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State Corporation Commission
of Kansas

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of The Empire District Electric Company for Approval to Make Certain Changes in its Charges for Electric Service	**)** **)** **)** **)**	**Docket No. 19-EPDE-223-RTS**

DIRECT TESTIMONY

PREPARED BY

Adam H. Gatewood

UTILITIES DIVISION

KANSAS CORPORATION COMMISSION

May 13, 2019

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Q. Would you please state your name and business address?

A. My name is Adam H. Gatewood. My business address is 1500 Southwest Arrowhead Road, Topeka, Kansas, 66604.

Q. Who is your employer and what is your title?

A. I am employed in the Utilities Division of the Kansas Corporation Commission (Commission) as a Senior Managing Financial Analyst.

Q. What is your educational and professional background?

A. I graduated from Washburn University with a B.A. in Economics and a Masters of Business Administration. I have filed testimony on cost of capital and related financial issues before the Commission in more than 120 proceedings. I have also filed testimony on cost of capital issues before the Federal Energy Regulatory Commission in natural gas pipeline and electric transmission dockets.

Q. What issues are you testifying to in this Docket?

A. I am testifying to the rate of return used to calculate The Empire District Electric Company's (Empire) revenue requirement, which includes providing a cost of capital analysis and responding to the analysis filed by Empire.[1]

Executive Summary

Q. Please summarize your findings.

A. Empire's new owner[2] is requesting an allowed return significantly greater than those

[1] The cost of capital analysis filed by EPDE was prepared and sponsored by Keith Magee of ScottMadden, Inc. On February 22, 2019, Robert B. Hevert also of ScottMadden, Inc. filed Supplemental Testimony adopting the testimony and analysis filed Keith Magee.

[2] Empire District Electric Company was acquired by Algonquin Power & Utilities Corporation (AQN) on January 1, 2017. See Docket 16-EPDE-410-ACQ.

granted by other state commissions throughout the nation, while at the same time asking consumers of one of the most economically challenged regions of our state to insulate its shareholders from risks typically borne by electric utility investors. This risk shifting occurs through the proposed Revenue Stability Rider (RSR). Staff is opposed to the RSR as further discussed in the Direct Testimony of Staff witness Dr. Robert Glass. Even without the risk-shift of the RSR, Empire's requested return to shareholders is greater than the national average and greater than the return necessary to compensate investors.

Staff recommends the Commission grant Empire an allowed return on equity (ROE) of 9.30% and an allowed rate of return (ROR) of 7.08%. An ROR is also referred to as the sum of a utility's "Weighted Average Cost of Capital." In the tables that follow, my description of Empire's ROR is consistent with this approach. Staff's ROE recommendation is consistent with the ROEs established for Westar Energy, Inc. (Westar) and Kansas City Power & Light Company in 2018. My review of the broad capital markets and markets specific to electric utilities reveals capital market conditions are, by and large, comparable to those observed in late 2017 and 2018 when Staff evaluated the merger of Westar and Great Plains Energy (18-KCPE-095-MER) and their respective rate cases (18-WSEE-328-RTS and 18-KCPE-480-RTS). Since all three of these utilities possess investment grade ratings and capital market conditions are comparable, Staff believes a similar ROE is a reasonable conclusion.

Empire District Electric Company
KCC Staff Recommended Rate of Return
Test Year Ending June 30, 2018

	Ratio	Cost	Weighted Cost
Long-Term Debt	48.35%	4.70%	2.27%
Equity	51.65%	9.30%	4.80%
		Rate of Return	7.08%

To measure the current capital markets, I relied on financial models and inputs to those models that are consistent with those used in past rate cases. The results are summarized in the following table. A cost of equity estimate is a range, not a specific point. However, as a practical matter, it is necessary to pick a specific point within that range of reasonable estimates to calculate a revenue requirement. If the Commission desires some flexibility to address issues raised in the Application and responding testimony, Staff advocates staying within a range of 9.00% to 9.60%. Staff recommends the 9.00% end of the range only if the Commission adopts Empire's RSR proposal.

Summary of Staff's Cost of Equity Estimates
19-EPDE-223-RTS

Discounted Cash Flow Analyses	Mean	Low	High
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	8.55%	8.06%	9.03%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast	8.13%	6.71%	9.94%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1926 - 2017, Reported by SBBI, Duff & Phelps	8.39%	7.14%	10.24%
Based on Forecasted Return Data, gathered from J.P. Morgan Asset Management Long-Term Capital Market Assumptions (2019 edition)	5.26%	4.63%	6.19%

Q. What is the allowed ROR that Empire requests in this Docket?

A. Empire is requesting an ROR of 7.54%[3]. The following table summarizes the specific variables of Empire's requested ROR.

Empire District Electric Company
Requested Rate of Return
Test Year Ending June 30, 2018

	Ratio	Cost	Weighted Cost
Long-Term Debt	48.35%	4.70%	2.27%
Equity	51.65%	10.20%	5.27%
		Rate of Return	7.54%

Source: Section 7; 19-EPDE-223-RTS

[3] Section 7, p. 1. Magee Direct pp. 2-3.

Q. Do you agree with the components of the ROR in Empire's request?

A. My analysis found that Empire's requested capital structure and cost of debt are accurate estimates of Empire's cost of debt and capitalization. I agree with these two inputs to Empire's ROR. I do not agree with Empire's proposed ROE of 10.20%.

Q. Who is sponsoring Empire's ROR and ROE Analysis?

A. At the time Empire filed its Application, Keith Magee of ScottMadden, Inc. sponsored Empire's recommended ROR and cost of capital analysis. However, ScottMadden, Inc. no longer employs Mr. Magee. In February 2019, Robert B. Hevert, also employed by ScottMadden, Inc., filed testimony adopting the testimony, schedules, and discovery responses filed by Mr. Magee. In this testimony, Mr. Hevert found Mr. Magee's analyses and conclusions to be reasonable.

Q. How does this affect your analysis of Empire's Application?

A. Because Mr. Magee detailed Empire's ROR and cost of capital analysis is his testimony and discovery responses, my testimony refers to Mr. Magee.

Q. What is Mr. Magee's cost of equity range?

A. Mr. Magee recommends a range of 9.90% to 10.50%. His recommendation of 10.20% is inclusive of flotation costs,[4] small company risk premium,[5] and the additional regulatory

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[4] Magee Direct Filed December 10, 2018, 19-EPDE-223-RTS; p. 42.

Q. ARE YOU PROPOSING TO ADJUST YOUR RECOMMENDED ROE BY 10 BASIS POINTS TO REFLECT THE EFFECT OF FLOTATION COSTS ON EMPIRE'S ROE?

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

[5] Magee Direct Filed December 10, 2018, 19-EPDE-223-RTS; p. 34.

Q. HAVE YOU CONSIDERED EMPIRE'S COMPARATIVELY SMALL SIZE IN YOUR ESTIMATED COST OF EQUITY?

A. Yes. While I have quantified the small size effect, rather than proposing a specific premium, I have considered

risk that he believes is necessary for a Kansas utility[6]. Moreover, it includes the application of a fully decoupled rate design (through the RSR) in addition to all of the existing mechanisms Empire currently has in place.[7] He is not clear on precisely how he arrived at the 9.90% to 10.50% range or the 10.20%. The only hint is in his statement, "On balance, I believe that the low end of the DCF-based results should be viewed carefully, and that somewhat more weight should be afforded the risk premium-based methods. I believe that doing so supports my recommended range of 9.90 percent to 10.50 percent, and my ROE recommendation of 10.20 percent."[8]

Q. Can you ascertain the value or cost that Mr. Magee places on these added risks and flotation costs?

A. Based on the mid-point of his Bond Yield Risk Premium of 10.12% less his recommendation of 10.20%, it appears that, in Mr. Magee's view, these three issues added eight basis-points to his recommendation even though he estimates the flotation costs at ten basis points. Thus, from the testimony he provided, it is difficult to ascertain the base ROE

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the small size of Empire's Kansas operations in my assessment of business risks in order to determine where, within a reasonable range of returns, Empire's required ROE appropriately falls. In that regard, Empire's comparatively small size further supports my recommended ROE of 10.20 percent.

[6] Magee Direct Filed December 10, 2018, 19-EPDE-223-RTS; p. 38.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE REGULATORY RISK FACED BY THE COMPANY, AND HOW THAT RISK WEIGHS IN YOUR ROE RECOMMENDATION?

A. On balance, it appears the Company faces somewhat higher regulatory risks than its peers. Although the Company is recommending several rate mechanisms in this proceeding, they do not fundamentally lower its risk profile relative to the proxy group. Rather, the Company is not able to take advantage of regulatory lag-reducing mechanisms, such as forecast test years and infrastructure cost recovery riders, that are available to many operating utilities.[6] In my view, therefore, the regulatory risks discussed above further support the reasonableness of my ROE recommendation.

[7] Empire currently has in place an Energy Cost Adjustment (ECA), Ad Valorem Tax Surcharge (AVTS), Asbury Enviornmental Cost Recovery Rider (AERR), Pension & OPEB Rider, and requesting to add a Transmission Delivery Charge (TDC), Revenue Stabilization Rider (RSR), and Capital Tracker Rider (CTR). Empire is requesting to eliminate the AERR in this proceeding, replacing it with the CTR.

[8] Magee Direct Filed December 10, 2018, 19-EPDE-223-RTS; pp. 51-52

and his beliefs of the two additional risks, Kansas regulation and small-company.

Q. Do you agree with the allowed return on equity that Empire requests?

A. No, my analysis demonstrates that Empire's proposed cost of equity overstates investors' required returns on investments in electric utilities. As has been the issue in rate cases over the past decade, expectations of earnings growth and broad based measures of economic growth are at the root of the disagreement. Just as in the past, the utility's cost of equity analyses is based on overly optimistic long-run earnings and economic growth rates. Because these growth assumptions are built into three of the four financial models, Mr. Magee's cost of equity estimates cannot accurately estimate investors' required returns.

Rate Design Mechanisms & Adjustment Clauses

Q. What adjustment clauses is Empire proposing in this Docket?

A. Empire is proposing a revenue decoupling mechanism (revenue stabilization rider or RSR), a capital tracker rider, and a transmission delivery charge (TDC) rider. Empire witnesses Mr. Hevert, Mr. Lyons, and Mr. Doll address these proposals. These new riders are in addition to Empire's existing riders that address fuel/power costs, pension costs, and annual variations in property taxes. Based on my review of S&P Global Market Intelligence's published research on adjustment clauses,[9] Empire's existing array of tariff riders and adjustment clauses are comparable to those employed by electric utilities across the country and used by the electric utilities in Staff's proxy group. The addition of a TDC rider and a

[9] RRA Focus—Adjustment Clauses: A State by State Overview, S&P Global Market Intelligence, September 28, 2018.

capital tracker rider would not cause me to distinguish Empire from the proxy group that I selected. This is because these types of mechanisms are widely used by the proxy group, and as such, any risk reduction would be priced into their stocks and therefore captured in the cost of equity estimates. The RSR is the exception as this mechanism fully decouples revenues from volumes delivered. Dr. Robert Glass addresses the RSR for Staff. I found that only two of the 19 electric utilities in Staff's proxy group are designated in the RRA study as having "fully-decoupled" revenue requirements. Thus I conclude that since most of the proxy companies do not possess this quality, the risk reduction achieved through full-decoupling is not accounted for in the cost of equity estimate of the proxy group.

Q. Do these mechanisms reduce risk for the utility?

A. Yes, these mechanisms reduce Empire's risk because year-over-year, between rate cases, and across a series of rate cases, a utility with these and similar cost recovery mechanisms will experience cash flows that more closely reflect its expenses and revenue requirement than if it did not have such mechanisms in place. Stated another way, the more automatic adjustment clauses a utility has, the closer the utility gets to achieving a guaranteed rate of return from its customers. The following passage from an S&P Global Market Intelligence report on adjustment clauses is clear evidence that Staff's opinion is a widely held view by investors.

> "A defining characteristic of an adjustment clause is that it effectively shifts the risk associated with recovery of the expense in question from shareholders to customers, because if the clause operates as designed, the company is able to change its rates to recover its costs on a current basis,

> without any negative effect on the bottom line and without the expense and delay that accompany a rate case filing."[10]

Research from S&P shows that regulatory jurisdictions across the country have adopted some combination of these mechanisms for their electric and gas utilities. It would be unusual for a utility not to have any of these mechanisms in place. I relied on that report to assess the use of these mechanisms by the proxy group. Empire, like each of the proxy companies, is utilizing a combination of adjustment mechanisms to shift risk from its investors to consumers. The exception is mechanisms like the RSR, which very few electric utilities have in place. Financial theory tells us that any decrease in investors' required return due to the risk reduction associated with these mechanisms is built into investors' pricing of these companies' stocks. Thus, because I am analyzing investors' market expectations for the proxy group, any consideration of these mechanisms is already accounted for.

Q. Should there be a reduction in the allowed return if the RSR is granted?

A. Yes. The Commission will need to make an explicit reduction to ROE because the proxy group of electric utilities does not capture the risk reduction of a fully decoupled rate design mechanism like the RSR. The risk reduction of this mechanism accrues to shareholders. It really is not a reduction in risk, rather, as Dr. Glass explains, full-decoupling shifts risks typically borne by investors to consumers. Since it can be difficult to quantify how that risk

[10] RRA Regulatory Focus Adjustment Clauses: A State-by-State Overview, Russell Ernst, CFA, Principal Analyst, S&P Global Market Intelligence, September 28, 2018, p. 2; https://ofccolo.snl.com/Cache/672A391AFE395175532.PDF?KeyProductLinkType=2&CachePath=%5c%5cdmzdoc2%5cwebcache%24%5c&O=PDF&D=&T=&reqFrom=SNL3&Y=&DoNotRedirectTo3=1

shift is valued by investors, the Commission can elect to determine the cost of equity adjustment based on a value to consumers. In other words, the Commission can compensate consumers for taking on risks that are transferred from stockholders via the RSR. In this rate proceeding, a ten basis-point reduction to the return on equity is approximately $44,600 in annual revenues based on Staff's revenue requirement model.

Conditions on Approval of Merger; Docket 16-EPDE-410-ACQ

Q. When Algonquin Power & Utilities Corp. (Algonquin) acquired Empire, did the authority to complete the transaction come with conditions?

A. Yes, the Stipulation and Agreement that was approved by the Commission includes conditions placed on Empire and Algonquin. The Unanimous Settlement Agreement attached to the Order Granting the Joint Motion to Approve the Unanimous Settlement Agreement and Approval of the Joint Application[11] contains a full list and narrative of the conditions. The conditions address accounting, rate making, financial, and quality of service issues. The conditions that are directly related to the cost of capital in this Docket involve: 1) appropriate, least-cost capitalization for Empire (para 34, 35, 36, and 64); 2) insulating Empire consumers from risk (and related costs) of Algonquin's diverse portfolio of investments (32 and 63); and 3) maintaining an investment-grade bond rating and financial health (58, 59, 60, 61, and 62).

[11] Order Granting Joint Motion to Approve the Unanimous Settlement Agreement and Approval of the Joint Application; 16-EPDE-410-ACQ; Filed December 22, 2016; http://estar.kcc.ks.gov/estar/portal/kscc/PSC/PSCDocumentDetailsPage.aspx?DocumentId=64effba4-5ba9-43aa-9f91-e3722a5cae15&Class=Order

To summarize my findings with respect to these specific conditions, Empire and Algonquin are complying with the finance/cost of capital related merger conditions. Discussed in detail throughout my testimony: 1) Empire's capitalization is reasonable and within the realm of least-cost for an electric utility; 2) the ROR Empire proposes focuses on the cost of capital to an electric utility, and excludes risks of Algonquin's non-utility businesses; and 3) Algonquin and Liberty (the owners of Empire) have maintained investment-grade bond ratings.

Corporate Structure

Q. Did the acquisition by Algonquin change Empire's corporate structure?

A. Yes, that transaction changed the corporate structure of the utility. Prior to the transaction, Empire was a publicly traded company that obtained its equity capital via the sale of common stock and it issued its own long-term debt through private placement with financial entities such as insurance companies. Empire's corporate structure was relatively uncomplicated; its primary business was a vertically integrated electric utility and subsidiaries providing natural gas utility services, water utility services, and fiber optic communication cable leasing.[12]

Algonquin purchased all of Empire's common stock in January of 2017, thus the entire Empire corporate structure now appears under the Algonquin corporate umbrella. Algonquin placed Empire in Liberty Utilities Central of its Liberty Utilities Group

[12] Empire District Electric Company, SEC Form 10-K 2015; filed February 26, 2016.

(Liberty), which holds electric, gas, and water regulated utilities serving 766,000 customers in 11 states.[13]

Corporate Structure

Algonquin Power & Utilities Corporation

Liberty Power Group	**Liberty Utilities Group**
Wind Power Generation	Electric Utilities (includes Empire)
Hydro Electric Generation	Natural Gas Utilitities
Solar Generation	Water and Wastewater Utilities
Thermal Co-Generation	Natural Gas and Electric Transmission

Sources: Prospectus Supplement, Algonquin Power & Utilities Corporation; filed December 17, 2018; pp. S-5, S-7.
S&P Global Market Inteligence; AQN corporate structure

Empire no longer issues its own debt. Instead, Empire obtains debt capital via Liberty Utilities Central, which sells long-term debt in the capital markets.

Financial Health & Historic Returns of Empire

Q. Are Empire and its parent companies, Liberty and Algonquin, financially sound?

A. Yes, by all measures they are financially sound; all three possess an investment-grade debt rating by S&P, Moody's, Fitch Ratings, and DBRS.

[13] Prospectus Supplement, Algonquin Power & Utilities Corporation; filed December 17, 2018; pp. S-6.

Long-Term Debt Ratings of
Algonquin Pwr & Utilities Corp. & Affiliates of Empire Dist. Electric Co.

	S&P	Moody's	Fitch	DBRS
Algonquin Pwr & Utilities Corp.	BBB		BBB	BBB
Liberty Utilities Co.	BBB		BBB	
Empire District Electric Co.	BBB	Baa1		

Source: S&P Global Market Intelligence and DBRS.com

It is important that Algonquin and Liberty maintain investment-grade bond ratings and strong financial health overall because they are the entities that obtain debt and equity capital from investors to fund Empire's capital needs.[14] Such is the case for the Note Payable to Liberty Utilities Central (LUC), the rate charged to Empire is determined by LUC's interest rate on bond it sells in the capital markets. In the event that the parent companies' capital costs rise above that of investment-grade utilities, Staff would seek to set Empire's revenue requirement based on capital costs consistent with that of an investment-grade utility.

Credit Rating Table		
	Moody's	S&P
Investment Grade	Aaa	AAA
	Aa1	AA+
	Aa2	AA
	Aa3	AA-
	A1	A+
	A2	A
	A3	A-
	Baa1	BBB+
	Baa2	BBB
	Baa3	BBB-
Less Than Investment Grade	Ba1	BB+
	Ba2	BB
	Ba3	BB-
	B1	B+
	B2	B
	B3	B-
	Caa1	CCC+
	Caa2	CCC
	Caa3	CCC-
	Ca	CC
		C+
		C
	C	D

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Macro-Economic Environment & Investor Expectations

Q. Is it necessary for the Commission to create a forecast of the broad economy in order to determine a fair and reasonable return for shareholders?

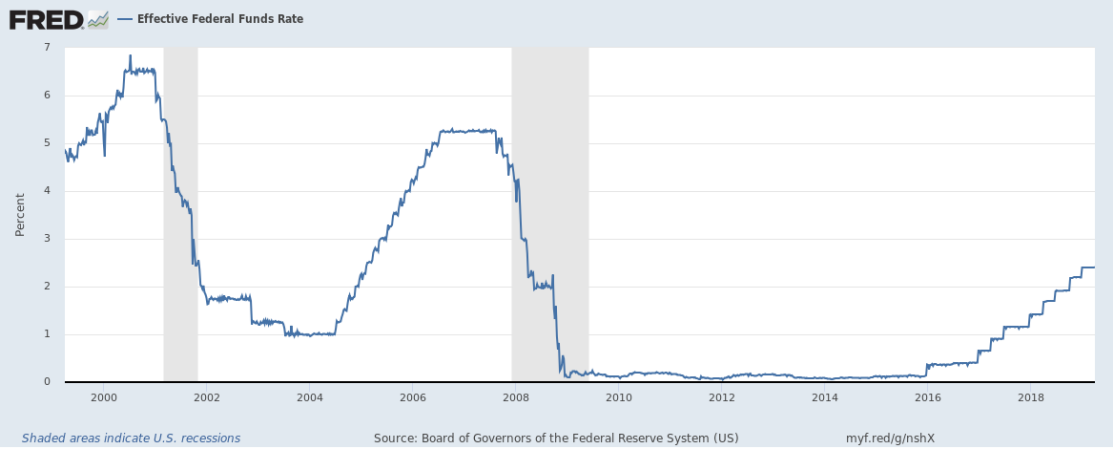
A. No, it is not necessary for the Commission to make a forecast of the economy's future or even adopt a specific perspective on the economy's direction in order to comply with the *Hope-Bluefield* standards set out by the Supreme Court. The focus is on the investors' required return, which is a product of the *investors'* expectations for the economy (*not* the Commission's expectations). Investors' expectations for the economy are included in a Commission's cost of capital decision, as long as the Commission's decision is based on market-derived data such as, economic information, current stock prices, and interest rates. It is a well-accepted premise that our capital markets are efficient, where investors factor all available information into their decisions to buy and sell debt and equity securities. Their decisions establish the prices that are used in cost of capital analyses. Furthermore, rational, profit-maximizing investors are forward looking, thus, investors evaluate economic data and incorporate their own forecasts of the economy into their decisions. Consequently, the price and interest rate data we rely on incorporates the investors' forecasts for the economy and those forecasts are embedded in the investors' required return that we are measuring.

Q. Do you believe Commissions benefit from some discussion of the economy?

A. Yes, I believe so because it provides some context to the market data that the Commission relies on for its cost of capital decisions.

Q. What recent issues do you find particularly noteworthy for the current economy?

A. At the end of 2017, the U.S. economy had reached a stage in the expansion where the Federal Open Markets Committee (FOMC)[15] of the U.S. Federal Reserve Board authorized open market operations transactions to begin increasing the Federal Funds Rate. The FOMC made statements that there would several rate hikes over the course of the year. The FOMC raised the interest rate on the Federal Funds Rate in December of 2017, March of 2018, August of 2018, and September of 2018. The target set in September 2018 was 2.0% - 2.25% and then the Federal Reserve increased it to 2.25% - 2.50% in December 2018. The following graph depicts the FOMC's actions over the past two recessions.



Statements and projection material from the March 2019 FOMC meeting indicate continued long-run projections of real GDP growth in the range of 1.7% to 2.2% annually and a

[15] The Federal Funds Rate is the rate at which funds are loaned between Federal Reserve depository institutions on an overnight basis. The Fed Funds Rate is a tool the FOMC uses to carry out its statutory objectives of achieving maximum employment, stable prices, and moderating long-term interest rates (12 U.S.C. § 225a). The first two statutory objectives are known as the "dual mandate" because of the inherent difficulty in balancing these two conflicting objectives.

targeted inflation rate of 2.0%. Both of these forecasts are consistent with FOMC members' forecasts from last year.[16]

The FOMC opted not to increase the rate in January and March of 2019. The FOMC statement in December 2018 noted, "…that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook."[17] The FOMC statement in January 2019 made a subtle but important revision to risks going from the "balanced" economic outlook to a stance that notes "…global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate…"[18] Those global developments include slower growth in China and Europe, as well as uncertainties surrounding Brexit.[19] With these risks now visible, the FOMC paused rate increases and stated that it would be flexible on reducing its balance sheet; a change in position from just months ago. In the days that followed that announcement in January, several central banks

[16] Economic projections of the Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, March 21, 2018, Table 1 and March 20, 2019; https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20180321.pdf https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20190320.pdf

Press Release by the Federal Reserve, March 20, 2019; https://www.federalreserve.gov/monetarypolicy/files/monetary20190130a1.pdf

[17] Press Release by the Federal Reserve December 19, 2019; https://www.federalreserve.gov/monetarypolicy/files/monetary20181219a1.pdf

[18] Press Release by the Federal Reserve, January 30, 2019; https://www.federalreserve.gov/monetarypolicy/files/monetary20190130a1.pdf

[19] "Federal Reserve Puts Interest Rates Rises on Hold as Global Economy Slows," Financial Times, January 30, 2019. https://www.ft.com/content/2565e154-24b7-11e9-b329-c7e6ceb5ffdf

around the globe followed, stating that they too would pause rate increases citing similar observations as those noted by the FOMC.[20] The FOMC's statement after the March 20, 2019, meeting again stated that it would exercise patience, "In light of global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate to support these outcomes."[21] Along that same time, the International Monetary Fund lowered its growth forecasts of global economy as well as its forecast for the United States.[22]

FOMC action on the Federal Funds Rate is an exercise of policy that does not directly change *long-term* capital costs of public utilities. These policy decisions directly affect lending costs on the very shortest end of the spectrum. Still, FOMC actions are an important barometer of the national and global economy and a key indicator of whether the Fed believes that the economy is exhibiting stable economic growth and price levels. The price of long-term bonds and common equity are influenced by the very same indicators that the Federal Reserves' FOMC reviews. Specifically, whether there is a risk of an expanding rate of price inflation and the prospects for continued economic growth. The FOMC's change in tone from late 2018 when it increased the Federal Funds Rate to early 2019 where it shifted to a neutral, "be patient" stance indicates its view that economic growth has slowed

[20] "The Big Read Central Banks, Global Economy: Why Central Bankers Blinked (Amid slower growth in China, Brexit and trade disputes, banks are putting the brakes on rate rises), Financial Times, February 8, 2019. https://www.ft.com/content/24508f0e-2b91-11e9-88a4-c32129756dd8

[21] Press Release by the Federal Reserve, March 20, 2019; https://www.federalreserve.gov/monetarypolicy/files/monetary20190130a1.pdf

[22] The Global Economy: A Delicate Moment, International Monetary Fund; April 9, 2019.

and rate increases could stall growth; a view shared by central banks around the world and the International Monetary Fund. These expectations are for "slower" growth, but still positive growth.

Capital Structure

Q. Please discuss the capital structure that Empire proposes to use in its ROR.

A. Empire's ROR is based on a capital structure of 51.65% equity and 48.35% long-term debt.[23]

Empire District Electric Company
Section 7 Capitalization
Test Year Ending June 30, 2018

		Balance	Ratio
Long-Term Debt	$	766,257,639	48.35%
Equity	$	818,704,469	51.65%
	$	1,584,962,108	

Source: Section 7; 19-EPDE-223-RTS

Q. What is Empire's rationale for the capital structure?

A. Empire argues that its capitalization is reasonable for setting the revenue requirement because its capital structure is consistent with the capital ratios of the Empire proxy group.[24]

Q. Do you agree with their rationale?

[23] Direct Testimony of Keith Magee; 19-EPDE-223-RTS; p. 52.
[24] Direct Testimony of Keith Magee; 19-EPDE-223-RTS; p. 53.

A. Empire's rationale is important and pertinent in that it demonstrates Empire is capitalized in a manner consistent with industry peers. Empire's reasoning is incomplete because it does not demonstrate that the capital costs recovered through the revenue requirement reflects the capital the parent has in place to finance the utility plant serving consumers. To determine if that is the case, I reviewed the capitalization of Empire's financing affiliates; Liberty Utilities and Algonquin Power & Utilities. The capitalization ratio of the ultimate parent company, Algonquin Power & Utilities, is roughly 50% equity and 50% debt, consistent with Empire's request.

Algonquin Power & Utilities Corporation
Capitalization Review ($ 000's)

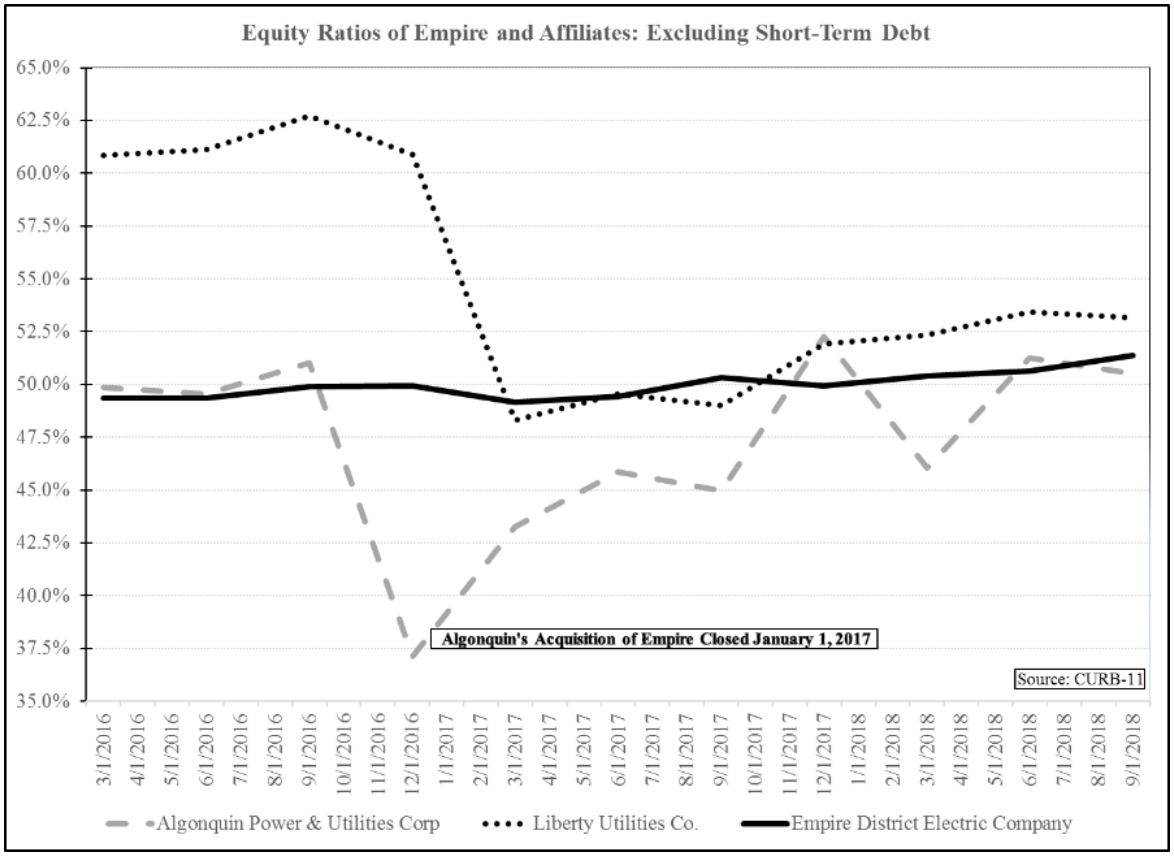
	12/31/2018	12/31/2017
Total Equity	$ 3,697,522	$ 3,320,100
Long-Term Debt	$ 3,323,747	$ 3,067,187
Equity Ratio	52.66%	51.98%

Source: Algonquin Power & Utilities Corporation; 2018 Form 10-K

The ultimate parent, Algonquin, as well as its U.S. subsidiary, Liberty, are regularly involved in acquisitions. To fund the acquisition of Empire, Liberty issued debt and Algonquin issued debt that converted to equity and subsequently invested the proceeds in its U.S. utility operations at Liberty.[25] The following chart highlights the equity ratios of Empire and its affiliates over the recent years. Its acquisition of Empire required additional debt that initially lowered Algonquin's and Liberty's equity ratios; in the following years,

[25] 16-EPDE-410-ACQ; Direct Testimony of Peter Eichler; p. 7.

Algonquin raised its equity ratio back to the pre-acquisition level.



Q. Do you propose any changes to the proposed capital ratios?

A. I do not have any changes to the proposed capitalization since the 51% equity ratio in the Empire ROR is very near that of the entities that provide capital to Empire, those being Algonquin and Liberty. Additionally, their capital ratios are comparable to financially sound, investment-grade electric utilities.

Cost of Debt

Q. What is the cost of debt embedded in the 7.54% ROR?

A. Empire is requesting a 4.70% cost of debt based on the following series of long-term debt.

Debt Contained in Empire's Rate of Return

Description	Principal Amount
6.375% Series due 2018	90,000,000
4.65% Series, due 6/1/2020.	100,000,000
6.70% Sr. Notes, Series due 2033	62,000,000
5.80% Sr. Notes, Series due 7-1-2035	40,000,000
5.875% Series, due 2037	80,000,000
5.20% Series, due 9-1-2040	50,000,000
3.58% Series, due 4-2-2027	88,000,000
3.73% Series, due 5-30-33	30,000,000
4.32% Series, due 5-30-43	120,000,000
4.27%, Series, due 12-1-2044	60,000,000
3.59% FMB Series due 8-20-2030	60,000,000
4.53% Note Payable to LUC, due 6-1-2033	90,000,000

Source: 19-EPDE-223-RTS Section 7; DR KCC-84

Q. Do you propose an adjustment to Empire's cost of debt?

A. I believe Empire's 4.70% cost of debt reasonably reflects the cost of long term debt that is financing Empire's rate base, so I do not have any adjustments to the proposed cost of debt.

Q. How did you evaluate the proposed cost of debt?

A. I reviewed the long-term debt on Empire's balance sheet and the cost associated with each

series of debt.[26] Empire's proposed cost of debt of 4.70% correctly reflects the composite cost of debt. All but one series of debt was issued by Empire prior to the acquisition. Post-acquisition, Empire will obtain debt capital through Liberty. One of the debt series is a note payable to Liberty Utilities Central (4.53% Note Payable to LUC, due 6-1-2033); this is an example of debt capital provided by an affiliate, it was not obtained by Empire directly from the capital markets. As such, it requires a closer examination to ensure that the affiliate is charging Empire a reasonable interest rate. Empire explained that the interest rate on the note payable is set by examining the market determined interest rate on the latest debt issue by Liberty and the interest rate on U.S. Government Bonds at that time to calculate the risk-premium that investors required to purchase Liberty Utility bonds. To determine the interest rate on a note to an affiliate, Liberty applies that risk premium to the prevailing interest rate on U.S. Government bonds. The intent of this calculation is to estimate the market cost of debt for Liberty and charge the affiliate (Empire) the same rate. I believe this is a reasonable means to assess capital costs to an affiliate.

Furthermore, the 4.53% interest rate on the note to Liberty is reasonable in comparison to the yield on public utility bonds at the time of the transaction between Liberty and Empire. The following table shows the yields on A/A and Baa/BBB rated public utility bonds. Empire and Liberty, as well as their ultimate parent Algonquin, are BBB rated by Standard & Poor's and Fitch Ratings[27] and thus, are viewed as comparable risk to the Baa/BBB reported in the composite yields data.

[26] Docket 19-EPDE-223-RTS Data Requests; KCC-84, KCC-89, and CURB-10.
[27] "Fitch Assigns Ratings to Algonquin Power, Subsidiaries"; S&P Global Market Intelligence; July 20, 2018.

Average Utility Debt Yields

Date	A	Baa/BBB
05/30/18	4.15%	4.48%
6/6/2018	4.28%	4.64%
06/13/18	4.23%	4.61%
06/20/18	4.27%	4.61%
06/27/18	4.22%	4.55%
07/03/18	4.21%	4.56%

Source: Value-Line Investment Survey

Rebuttal to EDE's proposed Cost of Equity

Q. Do you agree with Empire's proposed 10.20% cost of equity.

A. No. Empire's proposed ROE is well above the return currently required by investors and well above the returns recently granted to electric utilities by regulatory commissions. RRA reports that in 2018, the average allowed return granted to vertically-integrated electric utilities was 9.68%.[28] Justification for Empire's 10.20% return is dependent on the higher allowed returns granted over the previous two decades and overly optimistic expectations for earnings growth in the future. Empire requests the 10.20% ROE at the same time that it is seeking authority to implement a fully-decoupled rate design, a change that would shift risks from shareholders to ratepayers. This rate design is in addition to the full roster of recovery clauses and mechanisms that Empire already has in place.

Q. Do you agree with Mr. Magee's application of the DCF model?

[28] RRA Regulatory Focus, Major Rate Case Decisions — January - December 2018; S&P Global Market Intelligence; January 31, 2019; p. 1; p. 7.

A. No, because his DCF analyses rely sole on short-term growth rates. The DCF model assumes a growth rate that continues in perpetuity, well beyond the three to five-year growth forecasts that Mr. Magee uses.

Q. Can you explain how Mr. Magee estimates the expected growth rates in his financial models?

A. Mr. Magee gathered earnings growth forecasts for the proxy group from three sources, the same sources that I rely on for growth estimates. My criticism is that Mr. Magee relies on these three to five-year growth rate estimates as if they are long-run forecasts, which they are not. As I discussed on pages 58 through 63, there is compelling evidence that investors do not merely input the three to five-year forecasts, investors also include long-run growth estimates based on the nation's long-run economic growth. Mr. Magee fails to even compare the forecasted earnings growth rates of his proxy group to the long-run projected growth rate of the broad economy. The average earnings growth rate for his proxy group is 5.79%[29], as compared to the forecasted long-run growth rate of the nation's economy of 4.25%. A growth estimate that correctly considers projected long-run nGDP growth and three to five-year forecasted earnings growth would be in the range of 5.02% to 5.28%[30] which would lower his recommendation correspondingly. As I discuss later, economic growth for the U.S. nGDP is forecast to be 4.28% in the long-run. Including the long-run

[29] Schedule KM-1, pp. 1-3.

[30] (5.79% x 0.5) + (4.25% x 0.5) = 5.02%
(5.79% x 0.667) + (4.25% x 0.333) = 5.28%

nGDP forecast in the DCF calculations reduces Mr. Magee's required return estimated by his DCF models by 50 to 75 basis points.

Q. Where else in this analysis does Mr. Magee use overly optimistic growth estimates?

A. Mr. Magee uses the same methodology in his CAPM analysis, relying solely on three to five-year earnings growth forecasts for the companies that make up the S&P 500 Index. The earnings growth forecasts applied in his CAPM analysis result in a significantly greater overestimation than that seen in his DCF analysis. These estimates are unrealistic and not representative of investors' long-term expectations.

Q. Where is the earnings growth rate applied in the CAPM?

A. In his CAPM analysis, the three to five-year annual earnings growth rate estimate is used to calculate the market-return (Rm) used in the CAPM. Thus, the growth rate forecast is a couple of layers deep into the CAPM equation, but, nonetheless, it has a significant influence on the end result of the CAPM. His annual earnings growth rate forecast of 13.00%[31] is used to estimate the expected return on the S&P 500 Stock Index. The expected return on the market index (Rm) becomes the foundation for the calculation of the individual company or proxy group of companies. Since the expected market return (Rm) does not comport with capital market theory and realistic valuation practices, the CAPM analysis is not accurate.

[31] Magee Work papers; Response to data requests: KCC-85, Magee_EDE_KS Direct Exhibits, ExAnte MRP. 14.00% is the average of all the earnings growth rate forecasts applied in his CAPM analysis.

Q. What is the Rm supposed to represent?

A. In the CAPM, the input Rm is the return expected by investors through an index of the stock market such as the S&P 500 Index. Mr. Magee' CAPM analysis estimates that the S&P 500 will return *more than 16.00%* annually (including dividends) for investors in the future.[32] This forecast for the S&P 500 is merely his own forecast, and he does not provide any corroborating studies indicating that market participants expect returns of 16% into infinity. I have not come across any analytical work that could support such a high return on common stocks for the coming decades while there is considerable evidence that future returns will be lower than historical returns. Quite to the contrary, on page 63 I present the long-run market returns forecasted by the largest asset managers on the globe. Their forecasted long-run market returns are half of what Mr. Magee is expecting.

Q. How does he come to expect an annual return of 16% for the S&P 500?

A. Mr. Magee performs a DCF analysis on the companies in the S&P 500 Index. The calculation requires a dividend yield and a long-run growth rate estimate to apply to each company's dividends. His analysis incorporates expectations that earnings of the S&P 500 Index will grow at annual rate of 14.00% - more than three times the expected growth rate of the nation's economy.[33] Thus, an underlying assumption of Mr. Magee's recommendation to this Commission is that the 500 largest companies will experience perpetual growth rates that are several times that expected for the U.S. economy. Of course

[32] Magee Direct, Schedule KM-3, p. 1.
[33] Magee work papers; Response to data requests KCC-85; Magee EDE_KS Direct Exhibits, tab KM-3 ExAnte MRP.

with his wildly optimistic expectations for earnings growth, wildly optimistic expectations for annual returns will follow from his assumption. The result of Mr. Magee's CAPM is wholly dependent on this extra-ordinary event.

Empire's Risk Premium Study is Improper

Q. Do you agree with Mr. Magee's Risk Premium?

A. No, I disagree with using this type analysis in setting allowed returns because it has several weaknesses that cast doubt on the applicability of the results to any specific utility. Although the data provides an interesting view of regulatory and economic history, I recommend the Commission disregard it in setting the allowed return because there is absolutely no screening involved to find companies of comparable risk to Empire which is an integral element to any cost of capital study as noted in the Court rulings discussed later.

Q. How is the risk premium study constructed?

A. Mr. Magee's risk premium analysis is based on observations of allowed returns granted by state regulatory commissions to electric utilities in litigated cases as compared to the prevailing yield on utility bonds using data from 1992 through the first quarter of 2018. Thus, it is more a measure of state regulatory commissions' behavior as opposed to investor behavior.

Q. Is the reasonable return on equity for Empire equal to the return granted to other utilities in other jurisdictions over those many years?

A. We cannot know for sure because we do not know how the risk of the electric utilities in those past rate cases compares to Empire's risk. The Commission needs to be cautious in using a risk premium study like this because it does not comport with the framework set out in the *Hope* and *Bluefield* decisions, as there is no comparison of the risk of the electric utilities in this historic data to the risk of Empire.

Q. Have regulatory policies evolved over the past three decades that could have altered the electric utility industry?

A. Yes, I believe it has changed since 1992 and Mr. Magee's risk premium analysis fails to recognize these changes in the industry. For instance, rate design and trackers/riders/pass-through mechanisms have evolved over the past three decades; these mechanisms lower the risk of utilities by shifting risk to the consumer. The percentage of the revenue requirement recovered through the customer charges in Kansas has also increased over these decades resulting in a less volatile stream of revenues to the utility. Mr. Magee does not acknowledge these changes in the industry. His model depends on a single variable, interest rates and nothing more. Merely using an interest rate relationship to allowed returns does not measure changes in risk.

The Commission should also consider that the data was gathered from a period of time (1992 to 2018) when capital costs declined in a consistent manner with only a brief uptick at the outset of the Financial Crisis.

Staff recommends the Commission not place any weight on the risk premium analysis because the measurement period consists only of a unique era of declining capital costs. Furthermore, in his attempt to predict a reasonable return, his model relies on just one variable. When in reality, an accurate estimate of a fair return demands that policy makers evaluate additional variables designed to screen for data that is relevant and consistent with Empire's risk profile.

<u>Empire's Expected-Earnings Analysis Does Not Measure Investors' Required Return</u>

Q. Mr. Magee presents an "expected earnings analysis" as a means to estimate investors' required return. Is this a reasonable methodology to arrive at an estimate?

A. No. The expected earnings analysis is not a reasonable method of estimating investors' required return because it does not meet the *Hope* & *Bluefield* standards. The inputs to this type of analysis are not derived from financial markets or investors' transactions in markets such as the purchase of a stock or bond at an exchange at a market determined price. His expected-return data is purely accounting or book return information based on historic

levels of equity in the electric utility and the amount of earnings calculated from specific accounting rules. These observations do not reflect the actions of investors in the capital markets as they react to changes in the economy and potential returns from alternative investments.

Q. Should utility stockholders expect to earn the returns forecasted by Value-Line?

A. No, because the forecasted returns on the book value of equity capital shown in Schedule KM-8 are accounting returns, not market returns. Investors cannot purchase common stock at anything remotely close to the book-value of common equity that is used to determine accounting returns. Rather, investors must purchase common stock at market value and now, as has been the case for three decades, electric utilities' common stock trade at significant premium above their book value. For instance, Staff's Proxy group is trading at 196% of their book value. Certainly, investors are savvy enough to comprehend that they can expect to earn a market return less than that forecasted accounting return if they pay two times the book value for the stock. For these reasons, I urge the Commission to ignore these comparisons to book returns. To the best of my knowledge, the Commission has never relied on this approach for setting an allowed return for a Kansas utility.

Q. Does Empire's witness provide theoretical or empirical evidence for his expected earnings approach that might persuade the Commission to consider it?

A. No. In response to a data request for such support, Mr. Magee stated that theoretical or

empirical support is not applicable to his expected earnings approach.[34]

Staff's Critique of Empire's Alleged Business Risks

Q. What is your position on the small-size risk premium that Mr. Magee alleges?

A. Staff has consistently opposed this type of adjustment because it is not a widely accepted premise in public utility finance (or even finance generally) that size as measured by capitalization is a determinant of risk. The data used to support the notion of a small company risk premium has shown that there is a survivorship bias. The survivorship bias stems from the fact that a larger proportion of small companies cease to exist more often than larger companies cease to exist. The studies supporting a small company premium frequently fail to effectively measure the full extent of the loss incurred by investors in those small companies that disappear. Accurately measuring those losses has been shown to eliminate the small company premium.

Empirical research by Tyler Shumway and Vincent A. Warther concluded that no such size-premium has ever existed; rather, the data used to calculate the premium does not accurately measure the returns of small-cap stocks.[35] These researchers determined the historic data understates the negative impact of delisting a stock. Stocks are delisted from exchanges when they merge or are acquired by other companies. When delisting occurs under those circumstances, the annual return for the newly merged or acquired company continues to

[34] Response to CURB data request No. 28; signed by Keith Magee, January 17, 2019; 19-EPDE-223-RTS.
[35] The Delisting Bias in CRSP's Nasdaq Data and Its Implications for the Size Effect, Tyler Shumway and Vincent A. Warther, The Journal of Finance, vol. LIV, No. 6, December 1999, pp. 2361-2378.

be calculated and continues to be tracked as part of the market indexes. These positive events do not create a problem for measuring returns as the entity continues to exist and remains part of the market averages with pricing data reported going forward from the delisting date, just under a different name. Stocks are also delisted when their share price falls below a minimum price set by the exchange where they trade or if they enter bankruptcy. When these negative events occur, those companies' stocks cease to trade on exchanges and there ceases to be pricing data that captures the full extent of the price decline that continues after delisting from the exchange. Eventually, the company may disappear, which causes a 100% loss for its investors, which is not captured in the historic data. Research found that historic returns data did not do a good job of accurately tracking or estimating the loss investors incur with these negative events. These negative events occur almost exclusively with small companies, thus the delisting bias has inflated the historic returns of small companies. The failure to accurately track or estimate negative events has created *an appearance* that small companies experience higher returns than the shareholders' actual returns. So, it is not that smaller companies have consistently earned a higher return than larger companies; the problem has been with the data used to compute the historic returns experienced by small companies.

Q. What is Staff's position on the "regulatory-risk" that Mr. Magee alleges?

A. The Commission should not be compelled to make an upward adjustment to Empire's allowed return due to regulatory-risk as there is no compelling evidence that decisions by this Commission have created hardships for utility investors. Mr. Magee alleges that

Empire faces somewhat higher regulatory risks than its peers.[36] His support for that statement is Regulatory Research Associates' (RRA) ranking of the Kansas Corporation Commission to "Below Average/1" when RRA cited what it called the Commission's shift to a more "consumerist" approach to ratemaking. RRA announced that downgrade on May 11, 2017, following the Commissions' rejection of the first Westar/Great Plains Energy merger-attempt, a decision which is almost universally viewed as one that ultimately resulted in a stronger company and more consumer friendly merger the following year. Keep in mind that RRA's ranking is not a balanced view of regulation; RRA's only concern is investors. RRA staff made that fact clear in response to Staff's questions during a webcast. RRA is not the sole measure of "regulatory risk" as credit rating agencies also review public utility commissions as a factor in utility credit ratings. At this time a vast majority of Kansas utility consumers are served by a utility with an "A" rating. It is interesting to note that the credit rating of the State's largest utility was raised by Standard & Poors from BBB+ to A- on June 4, 2018, *after* RRA lowered their rating of the Commission on May 11, 2017.

Flotation Costs

Q. Is Empire requesting recovery of flotation costs?

A. In my opinion, no, even though Mr. Magee estimates Empire's flotation costs at ten basis points, he merely states that flotation costs are embedded in the 10.20% ROE request that

[36] Magee Direct p. 38.

he already said was reasonable.[37]

Q. Is Staff proposing a flotation cost adjustment in its recommendation?

A. No, because the Empire is not requesting such an adjustment, nor has Empire quantified the dollar amounts of unrecovered expenses directly related to issuing common equity to investors.

Staff's Cost of Equity Analysis

Q. Please summarize the results of your cost of equity analysis.

A. Staff recommends the Commission grant Empire an allowed return on equity (ROE) of 9.30% and an allowed rate of return (ROR) of 7.08%. Staff's ROE recommendation is consistent with the ROEs established for Westar and Kansas City Power & Light in 2018. My review of the broad capital markets and markets specific to electric utilities reveals that capital market conditions are by and large similar to those observed in late 2017 and 2018 when Staff evaluated the merger of Westar and Great Plains Energy (18-KCPE-095-MER) and their rate cases (18-WSEE-328-RTS and 18-KCPE-480-RTS). Since all three of these utilities possess investment grade ratings and capital market conditions are comparable, Staff believes a similar ROE is a reasonable conclusion. Importantly, Staff's belief has two

[37] Direct Testimony of Keith Magee; 19-EPDE-223-RTS; p. 42.

Q. ARE YOU PROPOSING TO ADJUST YOUR RECOMMENDED ROE BY 10 BASIS POINTS TO REFLECT THE EFFECT OF FLOTATION COSTS ON EMPIRE'S ROE?

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

important assumptions. First, Staff assumes Empire's RSR proposal will not be adopted in this proceeding. Second, Staff assumes the company's existing array of revenue adjustment mechanisms (e.g. property tax surcharges) remain in place. If the Commission adopts the RSR, then Staff recommends an ROE of 9.00%, the low-end of Staff's range. The RSR reduces Empire's investors' risk, and as discussed previously should result in a lower ROE award to Empire.

To prepare my cost of capital analysis, I relied on a discounted cash flow (DCF) model, a variation of the DCF model known as an internal rate of return (IRR) analysis and the capital asset pricing model (CAPM). These are the models I typically use to estimate a utility's required return on equity. The results in this table are based on capital markets data for one year, from April 1, 2018, through April 2, 2019. The following table is a summary of the results from those models.

Summary of Staff's Cost of Equity Estimates
19-EPDE-223-RTS

Discounted Cash Flow Analyses	Mean	Low	High
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	8.55%	8.06%	9.03%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast	8.13%	6.71%	9.94%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1926 - 2017, Reported by SBBI, Duff & Phelps	8.39%	7.14%	10.24%
Based on Forecasted Return Data, gathered from J.P. Morgan Asset Management Long-Term Capital Market Assumptions (2019 edition)	5.26%	4.63%	6.19%
Based on Forecasted Return Data, gathered from BlackRock Investments Projected Long-run Returns Market Assumptions (2019 edition)	6.25%	5.36%	7.57%
Based on Forecasted Return Data, gathered from Duff & Phelps Projected Market Risk Premium & Risk Free Return	6.70%	5.70%	8.18%

Q. For a point of comparison, could you please summarize ROE decisions by this Commission and Commissions across the country?

A. The first table contains allowed return on equity decisions made by this Commission in litigated rate cases. As a point of reference to the prevailing capital markets at that time, I included the yield on Baa rated corporate bonds as of the month of the Commission's

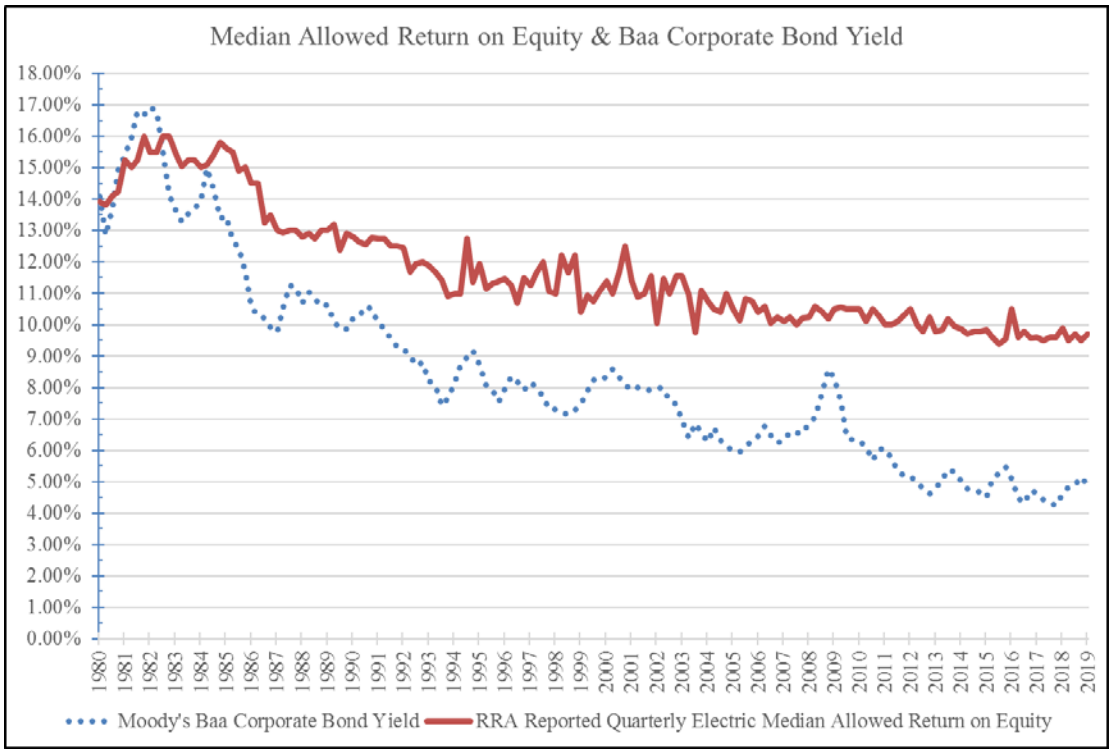
decision. In addition to these Commission determinations, in recent dockets, Staff, intervenors, and Evergy, Inc. reached an agreement to set rates using a return on equity of 9.30% for Westar (18-WSEE-328-RTS) and Kansas City Power & Light, Company (18-KCPE-480-RTS). The Commission issued Orders accepting the terms of these agreements on September 27, 2018, and December 13, 2018, respectively.

Commission Determined Allowed ROEs -- Kansas Utilities

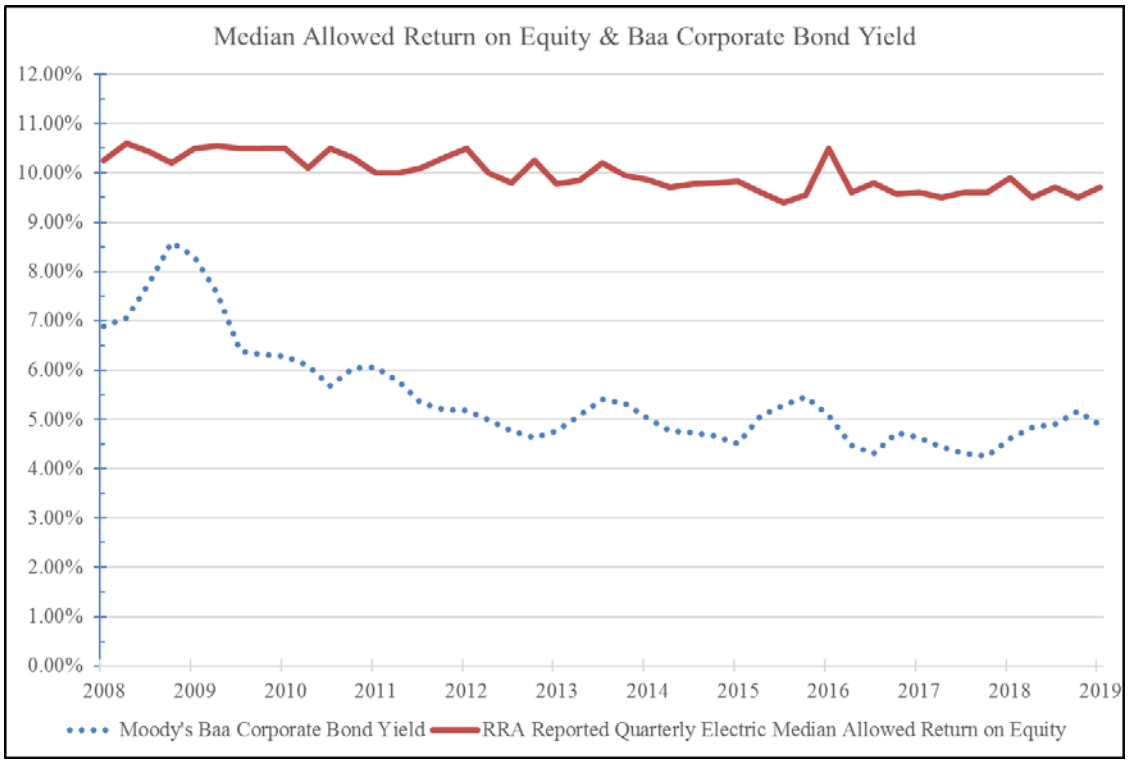
Company	Docket	Order Date	Requested ROE	Ordered ROE	Baa Bond Yield
Kansas City Power & Light	15-KCPE-116-RTS	9/10/2015	10.30%	9.30%	4.86%
Atmos Energy Corp.	14-ATMG-320-RTS	9/4/2014	10.53%	9.10%	4.89%
Kansas City Power & Light	12-KCPE-764-RTS	12/13/2012	10.40%	9.50%	4.80%
Kansas City Power & Light	10-KCPE-415-RTS	11/22/2010	10.75%	10.00%	5.56%
Westar Energy Inc.	05-WSEE-981-RTS	12/28/2005	11.50%	10.00%	6.10%
Westar Energy Inc.	01-WSRE-436-RTS	7/25/2001	12.75%	11.02%	7.97%
Kansas Gas Service Co.	193,305-U	4/15/1996	12.00%	10.50%	7.77%

Sources: SNL/RRA, Federal Reserve Bank of St. Louis, FRED

The following chart is broader in both the time period and reporting scope. It indicates the median return on equity granted in fully litigated rate cases across the nation from 1980 through June of 2018. As a point of reference to the prevailing capital markets, I included the average yield to maturity of Baa corporate bonds.



The next chart highlights a shorter time period, the last four years from early 2014 through June of 2018. Compared to the decline seen in the chart of the long-term changes, the past four years show a plateau in the median allowed return granted.



Q. How does Staff's recommendation compare to the returns available on other investments?

A. The following table shows Staff's recommendation of a 9.30% ROE allows investors a risk premium over less risky debt investments; consistent with the principles espoused by the Supreme Court in its *Hope* and *Bluefield* decisions. These types of income producing securities are viewed as alternatives to investments in utility stocks because, like utility stocks, bonds offer stable valuations and higher current income, relative to the equity market. Risk premiums vary over time and across market conditions; thus, there is not a benchmark risk premium or formula that sets a reasonable return on equity at a given interest rate.

KCC Staff's Risk Premium Over Fixed Income Yields
Based on a 9.30% Return on Equity
Fixed Income Yield Observations April 2018 through March 2019
19-EPDE-223-RTS

	30 Year (1)	Utility Bonds (2)		Moody's (3)
	Treasury Bond	A/A	Baa/BBB	Corporate Baa
Mar-19	2.99%	4.20%	4.51%	4.85%
Feb-19	3.02%	4.29%	4.66%	4.98%
Jan-19	3.03%	4.36%	4.76%	5.13%
Dec-18	3.10%	4.40%	4.80%	5.14%
Nov-18	3.36%	4.57%	4.96%	5.21%
Oct-18	3.34%	4.59%	5.05%	5.05%
Sep-18	3.15%	4.33%	4.72%	4.88%
Aug-18	3.05%	4.23%	4.57%	4.77%
Jul-18	3.00%	4.23%	4.56%	4.79%
Jun-18	3.04%	4.25%	4.60%	4.82%
May-18	3.15%	4.26%	4.61%	4.84%
Apr-18	3.07%	4.15%	4.48%	4.67%
Average	3.07%	4.24%	4.59%	4.79%

KCC Staff's Recommended ROE	9.30%
Average Yield on 30 Year Treasury Bond	3.07%
Equity Risk Premium Over the 30-Year Treasury Bond Yield	**6.23%**
KCC Staff's Recommended ROE	9.30%
Average Yield on "A" Rated Utility Bonds	4.24%
Equity Risk Premium Over "A" Utility Bond Yield	**5.06%**
KCC Staff's Recommended ROE	9.30%
Average Yield on "BBB/Baa" Rated Utility Bonds	4.59%
Equity Risk Premium Over "Baa/BBB" Utility Bond Yield	**4.71%**
KCC Staff's Recommended ROE	9.30%
Average Yield on Moody's BBB/Baa Rated Corporate Bonds	4.79%
Equity Risk Premium Over Moody's "Baa/BBB" Corporate Bond Yield	**4.51%**

1) Board of Governors of the Federal Reserve System, 30-Year Treasury Constant Maturity (https://fred.stlouisfed.org) H.15 Selected Interest Rates
2) Yield on A and BBB/Baa Rated Public Utility Bonds 25 to 30 Maturity Reported weekly in Value-Line Investment Survey, Selection & Opinion Section
3) Yield on Moody's Baa Corporate Bonds reported at FRED (Federal Reserve of St. Louis Electronic Data)

Q. Are the current capital market conditions comparable to those witnessed in the recent rate cases involving electric utilities?

A. I found compelling evidence that capital costs are comparable to those observed during recent dockets before this Commission that involved electric utilities. The first tier of the

following table (Interest Rates Observed for Risk Premium Calculations) compares capital costs observed during a time span of January 1, 2017, through April 2, 2019, a total of 27 months. Yields on Baa/BBB rated public utility bonds ranged from 4.28% to 4.59%. The average yield from the pricing period for this Docket is 4.59% compares to the yield at the beginning of the 27 month time span for the 18-KCPE-095-MER Docket when the yield was 4.52%. These bond yields are highly relevant as they measure investors' required returns on public utility debt rated the same as Empire's.

Q. If the Commission adopts your recommendation for a 9.30% ROE, is the resulting risk-premium similar to that found in recent rate cases?

A. Yes, the risk premium for Empire resulting from Staff's recommendation of a 9.30% ROE is similar to that found in these last three dockets. The second tier of comparison shown on the following table (Risk Premiums Over Fixed-Income Interest Rates) summarizes the risk premiums from this docket and the three previous Dockets. In each of these dockets the allowed ROE was set at 9.30% and resulted in a risk premium over the yield on Baa/BBB public utility bonds of 4.71% to 5.02%. Again, just as with the bond yields discussed above, the 4.78% risk premium observed at the beginning of the time period is very near that of the current Docket where the risk premium is 4.71%.

Q. Has there been a significant change in the allowed ROEs nationally during this time period?

A. No, the allowed ROEs granted nationally has not changed significantly. The third tier of data (Summary of RRA Reporter Quarterly Median ROEs for Electric Utilities) shows the

median allowed ROE granted during each of the four time periods; over the span of those dockets the median allowed ROE ranged from 9.58% to 9.66%.

Comparison of Staff Recommendations Across Kansas Electric Utilities During 2017-2019 Rate Cases

Interest Rates Observed for Risk Premium Calculations

	30 Year Treasury Bond	Utility Bonds A/A	Baa/BBB	Moody's Corporate Baa	Bond YTM*
18-095	2.97%	4.13%	4.52%	4.58%	4.24%
18-328	2.90%	3.97%	4.28%	4.39%	3.85%
18-480	2.94%	4.01%	4.32%	4.44%	4.12%
19-223	3.07%	4.24%	4.59%	4.79%	n/a

Risk Premiums Over Fixed-Income Interest Rates

	30 Year Treasury Bond	Utility Bonds A/A	Baa/BBB	Moody's Corporate Baa	Bond YTM*
18-095	6.33%	5.17%	4.78%	4.72%	5.06%
18-328	6.40%	5.33%	5.02%	4.91%	5.45%
18-480	6.36%	5.29%	4.98%	4.86%	5.18%
19-223	6.23%	5.06%	4.71%	4.51%	n/a

Summary of RRA Reported Quarterly Median ROEs for Electric Utilities

18-095	2017Q1- 2017Q4	9.58%
18-328	2017Q2 - 2018Q1	9.65%
18-480	2017Q2 - 2018Q2	9.62%
19-223	2018Q2 - 2019Q2	9.66%

*Yield to maturities reported on Great Plains and Westar Energy bonds for 18-KCPE-095-MER; Westar Energy bonds for 18-WSEE-328-RTS; and Great Plains Energy bonds for 18-KCPE-480-RTS.

KCC Staff's Data Period for Each Docket:

18-KCPE-095-MER	January 2017 - December 2017
18-WSEE-328-RTS	May 2017 - April 2018
18-KCPE-480-RTS	May 2017 - June 2018
19-EPDE-223-RTS	April 2018 - March 2019

Sources: Gatewood Direct, 18-KCPE-095-MER; filed January 29, 2018; pp. 16, 22.
Gatewood Direct, 18-WSEE-328-RTS; filed June 11, 2018; pp. 22,26.
Gatewood Direct, 18-KCPE-480-RTS; filed August 9, 2018
S&P Global Market Intelligence, RRA Quarterly Reports on Ratecases.

Q. How have capital costs changed since Empire last rate case?

A. By all measures, capital costs are lower now than those observed in 2010 during Empire's last rate case. Data comparing the table below indicates that interest rates are 150 to 180 basis point lower than they were at the last rate case. The median allowed ROEs dropped from 10.30% in 2010 to 9.57% for 2018.

Comparison to 10-EPD-314-RTS Staff Recommendations

	10-314	19-223	Change
Staff Recommendation:	10.00%	9.30%	-0.70%
Interest Rates:			
30 Year Treasury Yield	4.57%	3.07%	-1.50%
A/A Rated Utility Bond Yields	5.80%	4.24%	-1.56%
BBB/Baa Rated Utility Bond Yields	6.40%	4.59%	-1.81%
	2010	**2018**	
Median Allowed ROE Reported by RRA	10.30%	9.57%	-0.73%

Sources: Gatewood Direct 10-EPDE-314-RTS filed March 31, 2010

Standards for a Just & Reasonable Rate of Return

Q. What standards should public utility commissions consider when authorizing a rate of return?

A. The standards for setting a just and reasonable rate of return require that, to be reasonable, the allowed return must reflect the risks associated with an equity investment in the utility. For the allowed return to be in that reasonable range, it must compensate for those added risks while capturing a fair proportion of benefits for consumers. The allowed ROE is best

described as the forward-looking discount rate that is necessary to induce equity investors to commit their capital to the enterprise. Standards used to gauge the fairness and reasonableness of an allowed ROE have been stated by courts, as the result of appeals of decisions issued by regulatory agencies. Financial analysts and policy-makers rely on the courts' decisions as a guide in estimating the appropriate cost of capital. The opinions do not articulate precisely how to estimate or model a reasonable cost of capital. Instead, the decisions provide critical questions for policy makers and analysts to consider in determining a reasonable return for a regulated utility.

In general, United States Supreme Court decisions state that returns granted to regulated public utilities should: 1) be commensurate with returns on investments of similar risk; 2) be sufficient to assure the financial integrity of the utility under efficient economic management; and 3) change over time with changes in the money market and business conditions.[38] An important take-away from these decisions is that the Supreme Court of the United States has afforded regulatory agencies a significant amount of latitude in establishing an appropriate ROR and ROE for a utility. The Kansas Supreme Court has recognized and follows this body of law.[39] This Commission has noted this fact in Orders issued in previous dockets.[40]

Q. Please discuss how financial analysts apply the standards established by the Court.

[38] *Smyth v. Ames*, 169 U.S. 466 (1898); *Wilcox v. Consolidated Gas Co*., 212 U.S. 19, 48-49 (1909); *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-3 (1923); *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591, 603 (1944).
[39] *Kansas Gas & Elec. Co. v. State Corp. Comm'n*, 239 Kan. 483, 491, 720 P. 2d 1063, 1072 (1986).
[40] Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests, Docket No. 10-KCPE-415-RTS, November 22, 2010, 37-38.

A. For an allowed ROE to meet the legal standards, the return should be as specific as possible to the utility in question. Financial analysts achieve this goal by analyzing not only the utility in question, when it is possible to do so, but also a proxy group of similarly situated utilities.

There are several court cases that, as a group, are viewed as the keystone to measuring the adequacy of a utility's allowed return. The earliest of these decisions go back to an era when it was not only the "rate of return" at issue but also the fundamental measurement of the investment in the utility enterprise, commonly referred to as rate base. This is less of an issue today as regulators, utility management, and investors readily accept actual historic-depreciated value as the measure of investment to estimate the value of a utility's rate base (as opposed to reproduction cost or market value). The Court's decision in *Bluefield* addressed both rate base and ROR.[41] Treatises on rate of return for public utilities, such as The Cost of Capital – A Practitioner's Guide, agree that *Bluefield* lays out the four standards for a fair return.

> *1)* *Comparable Earnings* – a utility is entitled to a return similar to that being earned by other enterprises with similar risks, but not as high as those earned by highly profitable or speculative ventures;
>
> *2)* *Financial Integrity* – a utility is entitled to a return level reasonably sufficient to assure financial soundness;
>
> *3)* *Capital Attraction* – a utility is entitled to a return sufficient to support its credit and raise capital; and
>
> 4) *Changing Level of Returns* – a fair return can change along with

[41] *Bluefield Water Works & Improvement Co. v. Pub. Svc. Comm'n of West Virginia*, 262 U.S. 679, 692-3 (1923).

economic conditions and capital markets.[42]

As a financial analyst formulating rate of return analyses for our state commission, I take from *Bluefield* that the Court requires a rate Order that allows a utility an opportunity to earn a return consistent with the utility's risk profile and consistent with observations in the capital markets. The Court's decision in *Hope,*[43] like that in *Bluefield,* dealt with both valuation of rate base, as well as rate of return on that rate base. With respect to the rate of return, the Court in *Hope* affirmed the four standards set out in *Bluefield.*

Proxy Group of Electric Utilities

Q. How did you select a proxy group for your cost of equity analysis?

A. I selected a proxy group that is a group of companies that are comparable in risk to Empire's electric utility operations. Selecting a proxy group of electric utilities is an important component of meeting the Court's established standards for a fair return for the applicant. The complete table of my proxy group screening process appears in Schedule AHG-1

[42] The Cost of Capital – A Practitioner's Guide by David C. Parcell, Prepared for the Society of Utility and Regulatory Financial Analysts, 1997, pp. 3-13 to 3-14.

[43] *Federal Power Comm'n. v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). **"**The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus, we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint."

attached to the end of my testimony.

Q. Please provide the rationale for your selection criteria.

A. Using the following parameters, I evaluated the 38 electric utility companies followed by Value-Line Investment Survey. I have relied on these or similar selection parameters in past rate cases to pare the population down to those utilities that possess operational characteristics and financial risks comparable to the utility in question. With these similarities, coupled with the basic tenants of finance, we know that investors' required returns for the proxy group and that for Empire are very nearly the same.

1. **Has publicly traded common stock and is a public utility followed by Value-Line Investment Survey as an electric utility.**

   Stock-price data is critical to a cost of equity analysis as that price data encapsulates the market participants' valuation of the company and the economy. Selecting companies that investment research companies like Value-Line categorize as electric public utilities focuses the analysis on companies facing similar types of business risks and opportunities and ensures that publically available financial data is available. As a starting point, this parameter is important as it assures us the companies generally derive their earnings in this industry.

2. **Has earnings and dividend growth forecasts made by Value-Line Investment Survey and at least one other source.**

   Earnings and dividend growth forecasts that investors view as indicative of the utilities' future prospects are vital to estimate the investors' require return. As I discuss later, in the DCF model, the expected growth in earnings and dividends has a direct, one-for-one effect on the required return calculation. Using this screen, we know that we are able incorporate growth estimates from at least two independent sources.

3. **Has experienced no recent spin-offs of assets, mergers, or write-downs of distressed assets.**

Acquiring or disposing of significant assets will likely affect earnings forecasts and, therefore, not only affect the published growth estimates but also the market pricing of the utilities' common stock.

4. Exhibits positive forecasted earnings and dividend growth and no recent dividend cuts.

Public utilities are regarded as relatively stable investments with relatively predictable growth. This is particularly true of their dividend payments to investors. Utilities that have been forced to cut their dividend are typically experiencing some noteworthy financial or operational problem that would very likely make them incomparable to Empire. There is also the underlying premise of the discounted cash flow model that requires positive growth rates for the model to provide reliable estimates.

5. Possesses an investment-grade bond rating.

Empire's parent company possess an investment-grade bond rating which is indicative of financial stability and that same level of stability or low financial risk should be captured in the proxy group.

6. Derives at least 65% of its annual revenues from electric utility operations.

There are opportunities and risks specific to the regulated electric utility industry. This screen focuses the construction of the proxy group toward those specific risks.

7. Generally possesses operational and financial characteristics that are not unlike The Empire District Electric Company.

In this regard, Hawaiian Electric Industries, Inc. was removed as it is an isolated, island network that is not interconnected with any other electric utility or regional transmission network. California transmission owning utilities PG&E, Sempra Energy and Edison International were removed due to wildfire risk cited by Standard & Poor's. PPL Corporation that derives 30% of its revenues from a British utility investment is excluded due to its exposure to foreign currency risks and Brexit uncertainties.

By applying this set of filters, I arrive at the following electric utilities as the proxy group.

Staff Electric Utility Proxy Group

1	2	3	4	5	6		7	8
V-L Followed Electric Utiliities Company Name		Vertically Integrated	Positive Dividend History	Merger Asset Sale	Bond Ratings S&P	Moodys	Electric % of Total Revenues	Assets
Allete Inc.	ALE	Yes	Yes	No	BBB+	A3	71%	76%
Alliant Energy Corp.	LNT	Yes	Yes	No	A-	Baa1	87%	85%
Ameren Corp.	AEE	Yes	Yes	No	BBB+	Baa1	82%	54%
American Electric Power Co. Inc	AEP	Yes	Yes	No	A-	Baa1	88%	
AVANGRID Inc.	AGR	Yes	Yes	No	BBB+	Baa1	83%	
CMS Energy Corp.	CMS	Yes	Yes	No	BBB+	Baa1	66%	57%
Duke Energy Corp.	DUK	Yes	Yes	No	A-	Baa1	90%	
El Paso Electric Co.	EE	Yes	Yes	No	BBB	Baa1	100%	100%
IDACORP Inc.	IDA	Yes	Yes	No	BBB	Baa1	100%	
MGE Energy Inc.	MGEE	Yes	Yes	No	AA-	A1	72%	60%
NextEra Energy Inc.	NEE	Yes	Yes	No	A-	Baa1	71%	59%
NorthWestern Corp.	NWE	Yes	Yes	No	BBB	A3	77%	80%
OGE Energy Corp.	OGE	Yes	Yes	No	BBB+	Baa1	100%	
Pinnacle West Capital Corp.	PNW	Yes	Yes	No	A-	A3	100%	
PNM Resources Inc.	PNM	Yes	Yes	No	BBB+	Baa3	100%	
Portland General Electric Co.	POR	Yes	Yes	No	BBB+	A3	100%	
Southern Co.	SO	Yes	Yes	No	A-	Baa2	65%	
WEC Energy Group	WEC	Yes	Yes	No	A-	Baa1	99%	
Xcel Energy Inc.	XEL	Yes	Yes	No	A-	A3	84%	

1) Electric utilities followed by Value-Line Investment Survey (U.S. companies)
2) Ticker symbol
3) Vertically integrated (generation, transmission & distribution) & non-restructured
4) Stable, positive dividends
5) No merger, acquistion, or sale of assets (Value-Line & S&P Global Market Intelligence)
6) S&P and Moody's credit rating (LTR) data from S&P Global Market Intelligence
7) Revenues from regulated electric operations 65% of total revenues (2018 Form 10-K & S&P Global Market Intelligence)
8) Assets of regulated electric operations (S&P Global Market Intelligence)

Q. Is Staff's proxy group similar to that selected by Mr. Magee?

A. Staff's proxy group and Mr. Magee's proxy group are similar, though not identical. The difference is due to the screening criteria that we applied to the group of electric utilities followed by Value-Line. My criticisms of Mr. Magee's screens are not the major contributor to the difference in our cost of equity recommendations.

Return on Equity Analysis

Q. How did you perform the cost of equity analysis?

A. I am using DCF models and CAPM; identical to the methods used in recent rate cases before the Commission.

Q. Does the DCF model meet the legal standards discussed earlier in your testimony?

A. Yes, a cost of equity estimate derived from the DCF model meets the legal standards discussed above if the model incorporates current information from the capital markets via current stock prices and accurate data that investors use to establish their discount rate. This market-based information ensures the cost of equity estimates evaluate investors' required rate of return or discount rate that reflects the current economic environment.

The DCF model is a valuation model used by investors to value different types of investments such as real estate, bonds, and equity securities. The DCF model is a useful tool to value any investment that involves regular, periodic cash flows. The notion of discounting a future receipt of cash back to the present so as to place a price or value on an investment goes back centuries.[44] The premise of the DCF model in the valuation of common stock is that investors determine the value of a company's common stock by discounting its future dividend payments back to the present. The foundation of the DCF model is the process of discounting those future cash flows back to the present at the investors' required return. An investor's required rate of return is risk-sensitive and sensitive to the returns available on investments of comparable risk throughout the global capital markets. In other words, as the risk of the investment increases, so will the investors'

[44] The formal presentation of the DCF model as we use it today dates back to the 1930's in Irving Fisher's book: The Theory of Interest and John Burr Williams' 1938 text: The Theory of Investment Value. These two authors expressed the DCF model in modern economic terms.

required return. A higher required rate of return decreases the present value of the stream of dividends that equates to the price of the stock. So, all other variables being equal, investors price the riskier of two common stocks lower because the cash flows or dividends are discounted back to the present at a higher rate.

The form of the DCF model that regulatory agencies are accustomed to seeing is often referred to as the Gordon Growth Model, which is a model that values the security at the present value of a stream of cash flows (dividends) growing at a constant rate into perpetuity. The basic form of this DCF equation is:

$$P_0 = \frac{D_0(1+g)}{(Ke-g)}$$

where:

P_0 = the value of the common stock or asset

D_0 = the current dividend of the stock or annual cash flow from the asset

g = the annual growth rate of the dividend or cash flow forever

Ke = cost of equity or required rate of return for the stockholders

Or

Stock Price = Annual Dividend / (Req'd Rate of Return – Dividend Growth Rate)

This is the form of the equation commonly found in texts regarding finance, investments, and asset valuation. Such texts are inclusive of both theory and practical application of the DCF model in utility regulatory settings.

Regulatory agencies responsible for setting rates and revenue requirements want to know the investors' required rate of return or Ke in the equation. So, we solve the equation for

that variable. The equation below shows the algebraic isolation of the investors' required rate of return. By isolating investors' required rate of return in the equation, we can estimate it by knowing the stock's dividend yield and the annual dividend growth rate expected by investors. That form of the equation is:

$$Ke = \frac{D_0(1+g)}{P_0} + g$$

This equation is frequently written out as:

Req'd Rate of Return = (Dividend/Current Stock Price) + Dividend Growth Rate

or

Required Rate of Return = Dividend Yield + Dividend Growth Rate

Or as commonly abbreviated by regulatory agencies

Ke = y + g

Where: y = Dividend Yield

g = Expected Dividend Growth

Through a handful of inputs, the DCF model distills down to an equation, a complex cognitive process performed by investors to arrive at a discount rate and valuation of the security. As with any equation that attempts to model behavior, there are a host of assumptions that come along with it. Those assumptions are:

- Ke corresponds only to the specific stream of future dividends, rather than earnings, and that constitutes the source of value;
- The discount rate (Ke) must exceed the growth rate (g);
- The constant growth rate will continue for an indefinite future;
- Investors require the same discount rate (Ke) each year; and

- There is no external financing.

Q. Why is it reasonable to accept these assumptions?

A. The DCF model is attempting to emulate investors' behavior; distilling human behavior into a handful of inputs demands simplifying assumptions. The question becomes whether the assumptions are so contrary to investors' behavior in the real-world that the model output becomes meaningless or illogical. I do not believe the assumptions of the DCF model are contrary to investor behavior. And I do not know of any regulatory agency that has dismissed the DCF as being contrary to human behavior. Moreover, there are methods I use to evaluate whether an output falls outside of the realm of reality. For example, the output can be compared with the returns available on other investments such as long-term corporate bonds. There were no observations eliminated using this screen.[45]

Staff's Discounted Cash Flow Model

Q. How did you calculate the dividend yield (y) component of the DCF model?

A. The dividend yield (y) is the easier of the two components to measure as it is easily observable in daily stock price reports. It is calculated by dividing the stock's annual dividend payment per share by its market price per share.

Q. What is the source of the dividend information?

[45] Staff applies this screen using the interest rates of Baa Utility Bonds and the yields on utility-specific debt shown in the Risk Premium Table. Staff adds 100 basis points to these yields as a minimum risk premium test. Cost of equity observations below this level are eliminated from the average. FERC proceedings apply a similar test for outliers.
At September of 2018, the Baa Utility Bond Yield was 4.59% + 1.00% minimum risk premium =5.59% threshold.

A. Historic and current dividend information is easily obtained from public subscription services such as Value-Line and non-subscription services such as YahooFinance. The DCF model requires a forward-looking dividend payment which is often the current year's dividend payment increased by the forecasted growth rate for next year. I obtained the 2020 forecasted dividend per share information from Value-Line Investment Survey. The Value-Line reports for each of the proxy companies are attached as Schedule AHG-2. I obtained the stock prices for the dividend yields from YahooFinance. For this analysis, I used weekly stock price observations taken from April 1, 2018, through April 2, 2019; a full year of pricing observations. The stock prices for each of the proxy companies appears on Schedule AHG-____.

Dividend Yields Based on Prices from April 1, 2018, through April 2, 2019
19-EPDE-223-RTS

		1	2	3	4	5	6
		Dividends	Stock Prices			Dividend Yield	
		2020	Low	High	Mean	Max.	Min.
Allete Inc.	ALE	$ 2.46	$ 70.41	$ 84.26	$ 77.05	3.49%	2.92%
Alliant Energy Corp.	LNT	$ 1.50	$ 38.22	$ 47.91	$ 43.24	3.92%	3.13%
Ameren Corp.	AEE	$ 2.06	$ 55.01	$ 74.91	$ 64.32	3.74%	2.75%
Am. Electric Power Co. Inc	AEP	$ 2.88	$ 62.71	$ 86.10	$ 73.41	4.59%	3.34%
AVANGRID Inc.	AGR	$ 1.88	$ 45.81	$ 54.55	$ 50.20	4.10%	3.45%
CMS Energy Corp.	CMS	$ 1.64	$ 42.52	$ 56.30	$ 49.33	3.86%	2.91%
Duke Energy Corp.	DUK	$ 3.94	$ 71.96	$ 91.67	$ 82.84	5.48%	4.30%
El Paso Electric Co.	EE	$ 1.63	$ 47.99	$ 64.35	$ 56.47	3.39%	2.53%
IDACORP Inc.	IDA	$ 2.73	$ 84.82	$ 102.44	$ 95.23	3.21%	2.66%
MGE Energy Inc.	MGEE	$ 1.45	$ 55.30	$ 68.95	$ 62.72	2.62%	2.10%
NextEra Energy Inc.	NEE	$ 5.65	$ 155.06	$ 195.55	$ 172.67	3.64%	2.89%
NorthWestern Corp.	NWE	$ 2.40	$ 51.53	$ 71.77	$ 60.25	4.66%	3.35%
OGE Energy Corp.	OGE	$ 1.65	$ 31.49	$ 43.76	$ 37.52	5.24%	3.77%
Pinnacle West Capital Corp.	PNW	$ 3.22	$ 73.41	$ 97.27	$ 83.86	4.39%	3.31%
PNM Resources Inc.	PNM	$ 1.26	$ 34.95	$ 47.92	$ 40.65	3.61%	2.63%
Portland General Electric Co.	POR	$ 1.61	$ 39.18	$ 52.60	$ 45.65	4.11%	3.06%
Southern Co.	SO	$ 2.54	$ 42.42	$ 52.65	$ 46.36	5.99%	4.82%
WEC Energy Group	WEC	$ 2.50	$ 58.48	$ 80.05	$ 68.45	4.27%	3.12%
Xcel Energy Inc.	XEL	$ 1.69	$ 41.99	$ 57.51	$ 48.94	4.02%	2.94%
					Range:	5.99%	2.10%
					Average:	4.12%	3.16%

1) 2020 Dividends per Share Forecasted by Value-Line Investment Survey
2) Minimum 12 month price observed from April 1, 2018, through April 2, 2019
3) Maximum 12 month price observed from April 1, 2018, through April 2, 2019
4) Mean of the minimum and maximum prices from the time period of April 1, 2018, through April 2, 2019
5) Maximum dividend yield available in the market from time period
6) Minimum dividend yield available in the market from time period

Forecasted Growth Rates for the DCF Model

Q. Please discuss the importance of the second component, the growth rate (g), in the DCF equation.

A. The "g" represents the anticipated annual growth rate in cash-flows that investors expect to receive through dividends from the stock. This is a challenging and contentious issue in a DCF analysis for two reasons. First, it is a key element in the DCF model or any form of a discounted cash flow analysis because the growth rate has a one-for-one effect on the

required return produced by the model. All other factors being equal, a higher growth rate results in an equally higher cost of equity for the utility. Second, it is highly subjective due to the uncertainty about future earnings and dividends, as well as the economy.

Q. How did you estimate the growth rate in the DCF model?

A. I relied on a combination of short-term and long-term growth forecasts, the same growth forecasts that investors apply to value common stocks. The appropriate growth estimate to use in the DCF model is that which is expected by the market and factored into investors' analyses to estimate stock prices. Earnings per share growth forecasts are commonly incorporated into the DCF model. Investment firms that publish growth forecasts typically publish three to five-year annual growth estimates for earnings. Value-Line Investment Survey also provides dividend growth rate forecasts; it is the only firm that I am aware of that does so. Three to five years is as far into the future as analysts forecast for a specific company. There are several sources for these estimates. My analysis incorporates short-term forecasts published by Value-Line Investment Survey, FactSet as reported through S&P Market Intelligence, Zack's Investment Research and I/B/E/S (Institutional Brokers Estimation Service) reported through YahooFinance.

Q. How do investors estimate the dividend growth rate beyond the three to five-year horizon of the short-term growth forecasts?

A. For the long-term perspective of potential growth, investors rely on forecasts of the broad economy as measured by annual changes forecasted for the nation's gross domestic product (GDP). There are sources for long-term growth estimates of this country's GDP that extend

out more than 20 years. Academic texts and investment professionals use these forecasts in DCF models as a forecast of potential long-term growth of corporate dividend payments.

GDP refers to the market value of all final goods and services produced within a country in a given period. Nominal GDP (nGDP) is that measure of goods and services which *includes* effects of price changes - better known as inflation. Inflation must be included for our forecast because the DCF analysis is interested in the nominal required return. That is to say, investors' expectations of inflation are contained in their required return. Keep in mind that the "headline" GDP reported in the media is *real* GDP, which is GDP *less* the inflation experienced over the measurement period.

Q. Is it a widely accepted practice in securities valuation to use nGDP growth estimates in the DCF model?

A. Yes, in the federal regulatory arena, similar to the responsibilities of the KCC, the Federal Energy Regulatory Commission (FERC) uses nGDP to estimate the cost of equity because it is consistent with investor behavior. FERC has reviewed the issue of long-term growth estimates used in DCF models. It took comments from stakeholders that included state commissions, customers, investment bankers, and interstate pipeline companies.[46] Testimony from these parties made it clear that long-term estimates of nGDP are a common component of valuation analyses conducted by investment professionals. From that proceeding, FERC concluded that long-term growth estimates of nGDP should be the

[46] Transcript from Technical Conference held on January 23, 2008, FERC Docket PL07-2-000.

estimate of long-term growth in the DCF models used to estimate required returns for interstate pipeline companies because that is consistent with investor behavior.[47] In June of 2014, FERC concluded that the same methodology should be used in setting the required returns for electric transmission companies.[48] Although the Commission has never explicitly endorsed long-run nGDP growth as an input, it is clear that the growth estimate used by Staff in the 15-116 Docket was considered credible by the Commission.[49] In that analysis, I relied on the same sources for long-term nGDP growth as I am using in this analysis. These are also sources that FERC relies on for long-run nGDP estimates.

Q. Is there academic support for this issue?

A. Yes, academic research has shown that nGDP growth forecasts are an important input to valuation studies because the analyst has to consider whether a company's annual earnings can grow as fast as, or even faster than, the broad economy. In two of his books devoted to the subject of asset valuation, Dr. Aswath Damodaran discusses the nature of a stable growth rate for DCF models.[50] He argues for viewing nominal economic growth as the absolute maximum when using a stable-growth model, such as the DCF model we are using.

> "The stable growth rate cannot exceed the growth rate of the economy in which a firm operates, but it can be lower. There is nothing that prevents us from assuming that mature firms will become a smaller part of the economy and it may, in fact, be the more reasonable assumption to make. Note that the growth rate of an economy reflects the contributions of both young, higher growth

[47] Policy Statement, FERC Docket PL07-2-000 (April 17, 2008); FERC Opinion No. 486, FERC Docket RP04-274 (Oct. 19, 2006).
[48] Opinion No. 531, June 19, 2014, 147 FERC 61,234, para 36.
[49] Order issued September 10, 2015, Docket 15-KCPE-116-RTS, para. 34; p. 15-16.
[50] Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd Edition and Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd Edition.

> firms and mature, stable growth firms. If the former grow at a rate much higher than the growth rate of the economy, the latter have to grow at a rate that is lower." (Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Aswath Damodaran, p. 148)

> "The growth rate of a company cannot be greater than that of the economy but it can be less. Firms can become smaller over time relative to the economy. Thus, even though the cap on the growth rate may be the nominal growth rate of the economy, analysts may use growth rates much lower than this value for individual companies." (Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Aswath Damodaran, p.159)

It is worth noting that Professor Damodaran cites the nGDP growth projection as a *ceiling* for long-term growth in most valuation studies. Certainly, there are industries that will exceed the average for a period of time, but even for those industries, rapid growth cannot continue forever.

Q. Does the view that nGDP growth is a ceiling on long-term earnings growth exist outside of academia?

A. Yes, valuation analysts carefully consider the long-run growth rates used to value assets very carefully because using an incorrect growth estimate will lead to incorrectly valuing an asset. Institutions directly involved in asset valuation and asset management that apply valuation models to analyze potential acquisition and merger transactions recognize that estimates of firm-specific growth are a driver to the value of an asset; overstating growth would cause a model to overestimate the value of the asset, which would result in an economic loss to the investor. These experts also warn of a ceiling to earnings growth rates as being no more than that of broad economic growth.

> "Growth rate: Few companies can be expected to grow faster than the economy for long periods. The best estimate is probably the expected long-term rate of consumption growth for the industry's products, plus inflation." (Valuation: Measuring and Managing the Value of Companies, Tim Koller, Mark Goedhart, and David Wessels, McKinsey & Co; 4th ed, p. 275.)

The following quote from J.P. Morgan Asset Management (JPMAM) addresses the macro or economy-wide measures of profits, and it is consistent with the firm-specific view expressed by asset valuation experts in that analysts must be aware of the forecasted growth rates applied in valuation models and how those growth forecasts comport with broad measures of forecasted economic growth.

> "One common mistake is to assume that earnings and dividends received by investors can grow in line with—or even in excess of—overall economic growth (GDP) in perpetuity. Granted, it is almost a truism that aggregate earnings must grow at the same pace as the overall economy in the very long run; otherwise, profits would eventually outstrip the size of the entire economy or dwindle to an insignificant share of it. But not all of this earnings growth accrues to existing shareholders. On the contrary, a large portion of economic growth comes from the birth of new enterprises. Some commentators suggest (for example, Bernstein and Arnott, 2003; Cornell, 2010) that new enterprises account for more than half of GDP growth in the U.S., while in some rapidly developing economies new enterprises may account for the lion's share of overall economic growth."[51]

Peter L. Bernstein and Robert D. Arnott, referenced in the quote, have both published in peer-reviewed academic journals and books on investment strategy, as well as building careers in the field of asset management and investment strategy. Their research suggests that relying on GDP as the long-run growth estimate could actually be overly optimistic. Research by Bernstein and Arnott warns practitioners that a portion of nGDP growth is

[51] Long-term Capital Market Return Assumptions: 2015 Estimates and Thinking Behind the Numbers, J.P. Morgan Asset Management, p. 25, https://am.jpmorgan.com/us/institutional/ltcmra

created by new enterprises and that portion of nGDP growth does not contribute to the earnings growth of existing enterprises.[52]

Q. Do you believe this evidence justifies incorporating long-run nGDP growth forecasts into cost of equity analyses of utility companies?

A. Yes, because we have to ascertain the discount rate investors apply to the future cash flows from an investment in these utilities. Therefore, the Commission should emulate investors' analytical practices as closely as possible to determine investors' discount rate or required return. As noted above, investment professionals include a long-run growth forecast for the general economy (in addition to company-specific short-run growth estimates) when applying the DCF and capital asset pricing model, and that measure of macro-economic growth serves as the upper bounds of a firm-specific analysis. Therefore, the Commission should consider the same information when estimating a utility's required return.

Q. How did you estimate long-run nominal GDP growth?

A. I averaged the long-run nGDP forecasts of the Energy Information Agency (EIA) and the Social Security Administration (SSA). The average of these two forecasts composes the long-run growth estimate in the DCF analysis. The nGDP growth forecasts published by EIA and SSA are the same sources that I have relied on over the past decade. FERC also uses these two sources for nGDP estimates.

[52] Earnings Growth: The Two Percent Dilution, William J. Bernstein and Robert D. Arnot, Financial Analysts Journal, September/October 2003, pp 47-55.

Nominal GDP Estimates

Energy Information Agency (EIA) 2015 - 2050		4.18%
Social Security Administration (SSA) OADSI Trustees Report 2017 - 2095		4.38%
	Average	4.28%

Sources:
EIA Annual Energy Outlook 2018, Table B4

Forecasted Nominal GDP, 2018, OADSI Trustees Report Office of the Chief Actuary, Table V.B1.—Principal Economic Assumptions Table V.B2.—Additional Economic Factors

Q. Are these two the only two sources for long-run GDP forecasts?

A. There are other source shown in the table and they are wholly consistent with the EIA and SSA forecasts.

Additional GDP Estimates

Exxon-Mobile 2018 Outlook for Energy 2016 - 2040 2.2% Real GDP + 2.2 GDP Deflator from SSA	4.40%
Congressional Budget Office Nominal GDP Forecast	4.50%
Federal Reserve Open Market Committee Long-run Forecast 2.0% Real GDP + 2.0 PCE Inflation	4.00%

Sources:
ExxonMobile 2018 Outlook for Energy: A View to 2040, p. 60

An Update to the Economic Outlook: 2018-2028, Congressional Budget Office, August 2018

Economic Projections of Ferderal Reserve Board Members & Bank Presidents Under Their Individual Assessment of Projected Appropriate Monetary Policy, June 2018

Q. How did you arrive at a growth rate for each proxy company?

A. The growth rate is the average of the short-term growth rates[53] and the long-run forecast of nGDP of 4.28%[54]. The following table summarizes all of the observed growth forecasts, both historical and forecasted. My analysis is based on the forecasted growth rates. The historical data is shown to provide a comparative perspective.

Growth Rate Summary
19-EPDE-223-RTS

		1	2	3	4	5	6	7	8	9	10	11	12
		Value-Line Historic Data				**Forecasted Growth Rates**							**DCF**
		Earnings Growth		**Dividend Growth**		**Value Line**		**IBES**	**Zacks**	**FactSet**	**Short-run**	**Long-terr**	**Growth**
		10 Year	**5 Year**	**10 Year**	**5 Year**	**EPS**	**DPS**	**EPS**	**EPS**	**EPS**	**Average**	**nGDP**	**Rate**
Allete Inc.	ALE	1.00%	4.00%	3.00%	3.00%	5.00%	5.00%	6.00%	7.20%	7.00%	6.04%	4.28%	5.16%
Alliant Energy Corp.	LNT	4.50%	4.50%	7.50%	7.00%	6.50%	6.00%	7.25%	6.00%	6.22%	6.39%	4.28%	5.34%
Ameren Corp.	AEE	0.50%	4.50%	-3.50%	2.50%	6.50%	6.00%	7.70%	6.80%	6.64%	6.73%	4.28%	5.50%
Am. Electric Power Co. Inc	AEP	3.00%	5.00%	4.50%	5.00%	4.00%	6.00%	5.57%	5.70%	5.91%	5.44%	4.28%	4.86%
AVANGRID Inc.	AGR	na	na	na	na	12.00%	5.50%	9.20%	7.70%	7.51%	8.38%	4.28%	6.33%
CMS Energy Corp.	CMS	10.00%	7.00%	21.50%	7.00%	7.00%	7.00%	6.89%	6.40%	6.62%	6.78%	4.28%	5.53%
Duke Energy Corp.	DUK	2.50%	0.50%	10.00%	2.50%	5.50%	4.00%	4.50%	5.00%	4.93%	4.79%	4.28%	4.53%
El Paso Electric Co.	EE	6.50%	na	na	18.00%	3.00%	7.00%	5.10%	4.10%	5.05%	4.85%	4.28%	4.57%
IDACORP Inc.	IDA	7.50%	4.50%	5.50%	10.50%	4.50%	6.50%	2.60%	3.90%	3.98%	4.30%	4.28%	4.29%
MGE Energy Inc.	MGEE	4.50%	3.50%	3.00%	4.00%	7.50%	4.50%	4.00%	na	na	5.33%	4.28%	4.81%
NextEra Energy Inc.	NEE	7.50%	5.50%	8.50%	9.50%	9.00%	10.00%	7.46%	7.70%	7.81%	8.39%	4.28%	6.34%
NorthWestern Corp.	NWE	8.00%	7.00%	5.50%	7.00%	2.50%	4.50%	2.74%	2.50%	2.45%	2.94%	4.28%	3.61%
OGE Energy Corp.	OGE	4.00%	1.00%	6.50%	9.50%	6.50%	7.50%	-2.80%	4.80%	5.31%	4.26%	4.28%	4.27%
Pinnacle West Capital Corp.	PNW	4.00%	5.00%	2.50%	2.50%	6.00%	6.00%	4.56%	5.00%	5.28%	5.37%	4.28%	4.82%
PNM Resources Inc.	PNM	2.00%	8.50%	0.50%	11.50%	7.50%	7.00%	4.10%	4.80%	5.13%	5.71%	4.28%	4.99%
Portland General Electric Co.	POR	4.00%	3.50%	9.00%	3.50%	4.00%	6.00%	4.90%	4.10%	4.60%	4.72%	4.28%	4.50%
Southern Co.	SO	3.00%	3.00%	4.00%	3.50%	3.50%	3.00%	2.16%	4.50%	4.17%	3.47%	4.28%	3.87%
WEC Energy Group	WEC	8.50%	6.00%	15.50%	11.00%	6.00%	6.00%	4.59%	4.40%	5.87%	5.37%	4.28%	4.83%
Xcel Energy Inc.	XEL	5.50%	5.00%	4.50%	5.50%	5.50%	5.50%	6.60%	5.90%	5.88%	5.88%	4.28%	5.08%
	Min	0.50%	0.50%	-3.50%	2.50%	2.50%	3.00%	-2.80%	2.50%	2.45%	2.94%		3.61%
	Max	10.00%	8.50%	21.50%	18.00%	12.00%	10.00%	9.20%	7.70%	7.81%	8.39%		6.34%
	Mean	4.81%	4.59%	6.35%	6.83%	5.89%	5.95%	4.90%	5.36%	5.58%	5.53%		**4.91%**

Columns: 1) - 6) Historic 5 & 10 Year & Forecasted growth rates as reported by Value-Line
7) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gatherd by Thomson-Reuters (aka I/B/E/S) and reported at YahooFinance on March 29, 2019
8) Long-term forecasted annual earnings per share growth rate. Consensus forecasts gathered by FactSet and reported at S&P Global Market Intelligence (fka: SNL Financial) on March 29, 2019
9) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gathered by Zack's Investments gathered on March 29, 2019
10) Average of 3 to 5-year forecasted annual growth rates (colunms 5 through 9).
Long-term forecasted nominal GDP growth rate. Average of long-term forecasts by the U.S. Energy Information Agency and
11) Social Security Administration Office of the Chief Actuary. SSA-OADSI 2018 Trustee Report
12) Average of short-term and long-term growth rates applied in DCF analysis.

[53] For each proxy company, I gathered three short-run, three to five-year growth forecasts for earnings and dividend from Value-Line Investment Survey; as well as analysts' earnings growth projections by Thomson Financial Network (I/B/E/S) reported by YahooFinance. I/B/E/S aggregates analysts' earnings forecasts and reports the mean of those estimates. FactSet is a service similar to I/B/E/S in that it aggregates analysts' forecasts and publishes the mean and median of estimates. FactSet data was obtained through S&P Global Market Intelligence.

[54] See tables of nominal GDP estimates on previous page.

Q. How is the long-run nGDP forecast applied in your DCF analysis?

A. The long-run nGDP growth forecast of 4.28% is averaged with the short-run growth forecasts. In my DCF analysis, I give equal weight to short-run and long-run growth forecasts. The weighting is certainly debatable because we cannot know precisely how investors weight the two forecast horizons. At FERC, in both natural gas pipeline and electric transmission rate cases, the short-run growth is afforded a two-thirds weighting and the nGDP forecast a one-third weighting. Whatever the weighting an analyst applies between the short-term and long-term growth forecasts, the analysis needs to be constructed in a manner that distinguishes between the growth potential of each time horizon. Mr. Magee's analysis failed to include *any* long-run growth forecast, his growth estmates are limited 3 to 5 years.

Q. What are your observations of the short-run growth forecasts?

A. The average of the short-run growth forecasts for the proxy group is 5.53% with a range of 2.94% to 8.39%.

<u>DCF Results</u>

A. Please discuss the results of your DCF analysis.

Q. The results of my DCF analysis appear in the following table. As I have set out the foundations for the DCF analysis in the previous pages, in this section, I will discuss the specific information that I relied on for the DCF model and interpret the results.

Discounted Cash Flow (DCF) Analysis
19-EPDE-223-RTS

		1	2	3	4	5
		Dividend Yields		Growth	DCF Estimated	
		Max.	Min.	Rate	Required Return	
Allete Inc.	ALE	3.49%	2.92%	5.16%	8.08%	8.65%
Alliant Energy Corp.	LNT	3.92%	3.13%	5.34%	8.47%	9.26%
Ameren Corp.	AEE	3.74%	2.75%	5.50%	8.25%	9.25%
American Electric Power Co. Inc	AEP	4.59%	3.34%	4.86%	8.20%	9.45%
AVANGRID Inc.	AGR	4.10%	3.45%	6.33%	9.78%	10.43%
CMS Energy Corp.	CMS	3.86%	2.91%	5.53%	8.44%	9.39%
Duke Energy Corp.	DUK	5.48%	4.30%	4.53%	8.83%	10.01%
El Paso Electric Co.	EE	3.39%	2.53%	4.57%	7.09%	7.95%
IDACORP Inc.	IDA	3.21%	2.66%	4.29%	6.95%	7.50%
MGE Energy Inc.	MGEE	2.62%	2.10%	4.81%	6.91%	7.43%
NextEra Energy Inc.	NEE	3.64%	2.89%	6.34%	9.23%	9.98%
NorthWestern Corp.	NWE	4.66%	3.35%	3.61%	6.96%	8.27%
OGE Energy Corp.	OGE	5.24%	3.77%	4.27%	8.04%	9.51%
Pinnacle West Capital Corp.	PNW	4.39%	3.31%	4.82%	8.14%	9.21%
PNM Resources Inc.	PNM	3.61%	2.63%	4.99%	7.63%	8.61%
Portland General Electric Co.	POR	4.11%	3.06%	4.50%	7.56%	8.61%
Southern Co.	SO	5.99%	4.82%	3.87%	8.70%	9.86%
WEC Energy Group	WEC	4.27%	3.12%	4.83%	7.95%	9.10%
Xcel Energy Inc.	XEL	4.02%	2.94%	5.08%	8.01%	9.10%
Average of each column		4.12%	3.16%	4.91%	8.06%	9.03%
			Average of all observations		8.55%	

1) Dividend divided by maximum price observed from April 1, 2018, through April 2, 2019
2) Dividend divided by minimum price observed April 1, 2018, through April 2, 2019
3) Forecasted long-run growth rate
4) Low-end estimate = col 1 + col 3
5) High-end estimate = col 2 + col 3

Pricing data was gathered from YahooFinance for each of the proxy companies from the time period of April 1, 2018, through April 2, 2019, on a weekly basis. The low dividend yield is computed using the projected 2020 dividend divided by the average of the weekly high prices while the high dividend yield is computed using the average weekly low prices.

Q. What are the results of your DCF analysis?

A. My DCF analysis indicates an ROE ranging from 8.06% to 9.03% with an average of 8.55%

Internal Rate of Return (IRR) Analysis

Q. Please discuss the internal rate of return (IRR) analysis that you performed.

A. An IRR analysis of an investment is a form of a discounted cash flow analysis, only with a more complex equation than the Gordon Growth Model that we applied in the previous section. In the IRR analysis, we are able to apply the five-year growth forecasts to only the intended next five years of dividends, with the remaining years growing at the long-run nGDP forecasted growth rate. In the age of spreadsheets, the IRR equation is not that much harder to manage than the basic dividend yield plus growth DCF model and, as the IRR model allows us to apply the growth forecasts to their respective forecast periods. The IRR model provides important information to policy makers because it recognizes the respective time spans of both the short-run (three to five-year earnings growth) and long-run (nGDP growth rate) forecasts. The full output of the IRR calculations appears in Schedule AHG-4; the following table summarizes the results.

Internal Rate of Return (IRR)
19-EPDE-223-RTS

Allete Inc.		7.73%
Alliant Energy Corp.		8.07%
Ameren Corp.		7.80%
American Electric Power Co. Inc		8.48%
AVANGRID Inc.		8.60%
CMS Energy Corp.		7.95%
Duke Energy Corp.		9.33%
El Paso Electric Co.		7.28%
IDACORP Inc.		7.22%
MGE Energy Inc.		6.71%
NextEra Energy Inc.		8.04%
NorthWestern Corp.		8.28%
OGE Energy Corp.		8.86%
Pinnacle West Capital Corp.		8.38%
PNM Resources Inc.		7.60%
Portland General Electric Co.		7.97%
Southern Co.		9.94%
WEC Energy Group		8.17%
Xcel Energy Inc.		8.00%
	Mean	8.13%
	Min	6.71%
	Max	9.94%

In the IRR model, short-term growth forecasts are given much less weight than in the DCF analysis; five years of a several hundred year time horizon or five percent as opposed to a weighting of 50 percent that I applied in the two-stage DCF model. As a result of the greater weighting of the long-term growth estimate, the average for the proxy group in the IRR analysis is 42 basis points lower than the two-stage DCF results. In this instance, as is usually the case with public utilities, there is not a wide difference between the short-term growth rates and long-term nGDP growth. Therefore, the difference in weighting of the two growth rates between the DCF and IRR analyses does not cause a large difference in results.

Staff's Capital Asset Pricing Model (CAPM) Analysis

Q. Would you please describe the capital asset pricing model (CAPM)?

A. The CAPM offers an explanation of the positive relationship between risk and ROR required by investors.[55] It is appealing to regulators because it meets the legal standards I discussed above, as it can be structured to incorporate current data from the financial markets and the unique risks of the utility in question.

Ke = Rf + Beta (Rm - Rf) or

Ke = Rf + Beta (Rp)

Where:

Ke = required return on equity

Rf = return on a risk-free security

Rm = an expected return from the market as a whole

Rp = risk premium available to investors through purchasing common stocks instead of risk-free securities often calculated as Rm - Rf

Beta = volatility of the security's or portfolio's return relative to the volatility of the market's return with the market beta equal to 1.0

Rf

The Rf estimate is the interest rate investors believe represents a riskless return. Although it is a simple concept, the answer is not universally agreed upon. It is widely accepted that a debt instrument issued by the U.S. Government is a risk-free instrument. An investment

[55] The theoretical support for the CAPM is the work done by Harry Markowitz ("Portfolio Selection," Journal of Finance, March, 1952). W.F. Sharpe added the concept of a risk-free rate of return to the Markowitz model ("A Simplified Model of Portfolio Analysis," Management Science, January, 1963).

in U.S. Treasury Bonds is a risk-free investment, if the investor plans to hold it until maturity. The risk-free instrument chosen will have an effect on the results of the CAPM analysis. Whichever instrument is selected, it should be used consistently in the equation.

Beta

The beta coefficient measures the volatility of the return earned by the utility's stock relative to the volatility of the returns earned by the broader equity market. The broad equity market is frequently measured using the S&P 500 Index. This measure provides a look at the risk and volatility of a stock relative to other investments. A stock with a beta of 1 is equally as volatile as the market as a whole. A stock with a beta of 0.5 is half as volatile as the market. Value-Line reports that the proxy group has a beta coefficient of 0.58 with a range of 0.40 to 0.85.

Rm

Rm is the expected return on the stock market as measured by a broad market index such as the S&P 500. This represents the total return consisting of the price change of the index plus dividends earned for the year.

Rp

The risk premium is the difference between investors' expected return from the stock market and their expected return from the risk-free investment over the same time period. The risk premium is written as Rm-Rf. The market return and the risk-free return should be taken from the same time period so as to accurately measure the additional return

required by investors to take on the risk of common stocks over the risk-free investment over that forecasted or historic time period.

Q. Why do you incorporate a CAPM analysis in your evaluation of Empire's cost of equity?

A. A CAPM analysis, just like the DCF analysis, provides an estimate of investors' required.

Q. Please discuss your CAPM analysis.

A. I took two distinct approaches to the CAPM analysis that are commonly found in both cost of capital studies in regulatory and asset-valuation arenas. I performed one analysis using purely historic measures of returns from the stock and bond markets. The second analysis incorporates forecasted returns on debt and equity capital. The results are very different with the two approaches because historic returns on equity capital are drastically higher, 12.10%, compared to forecasted returns of 6.76% to 8.00%; reflecting the overwhelming evidence that expectations for future returns on debt and equity investments are much lower than those experienced by investors over the past century.

Both forms of my CAPM analysis incorporate the high and low beta coefficients observed in the proxy group and the proxy group average beta of 0.58. This average beta of the proxy group is about 58% of that exhibited by the broad equity market, clearly indicating that public utility companies like Empire and the proxy group are less volatile (and less risky) than the broad stock market, and investors expect a correspondingly lower return.

Proxy Group Beta Coefficients

Allete Inc.	ALE	0.65
Alliant Energy Corp.	LNT	0.65
Ameren Corp.	AEE	0.60
American Electric Power Co. Inc	AEP	0.55
AVANGRID Inc.	AGR	0.40
CMS Energy Corp.	CMS	0.55
Duke Energy Corp.	DUK	0.50
El Paso Electric Co.	EE	0.65
IDACORP Inc.	IDA	0.55
MGE Energy Inc.	MGEE	0.60
NextEra Energy Inc.	NEE	0.60
NorthWestern Corp.	NWE	0.55
OGE Energy Corp.	OGE	0.85
Pinnacle West Capital Corp.	PNW	0.55
PNM Resources Inc.	PNM	0.65
Portland General Electric Co.	POR	0.60
Southern Co.	SO	0.50
WEC Energy Group	WEC	0.55
Xcel Energy Inc.	XEL	0.50
Value-Line Investment Survey	Mean	0.58
	Min	0.40
	Max	0.85

Q. Please describe your forecasted CAPM analyses.

A. For the forecasted CAPM analyses I obtained forecasts of long-run returns for common equity and U.S. Treasury Bonds from two distinct sources; J.P. Morgan Asset Management (JPMAM) and BlackRock Investments (BlackRock). Combined, these two asset management companies oversee more than $8.5 trillion dollars with individual and institutional clients worldwide. Thus, it is reasonable assume their published forecasts influence the expectations of investors beyond just their own client base. JPMAM and BlackRock each annually publish annually their views of long-run (more than 15 years) returns available of numerous asset classes. Their respective forecasts are not identical, and

taken together they provide a range for long-run returns on asset classes by the largest asset management companies.

Q. How is JPMAM data is applied to the CAPM analysis?

A. For this CAPM analysis we are interested in their forecasted returns on common stock in the U.S. and U.S. Treasury Bonds published by JPMAM to establish the expected return for the market. JPMAM publishes 10 to 15-year forecasts of expected returns on dozens of investment asset classes in its annual publication, the Long Term Capital Market Return Assumptions (LTCMRA).[56] JPMAM forecasts an annual return on common stocks of 6.76%. The JPMAM's forecasted returns on common stocks has declined over the past two years; generally a product of the increase in stock prices. Following the calculations and inputs through the CAPM equation in line 2 of the following table, the forecasted return on a risk-free investment, 10-Year U.S. Treasury Bonds, is subtracted from the expected return on common stocks resulting in a risk premium of 3.45%. This risk premium is the additional return necessary to induce investors to take on the added risk associated with common stocks over the risk-free investment. The beta coefficient is applied to the risk premium to ascertain how much of a risk premium is necessary for investors to take on risks of investing in utility stocks as opposed to the risk free U.S. Treasury Bond.

[56] J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2019 Edition, J.P. Morgan Asset Management (published October of 2018). www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

Capital Asset Pricing Model -- Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields
19-EPDE-223-RTS

		Low Beta	High Beta	Avg Beta
1) Forecasted Returns on Common Stocks		6.76%	6.76%	6.76%
2) Forecasted Total Return on 10-Year T-Bonds	-	3.31%	3.31%	3.31%
3) Resulting Risk Premium		3.45%	3.45%	3.45%
4) Beta Coefficient	**X**	0.40	0.85	0.58
5) Risk Premium		1.38%	2.94%	2.01%
6) Forecasted Yield on 10-Year T-Bonds	+	3.25%	3.25%	3.25%
7) For Cost of Equity		4.63%	6.19%	**5.26%**

1) Forecasted 10 to 15-year annual arithmetic return on stocks
J.P. Morgan Asset Management, 2019 Edition.
2) Forecasted 10 to 15-year annual arithmetic return on intermediate term
U.S. Government bonds by J.P. Morgan Asset Management, 2019 Edition.
3) Resulting risk premium (1-2).
4) Beta coefficient range of proxy group reported by Value-Line.
5) Row 3 x Row 4 = asset specific risk premium.
6) Forecasted yield on 10-Year U.S. Treasury bonds forecasted by
J.P. Morgan Asset Management, 2019 Edition (page 57).
7) Forecasted cost of equity capital row 5 + row 6.

Sources:
J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions,
2019 Edition, J.P. Morgan Asset Management (published October of 2018).

The expected risk-free yield of 3.25% forecasted by JPMAM is added to the beta specific risk premium to arrive at the cost of equity for the given beta coefficients of 0.40 to 0.85. These results appear low by historic measures of the past 40 years. The results are in line with the returns offered on other investments in the current capital markets. For instance, investors in Applicants' long-term Baa public utility bonds are purchasing bonds with the

expectation for returns of 4.59%.[57]

As you can see in the next table, a CAPM analysis that incorporates BlackRock's long-term return projections are higher than those published by JPMAM.

Capital Asset Pricing Model -- Forecasted Risk Premium
Forecasted Market Returns & Treasury Bond Yields
by BlackRock Investments
19-EPDE-223-RTS

		Low Beta	High Beta	Avg Beta
1) Forecasted Returns on Common Stocks		7.70%	7.70%	7.70%
2) Forecasted Total Return on 10+ Year U.S. T-Bonds	-	2.80%	2.80%	2.80%
3) Equity Risk Premium		4.90%	4.90%	4.90%
4) Beta Coefficients of Proxy Group	x	0.40	0.85	0.58
5) Beta Adjusted Risk Premium		1.96%	4.17%	2.85%
6) Forecasted Yield on 10-Year T-Bonds	+	3.40%	3.40%	3.40%
7) Cost of Equity		5.36%	7.57%	**6.25%**

1) Forecasted 25-year annual geometeric returns on U.S. common stocks (average of large and small capitalization)
2) Forecasted 25-year annual geometeric return on intermediate term Treasury bonds
3) Resulting risk premium (1-2)
4) Beta coefficient range of proxy group reported by Value-Line.
5) Proxy Group risks premium
6) Forecasted yield on 10-Year U.S. Treasury bonds published in Survey of Professional Forecasters (Federal Reserve Bank of Philadelphia)
7) Forecasted cost of equity capital row 5 + row 6.

Sources:
https://www.blackrockblog.com/blackrock-capital-markets-assumptions/
https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2018/survq118

[57] Yield on BBB/Baa rated public utility bonds reported by Value-Line Investment Survey: Selection and Opinion Section. Average yield reported during pricing period for Staff's analysis.

Q. What is the third source of data used in the forward looking CAPM analyses?

A. I relied on data published by Duff & Phelps, a global financial services company. Specific to cost of capital estimation, Duff & Phelps provides forward looking estimates of an equity risk premium (ERP) and a risk-free return. Just as in the previous CAPM equations, the ERP plus the risk-free return equate to the expected return on common stocks. The beta coefficient of the particular asset (in this case the proxy group) is to the ERP, and the product added to the risk-free rate of return. As capital markets change, Duff & Phelps changes its ERP and risk-free return estimates.

Capital Asset Pricing Model -- Duff & Phleps' Forecasted Risk Premium Using Forecasted Market Returns & Treasury Bond Yields 19-EPDE-223-RTS

		Low Beta	High Beta	Avg Beta
1) Duff & Phelps U.S. ERP		5.50%	5.50%	5.50%
2) Beta Coefficient	x	0.40	0.85	0.58
3) Proxy Group Risk Premium		2.20%	4.68%	3.20%
4) Duff & Phelps U.S. Risk-Free Rate of Return	+	3.50%	3.50%	3.50%
5) Proxy Group Cost of Equity		5.70%	8.18%	**6.70%**

1) Duff & Phelps U.S. Equity Risk Premium (effective December 31, 2018)
2) Beta coefficient range of proxy group reported by Value-Line.
3) Resulting risk premium for proxy group (1-2).
4)' Duff & Phelps U.S. Risk-Free Rate of Return (affirmed December 31, 2018)
5) Forecasted Cost of Equity Range for Proxy Group

Sources:
Valuation Insights, First Quarter 2019, U.S. Equity Premium Recommendation; February 19, 2019; Duff & Phelps
https://www.duffandphelps.com

These three capital asset pricing models vary with respect to the precise return each

projects that is demanded by investors going forward. The models from all three of these sources projects that returns on equity capital in the future will be lower than the historic returns. Their view of lower returns is virtually universally accepted across the investment banking and asset management industry.

Q. Does the historic CAPM corroborate the findings of your forecasted CAPM analyses?

A. No, the cost of equity or expected returns calculated using purely historical data are significantly greater than found with the three scenarios using forecasted return. Again, this finding is not a surprise and it highlights the nearly universal acceptance that returns going forward are not going to be a repeat of the past. For the historical CAPM I relied on data of returns earned from 1926 through 2017. The process is the same as that applied in the Forecasted CAPM.

Capital Asset Pricing Model -- Historic Risk Premium
Based on Historic Risk Premiums from 1926 to 2017
19-EPDE-223-RTS

		Low Beta	High Beta	Average Beta
1) Total Returns on Common Stocks		12.10%	12.10%	12.10%
2) Total Return on Government Bonds	-	5.20%	5.20%	5.20%
3) Resulting Risk Premium		6.90%	6.90%	6.90%
4) Beta Coefficient	X	0.40	0.85	0.58
5) Risk Premium		2.76%	5.87%	4.01%
6) Historic Yield on Government Bonds	+	4.38%	4.38%	4.38%
7) Forecasted Cost of Equity Based on Historic Returns		7.14%	10.24%	8.39%

1) Historic returns on common stocks 1926-2017 (SBBI; Exhibit 2-3)
2) Historic returns on intermediate-term government bonds 1926-2017
3) Resulting risk premium (1-2)
4) Beta coefficient of the proxy group (Reported by Value-Line)
5) Row 3 x Row 4 = Asset Specific Risk Premium
6) Historic year-end yield on intermediate-term government bonds 1926-2017
7) Forecasted cost of equity capital, row 5 + row 6

Sources:
Ibbotson SBBI: 2018 Classic Yearbook (Duff & Phelps) & Value-Line Investment Survey.

If we rely on purely historic data, we have to assume that certain trends observed in the past 80 years will continue in the future. Most notably, we would be assuming that the returns observed on common stocks from decades past will continue in the future, which of course assumes this historical data accurately measures the past returns. There is strong evidence that these frequently-quoted returns do not present a complete picture of historic returns.[58] The simple step of beginning the measurement period in 1926 brings questions as to whether the time period represents all of the modern-era securities trading. Whether or not 1926 is

[58] McQuarrie, Edward F, "The Myth of 1926: How Much Do We Know Long-Term Returns on U.S. Stocks?" The Journal of Investing; Winter 2009, p. 96.

the best point in time to begin measuring historic returns, these historic returns are widely reported and frequently referred to in discussions of the capital markets and potential returns. There are well regarded financial publications that focus solely on this type of historic data and how to apply it in cost of capital studies. Thus, measurements from this time period likely influence expectations despite warnings that surround historic economic growth rates and market returns. I have to agree that the historic data is often cited and is part of the cost of capital universe, but I believe it has significant limitations and policy makers should give it only light consideration in their final decision.

Q. Would you please summarize your recommendation?

A. Staff recommends the Commission grant Empire an allowed return on equity of 9.30% and an allowed rate of return of 7.08%. This return is consistent with recent Commission decisions and is supported by data present in the current capital markets.

Q. Does that conclude your testimony?

A. Yes, thank you.

Schedule AHG - 1
19-EPDE-223-RTS

1	2	3	4	5		6	7	8
		Positive						
	Vertically	Dividend	Merger	Bond Ratings		Electric Ops % of Total		
Company	Integrated	History	Asset Sale	S&P	Moodys	Revenues	Assets	Notes
Allete Inc (ALE)	Yes	Yes	No	BBB+	A3	71%	76%	
Alliant Energy Corp (LNT)	Yes	Yes	No	A-	Baa1	87%	85%	
Ameren Corp (AEE)	Yes	Yes	No	BBB+	Baa1	82%	54%	57.3% Rev % assets are Mo.AEE specific; Il divested gen, Ill rev are dist. & trans.
Am. Electric Power Co. Inc (AEP)	Yes	Yes	No	A-	Baa1	88%		
AVANGRID Inc. (AGR)	Yes	Yes	No	BBB+	Baa1	83%		
~~Avista Corp (AVA)~~	Yes	Yes	YES	BBB	Baa2	61%	66%	Hydo-One Acquistion
~~Black Hills Corp (BKH)~~	Yes	Yes	No	BBB+	Baa2	**41%**	42%	
~~CenterPoint Energy Inc(CNP)~~	No	Yes	No	BBB+	Baa2	**31%**		27% of revenues from regulated nat. gas distr.
CMS Energy Corp (CMS)	Yes	Yes	No	BBB+	Baa1	66%	57%	34% of rev from reg. nat gas distr
~~Consolidated Edison Inc (ED)~~	No	Yes	No	A-	Baa1	76%		NY restructuring sold off generation assets
~~Dominion Energy (D)~~	Yes	Yes	YES	BBB+	Baa2	71%		Acquired SCANA--January 2019
~~DTE Energy Co. (DTE)~~	Yes	Yes	No	BBB+	Baa1	**53%**	63%	39% of revenues from energy trading
Duke Energy Corp (DUK)	Yes	Yes	No	A-	Baa1	90%		
~~Edison International (EIX)~~	Wildfire risk cited by S&P							
El Paso Electric Co. (EE)	Yes	Yes	No	BBB	Baa1	100%	100%	
~~Entergy Corp. (ETR)~~	Yes	Yes	YES	BBB+	Baa2	85%	92%	In the process of selling unregulated nuclear plants
~~Evergy Inc. (EVRG)~~	Yes	Yes	No	A-	Baa2	100%	100%	No Value-Line Estimates
~~Eversource Energy (ES)~~	No/Yes(NH)	Yes	No	A+	Baa1	88%		Outlier credit rating
~~Exelon Corp (EXC)~~	No	Yes	No	BBB	Baa2	**47%**		predominately unintegrated operations; revenues are "rate regulated reveenues"
~~FirstEnergy Corp. (FE)~~	Yes (5)/No (5)	Yes	YES	BBB	Baa3	87%		sale of nuclear plants 10/18, Bankruptcy of FES 3/18; as of 1/19 only regulated ops remain; 5 of 10
~~Hawaiian Electric Ind. Inc. (HE)~~	Yes	Yes	No	BBB-		88%		Not interconnected
IDACORP Inc. (IDA)	Yes	Yes	No	BBB	Baa1	100%		
MGE Energy Inc. (MGEE)	Yes	Yes	No	AA-	A1	72%	60%	
NextEra Energy Inc. (NEE)	Yes	Yes	No	A-	Baa1	71%	59%	Acquired Gulf Pwr from SO for $5.1b January 2019; less than 6% of EV
NorthWestern Corp. (NWE)	Yes	Yes	No	BBB	A3	77%	80%	
OGE Energy Corp (OGE)	Yes	Yes	No	BBB+	Baa1	100%		
~~Otter Tail Corp. (OTTR)~~	Yes	Yes	No	BBB	Baa2	49%	84%	Plastics
~~Pacific Gas and Elect Co. (PCG)~~	Wildfire risk cited by S&P							
Pinnacle West Capital Corp. (PNW)	Yes	Yes	No	A-	A3	100%		
PNM Resources Inc. (PNM)	Yes	Yes	No	BBB+	Baa3	100%		
Portland General Electric Co. (POR)	Yes	Yes	No	BBB+	A3	100%		
~~PPL Corp. (PPL)~~	Yes-KY/No-PA	Yes	No	A-	Baa2	71%	63%	30% of rev from British utility business; FX risk; Brexit Risk
~~Pub. Serv. Entprise Grp (PEG)~~	NO	Yes	No	BBB+	Baa1	95%		
~~Sempra Energy (SRE)~~	Wildfire risk cited by S&P							
Southern Co. (SO)	Yes	Yes	No	A-	Baa2	65%		sold gas and electric utilitities in FL, sold gas generation units; only 6% of EV
WEC Energy Group (WEC)	Yes	Yes	No	A-	Baa1	99%		
Xcel Energy Inc. (XEL)	Yes	Yes	No	A-	A3	84%		

1) U.S. Electric utilities followed by Value-Line Investment Survey
2) Vertically integrated (generation, transmission & distribution)
3) Stable dividends
4) No merger, acquistion, or sale of assets (Value-Line & S&P Global)
5) S&P and Moody's credit rating (LTR) data from S&P Global Market Intelligence
6) Revenues from regulated electric operations (2018 10-K & S&P)
7) Assets of regulated electric operations (S&P Global Market Intelligence)
8) Notes

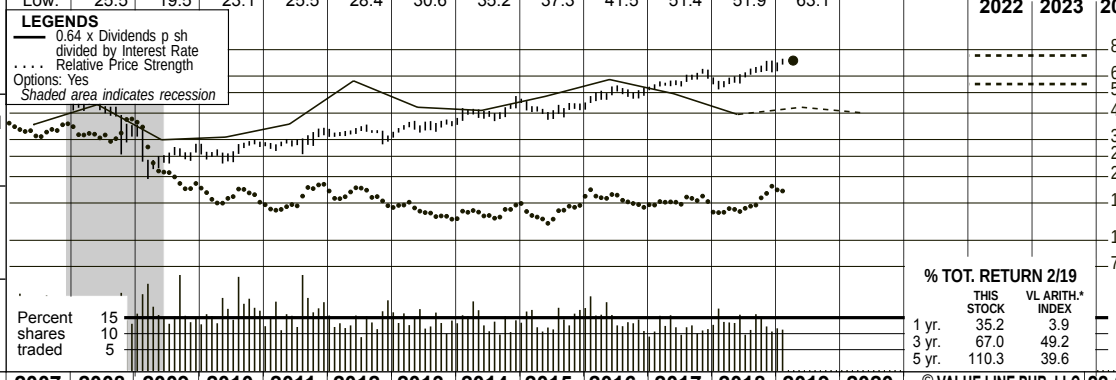
AMEREN NYSE-AEE

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
71.07	22.3	(Trailing: 21.4 Median: 16.0)	1.30	2.8%	VALUE LINE

TIMELINESS 2 Lowered 2/22/19
SAFETY 2 Raised 6/20/14
TECHNICAL 2 Raised 3/1/19
BETA .60 (1.00 = Market)

High:	54.3	35.3	29.9	34.1	35.3	37.3	48.1	46.8	54.1	64.9	70.9	72.4
Low:	25.5	19.5	23.1	25.5	28.4	30.6	35.2	37.3	41.5	51.4	51.9	63.1

Target Price Range
2022 | 2023 | 2024



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+5%)	5%
Low	55	(-25%)	-2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	0	0	0	0	0	1	25
to Sell	1	2	0	0	0	0	2	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	239	232	250
to Sell	251	228	257
Hld's(000)	172585	176059	178307

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	35.2	3.9
3 yr.	67.0	49.2
5 yr.	110.3	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
28.20	26.43	33.12	33.30	36.23	36.92	29.87	31.77	31.04	28.14	24.06	24.95	25.13	25.04	25.46	25.73	*26.35*	*27.15*	Revenues per sh	*29.75*
6.29	5.57	6.10	6.02	6.76	6.44	6.06	6.33	5.87	5.87	5.25	5.77	6.08	6.59	6.80	7.64	*7.95*	*8.45*	"Cash Flow" per sh	*10.25*
3.14	2.82	3.13	2.66	2.98	2.88	2.78	2.77	2.47	2.41	2.10	2.40	2.38	2.68	2.77	3.32	*3.30*	*3.50*	Earnings per sh A	*4.25*
2.54	2.54	2.54	2.54	2.54	2.54	1.54	1.54	1.56	1.60	1.60	1.61	1.66	1.72	1.78	1.85	*1.93*	*2.06*	Div'd Decl'd per sh B ■	*2.55*
4.19	4.13	4.63	4.99	6.96	9.75	7.51	4.66	4.50	5.49	5.87	7.66	8.12	8.78	9.05	9.56	*9.90*	*11.65*	Cap'l Spending per sh	*10.50*
26.73	29.71	31.09	31.86	32.41	32.80	33.08	32.15	32.64	27.27	26.97	27.67	28.63	29.27	29.61	31.21	*32.95*	*34.75*	Book Value per sh C	*40.25*
162.90	195.20	204.70	206.60	208.30	212.30	237.40	240.40	242.60	242.63	242.63	242.63	242.63	242.63	242.63	244.50	*246.50*	*248.50*	Common Shs Outst'g D	*253.00*
13.5	16.3	16.7	19.4	17.4	14.2	9.3	9.7	11.9	13.4	16.5	16.7	17.5	18.3	20.6	18.3	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.77	.86	.89	1.05	.92	.85	.62	.62	.75	.85	.93	.88	.88	.96	1.04	.99	*Value Line*		Relative P/E Ratio	*.85*
6.0%	5.5%	4.9%	4.9%	4.9%	6.2%	6.0%	5.8%	5.3%	5.0%	4.6%	4.0%	4.0%	3.5%	3.1%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $9036 mill. **Due in 5 Yrs** $2372 mill.
LT Debt $7859 mill. **LT Interest** $377 mill.
(LT interest earned: 4.0x)
Leases, Uncapitalized Annual rentals $10 mill.
Pension Assets-12/18 $3899 mill.
Oblig $4459 mill.
Pfd Stock $142 mill. **Pfd Div'd** $6 mill.
807,595 sh. $3.50 to $5.50 cum. (no par), $100 stated val., redeem. $102.176-$110/sh.; 616,323 sh. 4.00% to 6.625%, $100 par, redeem. $100-$104/sh.
Common Stock 244,638,879 shs. **as of 1/31/19**
MARKET CAP: $17 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
7090.0	7638.0	7531.0	6828.0	5838.0	6053.0	6098.0	6076.0	6177.0	6291.0	*6500*	*6750*	Revenues ($mill)	*7500*
624.0	669.0	602.0	589.0	518.0	593.0	585.0	659.0	683.0	821.0	*820*	*880*	Net Profit ($mill)	*1080*
34.7%	36.8%	37.3%	36.9%	37.5%	38.9%	38.3%	36.7%	38.2%	22.4%	*19.0%*	*19.0%*	Income Tax Rate	*19.0%*
5.8%	7.8%	5.6%	6.1%	7.1%	5.7%	5.1%	4.1%	3.5%	4.4%	*4.0%*	*3.0%*	AFUDC % to Net Profit	*3.0%*
49.7%	48.2%	45.3%	49.5%	45.2%	47.2%	49.3%	47.7%	49.2%	50.3%	*50.5%*	*50.5%*	Long-Term Debt Ratio	*50.0%*
49.1%	50.9%	53.7%	49.4%	53.7%	51.7%	49.7%	51.3%	49.8%	48.8%	*48.5%*	*49.0%*	Common Equity Ratio	*49.5%*
15991	15185	14738	13384	12190	12975	13968	13840	14420	15632	*16700*	*17700*	Total Capital ($mill)	*20600*
17610	17853	18127	16096	16205	17424	18799	20113	21466	22810	*24100*	*25775*	Net Plant ($mill)	*29300*
5.3%	6.0%	5.6%	6.0%	5.6%	5.8%	5.3%	6.0%	5.9%	6.3%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
7.8%	8.5%	7.5%	8.7%	7.7%	8.7%	8.3%	9.1%	9.3%	10.6%	*10.0%*	*10.0%*	Return on Shr. Equity	*10.5%*
7.8%	8.6%	7.5%	8.8%	7.8%	8.7%	8.3%	9.2%	9.4%	10.7%	*10.0%*	*10.0%*	Return on Com Equity E	*10.5%*
3.5%	3.8%	2.8%	3.0%	1.9%	2.9%	2.5%	3.3%	3.4%	4.8%	*4.0%*	*4.0%*	Retained to Com Eq	*4.0%*
56%	56%	63%	66%	76%	67%	70%	64%	64%	56%	*58%*	*58%*	All Div'ds to Net Prof	*60%*

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	-4.2	-3.4	+5.6
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	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 (yr-end)	NA	NA	NA
Fixed Charge Cov. (%)	351	362	329

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	-3.5%	-1.5%	*2.5%*
"Cash Flow"	1.0%	4.5%	*6.5%*
Earnings	.5%	4.5%	*6.5%*
Dividends	-3.5%	2.5%	*6.0%*
Book Value	-.5%	.5%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1434	1427	1859	1356	6076.0
2017	1514	1538	1723	1402	6177.0
2018	1585	1563	1724	1419	6291.0
2019	*1650*	*1600*	*1800*	*1450*	*6500*
2020	*1700*	*1650*	*1900*	*1500*	*6750*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.43	.61	1.52	.13	2.68
2017	.42	.79	1.18	.39	2.77
2018	.62	.97	1.45	.28	3.32
2019	*.65*	*.75*	*1.50*	*.40*	*3.30*
2020	*.70*	*.85*	*1.55*	*.40*	*3.50*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.41	.41	.41	.425	1.66
2016	.425	.425	.425	.44	1.72
2017	.44	.44	.44	.4575	1.78
2018	.4575	.4575	.4575	.475	1.85
2019					

BUSINESS: Ameren Corporation is a holding company formed through the merger of Union Electric and CIPSCO. Acq'd CILCORP 1/03; Illinois Power 10/04. Has 1.2 mill. electric and 127,000 gas customers in Missouri; 1.2 mill. electric and 813,000 gas customers in Illinois. Discontinued nonregulated power-generation operation in '13. Electric rev. breakdown: residential, 43%; commercial, 32%; industrial, 8%; other, 17%. Generating sources: coal, 68%; nuclear, 24%; hydro & other, 3%; purchased, 5%. Fuel costs: 27% of revs. '18 reported deprec. rates: 3%-4%. Has 8,800 employees. Chairman, President & CEO: Warner L. Baxter. Inc.: MO. Address: One Ameren Plaza, 1901 Chouteau Ave., P.O. Box 66149, St. Louis, MO 63166-6149. Tel.: 314-621-3222. Internet: www.ameren.com.

Investors should not be disappointed if Ameren's earnings fall short of the 2018 result. We assume normal weather patterns after favorable weather boosted profits by $0.32 a share last year. In addition, the Callaway nuclear plant will have a refueling outage this spring after not having one in 2018. This will cost an estimated $0.09 a share. Offsetting these factors to some extent will be rate relief in Illinois; a gas rate hike took effect last fall. We are sticking with our share-net estimate of $3.30. This is within the company's targeted range of $3.15-$3.35.

We expect higher earnings in 2020. Ameren's transmission operations and its Illinois electric business benefit from forward-looking regulatory plans that provide rate relief each year. (We assume the allowed return on equity for transmission won't change significantly, if at all.) Our estimate would produce a 6% share-earnings increase.

The capital budget is rising. A new regulatory law in Missouri that took effect last year made investing in the state more appealing for utilities, and ought to reduce regulatory lag there. The company's five-year, $13.3 billion capital budget includes $6.3 billion at Ameren Missouri to modernize its electric system and add renewable energy. The utility plans to add up to 557 megawatts of wind generation by the end of 2020, at a cost of about $1 billion, to comply with Missouri's renewable energy standards. (There might be more wind generation to come.) Ameren was able to avoid any equity financing for several years, but is now issuing stock (about $100 million annually) for its dividend-reinvestment and employee-benefit plans. There will also be some debt financing. All told, the company expects an 8% compound annual growth rate in its rate base through 2023. This should help the company attain its goal of 6%-8% compound annual earnings growth through 2023.

This stock is timely, but has a high valuation for a utility. The dividend yield is below the industry average, and the price-earnings ratio is well above its historical level. With the recent quotation near the upper end of our 3- to 5-year Target Price Range, total return potential is negligible.

Paul E. Debbas, CFA *March 15, 2019*

(A) Dil. EPS. Excl. nonrec. gain (losses): '05, (11¢); '10, ($2.19); '11, (32¢); '12, ($6.42); '17, (63¢); gain (loss) from disc. ops.: '13, (92¢); '15, 21¢. '16-'17 EPS don't sum due to rounding. Next egs. report due early May. (B) Div'ds pd. late Mar., June, Sept., & Dec. ■ Div'd reinv. plan avail. (C) Incl. intang. In '18: $6.29/sh. (D) In mill. (E) Rate base: Orig. cost depr. Rate all'd on com. eq. in MO in '17: elec., none; in '11: gas, none; in IL in '14: elec., 8.7%, in '18: gas, 9.87%; earned on avg. com. eq., '18: 8.3%. Reg. Climate: MO, Avg.; IL, Below Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	60
Earnings Predictability	80

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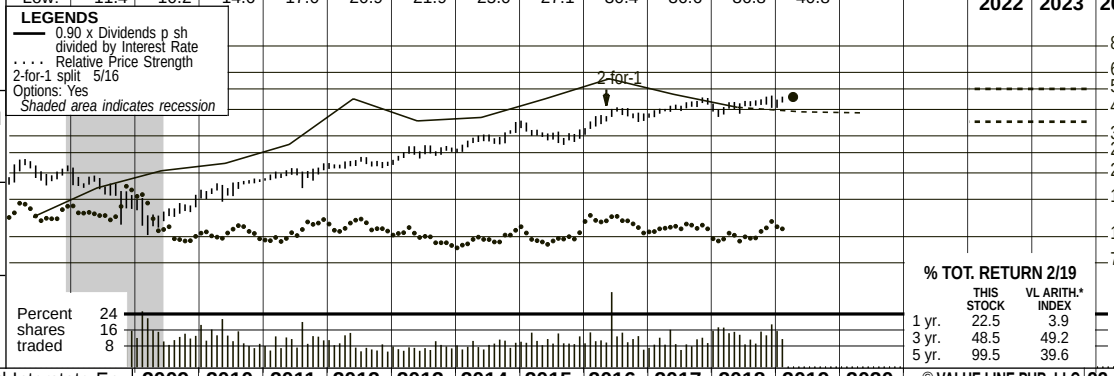
ALLIANT ENERGY NDQ-LNT

RECENT PRICE **45.90** | P/E RATIO **20.5** (Trailing: 21.1 Median: 15.0) | RELATIVE P/E RATIO **1.20** | DIV'D YLD **3.1%** | VALUE LINE

TIMELINESS 2 Lowered 3/8/19
SAFETY 2 Raised 9/28/07
TECHNICAL 3 Lowered 2/22/19
BETA .65 (1.00 = Market)

High:	21.2	15.8	18.8	22.2	23.8	27.1	34.9	35.4	41.0	45.6	46.6	46.3
Low:	11.4	10.2	14.6	17.0	20.9	21.9	25.0	27.1	30.4	36.6	36.8	40.8

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



Target Price Range
2022 | 2023 | 2024

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+10%)	5%
Low	35	(-25%)	-2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	1	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	226	237	251
to Sell	203	201	209
Hld's(000)	165135	169468	180932

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.5	3.9
3 yr.	48.5	49.2
5 yr.	99.5	39.6

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.

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
15.51	15.40	16.51	13.94	14.77	15.10	14.34	14.58	14.62	14.97	*15.15*	*15.30*	Revenues per sh	*15.95*
2.10	2.60	2.75	2.95	3.34	3.44	3.45	3.45	3.97	4.32	*4.40*	*4.60*	"Cash Flow" per sh	*5.20*
.95	1.38	1.38	1.53	1.65	1.74	1.69	1.65	1.99	2.19	*2.25*	*2.40*	Earnings per sh A	*2.80*
.75	.79	.85	.90	.94	1.02	1.10	1.18	1.26	1.34	*1.42*	*1.50*	Div'd Decl'd per sh B ■ †	*1.74*
5.43	3.91	3.03	5.22	3.32	3.78	4.25	5.26	6.34	6.64	*6.75*	*6.50*	Cap'l Spending per sh	*6.15*
12.54	13.05	13.57	14.12	14.79	15.54	16.41	16.96	18.08	19.43	*21.80*	*23.05*	Book Value per sh C	*27.55*
221.31	221.79	222.04	221.97	221.89	221.87	226.92	227.67	231.35	236.06	*240.00*	*242.00*	Common Shs Outst'g D	*250.00*
13.9	12.5	14.5	14.5	15.3	16.6	18.1	22.3	20.6	19.1	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.93	.80	.91	.92	.86	.87	.91	1.17	1.04	1.03	*Value Line*		Relative P/E Ratio	*.85*
5.7%	4.6%	4.3%	4.1%	3.7%	3.5%	3.6%	3.2%	3.1%	3.2%	*estimates*		Avg Ann'l Div'd Yield	*4.1%*
3432.8	3416.1	3665.3	3094.5	3276.8	3350.3	3253.6	3320.0	3382.2	3534.5	*3630*	*3700*	Revenues ($mill)	*3990*
208.6	303.9	304.4	337.8	382.1	385.5	380.7	373.8	455.9	512.1	*535*	*575*	Net Profit ($mill)	*695*
- -	30.1%	19.0%	21.5%	12.4%	10.1%	15.3%	13.4%	12.5%	8.4%	*11.0%*	*11.0%*	Income Tax Rate	*11.0%*
- -	- -	- -	- -	- -	- -	6.5%	7.0%	7.6%	*7.5%*	*7.5%*	*7.5%*	AFUDC % to Net Profit	*7.5%*
44.3%	46.3%	45.7%	48.4%	46.1%	49.7%	48.6%	52.8%	49.0%	53.3%	*52.0%*	*52.0%*	Long-Term Debt Ratio	*52.0%*
51.2%	49.5%	50.9%	48.4%	50.8%	47.5%	51.4%	47.2%	48.6%	46.7%	*48.0%*	*48.0%*	Common Equity Ratio	*48.0%*
5423.0	5840.8	5921.2	6476.6	6461.0	7257.2	7246.3	8177.6	8192.8	9832.0	*10000*	*10500*	Total Capital ($mill)	*12000*
6203.0	6730.6	7037.1	7838.0	7147.3	6442.0	8970.2	9809.9	10798	12462	*13000*	*14000*	Net Plant ($mill)	*17000*
5.1%	6.6%	6.4%	6.3%	7.0%	6.3%	6.3%	5.6%	6.8%	5.2%	*4.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
6.9%	9.7%	9.5%	10.1%	11.0%	10.6%	10.2%	9.7%	10.9%	11.2%	*10.0%*	*10.5%*	Return on Shr. Equity	*10.0%*
6.8%	9.9%	9.5%	10.3%	11.3%	10.9%	10.2%	9.7%	10.9%	11.2%	*10.0%*	*10.5%*	Return on Com Equity E	*10.0%*
.9%	3.8%	3.3%	3.9%	4.9%	4.3%	3.6%	2.8%	4.0%	4.3%	*3.5%*	*4.0%*	Retained to Com Eq	*4.0%*
88%	64%	67%	64%	57%	59%	65%	72%	63%	61%	*63%*	*63%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $5944.0 mill. **Due in 5 Yrs** $1750.0 mill.
LT Debt $5246.3 mill. **LT Interest** $225.0 mill.
(LT interest earned: 3.3x)

Pension Assets-12/18 $808.6 mill. **Oblig.** $1175.0 mill.
Pfd Stock $400.0 mill. **Pfd Div'd** $10.2 mill.
16,000,000 shs.

Common Stock 236,063,279 shs.

MARKET CAP: $10.8 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	+2.0	-1.0	+2.0
Avg. Indust. Use (MWH)	11987	12102	12340
Avg. Indust. Revs. per KWH (¢)	7.04	7.16	7.25
Capacity at Peak (Mw)	5615	5375	5459
Peak Load, Summer (Mw)	5615	5375	5459
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.0	+.4	+.4
Fixed Charge Cov. (%)	295	319	322

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	-.5%	-1.0%	*3.5%*
"Cash Flow"	3.0%	4.0%	*7.0%*
Earnings	4.5%	4.5%	*6.5%*
Dividends	7.5%	7.0%	*6.0%*
Book Value	4.0%	4.5%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	843.8	754.2	925.0	797.0	3320.0
2017	853.9	765.3	906.9	856.1	3382.2
2018	916.3	816.1	928.6	873.5	3534.5
2019	*925*	*840*	*960*	*905*	*3630*
2020	*950*	*855*	*975*	*920*	*3700*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.43	.37	.57	.28	1.65
2017	.44	.41	.73	.41	1.99
2018	.52	.43	.87	.37	2.19
2019	*.53*	*.45*	*.89*	*.38*	*2.25*
2020	*.57*	*.48*	*.94*	*.41*	*2.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.275	.275	.275	.275	1.10
2016	.295	.295	.295	.295	1.18
2017	.315	.315	.315	.315	1.26
2018	.335	.335	.335	.335	1.34
2019	.355				

BUSINESS: Alliant Energy Corp., formerly named Interstate Energy, is a holding company formed through the merger of WPL Holdings, IES Industries, and Interstate Power. Supplies electricity, gas, and other services in Wisconsin, Iowa, and Minnesota. Elect. revs. by state: WI, 41%; IA, 58%; MN, 1%. Elect. rev.: residential, 37%; commercial, 25%; industrial, 26%; wholesale, 5%; other, 7%. Fuel sources, 2018: coal, 37%; gas, 30%; other, 33%. Fuel costs: 45% of revs. 2018 depreciation rate: 5.9%. Estimated plant age: 16 years. Has approximately 3,885 employees. Chairman & Chief Executive Officer: Patricia L. Kampling. Incorporated: Wisconsin. Address: 4902 N. Biltmore Lane, Madison, Wisconsin 53718. Telephone: 608-458-3311. Internet: www.alliantenergy.com.

We estimate that Alliant Energy's earnings will rise 3% this year and 7% in 2020. The company ought to benefit from rate relief and cost reductions at its two primary subsidiaries, Interstate Power and Light and Wisconsin Power and Light. In December 2018, the Iowa Utilities Board approved a settlement allowing IPL to increase its natural gas base rates by approximately 6% in 2019. Alliant had originally sought an increase of 8.4%. Separately, the utility filed an electric rate case with the IUB seeking an increase of $89.9 million (5.5%), based on a common equity ratio of 9.5%. A decision from the regulator is expected within weeks. Meantime, Alliant struck an agreement last year to freeze electric base rates at their current levels at Wisconsin Power and Light. The company had previously requested increases of $61 million in 2019 and $133 million in 2020, but cost reductions and savings from the Tax Cuts and Jobs Act largely offset this requirement.

The utility announced a slew of leadership changes. Current Chief Executive Patricia L. Kampling announced her intent to retire from Alliant effective July 1, 2019. Ms. Kampling has been with the company since 2005 and has served as chairman and CEO since 2012. John O. Larsen was appointed by the board to serve as the next CEO. Mr. Larsen has been with Alliant since 1988 and is currently serving as Chief Operating Officer.

The board raised the dividend in January. This has been the pattern in recent years. The increase was $0.02 a share (6.0%) quarterly, the same as a year ago. Alliant is targeting a payout ratio in a range of 60%-70%.

Progress continues to be made on clean energy. Although coal still makes up the largest portion of LNT's electric grid, its share has dwindled from over 50% in 2005 to just 37% in 2018. To comply with environmental regulations, the utility plans to continue retiring coal-burning plants in favor of renewables/natural gas at a pace consistent with recent upgrades.

This stock is ranked to outperform the broader markets over the next six to 12 months. However, with the recent price well within our 2022-2024 Target Price Range, total return potential is low.

Daniel Henigson, CFA *March 15, 2019*

(A) Diluted EPS. Excl. nonrecur. gains (losses): '09, (44¢); '10, (8¢); '11, (1¢); '12, (8¢). Next earnings report 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 '18: $89.7 mill., $0.38/sh. **(D)** In millions, adjusted for split. **(E)** Rate base: Orig. cost. Rates all'd on com. eq. in IA in '18: 10.0%; in WI in '18 Regul. Clim.: WI, Above Avg.; IA, Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	80
Earnings Predictability	85

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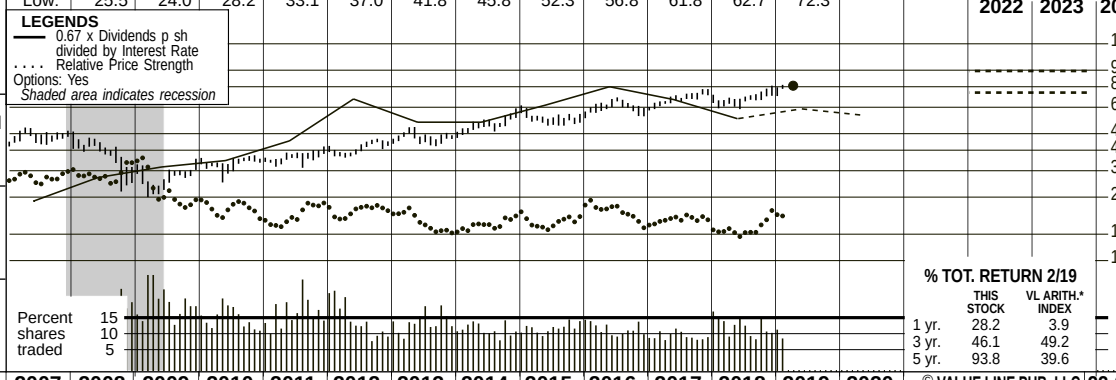
AMERICAN ELEC. PWR. NYSE-AEP

RECENT PRICE **81.03** | P/E RATIO **20.6** (Trailing: 20.8 / Median: 15.0) | RELATIVE P/E RATIO **1.20** | DIV'D YLD **3.4%** | VALUE LINE

TIMELINESS 3 Lowered 3/8/19
SAFETY 1 Raised 3/17/17
TECHNICAL 2 Raised 3/1/19
BETA .55 (1.00 = Market)

High:	49.1	36.5	37.9	41.7	45.4	51.6	63.2	65.4	71.3	78.1	81.1	81.8
Low:	25.5	24.0	28.2	33.1	37.0	41.8	45.8	52.3	56.8	61.8	62.7	72.3

Target Price Range
2022 | 2023 | 2024



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+15%)	8%
Low	75	(-5%)	2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	10	0	0	0	0	0	0	0	0
to Sell	1	0	0	0	0	0	1	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	357	397	485
to Sell	463	429	429
Hld's(000)	358261	359124	363168

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	28.2	3.9
3 yr.	46.1	49.2
5 yr.	93.8	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
36.82	35.51	30.76	31.82	33.41	35.56	28.22	30.01	31.27	30.77	31.48	34.78	33.51	33.31	31.35	32.84	*33.35*	*33.85*	Revenues per sh	*35.50*
5.76	5.89	5.96	6.67	6.80	6.84	6.32	6.29	6.83	6.92	7.02	7.57	7.98	8.47	7.95	8.77	*9.20*	*9.60*	"Cash Flow" per sh	*11.00*
2.53	2.61	2.64	2.86	2.86	2.99	2.97	2.60	3.13	2.98	3.18	3.34	3.59	4.23	3.62	3.90	*4.10*	*4.35*	Earnings per sh A	*5.00*
1.65	1.40	1.42	1.50	1.58	1.64	1.64	1.71	1.85	1.88	1.95	2.03	2.15	2.27	2.39	2.53	*2.72*	*2.88*	Div'd Decl'd per sh B ■	*3.40*
3.44	4.28	6.11	8.89	8.88	9.83	6.19	5.07	5.74	6.45	7.75	8.68	9.37	9.98	11.79	12.89	*13.55*	*12.50*	Cap'l Spending per sh	*12.50*
19.93	21.32	23.08	23.73	25.17	26.33	27.49	28.33	30.33	31.37	32.98	34.37	36.44	35.38	37.17	38.58	*40.00*	*41.90*	Book Value per sh C	*48.00*
395.02	395.86	393.72	396.67	400.43	406.07	478.05	480.81	483.42	485.67	487.78	489.40	491.05	491.71	492.01	493.25	*495.00*	*502.00*	Common Shs Outst'g D	*520.00*
10.7	12.4	13.7	12.9	16.3	13.1	10.0	13.4	11.9	13.8	14.5	15.9	15.8	15.2	19.3	18.0	*Bold figures are*		Avg Ann'l P/E Ratio	*17.0*
.61	.66	.73	.70	.87	.79	.67	.85	.75	.88	.81	.84	.80	.80	.97	.97	*Value Line*		Relative P/E Ratio	*.95*
6.1%	4.3%	3.9%	4.1%	3.4%	4.2%	5.5%	4.9%	5.0%	4.6%	4.2%	3.8%	3.8%	3.5%	3.4%	3.6%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $25257 mill. **Due in 5 Yrs** $9286.3 mill.
LT Debt $21648 mill. **LT Interest** $931 mill.
Incl. $1109.2 mill. securitized bonds. Incl. $289 mill. capitalized leases.
(LT interest earned: 2.9x)
Leases, Uncapitalized Annual rentals $259.6 mill.
Pension Assets-12/18 $4695.9 mill. **Oblig** $4810.3 mill.
Pfd Stock None

Common Stock 493,245,876 shs.

MARKET CAP: $40 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
13489	14427	15116	14945	15357	17020	16453	16380	15425	16196	*16500*	*17000*	Revenues ($mill)	*18500*
1365.0	1248.0	1513.0	1443.0	1549.0	1634.0	1763.4	2073.6	1783.2	1923.8	*2025*	*2160*	Net Profit ($mill)	*2585*
29.7%	34.8%	31.7%	33.9%	36.2%	37.8%	35.1%	26.8%	33.7%	5.8%	*15.0%*	*15.0%*	Income Tax Rate	*15.0%*
10.9%	10.4%	10.6%	11.2%	7.3%	9.0%	11.0%	8.0%	8.0%	10.7%	*11.0%*	*11.0%*	AFUDC % to Net Profit	*9.0%*
54.4%	53.1%	50.7%	50.6%	51.1%	49.0%	49.8%	50.0%	51.5%	53.2%	*54.0%*	*52.5%*	Long-Term Debt Ratio	*51.5%*
45.4%	46.7%	49.3%	49.4%	48.9%	51.0%	50.2%	50.0%	48.5%	46.8%	*46.0%*	*47.5%*	Common Equity Ratio	*48.5%*
28958	29184	29747	30823	32913	33001	35633	34775	37707	40677	*42950*	*44200*	Total Capital ($mill)	*51400*
34344	35674	36971	38763	40997	44117	46133	45639	50262	55099	*59300*	*62925*	Net Plant ($mill)	*77300*
6.2%	5.7%	6.6%	6.1%	6.0%	6.3%	6.1%	7.2%	5.9%	5.9%	*5.5%*	*6.0%*	Return on Total Cap'l	*6.0%*
10.3%	9.1%	10.3%	9.5%	9.6%	9.7%	9.9%	11.9%	9.8%	10.1%	*10.0%*	*10.5%*	Return on Shr. Equity	*10.5%*
10.4%	9.1%	10.3%	9.5%	9.6%	9.7%	9.9%	11.9%	9.8%	10.1%	*10.0%*	*10.5%*	Return on Com Equity E	*11.0%*
4.6%	3.1%	4.2%	3.5%	3.7%	3.8%	3.9%	5.5%	3.2%	3.5%	*3.5%*	*3.5%*	Retained to Com Eq	*3.5%*
56%	66%	60%	63%	62%	61%	60%	54%	67%	65%	*69%*	*69%*	All Div'ds to Net Prof	*70%*

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	+.3	-1.6	+3.0
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	NA	NA	NA
Fixed Charge Cov. (%)	374	354	254

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	-.5%	1.0%	*1.5%*
"Cash Flow"	2.0%	4.0%	*4.5%*
Earnings	3.0%	5.0%	*4.0%*
Dividends	4.5%	5.0%	*6.0%*
Book Value	4.0%	3.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	4044	3892	4652	3790	16380
2017	3933	3576	4104	3810	15424
2018	4048	4013	4333	3801	16195
2019	*4150*	*4050*	*4500*	*3800*	*16500*
2020	*4300*	*4200*	*4650*	*3850*	*17000*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1.02	1.03	1.43	.76	4.23
2017	.94	.76	1.11	.81	3.62
2018	.92	1.07	1.17	.74	3.90
2019	*1.00*	*.90*	*1.30*	*.90*	*4.10*
2020	*1.05*	*1.00*	*1.40*	*.90*	*4.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.53	.53	.53	.56	2.15
2016	.56	.56	.56	.59	2.27
2017	.59	.59	.59	.62	2.39
2018	.62	.62	.62	.67	2.53
2019	.67				

BUSINESS: American Electric Power Company, Inc. (AEP), through 10 operating utilities, serves 5.4 mill. customers in Arkansas, Kentucky, Indiana, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, & West Virginia. Electric revenue breakdown: residential, 41%; commercial, 24%; industrial, 19%; wholesale, 8%; other, 8%. Sold SEEBOARD (British utility) '02; Houston Pipeline '05; commercial barge operation in '15. Generating sources not available. Fuel costs: 36% of revenues. '18 reported depreciation rates (utility): 1.6%-9.8%. Has 17,600 employees. Chairman, President & CEO: Nicholas K. Akins. Incorporated: New York. Address: 1 Riverside Plaza, Columbus, Ohio 43215-2373. Telephone: 614-716-1000. Internet: www.aep.com.

American Electric Power has announced a significant acquisition. The company has agreed to buy 724 megawatts of wind capacity from Sempra Energy for a cash payment of $551 million, the assumption of $343 million of project debt, and $162 million in tax-equity obligations. The seven wind farms have long-term contracts with creditworthy counterparties, including two deals with utilities owned by AEP. The company plans to finance the transaction with a combination of debt and equity. This requires the approval of the Federal Energy Regulatory Commission, and is expected to close in the second quarter of 2019. AEP expects the purchase to be accretive to earnings by "a few cents" a share in the first full year. The deal would be a big step toward the company's goal of investing $2.2 billion in contracted renewables by 2023. We will not include this in our figures until after it is completed. Even after this purchase, AEP will still be predominantly a regulated utility.

One utility received a rate hike, another has a settlement pending, a third just filed an application, and a fourth will soon initiate a case. In West Virginia, Appalachian Power's settlement for a $44 million increase, based on a 9.75% return on equity, was approved. New tariffs took effect on March 6th. Public Service of Oklahoma reached a settlement calling for a $46 million hike, based on a 9.4% ROE, and awaits a ruling from the state commission (probably later this month). SWEPCO asked the Arkansas regulators for a $46 million increase, based on a 10.5% ROE. New rates should take effect at the start of 2020. Finally, AEP Texas expects to put forth an application in the second quarter.

We expect earnings growth this year and next in line with AEP's annual goal of 5%-7%. Rate relief should help. Also, the company is investing heavily in its transmission system, and much of this spending is recovered concurrently, via a tracking mechanism. The utilities should see modest kilowatt-hour sales growth. Our 2019 estimate is at the midpoint of AEP's targeted range of $4.00-$4.20.

This stock has a dividend yield and 3- to 5-year total return potential that are similar to those of most utilities.

Paul E. Debbas, CFA *March 15, 2019*

(A) Dil. EPS. Excl. nonrec. gains (losses): '03, ($1.92); '04, 24¢; '05, (62¢); '06, (20¢); '07, (20¢); '08, 40¢; '10, (7¢); '11, 89¢; '12, (38¢); '13, (14¢); '16, ($2.99); '17, 26¢; disc. ops.: '03, (32¢); '04, 15¢; '05, 7¢; '06, 2¢; '08, 3¢; '15, 58¢; '16, (1¢). '16 EPS don't sum due to rounding. Next egs. report due late Apr. (B) Div'ds paid early Mar., June, Sept., & Dec. ■ Div'd reinv. plan avail. (C) Incl. intang. In '18: $12.04/sh. (D) In mill. (E) Rate base: various. Rates all'd on com. eq.: 9.3%-10.9%; earn. on avg. com. eq., '18: 10.3%. Regul. Climate: Avg.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	85

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AVANGRID, INC. NYSE-AGR

RECENT PRICE **49.82** | P/E RATIO **20.0** (Trailing: 29.0 Median: NMF) | RELATIVE P/E RATIO **1.18** | DIV'D YLD **3.7%** | VALUE LINE

TIMELINESS 2 Raised 1/25/19
SAFETY 2 Raised 2/17/17
TECHNICAL 1 Raised 2/1/19
BETA .40 (1.00 = Market)

	2015	2016	2017	2018
High:	38.9	46.7	53.5	54.6	50.2
Low:	32.4	35.4	37.4	45.2	47.4

Target Price Range 2022 | 2023 | 2024

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+30%)	10%
Low	45	(-10%)	2%

Insider Decisions

	A	M	J	J	A	S	O	N	D
to Buy	0	1	2	1	2	1	1	1	1
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	109	123	125
to Sell	104	112	125
Hld's(000)	43908	40386	44032

% TOT. RETURN 1/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	6.0	-4.5
3 yr.	41.0	46.9
5 yr.	—	40.8

AVANGRID, Inc. was formed through a merger between Iberdrola USA, Inc. and UIL Holdings Corporation in December of 2015. Iberdrola S.A., a worldwide leader in the energy industry, owns 81.5% of AVANGRID. The predecessor company was founded in 1852 and is headquartered in New Gloucester, Maine. It was incorporated in 1997 in New York under the name NGE Resources, Inc. AVANGRID began trading on the NYSE on December 17, 2015.

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
--	--	--	--	--	--	14.14	19.48	19.30	*20.70*	*21.05*	*21.85*	Revenues per sh	*24.25*
--	--	--	--	--	--	3.44	4.74	4.49	*5.10*	*5.60*	*6.00*	"Cash Flow" per sh	*7.25*
--	--	--	--	--	--	1.05	1.98	1.67	*2.20*	*2.55*	*2.80*	Earnings per sh A	*3.50*
--	--	--	--	--	--	--	1.73	1.73	1.74	*1.80*	*1.88*	Div'd Decl'd per sh B ■	*2.40*
--	--	--	--	--	--	3.50	5.52	7.82	*7.75*	*7.75*	*7.75*	Cap'l Spending per sh	*7.75*
--	--	--	--	--	--	48.74	48.90	48.79	*49.25*	*50.00*	*50.95*	Book Value per sh C	*54.25*
--	--	--	--	--	--	308.86	308.99	309.01	*309.00*	*309.00*	*309.00*	Common Shs Outst'g D	*309.00*
--	--	--	--	--	--	33.5	20.5	27.3	*22.7*	*Bold figures are*		Avg Ann'l P/E Ratio	*16.0*
--	--	--	--	--	--	1.69	1.08	1.37	*1.25*	*Value Line*		Relative P/E Ratio	*.90*
--	--	--	--	--	--	--	4.3%	3.8%	3.5%	*estimates*		Avg Ann'l Div'd Yield	*4.3%*
--	--	--	--	--	4594.0	4367.0	6018.0	5963.0	*6400*	*6500*	*6750*	Revenues ($mill)	*7250*
--	--	--	--	--	424.0	267.0	611.0	516.0	*675*	*795*	*875*	Net Profit ($mill)	*1100*
--	--	--	--	--	39.9%	11.3%	37.4%	32.4%	*22.0%*	*22.0%*	*22.0%*	Income Tax Rate	*22.0%*
--	--	--	--	--	6.8%	12.7%	7.5%	12.4%	*10.0%*	*8.0%*	*8.0%*	AFUDC % to Net Profit	*6.0%*
--	--	--	--	--	16.8%	23.1%	23.0%	25.6%	*28.5%*	*30.0%*	*33.0%*	Long-Term Debt Ratio	*38.5%*
--	--	--	--	--	83.2%	76.9%	77.0%	74.4%	*71.5%*	*70.0%*	*67.0%*	Common Equity Ratio	*61.5%*
--	--	--	--	--	14956	19583	19619	20273	*21350*	*22150*	*23425*	Total Capital ($mill)	*27200*
--	--	--	--	--	17099	20711	21548	22669	*24175*	*25625*	*27050*	Net Plant ($mill)	*31000*
--	--	--	--	--	3.7%	2.1%	3.8%	3.1%	*3.5%*	*4.0%*	*4.5%*	Return on Total Cap'l	*5.0%*
--	--	--	--	--	3.4%	1.8%	4.0%	3.4%	*4.5%*	*5.0%*	*5.5%*	Return on Shr. Equity	*6.5%*
--	--	--	--	--	3.4%	1.8%	4.0%	3.4%	*4.5%*	*5.0%*	*5.5%*	Return on Com Equity E	*6.5%*
--	--	--	--	--	3.4%	1.8%	1.4%	NMF	*1.0%*	*1.5%*	*2.0%*	Retained to Com Eq	*2.0%*
--	--	--	--	--	--	--	66%	104%	*80%*	*70%*	*67%*	All Div'ds to Net Prof	*67%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $6119 mill. **Due in 5 Yrs** $2438 mill.
LT Debt $5096 mill. **LT Interest** $210 mill.
Incl. $74 mill. capitalized leases.
(LT interest earned: 4.0x)
Leases, Uncapitalized Annual rentals $36 mill.

Pension Assets-12/17 $2865 mill. **Oblig** $3593 mill.
Pfd Stock None

Common Stock 309,005,272 shs.
as of 10/31/18
MARKET CAP: $15 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	NA	NA	NA
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	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 (yr-end)	NA	+.5	+.6
Fixed Charge Cov. (%)	183	415	333

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	--	--	*4.5%*
"Cash Flow"	--	--	*8.0%*
Earnings	--	--	*12.0%*
Dividends	--	--	*5.5%*
Book Value	--	--	*1.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1670	1439	1418	1491	6018.0
2017	1758	1331	1341	1533	5963.0
2018	1865	1402	1546	*1587*	*6400*
2019	*1875*	*1425*	*1575*	*1625*	*6500*
2020	*1950*	*1475*	*1625*	*1700*	*6750*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.63	.33	.35	.67	1.98
2017	.77	.39	.32	.19	1.67
2018	.79	.34	.40	*.67*	*2.20*
2019	*.90*	*.45*	*.47*	*.73*	*2.55*
2020	*.98*	*.50*	*.52*	*.80*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	--	--	--	--	--
2016	--	.432	.432	.432	1.30
2017	.432	.432	.432	.432	1.73
2018	.432	.432	.432	.44	1.74
2019	.44				

BUSINESS: AVANGRID, Inc. (formerly Iberdrola USA, Inc.), is a diversified energy and utility company that serves 2.2 million electric customers in New York, Connecticut, and Maine and 1 million gas customers in New York, Connecticut, Massachusetts and Maine. Has a nonregulated generating subsidiary focused on wind power, with 7.1 gigawatts of capacity. Revenue breakdown by customer class not available. Generating sources not available. Fuel costs: 22% of revenues. '17 depreciation rate: 2.9%. Iberdrola owns 81.5% of stock. Has 6,500 employees. Chairman: José Ignacio Sanchez Galan. CEO: James P. Torgerson. Incorporated: New York. Address: 180 Marsh Hill Road, Orange, Connecticut 06477. Telephone: 207-629-1200. Internet: www.avangrid.com.

One of AVANGRID's gas utilities in Connecticut received a rate order. The state commission approved an order for Connecticut Natural Gas calling for increases of $9.9 million at the start of 2019, $4.6 million in 2020, and $5.2 million in 2021. The allowed return on equity is 9.3%, and the common-equity ratio is 54.0% now, 54.5% next year, and 55.0% in 2021.

Other rate cases are pending or upcoming. Berkshire Gas filed for an increase of $3.1 million, based on a return of 10.35% on a common-equity ratio of 61.5%. We believe the utility is trying to reach a settlement. Central Maine Power is seeking a $24 million hike, based on a return of 10% on a common-equity ratio of 55%. A ruling is scheduled for October. Importantly, this case includes the portion of AVANGRID's $2 billion electric system resiliency program that is allocated to Maine. The company's utilities in New York plan to file applications by May. These will also reflect the resiliency program.

We expect a significant earnings increase in 2019. Some items that hurt results in 2018 will make the comparison easier: storms, subpar wind conditions, and problems with some new wind projects. AVANGRID's utilities will also benefit from rate relief. The renewable-energy division ought to increase its contribution, as the company has about 1,000 megawatts of projects under construction. Finally, AVANGRID no longer has its money-losing gas storage and trading operations because these were sold last year.

We look for a smaller profit increase in 2020. The same factors that are helping boost the bottom line in 2019—rate relief and growth in the renewables business—will be important next year, as well. Our 2020 share-net estimate would produce a 10% earnings increase.

Central Maine expects to begin construction of a large transmission project in late 2019. Some permits are still needed. The project would cost $950 million and be completed in late 2022.

Timely AVANGRID stock has a dividend yield and 3- to 5-year total return potential that are about average, by utility standards.

Paul E. Debbas, CFA *February 15, 2019*

(A) Diluted EPS. Excl. nonrecurring gain (loss): '16, 6¢; '17, (44¢). Next earnings report due late Feb. (B) Div'ds paid in early Jan., April, July, and Oct. ■ Dividend reinvestment plan available. (C) Incl. intangibles. In '17: $6.2 bill., $20.04/sh. (D) In millions. (E) Rate base: net original cost. Rate allowed on com. eq. in NY in '16: 9.0%; in CT in '17: 9.1% elec.; in CT in '19: 9.3% gas; in ME in '14: 9.45%; earned on avg. common eq., '17: 3.4%. Regulatory Climate: Below Average.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	NMF
Earnings Predictability	NMF

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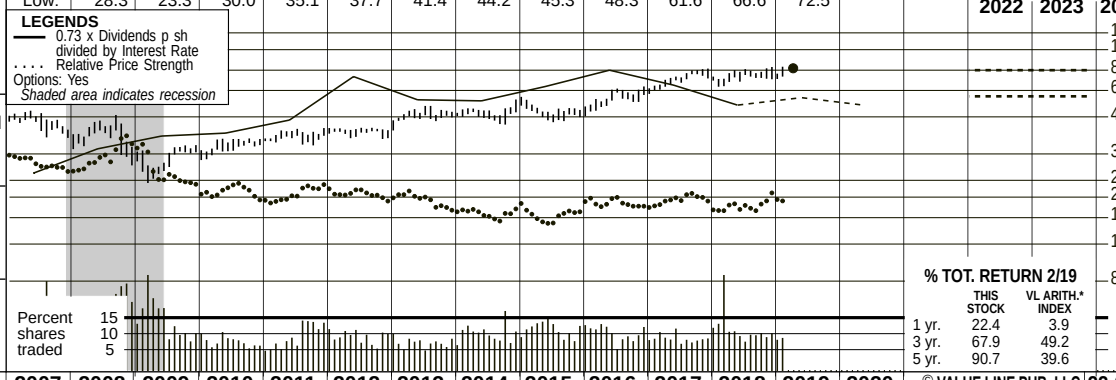
ALLETE NYSE-ALE

RECENT PRICE **81.64** | P/E RATIO **21.5** (Trailing: 24.2 Median: 17.0) | RELATIVE P/E RATIO **1.26** | DIV'D YLD **2.9%** | VALUE LINE

TIMELINESS 2 Raised 2/22/19
SAFETY 2 New 10/1/04
TECHNICAL 3 Lowered 3/15/19
BETA .65 (1.00 = Market)

High:	49.0	35.3	37.9	42.5	42.7	54.1	58.0	59.7	66.9	81.2	82.8	83.5
Low:	28.3	23.3	30.0	35.1	37.7	41.4	44.2	45.3	48.3	61.6	66.6	72.5

Target Price Range
2022 | 2023 | 2024



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(Nil)	3%
Low	60	(-25%)	-3%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	10	0	0	0	0	0	0	0
to Sell	1	1	1	1	1	0	0	1	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	137	137	126
to Sell	126	128	147
Hld's(000)	38232	37037	36618

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.4	3.9
3 yr.	67.9	49.2
5 yr.	90.7	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
- -	25.30	24.50	25.23	27.33	24.57	21.57	25.34	24.75	24.40	24.60	24.77	30.27	27.01	27.78	29.10	*28.85*	*30.10*	Revenues per sh	*34.50*
- -	2.97	3.85	4.14	4.42	4.23	3.57	4.35	4.91	5.01	5.35	5.68	6.79	7.08	6.59	7.37	*7.70*	*8.10*	"Cash Flow" per sh	*9.25*
- -	1.35	2.48	2.77	3.08	2.82	1.89	2.19	2.65	2.58	2.63	2.90	3.38	3.14	3.13	3.38	*3.50*	*3.70*	Earnings per sh A	*4.25*
- -	.30	1.25	1.45	1.64	1.72	1.76	1.76	1.78	1.84	1.90	1.96	2.02	2.08	2.14	2.24	*2.35*	*2.46*	Div'd Decl'd per sh B ■ †	*2.85*
- -	2.12	1.95	3.37	6.82	9.24	9.05	6.95	6.38	10.30	7.93	12.48	5.84	5.35	4.08	6.07	*10.60*	*7.20*	Cap'l Spending per sh	*5.25*
- -	21.23	20.03	21.90	24.11	25.37	26.41	27.26	28.78	30.48	32.44	35.06	37.07	38.17	40.47	41.86	*43.05*	*44.30*	Book Value per sh C	*48.25*
- -	29.70	30.10	30.40	30.80	32.60	35.20	35.80	37.50	39.40	41.40	45.90	49.10	49.60	51.10	51.50	*51.50*	*51.50*	Common Shs Outst'g D	*51.50*
- -	25.2	17.9	16.5	14.8	13.9	16.1	16.0	14.7	15.9	18.6	17.2	15.1	18.6	23.0	22.2	*Bold figures are*		Avg Ann'l P/E Ratio	*17.0*
- -	1.33	.95	.89	.79	.84	1.07	1.02	.92	1.01	1.05	.91	.76	.98	1.16	1.20	*Value Line*		Relative P/E Ratio	*.95*
- -	.9%	2.8%	3.2%	3.6%	4.4%	5.8%	5.0%	4.6%	4.5%	3.9%	3.9%	4.0%	3.6%	3.0%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $1486.0 mill. **Due in 5 Yrs** $447.5 mill.
LT Debt $1428.5 mill. **LT Interest** $61.0 mill.
(LT interest earned: 3.4x)

Leases, Uncapitalized Annual rentals $9.9 mill.

Pension Assets-12/18 $598.0 mill. **Oblig** $747.0 mill.

Pfd Stock None

Common Stock 51,519,442 shs. **as of 2/1/19**
MARKET CAP: $4.2 billion (Mid Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
759.1	907.0	928.2	961.2	1018.4	1136.8	1486.4	1339.7	1419.3	1498.6	*1485*	*1550*	Revenues ($mill)	*1775*
61.0	75.3	93.8	97.1	104.7	124.8	163.4	155.3	159.2	174.1	*180*	*190*	Net Profit ($mill)	*220*
33.7%	37.2%	27.6%	28.1%	21.5%	22.6%	19.4%	11.3%	14.8%	14.8%	*10.0%*	*10.0%*	Income Tax Rate	*10.0%*
12.8%	8.9%	2.7%	5.3%	4.4%	6.3%	2.0%	1.4%	.8%	.7%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*1.0%*
42.8%	44.2%	44.3%	43.7%	44.6%	44.2%	46.3%	42.0%	41.0%	39.9%	*38.5%*	*39.0%*	Long-Term Debt Ratio	*41.0%*
57.2%	55.8%	55.7%	56.3%	55.4%	55.8%	53.7%	58.0%	59.0%	60.1%	*61.5%*	*61.0%*	Common Equity Ratio	*59.0%*
1625.3	1747.6	1937.2	2134.6	2425.9	2882.2	3388.9	3263.4	3507.4	3584.3	*3610*	*3725*	Total Capital ($mill)	*4225*
1622.7	1805.6	1982.7	2347.6	2576.5	3286.4	3669.1	3741.2	3822.4	3904.4	*4235*	*4380*	Net Plant ($mill)	*4525*
4.8%	5.4%	6.0%	5.6%	5.3%	5.2%	5.8%	5.8%	5.5%	5.8%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
6.6%	7.7%	8.7%	8.1%	7.8%	7.8%	9.0%	8.2%	7.7%	8.1%	*8.0%*	*8.5%*	Return on Shr. Equity	*9.0%*
6.6%	7.7%	8.7%	8.1%	7.8%	7.8%	9.0%	8.2%	7.7%	8.1%	*8.0%*	*8.5%*	Return on Com Equity E	*9.0%*
.5%	1.5%	2.9%	2.3%	2.2%	2.5%	3.6%	2.8%	2.4%	2.7%	*2.5%*	*3.0%*	Retained to Com Eq	*3.0%*
93%	81%	66%	71%	72%	67%	60%	66%	68%	66%	*67%*	*66%*	All Div'ds to Net Prof	*67%*

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	-2.3	+8.4	-.2
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	1520	1599	1589
Annual Load Factor (%)	NA	NA	NA
% Change Customers (avg.)	NA	NA	NA
Fixed Charge Cov. (%)	318	339	296

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	1.0%	2.5%	*3.5%*
"Cash Flow"	5.0%	6.5%	*4.5%*
Earnings	1.0%	4.0%	*5.0%*
Dividends	3.0%	3.0%	*5.0%*
Book Value	5.5%	5.5%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	333.8	314.8	349.6	341.5	1339.7
2017	365.6	353.3	362.5	337.9	1419.3
2018	358.2	344.1	348.0	448.3	1498.6
2019	*365*	*360*	*380*	*380*	*1485*
2020	*380*	*375*	*400*	*395*	*1550*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2016	.93	.50	.81	.90	3.14
2017	.97	.72	.88	.56	3.13
2018	.99	.61	.59	1.19	3.38
2019	*1.05*	*.65*	*.90*	*.90*	*3.50*
2020	*1.10*	*.70*	*.95*	*.95*	*3.70*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.505	.505	.505	.505	2.02
2016	.52	.52	.52	.52	2.08
2017	.535	.535	.535	.535	2.14
2018	.56	.56	.56	.56	2.24
2019	.5875				

BUSINESS: ALLETE, Inc. is the parent of Minnesota Power, which supplies electricity to 146,000 customers in northeastern MN, & Superior Water, Light & Power in northwestern WI. Electric rev. breakdown: taconite mining/processing, 26%; paper/wood products, 9%; other ind'l, 8%; res'l, 12%; comm'l, 13%; wholesale, 16% other, 16%. ALLETE Clean Energy owns renewable energy projects. Acq'd U.S. Water Services 2/15. Has real estate operation in FL. Generating sources: coal & lignite, 41%; wind, 12%; other, 6%; purchased, 41%. Fuel costs: 28% of revs. '17 deprec. rate: 3.2%. Has 2,000 employees. Chairman & CEO: Alan R. Hodnik. President: Bethany M. Owen. Inc.: MN. Address: 30 West Superior St., Duluth, MN 55802-2093. Tel.: 218-279-5000. Internet: www.allete.com.

ALLETE has reached a deal to sell its U.S. Water Services subsidiary. The company would receive $260 million in cash (subject to closing adjustments) for its water-management business, which contributed $0.06 to share net in 2018. It plans to reinvest the proceeds in its utility and nonutility operations. The cash will also allow the company to switch to open-market purchases for its dividend-reinvestment program, and perhaps even repurchase stock. Completion of the transaction is expected by the end of the current quarter. The company expects to record an aftertax gain of $10 million ($0.20 a share) on the sale, which we will *exclude* from our earnings presentation as a nonrecurring item.

We have trimmed our 2019 earnings estimate by $0.10 a share. Minnesota Power, ALLETE's primary utility subsidiary, will lose some revenues from an expiring contract with a municipal customer and the temporary shutdown of an industrial customer. (As a result of these lost revenues, the utility expects to file a rate case in the fourth quarter of 2019.) Also, ALLETE Clean Energy (ACE) is incurring costs as it upsizes its operations. Our revised share-net estimate of $3.50 is at the low end of ALLETE's guidance of $3.50-$3.80 a share because the company is including the aforementioned gain on the U.S. Water sale. Note that the year-to-year comparison will be difficult because ACE booked a gain on the sale of a wind facility last year.

We expect solid profit growth in 2020. Minnesota Power should benefit from interim rate relief from the upcoming rate filing. The renewable-energy operation should improve its contribution as well. We look for an earnings increase of 6%, within ALLETE's annual target of 5%-7%.

The board of directors raised the dividend in the first quarter. The annual increase was $0.11 a share (4.9%).

The stock is timely, but has a high valuation. The dividend yield is somewhat below the utility average. The recent price is above the upper end of our 2022-2024 Target Price Range. We think this reflects takeover speculation, but we don't advise investors to purchase the stock in the hope that a takeover offer will emerge.

Paul E. Debbas, CFA *March 15, 2019*

(A) Diluted EPS. Excl. nonrec. gain (losses): '04, (25¢); '05, ($1.84); '15, (46¢); '17, 25¢; gain (losses) on disc. ops.: '04, $2.57, '05, (16¢); '06, (2¢). '16 & '18 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds historically paid in early Mar., June, Sept. and Dec. ■ Div'd reinvest. plan avail. † Shareholder invest. plan avail. (C) Incl. deferred charges. In '17: $11.95/sh. (D) In mill. (E) Rate base: Orig. cost depr. Rate allowed in MN on com. eq. in '18: 9.25%; earned on avg. com. eq., '17: 8.0%. Regulatory Climate: Avg.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	50
Earnings Predictability	85

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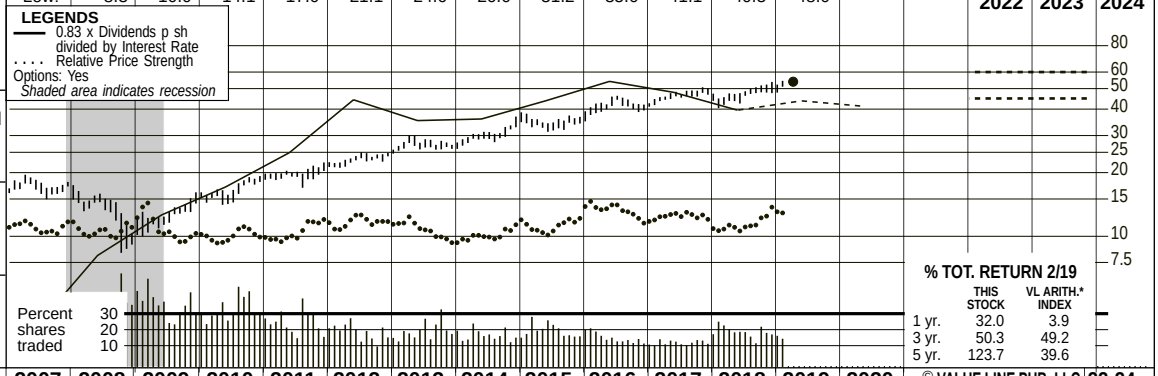
CMS ENERGY CORP. NYSE-CMS

RECENT PRICE **54.00** | P/E RATIO **22.7** (Trailing: 23.3 / Median: 17.0) | RELATIVE P/E RATIO **1.33** | DIV'D YLD **2.9%** | VALUE LINE

TIMELINESS 3 Lowered 1/11/19
SAFETY 2 Raised 3/21/14
TECHNICAL 2 Lowered 2/15/19
BETA .55 (1.00 = Market)

High:	17.5	16.1	19.3	22.4	25.0	30.0	36.9	38.7	46.3	50.8	53.8	54.6
Low:	8.3	10.0	14.1	17.0	21.1	24.6	26.0	31.2	35.0	41.1	40.5	48.0

LEGENDS
— 0.83 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+10%)	6%
Low	45	(-15%)	-1%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	9	0	0	0	0	0	0	0	12
to Sell	3	0	0	2	0	1	1	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	221	231	268
to Sell	227	235	236
Hld's(000)	255018	264290	261889

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	32.0	3.9
3 yr.	50.3	49.2
5 yr.	123.7	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
34.21	28.06	28.52	30.57	28.95	30.13	27.23	25.77	25.59	23.90	24.68	26.09	23.29	22.92	23.37	24.25	*24.75*	*25.15*	Revenues per sh	*27.00*
2.39	2.87	3.43	3.22	3.08	3.88	3.47	3.70	3.65	3.82	4.06	4.22	4.59	4.88	5.29	5.61	*6.00*	*6.35*	"Cash Flow" per sh	*7.50*
d.29	.74	1.10	.64	.64	1.23	.93	1.33	1.45	1.53	1.66	1.74	1.89	1.98	2.17	2.32	*2.50*	*2.70*	Earnings per sh A	*3.25*
- -	- -	- -	- -	.20	.36	.50	.66	.84	.96	1.02	1.08	1.16	1.24	1.33	1.43	*1.53*	*1.64*	Div'd Decl'd per sh B ▪	*2.00*
3.32	2.69	2.69	3.01	5.61	3.50	3.59	3.29	3.47	4.65	4.98	5.73	5.64	5.99	5.91	7.32	*7.70*	*8.35*	Cap'l Spending per sh	*7.50*
9.84	10.63	10.53	10.03	9.46	10.88	11.42	11.19	11.92	12.09	12.98	13.34	14.21	15.23	15.77	16.78	*17.90*	*19.35*	Book Value per sh C	*24.50*
161.13	195.00	220.50	222.78	225.15	226.41	227.89	249.60	254.10	264.10	266.10	275.20	277.16	279.21	281.65	283.37	*285.00*	*288.00*	Common Shs Outst'g D	*297.00*
- -	12.4	12.6	22.2	26.8	10.9	13.6	12.5	13.6	15.1	16.3	17.3	18.3	20.9	21.3	20.3	*Bold figures are*		Avg Ann'l P/E Ratio	*15.5*
- -	.66	.67	1.20	1.42	.66	.91	.80	.85	.96	.92	.91	.92	1.10	1.07	1.10	*Value Line*		Relative P/E Ratio	*.85*
- -	- -	- -	- -	1.2%	2.7%	4.0%	4.0%	4.3%	4.2%	3.8%	3.6%	3.4%	3.0%	2.9%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $11777 mill. **Due in 5 Yrs** $4151 mill.
LT Debt $10684 mill. **LT Interest** $465 mill.
Incl. $69 mill. capitalized leases.
(LT interest earned: 2.9x)
Leases, Uncapitalized Annual rentals $16 mill.
Pension Assets-12/18 $2247 mill. **Oblig** $2512 mill.
Pfd Stock $37 mill. **Pfd Div'd** $2 mill.
Incl. 373,148 shs. $4.50 $100 par, cum., callable at $110.00.
Common Stock 283,400,105 shs.
as of 1/14/19
MARKET CAP: $15 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
6205.0	6432.0	6503.0	6312.0	6566.0	7179.0	6456.0	6399.0	6583.0	6873.0	*7050*	*7250*	Revenues ($mill)	*8000*
231.0	356.0	384.0	413.0	454.0	479.0	525.0	553.0	610.0	659.0	*720*	*785*	Net Profit ($mill)	*1015*
34.6%	38.1%	36.8%	39.4%	39.9%	34.3%	34.0%	33.1%	31.2%	14.9%	*15.0%*	*15.0%*	Income Tax Rate	*15.0%*
13.0%	2.2%	2.6%	2.9%	2.0%	2.3%	2.7%	3.1%	1.1%	1.4%	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
67.9%	70.1%	66.9%	67.9%	67.5%	68.7%	68.3%	67.1%	67.3%	69.0%	*68.0%*	*66.5%*	Long-Term Debt Ratio	*63.5%*
29.0%	29.5%	32.6%	31.6%	32.2%	31.0%	31.4%	32.6%	32.4%	30.7%	*32.0%*	*33.0%*	Common Equity Ratio	*36.5%*
8977.0	9473.0	9279.0	10101	10730	11846	12534	13040	13692	15476	*16025*	*16800*	Total Capital ($mill)	*20000*
9682.0	10069	10633	11551	12246	13412	14705	15715	16761	18126	*19350*	*20700*	Net Plant ($mill)	*23800*
4.7%	5.8%	6.3%	5.9%	6.0%	5.7%	5.7%	5.8%	5.9%	5.6%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
8.0%	12.5%	12.5%	12.8%	13.0%	12.9%	13.2%	12.9%	13.6%	13.8%	*14.0%*	*14.0%*	Return on Shr. Equity	*14.0%*
8.5%	12.5%	12.6%	12.9%	13.1%	13.0%	13.3%	13.0%	13.7%	13.8%	*14.0%*	*14.0%*	Return on Com Equity E	*14.0%*
4.1%	6.9%	5.6%	5.0%	5.2%	5.0%	5.2%	4.8%	5.2%	5.3%	*5.5%*	*5.5%*	Retained to Com Eq	*6.0%*
54%	46%	55%	61%	60%	62%	61%	63%	62%	62%	*61%*	*60%*	All Div'ds to Net Prof	*59%*

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	+1.7	-1.4	+2.2
Avg. Indust. Use (MWH)	6031	NA	NA
Avg. Indust. Revs. per KWH (¢)	7.76	8.26	7.63
Capacity at Peak (Mw)	8331	NA	NA
Peak Load, Summer (Mw)	8227	7634	NA
Annual Load Factor (%)	54.6	NA	NA
% Change Customers (yr-end)	+.5	+1.2	+.3
Fixed Charge Cov. (%)	292	301	250

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	-2.5%	-1.0%	*2.5%*
"Cash Flow"	4.5%	6.5%	*6.0%*
Earnings	10.0%	7.0%	*7.0%*
Dividends	21.5%	7.0%	*7.0%*
Book Value	4.5%	5.5%	*7.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1801	1371	1587	1640	6399
2017	1829	1449	1527	1778	6583
2018	1953	1492	1599	1829	6873
2019	*2000*	*1550*	*1650*	*1850*	*7050*
2020	*2050*	*1600*	*1700*	*1900*	*7250*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.59	.45	.67	.28	1.98
2017	.71	.33	.61	.52	2.17
2018	.86	.49	.59	.38	2.32
2019	*.85*	*.45*	*.70*	*.50*	*2.50*
2020	*.90*	*.50*	*.75*	*.55*	*2.70*

Cal-endar	QUARTERLY DIVIDENDS PAID B ▪ Mar.31	Jun.30	Sep.30	Dec. 31	Full Year
2015	.29	.29	.29	.29	1.16
2016	.31	.31	.31	.31	1.24
2017	.3325	.3325	.3325	.3325	1.33
2018	.3575	.3575	.3575	.3575	1.43
2019	.3825				

BUSINESS: CMS Energy Corporation is a holding company for Consumers Energy, which supplies electricity and gas to lower Michigan (excluding Detroit). Has 1.8 million electric, 1.8 million gas customers. Has 1,034 megawatts of nonregulated generating capacity. Sold Palisades nuclear plant in '07. Electric revenue breakdown: residential, 45%; commercial, 34%; industrial, 15%; other, 6%. Generating sources: coal, 26%; gas, 14%; other, 3%; purchased, 57%. Fuel costs: 44% of revenues. '18 reported deprec. rates: 3.9% electric, 2.9% gas, 10.1% other. Has 8,600 employees. Chairman: John G. Russell. President & CEO: Patricia K. Poppe. Incorporated: Michigan. Address: One Energy Plaza, Jackson, MI 49201. Tel.: 517-788-0550. Internet: www.cmsenergy.com.

CMS Energy's utility subsidiary received an electric rate order. Consumers Energy's tariffs were raised by $89 million, based on a 10.0% return on equity. The common-equity ratio was not specified, but is assumed to be 52.5%. The order took effect in early 2019. The utility expects to file its next electric rate application in 2020.

Consumers Energy filed a gas rate case. The utility is seeking an increase of $229 million, based on a 10.75% return on a 52.5% common-equity ratio. It is also asking for decoupling of revenues and volume, and a regulatory mechanism to recover certain capital investments. This would provide an additional $11 million in revenues at the start of October in 2020 and 2021. An order is due in late September. Consumers Energy plans to file another rate application in October. The utility has an old system that needs to be upgraded, hence the need for frequent rate cases.

We expect a continuation of CMS Energy's steady earnings growth this year and next. Rate relief is benefiting Consumer Energy. Management is controlling expenses effectively. Our 2019 share-earnings estimate of $2.50 is within CMS Energy's typically narrow range of $2.47-$2.51. This would produce an increase of 8%, at the top of the company's goal for annual profit growth of 6%-8%. We estimate earnings will advance at the same pace in 2020.

As we had expected, the board of directors raised the annual dividend $0.10 a share (7.0%) in early 2019. CMS Energy's goal for yearly dividend growth is 6%-8%, the same as its target for earnings growth. We project dividend hikes will continue to be in this range over the period to 2022-2024.

We think CMS Energy's strong points are reflected in the stock price. Investors value the company's track record of steady and predictable growth in earnings and dividends. The dividend yield is about a half percentage point below the industry average. Like most utility issues, the recent price is well within the 3- to 5-year Target Price Range. Thus, total return potential over that time frame is unspectacular.

Paul E. Debbas, CFA *March 15, 2019*

(A) Diluted EPS. Excl. nonrec. gains (losses): '05, ($1.61); '06, ($1.08); '07, ($1.26); '09, (7¢); '10, 3¢; '11, 12¢; '12, (14¢); '17, (53¢); gains (losses) on disc. ops.: '05, 7¢; '06, 3¢; '07, (40¢); '09, 8¢; '10, (8¢); '11, 1¢; '12, 3¢. '16 EPS don't sum due to rounding. Next earnings report due late Apr. (B) Div'ds historically paid late Feb., May, Aug., & Nov. ▪ Div'd reinvest. plan avail. (C) Incl. intang. In '18: $6.15/sh. (D) In mill. (E) Rate base: Net orig. cost. Rate allowed on com. eq. in '18: 10%; earn. on avg. com. eq., '18: 14.3%. Reg. Clim.: Above Avg.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	80
Earnings Predictability	90

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DUKE ENERGY NYSE-DUK

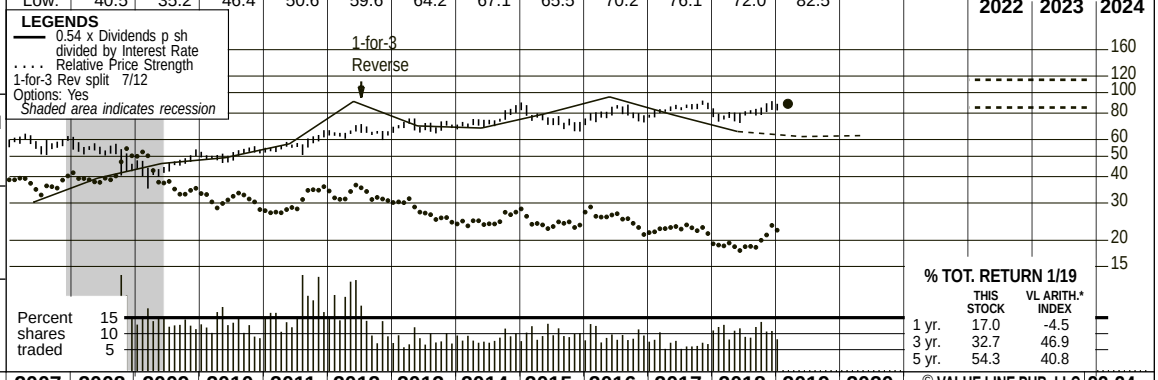
RECENT PRICE **88.50** | P/E RATIO **18.1** (Trailing: 20.2 / Median: 18.0) | RELATIVE P/E RATIO **1.07** | DIV'D YLD **4.3%** | VALUE LINE

TIMELINESS 3 Lowered 1/18/19
SAFETY 2 New 6/1/07
TECHNICAL 1 Raised 1/25/19
BETA .50 (1.00 = Market)

High:	61.8	53.8	55.8	66.4	71.1	75.5	87.3	90.0	87.8	91.8	91.4	88.6
Low:	40.5	35.2	46.4	50.6	59.6	64.2	67.1	65.5	70.2	76.1	72.0	82.5

Target Price Range
2022 | 2023 | 2024

LEGENDS
— 0.54 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
1-for-3 Rev split 7/12
Options: Yes
Shaded area indicates recession



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	115	(+30%)	*10%*
Low	85	(-5%)	*4%*

Insider Decisions

	A	M	J	J	A	S	O	N	D
to Buy	0	0	0	0	0	0	0	0	0
Options	0	6	0	0	0	0	0	0	0
to Sell	0	3	0	0	2	0	0	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	588	566	537
to Sell	642	597	607
Hld's(000)	416674	431271	426795

% TOT. RETURN 1/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	17.0	-4.5
3 yr.	32.7	46.9
5 yr.	54.3	40.8

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
- -	- -	- -	25.32	30.24	31.15	29.18	32.22	32.63	27.88	34.84	33.84	34.10	32.49	33.66	*33.45*	*34.20*	*34.90*	Revenues per sh	*37.25*
- -	- -	- -	7.86	8.11	7.34	7.58	8.49	8.68	6.80	8.56	9.11	9.40	9.20	10.01	*10.80*	*11.65*	*12.20*	"Cash Flow" per sh	*13.75*
- -	- -	- -	2.76	3.60	3.03	3.39	4.02	4.14	3.71	3.98	4.13	4.10	3.71	4.22	*4.45*	*4.95*	*5.15*	Earnings per sh A	*5.75*
- -	- -	- -	- -	2.58	2.70	2.82	2.91	2.97	3.03	3.09	3.15	3.24	3.36	3.49	3.64	*3.79*	*3.94*	Div'd Decl'd per sh B ■	*4.50*
- -	- -	- -	8.07	7.43	10.35	9.85	10.84	9.80	7.81	7.83	7.62	9.83	11.29	11.50	*15.05*	*15.00*	*12.30*	Cap'l Spending per sh	*11.75*
- -	- -	- -	62.30	50.40	49.51	49.85	50.84	51.14	58.04	58.54	57.81	57.74	58.62	59.63	*60.40*	*61.70*	*63.05*	Book Value per sh C	*67.00*
- -	- -	- -	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*	*731.50*	*736.00*	Common Shs Outst'g D	*750.00*
- -	- -	- -	- -	16.1	17.3	13.3	12.7	13.8	17.5	17.4	17.9	18.2	21.3	19.9	*18.0*	*Bold figures are*		Avg Ann'l P/E Ratio	*17.5*
- -	- -	- -	- -	.85	1.04	.89	.81	.87	1.11	.98	.94	.92	1.12	1.00	*.95*	*Value Line*		Relative P/E Ratio	*.95*
- -	- -	- -	- -	4.4%	5.2%	6.2%	5.7%	5.2%	4.7%	4.4%	4.3%	4.3%	4.3%	4.2%	4.5%	*estimates*		Avg Ann'l Div'd Yield	*4.5%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $56853 mill. **Due in 5 Yrs** $21467 mill.
LT Debt $50507 mill. **LT Interest** $1853 mill.
Incl. $1000 mill. capitalized leases.
(LT interest earned: 3.0x)

Leases, Uncapitalized Annual rentals $218 mill.
Pension Assets-12/17 $9003 mill. **Oblig** $8448 mill.
Pfd Stock None

Common Stock 712,877,558 shs.
as of 10/31/18
MARKET CAP: $63 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
12731	14272	14529	19624	24598	23925	23459	22743	23565	*24300*	*25000*	*25700*	Revenues ($mill)	*28000*
1461.0	1765.0	1839.0	2136.0	2813.0	2934.0	2854.0	2560.0	2963.0	*3170*	*3605*	*3810*	Net Profit ($mill)	*4350*
34.4%	32.6%	31.3%	30.2%	32.6%	30.6%	32.2%	31.0%	30.4%	*16.0%*	*16.0%*	*16.0%*	Income Tax Rate	*16.0%*
17.5%	22.7%	23.2%	22.3%	8.8%	7.2%	9.2%	11.7%	12.3%	*11.0%*	*11.0%*	*10.0%*	AFUDC % to Net Profit	*10.0%*
42.6%	44.3%	45.1%	47.0%	48.0%	47.7%	48.6%	52.6%	54.0%	*54.0%*	*55.0%*	*55.5%*	Long-Term Debt Ratio	*56.5%*
57.4%	55.7%	54.9%	52.9%	52.0%	52.3%	51.4%	47.4%	46.0%	*46.0%*	*45.0%*	*44.5%*	Common Equity Ratio	*43.5%*
37863	40457	41451	77307	79482	78088	77222	86609	90774	*95750*	*101075*	*103975*	Total Capital ($mill)	*115400*
37950	40344	42661	68558	69490	70046	75709	82520	86391	*92675*	*98875*	*102625*	Net Plant ($mill)	*111600*
4.9%	5.5%	5.6%	3.6%	4.6%	4.8%	4.8%	4.0%	4.3%	*4.5%*	*4.5%*	*5.0%*	Return on Total Cap'l	*5.0%*
6.7%	7.8%	8.1%	5.2%	6.8%	7.2%	7.2%	6.2%	7.1%	*7.0%*	*8.0%*	*8.0%*	Return on Shr. Equity	*8.5%*
6.7%	7.8%	8.1%	5.2%	6.8%	7.2%	7.2%	6.2%	7.1%	*7.0%*	*8.0%*	*8.0%*	Return on Com Equity E	*8.5%*
1.1%	2.1%	2.2%	.9%	1.5%	1.7%	1.5%	.6%	1.2%	*1.5%*	*2.0%*	*2.0%*	Retained to Com Eq	*2.0%*
84%	73%	72%	82%	78%	76%	79%	91%	83%	*82%*	*77%*	*76%*	All Div'ds to Net Prof	*77%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+.6	-.3	-2.0
Avg. Indust. Use (MWH)	2883	2908	2914
Avg. Indust. Revs. per KWH (¢)	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.)	+1.2	+1.4	+1.3
Fixed Charge Cov. (%)	317	264	272

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	2.0%	1.5%	*1.5%*
"Cash Flow"	2.0%	3.5%	*5.5%*
Earnings	2.5%	.5%	*5.5%*
Dividends	10.0%	2.5%	*4.0%*
Book Value	.5%	2.0%	*2.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	5377	5213	6576	5577	22743
2017	5729	5555	6482	5799	23565
2018	6135	5643	6628	*5894*	*24300*
2019	*6300*	*5750*	*6950*	*6000*	*25000*
2020	*6500*	*5900*	*7150*	*6150*	*25700*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.83	.90	1.44	.54	3.71
2017	1.02	.98	1.36	.86	4.22
2018	1.17	.71	1.64	*.93*	*4.45*
2019	*1.20*	*1.05*	*1.70*	*1.00*	*4.95*
2020	*1.25*	*1.10*	*1.80*	*1.00*	*5.15*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.795	.795	.825	.825	3.24
2016	.825	.825	.855	.855	3.36
2017	.855	.855	.89	.89	3.49
2018	.89	.89	.9275	.9275	3.64
2019	.9275				

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, 41%; commercial, 29%; industrial, 14%; other, 16%. Generating sources: coal, 27%; nuclear, 27%; gas, 23%; other, 1%; purchased, 22%. Fuel costs: 30% of revs. '17 reported deprec. rate: 2.8%. Has 29,100 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.

Duke Energy's two electric utilities in South Carolina have filed general rate cases. Duke Energy Carolinas and Duke Energy Progress filed for increases of $168 million (10.0%) and $59 million (10.3%), respectively. The applications are based on a 10.5% return on a 53% common-equity ratio, and Duke is asking that new tariffs take effect on June 1st.

The company expects to remain active in the regulatory arena. This is driven by a higher capital budget. Last year, Duke received electric rate orders in North Carolina, Ohio, and Kentucky. The utility filed for a $10.5 million gas rate hike in Kentucky. Duke is evaluating the need for an electric case in Indiana, and Piedmont Gas is considering a filing in North Carolina. Rate relief is a key reason for the profit growth we expect in 2019 and 2020.

Duke completed two gas-fired generating units in the fourth quarter of 2018, and other capital projects are under way. Duke is building a $1.1 billion gas-fired plant to serve the western Carolinas, which is expected to be completed in late 2019. The company's electric utilities are modernizing their systems. Piedmont plans to begin construction of a $250 million liquefied natural gas facility, with completion in 2021. On the down side, a proposed $7.0 billion-$7.5 billion gas pipeline, 47%-owned by Duke, is being tied up by litigation.

We estimate a significant earnings increase in 2019. Duke's results in 2018 (which were reported shortly after our press date) included some unusual expenses, such as a $70 million penalty stemming from coal ash problems. (The company *excludes* this item from its 2018 earnings guidance of $4.65-$4.85 a share.) Thus, the comparison should be easy, especially in the second quarter. As mentioned above, rate relief should help lift the bottom line this year and next. Duke is targeting annual earnings growth of 4%-6%.

This stock offers a dividend yield that is roughly one percentage point above the utility mean. The company's goal for annual dividend growth is 4%-6%. We project this will produce total returns over the 3- to 5-year period that are superior to those of most utility issues.

Paul E. Debbas, CFA *February 15, 2019*

(A) Diluted EPS. Excl. nonrec. losses: '12, 70¢; '13, 24¢; '14, 67¢; '17, 15¢; '18, 41¢; gain (losses) on disc. ops.: '14, (80¢); '15, 5¢; '16, (60¢). Next earnings report due early May. (B) Div'ds paid mid-Mar., June, Sept., & Dec. ■ Div'd reinv. plan avail. (C) Incl. intang. In '17: $45.48/sh. (D) In mill., adj. for rev. split. (E) Rate base: Net orig. cost. Rates all'd on com. eq. in '18 in NC: 9.9%; in '17 in SC: 10.1%; in '09 in OH: 10.63%; in '04 in IN: 10.3%; earned on avg. com. eq., '17: 7.1%. Reg. Clim.: NC Avg.; SC, OH, IN Above Avg.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	30
Earnings Predictability	85

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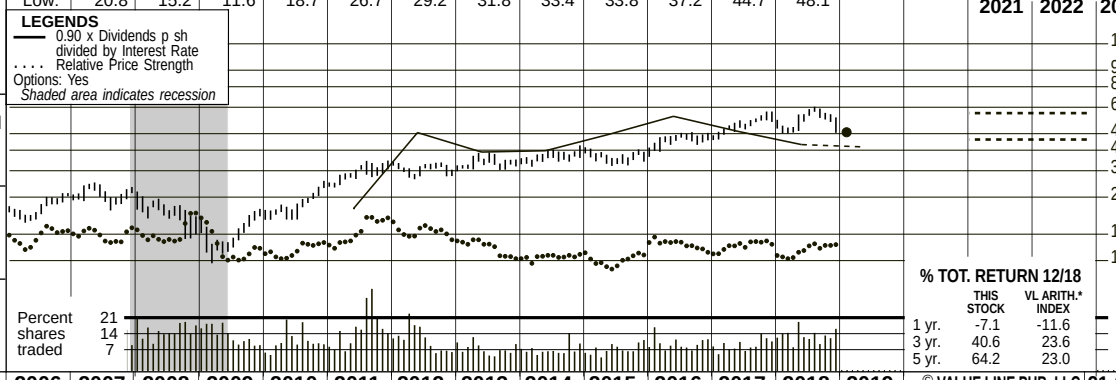
EL PASO ELECTRIC NYSE-EE

RECENT PRICE **48.62** | P/E RATIO **20.7** (Trailing: 18.7 Median: 15.0) | RELATIVE P/E RATIO **1.29** | DIV'D YLD **3.1%** | VALUE LINE

TIMELINESS 3 Lowered 1/4/19
SAFETY 2 Raised 5/11/07
TECHNICAL 2 Raised 1/18/19
BETA .65 (1.00 = Market)

High:	28.2	25.5	21.1	28.7	35.7	35.3	39.1	42.2	41.3	48.8	61.2	64.4
Low:	20.8	15.2	11.6	18.7	26.7	29.2	31.8	33.4	33.8	37.2	44.7	48.1

Target Price Range
2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+25%)	8%
Low	45	(-5%)	2%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	0	0	0
Options	0	5	8	0	3	0	0	3	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	100	90	84
to Sell	91	98	83
Hld's(000)	41623	40926	39851

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-7.1	-11.6
3 yr.	40.6	23.6
5 yr.	64.2	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
13.91	13.97	14.95	16.70	17.75	19.43	23.15	18.85	20.61	22.97	21.26	22.11	22.74	21.01	21.89	22.59	*22.15*	*22.75*	Revenues per sh	*24.50*
2.99	3.00	3.27	3.05	3.44	3.86	4.16	4.07	5.15	6.05	5.66	5.65	5.87	5.75	5.98	6.17	*6.20*	*6.50*	"Cash Flow" per sh	*7.50*
.57	.64	.69	.76	1.27	1.63	1.73	1.50	2.07	2.48	2.26	2.20	2.27	2.03	2.39	2.42	*2.30*	*2.45*	Earnings per sh A	*2.75*
--	--	--	--	--	--	--	--	--	.66	.97	1.05	1.11	1.17	1.23	1.32	1.42	*1.52*	Div'd Decl'd per sh B	*1.85*
1.75	2.03	1.94	2.28	2.73	4.63	5.36	5.95	5.27	5.90	6.70	7.18	8.50	8.55	7.03	5.91	*7.55*	*6.85*	Cap'l Spending per sh	*7.25*
9.20	10.51	11.23	11.56	12.60	14.76	15.47	16.45	19.04	19.03	20.57	23.44	24.39	25.13	26.52	28.14	*29.05*	*29.95*	Book Value per sh C	*32.75*
49.61	47.56	47.40	48.14	46.00	45.15	44.88	43.92	42.57	39.96	40.11	40.27	40.36	40.44	40.52	40.58	*40.60*	*40.70*	Common Shs Outst'g D	*41.00*
23.0	18.3	22.0	26.7	16.9	15.3	11.9	10.8	10.7	12.6	14.5	15.9	16.4	18.3	18.7	21.8	*24.2*		Avg Ann'l P/E Ratio	*18.5*
1.26	1.04	1.16	1.42	.91	.81	.72	.72	.68	.79	.92	.89	.86	.92	.98	1.10	*1.30*		Relative P/E Ratio	*1.05*
--	--	--	--	--	--	--	--	--	2.1%	3.0%	3.0%	3.0%	3.1%	2.7%	2.5%	2.6%		Avg Ann'l Div'd Yield	*3.6%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $1404.6 mill. **Due in 5 Yrs** $64.3 mill.
LT Debt $1385.3 mill. **LT Interest** $80.2 mill.
(LT interest earned: 2.7x)

Pension Assets-12/17 $304.4 mill. **Oblig** $362.0 mill.

Pfd Stock None

Common Stock 40,691,951 shs. **as of 10/31/18**

MARKET CAP: $2.0 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
1038.9	828.0	877.3	918.0	852.9	890.4	917.5	849.9	886.9	916.8	*900*	*925*	Revenues ($mill)	*1000*
77.6	66.9	90.3	103.5	90.8	88.6	91.4	81.9	96.8	98.3	*95.0*	*100*	Net Profit ($mill)	*115*
32.8%	33.1%	36.1%	34.2%	34.1%	33.0%	31.0%	29.9%	35.8%	34.2%	*23.5%*	*23.5%*	Income Tax Rate	*23.5%*
20.4%	24.3%	22.1%	17.6%	22.4%	24.1%	30.8%	27.5%	17.6%	11.2%	*14.0%*	*13.0%*	AFUDC % to Net Profit	*15.0%*
53.8%	52.7%	51.2%	51.8%	54.8%	51.4%	53.5%	52.7%	52.7%	51.2%	*54.0%*	*53.0%*	Long-Term Debt Ratio	*55.5%*
46.2%	47.3%	48.8%	48.2%	45.2%	48.6%	46.5%	47.3%	47.3%	48.8%	*46.0%*	*47.0%*	Common Equity Ratio	*44.5%*
1503.9	1527.7	1660.1	1576.7	1824.5	1943.5	2118.4	2150.8	2269.9	2338.2	*2565*	*2605*	Total Capital ($mill)	*3025*
1595.6	1756.0	1865.8	1947.1	2102.3	2257.5	2488.4	2695.5	2821.2	2928.4	*3075*	*3190*	Net Plant ($mill)	*3600*
6.7%	6.0%	7.0%	8.3%	6.5%	6.1%	5.7%	5.3%	5.8%	5.8%	*5.0%*	*5.5%*	Return on Total Cap'l	*5.5%*
11.2%	9.3%	11.1%	13.6%	11.0%	9.4%	9.3%	8.1%	9.0%	8.6%	*8.0%*	*8.5%*	Return on Shr. Equity	*8.5%*
11.2%	9.3%	11.1%	13.6%	11.0%	9.4%	9.3%	8.1%	9.0%	8.6%	*8.0%*	*8.5%*	Return on Com Equity E	*8.5%*
11.2%	9.3%	11.1%	10.0%	6.3%	4.9%	4.8%	3.4%	4.4%	3.9%	*3.0%*	*3.0%*	Retained to Com Eq	*3.0%*
--	--	--	26%	43%	47%	49%	57%	51%	54%	*61%*	*61%*	All Div'ds to Net Prof	*65%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+2.3	+.1	+.4
Avg. Indust. Use (MWH)	21687	21036	21553
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	2055	2080	2082
Peak Load, Summer (Mw)	1794	1892	1935
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.4	+1.6	+1.7
Fixed Charge Cov. (%)	218	267	263

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	2.0%	--	*2.0%*
"Cash Flow"	5.5%	1.0%	*4.0%*
Earnings	6.5%	--	*3.0%*
Dividends	--	18.0%	*7.0%*
Book Value	7.5%	6.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	163.8	219.5	289.7	176.9	849.9
2016	157.8	217.9	323.2	188.0	886.9
2017	171.3	251.8	297.5	196.2	916.8
2018	175.7	236.8	300.3	*187.2*	*900*
2019	*175*	*245*	*310*	*195*	*925*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.09	.52	1.40	.02	2.03
2016	d.14	.55	1.84	.14	2.39
2017	d.10	.89	1.47	.16	2.42
2018	d.17	.82	1.79	*d.14*	*2.30*
2019	*d.10*	*.80*	*1.80*	*d.05*	*2.45*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.28	.295	.295	.295	1.17
2016	.295	.31	.31	.31	1.23
2017	.31	.335	.335	.335	1.32
2018	.335	.36	.36	.36	1.42
2019					

BUSINESS: El Paso Electric Company (EPE) provides electric service to 424,000 customers in an area of approximately 10,000 square miles in the Rio Grande valley in western Texas (68% of revenues) and southern New Mexico (19% of revenues), including El Paso, Texas and Las Cruces, New Mexico. Wholesale is 13% of revenues. Electric revenue breakdown by customer class not available. Generating sources: nuclear, 49%; gas, 36%; purchased, 15%. Fuel costs: 27% of revenues. '17 reported depreciation rate: 2.3%. Has about 1,100 employees. Chairman: Charles A. Yamarone. President & CEO: Mary E. Kipp. Incorporated: Texas. Address: Stanton Tower, 100 North Stanton, El Paso, TX 79901. Tel.: 915-543-5711. Internet: www.epelectric.com.

We have lowered our 2018 earnings estimate for El Paso Electric Company by $0.25 a share, to $2.30. This is despite the fact that third-period profits were slightly better than we estimated. We think the December-period results fell into the red due in part to the poor performance of the stock market. This means that EPE will almost certainly record a mark-to-market charge for its decommissioning fund associated with its interest in Unit 3 (a nonregulated asset) of the Palo Verde nuclear station. The company would probably post a loss for the period, anyway, because the way the benefits of tax reform are being passed through to ratepayers makes profits even more skewed toward the second and third quarters. Our revised estimate is within EPE's targeted range of $2.25-$2.50 a share.

We have lowered our 2019 profit estimate by $0.15 a share, to $2.45. We think our December-period estimate was too optimistic. Even so, we look for earnings to recover to around the 2017 level thanks to some rate relief the utility should receive around midyear.

Some rate filings are upcoming in 2019. In Texas, the utility will file for recovery of transmission and distribution costs under the state's regulatory mechanisms. This ought to provide some rate relief in the second half of the year. In New Mexico, EPE is required to file a general rate case by the end of July. Any rate relief the utility obtains won't come until 2020. The regulatory climate in New Mexico is difficult, but the company's service area there is much smaller than in Texas.

The utility benefits from strong customer growth. The economy in the El Paso area is healthy. Numerous construction and transportation projects in the region are in various stages of development. We think annual customer growth will continue to exceed 1% comfortably. EPE expects to meet its increased power needs with a combination of gas and renewable resources.

This stock has a dividend yield that is modest for a utility. With the recent quotation within our 2021-2023 Target Price Range, total return potential is unspectacular, despite good dividend growth prospects over that time frame.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted earnings. Excl. nonrecurring gains (loss): '03, 81¢; '04, 4¢; '05, (2¢); '06, 13¢; '10, 24¢. Next earnings report due late February. (B) Initial dividend declared 4/11; payment dates in late March, June, Sept., and Dec. (C) Incl. deferred charges. In '17: $96.0 mill., $2.37/sh. (D) In millions. (E) Rate base: Net original cost. Rate allowed on common equity in TX in '17: 9.65%; in NM in '16: 9.48%; earned on avg. com. eq., '17: 8.9%. Regulatory Climate: TX, Average; NM, Below Average.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	75

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IDACORP, INC. NYSE-IDA

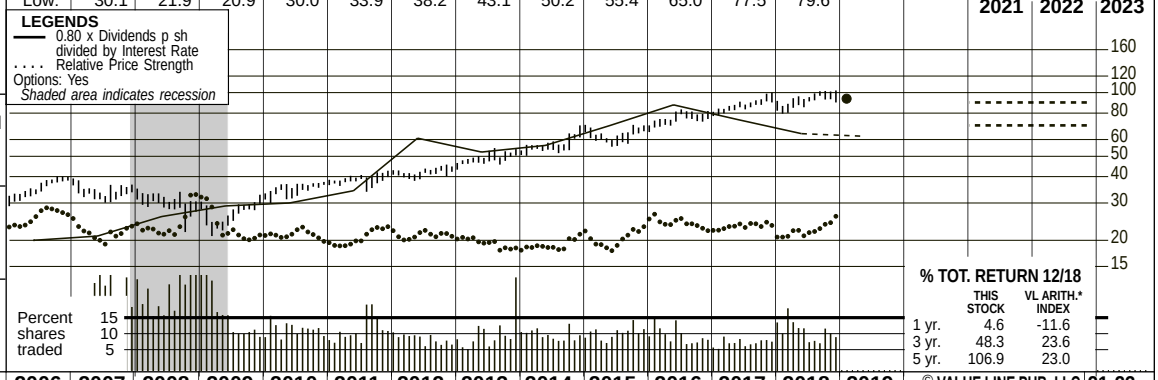
RECENT PRICE **93.72** | P/E RATIO **21.3** (Trailing: 19.8 Median: 14.0) | RELATIVE P/E RATIO **1.33** | DIV'D YLD **2.7%** | VALUE LINE

TIMELINESS 2 Lowered 1/25/19
SAFETY 2 Raised 8/2/13
TECHNICAL 1 Raised 1/25/19
BETA .55 (1.00 = Market)

High:	39.2	35.1	32.8	37.8	42.7	45.7	54.7	70.1	70.5	83.4	100.0	102.4
Low:	30.1	21.9	20.9	30.0	33.9	38.2	43.1	50.2	55.4	65.0	77.5	79.6

Target Price Range
2021 | 2022 | 2023

LEGENDS
— 0.80 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(-5%)	2%
Low	70	(-25%)	-3%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	0	0	0
Options	10	0	0	0	0	0	0	0	0
to Sell	2	0	0	1	0	0	0	0	1

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	136	145	142
to Sell	124	121	136
Hld's(000)	38795	38770	39319

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.6	-11.6
3 yr.	48.3	23.6
5 yr.	106.9	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
24.43	20.41	20.00	20.15	21.23	19.51	20.47	21.92	20.97	20.55	21.55	24.81	25.51	25.23	25.04	26.76	*27.10*	*27.50*	Revenues per sh	*29.25*
4.08	3.50	4.12	3.87	4.58	4.11	4.27	5.07	5.35	5.84	5.93	6.29	6.58	6.70	6.86	7.50	*7.90*	*8.10*	"Cash Flow" per sh	*9.25*
1.63	.96	1.90	1.75	2.35	1.86	2.18	2.64	2.95	3.36	3.37	3.64	3.85	3.87	3.94	4.21	*4.50*	*4.55*	Earnings per sh A	*5.25*
1.86	1.70	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.37	1.57	1.76	1.92	2.08	2.24	2.40	*2.56*	Div'd Decl'd per sh B ■ †	*3.05*
3.53	3.89	4.73	4.53	5.16	6.39	5.19	5.26	6.85	6.76	4.78	4.68	5.45	5.84	5.89	5.66	*6.25*	*6.40*	Cap'l Spending per sh	*6.75*
23.01	22.54	23.88	24.04	25.77	26.79	27.76	29.17	31.01	33.19	35.07	36.84	38.85	40.88	42.74	44.65	*46.70*	*48.70*	Book Value per sh C	*55.25*
38.02	38.34	42.22	42.66	43.63	45.06	46.92	47.90	49.41	49.95	50.16	50.23	50.27	50.34	50.40	50.42	*50.40*	*50.40*	Common Shs Outst'g D	*50.40*
18.9	26.5	15.5	16.7	15.1	18.2	13.9	10.2	11.8	11.5	12.4	13.4	14.7	16.2	19.1	20.6	*20.5*		Avg Ann'l P/E Ratio	*15.5*
1.03	1.51	.82	.89	.82	.97	.84	.68	.75	.72	.79	.75	.77	.82	1.00	1.04	*1.10*		Relative P/E Ratio	*.85*
6.0%	6.7%	4.1%	4.1%	3.4%	3.5%	4.0%	4.5%	3.4%	3.1%	3.3%	3.2%	3.1%	3.1%	2.8%	2.6%	2.6%		Avg Ann'l Div'd Yield	*3.8%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $1834.4 mill. **Due in 5 Yrs** $175.0 mill.
LT Debt $1834.4 mill. **LT Interest** $85.4 mill.
(LT interest earned: 3.7x)

Pension Assets-12/17 $697.7 mill.
Oblig $999.3 mill.

Pfd Stock None

Common Stock 50,392,789 shs.
as of 10/26/18

MARKET CAP: $4.7 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
960.4	1049.8	1036.0	1026.8	1080.7	1246.2	1282.5	1270.3	1262.0	1349.5	*1365*	*1385*	Revenues ($mill)	*1475*
98.4	124.4	142.5	166.9	168.9	182.4	193.5	194.7	198.3	212.4	*225*	*230*	Net Profit ($mill)	*270*
16.3%	15.2%	- -	- -	13.4%	28.3%	8.0%	19.0%	15.5%	18.6%	*7.5%*	*10.0%*	Income Tax Rate	*10.5%*
10.2%	10.5%	19.1%	23.3%	20.3%	12.3%	13.6%	16.3%	16.3%	13.9%	*13.0%*	*13.0%*	AFUDC % to Net Profit	*13.0%*
47.6%	50.2%	49.3%	45.6%	45.5%	46.6%	45.3%	45.6%	44.8%	43.7%	*44.0%*	*41.5%*	Long-Term Debt Ratio	*43.0%*
52.4%	49.8%	50.7%	54.4%	54.5%	53.4%	54.7%	54.4%	55.2%	56.3%	*56.0%*	*58.5%*	Common Equity Ratio	*57.0%*
2485.9	2807.1	3020.4	3045.2	3225.4	3465.9	3567.6	3783.3	3898.5	3997.5	*4195*	*4195*	Total Capital ($mill)	*4875*
2758.2	2917.0	3161.4	3406.6	3536.0	3665.0	3833.5	3992.4	4172.0	4283.9	*4430*	*4575*	Net Plant ($mill)	*4925*
5.3%	5.7%	6.0%	6.8%	6.5%	6.4%	6.6%	6.2%	6.1%	6.3%	*6.5%*	*6.5%*	Return on Total Cap'l	*6.5%*
7.6%	8.9%	9.3%	10.1%	9.6%	9.9%	9.9%	9.5%	9.2%	9.4%	*9.5%*	*9.5%*	Return on Shr. Equity	*9.5%*
7.6%	8.9%	9.3%	10.1%	9.6%	9.9%	9.9%	9.5%	9.2%	9.4%	*9.5%*	*9.5%*	Return on Com Equity E	*9.5%*
3.4%	4.8%	5.5%	6.5%	5.7%	5.6%	5.4%	4.8%	4.3%	4.4%	*4.5%*	*4.0%*	Retained to Com Eq	*4.0%*
55%	46%	41%	36%	41%	43%	46%	50%	53%	53%	*53%*	*56%*	All Div'ds to Net Prof	*57%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+1.2	-.5	+2.6
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	5.70	5.63	5.83
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	3402	3299	3422
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.4	+1.8	+2.0
Fixed Charge Cov. (%)	307	295	329

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	2.5%	4.0%	*2.0%*
"Cash Flow"	5.5%	4.0%	*4.5%*
Earnings	7.5%	4.5%	*4.5%*
Dividends	5.5%	10.5%	*6.5%*
Book Value	5.5%	5.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	279.4	336.3	369.2	285.4	1270.3
2016	281.0	315.4	372.0	293.6	1262.0
2017	302.6	333.0	408.3	305.6	1349.5
2018	310.1	340.0	408.8	*306.1*	*1365*
2019	*315*	*345*	*415*	*310*	*1385*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.47	1.31	1.46	.63	3.87
2016	.51	1.12	1.65	.66	3.94
2017	.66	.99	1.80	.77	4.21
2018	.72	1.23	2.02	*.53*	*4.50*
2019	*.65*	*1.20*	*2.00*	*.70*	*4.55*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.47	.47	.47	.51	1.92
2016	.51	.51	.51	.55	2.08
2017	.55	.55	.55	.59	2.24
2018	.59	.59	.59	.63	2.40
2019					

BUSINESS: IDACORP, Inc. is a holding company for Idaho Power Company, a regulated electric utility that serves 555,000 customers throughout a 24,000-square-mile area in southern Idaho and eastern Oregon (population: 1 million). Most of the company's revenues are derived from the Idaho portion of its service area. Revenue breakdown: residential, 41%; commercial, 24%; industrial, 14%; irrigation, 11%; other, 10%. Generating sources: hydro, 50%; coal, 18%; gas, 8%; purchased, 24%. Fuel costs: 33% of revenues. '17 reported depreciation rate: 2.9%. Has 2,000 employees. Chairman: Robert A. Tinstman. President & CEO: Darrel T. Anderson. Incorporated: Idaho. Address: 1221 W. Idaho St., Boise, Idaho 83702. Telephone: 208-388-2200. Internet: www.idacorpinc.com.

We have raised our 2018 and 2019 earnings estimates for IDACORP by $0.20 a share each year. Third-period profits were much higher than usual due to increased usage by irrigation customers. Moreover, customer growth is accelerating due to the strong economy in Idaho. The customer count advanced 2.0% in 2017, and 2.2% in the 12-month period that ended on September 30th. Kilowatt-hour sales are not advancing as fast as customer additions due to the effects of energy-efficiency measures, but should still exceed 1% (adjusted for the vagaries of weather). When the company announced third-quarter earnings, management raised its 2018 guidance from $4.20-$4.30 to $4.40-$4.50. Our 2018 estimate is at the upper end of this range. Because the third-quarter comparison will be difficult, we look for just a modest profit increase this year. IDACORP plans to put forth earnings guidance for 2019 next month, when it reports results for the fourth quarter of 2018.

Idaho Power's low electric rates are attractive for businesses in the utility's service area. There is rising demand from the food processing industry for cold storage facilities, which are especially attractive for utilities because they run 24 hours a day. A pump manufacturer moved its business from California to Idaho. Expansion has come from the mining and technology industries, as well. This should enable the good economic times (and strong customer growth) to continue.

If needed, the utility may use a regulatory mechanism to augment its income. Idaho Power may use up to $25 million annually of accumulated deferred investment tax credits if its return on equity falls below 9.5% (9.4% beginning next year). Note that the ROEs shown in the statistical array are for IDACORP, not just Idaho Power.

This timely stock is valued expensively. The dividend yield is below the industry mean, and is not much higher than the median of all stocks under our coverage. Considering that the recent quotation is above our 2021-2023 Target Price Range, we do not recommend this equity for long-term investors because total return potential is negative.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted EPS. Excl. nonrecurring gains (loss): '03, 26¢; '05, (24¢); '06, 17¢. '17 earnings don't sum due to rounding. Next earnings report due early Feb. (B) Div'ds historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available. † Shareholder investment plan available. (C) Incl. intangibles. In '17: $21.49/sh. (D) In millions. (E) Rate base: Net original cost. Rate allowed on common equity in '11: 10% (imputed); earned on avg. com. eq., '17: 9.6%. Regulatory Climate: Above Average.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	85
Earnings Predictability	95

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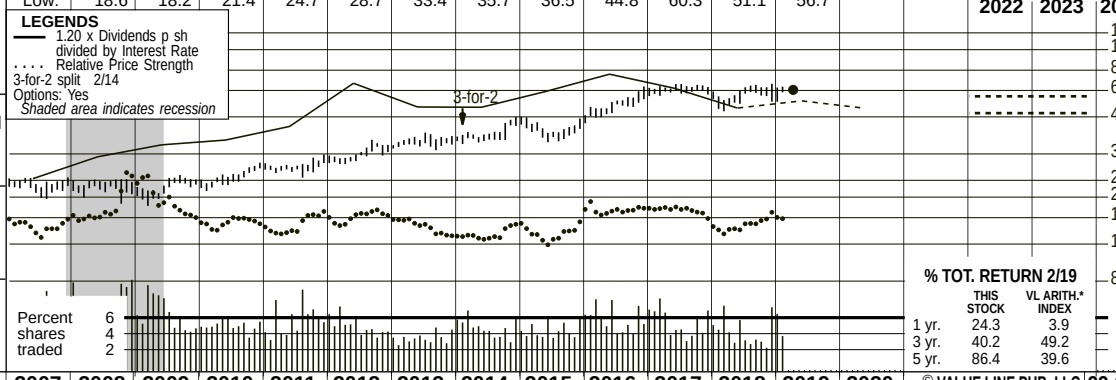
MGE ENERGY INC. NDQ-MGEE

RECENT PRICE **64.49** | P/E RATIO **25.4** (Trailing: 26.5 / Median: 18.0) | RELATIVE P/E RATIO **1.49** | DIV'D YLD **2.1%** | VALUE LINE

TIMELINESS 3 Raised 10/19/18
SAFETY 1 New 1/3/03
TECHNICAL 2 Lowered 2/15/19
BETA .60 (1.00 = Market)

High:	24.3	25.5	29.1	31.9	37.4	40.5	48.0	48.0	66.9	68.7	68.9	66.8
Low:	18.6	18.2	21.4	24.7	28.7	33.4	35.7	36.5	44.8	60.3	51.1	56.7

Target Price Range
2022 | 2023 | 2024



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(-5%)	1%
Low	50	(-20%)	-3%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	2	0	0	1	0	0	1	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	61	50	68
to Sell	64	59	62
Hld's(000)	13922	14137	14238

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	24.3	3.9
3 yr.	40.2	49.2
5 yr.	86.4	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
14.59	13.89	16.73	16.13	16.33	17.35	15.40	15.36	15.76	15.61	17.04	17.88	16.27	15.71	16.24	16.15	**16.70**	**17.45**	Revenues per sh	**21.10**
1.96	1.92	2.00	2.34	2.46	2.68	2.66	2.76	2.94	2.98	3.28	3.49	3.33	3.47	3.73	4.06	**4.30**	**4.70**	"Cash Flow" per sh	**5.55**
1.14	1.18	1.05	1.37	1.51	1.59	1.47	1.67	1.76	1.86	2.16	2.32	2.06	2.18	2.20	2.43	**2.60**	**2.80**	Earnings per sh A	**3.55**
.90	.91	.92	.93	.94	.96	.97	.99	1.01	1.04	1.07	1.11	1.16	1.21	1.26	1.32	**1.38**	**1.45**	Div'd Decl'd per sh B ■	**1.65**
3.02	3.13	2.80	2.94	4.14	3.08	2.35	1.76	1.88	2.84	3.43	2.67	2.08	2.41	3.12	6.12	**6.45**	**6.85**	Cap'l Spending per sh	**8.05**
9.56	11.06	11.21	11.93	12.99	13.92	14.47	15.14	15.89	16.71	17.81	19.02	19.92	20.89	22.45	23.56	**24.55**	**26.00**	Book Value per sh E	**31.95**
27.52	30.59	30.68	31.46	32.93	34.36	34.67	34.67	34.67	34.67	34.67	34.67	34.67	34.67	34.67	34.67	**35.00**	**35.00**	Common Shs Outst'g C	**36.00**
17.5	18.0	22.4	15.9	15.0	14.2	15.1	15.0	15.8	17.2	17.0	17.2	20.3	24.9	29.4	25.1	*Bold figures are*		Avg Ann'l P/E Ratio	**16.0**
1.00	.95	1.19	.86	.80	.85	1.01	.95	.99	1.09	.96	.91	1.02	1.31	1.48	1.35	*Value Line*		Relative P/E Ratio	**.90**
4.5%	4.3%	3.9%	4.3%	4.1%	4.2%	4.4%	4.0%	3.6%	3.2%	2.9%	2.8%	2.8%	2.2%	2.0%	2.2%	*estimates*		Avg Ann'l Div'd Yield	**2.9%**

CAPITAL STRUCTURE as of 12/31/18
Total Debt $510.9 mill. **Due in 5 Yrs** $81.9 mill.
LT Debt $493.3 mill. **LT Interest** $20.0 mill.
(Total interest earned: 6.7x)

Leases, Uncapitalized Annual rentals $1.6 mill.
Pension Assets-12/18 $323.8 mill. **Obligation** $360.3 mill.
Pfd Stock None

Common Stock 34,668,370 shs.
as of 2/1/19
MARKET CAP: $2.2 billion (Mid Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
533.8	532.6	546.4	541.3	590.9	619.9	564.0	544.7	563.1	559.8	**585**	**610**	Revenues ($mill)	**760**
51.0	57.7	60.9	64.4	74.9	80.3	71.3	75.6	76.1	84.2	**90.0**	**100**	Net Profit ($mill)	**120**
35.6%	36.9%	37.1%	37.7%	37.5%	37.5%	36.7%	36.0%	36.4%	24.6%	**21.0%**	**21.0%**	Income Tax Rate	**21.0%**
--	--	--	--	--	--	--	--	2.2%	2.0%	**2.0%**	**2.0%**	AFUDC % to Net Profit	**2.0%**
39.0%	38.9%	39.6%	38.2%	39.3%	37.5%	36.2%	34.6%	33.8%	37.7%	**38.0%**	**37.5%**	Long-Term Debt Ratio	**36.0%**
61.0%	61.1%	60.4%	61.8%	60.7%	62.5%	63.8%	65.4%	66.2%	62.3%	**62.0%**	**62.5%**	Common Equity Ratio	**64.0%**
822.7	859.4	911.9	937.9	1016.9	1054.7	1081.5	1106.9	1176.3	1310.0	**1385**	**1460**	Total Capital ($mill)	**1800**
939.8	968.0	995.6	1073.5	1160.2	1208.1	1243.4	1282.1	1341.4	1509.4	**1650**	**1800**	Net Plant ($mill)	**2250**
6.9%	7.6%	7.8%	7.9%	8.3%	8.5%	7.5%	7.7%	7.2%	7.2%	**7.5%**	**7.5%**	Return on Total Cap'l	**7.5%**
10.2%	11.0%	11.1%	11.1%	12.1%	12.2%	10.3%	10.4%	9.8%	10.3%	**10.5%**	**11.0%**	Return on Shr. Equity	**10.5%**
10.2%	11.0%	11.1%	11.1%	12.1%	12.2%	10.3%	10.4%	9.8%	10.3%	**10.5%**	**11.0%**	Return on Com Equity D	**10.5%**
3.4%	4.4%	4.7%	4.9%	6.1%	6.4%	4.5%	4.7%	4.2%	4.7%	**5.0%**	**5.5%**	Retained to Com Eq	**5.5%**
66%	60%	57%	56%	50%	48%	56%	55%	57%	54%	**54%**	**51%**	All Div'ds to Net Prof	**50%**

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	1.1	-2.6	1.6
Avg. Indust. Use (MWH)	2329	1966	1802
Avg. Indust. Revs. per KWH (¢)	7.55	8.23	7.70
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	783	783	783
Annual Load Factor (%)	NA	NA	NA
% Change Customers (avg.)	NA	NA	NA
Fixed Charge Cov. (%)	645	666	582

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	-.5%	- -	4.5%
"Cash Flow"	4.0%	4.0%	7.0%
Earnings	4.5%	3.5%	7.5%
Dividends	3.0%	4.0%	4.5%
Book Value	5.5%	6.0%	6.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	147.5	121.6	136.7	138.9	544.7
2017	156.8	126.5	139.5	140.3	563.1
2018	157.6	124.3	137.8	140.1	559.8
2019	**162**	**130**	**145**	**148**	**585**
2020	**168**	**135**	**152**	**155**	**610**

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.49	.47	.80	.42	2.18
2017	.56	.45	.77	.42	2.20
2018	.58	.53	.85	.47	2.43
2019	**.62**	**.57**	**.88**	**.53**	**2.60**
2020	**.67**	**.62**	**.93**	**.58**	**2.80**

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.2825	.2825	.2950	.2950	1.16
2016	.2950	.2950	.3075	.3075	1.21
2017	.3075	.3075	.3225	.3225	1.26
2018	.3225	.3225	.3375	.3375	1.32
2019					

BUSINESS: MGE Energy, Inc. is a holding company for Madison Gas and Electric. It provides electric service to about 153,000 customers in Dane County and gas service to 161,000 customers in seven counties in Wisconsin. Electric revenue breakdown, '18: residential, 35%; commercial, 52%; industrial, 4%; public authorities, 9%. Generating sources, '17: coal, 52%; purchased power, 23%; natural gas and other, 25%. Fuel costs: 19% of rev. '17 depr. rate: 3.7%. Has 706 employees. Off. and dir. own less than 1% of common; The Vanguard Group, Inc., 9.7%; BlackRock, Inc., 6.5% (3/18 proxy). Chairman, President & CEO: Jeffrey M. Keebler. Inc.: WI. Addr.: 133 South Blair St., Madison, WI 53788. Tel.: 608-252-7000. Web: www.mgeenergy.com.

Shares of MGE Energy have recovered nicely in price in recent months, following a selloff in December. The company posted a healthy bottom-line advance for the December quarter, despite a flat revenue comparison. Growth in the residential customer base and a measure of cost control supported performance here during the period. The story was similar for full-year 2018. The top line slipped slightly, but earnings per share advanced 10%. Favorable weather during the year benefited the bottom line.

Prospects for the company appear fairly bright. We anticipate favorable comparisons in the coming quarters, and solid growth in revenues and earnings per share for full-year 2019. Performance ought to remain favorable from 2020 onward. MGE's utility operations should further benefit from attractive demographics in their service territories. This includes healthy population growth and low unemployment in its operating areas. Investment in operations should continue to bear fruit, as well. The Saratoga Wind Farm (located near Saratoga, Iowa) was expected to be completed in February of 2019 at a cost of roughly $112 million. This operation consists of 33 turbines that generate 66 megawatts of power. Meanwhile, the company's stake in the Forward Wind Energy Center should provide access to renewable energy for an additional fifteen years. Elsewhere, MGE's transmission investments ought to further benefit earnings. Investments in solar power as well as energy technologies also appear to offer promise.

This stock is ranked to perform in line with the broader market averages for the coming six to 12 months. Looking further out, the shares lack long-term appreciation potential from the recent quotation. The equity continues to trade at a fairly rich valuation, based on its price-to-earnings multiple. Moreover, the dividend yield is below average for a utility. On the bright side, MGE Energy earns good marks for Safety, Financial Strength, Price Stability, and Earnings Predictability. Volatility is subdued, as well. A selloff some time in the future may offer conservative, income-oriented investors a more attractive entry point.

Michael Napoli, CFA *March 15, 2019*

(A) Diluted earnings. Excludes nonrecurring: '17, 62¢. Next earnings report due early May. (B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd. reinvestment plan available. (C) In millions, adjusted for split. (D) Rate allowed on common equity in '17: 9.8%; earned on common equity, '17: 12.5%. Regulatory Climate: Above Average. (E) Includes regulatory assets. In 2017: $154.9 mill., $4.47 per share.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	65
Earnings Predictability	95

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NEXTERA ENERGY NYSE-NEE

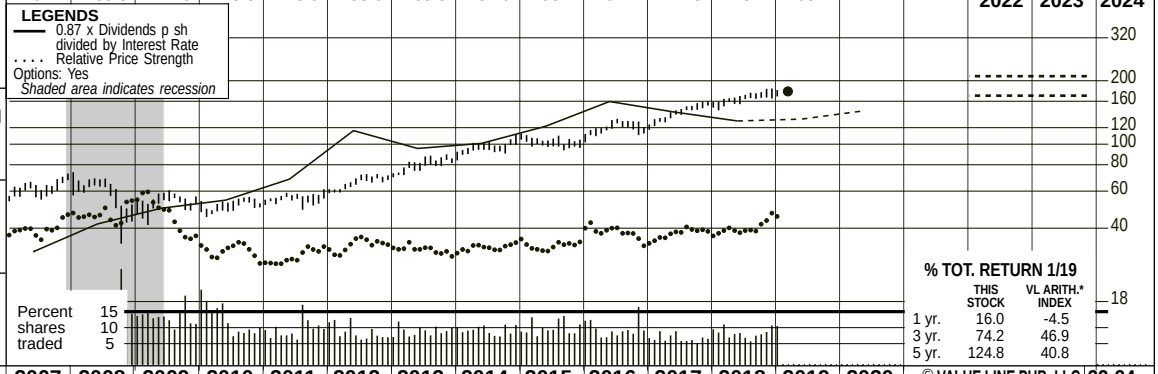
RECENT PRICE **178.17** | P/E RATIO **23.8** (Trailing: 26.2 / Median: 16.0) | RELATIVE P/E RATIO **1.41** | DIV'D YLD **2.8%** | VALUE LINE

TIMELINESS 3 Lowered 3/9/18
SAFETY 1 Raised 2/16/18
TECHNICAL 2 Raised 1/25/19
BETA .60 (1.00 = Market)

High:	73.8	60.6	56.3	61.2	72.2	89.8	110.8	112.6	132.0	159.4	184.2	180.9
Low:	33.8	41.5	45.3	49.0	58.6	69.8	84.0	93.7	102.2	117.3	145.1	168.7

Target Price Range
2022 | 2023 | 2024

LEGENDS
— 0.87 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	210	(+20%)	7%
Low	170	(-5%)	2%

Insider Decisions

	A	M	J	J	A	S	O	N	D
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	0	0	1	2	2	1	1
to Sell	0	2	2	0	2	3	2	2	2

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	577	607	612
to Sell	645	586	560
Hld's(000)	359118	358698	365576

% TOT. RETURN 1/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	16.0	-4.5
3 yr.	74.2	46.9
5 yr.	124.8	40.8

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
26.13	28.27	30.00	38.75	37.47	40.13	37.82	36.39	36.88	33.62	34.80	38.42	37.93	34.52	36.51	**33.45**	**36.80**	**39.70**	Revenues per sh	**46.75**
5.36	5.60	6.18	6.77	6.85	8.03	8.75	9.62	9.29	8.69	10.54	12.10	12.92	12.97	12.11	**14.65**	**15.90**	**17.40**	"Cash Flow" per sh	**20.75**
2.45	2.46	2.32	3.23	3.27	4.07	3.97	4.74	4.82	4.56	4.83	5.60	6.06	5.78	6.50	6.68	**8.25**	**9.00**	Earnings per sh A	**11.00**
1.20	1.30	1.42	1.50	1.64	1.78	1.89	2.00	2.20	2.40	2.64	2.90	3.08	3.48	3.93	4.44	**5.00**	**5.65**	Div'd Decl'd per sh B ■ †	**7.00**
3.75	3.75	4.09	9.22	12.32	12.80	14.52	13.89	15.93	22.31	15.36	15.84	18.17	20.59	22.80	**26.00**	**18.70**	**18.70**	Cap'l Spending per sh	**18.75**
18.91	20.25	21.52	24.49	26.35	28.57	31.35	34.36	35.92	37.90	41.47	44.96	48.97	52.01	59.89	**68.30**	**69.85**	**73.30**	Book Value per sh C	**85.00**
368.53	372.24	394.85	405.40	407.35	408.92	413.62	420.86	416.00	424.00	435.00	443.00	461.00	468.00	471.00	**500.00**	**535.00**	**535.00**	Common Shs Outst'g D	**535.00**
12.6	13.6	17.9	13.7	18.9	14.5	13.4	10.8	11.5	14.4	16.6	17.3	16.9	20.7	21.6	24.8	*Bold figures are*		Avg Ann'l P/E Ratio	**17.0**
.72	.72	.95	.74	1.00	.87	.89	.69	.72	.92	.93	.91	.85	1.09	1.09	1.34	*Value Line*		Relative P/E Ratio	**.95**
3.9%	3.9%	3.4%	3.4%	2.7%	3.0%	3.5%	3.9%	4.0%	3.6%	3.3%	3.0%	3.0%	2.9%	2.8%	2.7%	*estimates*		Avg Ann'l Div'd Yield	**3.7%**

CAPITAL STRUCTURE as of 9/30/18
Total Debt $32587 mill. **Due in 5 Yrs** $14147 mill.
LT Debt $27048 mill. **LT Interest** $1136 mill.

(LT interest earned: 4.0x)

Pension Assets-12/17 $4020 mill. **Oblig** $2593 mill.

Pfd Stock None

Common Stock 477,945,257 shs.

MARKET CAP: $85 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
15643	15317	15341	14256	15136	17021	17486	16155	17195	16727	**19700**	**21250**	Revenues ($mill)	**25000**
1615.0	1957.0	2021.0	1911.0	2062.0	2465.0	2752.0	2693.0	3074.0	3186.0	**4400**	**4960**	Net Profit ($mill)	**6100**
16.8%	21.4%	22.4%	26.6%	26.9%	32.3%	30.8%	29.3%	24.4%	**29.0%**	**24.5%**	**24.5%**	Income Tax Rate	**24.5%**
7.9%	4.4%	4.4%	10.8%	7.0%	6.7%	6.9%	8.2%	6.7%	**10.0%**	**5.0%**	**5.0%**	AFUDC % to Net Profit	**4.0%**
55.7%	55.5%	58.2%	59.1%	57.1%	55.0%	54.2%	53.3%	52.7%	**44.0%**	**45.5%**	**45.5%**	Long-Term Debt Ratio	**46.0%**
44.3%	44.5%	41.8%	40.9%	42.9%	45.0%	45.8%	46.7%	47.3%	**56.0%**	**54.5%**	**54.5%**	Common Equity Ratio	**54.0%**
29267	32474	35753	39245	42009	44283	49255	52159	59671	**60925**	**68550**	**71975**	Total Capital ($mill)	**84200**
36078	39075	42490	49413	52720	55705	61386	66912	72416	70334	**80800**	**86350**	Net Plant ($mill)	**101700**
6.9%	7.4%	7.0%	6.2%	6.2%	7.0%	6.8%	6.3%	6.3%	**6.5%**	**7.5%**	**8.0%**	Return on Total Cap'l	**8.0%**
12.5%	13.5%	13.5%	11.9%	11.4%	12.4%	12.2%	11.1%	10.9%	**9.5%**	**12.0%**	**12.5%**	Return on Shr. Equity	**13.5%**
12.5%	13.5%	13.5%	11.9%	11.4%	12.4%	12.2%	11.1%	10.9%	**9.5%**	**12.0%**	**12.5%**	Return on Com Equity E	**13.5%**
6.5%	7.8%	7.4%	5.6%	5.2%	6.0%	6.1%	4.4%	4.4%	**3.0%**	**4.5%**	**4.5%**	Retained to Com Eq	**5.0%**
47%	42%	46%	53%	54%	51%	50%	60%	60%	**66%**	**59%**	**61%**	All Div'ds to Net Prof	**61%**

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+5.6	-.8	-.9
Avg. Indust. Use (MWH)	277	255	NA
Avg. Indust. Revs. per KWH (¢)	6.69	6.11	NA
Capacity at Peak (Mw)	26073	NA	NA
Peak Load, Summer (Mw)	22717	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.4	+1.3	NA
Fixed Charge Cov. (%)	348	339	278

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	.5%	.5%	*3.5%*
"Cash Flow"	6.5%	6.5%	*7.5%*
Earnings	7.5%	5.5%	*9.0%*
Dividends	8.5%	9.5%	*10.5%*
Book Value	8.5%	8.5%	*7.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	3835	3817	4805	3698	16155
2017	3972	4404	4808	4011	17195
2018	3850	4069	4418	4390	16727
2019	***4600***	***4900***	***5600***	***4600***	***19700***
2020	***4950***	***5300***	***6050***	***4950***	***21250***

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1.41	.93	1.62	1.82	5.78
2017	1.90	1.68	1.79	1.13	6.50
2018	2.06	1.64	2.10	.88	6.68
2019	***2.15***	***2.20***	***2.25***	***1.65***	***8.25***
2020	***2.35***	***2.35***	***2.45***	***1.85***	***9.00***

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.77	.77	.77	.77	3.08
2016	.87	.87	.87	.87	3.48
2017	.9825	.9825	.9825	.9825	3.93
2018	1.11	1.11	1.11	1.11	4.44
2019					

BUSINESS: NextEra Energy, Inc. (formerly FPL Group, Inc.) is a holding company for Florida Power & Light Company (FPL) and Gulf Power, which provide electricity to 5.5 million customers in eastern, southern, & northwestern Florida. NextEra Energy Resources is a nonregulated power generator with nuclear, gas, & renewable ownership. Has 79.9% stake in NextEra Energy Partners. Rev. breakdown: residential, 55%; commercial, 35%; industrial & other, 10%. Generating sources: gas, 71%; nuclear, 23%; coal, 4%; purchased, 2%. Fuel costs: 24% of revs. '17 reported depr. rate (util.): 3.7%. Has 13,900 employees. Chairman, Pres. and CEO: James L. Robo. Inc.: FL. Address: 700 Universe Blvd., Juno Beach, FL 33408. Tel.: 561-694-4000. Internet: www.nexteraenergy.com.

NextEra Energy completed the acquisition of assets from Southern Company at the start of 2019. The last asset was Gulf Power, an electric company serving the Florida panhandle. Earlier, NextEra added Florida City Gas (a gas utility) and two nonregulated gas-fired generating assets in the Sunshine State. NextEra paid $5.1 billion and assumed $1.4 billion of Gulf Power debt. It financed the deal with $4.5 billion of debt. Management estimates that the transaction will boost share net by $0.15 in 2020 and $0.20 in 2021.

NextEra's operations are performing well. The company's main utility subsidiary, Florida Power & Light, is benefiting from rate increases and the healthy economy in its service area. FPL will get additional rate relief when a 1,750-megawatt gas-fired plant is completed in mid-2019. The company is also adding utility-owned solar capacity, which is recovered through a regulatory mechanism. NextEra Energy Resources is expanding its portfolio of wind and solar projects. This subsidiary had a backlog of 8,900 mw at year-end 2018. And the lower federal tax rate boosted profits by $0.45 a share last year. All told, we think earnings will wind up within the company's targeted ranges of $8.00-$8.50 a share this year and $8.70-$9.20 next year. However . . .

There are a couple of causes for concern. Renewable-energy projects affected by the bankruptcy of Pacific G&E contribute $0.13-$0.15 a share to annual earnings. What will happen here remains to be seen. Separately, a 31%-owned gas pipeline project has had delays and cost overruns.

We expect a hefty dividend increase soon. NextEra has stated its expectation for 12%-14% annual dividend growth through at least 2020, and we estimate the directors will raise the annual disbursement by $0.56 a share (12.6%).

NextEra's solid performance has not gone unnoticed on Wall Street. The stock was one of the top performers in 2017, and posted a total return of over 14% in 2018. At its current valuation, this issue doesn't stand out among utilities for either its dividend yield or its 3- to 5-year total return potential.

Paul E. Debbas, CFA *February 15, 2019*

(A) Diluted EPS. Excl. nonrecur. gains (losses): '03, 5¢; '11, (24¢); '13, (80¢); '16, 47¢; '17, 91¢; '18, $7.19; gain on disc. ops.: '13, 44¢. '15 EPS don't sum due to rounding. Next earnings report due late April. (B) Div'ds historically paid in mid-Mar., mid-June, mid-Sept., & mid-Dec. ■ Div'd reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. def'd charges. In '17: $8.27/sh. (D) In mill., adj. for stock split. (E) Rate allowed on com. eq. in '17: 9.6%-11.6%; earned on avg. com. eq., '17: 11.7%. Regulatory Climate: Average.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	80
Earnings Predictability	70

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NORTHWESTERN NYSE-NWE

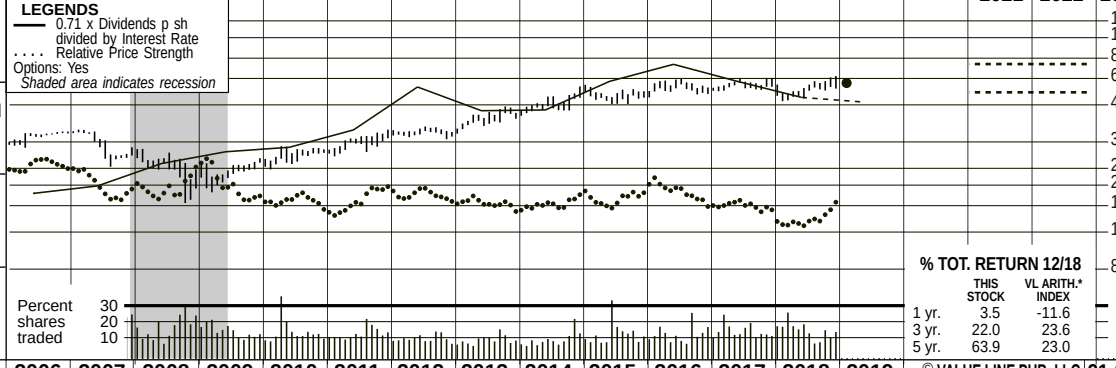
RECENT PRICE **60.96** | P/E RATIO **18.1** (Trailing: 18.3 / Median: 16.0) | RELATIVE P/E RATIO **1.13** | DIV'D YLD **3.8%** | VALUE LINE

TIMELINESS 3 Raised 8/3/18
SAFETY 2 Raised 7/27/18
TECHNICAL 1 Raised 1/25/19
BETA .55 (1.00 = Market)

High:	36.7	29.7	26.8	30.6	36.6	38.0	47.2	58.7	59.7	63.8	64.5	65.7
Low:	24.5	16.5	18.5	23.8	27.4	33.0	35.1	42.6	48.4	52.2	55.7	50.0

Target Price Range
2021 | 2022 | 2023

LEGENDS
— 0.71 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+25%)	9%
Low	55	(-10%)	2%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	0	0	0
Options	8	0	2	0	1	0	0	0	0
to Sell	2	0	1	0	1	0	0	0	2

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	130	133	128
to Sell	110	117	111
Hld's(000)	46665	48589	49333

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.5	-11.6
3 yr.	22.0	23.6
5 yr.	63.9	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
- -	- -	29.18	32.57	31.49	30.79	35.09	31.72	30.66	30.80	28.76	29.80	25.68	25.21	26.01	26.45	**23.85**	**24.75**	Revenues per sh	**27.50**
- -	- -	3.20	4.00	3.62	3.70	4.40	4.62	4.76	5.42	5.18	5.45	5.39	5.92	6.74	6.76	**6.90**	**7.20**	"Cash Flow" per sh	**8.00**
- -	- -	d14.32	1.71	1.31	1.44	1.77	2.02	2.14	2.53	2.26	2.46	2.99	2.90	3.39	3.34	**3.40**	**3.50**	Earnings per sh A	**3.75**
- -	- -	- -	1.00	1.24	1.28	1.32	1.34	1.36	1.44	1.48	1.52	1.60	1.92	2.00	2.10	2.20	**2.30**	Div'd Decl'd per sh B ■ †	**2.60**
- -	- -	2.25	2.26	2.81	3.00	3.47	5.26	6.30	5.20	5.89	5.95	5.76	5.89	5.96	5.60	**5.70**	**6.70**	Cap'l Spending per sh	**6.25**
- -	- -	19.92	20.60	20.65	21.12	21.25	21.86	22.64	23.68	25.09	26.60	31.50	33.22	34.68	36.44	**38.10**	**39.20**	Book Value per sh C	**42.50**
- -	- -	35.60	35.79	35.97	38.97	35.93	36.00	36.23	36.28	37.22	38.75	46.91	48.17	48.33	49.37	**50.35**	**50.50**	Common Shs Outst'g D	**51.00**
- -	- -	- -	17.1	26.0	21.7	13.9	11.5	12.9	12.6	15.7	16.9	16.2	18.4	17.2	17.8	**16.8**		Avg Ann'l P/E Ratio	**17.5**
- -	- -	- -	.91	1.40	1.15	.84	.77	.82	.79	1.00	.95	.85	.93	.90	.89	**.90**		Relative P/E Ratio	**.95**
- -	- -	- -	3.4%	3.6%	4.1%	5.4%	5.7%	4.9%	4.5%	4.2%	3.7%	3.3%	3.6%	3.4%	3.5%	3.9%		Avg Ann'l Div'd Yield	**4.0%**

CAPITAL STRUCTURE as of 9/30/18
Total Debt $2038.9 mill. **Due in 5 Yrs** $234.9 mill.
LT Debt $2036.6 mill. **LT Interest** $93.7 mill.
Incl. $20.5 mill. capitalized leases.
(LT interest earned: 3.2x)

Pension Assets-12/17 $586.5 mill. **Oblig** $696.8 mill.

Pfd Stock None

Common Stock 50,321,046 shs. **as of 10/19/18**

MARKET CAP: $3.1 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
1260.8	1141.9	1110.7	1117.3	1070.3	1154.5	1204.9	1214.3	1257.2	1305.7	**1200**	**1250**	Revenues ($mill)	**1400**
67.6	73.4	77.4	92.6	83.7	94.0	120.7	138.4	164.2	162.7	**170**	**175**	Net Profit ($mill)	**195**
37.3%	17.2%	25.0%	9.8%	9.6%	13.2%	- -	13.7%	13.7%	7.6%	**2.5%**	**4.0%**	Income Tax Rate	**10.0%**
2.3%	4.4%	14.2%	3.3%	9.4%	8.7%	8.9%	9.8%	4.3%	5.2%	**6.0%**	**6.0%**	AFUDC % to Net Profit	**5.0%**
46.8%	56.4%	57.2%	52.2%	53.8%	53.5%	53.4%	53.1%	52.0%	50.2%	**49.5%**	**48.5%**	Long-Term Debt Ratio	**46.5%**
53.2%	43.6%	42.8%	47.8%	46.2%	46.5%	46.6%	46.9%	48.0%	49.8%	**50.5%**	**51.5%**	Common Equity Ratio	**53.5%**
1434.3	1803.9	1916.4	1797.1	2020.7	2215.7	3168.0	3408.6	3493.9	3614.5	**3790**	**3850**	Total Capital ($mill)	**4025**
1839.7	1964.1	2118.0	2213.3	2435.6	2690.1	3758.0	4059.5	4214.9	4358.3	**4465**	**4620**	Net Plant ($mill)	**4975**
7.0%	6.0%	5.9%	7.0%	5.5%	5.5%	4.8%	5.2%	5.9%	5.6%	**5.5%**	**5.5%**	Return on Total Cap'l	**6.0%**
8.9%	9.3%	9.4%	10.8%	9.0%	9.1%	8.2%	8.6%	9.8%	9.0%	**9.0%**	**9.0%**	Return on Shr. Equity	**9.0%**
8.9%	9.3%	9.4%	10.8%	9.0%	9.1%	8.2%	8.6%	9.8%	9.0%	**9.0%**	**9.0%**	Return on Com Equity E	**9.0%**
2.3%	3.2%	3.5%	4.7%	3.2%	3.5%	3.8%	3.0%	4.1%	3.4%	**3.0%**	**3.0%**	Retained to Com Eq	**3.0%**
74%	66%	63%	56%	65%	61%	54%	65%	58%	62%	**65%**	**65%**	All Div'ds to Net Prof	**68%**

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	-.1	-.7	+3.8
Avg. Indust. Use (MWH)	30133	29784	30987
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Winter (Mw)	2096	2138	2133
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.3	+1.2	+1.3
Fixed Charge Cov. (%)	252	253	275

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-2.0%	-3.0%	*1.0%*
"Cash Flow"	5.5%	5.0%	*3.5%*
Earnings	8.0%	7.0%	*2.5%*
Dividends	5.5%	7.0%	*4.5%*
Book Value	5.5%	8.0%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	346.0	270.6	272.7	325.0	1214.3
2016	332.5	293.1	301.0	330.6	1257.2
2017	367.3	283.9	309.9	344.6	1305.7
2018	341.5	261.8	279.9	**316.8**	**1200**
2019	**355**	**275**	**295**	**325**	**1250**

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1.09	.38	.51	.93	2.90
2016	.82	.73	.92	.92	3.39
2017	1.17	.44	.75	.98	3.34
2018	1.18	.61	.56	**1.05**	**3.40**
2019	**1.20**	**.55**	**.75**	**1.00**	**3.50**

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.48	.48	.48	.48	1.92
2016	.50	.50	.50	.50	2.00
2017	.525	.525	.525	.525	2.10
2018	.55	.55	.55	.55	2.20
2019					

BUSINESS: NorthWestern Corporation (doing business as NorthWestern Energy) supplies electricity & gas in the Upper Midwest and Northwest, serving 433,000 electric customers in Montana and South Dakota and 286,000 gas customers in Montana (87% of gross margin), South Dakota (12%), and Nebraska (1%). Electric revenue breakdown: residential, 40%; commercial, 51%; industrial, 5%; other, 4%. Generating sources: hydro, 36%; coal, 29%; wind, 6%; other, 4%; purchased, 25%. Fuel costs: 31% of revenues. '17 reported deprec. rate: 3.0%. Has 1,600 employees. Chairman: Stephen P. Adik. President & CEO: Robert C. Rowe. Inc.: Delaware. Address: 3010 West 69th Street, Sioux Falls, South Dakota 57108. Tel.: 605-978-2900. Internet: www.northwesternenergy.com.

NorthWestern has an electric rate case pending in Montana. The utility is seeking a $34.9 million (6.6%) increase, based on a 10.65% return on a 49.4% common-equity ratio. NorthWestern wants to place in rates the capital investments it has made since its last application, in 2009 (including a 9.7-megawatt wind project it bought last year for $18.5 million); reset the baseline for fuel and purchased-power costs under the state's power-cost adjustment mechanism; and add a demand charge to bills of customers who have rooftop solar generation (so that nonsolar customers are not subsidizing solar users). The regulatory climate in Montana has not been good in recent years, but NorthWestern will try to reach a settlement with the commission's staff and intervenor groups. An order is expected by mid-2019.

We reduced our 2018 earnings estimate by $0.10 a share. Third-quarter profits were lower than usual due to unfavorable weather patterns and higher operating expenses. (This includes some unrecovered power costs.) Our revised estimate of $3.40 a share remains within NorthWestern's targeted range of $3.35-$3.50.

We estimate a modest earnings increase in 2019. We assume reasonable regulatory treatment in the aforementioned rate case in Montana. The company is also benefiting from the healthy economy in its service territory. NorthWestern probably won't put forth earnings guidance for this year as long as the rate application is unresolved.

A dividend hike is likely in the current quarter. This has been the board's pattern in recent years. We estimate the directors will raise the annual disbursement by $0.10 a share (4.5%), the same increase as in each of the previous two years. NorthWestern is targeting a payout ratio in a range of 60%-70%.

The dividend yield of NorthWestern stock is slightly above average for this industry. Like most electric utility issues, the recent quotation is within our 3- to 5-year Target Price Range. Accordingly, total return potential over that time frame is unspectacular, and only about equal to the utility average.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted EPS. Excl. gain (loss) on discont. ops.: '05, (6¢); '06, 1¢; nonrec. gains: '12, 39¢ net; '15, 27¢; '18, 26¢. '15 EPS don't add due to rounding. Next earnings report due mid-Feb. **(B)** Div'ds historically paid in late Mar., June, Sept. & Dec. ■ Div'd reinvestment plan avail. **(C)** Incl. def'd charges. In '17: $14.42/sh. **(D)** In mill. **(E)** Rate base: Net orig. cost. Rate allowed on com. eq. in MT in '14 (elec.): 9.8%; in '17 (gas): 9.55%; in SD in '15: none specified; in NE in '07: 10.4%; earned on avg. com. eq., '17: 9.5%. Regulatory Climate: Below Average.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	75
Earnings Predictability	85

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OGE ENERGY CORP. NYSE-OGE

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
42.05	19.8	(Trailing: 19.9 Median: 17.0)	1.16	3.8%	VALUE LINE

TIMELINESS 3 Raised 10/19/18
SAFETY 2 Lowered 12/18/15
TECHNICAL 2 Lowered 2/22/19
BETA .85 (1.00 = Market)

High:	18.1	18.9	23.1	28.6	30.1	40.0	39.3	36.5	34.2	37.4	41.8	42.9
Low:	9.8	9.9	16.9	20.3	25.1	27.7	32.8	24.2	23.4	32.6	29.6	38.0

Target Price Range
2022 | 2023 | 2024

2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+20%)	8%
Low	40	(-5%)	3%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	1	0	0
Options	0	0	0	0	0	0	0	0	1
to Sell	0	0	0	2	0	0	2	0	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	172	205	210
to Sell	192	163	186
Hld's(000)	122935	124911	136275

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	41.0	3.9
3 yr.	91.4	49.2
5 yr.	40.8	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
21.62	27.37	32.83	21.96	20.68	21.77	14.79	19.04	19.96	18.58	14.45	12.30	11.00	11.31	11.32	11.37	*12.25*	*13.00*	Revenues per sh	*15.25*
1.82	1.87	1.94	2.23	2.39	2.40	2.69	3.01	3.31	3.69	3.46	3.40	3.23	3.31	3.34	3.74	*4.05*	*4.25*	"Cash Flow" per sh	*5.00*
.87	.89	.92	1.23	1.32	1.25	1.33	1.50	1.73	1.79	1.94	1.98	1.69	1.69	1.92	2.12	*2.15*	*2.25*	Earnings per sh A	*2.75*
.67	.67	.67	.67	.68	.70	.71	.73	.76	.80	.85	.95	1.05	1.16	1.27	1.40	*1.54*	*1.65*	Div'd Decl'd per sh B ■	*1.95*
1.04	1.51	1.65	2.67	3.04	4.01	4.37	4.36	6.48	5.85	4.99	2.86	2.74	3.31	4.13	2.87	*3.15*	*2.90*	Cap'l Spending per sh	*3.00*
6.87	7.14	7.59	8.79	9.16	10.14	10.52	11.73	13.06	14.00	15.30	16.27	16.66	17.24	19.28	20.06	*20.70*	*21.30*	Book Value per sh C	*23.50*
174.80	180.00	181.20	182.40	183.60	187.00	194.00	195.20	196.20	197.60	198.50	199.40	199.70	199.70	199.70	199.70	*199.70*	*199.70*	Common Shs Outst'g D	*199.70*
11.8	14.1	14.9	13.7	13.8	12.4	10.8	13.3	14.4	15.2	17.7	18.3	17.7	17.7	18.3	16.5	*Bold figures are*		Avg Ann'l P/E Ratio	*16.5*
.67	.74	.79	.74	.73	.75	.72	.85	.90	.97	.99	.96	.89	.93	.92	.89	*Value Line*		Relative P/E Ratio	*.90*
6.5%	5.3%	4.9%	4.0%	3.8%	4.5%	5.0%	3.7%	3.1%	2.9%	2.5%	2.6%	3.5%	3.9%	3.6%	4.0%	*estimates*		Avg Ann'l Div'd Yield	*4.3%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $3147.0 mill. **Due in 5 Yrs** $250.5 mill.
LT Debt $2896.9 mill. **LT Interest** $134.9 mill.
(LT interest earned: 3.9x)

Leases, Uncapitalized Annual rentals $22.1 mill.

Pension Assets-12/18 $522.8 mill. **Oblig** $615.9 mill.

Pfd Stock None

Common Stock 199,732,315 shs.
as of 1/31/19
MARKET CAP: $8.4 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
2869.7	3716.9	3915.9	3671.2	2867.7	2453.1	2196.9	2259.2	2261.1	2270.3	*2450*	*2600*	Revenues ($mill)	*3050*
258.3	295.3	342.9	355.0	387.6	395.8	337.6	338.2	384.3	425.5	*430*	*450*	Net Profit ($mill)	*540*
31.7%	34.9%	30.7%	26.0%	24.9%	30.4%	29.2%	30.5%	32.5%	14.5%	*4.5%*	*4.5%*	Income Tax Rate	*4.5%*
9.1%	5.7%	9.0%	2.7%	2.6%	1.7%	3.7%	6.4%	15.0%	8.3%	*7.0%*	*3.0%*	AFUDC % to Net Profit	*3.0%*
50.6%	50.8%	51.6%	50.7%	43.1%	45.9%	44.3%	41.1%	41.7%	42.0%	*43.5%*	*44.5%*	Long-Term Debt Ratio	*45.5%*
49.4%	49.2%	48.4%	49.3%	56.9%	54.1%	55.7%	58.9%	58.3%	58.0%	*56.5%*	*55.5%*	Common Equity Ratio	*54.5%*
4129.7	4652.5	5300.4	5615.8	5337.2	5999.7	5971.6	5849.6	6600.7	6902.0	*7325*	*7650*	Total Capital ($mill)	*8625*
5911.6	6464.4	7474.0	8344.8	6672.8	6979.9	7322.4	7696.2	8339.9	8643.8	*8895*	*9075*	Net Plant ($mill)	*9550*
7.9%	7.8%	7.8%	7.7%	8.6%	7.8%	6.9%	7.0%	7.0%	7.3%	*7.0%*	*7.0%*	Return on Total Cap'l	*7.0%*
12.7%	12.9%	13.4%	12.8%	12.8%	12.2%	10.2%	9.8%	10.0%	10.6%	*10.5%*	*10.5%*	Return on Shr. Equity	*11.5%*
12.7%	12.9%	13.4%	12.8%	12.8%	12.2%	10.2%	9.8%	10.0%	10.6%	*10.5%*	*10.5%*	Return on Com Equity E	*11.5%*
6.0%	6.7%	7.7%	7.2%	7.3%	6.5%	4.0%	3.3%	3.5%	3.8%	*3.0%*	*3.0%*	Retained to Com Eq	*3.0%*
53%	48%	43%	44%	43%	47%	61%	67%	64%	64%	*71%*	*73%*	All Div'ds to Net Prof	*72%*

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	-1.1	-2.2	+6.8
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	5.17	5.30	4.86
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	6538	6456	6863
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.1	+1.0	+.9
Fixed Charge Cov. (%)	336	315	292

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	-6.0%	-8.5%	*5.0%*
"Cash Flow"	4.0%	- -	*6.5%*
Earnings	4.0%	1.0%	*6.5%*
Dividends	6.5%	9.5%	*7.5%*
Book Value	7.5%	6.0%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	433.1	551.4	743.9	530.8	2259.2
2017	456.0	586.4	716.8	501.9	2261.1
2018	492.7	567.0	698.8	511.8	2270.3
2019	*550*	*600*	*750*	*550*	*2450*
2020	*575*	*625*	*800*	*600*	*2600*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.13	.35	.92	.29	1.69
2017	.18	.52	.92	.30	1.92
2018	.27	.55	1.02	.27	2.12
2019	*.20*	*.55*	*1.10*	*.30*	*2.15*
2020	*.20*	*.60*	*1.15*	*.30*	*2.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.25	.25	.25	.275	1.03
2016	.275	.275	.275	.3025	1.13
2017	.3025	.3025	.3025	.3325	1.24
2018	.3325	.3325	.3325	.365	1.36
2019	.365				

BUSINESS: OGE Energy Corp. is a holding company for Oklahoma Gas and Electric Company (OG&E), which supplies electricity to 849,000 customers in Oklahoma (84% of electric revenues) and western Arkansas (8%); wholesale is (8%). Owns 25.6% of Enable Midstream Partners. Electric revenue breakdown: residential, 40%; commercial, 26%; industrial, 9%; oilfield, 7%; other, 18%. Generating sources: coal, 28%; gas, 27%; wind, 4%; purchased, 41%. Fuel costs: 39% of revenues. '18 reported depreciation rate (utility): 2.7%. Has 2,300 employees. Chairman, President and Chief Executive Officer: Sean Trauschke. Incorporated: Oklahoma. Address: 321 North Harvey, P.O. Box 321, Oklahoma City, Oklahoma 73101-0321. Telephone: 405-553-3000. Internet: www.oge.com.

OGE Energy's utility subsidiary has filed a general rate case in Oklahoma. Oklahoma Gas and Electric is seeking a rate increase of $77.6 million (4.4%), based on a return of 9.9% on a common-equity ratio of 53%. The utility wants to recover its $534 million investment to add pollution-control equipment to a coal-fired plant and its $75 million investment to convert another plant from coal to gas. OG&E also wants to raise its depreciation rate, which was cut last year. New tariffs are expected to take effect in mid-2019.

Another regulatory filing is pending in Oklahoma. OG&E has agreed to pay $53 million for two plants: a 360-megawatt facility that can run on coal or gas and a 146-mw cogeneration plant. The utility believes replacing costly purchased-power contracts will save customers $40 million-$50 million a year. OG&E is seeking approval of the deal with the commissions in Oklahoma and Arkansas.

The utility reached a settlement in Arkansas. OG&E and the commission's staff agreed to a $3.1 million boost in the first of what will be annual filings under the state's formula rate plan. If the regulators approve the settlement, this will take effect on April 1st.

Earnings in 2019 are likely to approximate the 2018 tally. Rate relief and solid customer growth should be positive factors, but we assume normal weather patterns after OG&E benefited from favorable weather in 2018. Also, the company's equity income from its stake in Enable Midstream Partners is likely to fall short of the contribution last year. We are sticking with our 2019 share-earnings estimate of $2.15. This is within OGE Energy's targeted range of $2.05-$2.20.

We look for moderate profit growth in 2020. OGE will have a full year of higher rates in Oklahoma and Arkansas. The healthy economy in the service area points to good customer growth, as well.

The stock has been performing well. The price rose 19% in 2018, and is up another 7% so far this year. Even after such a move, the dividend yield is slightly above the utility mean, and shareholders can look forward to a 10% hike later this year (based on OGE's stated goal). However, 3- to 5-year total return potential is low.

Paul E. Debbas, CFA *March 15, 2019*

(A) Diluted EPS. Excl. nonrecurring gain (losses): '03, (7¢); '04, (3¢); '15, (33¢); '17, $1.18; gains on discont. ops.: '02, 6¢; '05, 25¢; '06, 20¢. '18 EPS don't sum due to rounding. Next earnings report due early May. (B) Div'ds historically paid in late Jan., Apr., July, & Oct. ■ Div'd reinvestment plan avail. (C) Incl. deferred charges. In '18: $1.43/sh. (D) In mill., adj. for split. (E) Rate base: Net original cost. Rate allowed on com. eq. in OK in '18: none specified; in AR in '11: 9.95%; earned on avg. com. eq., '18: 10.8%. Regulatory Climate: Average.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	45
Earnings Predictability	80

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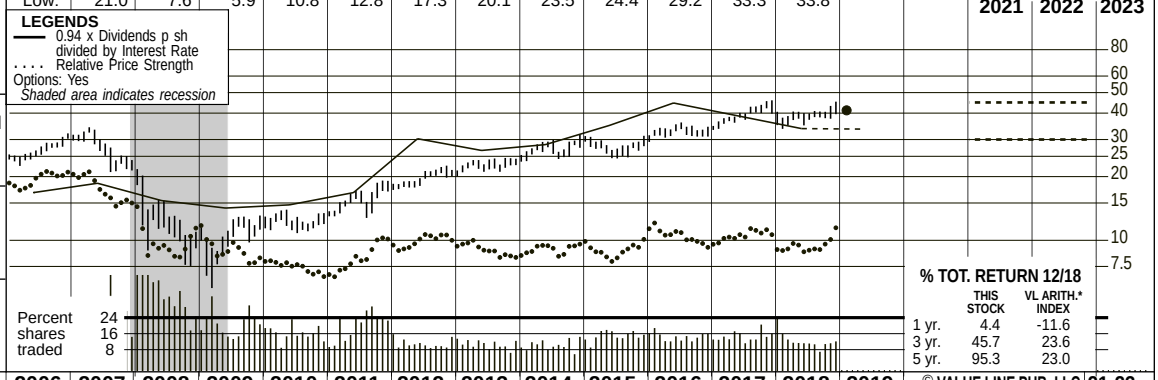
PNM RESOURCES NYSE-PNM

RECENT PRICE **41.17** | P/E RATIO **21.3** (Trailing: 20.5 Median: 18.0) | RELATIVE P/E RATIO **1.33** | DIV'D YLD **2.8%** | VALUE LINE

TIMELINESS 2 Raised 12/14/18
SAFETY 3 Lowered 5/9/08
TECHNICAL 1 Raised 1/25/19
BETA .65 (1.00 = Market)

High:	34.3	21.7	13.1	14.0	19.2	22.5	24.5	31.6	31.2	36.2	46.0	45.3
Low:	21.0	7.6	5.9	10.8	12.8	17.3	20.1	23.5	24.4	29.2	33.3	33.8

Target Price Range
2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+10%)	5%
Low	30	(-25%)	-4%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	1	0	0	0	0	0	0
Options	7	0	7	0	0	0	0	0	0
to Sell	3	0	0	0	0	0	0	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	129	137	129
to Sell	136	117	128
Hld's(000)	72513	73262	71804

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.4	-11.6
3 yr.	45.7	23.6
5 yr.	95.3	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
19.92	24.11	26.54	30.19	32.25	24.92	22.65	19.01	19.31	21.35	16.85	17.42	18.03	18.07	17.11	18.14	*17.90*	*18.85*	Revenues per sh	*20.50*
2.83	3.05	3.14	3.56	3.57	2.54	1.76	2.32	2.67	3.18	3.39	3.52	4.09	4.28	4.51	5.30	*5.40*	*5.75*	"Cash Flow" per sh	*6.75*
1.07	1.15	1.43	1.56	1.72	.76	.11	.58	.87	1.08	1.31	1.41	1.45	1.48	1.46	1.92	*1.95*	*2.15*	Earnings per sh A	*2.50*
.57	.61	.63	.79	.86	.91	.61	.50	.50	.50	.58	.68	.76	.82	.90	.99	1.09	*1.18*	Div'd Decl'd per sh B ■ †	*1.35*
4.09	2.78	2.25	3.07	4.04	5.94	3.99	3.32	3.25	4.10	3.88	4.37	5.78	7.01	7.53	6.28	*6.50*	*7.60*	Cap'l Spending per sh	*5.00*
16.60	17.84	18.19	18.70	22.09	22.03	18.89	18.90	17.60	19.62	20.05	20.87	22.39	20.78	21.04	21.28	*21.45*	*22.30*	Book Value per sh C	*26.50*
58.68	60.39	60.46	68.79	76.65	76.81	86.53	86.67	86.67	79.65	79.65	79.65	79.65	79.65	79.65	79.65	*79.65*	*79.65*	Common Shs Outst'g D	*83.00*
15.1	14.7	15.0	17.4	15.6	NMF	NMF	18.1	14.0	14.5	15.0	16.1	18.7	18.7	22.4	20.4	*19.9*		Avg Ann'l P/E Ratio	*14.5*
.82	.84	.79	.93	.84	NMF	NMF	1.21	.89	.91	.95	.90	.98	.94	1.18	1.03	*1.05*		Relative P/E Ratio	*.80*
3.5%	3.6%	2.9%	2.9%	3.2%	3.4%	4.9%	4.8%	4.1%	3.2%	3.0%	3.0%	2.8%	3.0%	2.8%	2.5%	2.8%		Avg Ann'l Div'd Yield	*3.7%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $2857.1 mill. **Due in 5 Yrs** $1773.0 mill.
LT Debt $2142.6 mill. **LT Interest** $98.6 mill.
(LT interest earned: 2.7x)
Leases, Uncapitalized Annual rentals $26.8 mill.
Pension Assets-12/17 $625.5 mill. **Oblig** $692.4 mill.
Pfd Stock $11.5 mill. **Pfd Div'd** $.5 mill.
115,293 shs. 4.58%, $100 par without mandatory redemption. Sinking fund began 2/1/84.

Common Stock 79,653,624 shs.
as of 10/30/18
MARKET CAP: $3.3 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
1959.5	1647.7	1673.5	1700.6	1342.4	1387.9	1435.9	1439.1	1363.0	1445.0	*1425*	*1500*	Revenues ($mill)	*1700*
8.1	54.0	80.5	97.1	106.1	114.0	116.8	118.8	117.4	154.4	*170*	*190*	Net Profit ($mill)	*225*
40.4%	30.4%	32.6%	38.8%	31.4%	31.6%	34.8%	36.9%	32.4%	33.0%	*11.0%*	*23.5%*	Income Tax Rate	*23.5%*
- -	6.3%	7.1%	8.7%	7.1%	1.3%	10.7%	17.0%	11.0%	11.9%	*12.0%*	*13.0%*	AFUDC % to Net Profit	*9.0%*
45.6%	48.7%	50.4%	51.5%	50.9%	50.0%	47.8%	54.1%	55.7%	56.1%	*60.0%*	*60.5%*	Long-Term Debt Ratio	*58.0%*
54.0%	51.0%	49.2%	48.1%	48.7%	49.7%	51.9%	45.5%	44.0%	43.6%	*40.0%*	*39.0%*	Common Equity Ratio	*42.0%*
3025.4	3214.9	3100.3	3245.6	3277.9	3344.0	3437.1	3633.3	3806.8	3887.5	*4280*	*4540*	Total Capital ($mill)	*5250*
3192.0	3332.4	3444.4	3627.1	3746.5	3933.9	4270.0	4535.4	4904.7	4980.2	*5220*	*5545*	Net Plant ($mill)	*6025*
1.9%	3.2%	4.2%	4.5%	5.1%	5.2%	5.1%	4.8%	4.7%	5.3%	*5.5%*	*5.5%*	Return on Total Cap'l	*5.5%*
.5%	3.3%	5.2%	6.2%	6.6%	6.8%	6.5%	7.1%	7.0%	9.0%	*9.0%*	*9.5%*	Return on Shr. Equity	*9.5%*
.5%	3.3%	5.2%	6.2%	6.6%	6.8%	6.5%	7.1%	7.0%	9.1%	*9.0%*	*9.5%*	Return on Com Equity E	*9.5%*
NMF	.5%	2.2%	3.3%	3.8%	3.8%	3.2%	3.3%	2.8%	4.5%	*4.0%*	*4.5%*	Retained to Com Eq	*4.5%*
NMF	86%	57%	47%	43%	45%	51%	54%	61%	51%	*51%*	*50%*	All Div'ds to Net Prof	*50%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	-1.4	-.5	+.3
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Indust. Revs. per KWH (¢)	NA	NA	NA
Capacity at Peak (Mw)	2787	2791	2580
Peak Load, Summer (Mw)	1889	1908	1843
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+.9	+.9	+.8
Fixed Charge Cov. (%)	231	202	243

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-5.0%	-1.5%	*2.0%*
"Cash Flow"	4.0%	9.0%	*6.0%*
Earnings	2.0%	8.5%	*7.5%*
Dividends	.5%	11.5%	*7.0%*
Book Value	- -	2.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	332.9	352.9	417.4	335.9	1439.1
2016	311.0	315.4	400.4	336.2	1363.0
2017	330.2	362.3	419.9	332.6	1445.0
2018	317.9	352.3	422.7	*332.1*	*1425*
2019	*340*	*370*	*450*	*340*	*1500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.18	.40	.76	.14	1.48
2016	.13	.34	.68	.31	1.46
2017	.29	.47	.92	.25	1.92
2018	.19	.48	1.09	*.19*	*1.95*
2019	*.11*	*.54*	*1.23*	*.27*	*2.15*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.20	.20	.20	.20	.80
2016	.22	.22	.22	.22	.88
2017	.242	.242	.243	.243	.97
2018	.265	.265	.265	.265	1.06
2019	.29				

BUSINESS: PNM Resources, Inc. is a holding company with two regulated electric utilities. Public Service Company of New Mexico (PNM) serves 524,000 customers in north central New Mexico, incl. Albuquerque and Santa Fe. Texas-New Mexico Power Company (TNMP) transmits and distributes power to 250,000 customers in Texas. Electric rev. breakdown: residential, 39%; commercial, 37%; industrial, 5%; other, 19%. Generating sources: coal, 57%; nuclear, 30%; gas/oil, 12%; solar, 1%. Fuel costs: 28% of revenues. '17 reported deprec. rates: 2.5%-8.4%. Has 1,700 employees. Chairman, President & CEO: Patricia K. Collawn. Inc.: New Mexico. Address: 414 Silver Ave. SW, Albuquerque, NM 87102-3289. Tel.: 505-241-2700. Internet: www.pnmresources.com.

PNM Resources' utility subsidiary in Texas received a rate order. The Texas commission approved a settlement calling for a $10.0 million tariff hike for TNMP, based on a return of 9.65% on a common-equity ratio of 45%. This figure includes the pass-through to customers of $11.6 million of benefits arising from the new federal tax law. New tariffs took effect at the start of 2019. TNMP will soon make a filing under the state's transmission cost adjustment mechanism, with a ruling probably coming in March.

Earnings are likely to rise significantly in 2019. PNM will benefit from rate relief, both at TNMP and at Public Service of New Mexico, which received the second phase of a two-year hike. Thus, its higher expenses will be fully recovered in rates, which was not the case last year. Another positive factor is the improving economy in New Mexico, which is boosting the utility's volume. Our 2019 share-earnings estimate is within the company's targeted range of $2.08-$2.18. Note that our 2018 estimate of $1.95 *includes* $0.06 a share of costs that management excludes from its definition of operating earnings.

The board of directors raised the annual dividend by $0.10 a share (9.4%), effective with the February payment. Even after this increase, the payout ratio is still low, by utility standards. Increases in the disbursement in upcoming years are more likely to be in a range of 5%-6%, which is also PNM's target for annual profit growth.

PNM intends to retire the San Juan coal-fired plant before the end of its useful life. This will satisfy customers who oppose coal, even at the cost of higher rates. The utility hopes to recover the cost of the plant through the issuance of $400 million of securitized bonds, but this needs to be passed by the state legislature and approved by the state commission. PNM plans to take a pretax charge of about $63 million against fourth-quarter earnings.

This timely stock has a high valuation. The dividend yield is low, for a utility, and is not much higher than the median of all stocks under our coverage. With the recent price well within our 2021-2023 Target Price Range, total return potential is negligible.

Paul E. Debbas, CFA *January 25, 2019*

(A) Dil. EPS. Excl. nonrec. gain (losses): '05, (56¢); '08, ($3.77); '10, ($1.36); '11, 88¢; '13, (16¢); '15, ($1.28); '17, (92¢); '18, *(59¢)*. Excl. gains from disc. ops.: '08, 42¢; '09, 78¢. '15 & '17 EPS don't sum due to rounding. Next egs. report due late Feb. (B) Div'ds paid mid-Feb., May, Aug., & Nov. ■ Div'd reinv. plan avail. (C) Incl. intang. In '17: $12.19/sh. (D) In mill., adj. for split. (E) Rate base: net orig. cost. Rate all'd on com. eq. in NM in '18: 9.575%; in TX in '11: 10.125%; earned on avg. com. eq., '17: 8.9%. Regulatory Climate: NM, Below Avg.; TX, Avg.

Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	90
Earnings Predictability	70

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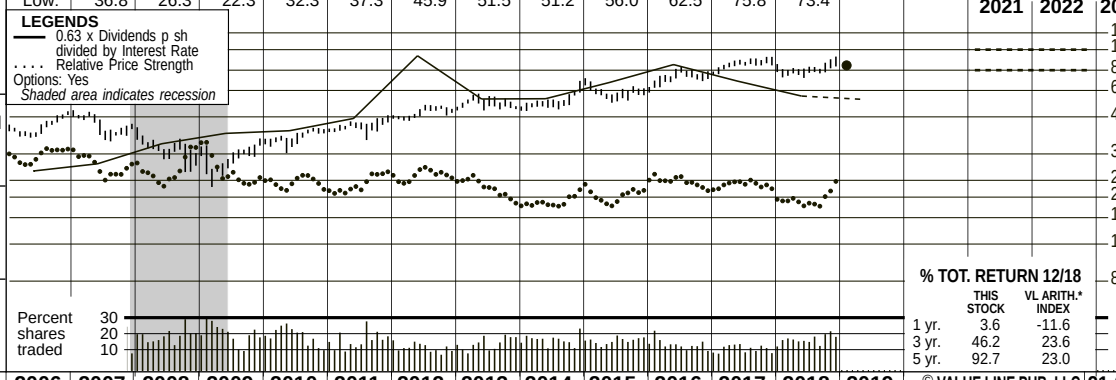
PINNACLE WEST NYSE-PNW

RECENT PRICE **84.21** | P/E RATIO **18.8** (Trailing: 18.4 / Median: 15.0) | RELATIVE P/E RATIO **1.17** | DIV'D YLD **3.6%** | VALUE LINE

TIMELINESS 1 Raised 12/28/18
SAFETY 1 Raised 5/3/13
TECHNICAL 1 Raised 1/25/19
BETA .55 (1.00 = Market)

High:	51.7	42.9	38.0	42.7	48.9	54.7	61.9	71.1	73.3	82.8	92.5	92.6
Low:	36.8	26.3	22.3	32.3	37.3	45.9	51.5	51.2	56.0	62.5	75.8	73.4

Target Price Range
2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	100	(+20%)	8%
Low	80	(-5%)	3%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	4	0	0	0	0	10	0
to Sell	5	0	1	0	0	0	0	0	1

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	205	198	219
to Sell	230	231	213
Hld's(000)	92969	91916	92477

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.6	-11.6
3 yr.	46.2	23.6
5 yr.	92.7	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
28.90	30.87	31.59	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	33.20	34.15	Revenues per sh	39.50
7.01	7.33	6.93	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	10.00	10.70	"Cash Flow" per sh	12.75
2.53	2.52	2.58	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	4.40	4.85	Earnings per sh A	5.75
1.63	1.73	1.83	1.93	2.03	2.10	2.10	2.10	2.10	2.10	2.67	2.23	2.33	2.44	2.56	2.70	2.87	3.04	Div'd Decl'd per sh B ■	3.60
9.81	7.60	5.86	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	11.25	10.80	Cap'l Spending per sh	11.00
29.44	31.00	32.14	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	46.20	47.80	Book Value per sh C	53.75
91.26	91.29	91.79	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	112.25	112.75	Common Shs Outst'g D	114.25
14.4	14.0	15.8	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	18.4		Avg Ann'l P/E Ratio	15.5
.79	.80	.83	1.02	.74	.79	.97	.91	.80	.92	.91	.86	.84	.81	.98	.97	1.00		Relative P/E Ratio	.85
4.5%	4.9%	4.5%	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%		Avg Ann'l Div'd Yield	4.0%
						3367.1	3297.1	3263.6	3241.4	3301.8	3454.6	3491.6	3495.4	3498.7	3565.3	3725	3850	Revenues ($mill)	4500
						213.6	229.2	330.4	328.2	387.4	406.1	397.6	437.3	442.0	497.8	495	550	Net Profit ($mill)	660
						23.4%	36.9%	31.9%	34.0%	36.2%	34.4%	34.2%	34.3%	33.9%	32.5%	20.0%	10.0%	Income Tax Rate	10.0%
						17.5%	11.2%	11.7%	12.8%	9.7%	10.0%	11.6%	11.8%	14.1%	13.9%	15.0%	7.0%	AFUDC % to Net Profit	8.0%
						46.8%	50.4%	45.3%	44.1%	44.6%	40.0%	41.0%	43.0%	45.6%	48.9%	48.0%	48.5%	Long-Term Debt Ratio	45.5%
						53.2%	49.6%	54.7%	55.9%	55.4%	60.0%	59.0%	57.0%	54.4%	51.1%	52.0%	51.5%	Common Equity Ratio	54.5%
						6477.6	6686.6	6729.1	6840.9	7171.9	6990.9	7398.7	8046.3	8825.4	9796.4	9975	10480	Total Capital ($mill)	11225
						8916.7	9257.8	9578.8	9962.3	10396	10889	11194	11809	12714	13445	14075	14625	Net Plant ($mill)	16125
						4.7%	4.8%	6.5%	6.4%	6.8%	7.1%	6.4%	6.4%	6.0%	6.1%	6.0%	6.0%	Return on Total Cap'l	7.0%
						6.2%	6.9%	9.0%	8.6%	9.8%	9.7%	9.1%	9.5%	9.2%	9.9%	9.5%	10.0%	Return on Shr. Equity	10.5%
						6.2%	6.9%	9.0%	8.6%	9.8%	9.7%	9.1%	9.5%	9.2%	9.9%	9.5%	10.0%	Return on Com Equity E	10.5%
						.3%	.7%	3.1%	2.8%	4.1%	4.1%	3.5%	3.9%	3.5%	4.2%	3.5%	4.0%	Retained to Com Eq	4.0%
						96%	89%	66%	68%	58%	58%	62%	59%	62%	58%	65%	62%	All Div'ds to Net Prof	62%

CAPITAL STRUCTURE as of 9/30/18
Total Debt $5215.6 mill. **Due in 5 Yrs** $1221.2 mill.
LT Debt $4487.4 mill. **LT Interest** $178.0 mill.
Incl. $13.4 mill. Palo Verde sale leaseback lessor notes.
(LT interest earned: 3.8x)
Leases, Uncapitalized Annual rentals $13.4 mill.
Pension Assets-12/17 $3057.0 mill. **Oblig** $3394.2 mill.
Pfd Stock None

Common Stock 112,079,739 shs.
as of 11/1/18
MARKET CAP: $9.4 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+1.3	+.3	- -
Avg. Indust. Use (MWH)	658	640	620
Avg. Indust. Revs. per KWH (¢)	8.17	8.37	8.34
Capacity at Peak (Mw)	9250	9192	8438
Peak Load, Summer (Mw)	7031	7051	7363
Annual Load Factor (%)	48.3	48.0	46.3
% Change Customers (yr-end)	+1.3	+1.3	+1.8
Fixed Charge Cov. (%)	438	416	425

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-.5%	1.0%	4.0%
"Cash Flow"	1.5%	5.0%	5.0%
Earnings	4.0%	5.0%	6.0%
Dividends	2.5%	2.5%	6.0%
Book Value	2.0%	4.0%	4.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	671.2	890.7	1199.1	734.4	3495.4
2016	677.2	915.4	1166.9	739.2	3498.7
2017	677.7	944.6	1183.3	759.7	3565.3
2018	692.7	974.1	1268.0	790.2	3725
2019	725	1025	1300	800	3850

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.14	1.10	2.30	.37	3.92
2016	.04	1.08	2.35	.47	3.95
2017	.21	1.49	2.46	.27	4.43
2018	.03	1.48	2.80	.09	4.40
2019	.05	1.55	2.90	.10	4.60

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.595	.595	.595	.625	2.41
2016	.625	.625	.625	.655	2.53
2017	.655	.655	.655	.695	2.66
2018	.695	.695	.695	.7375	2.82
2019					

BUSINESS: Pinnacle West Capital Corporation is a holding company for Arizona Public Service Company (APS), which supplies electricity to 1.2 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, 50%; commercial, 40%; industrial, 5%; other, 5%. Generating sources: nuclear, 29%; gas & other, 26%; coal, 22%; purchased, 23%. Fuel costs: 28% of revenues. '17 reported deprec. rate: 2.8%. Has 6,300 employees. Chairman, President & CEO: Donald E. Brandt. Inc.: AZ. Address: 400 North Fifth St., P.O. Box 53999, Phoenix, AZ 85072-3999. Tel.: 602-250-1000. Internet: www.pinnaclewest.com.

Pinnacle West's utility subsidiary should soon get an order on its rate case. Arizona Public Service requested a $67.5 million step increase in order to recover the cost of an environmental upgrade to the Four Corners coal-fired plant. The staff of the Arizona Corporation Commission recommended a hike of $58.5 million, which is acceptable to the utility. An administrative law judge's proposal was consistent with that of the staff.

Earnings are likely to advance significantly in 2019. We assume that APS will get a step increase for Four Corners along the lines of the staff recommendation. The utility also obtains some revenues annually from various regulatory mechanisms, such as one for transmission costs. Furthermore, operating and maintenance expenses are likely to decline by an estimated $40 million due in large part to fewer planned outages of APS' generating fleet. We had not anticipated a decline in O&M costs, so we raised our earnings estimate by $0.25 a share. Our revised estimate is at the midpoint of Pinnacle West's targeted range of $4.75-$4.95. Our 2018 estimate remains within the company's guidance of $4.35-$4.55.

A ballot measure was defeated in the November election. This would have amended the Arizona constitution to require a 50% renewable-energy standard by 2030. This might have doubled customers' bills and forced the early retirement of Four Corners and the Palo Verde nuclear station. The company spent some $20 million fighting the proposal, and this is one reason for the expected decline in O&M expenses in 2019.

The board of directors raised the dividend in the fourth quarter. The disbursement was boosted by $0.17 a share (6.1%) annually, slightly more than we had estimated. Pinnacle West has set a goal of 6% yearly dividend increases, which we believe is attainable.

This stock is top ranked for Timeliness and Safety. The dividend yield is about average for a utility. Like most utility equities, the recent quotation is within our 2021-2023 Target Price Range. Total return potential over that time frame is unspectacular, but still somewhat above the industry mean.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted EPS. Excl. nonrec. gain (losses): '02, (77¢); '09, ($1.45); '17, 8¢; gains (losses) from disc. ops.: '05, (36¢); '06, 10¢; '08, 28¢; '09, (13¢); '10, 18¢; '11, 10¢; '12, (5¢). '15 & '16 EPS don't sum due to rounding. Next earnings report due late Feb. (B) Div'ds historically pd. in early Mar., June, Sept., & Dec. There were 5 declarations in '12. ■ Div'd reinv. plan avail. (C) Incl. def'd chgs. In '17: $14.34/sh. (D) In mill. (E) Rate base: Fair value. Rate allowed on com. eq. in '17: 10.0%; earned on avg. com. eq., '17: 10.0%. Regul. Climate: Avg.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	65
Earnings Predictability	90

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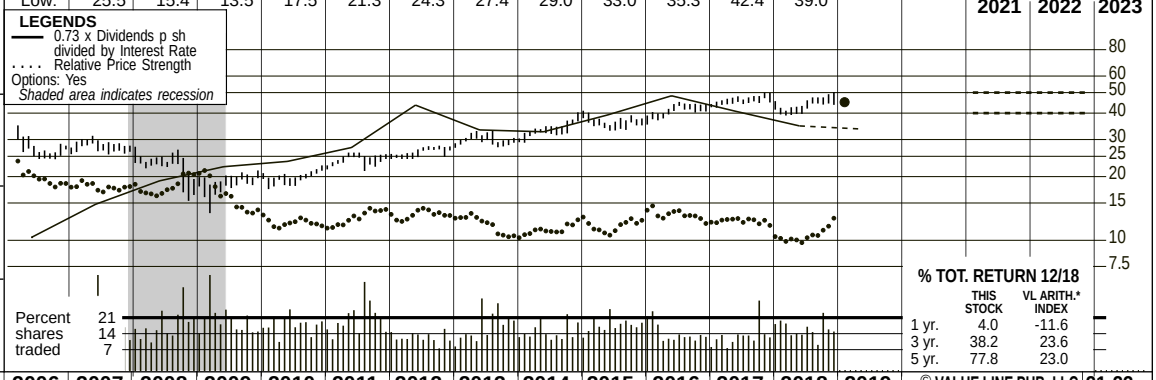
PORTLAND GENERAL NYSE-POR

RECENT PRICE **45.05** | P/E RATIO **18.2** (Trailing: 18.1 / Median: 16.0) | RELATIVE P/E RATIO **1.14** | DIV'D YLD **3.4%** | VALUE LINE

TIMELINESS 1 Raised 12/14/18
SAFETY 2 Raised 5/4/12
TECHNICAL 1 Raised 1/25/19
BETA .60 (1.00 = Market)

High:	31.3	27.7	21.4	22.7	26.0	28.1	33.3	40.3	41.0	45.2	50.1	50.4
Low:	25.5	15.4	13.5	17.5	21.3	24.3	27.4	29.0	33.0	35.3	42.4	39.0

Target Price Range
2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+10%)	6%
Low	40	(-10%)	1%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	0	0	0
Options	0	11	0	0	1	0	0	0	0
to Sell	0	0	0	0	0	1	0	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	146	141	143
to Sell	148	147	151
Hld's(000)	83357	83653	86446

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	4.0	-11.6
3 yr.	38.2	23.6
5 yr.	77.8	23.0

2002	2003	2004	2005F	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
- -	- -	- -	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	*21.95*	*23.50*	Revenues per sh	*25.75*
- -	- -	- -	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	*6.60*	*7.00*	"Cash Flow" per sh	*8.25*
- -	- -	- -	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	*2.40*	*2.50*	Earnings per sh A	*2.75*
- -	- -	- -	- -	.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*	Div'd Decl'd per sh B ■ †	*1.80*
- -	- -	- -	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	*7.40*	*5.15*	Cap'l Spending per sh	*5.00*
- -	- -	- -	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	*28.05*	*29.00*	Book Value per sh C	*32.00*
- -	- -	- -	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	*89.25*	*89.40*	Common Shs Outst'g D	*90.00*
- -	- -	- -	- -	23.4	11.9	16.3	14.4	12.0	12.4	14.0	16.9	15.3	17.7	19.1	20.0	*18.2*		Avg Ann'l P/E Ratio	*16.5*
- -	- -	- -	- -	1.26	.63	.98	.96	.76	.78	.89	.95	.81	.89	1.00	1.01	*.95*		Relative P/E Ratio	*.90*
- -	- -	- -	- -	2.5%	3.3%	4.3%	5.4%	5.2%	4.4%	4.1%	3.7%	3.3%	3.3%	3.1%	2.9%	3.3%		Avg Ann'l Div'd Yield	*4.0%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $2427 mill. **Due in 5 Yrs** $460 mill.
LT Debt $2127 mill. **LT Interest** $123 mill.
Incl. $49 mill. capitalized leases.
(LT interest earned: 3.2x)
Leases, Uncapitalized Annual rentals $9 mill.
Pension Assets-12/17 $629 mill. **Oblig** $869 mill.
Pfd Stock None

Common Stock 89,244,659 shs.
as of 10/16/18

MARKET CAP: $4.0 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
1745.0	1804.0	1783.0	1813.0	1805.0	1810.0	1900.0	1898.0	1923.0	2009.0	*1960*	*2100*	Revenues ($mill)	*2325*
87.0	95.0	125.0	147.0	141.0	137.0	175.0	172.0	193.0	204.0	*215*	*225*	Net Profit ($mill)	*255*
28.7%	28.8%	30.5%	28.3%	31.4%	23.2%	26.0%	20.7%	20.6%	25.3%	*13.0%*	*13.0%*	Income Tax Rate	*13.0%*
17.2%	31.6%	17.6%	5.4%	7.1%	14.6%	33.7%	19.8%	16.6%	8.8%	*7.0%*	*4.0%*	AFUDC % to Net Profit	*4.0%*
46.2%	50.3%	53.0%	49.6%	47.1%	51.3%	52.7%	47.8%	48.4%	50.1%	*47.0%*	*50.5%*	Long-Term Debt Ratio	*48.0%*
53.8%	49.7%	47.0%	50.4%	52.9%	48.7%	47.3%	52.2%	51.6%	49.9%	*53.0%*	*49.5%*	Common Equity Ratio	*52.0%*
2518.0	3100.0	3390.0	3298.0	3264.0	3735.0	4037.0	4329.0	4544.0	4842.0	*4730*	*5220*	Total Capital ($mill)	*5525*
3301.0	3858.0	4133.0	4285.0	4392.0	4880.0	5679.0	6012.0	6434.0	6741.0	*7030*	*7090*	Net Plant ($mill)	*7125*
5.0%	4.5%	5.4%	6.2%	5.9%	5.1%	5.8%	5.4%	5.6%	5.5%	*6.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
6.4%	6.2%	7.9%	8.8%	8.2%	7.5%	9.2%	7.6%	8.2%	8.4%	*8.5%*	*8.5%*	Return on Shr. Equity	*9.0%*
6.4%	6.2%	7.9%	8.8%	8.2%	7.5%	9.2%	7.6%	8.2%	8.4%	*8.5%*	*8.5%*	Return on Com Equity E	*9.0%*
2.0%	1.5%	3.0%	4.1%	3.5%	2.9%	4.6%	3.3%	3.5%	3.6%	*3.5%*	*3.5%*	Retained to Com Eq	*3.0%*
69%	76%	62%	54%	57%	61%	50%	56%	57%	58%	*60%*	*60%*	All Div'ds to Net Prof	*64%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	+.6	-2.1	+3.9
Avg. Indust. Use (MWH)	17485	16146	16041
Avg. Indust. Revs. per KWH (¢)	5.01	4.99	4.94
Capacity at Peak (Mw)	4609	4730	4743
Peak Load, Summer (Mw)	3914	3726	3976
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+1.2	+1.2	+1.3
Fixed Charge Cov. (%)	243	271	298

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-1.5%	-2.0%	*3.0%*
"Cash Flow"	1.5%	3.0%	*6.0%*
Earnings	4.0%	3.5%	*4.0%*
Dividends	9.0%	3.5%	*6.0%*
Book Value	3.0%	3.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	473	450	476	499	1898
2016	487	428	484	524	1923
2017	530	449	515	515	2009
2018	463	449	525	*523*	*1960*
2019	*555*	*470*	*530*	*545*	*2100*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.62	.44	.40	.57	2.04
2016	.68	.42	.38	.68	2.16
2017	.82	.36	.44	.67	2.29
2018	.72	.51	.59	*.58*	*2.40*
2019	*.80*	*.50*	*.50*	*.70*	*2.50*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ † Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.28	.28	.30	.30	1.16
2016	.30	.30	.32	.32	1.24
2017	.32	.32	.34	.34	1.32
2018	.34	.34	.3625	.3625	1.41
2019	.3625				

BUSINESS: Portland General Electric Company (PGE) provides electricity to 885,000 customers in 52 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, 48%; commercial, 33%; industrial, 11%; other, 8%. Generating sources: gas, 28%; coal, 15%; wind, 8%; hydro, 8%; purchased, 41%. Fuel costs: 30% of revenues. '17 reported depreciation rate: 3.6%. Has 2,900 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.

Portland General Electric Company received an order in its general rate case. The utility had filed for an increase of $85.9 million (4.8%), based on a 9.5% return on a 50% common-equity ratio. The Oregon Public Utility Commission (OPUC) granted PGE a hike of $32.7 million (4.8%), based on the same ROE and equity ratio, but reduced this to $9.0 million (0.5%) due to an updated load forecast. The company sought a regulatory mechanism that decouples revenues from volume, but received a small portion of what it wanted. New tariffs took effect at the start of 2019. However . . .

A separate regulatory decision was disappointing. PGE asked the OPUC to allow it to defer (for future recovery beginning in 2019) the 2018 portion of costs associated with an upgraded customer information system, which went into service in the June quarter at a cost of $152 million. The OPUC concluded that it lacked authority to do so, even though this was done in the past. The company is deciding what to do next, but will reverse the $7 million it had deferred through September 30th. Even so, PGE maintained its 2018 earnings guidance of $2.25-$2.40 a share because it "believes it will be able to partially offset the impacts of the capital project deferred reserves through cost savings and other actions during 2018." We raised our 2018 estimate by $0.10 because third-period income was above our expectation.

We continue to expect higher earnings in 2019. PGE is benefiting from the aforementioned tariff hike. Also, the service area's economy is healthy, and customer growth is improving.

Information on a request for proposals for 100 megawatts of renewable energy should be disclosed in the current quarter. This is needed to meet Oregon's renewable-energy requirements. Even if PGE winds up building this capacity, it does not expect to issue equity.

This timely stock has a yield that is about average for a utility. Like most utility issues, the recent quotation is well within our 3- to 5-year Target Price Range. We think the stock price reflects some takeover speculation, but do not advise investors to purchase this equity in the hope that a buyout offer will emerge.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted EPS. Excl. nonrecurring losses: '13, 42¢; '17, 19¢. '15 EPS don't sum due to rounding. Next earnings report due mid-February. (B) Div'ds paid mid-Jan., Apr., July, and Oct. ■ Div'd reinvestment plan avail. † Shareholder investment plan avail. (C) Incl. deferred charges. In '17: $4.92/sh. (D) In mill. (E) Rate base: Net orig. cost. Rate allowed on com. eq. in '19: 9.5%; earned on avg. com. eq., '17: 8.5%. Regulatory Climate: Average. (F) '05 per-share data are pro forma, based on shs. outstanding when stock began trading in '06.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	65
Earnings Predictability	85

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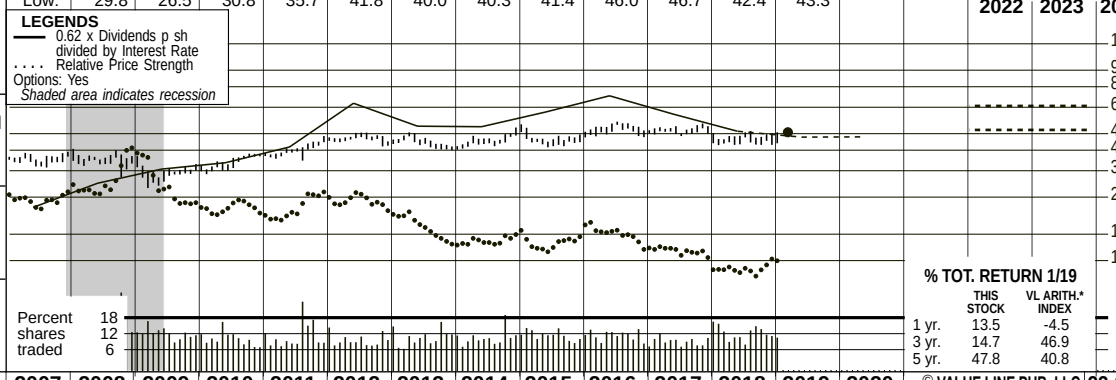
SOUTHERN COMPANY NYSE-SO

RECENT PRICE **48.73** | P/E RATIO **17.0** (Trailing: 14.5 Median: 16.0) | RELATIVE P/E RATIO **1.01** | DIV'D YLD **5.1%** | VALUE LINE

TIMELINESS 3 Raised 3/2/18
SAFETY 2 Lowered 2/21/14
TECHNICAL 4 Lowered 2/15/19
BETA .50 (1.00 = Market)

High:	40.6	37.6	38.6	46.7	48.6	48.7	51.3	53.2	54.6	53.5	49.4	48.8
Low:	29.8	26.5	30.8	35.7	41.8	40.0	40.3	41.4	46.0	46.7	42.4	43.3

Target Price Range
2022 | 2023 | 2024



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+35%)	11%
Low	50	(+5%)	6%

Insider Decisions

	A	M	J	J	A	S	O	N	D
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	1	0	0	0	0	1
to Sell	0	0	0	0	1	0	0	0	3

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	523	509	501
to Sell	595	530	556
Hld's(000)	577028	582212	583272

% TOT. RETURN 1/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	13.5	-4.5
3 yr.	14.7	46.9
5 yr.	47.8	40.8

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
15.31	16.05	18.28	19.24	20.12	22.04	19.21	20.70	20.41	19.06	19.26	20.34	19.18	20.09	22.86	*23.10*	*24.00*	*25.00*	Revenues per sh	*28.00*
3.53	3.65	4.03	4.01	4.22	4.43	4.43	4.51	4.91	5.18	5.27	5.28	5.47	5.69	6.64	*6.40*	*6.70*	*7.00*	"Cash Flow" per sh	*7.75*
1.97	2.06	2.13	2.10	2.28	2.25	2.32	2.36	2.55	2.67	2.70	2.77	2.84	2.83	3.21	*2.90*	*3.05*	*3.25*	Earnings per sh A	*3.75*
1.39	1.42	1.48	1.54	1.60	1.66	1.73	1.80	1.87	1.94	2.01	2.08	2.15	2.22	2.30	2.38	*2.46*	*2.54*	Div'd Decl'd per sh B ■	*2.78*
2.72	2.85	3.20	4.01	4.65	5.10	5.70	4.85	5.23	5.54	6.16	6.58	6.22	7.38	7.37	*8.35*	*7.15*	*6.40*	Cap'l Spending per sh	*5.25*
13.13	13.86	14.42	15.24	16.23	17.08	18.15	19.21	20.32	21.09	21.43	21.98	22.59	25.00	23.98	*24.35*	*25.20*	*26.15*	Book Value per sh C	*29.50*
734.83	741.50	741.45	746.27	763.10	777.19	819.65	843.34	865.13	867.77	887.09	907.78	911.72	990.39	1007.6	*1040.0*	*1050.0*	*1060.0*	Common Shs Outst'g D	*1090.0*
14.8	14.7	15.9	16.2	16.0	16.1	13.5	14.9	15.8	17.0	16.2	16.0	15.8	17.8	15.5	*15.6*	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.84	.78	.85	.87	.85	.97	.90	.95	.99	1.08	.91	.84	.80	.93	.78	*.85*	*Value Line*		Relative P/E Ratio	*.85*
4.7%	4.7%	4.4%	4.5%	4.4%	4.6%	5.5%	5.1%	4.6%	4.3%	4.6%	4.7%	4.8%	4.4%	4.6%	5.3%	*estimates*		Avg Ann'l Div'd Yield	*4.9%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $47002 mill. **Due in 5 Yrs** $18156 mill.
LT Debt $41425 mill. **LT Interest** $1450 mill.
(LT interest earned: 3.2x)

Leases, Uncapitalized Annual rentals $149 mill.
Pension Assets-12/17 $12992 mill.
Oblig $13808 mill.
Pfd Stock $324 mill. **Pfd Div'd** $17 mill.
Incl. 10 mill. shs. 5% cum. pfd. ($25 stated value); 334,210 shs. 4.4%-5.25% cum. pfd. ($100 par).

Common Stock 1,028,888,684 shs.
MARKET CAP: $50 billion (Large Cap)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
15743	17456	17657	16537	17087	18467	17489	19896	23031	*24000*	*25200*	*26500*	Revenues ($mill)	*30650*
1910.0	2040.0	2268.0	2415.0	2439.0	2567.0	2647.0	2757.0	3269.0	*3075*	*3305*	*3530*	Net Profit ($mill)	*4180*
31.9%	33.5%	35.0%	35.6%	34.8%	33.8%	33.4%	28.5%	25.2%	*20.0%*	*20.0%*	*20.0%*	Income Tax Rate	*20.0%*
14.9%	13.7%	10.2%	9.4%	11.6%	13.9%	13.2%	11.9%	7.6%	*7.0%*	*6.0%*	*6.0%*	AFUDC % to Net Profit	*4.0%*
53.2%	51.2%	50.0%	49.9%	51.5%	49.5%	52.8%	61.5%	64.5%	*63.0%*	*62.0%*	*61.5%*	Long-Term Debt Ratio	*59.5%*
43.6%	45.7%	47.1%	47.3%	45.8%	47.3%	44.0%	35.7%	35.0%	*36.5%*	*37.5%*	*38.0%*	Common Equity Ratio	*40.0%*
34091	35438	37307	38653	41483	42142	46788	69359	68953	*69100*	*70150*	*72850*	Total Capital ($mill)	*79700*
39230	42002	45010	48390	51208	54868	61114	78446	79872	*80400*	*84100*	*86925*	Net Plant ($mill)	*91900*
6.9%	7.0%	7.2%	7.3%	6.8%	7.1%	6.6%	4.9%	5.9%	*5.5%*	*5.5%*	*6.0%*	Return on Total Cap'l	*6.5%*
12.0%	11.8%	12.2%	12.5%	12.1%	12.1%	12.0%	10.3%	13.3%	*12.0%*	*12.0%*	*12.5%*	Return on Shr. Equity	*13.0%*
12.4%	12.2%	12.5%	12.8%	12.5%	12.5%	12.6%	11.0%	13.4%	*12.0%*	*12.0%*	*12.5%*	Return on Com Equity E	*13.0%*
3.2%	3.0%	3.4%	3.6%	3.2%	3.2%	3.1%	2.5%	3.9%	*2.0%*	*2.5%*	*2.5%*	Retained to Com Eq	*3.5%*
75%	77%	73%	73%	75%	75%	76%	78%	72%	*80%*	*78%*	*76%*	All Div'ds to Net Prof	*73%*

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	-.7	+.2	-2.6
Avg. Indust. Use (MWH)	3371	3105	3016
Avg. Indust. Revs. per KWH (¢)	5.88	6.01	6.18
Capacity at Yearend (Mw)	44223	46291	46936
Peak Load, Summer (Mw) F	36794	35781	34874
Annual Load Factor (%)	59.9	61.5	61.4
% Change Customers (yr-end)	+.9	+1.0	+1.0
Fixed Charge Cov. (%)	433	330	318

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '22-'24
Revenues	1.0%	.5%	*4.5%*
"Cash Flow"	4.0%	4.0%	*4.0%*
Earnings	3.0%	3.0%	*3.5%*
Dividends	4.0%	3.5%	*3.0%*
Book Value	4.5%	3.5%	*3.0%*

Cal-endar	QUARTERLY REVENUES (mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	3992	4459	6264	5181	19896
2017	5771	5430	6201	5629	23031
2018	6372	5627	6159	*5842*	*24000*
2019	*6500*	*6000*	*6600*	*6100*	*25200*
2020	*6850*	*6300*	*6950*	*6400*	*26500*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.57	.71	1.22	.33	2.83
2017	.73	.73	1.08	.67	3.21
2018	.93	.63	1.13	*.21*	*2.90*
2019	*.85*	*.70*	*1.10*	*.40*	*3.05*
2020	*.90*	*.75*	*1.15*	*.45*	*3.25*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.525	.5425	.5425	.5425	2.15
2016	.5425	.56	.56	.56	2.22
2017	.56	.58	.58	.58	2.30
2018	.58	.60	.60	.60	2.38
2019					

BUSINESS: The Southern Company, through its subs., supplies electricity to 4.6 million customers in GA, AL, FL, and MS. Also has a competitive generation business. Acq'd AGL Resources (renamed Southern Company Gas, 4.5 mill. customers in GA, FL, NJ, IL, VA, & TN) 7/16. Electric rev. breakdown: residential, 37%; commercial, 31%; industrial, 18%; other, 14%. Retail revs. by state: GA, 49%; AL, 35%; FL, 9%; MS, 7%. Generating sources: gas & oil, 42%; coal, 27%; nuclear, 15%; other, 7%; purchased, 9%. Fuel costs: 32% of revs. '17 reported depr. rate (utility): 2.9%. Has 31,300 employees. Chairman, President and CEO: Thomas A. Fanning. Inc.: DE. Address: 30 Ivan Allen Jr. Blvd., N.W., Atlanta, GA 30308. Tel.: 404-506-0747. Internet: www.southerncompany.com.

Southern Company completed a series of asset sales at the start of 2019. The company sold electric and gas utilities in Florida, plus two gas-fired generating assets there, for more than $5 billion. It plans to use the proceeds to reduce debt and offset part of its equity needs.

Construction of two units at the Vogtle nuclear station continues. This project has had significant delays and cost overruns, and is now expected to be completed in 2020 and 2021. Last year, the company took a $0.78-a-share writedown of construction costs that will not be recovered from Georgia Power's customers. If future cost overruns exceed $800 million, the utility will be responsible for a disproportionate amount of these overruns. Thus, Georgia Power still faces construction risk.

Earnings should improve this year and next. In 2019, the year-to-year comparisons in the second and fourth quarters should be easy. The utilities should benefit from rate relief and customer growth. Beginning in 2020, the aforementioned asset sales will increase profits by an estimated $0.04-$0.05 a share annually. Southern Company was scheduled to report fourth-quarter earnings in late February.

The share count has increased significantly in recent years. Besides the cost overruns for Georgia Power's nuclear project, Mississippi Power had similar problems with a coal-gasification project. This led to significant writedowns from 2013 through 2017. Thus, Southern Company wound up issuing stock to help finance the cost overruns and support the common-equity ratio.

Nicor Gas filed a general rate case. The utility is seeking a $230 million increase, based on a 10.6% return on equity. An order is expected by October.

This stock has one of the highest dividend yields of any electric utility issue. This is due to the problems with the two major projects and the remaining construction risk with Vogtle. Despite these difficulties, Southern Company has provided steady dividend growth, which we project will continue through 2022-2024. The stock has appeal for income-seeking investors willing to assume the risks regarding Vogtle construction.

Paul E. Debbas, CFA *February 15, 2019*

(A) Diluted EPS. Excl. nonrec. gain (losses): '03, 6¢; '09, (25¢); '13, (83¢); '14, (59¢); '15, (25¢); '16, (28¢); '17, ($2.37); '18, (78¢). '15 EPS don't sum due to rounding. Next earnings report due late Feb. (B) Div'ds paid in early Mar., June, Sept., and Dec. ■ Div'd reinvest. plan avail. (C) Incl. def'd chgs. In '17: $16.36/sh. (D) In mill. (E) Rate base: AL, MS, fair value; FL, GA, orig. cost. All'd return on com. eq. (blended): 12.5%; earn. on avg. com. eq., '17: 12.5%. Regul. Climate: GA, AL Above Avg.; MS, FL Avg. (F) Winter peak in '15.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	20
Earnings Predictability	95

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WEC ENERGY GROUP NYSE-WEC

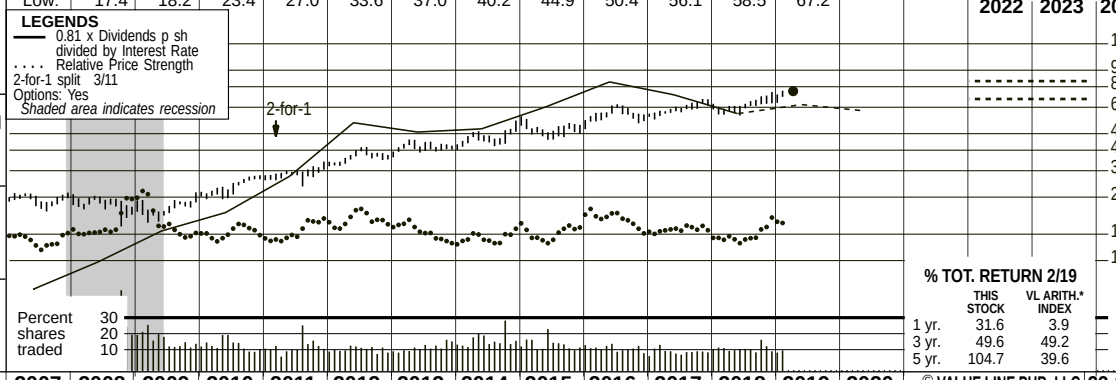
RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
76.25	22.1	(Trailing: 22.8 Median: 17.0)	1.29	3.1%	VALUE LINE

TIMELINESS 3 Lowered 11/9/18
SAFETY 1 Raised 3/23/12
TECHNICAL 2 Raised 3/8/19
BETA .55 (1.00 = Market)

High:	24.8	25.3	30.5	35.4	41.5	45.0	55.4	58.0	66.1	70.1	75.5	76.7
Low:	17.4	18.2	23.4	27.0	33.6	37.0	40.2	44.9	50.4	56.1	58.5	67.2

Target Price Range
2022 | 2023 | 2024

LEGENDS
— 0.81 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 3/11
Options: Yes
Shaded area indicates recession



2022-24 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	85	(+10%)	6%
Low	70	(-10%)	2%

Insider Decisions

	M	J	J	A	S	O	N	D	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	1	0	0	2	1	23
to Sell	1	0	0	2	0	0	2	1	0

Institutional Decisions

	2Q2018	3Q2018	4Q2018
to Buy	322	310	371
to Sell	307	348	321
Hld's(000)	232040	230392	236513

% TOT. RETURN 2/19

	THIS STOCK	VL ARITH.* INDEX
1 yr.	31.6	3.9
3 yr.	49.6	49.2
5 yr.	104.7	39.6

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	© VALUE LINE PUB. LLC	22-24
17.12	14.66	16.31	17.08	18.12	18.95	17.65	17.98	19.46	18.54	20.00	22.16	18.77	23.68	24.24	24.34	*25.05*	*26.00*	Revenues per sh	*29.50*
2.86	2.58	2.89	2.90	2.98	2.95	3.11	3.30	3.68	4.01	4.33	4.47	3.87	5.39	5.69	6.04	*6.35*	*6.70*	"Cash Flow" per sh	*8.25*
1.13	.93	1.28	1.32	1.42	1.52	1.60	1.92	2.18	2.35	2.51	2.59	2.34	2.96	3.14	3.34	*3.50*	*3.70*	Earnings per sh A	*4.50*
.40	.42	.44	.46	.50	.54	.68	.80	1.04	1.20	1.45	1.56	1.74	1.98	2.08	2.21	*2.36*	*2.50*	Div'd Decl'd per sh B ■	*3.00*
2.95	2.85	3.40	4.17	5.28	4.86	3.50	3.41	3.60	3.09	3.04	3.26	4.01	4.51	6.21	6.71	*9.45*	*10.10*	Cap'l Spending per sh	*7.75*
9.96	10.65	11.46	12.35	13.25	14.27	15.26	16.26	17.20	18.05	18.73	19.60	27.42	28.29	29.98	31.02	*32.00*	*33.05*	Book Value per sh C	*36.75*
236.85	233.97	233.96	233.94	233.89	233.84	233.82	233.77	230.49	229.04	225.96	225.52	315.68	315.62	315.57	315.52	*315.50*	*315.50*	Common Shs Outst'g D	*315.50*
12.4	17.5	14.5	16.0	16.5	14.8	13.3	14.0	14.2	15.8	16.5	17.7	21.3	19.9	20.0	19.6	*Bold figures are*		Avg Ann'l P/E Ratio	*16.5*
.71	.92	.77	.86	.88	.89	.89	.89	.89	1.01	.93	.93	1.07	1.04	1.01	1.06	*Value Line*		Relative P/E Ratio	*.90*
2.8%	2.6%	2.4%	2.2%	2.1%	2.4%	3.2%	3.0%	3.3%	3.2%	3.5%	3.4%	3.5%	3.4%	3.3%	3.4%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		22-24
4127.9	4202.5	4486.4	4246.4	4519.0	4997.1	5926.1	7472.3	7648.5	7679.5	*7900*	*8200*	Revenues ($mill)	*9300*
378.4	455.6	514.0	547.5	578.6	589.5	640.3	940.2	998.2	1060.5	*1110*	*1170*	Net Profit ($mill)	*1425*
36.5%	35.4%	33.9%	35.9%	36.9%	38.0%	40.4%	37.6%	37.2%	13.8%	*11.0%*	*11.0%*	Income Tax Rate	*11.0%*
25.0%	18.6%	16.8%	9.4%	4.5%	1.3%	4.5%	3.8%	1.6%	2.1%	*3.0%*	*3.0%*	AFUDC % to Net Profit	*2.0%*
51.9%	50.6%	53.6%	51.7%	50.6%	48.5%	51.2%	50.5%	48.0%	50.4%	*50.0%*	*47.5%*	Long-Term Debt Ratio	*50.0%*
47.7%	49.0%	46.0%	48.0%	49.1%	51.2%	48.6%	49.3%	51.9%	49.4%	*50.0%*	*52.5%*	Common Equity Ratio	*50.0%*
7473.1	7764.5	8608.0	8619.3	8626.6	8636.5	17809	18118	18238	19813	*20200*	*19925*	Total Capital ($mill)	*23200*
9070.5	9601.5	10160	10572	10907	11258	19190	19916	21347	22001	*24375*	*26600*	Net Plant ($mill)	*31325*
6.4%	7.5%	7.5%	7.9%	8.1%	8.1%	4.5%	6.3%	6.6%	6.5%	*6.5%*	*7.0%*	Return on Total Cap'l	*7.5%*
10.5%	11.9%	12.9%	13.1%	13.6%	13.2%	7.4%	10.5%	10.5%	10.8%	*11.0%*	*11.0%*	Return on Shr. Equity	*12.5%*
10.6%	12.0%	12.9%	13.2%	13.6%	13.3%	7.4%	10.5%	10.5%	10.8%	*11.0%*	*11.0%*	Return on Com Equity E	*12.5%*
6.2%	7.0%	6.8%	6.5%	5.9%	5.3%	2.1%	3.5%	3.6%	3.7%	*3.5%*	*3.5%*	Retained to Com Eq	*4.0%*
42%	41%	47%	51%	57%	60%	71%	67%	66%	66%	*67%*	*67%*	All Div'ds to Net Prof	*67%*

CAPITAL STRUCTURE as of 12/31/18
Total Debt $11799 mill. **Due in 5 Yrs** $3932.8 mill.
LT Debt $9994.0 mill. **LT Interest** $489.7 mill.
Incl. $18.4 mill. capitalized leases.
(LT interest earned: 3.7x)
Leases, Uncapitalized Annual rentals $8.7 mill.
Pension Assets-12/18 $2690.8 mill.
Oblig $2927.2 mill.
Pfd Stock $30.4 mill. **Pfd Div'd** $1.2 mill.
260,000 shs. 3.60%, $100 par, callable. $101;
44,498 shs. 6%, $100 par.
Common Stock 315,455,323 shs.
as of 1/31/19
MARKET CAP: $24 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2016	2017	2018
% Change Retail Sales (KWH)	+18.5	-3.0	+2.5
Avg. Indust. Use (MWH)	NA	NA	NA
Avg. Lg. C&I Revs. per KWH (¢)	7.08	7.13	7.05
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	NA	NA	NA
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+.5	+.7	+.7
Fixed Charge Cov. (%)	404	422	323

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '16-'18 to '22-'24
Revenues	3.0%	4.5%	*3.5%*
"Cash Flow"	7.0%	7.5%	*6.5%*
Earnings	8.5%	6.0%	*6.0%*
Dividends	15.5%	11.0%	*6.0%*
Book Value	8.5%	10.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	2194	1602	1712	1963	7472.3
2017	2304	1632	1657	2055	7648.5
2018	2287	1672	1644	2077	7679.5
2019	*2350*	*1700*	*1700*	*2150*	*7900*
2020	*2450*	*1750*	*1750*	*2250*	*8200*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1.09	.57	.68	.61	2.96
2017	1.12	.63	.68	.71	3.14
2018	1.23	.73	.74	.65	3.34
2019	*1.25*	*.75*	*.80*	*.70*	*3.50*
2020	*1.30*	*.80*	*.85*	*.75*	*3.70*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.4225	.4225	.44	.4575	1.74
2016	.495	.495	.495	.495	1.98
2017	.52	.52	.52	.52	2.08
2018	.5525	.5525	.5525	.5525	2.21
2019	.59				

BUSINESS: WEC Energy Group, Inc. (formerly Wisconsin Energy) is a holding company for utilities that provide electric, gas & steam service in WI & gas service in IL, MN, & MI. Customers: 1.6 mill. elec., 2.9 mill. gas. Acq'd Integrys Energy 6/15. Sold Point Beach nuclear plant in '07. Electric revenue breakdown: residential, 35%; small commercial & industrial, 31%; large commercial & industrial, 21%; other, 13%. Generating sources: coal, 45%; gas, 22%; renewables, 4%; purchased, 29%. Fuel costs: 38% of revenues. '18 reported deprec. rates (utility): 2.0%-3.2%. Has 7,900 employees. Chairman: Gale E. Klappa. President & CEO: Kevin Fletcher. Inc.: WI. Address: 231 W. Michigan St., P.O. Box 1331, Milwaukee, WI 53201. Tel.: 414-221-2345. Internet: www.wecenergygroup.com.

We expect WEC Energy Group to post steady earnings growth in 2019 and 2020. This has been the company's track record for several years (except 2015, when the share count rose sharply due to the acquisition of Integrys Energy). The company's utility in Chicago, Peoples Gas, is spending $280 million-$300 million annually to replace old pipes, and is recovering these expenditures through a rider on customers' bills. Expenses are being controlled effectively, helped by cost reductions stemming from the closing of old power plants. Finally, the company is investing in wind projects through a nonutility subsidiary (see below). Our 2019 share-earnings estimate is at the midpoint of management's narrow guidance of $3.48-$3.52. We look for improvement next year, to $3.70. WEC Energy's goal for annual earnings growth is 5%-7%.

A gas-fired plant is under construction in the upper peninsula of Michigan. The 180-megawatt facility is on track for commercial operation in the second period of 2019 at a cost of $277 million. The utility will recover half of the plant's cost in rates, and the other half through a 20-year contract with a large industrial customer.

WEC Energy continues to invest in nonutility wind projects. These are attractive because they are expected to provide a return on investment that exceeds that of the regulated utility business. Last year, the company acquired a 90% stake in a 132-mw facility for $166 million. In early 2019, WEC Energy completed the purchase of an 80% interest in a 200-mw project for $276 million. And it paid $145 million for an 80% stake in a 97-mw wind farm that is under construction. This is expected to be completed by yearend.

The board of directors raised the dividend in early 2019. The increase was $0.15 a share (6.8%) annually. WEC Energy expects yearly dividend growth of 5%-7% and a payout ratio of 65%-70%.

WEC Energy stock is performing well. The price has risen 10% so far this year, as utility investors find the company's steady earnings and dividend growth appealing. However, the dividend yield is low for a utility, and 3- to 5-year total return potential is unexciting.

Paul E. Debbas, CFA *March 15, 2019*

(A) Diluted EPS. Excl. gains on discont. ops.: '04, 77¢; '11, 6¢; nonrecurring gain: '17, 65¢. '16 & '18 EPS don't sum due to rounding. Next earnings report due late Apr. (B) Div'ds paid in early Mar., June, Sept. & Dec. ■ Div'd reinvest. plan avail. (C) Incl. intang. In '18: $21.74q/sh. (D) In mill., adj. for split. (E) Rate base: Net orig. cost. Rates all'd on com. eq. in WI in '15: 10.0%-10.3%; in IL in '15: 9.05%; in MN in '16: 9.11%; in MI in '16: 9.9%; earned on avg. com. eq., '18: 11.0%. Regulatory Climate: WI, Above Avg.; IL, Below Avg.; MN & MI, Avg.

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

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XCEL ENERGY NDQ-XEL

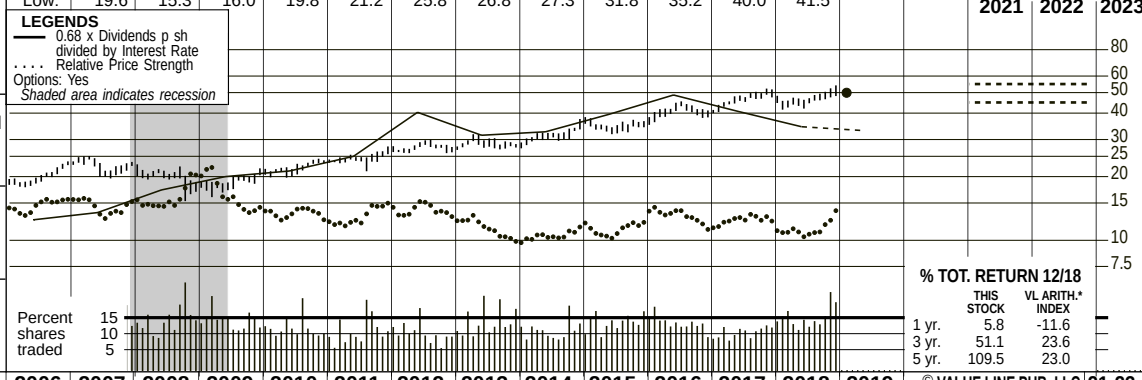
RECENT PRICE **49.89** | P/E RATIO **20.3** (Trailing: 20.2 Median: 15.0) | RELATIVE P/E RATIO **1.27** | DIV'D YLD **3.2%** | VALUE LINE

TIMELINESS 3 Lowered 11/16/18
SAFETY 1 Raised 5/1/15
TECHNICAL 1 Raised 1/25/19
BETA .50 (1.00 = Market)

High:	25.0	22.9	21.9	24.4	27.8	29.9	31.8	37.6	38.3	45.4	52.2	54.1
Low:	19.6	15.3	16.0	19.8	21.2	25.8	26.8	27.3	31.8	35.2	40.0	41.5

Target Price Range
2021 | 2022 | 2023

LEGENDS
— 0.68 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+10%)	6%
Low	45	(-10%)	1%

Insider Decisions

	M	A	M	J	J	A	S	O	N
to Buy	0	0	0	0	0	0	1	0	0
Options	0	0	6	0	0	0	0	1	0
to Sell	0	0	2	0	0	0	1	0	0

Institutional Decisions

	1Q2018	2Q2018	3Q2018
to Buy	301	303	296
to Sell	323	294	308
Hld's(000)	379296	375751	382071

% TOT. RETURN 12/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	5.8	-11.6
3 yr.	51.1	23.6
5 yr.	109.5	23.0

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
23.89	19.90	20.84	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	*22.35*	*22.90*	Revenues per sh	*24.75*
3.14	3.35	3.27	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	*5.85*	*6.20*	"Cash Flow" per sh	*7.25*
.42	1.23	1.27	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	*2.45*	*2.60*	Earnings per sh A	*3.00*
1.13	.75	.81	.85	.88	.91	.94	.97	1.00	1.03	1.07	1.11	1.20	1.28	1.36	1.44	1.52	*1.60*	Div'd Decl'd per sh B ■	*1.90*
6.04	2.49	3.19	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	*8.15*	*8.45*	Cap'l Spending per sh	*6.75*
11.70	12.95	12.99	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	*23.85*	*24.95*	Book Value per sh C	*28.50*
398.71	398.96	400.46	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	*516.50*	*518.00*	Common Shs Outst'g D	*533.00*
NMF	11.6	13.6	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	*19.1*		Avg Ann'l P/E Ratio	*16.5*
NMF	.66	.72	.82	.80	.89	.82	.85	.90	.89	.94	.84	.81	.83	.97	1.02	*1.00*		Relative P/E Ratio	*.90*
6.6%	5.2%	4.7%	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%		Avg Ann'l Div'd Yield	*3.8%*
						11203	9644.3	10311	10655	10128	10915	11686	11024	11107	11404	*11550*	*11850*	Revenues ($mill)	*13250*
						645.7	685.5	727.0	841.4	905.2	948.2	1021.3	1063.6	1123.4	1171.0	*1265*	*1355*	Net Profit ($mill)	*1615*
						34.4%	35.1%	37.5%	35.8%	33.2%	33.8%	33.9%	35.8%	34.1%	30.7%	*9.0%*	*9.0%*	Income Tax Rate	*9.0%*
						15.9%	16.8%	11.7%	9.4%	10.8%	13.4%	12.5%	7.7%	7.8%	9.4%	*11.0%*	*10.0%*	AFUDC % to Net Profit	*7.0%*
						52.2%	51.6%	53.1%	51.1%	53.3%	53.3%	53.0%	54.1%	56.3%	55.9%	*57.0%*	*58.0%*	Long-Term Debt Ratio	*57.0%*
						47.1%	47.7%	46.3%	48.9%	46.7%	46.7%	47.0%	45.9%	43.7%	44.1%	*43.0%*	*42.0%*	Common Equity Ratio	*43.0%*
						14800	15277	17452	17331	19018	20477	21714	23092	25216	25975	*28775*	*30675*	Total Capital ($mill)	*35600*
						17689	18508	20663	22353	23809	26122	28757	31206	32842	34329	*36775*	*39300*	Net Plant ($mill)	*44200*
						6.0%	6.2%	5.7%	6.5%	6.1%	6.0%	6.0%	5.8%	5.7%	5.8%	*5.5%*	*5.5%*	Return on Total Cap'l	*6.0%*
						9.1%	9.3%	8.9%	9.9%	10.2%	9.9%	10.0%	10.0%	10.2%	10.2%	*10.5%*	*10.5%*	Return on Shr. Equity	*10.5%*
						9.2%	9.4%	8.9%	9.9%	10.2%	9.9%	10.0%	10.0%	10.2%	10.2%	*10.5%*	*10.5%*	Return on Com Equity E	*10.5%*
						3.8%	3.7%	3.6%	4.3%	4.7%	4.5%	4.5%	4.3%	4.0%	3.9%	*4.0%*	*4.0%*	Retained to Com Eq	*4.0%*
						59%	61%	59%	56%	54%	54%	55%	57%	61%	62%	*62%*	*61%*	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 9/30/18
Total Debt $16501 mill. **Due in 5 Yrs** $3885 mill.
LT Debt $15508 mill. **LT Interest** $651 mill.
Incl. $151 mill. capitalized leases.
(LT interest earned: 3.4x)

Leases, Uncapitalized Annual rentals $238 mill.
Pension Assets-12/17 $3088 mill. **Oblig** $3828 mill.
Pfd Stock None

Common Stock 513,848,752 shs.
as of 10/19/18
MARKET CAP: $26 billion (Large Cap)

ELECTRIC OPERATING STATISTICS

	2015	2016	2017
% Change Retail Sales (KWH)	-.6	+.3	-.7
Large C & I Use (MWH)	23521	22519	22642
Large C & I Revs. per KWH (¢)	6.10	6.17	6.36
Capacity at Peak (Mw)	NA	NA	NA
Peak Load, Summer (Mw)	19583	20423	19591
Annual Load Factor (%)	NA	NA	NA
% Change Customers (yr-end)	+.9	+.9	+.9
Fixed Charge Cov. (%)	358	342	330

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-1.0%	.5%	*2.0%*
"Cash Flow"	4.0%	6.0%	*6.5%*
Earnings	5.5%	5.0%	*5.5%*
Dividends	4.5%	5.5%	*5.5%*
Book Value	4.5%	4.5%	*4.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	2962	2515	2901	2646	11024
2016	2772	2500	3040	2795	11107
2017	2946	2645	3017	2796	11404
2018	2951	2658	3048	*2893*	*11550*
2019	*3000*	*2700*	*3150*	*3000*	*11850*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.46	.39	.84	.41	2.10
2016	.47	.39	.90	.45	2.21
2017	.47	.45	.97	.42	2.30
2018	.57	.52	.96	*.40*	*2.45*
2019	*.60*	*.50*	*1.03*	*.47*	*2.60*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.30	.32	.32	.32	1.26
2016	.32	.34	.34	.34	1.34
2017	.34	.36	.36	.36	1.42
2018	.36	.38	.38	.38	1.50
2019	.38				

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; Public Service of Colorado, which supplies electricity & gas to Colorado; & Southwestern Public Service, which supplies electricity to Texas & New Mexico. Customers: 3.6 mill. electric, 1.9 mill. gas. Elec. rev. breakdown: residential, 31%; sm. comm'l & ind'l, 36%; lg. comm'l & ind'l, 18%; other, 15%. Generating sources not available. Fuel costs: 40% of revs. '17 reported depr. rate: 3.1%. Has 11,500 employees. Chairman, Pres. & CEO: Ben Fowke. Inc.: MN. Address: 414 Nicollet Mall, Minneapolis, MN 55401. Tel.: 612-330-5500. Internet: www.xcelenergy.com.

Xcel Energy has announced an asset acquisition. The company has agreed to pay $650 million for a 760-megawatt gas-fired plant in Minnesota. The utility is already purchasing power from the plant through an agreement that is now above the market price. The deal requires the approval of the Minnesota commission and is expected to be completed in mid-2019. This asset will eventually be placed in the rate base.

The deal illustrates a corporate strategy. Xcel wants to expand its rate base by acquiring projects from which it is purchasing power under contracts that are now above the market level. Xcel's utilities have 2,300 mw of wind purchased-power agreements and 2,400 mw of gas contracts that are candidates for conversion to ownership. Any such moves would require the approval of the state commission(s), however.

Xcel's goal is 5%-7% annual earnings growth. This is a slight increase from its previous target of 5%-6%. Increases in the rate base, modest volume growth, and rate relief are the key factors. Our 2019 share-net estimate is at the midpoint of the company's targeted range of $2.55-$2.65. This would produce profit growth of 6% over our estimated 2018 tally.

Some rate cases are upcoming in 2019. Public Service of Colorado plans to file this spring and Northern States Power intends to apply in Minnesota this fall. Whether these cases will be for one or more years is to be determined. Southwestern Public Service will file in Texas and New Mexico so that it can place two windfarms in the rate base. Any rate relief that arises from these cases won't affect earnings until 2020.

We expect a dividend increase in the first quarter, effective with the April payment. We estimate a $0.02-a-share (5.3%) hike in the quarterly disbursement, but wouldn't be surprised by a slightly larger boost. Xcel's goals are 5%-7% dividend growth and a payout ratio of 60%-70%.

This top-quality stock has a greater valuation than most utilities. The dividend yield and 3- to 5-year total return potential are somewhat below the norms for this industry.

Paul E. Debbas, CFA *January 25, 2019*

(A) Diluted EPS. Excl. nonrecurring gain (losses): '02, ($6.27); '10, 5¢; '15, (16¢); '17, (5¢); gains (losses) on discontinued ops.: '03, 27¢; '04, (30¢); '05, 3¢; '06, 1¢; '09, (1¢); '10, 1¢. '17 EPS don't sum due to rounding. Next earnings report due late Jan. (B) Div'ds historically paid mid-Jan., Apr., July, and Oct. ■ Div'd reinvestment plan available. (C) Incl. intangibles. In '17: $5.92/sh. (D) In mill. (E) Rate base: Varies. Rate allowed on com. eq. (blended): 9.6%; earned on avg. com. eq., '17: 10.4%. Regulatory Climate: Average.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	50
Earnings Predictability	100

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Date	High	Low
4/2/2018	$ 72.16	$ 70.41
4/9/2018	$ 72.65	$ 71.04
4/16/2018	$ 74.78	$ 71.88
4/23/2018	$ 77.44	$ 73.11
4/30/2018	$ 79.86	$ 75.72
5/7/2018	$ 79.40	$ 75.98
5/14/2018	$ 77.50	$ 73.76
5/21/2018	$ 76.15	$ 74.28
5/28/2018	$ 78.12	$ 75.53
6/4/2018	$ 76.56	$ 72.78
6/11/2018	$ 73.28	$ 70.46
6/18/2018	$ 76.65	$ 73.06
6/25/2018	$ 78.62	$ 76.39
7/2/2018	$ 80.78	$ 76.97
7/9/2018	$ 80.60	$ 75.92
7/16/2018	$ 78.75	$ 76.69
7/23/2018	$ 78.74	$ 75.85
7/30/2018	$ 77.61	$ 75.00
8/6/2018	$ 78.58	$ 75.61
8/13/2018	$ 79.42	$ 77.00
8/20/2018	$ 79.39	$ 75.61
8/27/2018	$ 76.56	$ 74.47
9/3/2018	$ 76.67	$ 75.08
9/10/2018	$ 76.10	$ 74.93
9/17/2018	$ 77.33	$ 74.13
9/24/2018	$ 76.75	$ 73.39
10/1/2018	$ 76.00	$ 73.49
10/8/2018	$ 78.60	$ 74.33
10/15/2018	$ 77.45	$ 74.61
10/22/2018	$ 78.09	$ 74.90
10/29/2018	$ 76.56	$ 72.75
11/5/2018	$ 77.62	$ 73.59
11/12/2018	$ 80.09	$ 76.30
11/19/2018	$ 80.94	$ 78.39
11/26/2018	$ 81.59	$ 78.36
12/3/2018	$ 82.82	$ 79.01
12/10/2018	$ 81.67	$ 79.21
12/17/2018	$ 81.01	$ 76.30
12/24/2018	$ 77.81	$ 72.42
12/31/2018	$ 76.29	$ 72.88
1/7/2019	$ 75.91	$ 73.32
1/14/2019	$ 76.07	$ 72.50
1/21/2019	$ 76.93	$ 73.92
1/28/2019	$ 77.04	$ 73.87
2/4/2019	$ 79.66	$ 74.55
2/11/2019	$ 80.34	$ 75.66
2/18/2019	$ 82.46	$ 79.35
2/25/2019	$ 82.95	$ 80.40
3/4/2019	$ 83.53	$ 81.18
3/11/2019	$ 84.26	$ 82.07
3/18/2019	$ 83.82	$ 81.32
3/25/2019	$ 83.63	$ 81.30
4/1/2019	$ 82.33	$ 80.80
Min/Max/Mean	$ 70.41	$ 84.26

Allete Inc.	**ALE**	
Mean of all	$ 77.05	
Min		$ 70.41
Max	$ 84.26	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 41.45	$ 40.34
4/9/2018	$ 41.36	$ 40.38
4/16/2018	$ 42.30	$ 41.23
4/23/2018	$ 43.13	$ 41.45
4/30/2018	$ 43.47	$ 42.04
5/7/2018	$ 43.29	$ 41.02
5/14/2018	$ 41.78	$ 40.30
5/21/2018	$ 40.94	$ 40.11
5/28/2018	$ 41.81	$ 40.47
6/4/2018	$ 40.76	$ 38.99
6/11/2018	$ 40.08	$ 38.22
6/18/2018	$ 41.28	$ 39.86
6/25/2018	$ 42.78	$ 41.07
7/2/2018	$ 43.95	$ 42.15
7/9/2018	$ 43.77	$ 41.79
7/16/2018	$ 43.35	$ 42.20
7/23/2018	$ 43.42	$ 41.41
7/30/2018	$ 43.06	$ 41.39
8/6/2018	$ 43.38	$ 42.25
8/13/2018	$ 43.84	$ 42.24
8/20/2018	$ 43.77	$ 42.71
8/27/2018	$ 43.35	$ 42.51
9/3/2018	$ 44.00	$ 42.71
9/10/2018	$ 44.05	$ 43.23
9/17/2018	$ 44.18	$ 42.47
9/24/2018	$ 43.31	$ 41.73
10/1/2018	$ 43.74	$ 42.03
10/8/2018	$ 44.70	$ 42.01
10/15/2018	$ 44.23	$ 42.29
10/22/2018	$ 44.57	$ 42.52
10/29/2018	$ 43.75	$ 42.22
11/5/2018	$ 44.74	$ 42.59
11/12/2018	$ 45.73	$ 44.12
11/19/2018	$ 46.05	$ 43.84
11/26/2018	$ 45.41	$ 43.78
12/3/2018	$ 46.58	$ 44.74
12/10/2018	$ 46.50	$ 44.95
12/17/2018	$ 45.47	$ 43.25
12/24/2018	$ 43.59	$ 40.68
12/31/2018	$ 43.12	$ 40.89
1/7/2019	$ 42.56	$ 41.12
1/14/2019	$ 42.98	$ 40.75
1/21/2019	$ 43.97	$ 42.57
1/28/2019	$ 44.55	$ 42.51
2/4/2019	$ 45.06	$ 43.12
2/11/2019	$ 45.25	$ 44.59
2/18/2019	$ 45.80	$ 44.72
2/25/2019	$ 46.18	$ 45.09
3/4/2019	$ 46.48	$ 45.68
3/11/2019	$ 47.48	$ 46.30
3/18/2019	$ 47.89	$ 46.27
3/25/2019	$ 47.91	$ 46.67
4/1/2019	$ 47.14	$ 46.14
Min/Max/Mean	$ 38.22	$ 47.91

Alliant Energy Corp LNT

Mean of all	$ 43.24	
Min		$ 38.22
Max	$ 47.91	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 57.92	$ 56.15
4/9/2018	$ 57.55	$ 55.01
4/16/2018	$ 57.49	$ 55.67
4/23/2018	$ 58.72	$ 56.30
4/30/2018	$ 59.18	$ 57.65
5/7/2018	$ 58.98	$ 56.07
5/14/2018	$ 57.06	$ 55.72
5/21/2018	$ 59.23	$ 55.80
5/28/2018	$ 59.79	$ 58.06
6/4/2018	$ 58.59	$ 56.19
6/11/2018	$ 57.02	$ 55.21
6/18/2018	$ 58.82	$ 56.97
6/25/2018	$ 61.25	$ 58.74
7/2/2018	$ 62.15	$ 60.49
7/9/2018	$ 62.02	$ 59.15
7/16/2018	$ 61.98	$ 60.73
7/23/2018	$ 62.41	$ 59.94
7/30/2018	$ 62.76	$ 60.78
8/6/2018	$ 63.41	$ 61.96
8/13/2018	$ 64.96	$ 62.60
8/20/2018	$ 65.09	$ 63.27
8/27/2018	$ 64.21	$ 62.81
9/3/2018	$ 65.87	$ 63.40
9/10/2018	$ 66.11	$ 64.58
9/17/2018	$ 65.54	$ 63.14
9/24/2018	$ 64.51	$ 62.06
10/1/2018	$ 65.29	$ 62.70
10/8/2018	$ 67.06	$ 63.09
10/15/2018	$ 66.34	$ 63.52
10/22/2018	$ 67.23	$ 63.84
10/29/2018	$ 65.81	$ 63.32
11/5/2018	$ 67.50	$ 63.83
11/12/2018	$ 70.36	$ 67.16
11/19/2018	$ 70.68	$ 67.20
11/26/2018	$ 68.99	$ 67.06
12/3/2018	$ 70.95	$ 67.91
12/10/2018	$ 70.94	$ 69.30
12/17/2018	$ 70.09	$ 66.11
12/24/2018	$ 67.44	$ 62.51
12/31/2018	$ 65.28	$ 63.13
1/7/2019	$ 65.89	$ 63.68
1/14/2019	$ 67.38	$ 64.17
1/21/2019	$ 69.03	$ 66.74
1/28/2019	$ 69.62	$ 66.97
2/4/2019	$ 70.48	$ 67.90
2/11/2019	$ 71.08	$ 68.26
2/18/2019	$ 72.18	$ 69.53
2/25/2019	$ 72.36	$ 69.80
3/4/2019	$ 71.90	$ 70.42
3/11/2019	$ 73.32	$ 71.81
3/18/2019	$ 74.45	$ 71.57
3/25/2019	$ 74.91	$ 73.01
4/1/2019	$ 73.77	$ 71.85
Min/Max/Mean	$ 55.01	$ 74.91

Ameren Corp.	**AEE**	
Mean of all	$ 64.32	
Min		$ 55.01
Max	$ 74.91	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 69.42	$ 67.69
4/9/2018	$ 69.14	$ 66.46
4/16/2018	$ 69.67	$ 67.42
4/23/2018	$ 70.98	$ 68.19
4/30/2018	$ 70.81	$ 68.52
5/7/2018	$ 69.45	$ 66.03
5/14/2018	$ 67.40	$ 64.46
5/21/2018	$ 67.40	$ 64.58
5/28/2018	$ 68.43	$ 66.43
6/4/2018	$ 67.12	$ 63.67
6/11/2018	$ 65.13	$ 62.71
6/18/2018	$ 67.82	$ 64.94
6/25/2018	$ 70.30	$ 67.57
7/2/2018	$ 71.73	$ 69.12
7/9/2018	$ 71.45	$ 68.24
7/16/2018	$ 71.17	$ 69.71
7/23/2018	$ 71.89	$ 68.13
7/30/2018	$ 71.49	$ 69.32
8/6/2018	$ 71.79	$ 70.26
8/13/2018	$ 72.91	$ 70.55
8/20/2018	$ 72.64	$ 70.51
8/27/2018	$ 72.29	$ 70.87
9/3/2018	$ 73.65	$ 71.87
9/10/2018	$ 73.74	$ 71.87
9/17/2018	$ 72.87	$ 70.12
9/24/2018	$ 71.44	$ 68.92
10/1/2018	$ 72.11	$ 69.31
10/8/2018	$ 73.89	$ 70.31
10/15/2018	$ 73.40	$ 70.59
10/22/2018	$ 76.05	$ 72.09
10/29/2018	$ 74.88	$ 72.07
11/5/2018	$ 75.49	$ 72.73
11/12/2018	$ 77.79	$ 74.93
11/19/2018	$ 78.47	$ 75.36
11/26/2018	$ 77.80	$ 75.02
12/3/2018	$ 79.77	$ 76.58
12/10/2018	$ 81.05	$ 78.11
12/17/2018	$ 80.43	$ 76.22
12/24/2018	$ 77.22	$ 72.53
12/31/2018	$ 75.09	$ 72.26
1/7/2019	$ 74.80	$ 72.44
1/14/2019	$ 76.50	$ 72.95
1/21/2019	$ 78.10	$ 75.52
1/28/2019	$ 79.61	$ 76.30
2/4/2019	$ 80.09	$ 78.15
2/11/2019	$ 80.85	$ 79.02
2/18/2019	$ 81.76	$ 79.13
2/25/2019	$ 81.72	$ 79.91
3/4/2019	$ 82.20	$ 80.66
3/11/2019	$ 84.27	$ 81.95
3/18/2019	$ 85.71	$ 82.08
3/25/2019	$ 86.10	$ 83.28
4/1/2019	$ 83.96	$ 82.23
Min/Max/Mean	$ 62.71	$ 86.10

American Electric P AEP		
Mean of all	$ 73.41	
Min		**$ 62.71**
Max	**$ 86.10**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 51.68	$ 50.36
4/9/2018	$ 51.41	$ 49.58
4/16/2018	$ 52.18	$ 50.26
4/23/2018	$ 53.00	$ 50.60
4/30/2018	$ 54.55	$ 52.45
5/7/2018	$ 54.49	$ 51.80
5/14/2018	$ 52.76	$ 51.31
5/21/2018	$ 53.63	$ 51.50
5/28/2018	$ 53.64	$ 52.02
6/4/2018	$ 52.60	$ 49.92
6/11/2018	$ 50.65	$ 49.60
6/18/2018	$ 51.69	$ 50.32
6/25/2018	$ 53.10	$ 51.47
7/2/2018	$ 54.18	$ 52.49
7/9/2018	$ 54.16	$ 51.80
7/16/2018	$ 53.22	$ 52.10
7/23/2018	$ 52.58	$ 48.75
7/30/2018	$ 51.09	$ 49.28
8/6/2018	$ 51.21	$ 49.96
8/13/2018	$ 50.56	$ 49.00
8/20/2018	$ 50.77	$ 49.46
8/27/2018	$ 50.21	$ 49.26
9/3/2018	$ 50.67	$ 49.30
9/10/2018	$ 50.09	$ 49.12
9/17/2018	$ 50.16	$ 48.67
9/24/2018	$ 49.05	$ 46.96
10/1/2018	$ 48.43	$ 46.11
10/8/2018	$ 48.23	$ 45.81
10/15/2018	$ 49.01	$ 46.17
10/22/2018	$ 49.55	$ 46.94
10/29/2018	$ 48.04	$ 46.01
11/5/2018	$ 49.13	$ 47.00
11/12/2018	$ 50.43	$ 48.58
11/19/2018	$ 51.11	$ 48.71
11/26/2018	$ 50.51	$ 48.88
12/3/2018	$ 52.41	$ 49.88
12/10/2018	$ 53.47	$ 50.96
12/17/2018	$ 53.35	$ 50.39
12/24/2018	$ 51.22	$ 48.04
12/31/2018	$ 50.22	$ 48.18
1/7/2019	$ 49.46	$ 48.07
1/14/2019	$ 49.58	$ 47.45
1/21/2019	$ 49.80	$ 48.32
1/28/2019	$ 49.95	$ 48.42
2/4/2019	$ 50.65	$ 49.09
2/11/2019	$ 50.99	$ 50.01
2/18/2019	$ 51.35	$ 47.78
2/25/2019	$ 49.58	$ 48.15
3/4/2019	$ 48.80	$ 48.03
3/11/2019	$ 49.88	$ 48.27
3/18/2019	$ 50.26	$ 48.57
3/25/2019	$ 50.68	$ 49.77
4/1/2019	$ 50.62	$ 49.89
Min/Max/Mean	$ 45.81	$ 54.55

AVANGRID Inc.	**AGR**	
Mean of all	$ 50.20	
Min		**$ 45.81**
Max	**$ 54.55**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 45.81	$ 44.80
4/9/2018	$ 45.43	$ 43.79
4/16/2018	$ 45.61	$ 44.34
4/23/2018	$ 47.39	$ 45.15
4/30/2018	$ 47.48	$ 45.95
5/7/2018	$ 46.44	$ 44.59
5/14/2018	$ 45.46	$ 43.80
5/21/2018	$ 45.81	$ 43.72
5/28/2018	$ 46.40	$ 45.12
6/4/2018	$ 45.51	$ 43.03
6/11/2018	$ 44.17	$ 42.52
6/18/2018	$ 45.63	$ 44.04
6/25/2018	$ 47.58	$ 45.50
7/2/2018	$ 48.63	$ 47.24
7/9/2018	$ 48.68	$ 46.29
7/16/2018	$ 48.11	$ 46.98
7/23/2018	$ 48.52	$ 46.25
7/30/2018	$ 48.42	$ 47.18
8/6/2018	$ 48.98	$ 47.80
8/13/2018	$ 50.12	$ 48.26
8/20/2018	$ 50.05	$ 48.84
8/27/2018	$ 49.74	$ 48.59
9/3/2018	$ 50.73	$ 49.28
9/10/2018	$ 50.81	$ 49.82
9/17/2018	$ 50.46	$ 48.46
9/24/2018	$ 49.49	$ 47.70
10/1/2018	$ 49.99	$ 48.13
10/8/2018	$ 51.36	$ 48.43
10/15/2018	$ 50.91	$ 48.74
10/22/2018	$ 51.91	$ 49.03
10/29/2018	$ 50.24	$ 47.92
11/5/2018	$ 50.28	$ 48.17
11/12/2018	$ 51.34	$ 49.68
11/19/2018	$ 52.25	$ 50.55
11/26/2018	$ 52.13	$ 50.32
12/3/2018	$ 53.35	$ 51.29
12/10/2018	$ 53.82	$ 52.17
12/17/2018	$ 53.16	$ 50.43
12/24/2018	$ 51.39	$ 47.63
12/31/2018	$ 49.74	$ 47.97
1/7/2019	$ 49.88	$ 48.32
1/14/2019	$ 51.21	$ 48.79
1/21/2019	$ 51.86	$ 50.49
1/28/2019	$ 52.36	$ 50.08
2/4/2019	$ 52.98	$ 51.13
2/11/2019	$ 53.14	$ 51.91
2/18/2019	$ 54.21	$ 52.41
2/25/2019	$ 54.56	$ 53.41
3/4/2019	$ 54.70	$ 53.61
3/11/2019	$ 55.68	$ 54.56
3/18/2019	$ 55.93	$ 54.19
3/25/2019	$ 56.30	$ 54.89
4/1/2019	$ 55.60	$ 54.34
Min/Max/Mean	$ 42.52	$ 56.30

CMS Energy Corp.	**CMS**	
Mean of all	$ 49.33	
Min		**$ 42.52**
Max	**$ 56.30**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 78.90	$ 76.71
4/9/2018	$ 79.05	$ 75.96
4/16/2018	$ 79.42	$ 76.80
4/23/2018	$ 80.75	$ 77.57
4/30/2018	$ 80.85	$ 78.82
5/7/2018	$ 80.13	$ 76.88
5/14/2018	$ 78.22	$ 73.13
5/21/2018	$ 76.02	$ 73.35
5/28/2018	$ 77.57	$ 75.49
6/4/2018	$ 76.50	$ 72.83
6/11/2018	$ 74.40	$ 71.96
6/18/2018	$ 77.67	$ 74.04
6/25/2018	$ 80.15	$ 77.47
7/2/2018	$ 81.70	$ 78.90
7/9/2018	$ 81.59	$ 77.90
7/16/2018	$ 81.75	$ 79.90
7/23/2018	$ 81.70	$ 78.78
7/30/2018	$ 81.72	$ 79.51
8/6/2018	$ 82.22	$ 80.00
8/13/2018	$ 82.72	$ 80.52
8/20/2018	$ 82.57	$ 80.54
8/27/2018	$ 81.80	$ 80.16
9/3/2018	$ 83.77	$ 81.24
9/10/2018	$ 83.23	$ 80.55
9/17/2018	$ 82.50	$ 78.53
9/24/2018	$ 80.06	$ 78.00
10/1/2018	$ 81.72	$ 78.52
10/8/2018	$ 83.31	$ 79.01
10/15/2018	$ 83.42	$ 79.71
10/22/2018	$ 85.08	$ 81.42
10/29/2018	$ 84.23	$ 80.89
11/5/2018	$ 85.77	$ 82.68
11/12/2018	$ 87.10	$ 84.04
11/19/2018	$ 89.23	$ 86.12
11/26/2018	$ 88.73	$ 86.26
12/3/2018	$ 90.70	$ 87.20
12/10/2018	$ 91.35	$ 88.80
12/17/2018	$ 91.30	$ 86.37
12/24/2018	$ 88.39	$ 82.77
12/31/2018	$ 86.60	$ 84.06
1/7/2019	$ 86.17	$ 84.21
1/14/2019	$ 86.02	$ 82.46
1/21/2019	$ 86.99	$ 84.85
1/28/2019	$ 88.48	$ 85.13
2/4/2019	$ 90.58	$ 86.48
2/11/2019	$ 90.74	$ 87.02
2/18/2019	$ 90.29	$ 87.24
2/25/2019	$ 89.99	$ 88.19
3/4/2019	$ 90.65	$ 88.98
3/11/2019	$ 91.08	$ 89.88
3/18/2019	$ 91.67	$ 88.66
3/25/2019	$ 91.67	$ 88.81
4/1/2019	$ 89.83	$ 88.22
Min/Max/Mean	$ 71.96	$ 91.67

Duke Energy Corp. DUK		
Mean of all	$ 82.84	
Min		**$ 71.96**
Max	**$ 91.67**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 50.75	$ 49.60
4/9/2018	$ 50.50	$ 48.50
4/16/2018	$ 50.40	$ 48.90
4/23/2018	$ 51.55	$ 49.05
4/30/2018	$ 56.90	$ 49.45
5/7/2018	$ 56.65	$ 54.50
5/14/2018	$ 56.80	$ 54.33
5/21/2018	$ 58.25	$ 55.20
5/28/2018	$ 59.13	$ 57.65
6/4/2018	$ 59.15	$ 55.60
6/11/2018	$ 56.20	$ 54.75
6/18/2018	$ 58.85	$ 55.80
6/25/2018	$ 59.35	$ 57.70
7/2/2018	$ 61.00	$ 58.25
7/9/2018	$ 60.85	$ 58.65
7/16/2018	$ 61.85	$ 59.50
7/23/2018	$ 62.05	$ 60.20
7/30/2018	$ 63.00	$ 60.80
8/6/2018	$ 64.35	$ 61.60
8/13/2018	$ 64.10	$ 62.25
8/20/2018	$ 64.10	$ 62.30
8/27/2018	$ 63.20	$ 60.95
9/3/2018	$ 63.05	$ 61.05
9/10/2018	$ 62.60	$ 60.15
9/17/2018	$ 62.25	$ 58.30
9/24/2018	$ 59.05	$ 56.88
10/1/2018	$ 59.33	$ 55.95
10/8/2018	$ 60.07	$ 57.21
10/15/2018	$ 60.14	$ 57.22
10/22/2018	$ 60.22	$ 56.21
10/29/2018	$ 59.09	$ 56.48
11/5/2018	$ 58.79	$ 57.22
11/12/2018	$ 59.27	$ 55.88
11/19/2018	$ 57.73	$ 54.75
11/26/2018	$ 56.40	$ 54.45
12/3/2018	$ 57.33	$ 51.57
12/10/2018	$ 56.18	$ 53.46
12/17/2018	$ 55.44	$ 51.91
12/24/2018	$ 52.10	$ 48.38
12/31/2018	$ 50.17	$ 48.06
1/7/2019	$ 50.38	$ 48.76
1/14/2019	$ 50.97	$ 47.99
1/21/2019	$ 52.41	$ 50.40
1/28/2019	$ 52.62	$ 50.58
2/4/2019	$ 53.67	$ 51.31
2/11/2019	$ 53.69	$ 52.10
2/18/2019	$ 55.22	$ 53.26
2/25/2019	$ 58.00	$ 52.83
3/4/2019	$ 58.49	$ 56.80
3/11/2019	$ 59.71	$ 58.26
3/18/2019	$ 58.80	$ 57.12
3/25/2019	$ 58.88	$ 57.30
4/1/2019	$ 59.26	$ 57.94
Min/Max/Mean	$ 47.99	$ 64.35

El Paso Electric Co. EE

Mean of all	$ 56.47	
Min		**$ 47.99**
Max	**$ 64.35**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 88.05	$ 85.84
4/9/2018	$ 87.86	$ 84.82
4/16/2018	$ 89.83	$ 85.85
4/23/2018	$ 94.16	$ 89.23
4/30/2018	$ 96.01	$ 91.84
5/7/2018	$ 94.34	$ 90.08
5/14/2018	$ 91.71	$ 87.34
5/21/2018	$ 91.23	$ 87.66
5/28/2018	$ 93.56	$ 87.03
6/4/2018	$ 91.43	$ 86.28
6/11/2018	$ 88.56	$ 85.23
6/18/2018	$ 91.63	$ 88.28
6/25/2018	$ 93.28	$ 91.40
7/2/2018	$ 94.76	$ 91.79
7/9/2018	$ 94.51	$ 90.92
7/16/2018	$ 94.72	$ 91.55
7/23/2018	$ 95.35	$ 91.62
7/30/2018	$ 94.64	$ 92.03
8/6/2018	$ 97.65	$ 94.35
8/13/2018	$ 99.26	$ 95.72
8/20/2018	$ 99.28	$ 96.45
8/27/2018	$ 98.90	$ 95.76
9/3/2018	$ 100.84	$ 97.40
9/10/2018	$ 100.89	$ 99.26
9/17/2018	$ 101.49	$ 97.69
9/24/2018	$ 99.90	$ 96.81
10/1/2018	$ 100.11	$ 97.38
10/8/2018	$ 101.89	$ 94.89
10/15/2018	$ 98.87	$ 94.79
10/22/2018	$ 99.49	$ 93.89
10/29/2018	$ 98.00	$ 92.94
11/5/2018	$ 98.96	$ 94.88
11/12/2018	$ 100.30	$ 97.00
11/19/2018	$ 101.41	$ 97.75
11/26/2018	$ 99.81	$ 96.57
12/3/2018	$ 101.07	$ 97.11
12/10/2018	$ 102.44	$ 98.82
12/17/2018	$ 101.08	$ 96.04
12/24/2018	$ 97.22	$ 89.91
12/31/2018	$ 93.14	$ 89.31
1/7/2019	$ 95.56	$ 89.65
1/14/2019	$ 95.73	$ 91.71
1/21/2019	$ 96.60	$ 92.63
1/28/2019	$ 97.69	$ 93.41
2/4/2019	$ 99.11	$ 95.03
2/11/2019	$ 99.30	$ 96.57
2/18/2019	$ 100.19	$ 97.59
2/25/2019	$ 99.25	$ 97.33
3/4/2019	$ 100.37	$ 98.13
3/11/2019	$ 102.01	$ 98.99
3/18/2019	$ 101.11	$ 97.72
3/25/2019	$ 101.16	$ 98.50
4/1/2019	$ 100.00	$ 97.81
Min/Max/Mean	$ 84.82	$ 102.44

IDACORP Inc.	**IDA**
Mean of all	$ 95.23
Min	**$ 84.82**
Max	**$ 102.44**

Source: YahooFinance

Date	High	Low
4/2/2018	$ 57.00	$ 55.52
4/9/2018	$ 57.05	$ 55.75
4/16/2018	$ 58.60	$ 55.96
4/23/2018	$ 58.60	$ 57.18
4/30/2018	$ 59.95	$ 57.90
5/7/2018	$ 59.80	$ 57.80
5/14/2018	$ 58.20	$ 56.10
5/21/2018	$ 59.30	$ 57.02
5/28/2018	$ 60.70	$ 58.05
6/4/2018	$ 58.80	$ 56.10
6/11/2018	$ 59.65	$ 55.30
6/18/2018	$ 61.60	$ 58.49
6/25/2018	$ 63.60	$ 61.15
7/2/2018	$ 66.25	$ 63.15
7/9/2018	$ 66.00	$ 62.79
7/16/2018	$ 64.30	$ 62.11
7/23/2018	$ 63.80	$ 61.90
7/30/2018	$ 64.95	$ 62.75
8/6/2018	$ 65.65	$ 64.22
8/13/2018	$ 67.30	$ 64.80
8/20/2018	$ 67.40	$ 65.45
8/27/2018	$ 65.95	$ 64.20
9/3/2018	$ 66.95	$ 64.70
9/10/2018	$ 67.25	$ 65.60
9/17/2018	$ 68.05	$ 64.45
9/24/2018	$ 64.90	$ 62.45
10/1/2018	$ 64.35	$ 61.90
10/8/2018	$ 66.39	$ 60.89
10/15/2018	$ 63.49	$ 60.57
10/22/2018	$ 64.33	$ 61.35
10/29/2018	$ 64.23	$ 60.29
11/5/2018	$ 63.25	$ 61.20
11/12/2018	$ 64.84	$ 62.20
11/19/2018	$ 65.01	$ 63.14
11/26/2018	$ 66.26	$ 63.16
12/3/2018	$ 67.27	$ 64.00
12/10/2018	$ 68.52	$ 64.70
12/17/2018	$ 68.95	$ 65.74
12/24/2018	$ 66.37	$ 56.64
12/31/2018	$ 60.16	$ 57.83
1/7/2019	$ 59.97	$ 57.70
1/14/2019	$ 61.30	$ 56.74
1/21/2019	$ 66.16	$ 60.46
1/28/2019	$ 64.46	$ 61.45
2/4/2019	$ 64.96	$ 62.84
2/11/2019	$ 65.68	$ 63.92
2/18/2019	$ 66.81	$ 64.63
2/25/2019	$ 66.71	$ 63.53
3/4/2019	$ 65.61	$ 63.31
3/11/2019	$ 66.92	$ 63.98
3/18/2019	$ 67.48	$ 65.33
3/25/2019	$ 68.61	$ 65.30
4/1/2019	$ 68.23	$ 66.57
Min/Max/Mean	$ 55.30	$ 68.95

MGE Energy Inc.	**MGEE**	
Mean of all	$ 62.72	
Min		**$ 55.30**
Max	**$ 68.95**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 164.43	$ 160.45
4/9/2018	$ 163.42	$ 158.65
4/16/2018	$ 165.15	$ 160.14
4/23/2018	$ 164.41	$ 159.61
4/30/2018	$ 165.13	$ 161.52
5/7/2018	$ 164.34	$ 157.86
5/14/2018	$ 161.13	$ 155.22
5/21/2018	$ 162.99	$ 157.00
5/28/2018	$ 166.62	$ 161.65
6/4/2018	$ 163.09	$ 155.46
6/11/2018	$ 159.65	$ 155.06
6/18/2018	$ 164.57	$ 159.15
6/25/2018	$ 169.53	$ 164.40
7/2/2018	$ 170.65	$ 167.01
7/9/2018	$ 170.39	$ 163.51
7/16/2018	$ 171.50	$ 168.35
7/23/2018	$ 170.56	$ 166.22
7/30/2018	$ 171.93	$ 165.45
8/6/2018	$ 173.06	$ 169.19
8/13/2018	$ 175.65	$ 171.00
8/20/2018	$ 175.61	$ 171.08
8/27/2018	$ 173.80	$ 169.40
9/3/2018	$ 174.81	$ 169.21
9/10/2018	$ 174.69	$ 171.65
9/17/2018	$ 174.23	$ 166.42
9/24/2018	$ 170.52	$ 164.25
10/1/2018	$ 172.77	$ 166.19
10/8/2018	$ 175.66	$ 167.88
10/15/2018	$ 174.49	$ 168.47
10/22/2018	$ 176.83	$ 168.71
10/29/2018	$ 174.54	$ 166.75
11/5/2018	$ 177.04	$ 168.17
11/12/2018	$ 180.60	$ 174.66
11/19/2018	$ 183.65	$ 175.30
11/26/2018	$ 182.03	$ 174.87
12/3/2018	$ 184.20	$ 178.68
12/10/2018	$ 183.84	$ 179.68
12/17/2018	$ 182.36	$ 172.39
12/24/2018	$ 175.38	$ 164.78
12/31/2018	$ 174.03	$ 168.66
1/7/2019	$ 176.14	$ 170.50
1/14/2019	$ 176.61	$ 169.35
1/21/2019	$ 180.88	$ 173.92
1/28/2019	$ 179.29	$ 171.74
2/4/2019	$ 183.37	$ 176.13
2/11/2019	$ 185.11	$ 181.68
2/18/2019	$ 188.14	$ 183.40
2/25/2019	$ 189.39	$ 186.06
3/4/2019	$ 189.43	$ 186.57
3/11/2019	$ 192.17	$ 188.46
3/18/2019	$ 195.55	$ 187.79
3/25/2019	$ 195.33	$ 191.30
4/1/2019	$ 193.75	$ 187.89
Min/Max/Mean	$ 155.06	$ 195.55

NextEra Energy Inc. NEE		
Mean of all	$ 172.67	
Min		**$ 155.06**
Max	**$ 195.55**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 54.51	$ 52.75
4/9/2018	$ 54.33	$ 52.74
4/16/2018	$ 55.20	$ 53.45
4/23/2018	$ 55.65	$ 53.72
4/30/2018	$ 55.80	$ 54.15
5/7/2018	$ 55.67	$ 52.95
5/14/2018	$ 53.99	$ 52.77
5/21/2018	$ 54.63	$ 52.88
5/28/2018	$ 55.10	$ 52.98
6/4/2018	$ 53.89	$ 51.53
6/11/2018	$ 54.33	$ 51.53
6/18/2018	$ 56.81	$ 54.16
6/25/2018	$ 57.74	$ 56.64
7/2/2018	$ 59.14	$ 56.84
7/9/2018	$ 59.04	$ 55.98
7/16/2018	$ 58.82	$ 57.33
7/23/2018	$ 59.92	$ 57.91
7/30/2018	$ 59.46	$ 58.03
8/6/2018	$ 60.23	$ 58.58
8/13/2018	$ 61.99	$ 59.06
8/20/2018	$ 62.16	$ 60.29
8/27/2018	$ 60.97	$ 59.41
9/3/2018	$ 60.96	$ 59.54
9/10/2018	$ 60.97	$ 58.89
9/17/2018	$ 60.37	$ 57.77
9/24/2018	$ 59.14	$ 56.93
10/1/2018	$ 60.67	$ 58.06
10/8/2018	$ 62.19	$ 58.12
10/15/2018	$ 61.14	$ 58.28
10/22/2018	$ 61.12	$ 56.23
10/29/2018	$ 60.28	$ 58.22
11/5/2018	$ 61.88	$ 59.05
11/12/2018	$ 64.58	$ 61.45
11/19/2018	$ 64.76	$ 62.59
11/26/2018	$ 64.36	$ 62.80
12/3/2018	$ 65.74	$ 62.75
12/10/2018	$ 65.05	$ 63.51
12/17/2018	$ 64.42	$ 61.02
12/24/2018	$ 61.61	$ 57.28
12/31/2018	$ 59.48	$ 57.33
1/7/2019	$ 61.26	$ 58.50
1/14/2019	$ 62.31	$ 59.39
1/21/2019	$ 62.87	$ 60.94
1/28/2019	$ 64.11	$ 61.26
2/4/2019	$ 65.23	$ 62.32
2/11/2019	$ 67.80	$ 64.66
2/18/2019	$ 67.45	$ 65.38
2/25/2019	$ 69.32	$ 66.85
3/4/2019	$ 70.30	$ 68.54
3/11/2019	$ 71.02	$ 69.78
3/18/2019	$ 71.64	$ 69.36
3/25/2019	$ 71.77	$ 69.83
4/1/2019	$ 70.89	$ 69.75
Min/Max/Mean	$ 51.53	$ 71.77

NorthWestern Corp. NWE		
Mean of all	$ 60.25	
Min		**$ 51.53**
Max	**$ 71.77**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 32.98	$ 32.03
4/9/2018	$ 32.31	$ 31.49
4/16/2018	$ 32.91	$ 31.69
4/23/2018	$ 33.16	$ 32.38
4/30/2018	$ 34.37	$ 32.70
5/7/2018	$ 34.59	$ 33.46
5/14/2018	$ 34.30	$ 33.22
5/21/2018	$ 34.49	$ 33.29
5/28/2018	$ 35.42	$ 34.17
6/4/2018	$ 34.81	$ 33.48
6/11/2018	$ 34.61	$ 33.19
6/18/2018	$ 35.08	$ 34.11
6/25/2018	$ 35.54	$ 34.77
7/2/2018	$ 35.79	$ 34.94
7/9/2018	$ 35.47	$ 34.13
7/16/2018	$ 36.59	$ 35.06
7/23/2018	$ 36.47	$ 35.23
7/30/2018	$ 36.43	$ 35.58
8/6/2018	$ 37.37	$ 35.96
8/13/2018	$ 37.69	$ 36.23
8/20/2018	$ 37.68	$ 36.63
8/27/2018	$ 37.14	$ 36.72
9/3/2018	$ 37.61	$ 36.65
9/10/2018	$ 37.74	$ 37.01
9/17/2018	$ 37.45	$ 35.99
9/24/2018	$ 36.75	$ 35.29
10/1/2018	$ 37.16	$ 35.95
10/8/2018	$ 37.98	$ 35.91
10/15/2018	$ 38.13	$ 36.32
10/22/2018	$ 37.98	$ 36.17
10/29/2018	$ 37.42	$ 35.55
11/5/2018	$ 38.33	$ 35.93
11/12/2018	$ 39.94	$ 37.71
11/19/2018	$ 39.97	$ 38.48
11/26/2018	$ 39.65	$ 38.60
12/3/2018	$ 40.65	$ 39.31
12/10/2018	$ 41.72	$ 39.93
12/17/2018	$ 41.80	$ 39.37
12/24/2018	$ 40.08	$ 37.67
12/31/2018	$ 39.32	$ 38.04
1/7/2019	$ 40.14	$ 38.79
1/14/2019	$ 40.59	$ 38.92
1/21/2019	$ 41.14	$ 39.85
1/28/2019	$ 41.19	$ 39.86
2/4/2019	$ 41.48	$ 40.17
2/11/2019	$ 42.07	$ 41.25
2/18/2019	$ 42.87	$ 41.45
2/25/2019	$ 42.75	$ 41.73
3/4/2019	$ 42.62	$ 41.87
3/11/2019	$ 43.16	$ 42.29
3/18/2019	$ 43.34	$ 41.82
3/25/2019	$ 43.76	$ 42.70
4/1/2019	$ 43.25	$ 42.39
Min/Max/Mean	$ 31.49	$ 43.76

OGE Energy Corp.	**OGE**	
Mean of all	$ 37.52	
Min		**$ 31.49**
Max	**$ 43.76**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 80.54	$ 78.86
4/9/2018	$ 80.37	$ 77.14
4/16/2018	$ 80.73	$ 77.55
4/23/2018	$ 81.85	$ 77.95
4/30/2018	$ 81.61	$ 78.24
5/7/2018	$ 80.48	$ 76.96
5/14/2018	$ 78.39	$ 75.97
5/21/2018	$ 78.63	$ 75.82
5/28/2018	$ 80.29	$ 77.48
6/4/2018	$ 77.86	$ 73.90
6/11/2018	$ 76.21	$ 73.41
6/18/2018	$ 78.44	$ 75.69
6/25/2018	$ 81.25	$ 78.24
7/2/2018	$ 83.05	$ 80.57
7/9/2018	$ 83.04	$ 78.66
7/16/2018	$ 81.17	$ 79.24
7/23/2018	$ 81.28	$ 77.56
7/30/2018	$ 80.89	$ 78.95
8/6/2018	$ 82.38	$ 80.29
8/13/2018	$ 82.83	$ 80.78
8/20/2018	$ 82.60	$ 80.22
8/27/2018	$ 81.32	$ 78.27
9/3/2018	$ 80.60	$ 78.61
9/10/2018	$ 80.46	$ 79.32
9/17/2018	$ 81.12	$ 78.38
9/24/2018	$ 80.35	$ 77.19
10/1/2018	$ 81.95	$ 78.11
10/8/2018	$ 84.19	$ 80.22
10/15/2018	$ 85.68	$ 81.29
10/22/2018	$ 86.71	$ 82.03
10/29/2018	$ 84.26	$ 81.45
11/5/2018	$ 88.66	$ 82.31
11/12/2018	$ 89.95	$ 86.81
11/19/2018	$ 90.06	$ 87.15
11/26/2018	$ 89.88	$ 87.78
12/3/2018	$ 91.37	$ 88.38
12/10/2018	$ 92.64	$ 89.33
12/17/2018	$ 91.71	$ 87.53
12/24/2018	$ 89.39	$ 83.14
12/31/2018	$ 85.73	$ 82.41
1/7/2019	$ 86.30	$ 83.63
1/14/2019	$ 86.15	$ 81.63
1/21/2019	$ 88.12	$ 84.80
1/28/2019	$ 88.42	$ 85.85
2/4/2019	$ 89.50	$ 86.55
2/11/2019	$ 90.37	$ 88.96
2/18/2019	$ 93.49	$ 89.57
2/25/2019	$ 94.02	$ 92.25
3/4/2019	$ 93.68	$ 91.90
3/11/2019	$ 96.43	$ 92.92
3/18/2019	$ 97.27	$ 94.01
3/25/2019	$ 97.25	$ 94.40
4/1/2019	$ 95.41	$ 93.58
Min/Max/Mean	$ 73.41	$ 97.27

Pinnacle West Capit PNW		
Mean of all	$ 83.86	
Min		**$ 73.41**
Max	**$ 97.27**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 38.40	$ 37.40
4/9/2018	$ 38.35	$ 37.10
4/16/2018	$ 39.30	$ 37.85
4/23/2018	$ 40.73	$ 38.70
4/30/2018	$ 40.35	$ 38.35
5/7/2018	$ 40.15	$ 37.85
5/14/2018	$ 38.85	$ 37.60
5/21/2018	$ 39.65	$ 37.60
5/28/2018	$ 40.60	$ 39.00
6/4/2018	$ 39.35	$ 35.25
6/11/2018	$ 36.83	$ 34.95
6/18/2018	$ 38.85	$ 36.60
6/25/2018	$ 39.35	$ 38.50
7/2/2018	$ 39.85	$ 38.60
7/9/2018	$ 39.80	$ 37.60
7/16/2018	$ 38.55	$ 37.53
7/23/2018	$ 38.95	$ 37.17
7/30/2018	$ 39.90	$ 37.90
8/6/2018	$ 40.50	$ 39.50
8/13/2018	$ 40.95	$ 39.45
8/20/2018	$ 40.90	$ 39.20
8/27/2018	$ 39.55	$ 38.55
9/3/2018	$ 40.75	$ 38.70
9/10/2018	$ 39.92	$ 39.20
9/17/2018	$ 40.45	$ 38.65
9/24/2018	$ 39.50	$ 38.15
10/1/2018	$ 39.78	$ 38.59
10/8/2018	$ 40.59	$ 37.90
10/15/2018	$ 40.34	$ 38.08
10/22/2018	$ 40.55	$ 38.19
10/29/2018	$ 39.37	$ 37.67
11/5/2018	$ 41.11	$ 38.04
11/12/2018	$ 42.72	$ 40.09
11/19/2018	$ 43.12	$ 41.69
11/26/2018	$ 43.29	$ 41.77
12/3/2018	$ 44.41	$ 42.12
12/10/2018	$ 45.35	$ 43.31
12/17/2018	$ 44.39	$ 42.01
12/24/2018	$ 42.43	$ 39.52
12/31/2018	$ 41.12	$ 39.71
1/7/2019	$ 41.96	$ 39.98
1/14/2019	$ 42.02	$ 40.06
1/21/2019	$ 43.20	$ 41.49
1/28/2019	$ 42.73	$ 41.25
2/4/2019	$ 43.09	$ 41.14
2/11/2019	$ 43.58	$ 42.57
2/18/2019	$ 44.61	$ 43.29
2/25/2019	$ 44.93	$ 43.19
3/4/2019	$ 45.90	$ 44.04
3/11/2019	$ 47.39	$ 45.90
3/18/2019	$ 47.92	$ 45.66
3/25/2019	$ 47.85	$ 46.81
4/1/2019	$ 47.42	$ 45.87
Min/Max/Mean	$ 34.95	$ 47.92

PNM Resources Inc.	**PNM**	
Mean of all	$ 40.65	
Min		**$ 34.95**
Max	**$ 47.92**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 40.64	$ 39.65
4/9/2018	$ 40.54	$ 39.18
4/16/2018	$ 41.21	$ 40.07
4/23/2018	$ 42.59	$ 40.15
4/30/2018	$ 42.93	$ 41.63
5/7/2018	$ 42.81	$ 40.56
5/14/2018	$ 41.09	$ 39.66
5/21/2018	$ 41.92	$ 39.66
5/28/2018	$ 42.93	$ 41.46
6/4/2018	$ 42.41	$ 39.99
6/11/2018	$ 41.43	$ 39.60
6/18/2018	$ 42.59	$ 41.12
6/25/2018	$ 43.29	$ 42.39
7/2/2018	$ 44.37	$ 42.47
7/9/2018	$ 44.30	$ 42.10
7/16/2018	$ 45.15	$ 42.97
7/23/2018	$ 46.00	$ 43.32
7/30/2018	$ 45.67	$ 44.38
8/6/2018	$ 46.75	$ 45.26
8/13/2018	$ 47.51	$ 45.48
8/20/2018	$ 47.56	$ 45.94
8/27/2018	$ 46.97	$ 46.04
9/3/2018	$ 47.54	$ 46.32
9/10/2018	$ 47.38	$ 46.25
9/17/2018	$ 47.12	$ 45.13
9/24/2018	$ 45.67	$ 44.44
10/1/2018	$ 46.17	$ 44.67
10/8/2018	$ 47.53	$ 44.82
10/15/2018	$ 47.41	$ 44.95
10/22/2018	$ 47.09	$ 43.94
10/29/2018	$ 46.10	$ 44.40
11/5/2018	$ 46.87	$ 44.75
11/12/2018	$ 48.56	$ 46.30
11/19/2018	$ 49.21	$ 47.14
11/26/2018	$ 48.25	$ 47.30
12/3/2018	$ 50.13	$ 47.45
12/10/2018	$ 50.40	$ 48.89
12/17/2018	$ 49.19	$ 46.62
12/24/2018	$ 46.42	$ 43.73
12/31/2018	$ 45.85	$ 44.19
1/7/2019	$ 45.61	$ 44.09
1/14/2019	$ 46.10	$ 44.03
1/21/2019	$ 47.61	$ 45.76
1/28/2019	$ 48.49	$ 46.41
2/4/2019	$ 49.27	$ 47.17
2/11/2019	$ 49.50	$ 48.34
2/18/2019	$ 50.45	$ 48.39
2/25/2019	$ 50.42	$ 49.08
3/4/2019	$ 51.58	$ 50.03
3/11/2019	$ 52.60	$ 51.56
3/18/2019	$ 52.31	$ 50.70
3/25/2019	$ 52.59	$ 51.31
4/1/2019	$ 51.89	$ 51.19
Min/Max/Mean	$ 39.18	$ 52.60

Portland General El POR

Mean of all	$ 45.65	
Min		**$ 39.18**
Max	**$ 52.60**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 45.24	$ 43.97
4/9/2018	$ 45.06	$ 43.75
4/16/2018	$ 46.29	$ 44.09
4/23/2018	$ 46.75	$ 45.07
4/30/2018	$ 46.62	$ 45.62
5/7/2018	$ 46.19	$ 43.61
5/14/2018	$ 45.13	$ 42.42
5/21/2018	$ 44.64	$ 43.03
5/28/2018	$ 45.15	$ 43.96
6/4/2018	$ 44.60	$ 42.80
6/11/2018	$ 44.48	$ 42.73
6/18/2018	$ 45.93	$ 44.26
6/25/2018	$ 46.85	$ 45.73
7/2/2018	$ 47.85	$ 46.37
7/9/2018	$ 48.12	$ 46.02
7/16/2018	$ 48.24	$ 47.18
7/23/2018	$ 48.29	$ 46.66
7/30/2018	$ 49.03	$ 47.65
8/6/2018	$ 49.43	$ 45.88
8/13/2018	$ 47.62	$ 46.05
8/20/2018	$ 46.94	$ 44.93
8/27/2018	$ 45.09	$ 43.63
9/3/2018	$ 45.98	$ 43.72
9/10/2018	$ 44.67	$ 43.61
9/17/2018	$ 44.88	$ 43.10
9/24/2018	$ 44.31	$ 42.57
10/1/2018	$ 43.94	$ 42.51
10/8/2018	$ 44.64	$ 43.03
10/15/2018	$ 45.58	$ 43.60
10/22/2018	$ 46.26	$ 44.51
10/29/2018	$ 46.33	$ 44.33
11/5/2018	$ 47.22	$ 44.85
11/12/2018	$ 47.69	$ 46.53
11/19/2018	$ 47.33	$ 45.39
11/26/2018	$ 47.37	$ 45.35
12/3/2018	$ 47.89	$ 45.61
12/10/2018	$ 47.98	$ 46.31
12/17/2018	$ 47.68	$ 44.48
12/24/2018	$ 45.26	$ 42.50
12/31/2018	$ 44.73	$ 43.26
1/7/2019	$ 46.79	$ 44.18
1/14/2019	$ 47.24	$ 45.55
1/21/2019	$ 48.17	$ 46.49
1/28/2019	$ 48.68	$ 47.11
2/4/2019	$ 49.18	$ 47.81
2/11/2019	$ 49.62	$ 48.45
2/18/2019	$ 50.54	$ 48.42
2/25/2019	$ 50.29	$ 49.01
3/4/2019	$ 50.91	$ 49.62
3/11/2019	$ 51.95	$ 50.85
3/18/2019	$ 52.31	$ 50.77
3/25/2019	$ 52.65	$ 51.21
4/1/2019	$ 51.68	$ 50.98
Min/Max/Mean	$ 42.42	$ 52.65

Southern Co.	**SO**	
Mean of all	$ 46.36	
Min		**$ 42.42**
Max	**$ 52.65**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 63.76	$ 62.11
4/9/2018	$ 63.26	$ 61.39
4/16/2018	$ 63.55	$ 61.75
4/23/2018	$ 64.84	$ 62.08
4/30/2018	$ 64.93	$ 63.63
5/7/2018	$ 64.43	$ 61.00
5/14/2018	$ 62.13	$ 59.96
5/21/2018	$ 62.70	$ 59.96
5/28/2018	$ 63.70	$ 62.19
6/4/2018	$ 62.69	$ 58.96
6/11/2018	$ 60.62	$ 58.48
6/18/2018	$ 62.51	$ 60.46
6/25/2018	$ 64.98	$ 62.33
7/2/2018	$ 66.47	$ 64.44
7/9/2018	$ 66.40	$ 63.19
7/16/2018	$ 65.56	$ 64.24
7/23/2018	$ 66.20	$ 63.27
7/30/2018	$ 66.72	$ 64.55
8/6/2018	$ 67.70	$ 65.75
8/13/2018	$ 68.48	$ 66.41
8/20/2018	$ 68.46	$ 66.91
8/27/2018	$ 68.16	$ 66.75
9/3/2018	$ 69.52	$ 67.62
9/10/2018	$ 69.51	$ 68.05
9/17/2018	$ 68.90	$ 66.00
9/24/2018	$ 67.26	$ 64.96
10/1/2018	$ 68.49	$ 66.16
10/8/2018	$ 70.22	$ 66.78
10/15/2018	$ 70.87	$ 67.40
10/22/2018	$ 72.09	$ 68.42
10/29/2018	$ 70.37	$ 66.46
11/5/2018	$ 70.43	$ 66.89
11/12/2018	$ 71.54	$ 68.78
11/19/2018	$ 72.63	$ 70.27
11/26/2018	$ 72.52	$ 69.68
12/3/2018	$ 74.44	$ 71.25
12/10/2018	$ 75.48	$ 73.03
12/17/2018	$ 74.73	$ 70.63
12/24/2018	$ 72.03	$ 66.75
12/31/2018	$ 69.40	$ 67.21
1/7/2019	$ 69.54	$ 67.56
1/14/2019	$ 71.33	$ 67.80
1/21/2019	$ 72.38	$ 70.32
1/28/2019	$ 73.51	$ 69.76
2/4/2019	$ 74.72	$ 71.72
2/11/2019	$ 75.61	$ 73.74
2/18/2019	$ 76.67	$ 74.14
2/25/2019	$ 76.66	$ 74.89
3/4/2019	$ 77.41	$ 75.53
3/11/2019	$ 78.88	$ 76.80
3/18/2019	$ 79.95	$ 77.37
3/25/2019	$ 80.05	$ 78.04
4/1/2019	$ 79.03	$ 77.22
Min/Max/Mean	$ 58.48	$ 80.05

WEC Energy Group	**WEC**	
Mean of all	$ 68.45	
Min		**$ 58.48**
Max	**$ 80.05**	

Source: YahooFinance

Date	High	Low
4/2/2018	$ 45.99	$ 44.70
4/9/2018	$ 45.80	$ 43.93
4/16/2018	$ 46.01	$ 44.49
4/23/2018	$ 47.38	$ 45.12
4/30/2018	$ 47.37	$ 45.93
5/7/2018	$ 46.54	$ 44.58
5/14/2018	$ 45.41	$ 43.44
5/21/2018	$ 45.30	$ 43.28
5/28/2018	$ 45.87	$ 44.63
6/4/2018	$ 44.93	$ 42.27
6/11/2018	$ 43.43	$ 41.99
6/18/2018	$ 44.39	$ 43.25
6/25/2018	$ 46.24	$ 43.90
7/2/2018	$ 47.08	$ 45.70
7/9/2018	$ 46.95	$ 44.76
7/16/2018	$ 46.35	$ 45.09
7/23/2018	$ 47.15	$ 44.54
7/30/2018	$ 47.35	$ 45.87
8/6/2018	$ 48.26	$ 46.68
8/13/2018	$ 48.57	$ 47.33
8/20/2018	$ 48.50	$ 47.19
8/27/2018	$ 48.72	$ 47.20
9/3/2018	$ 49.49	$ 48.05
9/10/2018	$ 49.23	$ 47.86
9/17/2018	$ 48.51	$ 46.68
9/24/2018	$ 47.59	$ 46.01
10/1/2018	$ 48.57	$ 46.52
10/8/2018	$ 49.74	$ 47.07
10/15/2018	$ 49.38	$ 47.44
10/22/2018	$ 50.53	$ 48.11
10/29/2018	$ 49.97	$ 47.44
11/5/2018	$ 50.42	$ 47.82
11/12/2018	$ 52.24	$ 50.10
11/19/2018	$ 52.46	$ 50.52
11/26/2018	$ 52.49	$ 50.49
12/3/2018	$ 53.48	$ 51.70
12/10/2018	$ 54.11	$ 52.45
12/17/2018	$ 53.51	$ 50.42
12/24/2018	$ 51.33	$ 48.16
12/31/2018	$ 49.51	$ 47.70
1/7/2019	$ 49.33	$ 47.95
1/14/2019	$ 51.01	$ 48.29
1/21/2019	$ 51.58	$ 50.14
1/28/2019	$ 52.58	$ 50.10
2/4/2019	$ 53.50	$ 51.57
2/11/2019	$ 53.91	$ 53.03
2/18/2019	$ 55.27	$ 53.35
2/25/2019	$ 55.36	$ 54.13
3/4/2019	$ 55.90	$ 54.41
3/11/2019	$ 56.89	$ 55.62
3/18/2019	$ 57.51	$ 55.43
3/25/2019	$ 57.48	$ 55.81
4/1/2019	$ 56.25	$ 55.01
Min/Max/Mean	$ 41.99	$ 57.51

Xcel Energy Inc.	**XEL**	
Mean of all	$ 48.94	
Min		**$ 41.99**
Max	**$ 57.51**	

Source: YahooFinance

Schedule AHG - 4
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Internal Rate of Return Analysis Summary

1	2	3	4	5	6	7	8	9	10	11	12	13	14
							Short-Term Growth EPS Growth				**Long-Term Growth Years 5 Through 250**		
	IRR	Average Price	ST Growth Estimate	LT Growth Estimate	2019 Dividends	2019 Year 0	2020 Year1	2021 Year2	2022 Year3	2023 Year4	2024 Year5	2025 Year6	Sum of 2021 through 2264 Year 7 through Year 250
Allete Inc.	7.73%	$77.05	6.04%	4.28%	$2.35	($74.70)	$2.46	$2.61	$2.77	$2.93	$3.06	$3.19	$ 2,145,543.49
Alliant Energy Corp.	8.07%	$43.24	6.39%	4.28%	$1.42	($41.82)	$1.50	$1.60	$1.70	$1.81	$1.88	$1.96	$ 1,321,404.33
Ameren Corp.	7.80%	$64.32	6.73%	4.28%	$1.93	($62.39)	$2.06	$2.20	$2.35	$2.50	$2.61	$2.72	$ 1,831,873.12
American Electric Power Co. Inc	8.48%	$73.41	5.44%	4.28%	$2.72	($70.69)	$2.88	$3.04	$3.20	$3.38	$3.52	$3.67	$ 2,469,177.49
AVANGRID Inc.	8.60%	$50.20	8.38%	4.28%	$1.80	($48.40)	$1.88	$2.04	$2.21	$2.39	$2.50	$2.60	$ 1,750,742.96
CMS Energy Corp.	7.95%	$49.33	6.78%	4.28%	$1.53	($47.80)	$1.64	$1.75	$1.87	$2.00	$2.08	$2.17	$ 1,460,599.20
Duke Energy Corp.	9.33%	$82.84	4.79%	4.28%	$3.79	($79.05)	$3.94	$4.13	$4.33	$4.53	$4.73	$4.93	$ 3,315,881.99
El Paso Electric Co.	7.28%	$56.47	4.85%	4.28%	$1.52	($54.95)	$1.63	$1.71	$1.79	$1.87	$1.95	$2.04	$ 1,371,278.69
IDACORP Inc.	7.22%	$95.23	4.30%	4.28%	$2.56	($92.67)	$2.73	$2.84	$2.97	$3.09	$3.23	$3.36	$ 2,262,484.37
MGE Energy Inc.	6.71%	$62.72	5.33%	4.28%	$1.38	($61.34)	$1.45	$1.53	$1.61	$1.69	$1.77	$1.84	$ 1,239,534.28
NextEra Energy Inc.	8.04%	$172.67	8.39%	4.28%	$5.00	($167.67)	$5.65	$6.12	$6.64	$7.20	$7.50	$7.82	$ 5,263,289.21
NorthWestern Corp.	8.28%	$60.25	2.94%	4.28%	$2.30	($57.95)	$2.40	$2.47	$2.55	$2.62	$2.73	$2.85	$ 1,917,628.00
OGE Energy Corp.	8.86%	$37.52	4.26%	4.28%	$1.54	($35.98)	$1.65	$1.72	$1.79	$1.87	$1.95	$2.03	$ 1,367,902.54
Pinnacle West Capital Corp.	8.38%	$83.86	5.37%	4.28%	$3.04	($80.82)	$3.22	$3.40	$3.58	$3.77	$3.93	$4.10	$ 2,757,393.30
PNM Resources Inc.	7.60%	$40.65	5.71%	4.28%	$1.18	($39.47)	$1.26	$1.33	$1.41	$1.49	$1.56	$1.62	$ 1,090,831.72
Portland General Electric Co.	7.97%	$45.65	4.72%	4.28%	$1.52	($44.13)	$1.61	$1.69	$1.77	$1.85	$1.93	$2.01	$ 1,353,416.33
Southern Co.	9.94%	$46.36	3.47%	4.28%	$2.46	($43.90)	$2.54	$2.63	$2.72	$2.81	$2.93	$3.06	$ 2,057,878.61
WEC Energy Group	8.17%	$68.45	5.37%	4.28%	$2.36	($66.09)	$2.50	$2.63	$2.78	$2.92	$3.05	$3.18	$ 2,139,482.48
Xcel Energy Inc.	8.00%	$48.94	5.88%	4.28%	$1.60	($47.34)	$1.69	$1.79	$1.89	$2.00	$2.09	$2.18	$ 1,465,406.37
Mean	8.13%												
Min	6.71%												
Max	9.94%												

Column 1) Proxy group
2) Internal rate of return calcuation which is the discount rate that equates the stock price paid to the stream of future dividends recieved
3) Average stock price from April 1, 2018 through April 2, 2019, from Schedule AHG-3
4) Average of short-term growth rates used in first 5 years
5) Long-term nGDP growth rate used beginning in year 5 or 2024
6) 2019 dividends reported by Value-Line
7) Year 0 Cashflow; stock price less 2019 dividend
8 through 11) Annual cashflow growing at short-term growth rate
12 through 250) Annual cashflow growing at long-term growth rate

STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

VERIFICATION

Adam H. Gatewood, being duly sworn upon his oath deposes and states that he is a Senior Managing Financial Analyst for the Utilities Division of the Kansas Corporation Commission of the State of Kansas, that he has read and is familiar with the foregoing *Direct Testimony*, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.

Adam H. Gatewood
Senior Managing Financial Analyst
State Corporation Commission of the
State of Kansas

Subscribed and sworn to before me this 13th day of May, 2019.

VICKI D. JACOBSEN
Notary Public - State of Kansas
My Appt. Expires 6-30-22

Vicki D. Jacobsen
Notary Public

My Appointment Expires: 6-30-22

CERTIFICATE OF SERVICE

19-EPDE-223-RTS

I, the undersigned, certify that a true and correct copy of the above and foregoing Direct Testimony was served via electronic service this 13th day of May, 2019, to the following:

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19-EPDE-223-RTS

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