.63	6.61	11,609	0.00052	0.0034	0.03%
Unum Group	UNM	1.37	4.08	4.14	5.51	5,694	0.00025	0.0014	0.02%
V.F. Corp.	VFC	9.89	2.33	2.56	12.45	32,835	0.00146	0.0182	0.09%
Verisk Analytics	VRSK	10.32	0.64	0.71	11.03	29,294	0.00131	0.0144	0.08%
Verizon Communic.	VZ	3.29	4.30	4.44	7.73	244,148	0.01089	0.0842	0.65%
Visa Inc.	V	13.84	0.59	0.67	14.51	428,015	0.01910	0.2771	1.14%
Vornado R'lty Trust	VNO	17.33	4.62	5.42	22.75	8,789	0.00039	0.0089	0.02%
Vulcan Materials	VMC	13.65	0.88	1.00	14.65	22,383	0.00100	0.0146	0.06%
Wabtec Corp.	WAB	7.30	0.62	0.67	7.97	14,746	0.00066	0.0052	0.04%
Walgreens Boots	WBA	3.63	3.37	3.49	7.12	48,016	0.00214	0.0153	0.13%
Walmart Inc.	WMT	6.29	1.57	1.67	7.96	395,774	0.01766	0.1405	1.05%
Waste Management	WM	11.17	1.74	1.93	13.10	55,955	0.00250	0.0327	0.15%
WEC Energy Group	WEC	6.10	2.95	3.13	9.23	29,468	0.00131	0.0121	0.08%
Welltower Inc.	WELL	13.00	3.30	3.73	16.73	31,389	0.00140	0.0234	0.08%
Western Union	WU	9.25	3.56	3.89	13.14	10,386	0.00046	0.0061	0.03%
Weyerhaeuser Co.	WY	5.00	1.85	1.94	6.94	27,526	0.00123	0.0085	0.07%
Whirlpool Corp.	WHR	3.00	2.17	2.24	5.24	14,283	0.00064	0.0033	0.04%
Williams Cos.	WMB	5.00	6.80	7.14	12.14	29,258	0.00131	0.0158	0.08%
Willis Towers Wat. plc	WLTW	5.66	1.19	1.26	6.92	30,672	0.00137	0.0095	0.08%
Xcel Energy Inc.	XEL	6.30	2.69	2.86	9.16	36,573	0.00163	0.0149	0.10%
Xylem Inc.	XYL	18.16	1.06	1.25	19.41	19,112	0.00085	0.0166	0.05%
Yum! Brands	YUM	12.61	1.75	1.97	14.58	34,215	0.00153	0.0223	0.09%
Zimmer Biomet Hldgs.	ZBH	11.29	0.61	0.68	11.97	33,738	0.00151	0.0180	0.09%
Zoetis Inc.	ZTS	11.43	0.63	0.70	12.13	75,043	0.00335	0.0406	0.20%
					Total	37,666,706		Sum of Weights of Removed Total Removed	40.5% 201
								Sum of Weights Removed (non-dividend paying) Total Removed (non-dividend paying)	30% 118

Notes: [1] Company was removed due to not paying dividends
[2] Company was removed due to growth rate below 0% or above 20%
Source: Attachment__MFG-18, Schedule 4

Dr. Griffing Constant Growth ECAPM Results

Company	Market Return	Risk-Free Rate	Market Risk Premium	Beta	Risk Premium	Unadjusted ROE	CAPM			ECAPM		
							Market Cap (Millions)	Size Adjustment	Adjusted ROE	Unadjusted ROE	Adjusted ROE	
Alliant Energy Corporation	12.63%	2.37%	10.26%	0.85	8.72%	11.09%	13,590	0.50%	11.59%	11.48%	11.98%	
Ameren Corporation	12.63%	2.37%	10.26%	0.80	8.21%	10.58%	20,593	0.50%	11.08%	11.09%	11.59%	
American Electric Power Co.	12.63%	2.37%	10.26%	0.75	7.70%	10.07%	43,050	-0.28%	9.79%	10.71%	10.43%	
CMS Energy Corporation	12.63%	2.37%	10.26%	0.75	7.70%	10.07%	17,665	0.50%	10.57%	10.71%	11.21%	
Consolidated Edison, Inc.	12.63%	2.37%	10.26%	0.75	7.70%	10.07%	25,778	0.50%	10.57%	10.71%	11.21%	
Dominion Energy	12.63%	2.37%	10.26%	0.80	8.21%	10.58%	61,433	-0.28%	10.30%	11.09%	10.81%	
Duke Energy	12.63%	2.37%	10.26%	0.85	8.72%	11.09%	75,224	-0.28%	10.81%	11.48%	11.20%	
Energy Corporation	12.63%	2.37%	10.26%	0.95	9.75%	12.12%	20,368	0.50%	12.62%	12.25%	12.75%	
Eversource Energy	12.63%	2.37%	10.26%	0.95	9.75%	12.12%	13,895	0.50%	12.62%	12.25%	12.75%	
NextEra Energy	12.63%	2.37%	10.26%	0.90	9.23%	11.60%	30,043	0.50%	12.10%	11.86%	12.36%	
OGE Energy Corp.	12.63%	2.37%	10.26%	0.90	9.23%	11.60%	151,724	-0.28%	11.32%	11.86%	11.58%	
Pinnacle West Capital Corp.	12.63%	2.37%	10.26%	1.05	10.77%	13.14%	6,601	0.79%	13.93%	13.01%	13.80%	
Portland General Electric Co.	12.63%	2.37%	10.26%	0.90	9.23%	11.60%	9,276	0.73%	12.33%	11.86%	12.59%	
Southern Co.	12.63%	2.37%	10.26%	0.90	9.23%	11.60%	4,344	0.79%	12.39%	11.86%	12.65%	
WEC Energy Group, Inc.	12.63%	2.37%	10.26%	0.95	9.75%	12.12%	66,346	-0.28%	11.84%	12.25%	11.97%	
				0.80	8.21%	10.58%	29,467	0.50%	11.08%	11.09%	11.59%	
								Mean	11.56%		11.90%	
								Median	11.46%		11.78%	
								Mean + Flotation Costs	11.71%		12.05%	
								Median + Flotation Costs	11.61%		11.93%	

Source: Attachment_MFG-18, Schedule 9

Dr. Griffing Multi-Stage ECAPM Results

Company	Market Return	Risk-Free Rate	Market Risk Premium	Beta	Risk Premium	Unadjusted ROE	CAPM		Adjusted ROE	ECAPM	
							Market Cap (Millions)	Size Adjustment		Unadjusted ROE	Adjusted ROE
Alliant Energy Corporation	10.19%	2.37%	7.82%	0.85	6.65%	9.02%	13,590	0.50%	9.52%	9.31%	9.81%
Ameren Corporation	10.19%	2.37%	7.82%	0.80	6.26%	8.63%	20,593	0.50%	9.13%	9.02%	9.52%
American Electric Power Co.	10.19%	2.37%	7.82%	0.75	5.87%	8.24%	43,050	-0.28%	7.96%	8.72%	8.44%
CMS Energy Corporation	10.19%	2.37%	7.82%	0.75	5.87%	8.24%	17,665	0.50%	8.74%	8.72%	9.22%
Consolidated Edison, Inc.	10.19%	2.37%	7.82%	0.75	5.87%	8.24%	25,778	0.50%	8.74%	8.72%	9.22%
Dominion Energy	10.19%	2.37%	7.82%	0.80	6.26%	8.63%	61,433	-0.28%	8.35%	9.02%	8.74%
Duke Energy	10.19%	2.37%	7.82%	0.85	6.65%	9.02%	75,224	-0.28%	8.74%	9.31%	9.03%
Energy Corporation	10.19%	2.37%	7.82%	0.95	7.43%	9.80%	20,368	0.50%	10.30%	9.90%	10.40%
Eversource Energy	10.19%	2.37%	7.82%	0.95	7.43%	9.80%	13,895	0.50%	10.30%	9.90%	10.40%
NextEra Energy	10.19%	2.37%	7.82%	0.90	7.04%	9.41%	30,043	0.50%	9.91%	9.60%	10.10%
OGE Energy Corp.	10.19%	2.37%	7.82%	0.90	7.04%	9.41%	151,724	-0.28%	9.13%	9.60%	9.32%
Pinnacle West Capital Corp.	10.19%	2.37%	7.82%	1.05	8.21%	10.58%	6,601	0.79%	11.37%	10.48%	11.27%
Portland General Electric Co.	10.19%	2.37%	7.82%	0.90	7.04%	9.41%	9,276	0.73%	10.14%	9.60%	10.33%
Southern Co.	10.19%	2.37%	7.82%	0.90	7.04%	9.41%	4,344	0.79%	10.20%	9.60%	10.39%
WEC Energy Group, Inc.	10.19%	2.37%	7.82%	0.95	7.43%	9.80%	66,346	-0.28%	9.52%	9.90%	9.62%
				0.80	6.26%	8.63%	29,467	0.50%	9.13%	9.02%	9.52%
								Mean	9.45%		9.71%
								Median	9.32%		9.57%
								Mean + Flotation Costs	9.60%		9.86%
								Median + Flotation Costs	9.47%		9.72%

Source: Attachment_MFG-18, Schedule 10

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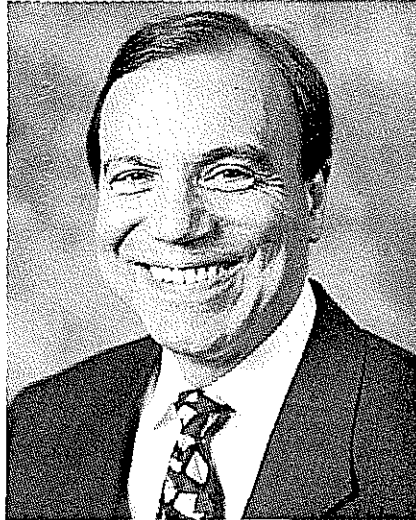
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Comparable Earnings: New Life for an Old Precept

by
Frank J. Hanley
Pauline M. Ahern

Comparable Earnings: New Life for an Old Precept

Accelerating deregulation has greatly increased the investment risk of natural gas utilities. As a result, the authors believe it more appropriate than ever to employ the comparable earnings model. We believe our application of the model overcomes the greatest traditional objection to it — lack of comparability of the selected non-utility proxy firms. Our illustration focuses on a target gas pipeline company with a beta of 0.96 — almost equal to the market's beta of 1.00.



Introduction

The comparable earnings model used to determine a common equity cost rate is deeply rooted in the standard of “corresponding risk” enunciated in the landmark *Bluefield* and *Hope* decisions of the U.S. Supreme Court.¹ With such solid grounding in the foundations of rate of return regulation, comparable earnings should be accepted as a principal model, along with the currently popular market-based models, provided that its most common criticism, non-comparability of the proxy companies, is overcome.

Our comparable earnings model overcomes the non-comparability issue of the non-utility firms selected as a proxy for the target utility, in this example, a gas pipeline company. We should note that in the absence of common stock prices for the target utility (as with a wholly-owned subsidiary), it is appropriate to use the average of a proxy group of similar risk gas pipeline companies whose common stocks are actively traded. As we will demonstrate, our selection process results in a group of domestic, non-utility firms that is comparable in total risk, the sum of business and financial risk, which reflects both non-diversifiable systematic, or market, risk as well as diversifiable unsystematic, or firm-specific, risk.

Frank J. Hanley is president of AUS Consultants — Utility Services Group. He has testified in several hundred rate proceedings on the subject of cost of capital before the Federal Energy Regulatory Commission and 27 state regulatory commissions. Before joining AUS in 1971, he was an assistant treasurer of a number of operating companies in the American Water Works System, as well as a financial planning officer with the Philadelphia National Bank. He is a Certified Rate of Return Analyst.

Pauline M. Ahern is a senior financial analyst with AUS Consultants — Utility Services Group. She has participated in many cost-of-capital studies. A former employee of the U.S. Department of the Treasury and the Federal Reserve Bank of Boston, she holds an MBA degree from Rutgers University and is a Certified Rate of Return Analyst.

Embedded in the Landmark Decisions

As stated in *Bluefield* in 1922: “A public utility is entitled to such rates as will permit it to earn a return ... on investments in other business undertakings which are attended by corresponding risks and uncertainties ...”

In addition, the court stated in *Hope* in 1944: “By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.”

Thus, the “corresponding risk” pre-

cept of *Bluefield* and *Hope* predates the use of such market-based cost-of-equity models as the Discounted Cash Flow (DCF) and Capital Asset Pricing (CAPM), which were developed later and are currently popular in rate-base/rate-of-return regulation. Consequently, the comparable earnings model has a longer regulatory and judicial history. However, it has far greater relevance now than ever before in its history because significant deregulation has substantially increased natural gas utilities' investment risk to a level similar to that of non-utility firms. As a result, it is

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more important than ever to look to similar-risk non-utility firms for insight into common equity cost rate, especially in view of the deficiencies inherent in the currently popular market-based cost of common equity models, particularly the DCF model.

Despite the fact that the landmark decisions are still regarded as having set the standards for determining a fair rate of return, the comparable earnings model has experienced decreased usage by expert witnesses, as well as less regulatory acceptance over the years. We believe the decline in the popularity of the comparable earnings model, in large measure, is attributable to the difficulty of selecting non-utility proxy firms that regulators will accept as comparable to the target utility. Regulatory acceptance is difficult to gain when the selection process is arbitrary. Our application of the model is objective and consistent with fundamental financial tenets.

Principles of Comparable Earnings

Regulation is a substitute for the competition of the marketplace. Moreover, regulated public utilities compete in the capital markets with all firms, including unregulated non-utilities. The comparable earnings model is based upon the opportunity cost principle; i.e., that the true cost of an investment is the return that could have been earned on the next best available alternative investment of similar risk. Consequently, the comparable earnings model is consistent with regulatory and financial principles, as it is a surrogate for the competition of the marketplace, and investors seek the greatest available rate of return for bearing similar risk.

The selection of comparable firms is the most difficult step in applying the comparable earnings model, as noted by Phillips² as well as by Bonbright, Danielsen and Kamerschen.³ The selection of non-utility proxy firms should result in a sufficiently broad-based group in order to minimize the effect of company-specific aberrations. How-

ever, if the selection process is arbitrary, it likely would result in a proxy group that is too broad-based, such as the Standard & Poor's 500 Composite Index or the Value Line Industrial Composite. The use of such groups would require subjective adjustments to the comparable earnings results to reflect risk differences between the group(s) and the target utility, a gas pipeline company in this example.

Authors' Selection Criteria

We base the selection of comparable non-utility firms on market-based, objective, quantitative measures of risk resulting from market prices that subsume investors' assessments of all elements of risk. Thus, our approach is based upon the principle of risk and return; namely, that firms of comparable risk should be expected to earn comparable returns. It is also consistent with the "corresponding risk" standard established in *Bluefield* and *Hope*. We measure total investment risk as the sum of non-diversifiable systematic and diversifiable unsystematic risk. We use the unadjusted beta as a measure of systematic risk and the standard error of the estimate (residual standard error) as a measure of unsystematic risk. Both the unadjusted beta and the residual standard error are derived from a regression of the target utility's security returns relative to the market's returns, which takes the general form:

$$r_{it} = a_i + b_i r_{mt} + e_{it}$$

where:

r_{it} = t th observation of the i th utility's rate of return

r_{mt} = t th observation of the market's rate of return

e_{it} = t th random error term

a_i = constant least-squares regression coefficient

b_i = least-squares regression slope coefficient, the unadjusted beta.

As shown by Francis,⁴ the total variation or risk of a firm's return, $\text{Var}(r_i)$, comes from two sources:

$$\text{Var}(r_i) = \text{total risk of } i\text{th asset}$$

$$\begin{aligned} &= \text{var}(a_i + b_i r_m + e) \\ &\quad \text{substituting } (a_i + b_i r_m + e) \\ &\quad \text{for } r_i \\ &= \text{var}(b_i r_m) + \text{var}(e) \text{ since} \\ &\quad \text{var}(a_i) = 0 \\ &= b_i^2 \text{var}(r_m) + \text{var}(e) \\ &\quad \text{since } \text{var}(b_i r_m) = b_i^2 \\ &\quad \text{var}(r_m) \\ &= \text{systematic} + \\ &\quad \text{unsystematic risk} \end{aligned}$$

Francis⁵ also notes: "The term $\sigma^2(r_i|r_m)$ is called the *residual variance around the regression line* in statistical terms or *unsystematic risk* in capital market theory language. $\sigma^2(r_i|r_m) = \dots = \text{var}(e)$. The residual variance is the squared standard error in regression language, a measure of unsystematic risk." Application of these criteria results in a group of non-utility firms whose average total investment risk is indeed comparable to that of the target gas pipeline.

As a measure of systematic risk, we use the Value Line unadjusted beta. Beta measures the extent to which market-wide or macro-economic events affect a firm's stock price. We use the unadjusted beta of the target utility as a starting point because it results from the regression of the target utility's security returns relative to the market's returns. Thus, the resulting standard deviation of beta relates to the unadjusted beta. We use the standard deviation of the unadjusted beta to determine the range around it as the selection criterion based on systematic risk.

We use the residual standard error of the regression as a measure of unsystematic risk. The residual standard error reflects the extent to which events specific to the firm's operations affect a firm's stock price. Thus, it is a measure of diversifiable, unsystematic, firm-specific risk.

An Illustration of Authors' Approach

Step One: We begin our approach by establishing the selection criteria as a range of both unadjusted beta and residual standard error of the target gas
continued on page 6

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pipeline company.

As shown in table 1, our target gas pipeline company has a Value Line unadjusted beta of 0.90, whose standard deviation is 0.1250. The selection criterion range of unadjusted beta is the unadjusted beta plus (+) and minus (-) three of its standard deviations. By using three standard deviations, 99.73 percent of the comparable unadjusted betas is captured.

Three standard deviations of the target utility's unadjusted beta equals 0.38 ($0.1250 \times 3 = 0.3750$, rounded to 0.38). Consequently, the range of unadjusted betas to be used as a selection criteria is $0.52 - 1.28$ ($0.52 = 0.90 - 0.38$) and $(1.28 = 0.90 + 0.38)$.

Likewise, the selection criterion range of residual standard error equals the residual standard error plus (+) and

minus (-) three of its standard deviations. The standard deviation of the residual standard error is defined as: $\sigma/\sqrt{2N}$.

As also shown in table 1, the target gas pipeline company has a residual standard error of 3.7867. According to the above formula, the standard deviation of the residual standard error would be 0.1664 ($0.1664 = 3.7867/\sqrt{2(259)} = 3.7867/22.7596$, where $259 = N$, the number of weekly price change observations over a period of five years). Three standard deviations of the target utility's residual standard error would be 0.4992 ($0.1664 \times 3 = .4992$). Consequently, the range of residual standard errors to be used as a selection criterion is $3.2875 - 4.2859$ ($3.2875 = 3.7867 - 0.4992$) and $(4.2859 = 3.7867 + 0.4992)$.

Step Two: The step one criteria are applied to Value Line's data base of nearly 4,000 firms for which Value Line derives unadjusted betas and residual standard errors on a weekly basis. All firms with unadjusted betas and residual standard errors within the criteria ranges are then selected.

Step Three: In the regulatory ratemaking environment, authorized common equity return rates are applied to a book-value rate base. Thus, the earnings rates on book common equity, or net worth, of competitive, non-utility firms are highly relevant provided those firms are indeed comparable in total risk to the target gas pipeline. The use of the return rates of other utilities has no relevance because their allowed, and hence subsequently achieved, earnings rates are dependent upon the regulatory

table 1

Summary of the Comparable Earnings Analysis for the Proxy Group of 248 Non-Utility Companies Comparable in Total Risk to the Target Gas Pipeline Company¹

	1	2	3	4	5	6	7	8
	adj. beta	unadj. beta	residual standard error	rate of return on net worth				
				3-year average ²	4-year average ²	5-year average ²	5-year projected ³	
average for the proxy group of 248 non-utility companies comparable in total risk to the target gas pipeline company	0.97	0.92	3.7705					
target gas pipeline company	0.96	0.90 ⁴	3.7867					
median				11.7%	12.0%	12.6%	15.5%	
average of the median historical returns					12.1%			
conclusion ⁵								13.8%

¹ The criteria for selection of the non-utility group was that the non-utility companies be domestic and included in Value Line Investment Survey. The non-utility group was selected based on an unadjusted beta range of 0.52 to 1.28 and a residual standard error range of 3.2875 to 4.2859.

² Ending 1992.

³ 1996-1998/1997-1999.

⁴ The average standard deviation of the target gas pipeline company's unadjusted beta is 0.1250.

⁵ Equal weight given to both the average of the 3-, 4- and 5-year historical medians (12.1%) and 5-year projected median rate of return on net worth (15.5%). Thus, $13.8\% = (12.1\% + 15.5\% / 2)$.

Source: Value Line Inc., March 15, 1994
Value Line Investment Survey

Comparable Earnings *from page 6*

process. Consequently, we believe all utilities must be eliminated to avoid circularity. Moreover, we believe non-domestic firms must be eliminated because their reporting methods differ significantly from U.S. firms.

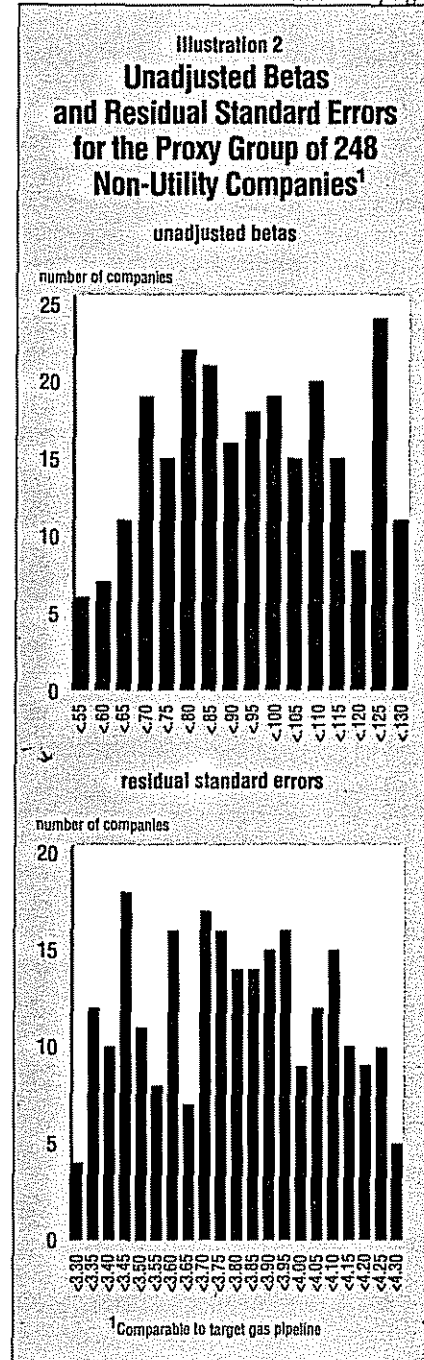
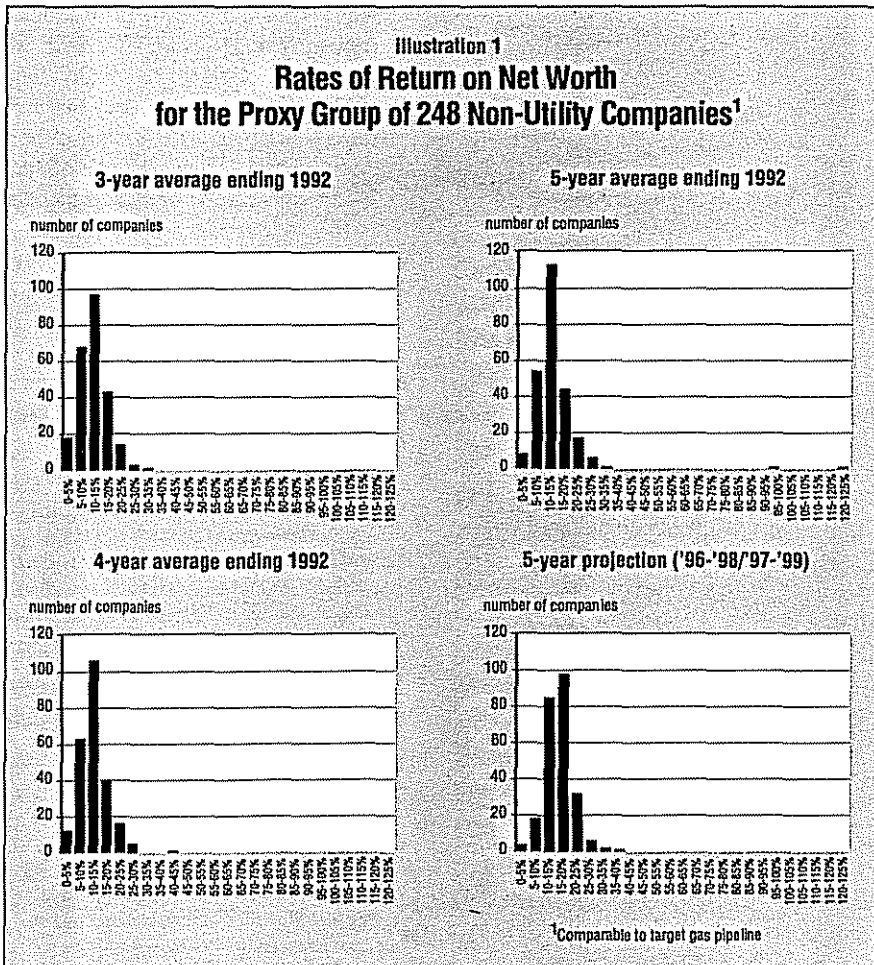
Step Four: We then eliminated those firms for which Value Line does not publish a "Ratings & Report" in *Value Line Investment Survey* so that the historical and projected returns on net worth⁶ are from a consistent source. We use historical returns on net worth for the most recent five years, as well as those projected three to five years into the future. We believe it is logical to evaluate both historical and projected return rates because it is reasonable to assume that investors avail themselves of both when they are available from widely disseminated information ser-

VICES, such as Value Line Inc. The use of Value Line's return rates on net worth understates the common equity return rates for two reasons. First, preferred stock is included in net worth. Second, the net worth return rates are as of the end of each period. Thus, the use of average common equity return rates would yield higher results.

Step Five: Median returns based on the historical average three, four and five years ending 1992 and projected 1996-1998 or 1997-1999 rates of return on net worth are then determined as shown in columns 4 through 7 of table 1. The median is used due to the wide variations and skewness in rates of return on net worth for the non-utility firms as evidenced by the frequency distributions of those returns as shown in illustration 1.

However, we show the average unadjusted beta, 0.92, and residual standard error, 3.7705, for the proxy group in columns 2 and 3 of table 1 because their frequency distributions are not significantly skewed, as shown in illustration 2.

Step Six: Our conclusion of a com-
continued on page 8



Comparable Earnings from page 7

comparable earnings cost rate is based upon the mid-point of the average of the median three-, four- and five-year historical rates of return on net worth of 12.1 percent as shown in column 5 and the median projected 1996-1998/1997-1999 rate of return on net worth of 15.5 percent as shown in column 7 of table 1. As shown in column 8, it is 13.8 percent.

Summary

Our comparable earnings approach demonstrates that it is possible to select a proxy group of non-utility firms that is comparable in total risk to a target utility. In our example, the 13.8 percent comparable earnings cost rate is very conservative as it is an expected achieved rate on book common equity (a regulatory allowed rate should be

greater) and because it is based on end-of-period net worth. A similar rate on average net worth would be about 20 to 40 basis points higher (i.e., 14.0 to 14.2 percent) and still understate the appropriate regulatory allowed rate of return on book common equity.

Our selection criteria are based upon measures of systematic and unsystematic risk, specifically unadjusted beta and residual standard error. They provide the basis for the objective selection of comparable non-utility firms. Our selection criteria rely on changes in market prices over approximately five years. We compare the aggregate total risk, or the sum of systematic and unsystematic risk, which reflects investors' aggregate assessment of both business and financial risk. Thus, no adjustments are necessary to the proxy group results to

compensate for the differences in business risk and financial risk, such as accounting practices and debt/equity ratios. Moreover, it is inappropriate to attempt a comparison of the target utility with any individual firm, or subset of firms, in the proxy group because only the average firm of the group is relevant.

Because the comparable earnings model is firmly anchored in the "corresponding risk" precept established in the landmark court decisions, it is worthy of consideration as a principal model for use in estimating the cost rate of common equity capital of a regulated utility. Our approach to the comparable earnings model produces a proxy group that is indeed comparable in total risk because the selection process is objective and quantitative. It therefore overcomes criticism linked to arbitrary selection processes.

All cost-of-common-equity models, including the DCF and CAPM, are fraught with deficiencies, usually stemming from the many necessary but unrealistic assumptions that underlie them. The effects of the deficiencies of individual models can be mitigated by using more than one model when estimating a utility's common equity cost rate. Therefore, when the non-comparability issue is overcome, the comparable earnings model deserves to receive the same consideration as a primary model, as do the currently popular market-based models. ■

Report Lists Pipeline, Storage Projects

More than \$9 billion worth of projects to expand the nation's natural gas pipeline network are in various stages of development, according to an A.G.A. report. These projects involve nearly 8,000 miles of new pipelines and capacity additions to existing lines and represent 15.3 billion cubic feet (Bcf) per day of new pipeline capacity.

During 1993 and early 1994, construction on 3,100 miles of pipeline was completed or under way, at a cost of nearly \$4 billion, says A.G.A. These projects are adding 5.4 Bcf in daily delivery capacity nationwide.

Among the projects completed in 1993 were Pacific Gas Transmission Co.'s 805 miles of looping that allows increased deliveries of Canadian gas to the West Coast; Northwest Pipeline Corp.'s addition of 433 million cubic feet of daily capacity for customers in the Pacific Northwest and Rocky Mountain areas; and the 156-mile Empire State Pipeline in New York.

In addition, major construction projects were started on the systems of Texas Eastern Transmission Corp. and Algonquin Gas Transmission Co. — both subsidiaries of Panhandle Eastern Corp. — and along Florida Gas Transmission Co.'s pipeline.

The report goes on to discuss another \$5 billion in proposed projects, which, if completed, will add nearly 5,000 miles of pipeline and 9.8 Bcf per day in capacity, much of it serving Florida and West Coast markets.

A.G.A. also identifies 47 storage projects and says that if all of them are built, existing storage capacity will increase by more than 500 Bcf, or 15 percent.

For a copy of *New Pipeline Construction: Status Report 1993-94* (#F00103), call A.G.A. at (703) 841-8490. Price per copy is \$6 for employees of member companies and associates and \$12 for other customers.

¹Bluefield Water Works Improvement Co. v. Public Service Commission. 262 U.S. 679 (1922) and Federal Power Commission v. Hope Natural Gas Co. 320 U.S. 519 (1944).

²Charles F. Phillips Jr., *The Regulation of Public Utilities: Theory and Practice*, Public Utilities Reports Inc. 1988, p. 379

³James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utilities Rates*, 2nd edition, Public Utilities Reports Inc. 1988, p. 329

⁴Jack Clark Francis, *Investments: Analysis and Management*, 3rd edition, McGraw-Hill Book Co., 1980, p. 363

⁵Id., p. 548.

⁶Returns on net worth must be used when relying on Value Line data because returns on book common equity for non-utility firms are not available from Value Line



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Analysis and

Management

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Jack Clark Francis

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Beta Measurements The beta coefficient is an *index of systematic risk*. Beta coefficients may be used for ranking the systematic risk of different assets. If the beta is larger than 1, $b > 1.0$, then the asset is more volatile than the market and is called an **aggressive asset**. If the beta is less than 1, $b < 1.0$, the asset is a **defensive asset**; its price fluctuations are less volatile than the market's. Figure 10-1 illustrates the characteristic lines for three different assets that have low, medium, and high levels of beta (or undiversifiable risk).

Figure 10-2 shows that IBM is a stock with an average amount of systematic risk. IBM's beta of 1.02 indicates that its return tends to increase 2 percent more than the return on the market average when the market is rising. When the market falls, IBM's return tends to fall 2 percent more than the market's. The characteristic line for IBM has an above average correlation coefficient of $\rho = .7495$, indicating that the returns on this security follow its particular characteristic line slightly more closely than those of the average stock.

Partitioning Risk

Total risk can be measured by the variance of returns, denoted $\text{Var}(r)$. This measure of *total risk is partitioned into its systematic and unsystematic components in Equation (10-8).*⁷

$$\begin{aligned}\text{Var}(r_i) &= \text{total risk of } i\text{th asset} \\ &= \text{Var}(a_i + b_i r_{m,t} + e_{i,t}) \\ &\quad \text{by substituting } (a_i + b_i r_{m,t} + e_{i,t}) \text{ for } r_{i,t} \\ &= 0 + \text{Var}(b_i r_{m,t}) + \text{Var}(e_{i,t}) \\ &\quad \text{since } \text{Var}(a_i) = 0\end{aligned}\tag{10-8}$$

$$\begin{aligned}\text{Var}(r_i) &= b_i^2 \text{Var}(r_m) + \text{Var}(e) \quad \text{since } \text{Var}(b_i r_m) = b_i^2 \text{Var}(r_m) \\ &= \text{systematic} + \text{unsystematic risk}\end{aligned}\tag{10-8a}$$

$$.01389 = .00780 + .00609 \quad \text{for IBM}$$

The unsystematic risk measure $\text{Var}(e)$ is called in regression language the *residual variance* or, synonymously, the *standard error squared*.

Undiversifiable Proportion The percentage of total risk that is systematic can be measured by the coefficient of determination ρ^2 (that is, the characteristic line's squared correlation coefficient).

⁷In this context, **partition** is a technical statistical term that means to divide the total variance into *mutually exclusive* and *exhaustive* pieces. This partition is only possible if the returns from the market are statistically independent from the residual error terms that occur simultaneously, $\text{Cov}(r_{m,t}, e_{i,t}) = 0$. The mathematics of regression analysis will orthogonalize the residuals and thus ensure that the needed statistical independence exists.

$$\frac{\text{Systematic risk}}{\text{Total risk}} = \frac{b_i^2 \text{Var}(r_m)}{\text{Var}(r_i)} = \rho^2 \quad (10-9)$$

$$\frac{.007802}{.01389} = \frac{(1.021)^2 (.00749)}{.00749} = .5617 \times 100 = 56.17\% \quad \text{for IBM}$$

Diversifiable Proportion The percentage of unsystematic risk equals $(1.0 - \rho^2)$.

$$\frac{\text{Unsystematic risk}}{\text{Total risk}} = \frac{\text{Var}(e)}{\text{Var}(r_i)} = (1.0 - \rho^2)$$

$$\frac{.00609}{.01389} = (1.0 - .5617) = .438 \times 100 \quad (10-10)$$

$$= 43.8\% \text{ unsystematic} \quad \text{for IBM}$$

Studies of the characteristic lines of hundreds of stocks listed on the NYSE indicate that the average correlation coefficient is approximately $\rho = .5$.⁸ This means that about $\rho^2 = 25$ percent of the total variability of return in most NYSE securities is explained by movements in the market.

	NYSE average	IBM
Systematic risk: ρ^2	.25	.5617
Unsystematic risk: $(1.0 - \rho^2)$.75	.4383
Total risk: 100%	1.00	1.0000

As explained above, systematic changes are common to all stocks and are therefore undiversifiable.

A primary use of the characteristic line (or *market model*, or the *single-index model*, as it is also called) is to assess the risk characteristics of one asset.⁹ The statistics in Table 10-2, for instance, indicate that IBM's common stock is slightly more risky than the average common stock in terms of total risk and

⁸The average ρ was found to be about .5, as reported in Marshall Blume, "On the Assessment of Risk," *Journal of Finance*, March 1971, p. 4. For similar estimates, see J. C. Francis, "Statistical Analysis of Risk Surrogates for NYSE Stocks," *Journal of Financial and Quantitative Analysis*, Dec. 1979.

⁹Professor Jensen reformulated the characteristic line in a risk-premium form. See M. C. Jensen, "The Performance of Mutual Funds in the Period 1945 through 1964," *Journal of Finance*, May 1968, pp. 389-416. See also M. C. Jensen, "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business*, vol. XLII, 1969. Jensen interprets the alpha intercept term of the characteristic line, as he formulates it, as an investment performance measure. It has been suggested that Jensen's performance measure is biased. See Keith V. Smith and Dennis A. Tito, "Risk-Return Measures of Ex-Post Portfolio Performance," *Journal of Financial and Quantitative Analysis*, Dec. 1969, vol. IV, no. 4, p. 466.

systematic risk.¹⁰ New risk measurements must be made periodically, however, because the risk and return of an asset may change with the passage of time.¹¹

10-3**CAPITAL ASSET PRICING MODEL (CAPM)**

An old axiom states "there is no such thing as a free lunch." This means that you cannot expect to get something for nothing—a rule that certainly applies to investment returns. Investors who want to earn high average rates of return must take high risks and endure the associated loss of sleep, the possibility of ulcers, and the chance of bankruptcy. The question to which we now turn is: Should investors worry about total risk, undiversifiable risk, diversifiable risk, or all three?

In Chapter 1 it was suggested that *investors should seek investments that have the maximum expected return in their risk class*. Their happiness from investing is presumed to be derived as indicated in the expected utility $E(U)$ function below.

$$E(U) = f[E(r), \sigma]$$

The investment preferences of wealth-seeking risk-averse investors represented by the function above cause them to maximize their expected utility (or, equivalently, happiness) by (1) maximizing their expected return in any given risk class, $\partial E(U)/\partial E(r) > 0$, or, conversely, (2) minimizing their total risk at any given rate of expected return, $\partial E(U)/\partial \sigma < 0$. However, in selecting individual assets, investors will not be particularly concerned with the asset's total risk σ . Figure 9-1 showed that the unsystematic portion of total risk can be easily diversified by holding a portfolio of different securities. But, systematic risk affects all stocks in the market because it is undiversifiable. Portfolio theory therefore suggests that only the undiversifiable (or systematic) risk is worth avoiding.¹²

¹⁰Statements about the relative degree of total risk are made in the context of a long-run horizon—that is, over at least one *complete business cycle*. Obviously, an accurate short-run forecast which says that some particular company will go bankrupt next quarter makes it more risky than IBM, although IBM may have had more historical *variability of return*.

¹¹Empirical studies documenting the intertemporal instability of betas have been published. Marshall Blume, "Betas and Their Regression Tendencies," *Journal of Finance*, June 1975, pp. 785–795. See also J. C. Francis, "Statistical Analysis of Risk Coefficients for NYSE Stocks," *Journal of Financial and Quantitative Analysis*, Dec. 1979, vol. XIV, no. 5, pp. 981–997. An appendix at the end of this chapter reviews some evidence about shifting betas, standard deviations, and correlations.

¹²Both the systematic and unsystematic portions of total risk must be considered by **undiversified investors**. Entrepreneurs who have their entire net worth invested in one business, for example, can be bankrupted by a piece of bad luck that could be easily averaged away to zero in a diversified portfolio. Poorly diversified investors should not treat diversifiable risk lightly. Only well-diversified investors can afford to ignore diversifiable risk.

Recently Authorized ROEs by RRA Ranking

State	Company	Case Identification	Service	Case Type	Date	Return on Equity (%)	RRA Rank	Electric Utilities		
								Top Third (Average/1 and higher)	Middle Third (Average/2)	Bottom Third (Average/3 and lower)
Wyoming	MDU Resources Group	D-20004-117-ER-16	Electric	Vertically Integrated	1/18/2017	9.45	Average / 2	9.45		
Michigan	DTE Electric Co.	C-U-18014	Electric	Vertically Integrated	1/31/2017	10.10	Average / 1	10.10	9.75	
Arizona	Tucson Electric Power Co.	D-E-01933A-15-0322	Electric	Vertically Integrated	2/24/2017	9.75	Average / 3			
Michigan	Consumers Energy Co.	C-U-17990	Electric	Vertically Integrated	2/28/2017	10.10	Average / 1			
Minnesota	Otter Tail Power Co.	D-E-017/GR-15-1033	Electric	Vertically Integrated	3/2/2017	9.41	Average / 2	9.41		
Oklahoma	Oklahoma Gas and Electric Co.	Ca-PUD201500273	Electric	Vertically Integrated	3/20/2017	9.50	Average / 2	9.50		
Florida	Gulf Power Co.	D-160186-EI	Electric	Vertically Integrated	4/4/2017	10.25	Above Average / 3			
Missouri	Eergy Metro Inc	C-ER-2016-0285	Electric	Vertically Integrated	5/3/2017	9.50	Average / 2	9.50		
Minnesota	Northern States Power Co.	D-E-002/GR-15-826	Electric	Vertically Integrated	5/11/2017	9.20	Average / 2	9.20		
Arkansas	Oklahoma Gas and Electric Co.	D-16-052-U	Electric	Vertically Integrated	5/18/2017	9.50	Average / 1			
North Dakota	MDU Resources Group	C-PU-16-666	Electric	Vertically Integrated	6/16/2017	9.65	Average / 1			
Kentucky	Kentucky Utilities Co.	C-2016-00370	Electric	Vertically Integrated	6/22/2017	9.70	Average / 1			
Kentucky	Louisville Gas & Electric Co.	C-2016-00371 (elec)	Electric	Vertically Integrated	6/22/2017	9.70	Average / 1			
Arizona	Arizona Public Service Co.	D-E-01345A-16-0036	Electric	Vertically Integrated	8/15/2017	10.00	Average / 3			10.00
California	Southern California Edison Co.	Advice No. 3665-E	Electric	Vertically Integrated	10/26/2017	10.30	Above Average / 3			
California	Pacific Gas and Electric Co.	Advice No. 3887-G/5148-E	Electric	Vertically Integrated	10/26/2017	10.25	Above Average / 3			
California	San Diego Gas & Electric Co.	Advice No. 3120-E	Electric	Vertically Integrated	10/26/2017	10.20	Above Average / 3			
Florida	Tampa Electric Co.	D-20170210-EI	Electric	Vertically Integrated	11/6/2017	10.25	Above Average / 2			
Alaska	Alaska Electric Light Power	D-U-16-086	Electric	Vertically Integrated	11/15/2017	11.95	Below Average / 1			11.95
Washington	Washou Electric Inc.	D-UE-170033	Electric	Vertically Integrated	12/5/2017	9.50	Average / 3			9.50
Wisconsin	Northern States Power Co.	D-4220-UR-123 (Elec)	Electric	Vertically Integrated	12/7/2017	9.80	Above Average / 2			
Texas	El Paso Electric Co.	D-46831	Electric	Vertically Integrated	12/14/2017	9.65	Average / 2	9.65		
Texas	Southwestern Electric Power Co	D-46449	Electric	Vertically Integrated	12/14/2017	9.60	Average / 2	9.60		
Oregon	Portland General Electric Co.	D-UE-319	Electric	Vertically Integrated	12/18/2017	9.50	Average / 2	9.50		
New Mexico	Public Service Co. of NM	C-16-00276-UT	Electric	Vertically Integrated	12/20/2017	9.58	Below Average / 2			9.58
Vermont	Green Mountain Power Corp.	C-17-3112-INV	Electric	Vertically Integrated	12/21/2017	9.10	Average / 2	9.10		
Idaho	Avista Corp.	C-AVU-E-17-01	Electric	Vertically Integrated	12/28/2017	9.50	Average / 2			
Nevada	Nevada Power Co.	D-17-06003	Electric	Vertically Integrated	12/29/2017	9.51	Average / 2			
Kentucky	Kentucky Power Co.	C-2017-00179	Electric	Vertically Integrated	1/18/2018	9.70	Average / 1			9.30
Oklahoma	Public Service Co. of OK	Ca-PUD201700151	Electric	Vertically Integrated	1/31/2018	9.30	Average / 3			
Iowa	Interstate Power & Light Co.	D-RPU-2017-0001	Electric	Vertically Integrated	2/2/2018	9.98	Average / 1			9.98
North Carolina	Duke Energy Progress LLC	D-E-2, Sub 1142	Electric	Vertically Integrated	2/23/2018	9.90	Average / 1			9.90
Minnesota	Minnesota Power Entrprs Inc.	D-E-0157/GR-16-664	Electric	Vertically Integrated	3/12/2018	9.25	Average / 2	9.25		
Michigan	Consumers Energy Co.	C-U-18322	Electric	Vertically Integrated	3/29/2018	10.00	Above Average / 3			
Michigan	Indiana Michigan Power Co.	C-U-18370	Electric	Vertically Integrated	4/12/2018	9.90	Above Average / 3			
Kentucky	Duke Energy Kentucky Inc.	C-2017-00321	Electric	Vertically Integrated	4/13/2018	9.73	Average / 1			9.50
Michigan	DTE Electric Co.	C-U-18255	Electric	Vertically Integrated	4/18/2018	10.00	Above Average / 3			
Washington	Avista Corp.	D-UE-170485	Electric	Vertically Integrated	4/26/2018	9.50	Average / 3			9.50
Indiana	Indiana Michigan Power Co.	Ca-44967	Electric	Vertically Integrated	5/30/2018	9.95	Average / 1			9.95
North Carolina	Duke Energy Carolinas LLC	D-E-7, Sub 1146	Electric	Vertically Integrated	6/22/2018	9.90	Average / 1			9.90
Hawaii	Hawaiian Electric Co.	D-2016-0328	Electric	Vertically Integrated	6/22/2018	9.50	Average / 2			9.50
Hawaii	Hawaii Electric Light Co	D-2015-0170	Electric	Vertically Integrated	6/29/2018	9.50	Average / 2			
New Mexico	Southwestern Public Service Co	C-17-00255-UT	Electric	Vertically Integrated	9/5/2018	9.56	Below Average / 2			9.56
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-121 (Elec)	Electric	Vertically Integrated	9/14/2018	10.00	Above Average / 2			
Wisconsin	Madison Gas and Electric Co.	D-3270-UR-122 (Elec)	Electric	Vertically Integrated	9/20/2018	9.80	Above Average / 2			9.80
North Dakota	Otter Tail Power Co.	C-PU-17-398	Electric	Vertically Integrated	9/26/2018	9.77	Average / 1			9.77

											Electric Utilities		
State	Company	Case Identification	Service	Case Type	Date	Return on Equity (%)	RRA Rank	Top Third (Average/1 and higher)	Middle Third (Average/2)	Bottom Third (Average/3 and lower)			
Kansas	Energy Kansas Central Inc.	D-18-WSE-E-328-RTS	Electric	Vertically Integrated	9/27/2018	9.30	Below Average / 1			9.30			
Indiana	AES Indiana	Ca-45029	Electric	Vertically Integrated	10/31/2018	9.99	Average / 1	9.99					
Kansas	Energy Metro Inc.	D-18-KCPE-480-RTS	Electric	Vertically Integrated	12/13/2018	9.30	Below Average / 1			9.30			
Oregon	Portland General Electric Co.	D-UE-335	Electric	Vertically Integrated	12/14/2018	9.50	Average / 2		9.50				
Vermont	Green Mountain Power Corp.	C-18-0974-TF	Electric	Vertically Integrated	12/21/2018	9.30	Average / 3			9.30			
Michigan	Consumers Energy Co.	C-U-20134	Electric	Vertically Integrated	1/9/2019	10.00	Above Average / 3	10.00					
West Virginia	Appalachian Power Co.	C-18-0646-E-42T	Electric	Vertically Integrated	2/27/2019	9.75	Below Average / 2			9.75			
Oklahoma	Public Service Co. of OK	Ca-PUD201800097	Electric	Vertically Integrated	3/14/2019	9.40	Average / 3			9.40			
Kentucky	Kentucky Utilities Co.	C-2018-00294	Electric	Vertically Integrated	4/30/2019	9.73	Average / 1	9.73					
Kentucky	Louisville Gas & Electric Co.	C-2018-00295 (elec.)	Electric	Vertically Integrated	4/30/2019	9.73	Average / 1	9.73					
South Carolina	Duke Energy Carolinas LLC	D-2018-319-E	Electric	Vertically Integrated	5/1/2019	9.50	Average / 3			9.50			
Michigan	DTE Electric Co.	C-U-20162	Electric	Vertically Integrated	5/2/2019	10.00	Above Average / 3	10.00					
South Carolina	Duke Energy Progress LLC	D-2018-318-E	Electric	Vertically Integrated	5/8/2019	9.50	Average / 3			9.50			
South Dakota	Otter Tail Power Co.	D-EL18-021	Electric	Vertically Integrated	5/14/2019	8.75	Average / 2		8.75				
Hawaii	Maui Electric Company Ltd	D-2017-0150	Electric	Vertically Integrated	5/16/2019	9.50	Average / 2		9.50				
Michigan	Upper Peninsula Power Co.	C-U-20276	Electric	Vertically Integrated	5/23/2019	9.90	Above Average / 3			9.90			
Vermont	Green Mountain Power Corp.	C-19-1932-TF	Electric	Vertically Integrated	8/29/2019	9.06	Average / 3			9.06			
Wisconsin	Northern States Power Co.	D-4220-UR-124 (Elec)	Electric	Vertically Integrated	9/4/2019	10.00	Above Average / 2	10.00					
Wisconsin	Wisconsin Electric Power Co.	D-05-UR-109 (WEP-Elec)	Electric	Vertically Integrated	10/31/2019	10.00	Above Average / 2	10.00					
Wisconsin	Wisconsin Public Service Corp.	D-6690-UR-126 (Elec)	Electric	Vertically Integrated	10/31/2019	10.00	Above Average / 2	10.00					
Louisiana	Energy New Orleans LLC	D-UD-18-07 (elec)	Electric	Vertically Integrated	11/7/2019	9.35	Average / 2		9.35				
Idaho	Avista Corp.	C-AVU-E-19-04	Electric	Vertically Integrated	11/29/2019	9.50	Average / 2		9.50				
Indiana	Northern IN Public Svc Co.	Ca-45159	Electric	Vertically Integrated	12/4/2019	9.75	Average / 1	9.75					
Georgia	Georgia Power Co.	D-42516	Electric	Vertically Integrated	12/17/2019	10.50	Above Average / 2	10.50					
California	Southern California Edison Co.	A-19-04-014	Electric	Vertically Integrated	12/19/2019	10.30	Average / 2		10.30				
California	Pacific Gas and Electric Co.	A-19-04-015	Electric	Vertically Integrated	12/19/2019	10.25	Average / 2		10.25				
California	San Diego Gas & Electric Co.	A-19-04-017 (Elec)	Electric	Vertically Integrated	12/19/2019	10.20	Average / 2		10.20				
Montana	NorthWestern Corp.	D20182.12	Electric	Vertically Integrated	12/20/2019	9.65	Below Average / 1			9.65			
Arkansas	Southwestern Electric Power Co	D-19-008-U	Electric	Vertically Integrated	12/20/2019	9.45	Average / 1	9.45					
Nevada	Sierra Pacific Power Co.	D-19-06002	Electric	Vertically Integrated	12/24/2019	9.70	Average / 2		9.70				
Iowa	Interstate Power & Light Co.	D-RPU-2019-0001	Electric	Vertically Integrated	1/8/2020	10.02	Average / 1	10.02					
Michigan	Indiana Michigan Power Co.	C-U-20359	Electric	Vertically Integrated	1/23/2020	9.86	Above Average / 3	9.86					
California	PacifiCorp	A-18-04-002	Electric	Vertically Integrated	2/6/2020	10.00	Average / 2		10.00				
Colorado	Public Service Co. of CO	D-19AL-0268E	Electric	Vertically Integrated	2/11/2020	9.30	Average / 1	9.30					
North Carolina	Virginia Electric & Power Co.	E-22, Sub 562	Electric	Vertically Integrated	2/24/2020	9.75	Average / 1	9.75					
Indiana	Indiana Michigan Power Co.	Ca-45235	Electric	Vertically Integrated	3/11/2020	9.70	Average / 1	9.70					
Washington	Avista Corp.	D-UE-190334	Electric	Vertically Integrated	3/25/2020	9.40	Average / 3			9.40			
Kentucky	Duke Energy Kentucky Inc.	C-2019-00271	Electric	Vertically Integrated	4/27/2020	9.25	Average / 1	9.25					
Michigan	DTE Electric Co.	C-U-20561	Electric	Vertically Integrated	5/8/2020	9.90	Above Average / 3	9.90					
New Mexico	Southwestern Public Service Co	C-19-00170-UT	Electric	Vertically Integrated	5/20/2020	9.45	Below Average / 2			9.45			
Indiana	Duke Energy Indiana, LLC	Ca-45253	Electric	Vertically Integrated	6/29/2020	9.70	Average / 1	9.70					
Missouri	Empire District Electric Co.	C-ER-2019-0374	Electric	Vertically Integrated	7/1/2020	9.25	Average / 3			9.25			
Washington	Puget Sound Energy Inc.	D-UE-190529	Electric	Vertically Integrated	7/8/2020	9.40	Average / 3			9.40			
Hawaii	Hawaii Electric Light Co	D-2018-0368	Electric	Vertically Integrated	7/28/2020	9.50	Average / 2		9.50				
California	Liberty Utilities (CalPeco Ele	A-18-12-001	Electric	Vertically Integrated	8/27/2020	10.00	Average / 2		10.00				
Texas	Southwestern Public Service Co	D-49831	Electric	Vertically Integrated	8/27/2020	9.45	Average / 2		9.45				
Hawaii	Hawaiian Electric Co.	D-2019-0085	Electric	Vertically Integrated	10/22/2020	9.50	Average / 2		9.50				

Electric Utilities										
State	Company	Case Identification	Service	Case Type	Date	Return on Equity (%)	RRA Rank	Top Third (Average/1 and higher)	Middle Third (Average/2)	Bottom Third (Average/3 and lower)
Wisconsin	Madison Gas and Electric Co.	D-3270-UR-123 (Elec)	Electric	Vertically Integrated	11/24/2020	9.80	Above Average / 2	9.80		
Virginia	Appalachian Power Co.	C-PUR-2020-00015	Electric	Vertically Integrated	11/24/2020	9.20	Average / 1	9.20		
Nevada	Nevada Power Co.	D-20-06003	Electric	Vertically Integrated	12/10/2020	9.40	Average / 2		9.40	
Washington	PacifiCorp	D-UE-191024	Electric	Vertically Integrated	12/14/2020	9.50	Average / 3			9.50
Michigan	Consumers Energy Co.	C-U-20697	Electric	Vertically Integrated	12/17/2020	9.90	Above Average / 3	9.90		
Oregon	PacifiCorp	D-UE-374	Electric	Vertically Integrated	12/18/2020	9.50	Average / 2		9.50	
Arizona	Tucson Electric Power Co.	D-E-01933A-19-0028	Electric	Vertically Integrated	12/22/2020	9.15	Average / 3			9.15
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-122 (Elec)	Electric	Vertically Integrated	12/23/2020	10.00	Above Average / 2	10.00		
Utah	PacifiCorp	D-20-035-04	Electric	Vertically Integrated	12/30/2020	9.65	Average / 2		9.65	
Kentucky	Kentucky Power Co.	C-2020-00174	Electric	Vertically Integrated	1/13/2021	9.30	Average / 1	9.30		
North Carolina	Duke Energy Carolinas LLC	D-E-7, Sub 1214	Electric	Vertically Integrated	3/31/2021	9.60	Average / 1	9.60		
North Carolina	Duke Energy Progress LLC	D-E-2, Sub 1219	Electric	Vertically Integrated	4/16/2021	9.60	Average / 1	9.60		
Total Cases						105		51	31	23
Mean						9.70		9.85	9.56	9.57
Median						9.65		9.90	9.50	9.50
Maximum						11.95		10.50	10.30	11.95
Minimum						8.75		9.20	8.75	9.06
2020 Mean						9.60				
2020 Median						9.50				

Source: Regulatory Research Associates