

# Ann E. Bulkley

**Boston** 

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With more than 25 years of experience in the energy industry, Ms. Bulkley specializes in regulatory economics for the electric and natural gas sectors, including rate of return, cost of equity, and capital structure issues.

Ms. Bulkley has extensive state and federal regulatory experience, and she has provided expert testimony on the cost of capital in nearly 100 regulatory proceedings before 32 state regulatory commissions and the Federal Energy Regulatory Commission (FERC).

In addition to her regulatory experience, Ms. Bulkley has provided valuation and appraisal services for a variety of purposes, including the sale or acquisition of utility assets, regulated ratemaking, ad valorem tax disputes, and other litigation purposes. In addition, she has experience in the areas of contract and business unit valuation, strategic alliances, market restructuring, and regulatory and litigation support.

Ms. Bulkley is a Certified General Appraiser licensed in the Commonwealth of Massachusetts and the State of New Hampshire.

Prior to joining Brattle, Ms. Bulkley was a Senior Vice President at an economic consultancy, and also held senior positions at several consulting firms.

# AREAS OF EXPERTISE

- Regulatory Economics, Finance & Rates
- Regulatory Investigations & Enforcement
- Tax Controversy & Transfer Pricing
- Electricity Litigation & Regulatory Disputes
- M&A Litigation





# **EDUCATION**

Boston University

MA in Economics

Simmons College

BA in Economics and Finance

# PROFESSIONAL EXPERIENCE

The Brattle Group (2022–Present)

Principal

Concentric Energy Advisors, Inc. (2002–2021)

Senior Vice President

Vice President

**Assistant Vice President** 

**Project Manager** 

Navigant Consulting, Inc. (1997–2002)

**Project Manager** 

Reed Consulting Group (1995-1997)

Consultant- Project Manager

Cahners Publishing Company (1995)

**Economist** 

# SELECTED CONSULTING EXPERIENCE & EXPERT TESTIMONY

# **REGULATORY ANALYSIS AND RATEMAKING**

Have provided a range of advisory services relating to regulatory policy analysis and many aspects of utility ratemaking, with specific services including:

- Cost of capital and return on equity testimony, cost of service and rate design analysis and testimony, development of ratemaking strategies
- Development of merchant function exit strategies
- Analysis and program development to address residual energy supply and/or provider of last resort obligations
- Stranded costs assessment and recovery





Performance-based ratemaking analysis and design

Many aspects of traditional utility ratemaking (e.g., rate design, rate base valuation)

# **COST OF CAPITAL**

Have provided expert testimony on the cost of capital and capital structure in nearly 100 regulatory proceedings before state and federal regulatory commissions in the United States.

# **RATEMAKING**

Have assisted several clients with analysis to support investor-owned and municipal utility clients in the preparation of rate cases. Sample engagements include:

- Assisted several investor-owned and municipal clients on cost allocation and rate design issues
  including the development of expert testimony supporting recommended rate alternatives.
- Worked with Canadian regulatory staff to establish filing requirements for a rate review of a newly
  regulated electric utility. Along with analyzing and evaluating rate application, attended hearings
  and conducted investigation of rate application for regulatory staff and prepared, supported, and
  defended recommendations for revenue requirements and rates for the company. Additionally,
  developed rates for gas utility for transportation program and ancillary services.

# **VALUATION**

Have provided valuation services to utility clients, unregulated generators, and private equity clients for a variety of purposes, including ratemaking, fair value, ad valorem tax, litigation and damages, and acquisition. Appraisal practices are consistent with the national standards established by the Uniform Standards of Professional Appraisal Practice.

Representative projects/clients have included:

- Prepared appraisals of electric utility transmission and distribution assets for ad valorem tax purposes.
- Prepared appraisals of several hydroelectric generating facilities for ad valorem tax purposes.
- Conducted appraisals of fossil fuel generating facilities for ad valorem tax purposes.
- Conducted appraisals of generating assets for the purposes of unwinding sale-leaseback agreements.
- For a confidential utility client, prepared valuation of fossil and nuclear generation assets for financing purposes for regulated utility client.
- Prepared a valuation of a portfolio of generation assets for a large energy utility to be used for strategic planning purposes. Valuation approach included an income approach, a real options analysis, and a risk analysis.





- Assisted clients in the restructuring of NUG contracts through the valuation of the underlying assets.
   Performed analysis to determine the option value of a plant in a competitively priced electricity market following the settlement of the NUG contract.
- Prepared market valuations of several purchase power contracts for large electric utilities in the sale
  of purchase power contracts. Assignment included an assessment of the regional power market,
  analysis of the underlying purchase power contracts, and a traditional discounted cash flow
  valuation approach, as well as a risk analysis. Analyzed bids from potential acquirers using income
  and risk analysis approached. Prepared an assessment of the credit issues and value at risk for the
  selling utility.
- Prepared appraisal of a portfolio of generating facilities for a large electric utility to be used for financing purposes.
- Prepared fair value rate base analyses for Northern Indiana Public Service Company for several electric rate proceedings. Valuation approaches used in this project included income, cost, and comparable sales approaches.
- Prepared an appraisal of a fleet of fossil generating assets for a large electric utility to establish the value of assets transferred from utility property.
- Conducted due diligence on an electric transmission and distribution system as part of a buy-side due diligence team.
- Provided analytical support for and prepared appraisal reports of generation assets to be used in ad valorem tax disputes.
- Provided analytical support and prepared testimony regarding the valuation of electric distribution system assets in five communities in a condemnation proceeding.
- Prepared feasibility reports analyzing the expected net benefits resulting from municipal ownership
  of investor-owned utility operations.
- Prepared independent analyses of proposal for the proposed government condemnation of the investor-owned utilities in Maine and the formation of a public power district.
- Valued purchase power agreements in the transfer of assets to a deregulated electric market.

# STRATEGIC AND FINANCIAL ADVISORY SERVICES

Have assisted several clients across North America with analytically-based strategic planning, due diligence, and financial advisory services.

# Representative projects include:

- Preparation of feasibility studies for bond issuances for municipal and district steam clients.
- Assisted in the development of a generation strategy for an electric utility. Analyzed various NERC regions to identify potential market entry points. Evaluated potential competitors and alliance





partners. Assisted in the development of gas and electric price forecasts. Developed a framework for the implementation of a risk management program.

- Assisted clients in identifying potential joint venture opportunities and alliance partners. Contacted
  interviewed and evaluated potential alliance candidates based on company-established criteria for
  several LDCs and marketing companies. Worked with several LDCs and unregulated marketing
  companies to establish alliances to enter into the retail energy market. Prepared testimony in
  support of several merger cases and participated in the regulatory process to obtain approval for
  these mergers.
- Assisted clients in several buy-side due diligence efforts, providing regulatory insight and developing valuation recommendations for acquisitions of both electric and gas properties.

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SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Arizona Corporation Comm	ission			
Tucson Electric Power Company	6/22	Tucson Electric Power Company	Docket No. G- 01933A-22-0107	Return on Equity
Southwest Gas Corporation	12/21	Southwest Gas Corporation	Docket No. G- 01551A-21-0368	Return on Equity
Arizona Public Service Company	10/19	Arizona Public Service Company	Docket No. E- 01345A-19-0236	Return on Equity
Tucson Electric Power Company	04/19	Tucson Electric Power Company	Docket No. E- 01933A-19-0028	Return on Equity
Tucson Electric Power Company	11/15	Tucson Electric Power Company	Docket No. E- 01933A-15-0322	Return on Equity
UNS Electric	05/15	UNS Electric	Docket No. E- 04204A-15-0142	Return on Equity
UNS Electric	12/12	UNS Electric	Docket No. E- 04204A-12-0504	Return on Equity
Arkansas Public Service Con	nmission			
Oklahoma Gas and Electric Co	10/21	Oklahoma Gas and Electric Co	Docket No. D-18-046- FR	Return on Equity
Arkansas Oklahoma Gas Corporation	10/13	Arkansas Oklahoma Gas Corporation	Docket No. 13-078-U	Return on Equity
California Public Utilities Co	mmissio	n		





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Pacificorp, d/b/a Pacific Power	5/22	Pacificorp, d/b/a Pacific Power		Return on Equity
San Jose Water Company	05/21	San Jose Water Company	A2105004	Return on Equity
Colorado Public Utilities Con	mmission			
Public Service Company of Colorado	07/21	Public Service Company of Colorado	21AL-0317E	Return on Equity
Public Service Company of Colorado	02/20	Public Service Company of Colorado	20AL-0049G	Return on Equity
Public Service Company of Colorado	05/19	Public Service Company of Colorado	19AL-0268E	Return on Equity
Public Service Company of Colorado	01/19	Public Service Company of Colorado	19AL-0063ST	Return on Equity
Atmos Energy Corporation	05/15	Atmos Energy Corporation	Docket No. 15AL- 0299G	Return on Equity
Atmos Energy Corporation	04/14	Atmos Energy Corporation	Docket No. 14AL- 0300G	Return on Equity
Atmos Energy Corporation	05/13	Atmos Energy Corporation	Docket No. 13AL- 0496G	Return on Equity
<b>Connecticut Public Utilities</b>	Regulato	ry Authority		
United Illuminating	05/21	United Illuminating	Docket No. 17-12- 03RE11	Return on Equity
Connecticut Water Company	01/21	Connecticut Water Company	Docket No. 20-12-30	Return on Equity
Connecticut Natural Gas Corporation	06/18	Connecticut Natural Gas Corporation	Docket No. 18-05-16	Return on Equity
Yankee Gas Services Co. d/b/a Eversource Energy	06/18	Yankee Gas Services Co. d/b/a Eversource Energy	Docket No. 18-05-10	Return on Equity
The Southern Connecticut Gas Company	06/17	The Southern Connecticut Gas Company	Docket No. 17-05-42	Return on Equity





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT	
The United Illuminating Company	07/16	The United Illuminating Company	Docket No. 16-06-04	Return on Equity	
Federal Energy Regulatory (	Commissi	on			
Northern Natural Gas Company	07/22	Northern Natural Gas Company	Docket No. RP22	Return on Equity	
Transwestern Pipeline Company, LLC	07/22	Transwestern Pipeline Company, LLC	Docket No. RP22	Return on Equity	
Florida Gas Transmission	02/21	Florida Gas Transmission	Docket No. RP21-441	Return on Equity	
TransCanyon	01/21	TransCanyon	Docket No. ER21- 1065	Return on Equity	
Duke Energy	12/20	Duke Energy	Docket No. EL21-9- 000	Return on Equity	
Wisconsin Electric Power Company	08/20	Wisconsin Electric Power Company	Docket No. EL20-57- 000	Return on Equity	
Panhandle Eastern Pipe Line Company, LP	10/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-78-000 RP19-78-001	Return on Equity	
Panhandle Eastern Pipe Line Company, LP	08/19	Panhandle Eastern Pipe Line Company, LP	Docket Nos. RP19-1523	Return on Equity	
Sea Robin Pipeline Company LLC	11/18	Sea Robin Pipeline Company LLC	Docket# RP19-352- 000	Return on Equity	
Tallgrass Interstate Gas Transmission	10/15	Tallgrass Interstate Gas Transmission	RP16-137	Return on Equity	
Idaho Public Utilities Commission					
PacifiCorp d/b/a Rocky Mountain Power	05/21	PacifiCorp d/b/a Rocky Mountain Power	Case No. PAC-E-21- 07	Return on Equity	
Illinois Commerce Commiss	ion				
Illinois American Water	02/22	Illinois American Water	Docket No. 22-0210	Return on Equity	





SPONSOR	DATE	CASE/APPLICANT	DOCKET / CASE NO.	SUBJECT
North Shore Gas Company	02/21	North Shore Gas Company	No. 20-0810	Return on Equity
Indiana Utility Regulatory C	ommissio	on		
Indiana Michigan Power Co.	07/21	Indiana Michigan Power Co.	IURC Cause No. 45576	Return on Equity
Indiana Gas Company Inc.	12/20	Indiana Gas Company Inc.	IURC Cause No. 45468	Return on Equity
Southern Indiana Gas and Electric Company	10/20	Southern Indiana Gas and Electric Company	IURC Cause No. 45447	Return on Equity
Indiana and Michigan American Water Company	09/18	Indiana and Michigan American Water Company	IURC Cause No. 45142	Return on Equity
Indianapolis Power and Light Company	12/17	Indianapolis Power and Light Company	Cause No. 45029	Fair Value
Northern Indiana Public Service Company	09/17	Northern Indiana Public Service Company	Cause No. 44988	Fair Value
Indianapolis Power and Light Company	12/16	Indianapolis Power and Light Company	Cause No.44893	Fair Value
Northern Indiana Public Service Company	10/15	Northern Indiana Public Service Company	Cause No. 44688	Fair Value
Indianapolis Power and Light Company	09/15	Indianapolis Power and Light Company	Cause No. 44576 Cause No. 44602	Fair Value
Kokomo Gas and Fuel Company	09/10	Kokomo Gas and Fuel Company	Cause No. 43942	Fair Value
Northern Indiana Fuel and Light Company, Inc.	09/10	Northern Indiana Fuel and Light Company, Inc.	Cause No. 43943	Fair Value
Iowa Department of Comm	erce Utili	ties Board		, 





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
MidAmerican Energy	01/22	MidAmerican Energy	Docket No. RPU-	Return on
Company		Company	2022-0001	Equity
Iowa-American Water	08/20	Iowa-American Water	Docket No. RPU-	Return on
Company		Company	2020-0001	Equity
Kansas Corporation Commis	ssion			
Atmos Energy Corporation	08/15	Atmos Energy	Docket No. 16-	Return on Equity
		Corporation	ATMG-079-RTS	
Kentucky Public Service Con	nmission			
Kentucky-American Water	11/18	Kentucky-American	Docket No. 2018-	Return on Equity
Company		Water Company	00358	
Maine Public Utilities Comm	nission			
Central Maine Power	08/22	Central Maine Power	Docket No. 2022-	Return on Equity
			00152	
Central Maine Power	10/18	Central Maine Power	Docket No. 2018-194	Return on Equity
Maryland Public Service Cor	mmission	1		
Maryland American Water	06/18	Maryland American	Case No. 9487	Return on Equity
Company		Water Company		
Massachusetts Appellate Ta	x Board			
Hopkinton LNG Corporation	03/20	Hopkinton LNG	Docket No.	Valuation of
		Corporation		LNG Facility
FirstLight Hydro Generating	06/17	FirstLight Hydro	Docket No. F-325471	Valuation of
Company		Generating Company	Docket No. F-325472	Electric
			Docket No. F-325473	Generation
			Docket No. F-325474	Assets
Massachusetts Department of Public Utilities				
National Grid USA	11/20	Boston Gas Company	DPU 20-120	Return on Equity
Berkshire Gas Company	05/18	Berkshire Gas Company	DPU 18-40	Return on Equity





SPONSOR	DATE	CASE/APPLICANT	DOCKET/CASE NO.	SUBJECT
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Michigan Public Service Con	nmission			
Michigan Gas Utilities Corporation	03/21	Michigan Gas Utilities Corporation	Case No. U-20718	Return on Equity
Wisconsin Electric Power Company	12/11	Wisconsin Electric Power Company	Case No. U-16830	Return on Equity
Michigan Tax Tribunal				
New Covert Generating Co., LLC.	03/18	The Township of New Covert Michigan	MTT Docket No. 000248TT and 16- 001888-TT	Valuation of Electric Generation Assets
Covert Township	07/14	New Covert Generating Co., LLC.	Docket No. 399578	Valuation of Electric Generation Assets
Minnesota Public Utilities C	ommissio	on		
CenterPoint Energy Resources	11/21	CenterPoint Energy Resources	D-G-008/GR-21-435	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/21	Allete, Inc. d/b/a Minnesota Power	D-E-015/GR-21-630	Return on Equity
Otter Tail Power Company	11/20	Otter Tail Power Company	E017/GR-20-719	Return on Equity
Allete, Inc. d/b/a Minnesota Power	11/19	Allete, Inc. d/b/a Minnesota Power	E015/GR-19-442	Return on Equity
CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	10/19	CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas	G-008/GR-19-524	Return on Equity





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT	
Great Plains Natural Gas Co.	09/19	Great Plains Natural Gas Co.	Docket No. G004/GR- 19-511	Return on Equity	
Minnesota Energy Resources Corporation	10/17	Minnesota Energy Resources Corporation	Docket No. G011/GR- 17-563	Return on Equity	
Missouri Public Service Com	mission				
Missouri American Water Company	07/22	Missouri American Water Company	Case No. WR-2022- 0303 Case No. SR-2022- 0304	Return on Equity	
Evergy Missouri West	1/22	Evergy Missouri West	File No. ER-2022- 0130	Return on Equity	
Evergy Missouri Metro	1/22	Evergy Missouri Metro	File No. ER-2022- 0129	Return on Equity	
Ameren Missouri	03/21	Ameren Missouri	Docket No. ER-2021- 0240 Docket No. GR-2021- 0241	Return on Equity	
Missouri American Water Company	06/20	Missouri American Water Company	Case No. WR-2020- 0344 Case No. SR-2020- 0345	Return on Equity	
Missouri American Water Company	06/17	Missouri American Water Company	Case No. WR-17-0285 Case No. SR-17-0286	Return on Equity	
Montana Public Service Commission					
Montana-Dakota Utilities Co.	06/20	Montana-Dakota Utilities Co.	D2020.06.076	Return on Equity	
Montana-Dakota Utilities Co.	09/18	Montana-Dakota Utilities Co.	D2018.9.60	Return on Equity	
New Hampshire - Board of 1	ax and L	and Appeals			





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Public Service Company of New Hampshire d/b/a Eversource Energy	11/19 12/19	Public Service Company of New Hampshire d/b/a Eversource Energy	Master Docket No. 28873-14-15-16- 17PT	Valuation of Utility Property and Generating Assets
New Hampshire Public Utili	ties Com	mission		
Public Service Company of New Hampshire	05/19	Public Service Company of New Hampshire	DE-19-057	Return on Equity
New Hampshire-Merrimack	County	Superior Court		
Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	04/18	Northern New England Telephone Operations, LLC d/b/a FairPoint Communications, NNE	220-2012-CV-1100	Valuation of Utility Property
New Hampshire-Rockingham	m Superio	or Court		
Eversource Energy	05/18	Public Service Commission of New Hampshire	218-2016-CV-00899 218-2017-CV-00917	Valuation of Utility Property
New Jersey Board of Public	Utilities		'	
New Jersey American Water Company, Inc.	01/22	New Jersey American Water Company, Inc.	WR22010019	Return on Equity
Public Service Electric and Gas Company	10/20	Public Service Electric and Gas Company	EO18101115	Return on Equity
New Jersey American Water Company, Inc.	12/19	New Jersey American Water Company, Inc.	WR19121516	Return on Equity
Public Service Electric and Gas Company	04/19	Public Service Electric and Gas Company	EO18060629 GO18060630	Return on Equity
Public Service Electric and Gas Company	02/18	Public Service Electric and Gas Company	GR17070776	Return on Equity
Public Service Electric and Gas Company	01/18	Public Service Electric and Gas Company	ER18010029 GR18010030	Return on Equity
New Mexico Public Regulat	ion Comr	nission		





SPONSOR	DATE	CASE/APPLICANT	DOCKET/CASE NO.	SUBJECT
Southwestern Public Service Company	07/19	Southwestern Public Service Company	19-00170-UT	Return on Equity
Southwestern Public Service Company	10/17	Southwestern Public Service Company	Case No. 17-00255- UT	Return on Equity
Southwestern Public Service Company	12/16	Southwestern Public Service Company	Case No. 16-00269- UT	Return on Equity
Southwestern Public Service Company	10/15	Southwestern Public Service Company	Case No. 15-00296- UT	Return on Equity
Southwestern Public Service Company	06/15	Southwestern Public Service Company	Case No. 15-00139- UT	Return on Equity
New York State Department	t of Publi	c Service		
New York State Electric and Gas Company	05/22	New York State Electric and Gas Company	22-E-0317 22-G-0318 22-E-0319	Return on Equity
Rochester Gas and Electric		Rochester Gas and Electric	22-G-0320	
Corning Natural Gas Corporation	07/21	Corning Natural Gas Corporation	Case No. 21-G-0394	Return on Equity
Central Hudson Gas and Electric Corporation	08/20	Central Hudson Gas and Electric Corporation	Electric 20-E-0428 Gas 20-G-0429	Return on Equity
Niagara Mohawk Power Corporation	07/20	National Grid USA	Case No. 20-E-0380 20-G-0381	Return on Equity
Corning Natural Gas Corporation	02/20	Corning Natural Gas Corporation	Case No. 20-G-0101	Return on Equity
New York State Electric and Gas Company	05/19	New York State Electric and Gas Company	19-E-0378 19-G-0379 19-E-0380	Return on Equity
Rochester Gas and Electric		Rochester Gas and Electric	19-G-0381	





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT	
Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	04/19	Brooklyn Union Gas Company d/b/a National Grid NY KeySpan Gas East Corporation d/b/a National Grid	19-G-0309 19-G-0310	Return on Equity	
Central Hudson Gas and Electric Corporation	07/17	Central Hudson Gas and Electric Corporation	Electric 17-E-0459 Gas 17-G-0460	Return on Equity	
Niagara Mohawk Power Corporation	04/17	National Grid USA	Case No. 17-E-0238 17-G-0239	Return on Equity	
Corning Natural Gas Corporation	06/16	Corning Natural Gas Corporation	Case No. 16-G-0369	Return on Equity	
National Fuel Gas Company	04/16	National Fuel Gas Company	Case No. 16-G-0257	Return on Equity	
KeySpan Energy Delivery	01/16	KeySpan Energy Delivery	Case No. 15-G-0058 Case No. 15-G-0059	Return on Equity	
New York State Electric and Gas Company Rochester Gas and Electric	05/15	New York State Electric and Gas Company Rochester Gas and Electric	Case No. 15-E-0283 Case No. 15-G-0284 Case No. 15-E-0285 Case No. 15-G-0286	Return on Equity	
North Dakota Public Service	Commis	sion			
Montana-Dakota Utilities Co.	05/22	Montana-Dakota Utilities Co.	C-PU-22-194	Return on Equity	
Montana-Dakota Utilities Co.	08/20	Montana-Dakota Utilities Co.	C-PU-20-379	Return on Equity	
Northern States Power Company	12/12	Northern States Power Company	C-PU-12-813	Return on Equity	
Northern States Power Company	12/10	Northern States Power Company	C-PU-10-657	Return on Equity	
Oklahoma Corporation Commission					
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	Cause No. PUD 202100164	Return on Equity	





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT		
Arkansas Oklahoma Gas Corporation	01/13	Arkansas Oklahoma Gas Corporation	Cause No. PUD 201200236	Return on Equity		
Oregon Public Service Comm	mission					
PacifiCorp d/b/a Pacific Power & Light	03/22	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-399	Return on Equity		
PacifiCorp d/b/a Pacific Power & Light	02/20	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE-374	Return on Equity		
Pennsylvania Public Utility	Commissi	ion				
American Water Works Company Inc.	04/22	Pennsylvania-American Water Company	Docket No. R-2020- 3031672 (water) Docket No. R-2020- 3031673 (wastewater)	Return on Equity		
American Water Works Company Inc.	04/20	Pennsylvania-American Water Company	Docket No. R-2020- 3019369 (water) Docket No. R-2020- 3019371 (wastewater)	Return on Equity		
American Water Works Company Inc.	04/17	Pennsylvania-American Water Company	Docket No. R-2017- 2595853	Return on Equity		
South Dakota Public Utilitie	s Commi	ssion				
MidAmerican Energy Company	05/22	MidAmerican Energy Company	D-NG22-005	Return on Equity		
Northern States Power Company	06/14	Northern States Power Company	Docket No. EL14-058	Return on Equity		
Texas Public Utility Commission						
Entergy Texas, Inc.	07/22	Entergy Texas, Inc.	D-53719	Return on Equity		
Southwestern Public Service Commission	08/19	Southwestern Public Service Commission	Docket No. D-49831	Return on Equity		
Southwestern Public Service Company	01/14	Southwestern Public Service Company	Docket No. 42004	Return on Equity		





SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT		
<b>Utah Public Service Commis</b>	sion					
PacifiCorp d/b/a Rocky Mountain Power	05/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20-035- 04	Return on Equity		
Virginia State Corporation Commission						
Virginia American Water Company, Inc.	11/21	Virginia American Water Company, Inc.	Docket No. PUR- 2021-00255	Return on Equity		
Virginia American Water Company, Inc.	11/18	Virginia American Water Company, Inc.	Docket No. PUR- 2018-00175	Return on Equity		
Washington Utilities Transp	ortation	Commission				
Cascade Natural Gas Corporation	06/20	Cascade Natural Gas Corporation	Docket No. UG- 200568	Return on Equity		
PacifiCorp d/b/a Pacific Power & Light	12/19	PacifiCorp d/b/a Pacific Power & Light	Docket No. UE- 191024	Return on Equity		
Cascade Natural Gas Corporation	04/19	Cascade Natural Gas Corporation	Docket No. UG- 190210	Return on Equity		
West Virginia Public Service	Commis	sion				
West Virginia American Water Company	04/21	West Virginia American Water Company	Case No. 21-02369- W-42T	Return on Equity		
West Virginia American Water Company	04/18	West Virginia American Water Company	Case No. 18-0573-W- 42T Case No. 18-0576-S- 42T	Return on Equity		
Wisconsin Public Service Co	mmissior	1				
Wisconsin Electric Power Company and Wisconsin Gas LLC	04/22	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR- 110	Return on Equity		
Wisconsin Public Service Corp.	04/22	Wisconsin Public Service Corp.	6690-UR-127	Return on Equity		
Alliant Energy		Alliant Energy		Return on Equity		



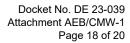


SPONSOR	DATE	CASE/APPLICANT	DOCKET /CASE NO.	SUBJECT
Wisconsin Electric Power Company and Wisconsin Gas LLC	03/19	Wisconsin Electric Power Company and Wisconsin Gas LLC	Docket No. 05-UR- 109	Return on Equity
Wisconsin Public Service Corp.	03/19	Wisconsin Public Service Corp.	6690-UR-126	Return on Equity
Wyoming Public Service Cor	nmission			
PacifiCorp d/b/a Rocky Mountain Power	03/20	PacifiCorp d/b/a Rocky Mountain Power	Docket No. 20000- 578-ER-20	Return on Equity
Montana-Dakota Utilities Co.	05/19	Montana-Dakota Utilities Co.	30013-351-GR-19	Return on Equity

# CERTIFICATIONS/ACCREDITATIONS

Certified General Appraiser, licensed in the Commonwealth of Massachusetts and the State of New Hampshire







# Christopher Wall

**Boston** 

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Chris.Wall@brattle.com

With more than 10 years of experience as a financial and economic consultant in the energy industry, Mr. Wall specializes in regulatory economics for the electric, natural gas, and water utility sectors.

Mr. Wall has expertise in matters related to rate of return, cost of equity, capital structure, cost of service, and rate design. He has prepared expert testimony related to return on equity and capital structure in over 50 regulatory proceedings for electric, natural gas, and water utility clients across the US.

Mr. Wall has also applied his economics, financial modeling, advanced statistics, and econometrics competencies to prepare rate design, rate consolidation, marginal cost, cost of service, valuation, and demand forecast studies for electric and natural gas utilities. These studies have been submitted in utility regulatory proceedings throughout North America.

Mr. Wall has provided expert testimony before regulatory commissions in Arkansas, Massachusetts, and New York on issues that include cost of capital, natural gas demand forecasting, and statistical concepts for return on equity and cost of service.

Prior to joining Brattle, Mr. Wall was an Assistant Vice President at an economic consulting firm.

# AREAS OF EXPERTISE

Regulatory Economics, Finance & Rates

# **EDUCATION**

Northeastern University

MA in Economics

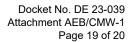
Saint Peter's College

BA in Economics and Mathematics (summa cum laude)

# PROFESSIONAL EXPERIENCE

The Brattle Group (2022–Present)
 Senior Associate







Concentric Energy Advisors, Inc. (2010–2021)

Assistant Vice President (2021)
Senior Project Manager (2019–2020)
Project Manager (2017–2018)
Senior Consultant (2015–2016)
Consultant (2013–2014)
Assistant Consultant (2011–2012)
Associate (2010)

# **EXPERT TESTIMONY**

- Return on Equity | New York Department of Public Service
   On behalf of the Corning Natural Gas Corporation, provided testimony related to return on equity in Case No. 21-G-0394 (July 2021) and Case No. 20-G-0101 (February 2020).
- Integrated Resource Plan | Massachusetts Department of Public Utilities
   On behalf of Berkshire Gas Company, provided testimony regarding the development of the natural gas demand forecast for an integrated resource plan in DPU 20-139 (2020), DPU 18-107 (2018), DPU 16-103 (2016), and DPU 14-98 (2014).
- Return on Equity and Class Cost of Service | Arkansas Public Service Commission
   On behalf of the Arkansas Oklahoma Gas Corporation, provided rebuttal testimony on statistical concepts for return on equity and class cost of service in Docket No. 13-078-U (2014).

# SELECTED CONSULTING EXPERIENCE

# **COST OF CAPITAL**

- Provided expert testimony on the cost of capital for a Northeast natural gas utility.
- Prepared expert testimony and exhibits for return on equity, capital structure, and cost of debt
  analysis for numerous electric, gas, and water utility clients across the US. This included preparing
  direct testimony, responding to data requests, drafting rebuttal testimony in response to
  intervening witnesses, assisting with hearing preparation, and drafting and reviewing post-hearing
  briefs.

# **DEMAND FORECASTING & SUPPLY PLANNING**

- Filed expert testimony regarding the development of the natural gas demand forecast for a Northeast gas utility.
- Contributed to and worked on demand forecasting projects for multiple Northeast gas utilities:



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- Assisted in the development of natural gas price and effective degree day forecasts.
- Developed natural gas demand forecasts by customer class using SPSS.
  - Developed models for number of customers and use per customer.
  - Performed checks for model stability, heteroscedasticity, and autocorrelation by performing the Chow, Breusch-Pagan, and Autocorrelation Function/Partial Autocorrelation Function tests.
- Contributed in the development of the forecasting and supply planning report and supported data requests.

# **RATEMAKING**

- Evaluated rate design restructuring and its impacts on customer bills for Northeast gas and electric utilities.
- Developed marginal cost studies and prepared testimony for Northeast electric and gas utilities.
- Designed rates and prepared testimony for a Northeast electric and gas utility.
- Prepared a cost of service study and designed rates for a Mid-Atlantic municipal gas utility.
- Prepared cost of service studies and designed rates for Midwest electric and gas utilities.
- Evaluated the impact of different rate alternatives and solar generation compensation approaches
  on solar customers in each rate class for a Midwest municipal electric utility.
- Contributed to the development of a benchmarking study to compare a Canadian natural gas utility's performance with its peers.
- Assisted in the development of a Total Factor Productivity Analysis for a Canadian natural gas utility as part of an Incentive Ratemaking report filed with the Ontario Energy Board.

# **VALUATION**

- Provided analytical support for and prepared appraisal reports of generation assets to be used in ad valorem tax disputes.
- Provided analytical support and prepared expert testimony regarding the fair value of the
  distribution system assets of a Midwest natural gas utility and the fair value of the transmission and
  distribution system assets of a different Midwest electric utility.



# SUMMARY OF ROE ANALYSES RESULTS

Constant Gro	wth DCF - Earnin	igs Growth	
	Minimum	Average	Maximum
	Growth Rate	Growth Rate	Growth Rate
30-Day Avg. Stock Price	8.09%	9.32%	10.33%
90-Day Avg. Stock Price	8.23%	9.46%	10.48%
180-Day Avg. Stock Price	8.14%	9.37%	10.38%
Average	8.15%	9.38%	10.40%
Constant Growth De	CF - Earnings & 1	Retention Growth	
	<b>-</b> 200/	0.0007	40.000/
30-Day Avg. Stock Price	7.39%	9.09%	10.33%
90-Day Avg. Stock Price	7.53%	9.23%	10.48%
180-Day Avg. Stock Price	7.44%	9.13%	10.38%
Average	7.45%	9.15%	10.40%
CAPM, ECAPM,	, and Bond Yield I	Risk Premium	
	Current	Near-Term	Longer-Term
	30-Day Avg	Projected	Projected
	30-Year	30-Year	30-Year
	Treasury	Treasury	Treasury
	Yield	Yield	Yield
CAPM:			
Current Value Line Beta	11.41%	11.42%	11.43%
Current Bloomberg Beta	10.83%	10.85%	10.87%
Long-term Avg. Value Line Beta	10.41%	10.44%	10.46%
ECAPM:			
Current Value Line Beta	11.68%	11.69%	11.70%
Current Bloomberg Beta	11.25%	11.26%	11.28%
Long-term Avg. Value Line Beta	10.93%	10.95%	10.97%
Bond Yield Risk Premium:	10.12%	10.17%	10.21%

# PROXY GROUP SCREENING DATA AND RESULTS - FINAL PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]
					Positive Growth		
					Rates from at least	% Regulated	
			S&P Credit Rating	Covered by	two sources (Value	Electric	
			Between BBB- and	More Than 1	Line, Yahoo! First	Operating	
Company	Ticker	Dividends	AAA	Analyst	Call, and Zacks)	Income ≥ 70%	Announced Merger
ALLETE, Inc.	ALE	Yes	BBB	Yes	Yes	93.08%	No
Alliant Energy Corporation	LNT	Yes	A-	Yes	Yes	88.08%	No
Ameren Corporation	AEE	Yes	$\mathrm{BBB}+$	Yes	Yes	85.03%	No
American Electric Power Company, Inc.	AEP	Yes	A-	Yes	Yes	95.43%	No
Avista Corporation	AVA	Yes	BBB	Yes	Yes	76.10%	No
Duke Energy Corporation	DUK	Yes	BBB+	Yes	Yes	90.32%	No
Edison International	EIX	Yes	BBB	Yes	Yes	100.25%	No
Entergy Corporation	ETR	Yes	BBB+	Yes	Yes	99.41%	No
Eversource Energy	ES	Yes	A-	Yes	Yes	80.09%	No
Evergy, Inc.	<b>EVRG</b>	Yes	A-	Yes	Yes	100.00%	No
IDACORP, Inc.	IDA	Yes	BBB	Yes	Yes	99.84%	No
NextEra Energy, Inc.	NEE	Yes	A-	Yes	Yes	85.07%	No
NorthWestern Corporation	NWE	Yes	BBB	Yes	Yes	84.01%	No
OGE Energy Corporation	OGE	Yes	BBB+	Yes	Yes	100.00%	No
Otter Tail Corporation	OTTR	Yes	BBB	Yes	Yes	62.74%	No
Portland General Electric Company	POR	Yes	BBB+	Yes	Yes	100.00%	No
Xcel Energy Inc.	XEL	Yes	A-	Yes	Yes	86.47%	No

Notes: [1]Source: Bloomberg Professional [2]Source: Bloomberg Professional [3]Source: Yahoo! Finance and Zacks

[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks [5]Source: SNL Financial (pulled from FERC Form 1) 2019-2021

[6] to [7] Source: Form 10-Ks for 2019, 2020 & 2021

[8]SNL Financial News Releases

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
						Value Line			Average		Cost of	Cost of
						Projected	Yahoo!	Zacks	Projected	Cost of	Equity:	Equity:
					Expected	EPS	Finance	Projected	EPS	Equity:	Mean	Maximum
		Annualized	Stock	Dividend	Dividend	Growth	Projected EPS	EPS Growth	Growth	Minimum	Growth	Growth
Company		Dividend	Price	Yield	Yield	Rate	Growth Rate	Rate	Rate	Growth Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$64.09	4.06%	4.22%	6.00%	8.70%	9.60%	8.10%	10.18%	12.32%	13.85%
Alliant Energy Corporation	LNT	\$1.81	\$54.38	3.33%	3.42%	6.00%	5.55%	5.80%	5.78%	8.97%	9.21%	9.43%
Ameren Corporation	AEE	\$2.36	\$88.15	2.68%	2.77%	6.50%	6.64%	6.90%	6.68%	9.26%	9.45%	9.67%
American Electric Power Company	AEP	\$3.32	\$94.56	3.51%	3.62%	6.50%	6.15%	6.10%	6.25%	9.72%	9.87%	10.13%
Avista Corporation	AVA	\$1.76	\$42.48	4.14%	4.24%	3.50%	5.20%	5.20%	4.63%	7.72%	8.87%	9.45%
Duke Energy Corporation	DUK	\$4.02	\$102.85	3.91%	4.01%	5.00%	5.65%	5.50%	5.38%	9.01%	9.40%	9.67%
Edison International	EIX	\$2.95	\$66.39	4.44%	4.55%	6.49%	4.40%	3.00%	4.63%	7.51%	9.18%	11.08%
Entergy Corporation	ETR	\$4.28	\$109.55	3.91%	4.01%	4.00%	6.19%	6.00%	5.40%	7.98%	9.41%	10.22%
Eversource Energy	ES	\$2.55	\$83.08	3.07%	3.17%	6.50%	6.42%	6.50%	6.47%	9.59%	9.64%	9.67%
Evergy, Inc.	EVRG	\$2.45	\$62.50	3.92%	4.02%	7.50%	2.43%	5.30%	5.08%	6.40%	9.10%	11.57%
IDACORP, Inc.	IDA	\$3.16	\$106.55	2.97%	3.02%	4.50%	3.40%	3.40%	3.77%	6.42%	6.79%	7.53%
NextEra Energy, Inc.	NEE	\$1.70	\$82.50	2.06%	2.16%	10.50%	10.21%	9.00%	9.90%	11.15%	12.07%	12.67%
NorthWestern Corporation	NWE	\$2.52	\$57.74	4.36%	4.43%	3.50%	4.50%	1.70%	3.23%	6.10%	7.67%	8.96%
OGE Energy Corporation	OGE	\$1.66	\$39.21	4.22%	4.32%	6.50%	1.90%	5.00%	4.47%	6.17%	8.79%	10.86%
Otter Tail Corporation	OTTR	\$1.65	\$60.44	2.73%	2.82%	4.50%	9.00%	n/a	6.75%	7.29%	9.57%	11.85%
Portland General Electric Company	POR	\$1.81	\$48.17	3.76%	3.83%	5.00%	1.39%	5.30%	3.90%	5.17%	7.73%	9.16%
Xcel Energy Inc.	XEL	\$1.95	\$69.89	2.79%	2.88%	6.00%	7.01%	6.50%	6.50%	8.87%	9.38%	9.90%
Mean		•	<u> </u>							8.09%	9.32%	10.33%
Median										7.98%	9.38%	9.90%

- [1] Bloomberg Professional as of January 31 2023 [2] Bloomberg Professional 30-day average as of January 31 2023
- [3] Equals [1]/[2]
- [4] Equals [3] x (1 + 0.5 x [8])

  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance [7] Zacks
- [8] Equals average of [5], [6], [7]
- [9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3]  $\times$  (1 + 0.5  $\times$  (max([5], [6], [7])) + (max([5], [6], [7])

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
						Value Line Projected	Yahoo!	Zacks	Average Projected	Cost of	Cost of Equity:	Cost of Equity:
					Expected	EPS	Finance	Projected	EPS	Equity:	Mean	Maximum
		Annualized	Stock	Dividend	Dividend	Growth	Projected EPS		Growth	Minimum	Growth	Growth
Company		Dividend	Price	Yield	Yield	Rate	Growth Rate	Rate	Rate	Growth Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$59.65	4.36%	4.54%	6.00%	8.70%	9.60%	8.10%	10.49%	12.64%	14.17%
Alliant Energy Corporation	LNT	\$1.81	\$53.40	3.39%	3.49%	6.00%	5.55%	5.80%	5.78%	9.03%	9.27%	9.49%
Ameren Corporation	AEE	\$2.36	\$84.71	2.79%	2.88%	6.50%	6.64%	6.90%	6.68%	9.38%	9.56%	9.78%
American Electric Power Company	AEP	\$3.32	\$91.64	3.62%	3.74%	6.50%	6.15%	6.10%	6.25%	9.83%	9.99%	10.24%
Avista Corporation	AVA	\$1.76	\$40.23	4.37%	4.48%	3.50%	5.20%	5.20%	4.63%	7.95%	9.11%	9.69%
Duke Energy Corporation	DUK	\$4.02	\$97.43	4.13%	4.24%	5.00%	5.65%	5.50%	5.38%	9.23%	9.62%	9.89%
Edison International	EIX	\$2.95	\$62.17	4.75%	4.86%	6.49%	4.40%	3.00%	4.63%	7.82%	9.49%	11.39%
Entergy Corporation	ETR	\$4.28	\$108.60	3.94%	4.05%	4.00%	6.19%	6.00%	5.40%	8.02%	9.44%	10.25%
Eversource Energy	ES	\$2.55	\$79.99	3.19%	3.29%	6.50%	6.42%	6.50%	6.47%	9.71%	9.76%	9.79%
Evergy, Inc.	EVRG	\$2.45	\$60.52	4.05%	4.15%	7.50%	2.43%	5.30%	5.08%	6.53%	9.23%	11.70%
IDACORP, Inc.	IDA	\$3.16	\$103.99	3.04%	3.10%	4.50%	3.40%	3.40%	3.77%	6.49%	6.86%	7.61%
NextEra Energy, Inc.	NEE	\$1.70	\$80.86	2.10%	2.21%	10.50%	10.21%	9.00%	9.90%	11.20%	12.11%	12.71%
NorthWestern Corporation	NWE	\$2.52	\$54.56	4.62%	4.69%	3.50%	4.50%	1.70%	3.23%	6.36%	7.93%	9.22%
OGE Energy Corporation	OGE	\$1.66	\$37.88	4.37%	4.47%	6.50%	1.90%	5.00%	4.47%	6.31%	8.94%	11.01%
Otter Tail Corporation	OTTR	\$1.65	\$60.40	2.73%	2.82%	4.50%	9.00%	n/a	6.75%	7.29%	9.57%	11.85%
Portland General Electric Company	POR	\$1.81	\$46.44	3.90%	3.97%	5.00%	1.39%	5.30%	3.90%	5.31%	7.87%	9.30%
Xcel Energy Inc.	XEL	\$1.95	\$67.09	2.91%	3.00%	6.00%	7.01%	6.50%	6.50%	8.99%	9.50%	10.02%
Mean			<u> </u>		<u> </u>		•		<u> </u>	8.23%	9.46%	10.48%
Median										8.02%	9.49%	10.02%

- Notes:
  [1] Bloomberg Professional as of January 31 2023
  [2] Bloomberg Professional 90-day average as of January 31 2023
  [3] Equals [1]/[2]
  [4] Equals [3] x (1 + 0.5 x [8])
  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance
- [7] Zacks

- [7] Zacks
  [8] Equals average of [5], [6], [7]
  [9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7]))
  [10] Equals [4] + [8]
  [11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7]))

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
						Value Line			Average		Cost of	Cost of
						Projected	Yahoo!	Zacks	Projected	Cost of	Equity:	Equity:
					Expected	EPS	Finance	Projected	EPS	Equity:	Mean	Maximum
		Annualized	Stock	Dividend	Dividend	Growth	Projected EPS		Growth	Minimum	Growth	Growth
Company		Dividend	Price	Yield	Yield	Rate	Growth Rate	Rate	Rate	Growth Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$59.39	4.38%	4.56%	6.00%	8.70%	9.60%	8.10%	10.51%	12.66%	14.19%
Alliant Energy Corporation	LNT	\$1.81	\$56.17	3.22%	3.32%	6.00%	5.55%	5.80%	5.78%	8.86%	9.10%	9.32%
Ameren Corporation	AEE	\$2.36	\$87.43	2.70%	2.79%	6.50%	6.64%	6.90%	6.68%	9.29%	9.47%	9.69%
American Electric Power Company	AEP	\$3.32	\$94.51	3.51%	3.62%	6.50%	6.15%	6.10%	6.25%	9.72%	9.87%	10.13%
Avista Corporation	AVA	\$1.76	\$40.84	4.31%	4.41%	3.50%	5.20%	5.20%	4.63%	7.88%	9.04%	9.62%
Duke Energy Corporation	DUK	\$4.02	\$101.88	3.95%	4.05%	5.00%	5.65%	5.50%	5.38%	9.04%	9.44%	9.71%
Edison International	EIX	\$2.95	\$63.34	4.66%	4.77%	6.49%	4.40%	3.00%	4.63%	7.73%	9.40%	11.30%
Entergy Corporation	ETR	\$4.28	\$111.02	3.86%	3.96%	4.00%	6.19%	6.00%	5.40%	7.93%	9.36%	10.16%
Eversource Energy	ES	\$2.55	\$83.45	3.06%	3.15%	6.50%	6.42%	6.50%	6.47%	9.57%	9.63%	9.65%
Evergy, Inc.	EVRG	\$2.45	\$63.35	3.87%	3.97%	7.50%	2.43%	5.30%	5.08%	6.34%	9.04%	11.51%
IDACORP, Inc.	IDA	\$3.16	\$105.36	3.00%	3.06%	4.50%	3.40%	3.40%	3.77%	6.45%	6.82%	7.57%
NextEra Energy, Inc.	NEE	\$1.70	\$80.77	2.10%	2.21%	10.50%	10.21%	9.00%	9.90%	11.20%	12.11%	12.72%
NorthWestern Corporation	NWE	\$2.52	\$55.02	4.58%	4.65%	3.50%	4.50%	1.70%	3.23%	6.32%	7.89%	9.18%
OGE Energy Corporation	OGE	\$1.66	\$38.41	4.31%	4.41%	6.50%	1.90%	5.00%	4.47%	6.25%	8.88%	10.95%
Otter Tail Corporation	OTTR	\$1.65	\$64.85	2.54%	2.63%	4.50%	9.00%	n/a	6.75%	7.10%	9.38%	11.66%
Portland General Electric Company	POR	\$1.81	\$47.85	3.78%	3.86%	5.00%	1.39%	5.30%	3.90%	5.20%	7.75%	9.18%
Xcel Energy Inc.	XEL	\$1.95	\$69.39	2.81%	2.90%	6.00%	7.01%	6.50%	6.50%	8.89%	9.40%	9.92%
Mean										8.14%	9.37%	10.38%
Median										7.93%	9.38%	9.92%

- Notes:
  [1] Bloomberg Professional as of January 31 2023
  [2] Bloomberg Professional 180-day average as of January 31 2023
  [3] Equals [1]/[2]
  [4] Equals [3] x (1 + 0.5 x [8])
  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance
- [7] Zacks

- [7] Zacks
  [8] Equals average of [5], [6], [7]
  [9] Equals [3] x (1 + 0.5 x (min([5], [6], [7])) + (min([5], [6], [7]))
  [10] Equals [4] + [8]
  [11] Equals [3] x (1 + 0.5 x (max([5], [6], [7])) + (max([5], [6], [7]))

# RETENTION GROWTH

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]
			All																			
		All	Dividends	All		Return on					~	~	~									
		Dividends to		Dividends to		Common	Common	Common	Average		Common	Common	Common	Price	Price	Price	Projected					
		Net Profit	Profit	Net Profit	Average	Equity	Equity	Equity	Return on		Shares	Shares	Shares	Projection	Projection		Book Value					
		Projection	Projection	Projection		Projection		Projection	Common		Outstanding	Outstanding	Outstanding	Years 3-5	Years 3-5	Years 3-5	•	to-Book				
Company	Ticker	Year 1	Year 2	Years 3-5	Ratio	Year 1	Year 2	Years 3-5	Equity	bxr	Year 0	Years 3-5	Growth Rate	High	Low	Mid	Years 3-5	Ratio	S	v	s x v	br + sv
ALLETE, Inc.	ALE	69.00%	68.00%	63.00%	33%	7.50%	8.00%	9.00%	8.17%	2.72%	53.20	61.00	2.77%	s 95.00	\$ 70.00	\$ 82.50	s 54.00	1.53	4.24%	34 55%	1.46%	4.19%
Alliant Energy Corporation	LNT	61.00%	61.00%	61.00%	39%	11.00%	11.50%	11.50%	11.33%	4.42%	250.47	253.00	0.20%	\$ 70.00	\$ 55.00	\$ 62.50		2.07	0.42%	51.60%	0.21%	4.63%
Ameren Corporation	AEE	58,00%	58.00%	60.00%	41%	10.00%	10.00%	10.00%	10.00%	4.13%	257.70	280.00	1.67%	\$ 100.00	\$ 80.00	\$ 90.00		1.76	2.94%	43.06%	1.27%	5.40%
American Electric Power Company, Inc	AEP	63.00%	63.00%	62.00%	37%	11.00%	10.50%	11.00%	10.83%	4.04%	504.21	545.00	1.57%	\$ 120.00	\$ 100.00			1.86	2.92%	46.36%	1.36%	5.40%
Avista Corporation	AVA	93.00%	78.00%	72.00%	19%	6.50%	7.50%	8.00%	7.33%	1.39%	71.50	83.00	3.03%	\$ 65.00	\$ 50.00	\$ 57.50		1.65	4.98%	39.22%	1.95%	3.35%
Duke Energy Corporation	DUK	76,00%	73.00%	68.00%	28%	8.50%	9.00%	9.00%	8.83%	2.44%	769.00	770.00	0.03%	\$ 130.00	\$ 95.00	\$ 112.50	\$ 70.00	1.61	0.04%	37.78%	0.02%	2.46%
Edison International	EIX	61.00%	61.00%	56.00%	41%	13.00%	12.50%	13.00%	12.83%	5.22%	380.38	390.00	0.50%	\$ 120.00	\$ 80.00	\$ 100.00	\$ 47.45	2.11	1.06%	52.55%	0.55%	5.77%
Entergy Corporation	ETR	62.00%	64.00%	60.00%	38%	9.50%	10.50%	11.50%	10.50%	3.99%	202.65	214.00	1.10%	\$ 160.00	\$ 115.00	\$ 137.50	\$ 74.00	1.86	2.04%	46.18%	0.94%	4.93%
Eversource Energy	ES	62.00%	62.00%	62.00%	38%	9.00%	9.50%	10.00%	9.50%	3.61%	344.40	365.00	1.17%	\$ 115.00	\$ 95.00	\$ 105.00	\$ 53.75	1.95	2.28%	48.81%	1.11%	4.72%
Evergy, Inc.	EVRG	64.00%	65.00%	63.00%	36%	8.50%	9.00%	10.00%	9.17%	3.30%	229.30	230.00	0.06%	\$ 95.00	\$ 70.00	\$ 82.50	\$ 47.50	1.74	0.11%	42.42%	0.04%	3.34%
IDACORP, Inc.	IDA	60.00%	63.00%	66.00%	37%	9.50%	9.00%	9.50%	9.33%	3.45%	50.52	52.00	0.58%	\$ 130.00	\$ 105.00	\$ 117.50	\$ 67.30	1.75	1.01%	42.72%	0.43%	3.89%
NextEra Energy, Inc.	NEE	58.00%	59.00%	61.00%	41%	15.00%	13.50%	15.00%	14.50%	5.90%	1963.00	2025.00	0.62%	\$ 105.00	\$ 85.00	\$ 95.00	\$ 27.25	3.49	2.17%	71.32%	1.55%	7.45%
NorthWestern Corporation	NWE	75.00%	72.00%	67.00%	29%	7.50%	7.50%	8.00%	7.67%	2.20%	54.06	62.00	2.78%	\$ 75.00	\$ 55.00	\$ 65.00	\$ 50.00	1.30	3.61%	23.08%	0.83%	3.03%
OGE Energy Corporation	OGE	73.00%	81.00%	57.00%	30%	12.00%	12.00%	13.00%	12.33%	3.66%	200.10	200.20	0.01%	\$ 55.00	\$ 40.00	\$ 47.50	\$ 26.00	1.83	0.02%	45.26%	0.01%	3.67%
Otter Tail Corporation	OTTR	31.00%	44.00%	57.00%	56%	19.50%	13.50%	11.50%	14.83%	8.31%	41.55	42.50	0.45%	\$ 75.00	\$ 55.00	\$ 65.00	\$ 34.25	1.90	0.86%	47.31%	0.41%	8.71%
Portland General Electric Company	POR	64.00%	64.00%	64.00%	36%	9.00%	8.50%	9.50%	9.00%	3.24%	89.41	100.00	2.26%	\$ 75.00	\$ 55.00	\$ 65.00	\$ 37.00	1.76	3.98%	43.08%	1.71%	4.95%
Xcel Energy Inc.	XEL	62.00%	62.00%	62.00%	38%	10.50%	10.50%	11.00%	10.67%	4.05%	544.03	561.00	0.62%	\$ 90.00	\$ 75.00	\$ 82.50	\$ 37.00	2.23	1.37%	55.15%	0.76%	4.81%
Mean																						4.75%

Notes:
[1] - [3] Value Line
[4] Equals 1 - Average ([1], [2], [3])
[5] - [7] Value Line
[8] Equals Average ([5], [6], [7])
[9] Equals [4] x [8]
[10] - [11] Value Line
[12] Equals ([11] / [10] ^ 0.2 - 1
[13] - [14] Value Line
[15] Equals Average ([13], [14])
[16] Value Line
[17] Equals [15] / [16]
[18] Equals [15] x [17]
[19] Equals 1 - (1 / [17])
[20] Equals [18] x [19]
[21] Equals [9] + [20]

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
						Value Line	:				Cost of	Cost of	Cost of
						Projected	Yahoo!	Zacks		Average	Equity:	Equity:	Equity:
					Expected	EPS	Finance	Projected	Projected	Projected	Minimum	Mean	Maximum
		Annualized	Stock	Dividend	Dividend	Growth	Projected EPS	EPS Growth	Retention	Growth	Growth	Growth	Growth
Company		Dividend	Price	Yield	Yield	Rate	Growth Rate	Rate	Growth Rate	Rate	Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$64.09	4.06%	4.20%	6.00%	8.70%	9.60%	4.19%	7.12%	8.33%	11.32%	13.85%
Alliant Energy Corporation	LNT	\$1.81	\$54.38	3.33%	3.42%	6.00%	5.55%	5.80%	4.63%	5.50%	8.04%	8.92%	9.43%
Ameren Corporation	AEE	\$2.36	\$88.15	2.68%	2.76%	6.50%	6.64%	6.90%	5.40%	6.36%	8.15%	9.12%	9.67%
American Electric Power Company	AEP	\$3.32	\$94.56	3.51%	3.62%	6.50%	6.15%	6.10%	5.40%	6.04%	9.01%	9.65%	10.13%
Avista Corporation	AVA	\$1.76	\$42.48	4.14%	4.23%	3.50%	5.20%	5.20%	3.35%	4.31%	7.56%	8.54%	9.45%
Duke Energy Corporation	DUK	\$4.02	\$102.85	3.91%	4.00%	5.00%	5.65%	5.50%	2.46%	4.65%	6.42%	8.65%	9.67%
Edison International	EIX	\$2.95	\$66.39	4.44%	4.55%	6.49%	4.40%	3.00%	5.77%	4.92%	7.51%	9.47%	11.08%
Entergy Corporation	ETR	\$4.28	\$109.55	3.91%	4.01%	4.00%	6.19%	6.00%	4.93%	5.28%	7.98%	9.29%	10.22%
Eversource Energy	ES	\$2.55	\$83.08	3.07%	3.16%	6.50%	6.42%	6.50%	4.72%	6.04%	7.87%	9.20%	9.67%
Evergy, Inc.	EVRG	\$2.45	\$62.50	3.92%	4.01%	7.50%	2.43%	5.30%	3.34%	4.64%	6.40%	8.65%	11.57%
IDACORP, Inc.	IDA	\$3.16	\$106.55	2.97%	3.02%	4.50%	3.40%	3.40%	3.89%	3.80%	6.42%	6.82%	7.53%
NextEra Energy, Inc.	NEE	\$1.70	\$82.50	2.06%	2.16%	10.50%	10.21%	9.00%	7.45%	9.29%	9.59%	11.45%	12.67%
NorthWestern Corporation	NWE	\$2.52	\$57.74	4.36%	4.43%	3.50%	4.50%	1.70%	3.03%	3.18%	6.10%	7.62%	8.96%
OGE Energy Corporation	OGE	\$1.66	\$39.21	4.22%	4.32%	6.50%	1.90%	5.00%	3.67%	4.27%	6.17%	8.58%	10.86%
Otter Tail Corporation	OTTR	\$1.65	\$60.44	2.73%	2.83%	4.50%	9.00%	n/a	8.71%	7.40%	7.29%	10.24%	11.85%
Portland General Electric Company	POR	\$1.81	\$48.17	3.76%	3.84%	5.00%	1.39%	5.30%	4.95%	4.16%	5.17%	8.00%	9.16%
Xcel Energy Inc.	XEL	\$1.95	\$69.89	2.79%	2.87%	6.00%	7.01%	6.50%	4.81%	6.08%	7.67%	8.96%	9.90%
Mean		_		·	·	·	_				7.39%	9.09%	10.33%
Median											7.56%	8.96%	9.90%

- Notes:
  [1] Bloomberg Professional as of January 31 2023
  [2] Bloomberg Professional 30-day average as of January 31 2023
  [3] Equals [1]/[2]
  [4] Equals [3] x (1 + 0.5 x [8])
  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance [7] Zacks
- [8] Attachment AEB/CMW-5

- [6] Attachment AED-CNM-2 [9] Equals average of [5], [6], [7], [8] [10] Equals [3] x (1 + 0.5 x (min([5], [6], [7], [8])) + (min([5], [6], [7], [8]) [11] Equals [3] x (1 + 0.5 x (max([5], [6], [7], [8])) + (max([5], [6], [7], [8])

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Common		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Projected EPS Growth Rate	Yahoo! Finance Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Retention Growth Rate	Average Projected Growth Rate	Equity: Minimum Growth Rate	Equity: Mean Growth Rate	Equity: Maximum Growth Rate
Company		Dividend	rnce	rieid	i leiu	Kate	Growth Rate	Rate	Growin Kate	Rate	Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$59.65	4.36%	4.51%	6.00%	8.70%	9.60%	4.19%	7.12%	8.64%	11.64%	14.17%
Alliant Energy Corporation	LNT	\$1.81	\$53.40	3.39%	3.48%	6.00%	5.55%	5.80%	4.63%	5.50%	8.10%	8.98%	9.49%
Ameren Corporation	AEE	\$2.36	\$84.71	2.79%	2.87%	6.50%	6.64%	6.90%	5.40%	6.36%	8.26%	9.23%	9.78%
American Electric Power Company	AEP	\$3.32	\$91.64	3.62%	3.73%	6.50%	6.15%	6.10%	5.40%	6.04%	9.12%	9.77%	10.24%
Avista Corporation	AVA	\$1.76	\$40.23	4.37%	4.47%	3.50%	5.20%	5.20%	3.35%	4.31%	7.79%	8.78%	9.69%
Duke Energy Corporation	DUK	\$4.02	\$97.43	4.13%	4.22%	5.00%	5.65%	5.50%	2.46%	4.65%	6.64%	8.87%	9.89%
Edison International	EIX	\$2.95	\$62.17	4.75%	4.86%	6.49%	4.40%	3.00%	5.77%	4.92%	7.82%	9.78%	11.39%
Entergy Corporation	ETR	\$4.28	\$108.60	3.94%	4.05%	4.00%	6.19%	6.00%	4.93%	5.28%	8.02%	9.33%	10.25%
Eversource Energy	ES	\$2.55	\$79.99	3.19%	3.28%	6.50%	6.42%	6.50%	4.72%	6.04%	7.99%	9.32%	9.79%
Evergy, Inc.	EVRG	\$2.45	\$60.52	4.05%	4.14%	7.50%	2.43%	5.30%	3.34%	4.64%	6.53%	8.79%	11.70%
IDACORP, Inc.	IDA	\$3.16	\$103.99	3.04%	3.10%	4.50%	3.40%	3.40%	3.89%	3.80%	6.49%	6.89%	7.61%
NextEra Energy, Inc.	NEE	\$1.70	\$80.86	2.10%	2.20%	10.50%	10.21%	9.00%	7.45%	9.29%	9.63%	11.49%	12.71%
NorthWestern Corporation	NWE	\$2.52	\$54.56	4.62%	4.69%	3.50%	4.50%	1.70%	3.03%	3.18%	6.36%	7.87%	9.22%
OGE Energy Corporation	OGE	\$1.66	\$37.88	4.37%	4.47%	6.50%	1.90%	5.00%	3.67%	4.27%	6.31%	8.73%	11.01%
Otter Tail Corporation	OTTR	\$1.65	\$60.40	2.73%	2.83%	4.50%	9.00%	n/a	8.71%	7.40%	7.29%	10.24%	11.85%
Portland General Electric Company	POR	\$1.81	\$46.44	3.90%	3.98%	5.00%	1.39%	5.30%	4.95%	4.16%	5.31%	8.14%	9.30%
Xcel Energy Inc.	XEL	\$1.95	\$67.09	2.91%	2.99%	6.00%	7.01%	6.50%	4.81%	6.08%	7.79%	9.08%	10.02%
Mean			-								7.53%	9.23%	10.48%
Median											7.79%	9.08%	10.02%

- Notes:
  [1] Bloomberg Professional as of January 31 2023
  [2] Bloomberg Professional 90-day average as of January 31 2023
  [3] Equals [1]/[2]
  [4] Equals [3] x (1 + 0.5 x [8])
  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance [7] Zacks
- [8] Attachment AEB/CMW-5

- [6] Attachment AED/CMW-2 [9] Equals average of [5], [6], [7], [8] [10] Equals [3] x (1 + 0.5 x (min([5], [6], [7], [8])) + (min([5], [6], [7], [8]) [11] Equals [3] x (1 + 0.5 x (max([5], [6], [7], [8])) + (max([5], [6], [7], [8])

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Projected EPS Growth Rate	Yahoo! Finance Projected EPS Growth Rate	Zacks Projected EPS Growth Rate	Retention Growth Rate	Average Projected Growth Rate	Equity: Minimum Growth Rate	Equity: Mean Growth Rate	Equity: Maximum Growth Rate
Company		Dividend	THEC	1 ICIU	1 icid	Rate	Glowin Rate	Rate	Growth Rate	Rate	Rate	Rate	Rate
ALLETE, Inc.	ALE	\$2.60	\$59.39	4.38%	4.53%	6.00%	8.70%	9.60%	4.19%	7.12%	8.66%	11.66%	14.19%
Alliant Energy Corporation	LNT	\$1.81	\$56.17	3.22%	3.31%	6.00%	5.55%	5.80%	4.63%	5.50%	7.93%	8.81%	9.32%
Ameren Corporation	AEE	\$2.36	\$87.43	2.70%	2.78%	6.50%	6.64%	6.90%	5.40%	6.36%	8.17%	9.14%	9.69%
American Electric Power Company	AEP	\$3.32	\$94.51	3.51%	3.62%	6.50%	6.15%	6.10%	5.40%	6.04%	9.01%	9.66%	10.13%
Avista Corporation	AVA	\$1.76	\$40.84	4.31%	4.40%	3.50%	5.20%	5.20%	3.35%	4.31%	7.73%	8.71%	9.62%
Duke Energy Corporation	DUK	\$4.02	\$101.88	3.95%	4.04%	5.00%	5.65%	5.50%	2.46%	4.65%	6.45%	8.69%	9.71%
Edison International	EIX	\$2.95	\$63.34	4.66%	4.77%	6.49%	4.40%	3.00%	5.77%	4.92%	7.73%	9.69%	11.30%
Entergy Corporation	ETR	\$4.28	\$111.02	3.86%	3.96%	4.00%	6.19%	6.00%	4.93%	5.28%	7.93%	9.24%	10.16%
Eversource Energy	ES	\$2.55	\$83.45	3.06%	3.15%	6.50%	6.42%	6.50%	4.72%	6.04%	7.85%	9.18%	9.65%
Evergy, Inc.	EVRG	\$2.45	\$63.35	3.87%	3.96%	7.50%	2.43%	5.30%	3.34%	4.64%	6.34%	8.60%	11.51%
IDACORP, Inc.	IDA	\$3.16	\$105.36	3.00%	3.06%	4.50%	3.40%	3.40%	3.89%	3.80%	6.45%	6.85%	7.57%
NextEra Energy, Inc.	NEE	\$1.70	\$80.77	2.10%	2.20%	10.50%	10.21%	9.00%	7.45%	9.29%	9.63%	11.49%	12.72%
NorthWestern Corporation	NWE	\$2.52	\$55.02	4.58%	4.65%	3.50%	4.50%	1.70%	3.03%	3.18%	6.32%	7.84%	9.18%
OGE Energy Corporation	OGE	\$1.66	\$38.41	4.31%	4.40%	6.50%	1.90%	5.00%	3.67%	4.27%	6.25%	8.67%	10.95%
Otter Tail Corporation	OTTR	\$1.65	\$64.85	2.54%	2.64%	4.50%	9.00%	n/a	8.71%	7.40%	7.10%	10.04%	11.66%
Portland General Electric Company	POR	\$1.81	\$47.85	3.78%	3.86%	5.00%	1.39%	5.30%	4.95%	4.16%	5.20%	8.02%	9.18%
Xcel Energy Inc.	XEL	\$1.95	\$69.39	2.81%	2.90%	6.00%	7.01%	6.50%	4.81%	6.08%	7.69%	8.98%	9.92%
Mean								-			7.44%	9.13%	10.38%
Median											7.73%	8.98%	9.92%

- Notes:
  [1] Bloomberg Professional as of January 31 2023
  [2] Bloomberg Professional 180-day average as of January 31 2023
  [3] Equals [1]/[2]
  [4] Equals [3] x (1 + 0.5 x [8])
  [5] Value Line. Projected EPS growth rate for EIX based on estimated 2022 EPS in order to exclude anomalous results in 2021 due to wildfire and landslide events per Value Line.
- [6] Yahoo! Finance [7] Zacks
- [8] Attachment AEB/CMW-5

- [6] Attachment AED/CMW-2 [9] Equals average of [5], [6], [7], [8] [10] Equals [3] x (1 + 0.5 x (min([5], [6], [7], [8])) + (min([5], [6], [7], [8]) [11] Equals [3] x (1 + 0.5 x (max([5], [6], [7], [8])) + (max([5], [6], [7], [8])

# CAPITAL ASSET PRICING MODEL CURRENT RISK FREE RATE AND VALUE LINE BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
					Market		
		Current 30-day		Market	Risk		
		average of 30-year		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	Treasury bond yield	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLEME	41.5	2.710/	0.00	10.500/	0.700/	11 (20/	11.040/
ALLETE, Inc.	ALE	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
Alliant Energy Corporation	LNT	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
Ameren Corporation	AEE	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
American Electric Power Company, Inc.	AEP	3.71%	0.75	12.50%	8.79%	10.30%	10.85%
Avista Corporation	AVA	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
Duke Energy Corporation	DUK	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
Edison International	EIX	3.71%	0.95	12.50%	8.79%	12.06%	12.17%
Entergy Corporation	ETR	3.71%	0.95	12.50%	8.79%	12.06%	12.17%
Eversource Energy	ES	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
Evergy, Inc.	EVRG	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
IDACORP, Inc.	IDA	3.71%	0.80	12.50%	8.79%	10.74%	11.18%
NextEra Energy, Inc.	NEE	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
NorthWestern Corporation	NWE	3.71%	0.90	12.50%	8.79%	11.62%	11.84%
OGE Energy Corporation	OGE	3.71%	1.00	12.50%	8.79%	12.50%	12.50%
Otter Tail Corporation	OTTR	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
Portland General Electric Company	POR	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
Xcel Energy Inc.	XEL	3.71%	0.80	12.50%	8.79%	10.74%	11.18%
Mean						11.41%	11.68%
Median						11.62%	11.84%

<sup>[1]</sup> Bloomberg Professional 30-day average as of January 31, 2023

<sup>[2]</sup> Value Line

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL NEAR TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected 30-year U.S. Treasury bond yield (Q2 2023 - Q2		Market Return	Market Risk Premium	CAPM	ECAPM
Company	Ticker	2024)	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc. Alliant Energy Corporation	ALE LNT	3.82% 3.82%	0.90 0.85	12.50% 12.50%	8.68% 8.68%	11.63% 11.19%	11.85% 11.52%
Ameren Corporation	AEE	3.82%	0.85	12.50%	8.68%	11.19%	11.52%
American Electric Power Company, Inc.	AEP	3.82%	0.75	12.50%	8.68%	10.33%	10.87%
Avista Corporation	AVA	3.82%	0.90	12.50%	8.68%	11.63%	11.85%
Duke Energy Corporation	DUK	3.82%	0.85	12.50%	8.68%	11.19%	11.52%
Edison International	EIX	3.82%	0.95	12.50%	8.68%	12.06%	12.17%
Entergy Corporation	ETR	3.82%	0.95	12.50%	8.68%	12.06%	12.17%
Eversource Energy	ES	3.82%	0.90	12.50%	8.68%	11.63%	11.85%
Evergy, Inc.	EVRG	3.82%	0.90	12.50%	8.68%	11.63%	11.85%
IDACORP, Inc.	IDA	3.82%	0.80	12.50%	8.68%	10.76%	11.19%
NextEra Energy, Inc.	NEE	3.82%	0.90	12.50%	8.68%	11.63%	11.85%
NorthWestern Corporation	NWE	3.82%	0.90	12.50%	8.68%	11.63%	11.85%
OGE Energy Corporation	OGE	3.82%	1.00	12.50%	8.68%	12.50%	12.50%
Otter Tail Corporation	OTTR	3.82%	0.85	12.50%	8.68%	11.19%	11.52%
Portland General Electric Company	POR	3.82%	0.85	12.50%	8.68%	11.19%	11.52%
Xcel Energy Inc.	XEL	3.82%	0.80	12.50%	8.68%	10.76%	11.19%
Mean						11.42%	11.69%
Median						11.63%	11.85%

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 42, No. 2, February 1, 2023, at 2

<sup>[2]</sup> Value Line

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

# CAPITAL ASSET PRICING MODEL LONG-TERM PROJECTED RISK-FREE RATE AND VALUE LINE BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
					Market		
		Projected 30-year		Market	Risk		
		U.S. Treasury bond		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	yield (2024 - 2028)	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
Alliant Energy Corporation	LNT	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
Ameren Corporation	AEE	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
American Electric Power Company, Inc.	AEP	3.90%	0.75	12.50%	8.60%	10.35%	10.88%
Avista Corporation	AVA	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
Duke Energy Corporation	DUK	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
Edison International	EIX	3.90%	0.95	12.50%	8.60%	12.07%	12.17%
Entergy Corporation	ETR	3.90%	0.95	12.50%	8.60%	12.07%	12.17%
Eversource Energy	ES	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
Evergy, Inc.	EVRG	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
IDACORP, Inc.	IDA	3.90%	0.80	12.50%	8.60%	10.78%	11.21%
NextEra Energy, Inc.	NEE	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
NorthWestern Corporation	NWE	3.90%	0.90	12.50%	8.60%	11.64%	11.85%
OGE Energy Corporation	OGE	3.90%	1.00	12.50%	8.60%	12.50%	12.50%
Otter Tail Corporation	OTTR	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
Portland General Electric Company	POR	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
Xcel Energy Inc.	XEL	3.90%	0.80	12.50%	8.60%	10.78%	11.21%
Mean						11.43%	11.70%
Median						11.64%	11.85%

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14

<sup>[2]</sup> Value Line

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL CURRENT RISK FREE RATE AND BLOOMBERG BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 \ x (Rm - Rf) + 0.75 \ x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
		Current 30-day		Market	Market Risk		
		average of 30-year		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	Treasury bond yield	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.71%	0.83	12.50%	8.79%	11.01%	11.38%
	LNT	3.71%	0.83	12.50%	8.79%	10.71%	11.16%
Alliant Energy Corporation	AEE	3.71%	0.80	12.50%	8.79%	10.7176	10.90%
Ameren Corporation						10.3776	
American Electric Power Company, Inc.	AEP	3.71%	0.77	12.50%	8.79%		10.98%
Avista Corporation	AVA	3.71%	0.76	12.50%	8.79%	10.36%	10.89%
Duke Energy Corporation	DUK	3.71%	0.73	12.50%	8.79%	10.08%	10.69%
Edison International	EIX	3.71%	0.85	12.50%	8.79%	11.19%	11.52%
Entergy Corporation	ETR	3.71%	0.86	12.50%	8.79%	11.25%	11.56%
Eversource Energy	ES	3.71%	0.81	12.50%	8.79%	10.79%	11.21%
Evergy, Inc.	EVRG	3.71%	0.79	12.50%	8.79%	10.63%	11.10%
IDACORP, Inc.	IDA	3.71%	0.81	12.50%	8.79%	10.80%	11.22%
NextEra Energy, Inc.	NEE	3.71%	0.82	12.50%	8.79%	10.94%	11.33%
NorthWestern Corporation	NWE	3.71%	0.86	12.50%	8.79%	11.30%	11.60%
OGE Energy Corporation	OGE	3.71%	0.93	12.50%	8.79%	11.87%	12.03%
Otter Tail Corporation	OTTR	3.71%	0.88	12.50%	8.79%	11.46%	11.72%
Portland General Electric Company	POR	3.71%	0.79	12.50%	8.79%	10.62%	11.09%
Xcel Energy Inc.	XEL	3.71%	0.75	12.50%	8.79%	10.28%	10.84%
Mean	ALL	5.7170	0.73	12.3070	0.7770	10.83%	11.25%
Median						10.8376	11.21%
Micuiali						10./9/0	11.41/0

<sup>[1]</sup> Bloomberg Professional 30-day average as of January 31, 2023

<sup>[2]</sup> Bloomberg Professional

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL NEAR TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected			Market		
		30-year U.S.		Market	Risk		
		Treasury bond yield		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	(Q2 2023 - Q2	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.82%	0.83	12.50%	8.68%	11.03%	11.40%
Alliant Energy Corporation	LNT	3.82%	0.80	12.50%	8.68%	10.73%	11.17%
Ameren Corporation	AEE	3.82%	0.76	12.50%	8.68%	10.40%	10.92%
American Electric Power Company, Inc.	AEP	3.82%	0.77	12.50%	8.68%	10.50%	11.00%
Avista Corporation	AVA	3.82%	0.76	12.50%	8.68%	10.38%	10.91%
Duke Energy Corporation	DUK	3.82%	0.73	12.50%	8.68%	10.11%	10.71%
Edison International	EIX	3.82%	0.85	12.50%	8.68%	11.21%	11.53%
Entergy Corporation	ETR	3.82%	0.86	12.50%	8.68%	11.26%	11.57%
Eversource Energy	ES	3.82%	0.81	12.50%	8.68%	10.81%	11.23%
Evergy, Inc.	EVRG	3.82%	0.79	12.50%	8.68%	10.65%	11.11%
IDACORP, Inc.	IDA	3.82%	0.81	12.50%	8.68%	10.82%	11.24%
NextEra Energy, Inc.	NEE	3.82%	0.82	12.50%	8.68%	10.96%	11.34%
NorthWestern Corporation	NWE	3.82%	0.86	12.50%	8.68%	11.31%	11.61%
OGE Energy Corporation	OGE	3.82%	0.93	12.50%	8.68%	11.88%	12.03%
Otter Tail Corporation	OTTR	3.82%	0.88	12.50%	8.68%	11.48%	11.73%
Portland General Electric Company	POR	3.82%	0.79	12.50%	8.68%	10.64%	11.11%
Xcel Energy Inc.	XEL	3.82%	0.75	12.50%	8.68%	10.31%	10.86%
Mean						10.85%	11.26%
Median						10.81%	11.23%

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 42, No. 2, February 1, 2023, at 2

<sup>[2]</sup> Bloomberg Professional

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

# CAPITAL ASSET PRICING MODEL LONG-TERM PROJECTED RISK-FREE RATE AND BLOOMBERG BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
					Market		
		Projected 30-year		Market	Risk		
		U.S. Treasury bond		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	yield (2024 - 2028)	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.90%	0.83	12.50%	8.60%	11.05%	11.41%
Alliant Energy Corporation	LNT	3.90%	0.80	12.50%	8.60%	10.75%	11.19%
Ameren Corporation	AEE	3.90%	0.76	12.50%	8.60%	10.75%	10.94%
American Electric Power Company, Inc.	AEP	3.90%	0.70	12.50%	8.60%	10.52%	11.01%
Avista Corporation	AVA	3.90%	0.76	12.50%	8.60%	10.3276	10.93%
Duke Energy Corporation	DUK	3.90%	0.73	12.50%	8.60%	10.40%	10.73%
Edison International	EIX	3.90%	0.75	12.50%	8.60%	11.22%	11.54%
Entergy Corporation	ETR	3.90%	0.86	12.50%	8.60%	11.27%	11.58%
Eversource Energy	ES	3.90%	0.81	12.50%	8.60%	10.82%	11.24%
Evergy, Inc.	EVRG	3.90%	0.79	12.50%	8.60%	10.67%	11.13%
IDACORP, Inc.	IDA	3.90%	0.81	12.50%	8.60%	10.84%	11.25%
NextEra Energy, Inc.	NEE	3.90%	0.82	12.50%	8.60%	10.97%	11.35%
NorthWestern Corporation	NWE	3.90%	0.86	12.50%	8.60%	11.32%	11.62%
OGE Energy Corporation	OGE	3.90%	0.93	12.50%	8.60%	11.89%	12.04%
Otter Tail Corporation	OTTR	3.90%	0.88	12.50%	8.60%	11.48%	11.74%
Portland General Electric Company	POR	3.90%	0.79	12.50%	8.60%	10.66%	11.12%
Xcel Energy Inc.	XEL	3.90%	0.75	12.50%	8.60%	10.33%	10.87%
Mean			- , , -			10.87%	11.28%
Median						10.82%	11.24%

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14

<sup>[2]</sup> Bloomberg Professional

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL CURRENT RISK FREE RATE AND LONG-TERM VALUE LINE BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 \ x (Rm - Rf) + 0.75 \ x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
-					Market		
		Current 30-day		Market	Risk		
		average of 30-year		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	Treasury bond yield	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.71%	0.79	12.50%	8.79%	10.61%	11.08%
Alliant Energy Corporation	LNT	3.71%	0.75	12.50%	8.79%	10.30%	10.85%
Ameren Corporation	AEE	3.71%	0.73	12.50%	8.79%	10.08%	10.68%
American Electric Power Company, Inc.	AEP	3.71%	0.68	12.50%	8.79%	9.64%	10.35%
Avista Corporation	AVA	3.71%	0.79	12.50%	8.79%	10.61%	11.08%
Duke Energy Corporation	DUK	3.71%	0.67	12.50%	8.79%	9.55%	10.29%
Edison International	EIX	3.71%	0.75	12.50%	8.79%	10.30%	10.85%
Entergy Corporation	ETR	3.71%	0.75	12.50%	8.79%	10.26%	10.82%
Eversource Energy	ES	3.71%	0.74	12.50%	8.79%	10.24%	10.81%
Evergy, Inc.	EVRG	3.71%	0.95	12.50%	8.79%	12.06%	12.17%
IDACORP, Inc.	IDA	3.71%	0.73	12.50%	8.79%	10.12%	10.72%
NextEra Energy, Inc.	NEE	3.71%	0.73	12.50%	8.79%	10.12%	10.72%
NorthWestern Corporation	NWE	3.71%	0.75	12.50%	8.79%	10.26%	10.82%
OGE Energy Corporation	OGE	3.71%	0.93	12.50%	8.79%	11.88%	12.03%
Otter Tail Corporation	OTTR	3.71%	0.85	12.50%	8.79%	11.18%	11.51%
Portland General Electric Company	POR	3.71%	0.75	12.50%	8.79%	10.30%	10.85%
Xcel Energy Inc.	XEL	3.71%	0.66	12.50%	8.79%	9.46%	10.22%
Mean						10.41%	10.93%
Median						10.26%	10.82%

<sup>[1]</sup> Bloomberg Professional 30-day average as of January 31, 2023

<sup>[2]</sup> Attachment AEB/CMW-7

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL NEAR-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

 $K = Rf + \beta \; (Rm - Rf)$   $K = Rf + 0.25 \; x \; (Rm - Rf) + 0.75 \; x \; \beta \; x \; (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
		Near-term projected			Market		
		30-year U.S.		Market	Risk		
		Treasury bond yield		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	(Q2 2023 - Q2	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
AT LEGIE		2.020/	0.70	10.500/	0.600/	10.620/	11 100/
ALLETE, Inc.	ALE	3.82%	0.79	12.50%	8.68%	10.63%	11.10%
Alliant Energy Corporation	LNT	3.82%	0.75	12.50%	8.68%	10.33%	10.87%
Ameren Corporation	AEE	3.82%	0.73	12.50%	8.68%	10.11%	10.71%
American Electric Power Company, Inc.	AEP	3.82%	0.68	12.50%	8.68%	9.68%	10.38%
Avista Corporation	AVA	3.82%	0.79	12.50%	8.68%	10.63%	11.10%
Duke Energy Corporation	DUK	3.82%	0.67	12.50%	8.68%	9.59%	10.32%
Edison International	EIX	3.82%	0.75	12.50%	8.68%	10.33%	10.87%
Entergy Corporation	ETR	3.82%	0.75	12.50%	8.68%	10.28%	10.84%
Eversource Energy	ES	3.82%	0.74	12.50%	8.68%	10.27%	10.83%
Evergy, Inc.	EVRG	3.82%	0.95	12.50%	8.68%	12.06%	12.17%
IDACORP, Inc.	IDA	3.82%	0.73	12.50%	8.68%	10.15%	10.74%
NextEra Energy, Inc.	NEE	3.82%	0.73	12.50%	8.68%	10.15%	10.74%
NorthWestern Corporation	NWE	3.82%	0.75	12.50%	8.68%	10.28%	10.84%
OGE Energy Corporation	OGE	3.82%	0.93	12.50%	8.68%	11.89%	12.04%
Otter Tail Corporation	OTTR	3.82%	0.85	12.50%	8.68%	11.19%	11.52%
Portland General Electric Company	POR	3.82%	0.75	12.50%	8.68%	10.33%	10.87%
Xcel Energy Inc.	XEL	3.82%	0.66	12.50%	8.68%	9.50%	10.25%
Mean						10.44%	10.95%
Median						10.28%	10.84%

#### Notes

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 42, No. 2, February 1, 2023, at 2

<sup>[2]</sup> Attachment AEB/CMW-7

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

# CAPITAL ASSET PRICING MODEL LONG-TERM PROJECTED RISK FREE RATE AND LONG-TERM VALUE LINE BETA

 $K = Rf + \beta (Rm - Rf)$   $K = Rf + 0.25 x (Rm - Rf) + 0.75 x \beta x (Rm - Rf)$ 

		[1]	[2]	[3]	[4]	[5]	[6]
					Market		
		Projected 30-year		Market	Risk		
		U.S. Treasury bond		Return	Premium	CAPM	<b>ECAPM</b>
Company	Ticker	yield (2024 - 2028)	Beta (β)	(Rm)	(Rm - Rf)	ROE (K)	ROE (K)
ALLETE, Inc.	ALE	3.90%	0.79	12.50%	8.60%	10.65%	11.11%
Alliant Energy Corporation	LNT	3.90%	0.75	12.50%	8.60%	10.35%	10.88%
Ameren Corporation	AEE	3.90%	0.73	12.50%	8.60%	10.33%	10.72%
American Electric Power Company, Inc.	AEP	3.90%	0.73	12.50%	8.60%	9.70%	10.7276
	AVA	3.90%	0.08	12.50%	8.60%	10.65%	11.11%
Avista Corporation			0.79				
Duke Energy Corporation Edison International	DUK	3.90%		12.50%	8.60%	9.62%	10.34%
	EIX	3.90%	0.75	12.50%	8.60%	10.35%	10.88%
Entergy Corporation	ETR	3.90%	0.75	12.50%	8.60%	10.30%	10.85%
Eversource Energy	ES	3.90%	0.74	12.50%	8.60%	10.29%	10.84%
Evergy, Inc.	EVRG	3.90%	0.95	12.50%	8.60%	12.07%	12.17%
IDACORP, Inc.	IDA	3.90%	0.73	12.50%	8.60%	10.18%	10.76%
NextEra Energy, Inc.	NEE	3.90%	0.73	12.50%	8.60%	10.18%	10.76%
NorthWestern Corporation	NWE	3.90%	0.75	12.50%	8.60%	10.30%	10.85%
OGE Energy Corporation	OGE	3.90%	0.93	12.50%	8.60%	11.89%	12.04%
Otter Tail Corporation	OTTR	3.90%	0.85	12.50%	8.60%	11.21%	11.53%
Portland General Electric Company	POR	3.90%	0.75	12.50%	8.60%	10.35%	10.88%
Xcel Energy Inc.	XEL	3.90%	0.66	12.50%	8.60%	9.53%	10.27%
Mean						10.46%	10.97%
Median						10.30%	10.85%

#### Notes

<sup>[1]</sup> Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14

<sup>[2]</sup> Attachment AEB/CMW-7

<sup>[3]</sup> Attachment AEB/CMW-8

<sup>[4]</sup> Equals [3]-[1]

<sup>[5]</sup> Equals [1] + [2] x [4]

<sup>[6]</sup> Equals [1] +  $0.25 \times ([4]) + 0.75 \times ([2] \times [4])$ 

## HISTORICAL VALUE LINE BETA

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	Average
ALLETE, Inc.	ALE	0.75	0.80	0.80	0.75	0.80	0.65	0.65	0.85	0.90	0.90	0.79
Alliant Energy Corporation	LNT	0.75	0.8	0.8	0.70	0.70	0.60	0.60	0.85	0.85	0.85	0.75
Ameren Corporation	AEE	0.8	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.80	0.85	0.73
American Electric Power Company,	AEP	0.7	0.7	0.7	0.65	0.65	0.55	0.55	0.75	0.75	0.75	0.68
Avista Corporation	AVA	0.75	0.8	0.8	0.70	0.75	0.65	0.60	0.95	0.95	0.90	0.79
Duke Energy Corporation	DUK	0.65	0.6	0.65	0.60	0.60	0.50	0.50	0.85	0.85	0.85	0.67
Edison International	EIX	0.8	0.75	0.7	0.65	0.65	0.55	0.55	0.95	0.95	0.95	0.75
Entergy Corporation	ETR	0.7	0.7	0.7	0.65	0.65	0.60	0.60	0.95	0.95	0.95	0.75
Eversource Energy	ES			0.75	0.70	0.65	0.60	0.55	0.90	0.90	0.90	0.74
Evergy, Inc.	<b>EVRG</b>						NMF	NMF	1.00	0.95	0.90	0.95
IDACORP, Inc.	IDA	0.75	0.8	0.8	0.75	0.70	0.55	0.55	0.80	0.80	0.80	0.73
NextEra Energy, Inc.	NEE	0.7	0.7	0.75	0.65	0.65	0.55	0.55	0.90	0.90	0.95	0.73
NorthWestern Corporation	NWE	0.7	0.7	0.7	0.70	0.70	0.55	0.60	0.95	0.95	0.90	0.75
OGE Energy Corporation	OGE	0.85	0.9	0.95	0.90	0.95	0.85	0.75	1.10	1.05	1.00	0.93
Otter Tail Corporation	OTTR	0.95	0.9	0.85	0.85	0.90	0.75	0.70	0.85	0.90	0.85	0.85
Portland General Electric Company	POR	0.75	0.8	0.8	0.70	0.70	0.60	0.55	0.85	0.90	0.85	0.75
Xcel Energy Inc.	XEL	0.65	0.65	0.65	0.60	0.60	0.50	0.50	0.80	0.80	0.80	0.66
Mean		0.75	0.76	0.76	0.70	0.71	0.60	0.58	0.89	0.89	0.88	0.76

- [1] Value Line, dated December 26, 2013.
- [2] Value Line, dated December 31, 2014.
- [3] Value Line, dated December 30, 2015.
- [4] Value Line, dated December 29, 2016.
- [5] Value Line, dated December 28, 2017.
- [6] Value Line, dated December 27, 2018.
- [7] Value Line, dated December 26, 2019. [8] Value Line, dated December 30, 2020.
- [9] Value Line, dated December 29, 2021. [10] Value Line, dated December 30, 2022.
- [11] Average ([1] [10])

[1] Estimate of the S&P 500 Dividend Yield

[2] Estimate of the S&P 500 Growth Rate 10.65% 12.50%

1.75%

[3] S&P 500 Estimated Required Market Return

_		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
	m: 1	Shares		Market	Weight in	Estimated	Cap-Weighted	Value Line Long-Term	Cap-Weighted Long-Term
Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yiel	d Dividend Yield	Growth Est.	Growth Est.
LyondellBasell Industries NV	LYB SBNY	325.62 62.93	96.69 128.95	31,484.58 8,114.69	0.11% 0.03%	4.92% 2.17%	0.01%	3.50% 14.50%	0.00%
Signature Bank/New York NY American Express Co	AXP	743.00	174.93	129,972.99	0.05%	1.19%	0.00%	10.00%	0.05%
Verizon Communications Inc	VZ	4,200.00	41.57	174,594.00	0.62%	6.28%	0.04%	2.50%	0.02%
Broadcom Inc	AVGO	417.89	585.01	244,467.49		3.15%		30.00%	
Boeing Co/The Caterpillar Inc	BA CAT	598.24 520.41	213.00 252.29	127,425.12 131,293.99	0.46%	1.90%	0.01%	11.00%	0.05%
JPMorgan Chase & Co	JPM	2,933.21	139.96	410,531.37	1.45%	2.86%	0.04%	5.00%	0.07%
Chevron Corp	CVX	1,901.00	174.02	330,812.02	0.040/	3.47%	0.000/	44.00%	0.050/
Coca-Cola Co/The AbbVie Inc	KO ABBV	4,324.51 1,768.48	61.32 147.75	265,179.14 261,293.07	0.94% 0.92%	2.87% 4.01%	0.03% 0.04%	8.00% 4.50%	0.07% 0.04%
Walt Disney Co/The	DIS	1,823.59	108.49	197,841.50	***			86.00%	
FleetCor Technologies Inc	FLT	73.75	208.81	15,400.16	0.05%			10.50%	0.01%
Extra Space Storage Inc Exxon Mobil Corp	EXR XOM	133.92 4.118.29	157.83 116.01	21,136.91 477,763.17	0.07%	3.80% 3.14%	0.00%	4.00%	0.00%
Phillips 66	PSX	472.63	100.27	47,390.81		3.87%		85.00%	
General Electric Co	GE	1,092.67	80.48	87,937.92		0.40%		21.00%	
HP Inc Home Depot Inc/The	HPQ HD	982.15 1,019.19	29.14 324.17	28,619.73 330,389.53	0.10% 1.17%	3.60% 2.34%	0.00%	10.50% 9.00%	0.01% 0.11%
Monolithic Power Systems Inc	MPWR	46.94	426.56	20,023.58	1.1770	0.70%	0.0570	23.50%	0.1170
International Business Machines Corp	IBM	904.13	134.73	121,812.90	0.43%	4.90%	0.02%	3.00%	0.01%
Johnson & Johnson McDonald's Corp	JNJ MCD	2,614.48 732.42	163.42 267.40	427,258.98 195,850.18	1.51% 0.69%	2.77% 2.27%	0.04% 0.02%	8.00% 10.50%	0.12% 0.07%
Merck & Co Inc	MRK	2,535.40	107.41	272,326.88	0.96%	2.72%	0.02%	8.00%	0.08%
3M Co	MMM	552.74	115.08	63,609.66	0.22%	5.18%	0.01%	7.50%	0.02%
American Water Works Co Inc Bank of America Corp	AWK BAC	181.83 7,996.78	156.49 35.48	28,454.26 283,725.68	0.10% 1.00%	1.67% 2.48%	0.00%	3.00% 8.50%	0.00% 0.09%
Pfizer Inc	PFE	5,613.32	44.16	247,883.99	0.88%	3.71%	0.02%	6.50%	0.06%
Procter & Gamble Co/Ths	PG	2,359.14	142.38	335,894.92	1.19%	2.57%	0.03%	6.50%	0.08%
AT&T Inc	T	7,128.00	20.37	145,197.36	0.51%	5.45%	0.03%	1.00%	0.01%
Travelers Cos Inc/The Raytheon Technologies Corp	TRV RTX	232.10 1,470.06	191.12 99.85	44,358.95 146,785.59	0.16% 0.52%	1.95% 2.20%	0.00%	6.50% 7.00%	0.01% 0.04%
Analog Devices Inc	ADI	509.30	171.47	87,328.99	0.31%	1.77%	0.01%	14.00%	0.04%
Walmart Inc	WMT	2,696.80	143.87	387,988.62	1.37%	1.56%	0.02%	7.50%	0.10%
Cisco Systems Inc Intel Corp	CSCO INTC	4,108.10 4,137.00	48.67 28.26	199,941.37 116,911.62	0.71%	3.12% 5.17%	0.02%	9.00%	0.06%
General Motors Co	GM	1,394.64	39.32	54,837.13	0.19%	0.92%	0.00%	10.00%	0.02%
Microsoft Corp	MSFT	7,443.80	247.81	1,844,649.07	6.52%	1.10%	0.07%	15.00%	0.98%
Dollar General Corp Cigna Corp	DG CI	223.58 305.74	233.60 316.67	52,227.12 96,818.37	0.18%	0.94% 1.41%	0.00%	10.00% 10.00%	0.02% 0.03%
Kinder Morgan Inc	KMI	2,247.74	18.30	41,133.68	0.15%	6.07%	0.01%	19.00%	0.03%
Citigroup Inc	C	1,937.00	52.22	101,150.14	0.36%	3.91%	0.01%	3.50%	0.01%
American International Group Inc Altria Group Inc	AIG MO	742.98 1,792.17	63.22 45.04	46,971.20 80,719.47	0.17% 0.29%	2.02% 8.35%	0.00% 0.02%	6.50% 6.00%	0.01% 0.02%
HCA Healthcare Inc	HCA	282.72	255.07	72,112.63	0.25%	0.94%	0.02%	12.50%	0.02%
International Paper Co	IP	355.67	41.82	14,874.12	0.05%	4.42%	0.00%	13.50%	0.01%
Hewlett Packard Enterprise Cc	HPE	1,281.82	16.13	20,675.71	0.07%	2.98%	0.00%	7.50%	0.01%
Abbott Laboratories Aflac Inc	ABT AFL	1,743.57 621.79	110.55 73.50	192,752.11 45,701.49	0.68% 0.16%	1.85% 2.29%	0.01% 0.00%	7.00% 9.00%	0.05% 0.01%
Air Products and Chemicals Inc	APD	221.99	320.51	71,149.37	0.25%	2.18%	0.01%	11.50%	0.03%
Royal Caribbean Cruises Ltd Hess Corp	RCL HES	255.18 308.31	64.94 150.16	16,571.52 46,295.53		1.00%			
Archer-Daniels-Midland Co	ADM	549.33	82.85	45,512.32	0.16%	2.17%	0.00%	13.00%	0.02%
Automatic Data Processing Inc	ADP	414.40	225.81	93,575.66	0.33%	2.21%	0.01%	10.00%	0.03%
Verisk Analytics Inc	VRSK	156.39	181.79	28,429.77	0.10%	0.68%	0.00%	13.00%	0.01% 0.02%
AutoZone Inc Avery Dennison Corp	AZO AVY	18.77 80.97	2,438.85 189.44	45,767.46 15,338.77	0.16% 0.05%	1.58%	0.00%	14.50% 12.00%	0.02%
Enphase Energy Inc	ENPH	135.92	221.38	30,090.86				26.50%	
MSCI Inc	MSCI	79.96	531.56	42,502.47	0.15%	1.04%	0.00%	14.50%	0.02%
Ball Corp Ceridian HCM Holding Inc	BALL CDAY	313.92 153.60	58.24 72.28	18,282.70 11,101.85		1.37%		21.50%	
Carrier Global Corp	CARR	836.26	45.53	38,075.01		1.63%			
Bank of New York Mellon Corp/The Otis Worldwide Corp	BK	808.45	50.57	40,883.06	0.14%	2.93%	0.00%	6.00%	0.01%
Otis Worldwide Corp Baxter International Inc	OTIS BAX	416.59 504.12	82.23 45.69	34,255.87 23,033.29	0.08%	1.41% 2.54%	0.00%	8.00%	0.01%
Becton Dickinson and Co	BDX	284.27	252.22	71,698.07	0.25%	1.44%	0.00%	4.50%	0.01%
Berkshire Hathaway Inc Best Buy Co Inc	BRK/B	1,301.98	311.52	405,593.12	1.43% 0.07%	2.079/	0.000/	6.00%	0.09%
Boston Scientific Corp	BBY BSX	221.26 1,432.31	88.72 46.25	19,630.54 66,244.38	0.07%	3.97%	0.00%	4.00% 17.00%	0.00% 0.04%
Bristol-Myers Squibb Cc	BMY	2,126.16	72.65	154,465.52		3.14%			
Brown-Forman Corp	BF/B	309.95	66.58	20,636.60	0.07%	1.23%	0.00%	14.50%	0.01%
Coterra Energy Inc Campbell Soup Co	CTRA CPB	788.47 299.47	25.03 51.93	19,735.33 15,551.37	0.05%	10.87% 2.85%	0.00%	5.00%	0.00%
Hilton Worldwide Holdings Inc	HLT	270.46	145.09	39,240.46	0.0370	0.41%	0.0070	3.0070	0.0070
Carnival Corp	CCL	1,112.71	10.82	12,039.49					
Qorvo Inc Lumen Technologies Inc	QRVO LUMN	101.39 1,034.58	108.66 5.25	11,016.93 5,431.56	0.04% 0.02%			14.50% 1.50%	0.01% 0.00%
UDR Inc	UDR	325.54	42.59	13,864.83	0.05%	3.57%	0.00%	10.50%	0.01%
Clorox Co/The	CLX	123.39	144.69	17,852.58	0.06%	3.26%	0.00%	7.50%	0.00%
Paycom Software Inc CMS Energy Corp	PAYC CMS	60.02 290.25	323.94 63.19	19,442.88 18,341.02	0.06%	2.91%	0.00%	21.00% 6.50%	0.00%
Newell Brands Inc	NWL	413.60	15.96	6,601.06	5.0070	5.76%	0.0070	0.5070	0.0070
Colgate-Palmolive Co	CL	835.21	74.53	62,248.50	0.22%	2.52%	0.01%	6.50%	0.01%
EPAM Systems Inc Comerica Inc	EPAM CMA	57.51 131.00	332.65 73.31	19,131.70	0.03%	3.71%	0.00%	20.50%	0.00%
Conagra Brands Inc	CMA CAG	476.62	73.31 37.19	9,603.61 17,725.61	0.05%	3.71%	0.00%	9.00% 3.50%	0.00% 0.00%
Consolidated Edison Inc	ED	354.86	95.31	33,821.99	0.12%	3.40%	0.00%	4.00%	0.00%
Corning Inc	GLW	845.81	34.61	29,273.52	0.10%	3.12%	0.00%	17.50%	0.02%
Cummins Inc Caesars Entertainment Inc	CMI CZR	141.02 214.57	249.54 52.06	35,190.63 11,170.31	0.12%	2.52%	0.00%	8.50%	0.01%
Danaher Corp	DHR	728.30	264.38	192,547.95	0.68%	0.38%	0.00%	16.00%	0.11%
Target Corp	TGT	460.31	172.14	79,237.76	0.28%	2.51%	0.01%	12.00%	0.03%
Deere & Co	DE	297.16	422.84	125,649.87	0.44%	1.14%	0.01%	16.50%	0.07%

[1] Estimate of the S&P 500 Dividend Yield

[2] Estimate of the S&P 500 Growth Rate 10.65% 12.50%

1.75%

[3] S&P 500 Estimated Required Market Return

		[4]	[5]	[6]	[7]	[8]	[9]	[10] Value Line	[11] Cap-Weighted
		Shares		Market	Weight in	Estimated	Cap-Weighted	Long-Term	Long-Term
Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yield	Dividend Yield	Growth Est.	Growth Est.
Dominion Energy Inc	D	833.28	63.64	53,029.62	0.19%	4.20%	0.01%	5.50%	0.01%
Dover Corp	DOV	140.35	151.83	21,309.95	0.08%	1.33%	0.00%	9.00%	0.01%
Alliant Energy Corp Steel Dynamics Inc	LNT STLD	251.02 175.57	54.03 120.64	13,562.72 21,180.89	0.05% 0.07%	3.35% 1.13%	0.00%	6.00% 2.00%	0.00% 0.00%
Duke Energy Corp	DUK	770.00	102.45	78,886.50	0.28%	3.92%	0.00%	5.00%	0.01%
Regency Centers Corp	REG	171.12	66.63	11,401.93	0.04%	3.90%	0.00%	12.50%	0.01%
Eaton Corp PLC	ETN	397.70	162.21	64,510.92	0.23%	2.00%	0.00%	12.00%	0.03%
Ecolab Inc PerkinElmer Inc	ECL PKI	284.83 126.32	154.83 137.53	44,099.92 17,372.24	0.16% 0.06%	1.37% 0.20%	0.00%	10.50% 4.00%	0.02%
Emerson Electric Co	EMR	582.30	90.22	52,535.38	0.19%	2.31%	0.00%	9.50%	0.02%
EOG Resources Inc	EOG	587.39	132.25	77,682.20		2.50%		26.00%	
Aon PLC Entergy Corp	AON ETR	206.85 203.48	318.68 108.28	65,919.91 22,033.25	0.23% 0.08%	0.70% 3.95%	0.00% 0.00%	7.50% 4.00%	0.02% 0.00%
Equifax Inc	EFX	122.44	222.20	27,206.83	0.10%	0.70%	0.00%	7.00%	0.01%
EQT Corp	EQT	367.05	32.67	11,991.39		1.84%			
IQVIA Holdings Inc	IQV IT	185.74	229.41	42,610.61	0.15%			14.50%	0.02%
Gartner Inc FedEx Corp	FDX	79.02 252.40	338.14 193.86	26,721.18 48,929.68	0.09% 0.17%	2.37%	0.00%	18.00% 13.00%	0.02% 0.02%
FMC Corp	FMC	125.97	133.13	16,769.85	0.06%	1.74%	0.00%	11.00%	0.01%
Brown & Brown Inc	BRO	283.20	58.56	16,584.19	0.06%	0.79%	0.00%	8.00%	0.00%
Ford Motor Co	F NEE	3,949.64	13.51	53,359.66	0.52%	4.44% 2.28%	0.01%	33.50%	0.069/
NextEra Energy Inc Franklin Resources Inc	BEN	1,987.16 500.36	74.63 31.20	148,302.05 15,611.17	0.06%	3.85%	0.01%	10.50% 3.50%	0.06%
Garmin Ltd	GRMN	191.66	98.88	18,951.74	0.07%	2.95%	0.00%	6.00%	0.00%
Freeport-McMoRan Inc	FCX	1,429.33	44.62	63,776.57		1.34%		27.50%	
Dexcom Inc	DXCM	386.26	107.09	41,364.37	0.23%	2.16%	0.00%	9.00%	0.02%
General Dynamics Corp General Mills Inc	GD GIS	274.55 589.61	233.06 78.36	63,986.39 46,201.92	0.23%	2.16%	0.00%	9.00% 4.00%	0.02%
Genuine Parts Co	GPC	141.16	167.82	23,689.64	0.10%	2.13%	0.00%	9.00%	0.01%
Atmos Energy Corp	ATO	141.02	117.54	16,575.02	0.06%	2.52%	0.00%	7.50%	0.00%
WW Grainger Inc	GWW	50.53	589.48	29,785.83	0.11%	1.17%	0.00%	11.00%	0.01%
Halliburton Co L3Harris Technologies Inc	HAL LHX	908.05 190.40	41.22 214.82	37,429.70 40,902.37	0.14%	1.55% 2.09%	0.00%	32.50% 18.00%	0.03%
Healthpeak Properties Inc	PEAK	537.54	27.48	14,771.60	0.05%	4.37%	0.00%	17.00%	0.01%
Catalent Inc	CTLT	179.96	53.55	9,637.07				21.00%	
Fortive Corp	FTV	353.81	68.03	24,069.56	0.09%	0.41%	0.00%	12.00%	0.01%
Hershey Co/The Synchrony Financial	HSY SYF	146.97 438.20	224.60 36.73	33,009.24 16,095.09	0.12% 0.06%	1.85% 2.50%	0.00% 0.00%	9.00% 9.50%	0.01% 0.01%
Hormel Foods Corp	HRL	546.42	45.31	24,758.47	0.09%	2.43%	0.00%	7.50%	0.01%
Arthur J Gallagher & Co	AJG	211.90	195.72	41,473.07	0.15%	1.12%	0.00%	18.50%	0.03%
Mondelez International Inc	MDLZ	1,365.62	65.44	89,366.11	0.32%	2.35%	0.01%	7.50%	0.02%
CenterPoint Energy Inc Humana Inc	CNP HUM	629.43 126.60	30.12 511.70	18,958.49 64,781.22	0.07% 0.23%	2.52% 0.62%	0.00%	6.50% 11.00%	0.00%
Willis Towers Watson PLC	WTW	108.24	254.19	27,513.02	0.10%	1.29%	0.00%	8.50%	0.01%
Illinois Tool Works Inc	ITW	307.19	236.04	72,508.18	0.26%	2.22%	0.01%	11.00%	0.03%
CDW Corp/DE	CDW	135.39	196.03	26,540.70	0.09%	1.20%	0.00%	8.50%	0.01%
Trane Technologies PLC Interpublic Group of Cos Inc/The	TT IPG	230.31 388.53	179.12 36.46	41,252.59 14,165.62	0.05%	1.50% 3.18%	0.00%	10.00%	0.01%
International Flavors & Fragrances Inc	IFF	254.96	112.46	28,673.03	0.10%	2.88%	0.00%	7.50%	0.01%
Generac Holdings Inc	GNRC	63.36	120.60	7,640.73				23.50%	
NXP Semiconductors NV	NXPI	259.14	184.31	47,761.17	0.17%	2.20%	0.00%	12.00%	0.02%
Kellogg Co Broadridge Financial Solutions Inc	K BR	341.28 117.66	68.58 150.36	23,405.05 17,690.61	0.08%	3.44% 1.93%	0.00%	3.50% 9.50%	0.00% 0.01%
Kimberly-Clark Corp	KMB	337.49	130.01	43,877.33	0.16%	3.63%	0.00%	5.50%	0.01%
Kimco Realty Corp	KIM	618.46	22.46	13,890.63	0.05%	4.10%	0.00%	8.50%	0.00%
Oracle Corp	ORCL	2,696.25	88.46	238,510.54	0.84%	1.45%	0.01%	10.00%	0.08%
Kroger Co/The Lennar Corp	KR LEN	715.82 253.54	44.63 102.40	31,947.14 25,962.39	0.11% 0.09%	2.33% 1.46%	0.00%	6.50% 8.50%	0.01% 0.01%
Eli Lilly & Co	LLY	950.18	344.15	327,003.76	1.16%	1.31%	0.02%	11.50%	0.13%
Bath & Body Works Inc	BBWI	228.42	46.01	10,509.37		1.74%		26.50%	
Charter Communications Inc	CHTR	155.67	384.31	59,826.31	0.000/	# 000/	0.000/	23.00%	0.000/
Lincoln National Corp Loews Corp	LNC L	169.22 237.43	35.43 61.48	5,995.29 14,597.01	0.02% 0.05%	5.08% 0.41%	0.00% 0.00%	11.50% 18.50%	0.00% 0.01%
Lowe's Cos Inc	LOW	604.70	208.25	125,929.40	0.45%	2.02%	0.01%	12.50%	0.06%
IDEX Corp	IEX	75.42	239.68	18,076.91	0.06%	1.00%	0.00%	11.00%	0.01%
Marsh & McLennan Cos Inc	MMC	496.01	174.91	86,757.11	0.31%	1.35%	0.00%	11.00%	0.03%
Masco Corp S&P Global Inc	MAS SPGI	225.53 325.80	53.20 374.94	11,998.14 122,155.45	0.04% 0.43%	2.11% 0.96%	0.00%	8.00% 9.50%	0.00%
Medtronic PLC	MDT	1,330.18	83.69	111,322,76	0.39%	3.25%	0.00%	7.50%	0.03%
Viatris Inc	VTRS	1,212.69	12.16	14,746.25		3.95%			
CVS Health Corp	CVS	1,313.97	88.22	115,918.17	0.41%	2.74%	0.01%	6.00%	0.02%
DuPont de Nemours Inc Micron Technology Inc	DD MU	496.79 1,091.18	73.95 60.30	36,737.55 65,797.97	0.13% 0.23%	1.78% 0.76%	0.00%	9.50% 13.00%	0.01% 0.03%
Motorola Solutions Inc	MSI	167.20	257.01	42,972.84	0.25%	1.37%	0.00%	10.50%	0.03%
Choe Global Markets Inc	CBOE	106.08	122.88	13,035.36	0.05%	1.63%	0.00%	10.00%	0.00%
Laboratory Corp of America Holding	LH	88.60	252.12	22,337.83	0.08%	1.14%	0.00%	1.50%	0.00%
Newmont Corp NIKE Inc	NEM NKE	793.74 1,245.67	52.93 127.33	42,012.61 158,610.65	0.15%	4.16% 1.07%	0.01%	9.50% 24.00%	0.01%
NiSource Inc	NI	406.13	27.75	11,270.22	0.04%	3.60%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	228.08	245.81	56,063.36	0.20%	2.20%	0.00%	10.00%	0.02%
Principal Financial Group Inc	PFG	244.68	92.55	22,645.41	0.08%	2.77%	0.00%	6.50%	0.01%
Eversource Energy Northean Gramman Corn	ES	348.31	82.33	28,676.12	0.10%	3.10%	0.00%	6.50%	0.01%
Northrop Grumman Corp Wells Fargo & Co	NOC WFC	153.05 3,833.80	448.04 46.87	68,573.87 179,690.21	0.24% 0.64%	1.54% 2.56%	0.00% 0.02%	6.50% 12.00%	0.02% 0.08%
Nucor Corp	NUE	256.54	169.02	43,361.07	0.15%	1.21%	0.02%	2.50%	0.00%
Occidental Petroleum Corp	OXY	908.91	64.79	58,888.54		0.80%			
			85.99	17,534.74	0.06%	3.26%	0.00%	6.50%	0.00%
Omnicom Group Inc	OMC	203.92							
ONEOK Inc	OMC OKE	446.95	68.48	30,607.41	0.11%	5.58%	0.01%	11.50%	0.01%
ONEOK Inc Raymond James Financial Inc	OMC OKE RJF	446.95 215.00	68.48 112.77	30,607.41 24,245.55	0.11% 0.09%			11.50% 15.00%	0.01% 0.01%
ONEOK Inc Raymond James Financial Inc PG&E Corp Parker-Hannifin Corp	OMC OKE	446.95	68.48	30,607.41 24,245.55 31,604.43 41,860.36	0.11%	5.58%	0.01%	11.50%	0.01%
ONEOK Inc Raymond James Financial Inc PG&E Corp	OMC OKE RJF PCG	446.95 215.00 1,987.70	68.48 112.77 15.90	30,607.41 24,245.55 31,604.43	0.11% 0.09% 0.11%	5.58% 1.49%	0.01% 0.00%	11.50% 15.00% 7.50%	0.01% 0.01% 0.01%

[1] Estimate of the S&P 500 Dividend Yield 1.75%

[2] Estimate of the S&P 500 Growth Rate 10.65%

[3] S&P 500 Estimated Required Market Return 12.50%

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
N	Tielen	Shares	Deine	Market	Weight in	Estimated	Cap-Weighted	Value Line Long-Term	Cap-Weighted Long-Term
Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yiel	d Dividend Yield	Growth Est.	Growth Est.
ConocoPhillips	COP	1,246.07	121.87	151,858.67	0.54%	0.57%	0.00%	20.00%	0.11%
PulteGroup Inc Pinnacle West Capital Corp	PHM PNW	227.82 113.14	56.89 74.55	12,960.68 8,434.59	0.05%	1.12% 4.64%	0.00%	7.00% 0.50%	0.00%
PNC Financial Services Group Inc/The	PNC	401.00	165.43	66,337.43	0.23%	3.63%	0.01%	12.00%	0.03%
PPG Industries Inc	PPG	235.03	130.34	30,633.42	0.11%	1.90%	0.00%	4.00%	0.00%
Progressive Corp/The	PGR	584.90	136.35	79,751.12	0.28%	0.29%	0.00%	6.50%	0.02%
Public Service Enterprise Group Inc Robert Half International Inc	PEG RHI	498.95 108.50	61.93 83.96	30,899.97 9,109.58	0.11% 0.03%	3.49% 2.05%	0.00%	4.50% 10.50%	0.00% 0.00%
Edison International	EIX	381.88	68.90	26,311.19	0.09%	4.28%	0.00%	16.00%	0.01%
Schlumberger Ltd	SLB	1,420.19	56.98	80,922.31		1.76%		28.50%	
Charles Schwab Corp/The Sherwin-Williams Co/The	SCHW SHW	1,815.85 259.14	77.42 236.59	140,582.80 61,310.64	0.50% 0.22%	1.29% 1.01%	0.01%	9.00% 11.50%	0.04% 0.02%
West Pharmaceutical Services Inc	WST	74.03	265.60	19,663.16	0.2276	0.29%	0.00%	17.00%	0.01%
J M Smucker Co/The	SJM	106.64	152.80	16,294.44	0.06%	2.67%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	53.16	248.73	13,221.24	0.05%	2.61%	0.00%	4.50%	0.00%
AMETEK Inc Southern Co/The	AME SO	229.65 1,088.67	144.92 67.68	33,281.46 73,681.39	0.12% 0.26%	0.61% 4.02%	0.00% 0.01%	10.00% 6.50%	0.01% 0.02%
Truist Financial Corp	TFC	1,326.83	49.39	65,532.08	0.23%	4.02%	0.01%	5.50%	0.01%
Southwest Airlines Co	LUV	593.75	35.77	21,238.51		2.01%			
W R Berkley Corp	WRB	264.55	70.14	18,555.26	0.07%	0.57%	0.00%	15.50%	0.01%
Stanley Black & Decker Inc Public Storage	SWK PSA	147.94 175.64	89.31 304.34	13,212.70 53,453.67	0.05% 0.19%	3.58% 2.63%	0.00% 0.00%	6.00% 8.00%	0.00% 0.02%
Arista Networks Inc	ANET	305.57	126.02	38,508.31	0.14%	2.0376	0.0078	10.00%	0.01%
Sysco Corp	SYY	506.77	77.46	39,254.25		2.53%		21.50%	
Corteva Inc	CTVA	718.60	64.45	46,313.77	0.16%	0.93%	0.00%	16.50%	0.03%
Texas Instruments Inc Textron Inc	TXN TXT	906.00 208.77	177.21 72.85	160,552.26 15,208.97	0.57% 0.05%	2.80% 0.11%	0.02%	7.50% 10.50%	0.04% 0.01%
Thermo Fisher Scientific Inc	TMO	392.20	570.33	223,681.14	0.05%	0.11%	0.00%	11.00%	0.01%
TJX Cos Inc/The	TJX	1,155.50	81.86	94,589.56	0.33%	1.44%	0.00%	17.00%	0.06%
Globe Life Inc	GL	97.27	120.85	11,755.08	0.04%	0.69%	0.00%	8.50%	0.00%
Johnson Controls International plc	JCI	687.21	69.57	47,809.48	0.17%	2.01%	0.00%	12.50%	0.02%
Ulta Beauty Inc Union Pacific Corp	ULTA UNP	50.88 614.80	513.96 204.19	26,150.80 125,536.22	0.09% 0.44%	2.55%	0.01%	16.50% 9.50%	0.02% 0.04%
Keysight Technologies Inc	KEYS	178.34	179.35	31,986.00	0.11%			13.00%	0.01%
UnitedHealth Group Inc	UNH	934.35	499.19	466,417.68	1.65%	1.32%	0.02%	12.00%	0.20%
Marathon Oil Corp	MRO	635.07	27.47	17,445.32	0.040/	1.46%		11.500/	0.000/
Bio-Rad Laboratories Inc Ventas Inc	BIO VTR	24.75 399.72	467.46 51.81	11,569.17 20,709.39	0.04% 0.07%	3.47%	0.00%	11.50% 10.50%	0.00% 0.01%
VF Corp	VFC	388.57	30.94	12,022.23	0.04%	6.59%	0.00%	9.00%	0.00%
Vulcan Materials Co	VMC	132.91	183.33	24,365.84	0.09%	0.87%	0.00%	8.50%	0.01%
Weyerhaeuser Co	WY	732.79	34.43	25,230.10	0.09%	2.09%	0.00%	7.00%	0.01%
Whirlpool Corp Williams Cos Inc/The	WHR WMB	54.00 1,218.34	155.59 32.24	8,401.86 39,279.28	0.03% 0.14%	4.50% 5.55%	0.00% 0.01%	6.00% 12.00%	0.00% 0.02%
Constellation Energy Corp	CEG	326.66	85.36	27,884.04	0.1470	0.66%	0.0170	12.0070	0.0270
WEC Energy Group Inc	WEC	315.44	93.99	29,647.74	0.10%	3.32%	0.00%	6.00%	0.01%
Adobe Inc	ADBE	457.80	370.34	169,541.65	0.60%	2.420/	0.000/	13.00%	0.08%
AES Corp/The Amgen Inc	AES AMGN	667.95 533.58	27.41 252.40	18,308.51 134,675.34	0.06% 0.48%	2.42% 3.38%	0.00% 0.02%	14.00% 5.50%	0.01% 0.03%
Apple Inc	AAPL	15,836.21	144.29	2,285,007.17	8.08%	0.64%	0.05%	13.50%	1.09%
Autodesk Inc	ADSK	215.77	215.16	46,424.43	0.16%			14.00%	0.02%
Cintas Corp	CTAS CMCSA	101.62 4.313.96	443.74 39.35	45,092.86	0.16% 0.60%	1.04% 2.95%	0.00%	14.00% 9.00%	0.02% 0.05%
Comcast Corp Molson Coors Beverage Co	TAP	200.15	52.58	169,754.48 10,523.62	0.00%	2.89%	0.0276	49.50%	0.05%
KLA Corp	KLAC	138.48	392.48	54,350.63	0.19%	1.32%	0.00%	20.00%	0.04%
Marriott International Inc/MD	MAR	316.54	174.18	55,134.94	0.19%	0.92%	0.00%	17.50%	0.03%
McCormick & Co Inc/MD	MKC	250.72	75.12	18,834.16	0.07%	2.08%	0.00%	4.50%	0.00%
PACCAR Inc Costco Wholesale Corp	PCAR COST	348.00 443.73	109.31 511.14	38,039.88 226,807.64	0.13% 0.80%	0.91% 0.70%	0.00% 0.01%	5.00% 10.50%	0.01% 0.08%
First Republic Bank/CA	FRC	182.93	140.88	25,770.47	0.09%	0.77%	0.00%	11.50%	0.01%
Stryker Corp	SYK	378.43	253.81	96,049.32	0.34%	1.18%	0.00%	8.50%	0.03%
Tyson Foods Inc	TSN LW	287.82 143.87	65.75	18,923.90	0.07% 0.05%	2.92% 1.12%	0.00%	6.00% 11.50%	0.00% 0.01%
Lamb Weston Holdings Inc Applied Materials Inc	AMAT	843.08	99.89 111.49	14,371.27 93,994.77	0.03%	0.93%	0.00% 0.00%	13.50%	0.01%
American Airlines Group Inc	AAL	649.90	16.14	10,489.40					
Cardinal Health Inc	CAH	262.13	77.25	20,249.85	0.07%	2.57%	0.00%	5.00%	0.00%
Cincinnati Financial Corp Paramount Global	CINF PARA	157.18 608.47	113.15 23.16	17,785.37 14.092.17	0.06% 0.05%	2.65% 4.15%	0.00%	9.00% 4.50%	0.01% 0.00%
Paramount Global DR Horton Inc	PARA DHI	343.39	23.16 98.69	14,092.17 33,889.46	0.05%	4.15% 1.01%	0.00%	4.50% 0.50%	0.00%
Electronic Arts Inc	EA	276.08	128.68	35,525.97	0.13%	0.59%	0.00%	13.00%	0.02%
Expeditors International of Washington Inc	EXPD	159.14	108.15	17,210.56	0.06%	1.24%	0.00%	10.00%	0.01%
Fastenal Co	FAST	570.81	50.20	28,654.76	0.10%	2.79%	0.00%	8.50%	0.01%
M&T Bank Corp Xcel Energy Inc	MTB XEL	172.61 547.25	156.00 68.77	26,927.63 37,634.24	0.10% 0.13%	3.08% 2.84%	0.00% 0.00%	9.00% 6.00%	0.01% 0.01%
Fiserv Inc	FISV	635.03	106.68	67,744.79	0.24%			11.00%	0.03%
Fifth Third Bancorp	FITB	683.39	36.29	24,800.08	0.09%	3.64%	0.00%	9.50%	0.01%
Gilead Sciences Inc Hasbro Inc	GILD	1,254.24	83.94	105,281.24	0.37%	3.48% 4.73%	0.01%	12.00%	0.04% 0.00%
Huntington Bancshares Inc/OH	HAS HBAN	138.11 1,442.73	59.17 15.17	8,172.21 21,886.27	0.03%	4.73%	0.00%	7.50% 12.50%	0.00%
Welltower Inc	WELL	472.52	75.04	35,457.98	0.13%	3.25%	0.00%	2.50%	0.00%
Biogen Inc	BIIB	144.00	290.90	41,889.89				-10.50%	
Northern Trust Corp Packaging Corp of America	NTRS	208.89	96.97	20,256.45	0.07%	3.09%	0.00%	8.00%	0.01%
Packaging Corp of America Paychex Inc	PKG PAYX	92.53 360.47	142.70 115.86	13,204.60 41,763.71	0.05% 0.15%	3.50% 2.73%	0.00%	11.00% 10.50%	0.01% 0.02%
QUALCOMM Inc	QCOM	1,117.19	133.21	148,821.15	0.13%	2.75%	0.00%	18.00%	0.02%
Roper Technologies Inc	ROP	106.05	426.75	45,257.69	0.16%	0.64%	0.00%	3.50%	0.01%
Ross Stores Inc	ROST	344.37	118.19	40,701.21	0.14%	1.05%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc Starbucks Corp	IDXX SBUX	82.82 1,148.56	480.50 109.14	39,793.57 125,353.73	0.14% 0.44%	1.94%	0.01%	12.00% 16.00%	0.02% 0.07%
KeyCorp	KEY	933.33	19.19	17,910.51	0.44%	4.27%	0.01%	7.50%	0.00%
Fox Corp	FOXA	302.48	33.94	10,266.00	0.04%	1.47%	0.00%	12.00%	0.00%
Fox Corp	FOX	240.22	31.70	7,614.94	0.1107	1.58%	0.0007	0.5007	0.0101
State Street Corp Norwegian Cruise Line Holdings Ltd	STT NCLH	349.02 421.40	91.33 15.21	31,876.36 6,409.43	0.11%	2.76%	0.00%	8.50%	0.01%
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[1] Estimate of the S&P 500 Dividend Yield

[2] Estimate of the S&P 500 Growth Rate 10.65% 12.50%

1.75%

[3] S&P 500 Estimated Required Market Return

		E41	re1	[6]	[7]	191	F01	[10]	F1.13
		[4]	[5]	[6]	[7]	[8]	[9]	[10] Value Line	[11] Cap-Weighted
Name	Ticker	Shares Outst'r	Price	Market Capitalization	Weight in Index	Estimated Dividend Viole	Cap-Weighted Dividend Yield	Long-Term Growth Est.	Long-Term Growth Est.
ivame	Ticker	Outst'g	rnce	Сарнанданон	index	Dividend Tield	Dividend Tield	Growin Est.	Growin Est.
US Bancorp	USB	1,531.00	49.80	76,243.80	0.27%	3.86%	0.01%	6.00% 11.50%	0.02%
A O Smith Corp Gen Digital Inc	AOS GEN	126.87 651.36	67.70 23.01	8,589.10 14,987.79	0.03% 0.05%	1.77% 2.17%	0.00% 0.00%	10.50%	0.00% 0.01%
T Rowe Price Group Inc	TROW	224.30	116.47	26,124.22	0.09%	4.12%	0.00%	4.50%	0.00%
Waste Management Inc Constellation Brands Inc	WM	410.48	154.73	63,513.11	0.22%	1.68%	0.00%	6.50%	0.01%
DENTSPLY SIRONA Inc	STZ XRAY	184.50 214.91	231.52 36.83	42,714.98 7,915.21	0.15%	1.38% 1.36%	0.00%	6.00% 12.00%	0.01%
Zions Bancorp NA	ZION	148.66	53.16	7,902.98	0.03%	3.09%	0.00%	6.50%	0.00%
Alaska Air Group Inc	ALK	127.53	51.34	6,547.54					
Invesco Ltd Linde PLC	IVZ LIN	454.80 492.46	18.51 330.94	8,418.35 162,973.72	0.03% 0.58%	4.05% 1.41%	0.00% 0.01%	10.00% 12.00%	0.00% 0.07%
Intuit Inc	INTU	280.93	422.67	118,738.57	0.42%	0.74%	0.00%	16.50%	0.07%
Morgan Stanley	MS	1,690.11	97.33	164,498.31	0.58%	3.19%	0.02%	8.50%	0.05%
Microchip Technology Inc	MCHP CB	550.01	77.62 227.49	42,691.70	0.15% 0.33%	1.69% 1.46%	0.00%	10.00%	0.02% 0.05%
Chubb Ltd Hologic Inc	HOLX	415.05 246.55	81.37	94,419.72 20,061.85	0.3376	1.40%	0.00%	14.50% 25.00%	0.0376
Citizens Financial Group Inc	CFG	492.49	43.32	21,334.71	0.08%	3.88%	0.00%	8.00%	0.01%
O'Reilly Automotive Inc	ORLY	62.58	792.35	49,582.09	0.18%	2.650/	0.000/	13.00%	0.02%
Allstate Corp/The Equity Residential	ALL EQR	265.21 377.92	128.47 63.65	34,071.53 24,054.54	0.12%	2.65% 3.93%	0.00%	2.50% -6.00%	0.00%
BorgWarner Inc	BWA	234.15	47.28	11,070.80	0.04%	1.44%	0.00%	9.50%	0.00%
Keurig Dr Pepper Inc	KDP	1,416.25	35.28	49,965.34	0.18%	2.27%	0.00%	11.50%	0.02%
Organon & Co	OGN	254.36	30.13	7,663.99		3.72%		50 50%	
Host Hotels & Resorts Inc Incyte Corp	HST INCY	715.03 222.48	18.85 85.14	13,478.28 18,941.52		2.55%		59.50% 25.50%	
Simon Property Group Inc	SPG	326.95	128.46	41,999.48	0.15%	5.60%	0.01%	3.00%	0.00%
Eastman Chemical Co	EMN	119.99	88.17	10,579.52	0.04%	3.58%	0.00%	7.00%	0.00%
AvalonBay Communities Inc Prudential Financial Inc	AVB PRU	139.90 368.00	177.44 104.94	24,823.32 38,617.92	0.09% 0.14%	3.58% 4.57%	0.00% 0.01%	9.00% 5.00%	0.01%
United Parcel Service Inc	UPS	729.82	185.23	135,184.74	0.14%	3.50%	0.01%	11.50%	0.01%
Walgreens Boots Alliance Inc	WBA	862.50	36.86	31,791.90	0.11%	5.21%	0.01%	3.00%	0.00%
STERIS PLC	STE	99.82	206.51	20,614.45	0.07%	0.91%	0.00%	10.00%	0.01%
McKesson Corp Lockheed Martin Corp	MCK LMT	141.79 255.30	378.68 463.26	53,694.17 118,268.89	0.19% 0.42%	0.57% 2.59%	0.00% 0.01%	10.00% 8.00%	0.02%
AmerisourceBergen Corp	ABC	202.24	168.96	34,169.79	0.12%	1.15%	0.00%	8.50%	0.01%
Capital One Financial Corp	COF	381.30	119.00	45,374.70		2.02%			
Waters Corp Nordson Corp	WAT NDSN	59.41 57.18	328.58 243.30	19,520.28 13,911.65	0.07% 0.05%	1.07%	0.00%	6.00% 12.00%	0.00% 0.01%
Dollar Tree Inc	DLTR	221.18	150.18	33,217.41	0.03%	1.0776	0.00%	12.00%	0.01%
Darden Restaurants Inc	DRI	121.71	147.97	18,008.69		3.27%		21.50%	
Evergy Inc	EVRG	229.48	62.65	14,376.80	0.05%	3.91%	0.00%	7.50%	0.00%
Match Group Inc Domino's Pizza Inc	MTCH DPZ	279.31 35.40	54.12 353.00	15,116.04 12,495.85	0.04%	1.25%	0.00%	21.00% 14.00%	0.01%
NVR Inc	NVR	3.20	5,270.00	16,842.92	0.06%	1.2370	0.0070	5.50%	0.00%
NetApp Inc	NTAP	215.57	66.23	14,277.40	0.05%	3.02%	0.00%	8.50%	0.00%
DXC Technology Co	DXC ODFL	230.07	28.73	6,609.77	0.02%	0.269/	0.000/	12.00% 11.50%	0.00% 0.01%
Old Dominion Freight Line Inc DaVita Inc	DVA	110.48 90.10	333.24 82.39	36,817.02 7,423.34	0.13%	0.36%	0.00%	8.50%	0.01%
Hartford Financial Services Group Inc/Th	HIG	318.10	77.61	24,687.66	0.09%	2.19%	0.00%	6.50%	0.01%
Iron Mountain Inc	IRM	290.71	54.58	15,867.17	0.06%	4.53%	0.00%	11.00%	0.01%
Estee Lauder Cos Inc/The Cadence Design Systems Inc	EL CDNS	231.27 274.32	277.08 182.83	64,080.29 50,153.19	0.23% 0.18%	0.95%	0.00%	14.00% 12.00%	0.03% 0.02%
Tyler Technologies Inc	TYL	41.64	322.77	13,440.14	0.05%			12.00%	0.01%
Universal Health Services Inc	UHS	64.16	148.21	9,508.71	0.03%	0.54%	0.00%	7.00%	0.00%
Skyworks Solutions Inc	SWKS	160.16	109.67	17,564.86	0.06%	2.26%	0.00%	9.00%	0.01%
Quest Diagnostics Inc Activision Blizzard Inc	DGX ATVI	113.89 782.63	148.48 76.57	16,909.94 59,925.60	0.06% 0.21%	1.78% 0.61%	0.00% 0.00%	3.50% 11.50%	0.00% 0.02%
Rockwell Automation Inc	ROK	114.78	282.03	32,371.97	0.11%	1.67%	0.00%	9.50%	0.01%
Kraft Heinz Co/The	KHC	1,224.93	40.53	49,646.41	0.18%	3.95%	0.01%	6.50%	0.01%
American Tower Corp Regeneron Pharmaceuticals Inc	AMT REGN	465.61 107.08	223.39 758.47	104,011.72 81,220.00	0.37% 0.29%	2.79%	0.01%	9.00% 3.00%	0.03% 0.01%
Amazon.com Inc	AMZN	10,201.65	103.13	1,052,096.58	0.2970			26.50%	0.0176
Jack Henry & Associates Inc	JKHY	72.95	180.09	13,137.39	0.05%	1.09%	0.00%	8.50%	0.00%
Ralph Lauren Corp	RL	41.09	123.85	5,089.12	0.02%	2.42%	0.00%	12.00%	0.00%
Boston Properties Inc Amphenol Corp	BXP APH	156.76 595.10	74.54 79.77	11,684.52 47,470.73	0.17%	5.26% 1.05%	0.00%	-1.00% 13.00%	0.02%
Howmet Aerospace Inc	HWM	413.71	40.69	16,833.94	0.06%	0.39%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	237.60	230.35	54,730.93		9.92%		21.00%	
Valero Energy Corp	VLO SNPS	385.52 152.42	140.03 353.75	53,984.79 53,917.51	0.19% 0.19%	2.91%	0.01%	11.00% 12.50%	0.02%
Synopsys Inc Etsy Inc	ETSY	125.69	137.58	17,292.16	0.19%			24.50%	0.02%
CH Robinson Worldwide Inc	CHRW	117.71	100.17	11,790.91	0.04%	2.44%	0.00%	8.50%	0.00%
Accenture PLC	ACN	658.39	279.05	183,723.45	0.65%	1.61%	0.01%	12.50%	0.08%
TransDigm Group Inc Yum! Brands Inc	TDG YUM	54.54 281.69	717.75 130.51	39,142.50 36,763.10	0.14% 0.13%	1.75%	0.00%	19.50% 10.50%	0.03% 0.01%
Prologis Inc	PLD	923.08	129.28	119,335.65	0.42%	2.44%	0.01%	6.00%	0.03%
FirstEnergy Corp	FE	571.75	40.95	23,413.29	0.08%	3.81%	0.00%	3.00%	0.00%
VeriSign Inc	VRSN	106.02	218.05	23,116.79	0.08%	0.210/	0.000/	11.00%	0.01%
Quanta Services Inc Henry Schein Inc	PWR HSIC	142.90 135.55	152.19 86.15	21,748.10 11,677.46	0.08% 0.04%	0.21%	0.00%	16.50% 7.00%	0.01% 0.00%
Ameren Corp	AEE	258.37	86.87	22,444.69	0.08%	2.72%	0.00%	6.50%	0.01%
ANSYS Inc	ANSS	87.11	266.36	23,203.15	0.08%		0.0	8.50%	0.01%
FactSet Research Systems Inc	FDS	38.25	422.94	16,178.30	0.06%	0.84%	0.00%	10.50%	0.01%
NVIDIA Corp Sealed Air Corp	NVDA SEE	2,460.00 144.66	195.37 54.76	480,610.20 7,921.47	0.03%	0.08% 1.46%	0.00%	23.00% 10.00%	0.00%
Cognizant Technology Solutions Corp	CTSH	513.92	66.75	34,304.23	0.12%	1.62%	0.00%	8.00%	0.01%
SVB Financial Group	SIVB	59.17	302.44	17,895.98	0.06%			8.50%	0.01%
Intuitive Surgical Inc	ISRG	353.39	245.69	86,823.16	0.31%			12.50%	0.04%
Take-Two Interactive Software Inc Republic Services Inc	TTWO RSG	167.82 316.00	113.23 124.82	19,002.15 39,443.24	0.07% 0.14%	1.59%	0.00%	3.00% 12.50%	0.00% 0.02%
eBay Inc	EBAY	542.66	49.50	26,861.62	0.09%	1.78%	0.00%	12.50%	0.01%
Goldman Sachs Group Inc/The	GS	334.92	365.81	122,515.62	0.43%	2.73%	0.01%	5.00%	0.02%
SBA Communications Corp	SBAC	107.97	297.53	32,123.12		0.95%		35.50%	

[1] Estimate of the S&P 500 Dividend Yield 1.75%

[2] Estimate of the S&P 500 Growth Rate 10.65%

[3] S&P 500 Estimated Required Market Return 12.50%

Value Line Cap-Weighte Shares Market Weight in Estimated Cap-Weighted Long-Term Long-Term										
Sure			[4]	[5]	[6]	[7]	[8]	[9]	[10] Value Line	[11]
Section   Sect			Shares		Market	Weight in	Estimated	Cap-Weighted		Long-Term
Models   M	Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yield	Dividend Yield	Growth Est.	Growth Est.
Mode	Sempra Energy	SRE	314.33	160.33	50,397.01	0.18%	2.86%	0.01%	7.50%	0.01%
Record   R	Moody's Corp	MCO	183.20	322.75	59,127.80					
File Pro										
Alemai Technologies for   Alemai Series   Al						0.03%				0.00%
March Smort Bellenge like  MEXT X 3714 333.55 13.94.22 0.95% 0.75% 0.95% 10.95% 10.95% 0.95% 0.95	Akamai Technologies Inc									
Development							0.000/	0.000/		
Bio-Techno Corg						0.05%		0.00%		0.00%
Aphabet for   GOOG   S-971,00   98,84   99,771   11,775   0.005   0.						0.04%		0.00%		0.01%
Nelfis Inc.  NELLE 16.23   33.356   17.596.99   0.95%   1.459.0   0.00%   1.459.0   0.00%   0.	Alphabet Inc		5,973.00	98.84	590,371.32					
Algenge Pis Alle 1978 1435 1735 1935 1835 1835 1835 1836 1849 1849 1849 1849 1849 1849 1849 1849							0.56%	0.00%		
Appear Technologoe In Warm In Droscowy in Wall Drospons (Wall Drospons) (Wall Drospons							1.40%	0.00%		
Eleman Flesh Inf										
Transhe free   TMMB   26.65   58.06   14,319.05   0.05%   10,00%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.01%   0.00%   0.02%   0.02%   0.02%   0.02%   0.00%   0.0										
CME Group face  MIRIE S 397.7   176.66   0.55.980.2   2.27%   2.27%   2.07%   0.01%   1.57%   0.02%    MIRINGE NATIONAL TO A DIVIDE S 19.74   1.01%   1.01%   1.01%   1.01%   1.01%   1.01%    DTE Entargo C							1.18%	0.00%		
Jamper Newbooks lee  ILLEX 13.23 32.25 13.25 13.25 10.485							2.26%	0.01%		
DTF Energy Co DTF   19.74   116.37   22.545.76   0.88%   3.27%   0.00%   4.50%   0.00%										
Nacles [ne]  Nacles [ne]  Nacle [ne]  OR   10,40   491,28   691,39   295,701,44   0,10%   1,35%   0,00%   8,50%   0,01%   0,00										
Celmoes Cop										
Filiphy North International Inc.										
Improved Bandam for   IR   404.93   5.00   22.675.86   1.494										
Hamingnon pagls Industries Inc   Hill   39.00   220.54   8,800.41   0.09%   2.25%   0.00%	Salesforce Inc	CRM	1,000.00	167.97	167,970.00					
Medick inc						0.0007		0.0001	10.0001	0.000
Tapeatry lie										
CSX Cup  CSX 2,10241 30.92 65.006.49 0.23% 1.29% 0.00% 10.59% 0.02% 10.29% 0.02% 10.29% 0.02% 10.29% 0.02% 10.29% 0.02% 10.29% 0.02% 10.29% 0.02% 10.29% 0.02% 0.0										
Ameriprie Financial Inc.  AMP  Ober 15 15 500 (22%)  Zammer Blomet Holdings Inc.  Zammer Blomet Inc.  Zammer Blomet Holdings Inc.  Z		CSX	2,102.41	30.92		0.23%	1.29%	0.00%	10.50%	0.02%
Zahra Technologies Corp										
Zammer Biondings Inc.   ZBH   29,8   127,3   26,722.5   0.09%   0.79%   0.09%   5.59%   0.01%   Camidan Poperty Trust   CPT   16,53   12,21   13,123.31   0.02%   3.05%   0.00%   3.30%   0.00%   3.30%   0.00%   0							1.43%	0.00%		
CBRE Group Inc							0.75%	0.00%		
Master and he							0.7570	0.0070		
CarMax fine	Camden Property Trust									
Intercontinental Exchange Inc						1.24%	0.62%	0.01%		0.23%
Fisching Mational Information Services In   CM   CM   27.7   1,646.8   45,693.0   2.51%   2.20%   2.20%   CM   CM   CM   CM   CM   CM   CM   C						0.21%	1.41%	0.00%		0.01%
Chipode Mexican Grill Inc						0.2170		0.0070		0.0170
Live Nation Entertainment Inc	Chipotle Mexican Grill Inc									
Assumatine AIZ 5.283 132.59 7,004.86 0.02% 2.11% 0.00% 15.50% 0.00% NGC Fibres pile NRG Faregy in NRG Faregy in NRG Faregy in Financial Corp RF 934.45 23.54 21.996.86 0.08% 3.40% 0.00% 11.50% 0.01% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 38.00% 11.50% 0.02% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 38.00% 11.50% 0.02% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 38.00% 11.50% 0.02% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 38.00% 11.50% 0.02% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 38.00% 11.50% 0.02% Monsier Devenege Org MNST 521.74 104.08 54.30.312 0.19% 16.10% 10.00									27.00%	
NRG						0.02%	2 11%	0.00%	15 50%	0.00%
Monster Severage Corp						0.0270		0.0070		0.0070
Mosaic CoThe							3.40%	0.00%		
Baker Hughes Co Epclais Group Inc EP 196.19 84.70 16.617.21 18.90% 18.						0.19%	1.610/			0.02%
Expedia Group Inc									38.00%	
CF Industries Holdings Inc     LIDOS 136.69 98.84 13.510.44 0.05% 1.46% 0.09% 8.59% 0.00% APA Corp     APA 321.51 44.33 14.252.63 2.25% APA Corp     APA 321.51 44.33 14.252.63 2.25% APA Corp     APA 321.51 44.33 14.252.63 2.15% First Solar Inc     GOOG 6.086.00 99.87 66.7808.82 2.15% First Solar Inc     FELR 106.61 177.60 18.933.23 TE Connectivity Lix     TE Connectivity Lix     COO 49.43 348.93 17.248.87 0.06% 0.02% 0.00% 15.00% 0.01% Cooper Coo Inc Till Cooper C							2.3770			
APA Corp  APA GOGG  GORG  GORG  GORG  GORG  GORG  GORG  GORG  FIST  GORG  GORG		CF	196.19	84.70	16,617.21					
Alphabel Inc						0.05%		0.00%	8.50%	0.00%
First Solar Inc						2 15%	2.26%		18 50%	0.40%
Cooper Cos Inc The         COO         49.43         348.93         17,245.87         0.06%         0.02%         0.09%         14.00%         0.01%           Discover Financial Services         DFS         267.00         116.73         31,166.01         0.11%         2.06%         0.00%         8.50%         0.01%           Visa Inc         V         1,624.95         23.021         374,080.66         1.32%         0.78%         0.01%         13.50%         0.18%           Mia-America Apartment Communities Inc         MAA         115.48         166.72         19,252.31         2.33%         3.36%         0.00%         9.00%         0.01%           Maratino Ptroleum Corp         MPC         468.66         128.52         60,222.31         2.33%         1.15%         0.00%         13.00%         0.01%           Advanced Micro Devices Inc         AMD         1,612.36         75.15         121,168.55         0.09%         1.61%         0.00%         8.50%         0.01%           Mettler-Toledo International Inc         MTD         22.29         1,532.92         34,174.92         0.12%         0.77%         0.00%         8.50%         0.01%           VCIC Properties Inc         CPRT         476.30         66.61         31,7						2.1370				0.1070
Discover Financial Services   DFS   26700   116.73   31,166.91   0.11%   2.06%   0.00%   8.50%   0.01%   Visa Inc   V   1,624.95   230,21   374,080.66   1.32%   0.78%   0.01%   31.50%   0.18%   Mid-America Apartment Communities Inc   XY   II 880.26   104.01   18,748.43   0.07%   1.5%   0.00%   9.00%   0.01%   Martinon Petroleum Corp   MPC   468.66   128.52   60,223.1   2.33%   1.5%   0.00%   1.61%   0.00%   13.00%   0.01%   Martinon Petroleum Corp   MPC   468.66   128.52   60,223.1   2.33%   1.61%   0.00%   13.00%   0.01%   Martinon Petroleum Corp   MPC   468.66   75.15   121,168.55   1.61%   0.00%   13.00%   0.01%   Martinon Petroleum Eorp   MPC   468.66   75.15   121,168.55   1.61%   0.00%   1.61%   0.00%   3.50%   0.01%   Martinon Petroleum Eorp   MPC   468.66   128.52   0.023.31   0.00%   0.07%   0.00%	TE Connectivity Ltd	TEL	316.46		40,237.51	0.14%			10.50%	0.01%
V										
Mid-America Apartment Communities Inc   MAA   115.48   166.72   19.252.33   3.5%   -14.50%   Nary										
Xylem IncNY						1.5270		0.0170		0.1070
Tractor Supply Co					18,748.43	0.07%		0.00%	9.00%	0.01%
Advanced Micro Devices Ink RMD						0.000/		0.000/	12.000/	0.040/
ResMed Ine         RMD         146.91         228.37         33,549.61         0.12%         0.77%         0.00%         8.50%         0.01%           Mettler-Toledo International Inc         MTD         22.99         1,532.92         34,174.92         0.12%         4.56%         0.01%         8.50%         0.01%           VICI Properties Inc         VICI         1,033.99         34.18         33,341.88         0.12%         4.56%         0.01%         8.50%         0.01%           Copart Inc         CPRT         476.30         66.61         31,726.34         0.11%						0.09%	1.61%	0.00%		0.01%
VICI Properties Inc Copart Inc Co						0.12%	0.77%	0.00%		0.01%
Copart Inc         CPRT         476.30         66.61         31.726.34         0.11%         7.00%         0.01%           Jacobs Solutions Inc         J         126.61         123.55         15.642.79         0.06%         0.84%         0.00%         12.00%         0.01%           Abemarle Corp         ALB         117.15         281.45         32.972.71         0.56%         0.84%         0.00%         12.00%         0.01%           Fortinet Inc         FTNT         781.24         52.34         40,889.89         -         -         21.50%         -         22.50%         -         -         22.50%         -         -         22.50%         -										
Jacobs Solutions Inc         J         12.661         123.55         15.642.79         0.06%         0.84%         0.00%         12.00%         0.1%           Albemarle Corp         ALB         117.15         281.45         32.972.71         0.56%         21.50%         21.50%           Fortinet Inc         FTNT         781.24         52.34         40.889.89         21.50%         21.50%           Moderna Inc         MRNA         3841.8         1176.06         67.638.73         3.89%         4.00%         2.50%           ESSEX Property Trust Inc         ESS         64.75         226.07         14.688.94         0.11%         1.00%         0.01%         6.00%         0.01%           CoStar Group Inc         CSGP         406.69         77.90         31,681.15         0.11%         4.40%         0.01%         6.00%         0.01%           Westrock Co         WRK         254.52         39.24         9.987.29         0.04%         2.80%         0.00%         15.00%         0.01%           Westen Digital Corp         POOL         317.65         43.95         15.088.46         0.05%         1.04%         0.00%         14.00%         0.01%           Westen Digital Corp         PDE         1,377.71 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.56%</td> <td>0.01%</td> <td></td> <td></td>							4.56%	0.01%		
Albemarle Corp							0.84%	0.00%		
Fortise Inc.						0.0078		0.0076		0.0176
Essex Property Trust Inc   ESS   64.75   226.07   14,638.94   3,89%   -4.00%   -4.										
CoStar Group Inc CoStar										
Really Income Corp         O         67.15         67.83         42,539.86         0.15%         4.40%         0.01%         6.00%         0.01%           Westrock Co         WRK         254.52         39.24         9,987.29         0.04%         2.80%         0.00%         15.00%         0.01%           Westinghouse Air Brake Technologies Corp         WAB         181.87         103.81         18,879.72         0.07%         0.58%         0.00%         9.50%         0.01%           Pool Corp         POOL         39.05         385.61         15,058.46         0.05%         1.04%         0.00%         14.00%         0.01%           Western Digital Corp         WDC         317.65         43.95         13,607.2         0.05%         0.05%         0.00%         6.50%         0.00%           Pepsico Ine         PEP         1,377.71         171.02         235,615.79         0.83%         2.69%         0.02%         6.50%         0.05%           Diamondback Energy Inc         FANG         181.86         146.12         25,573.24         6.99%         0.02%         45.50%         0.00%           ServiceNow Inc         OND         233.00         455.13         92,391.39         45.50%         0.00%         45.50						0.110/	3.89%			0.019/
Westrock Co         WRK         254.52         39.24         9,987.29         0.04%         2.80%         0.00%         15.00%         0.01%           Westinghouse Air Brake Technologies Corp         WAB         181.87         103.81         18,879.72         0.07%         0.58%         0.00%         9.50%         0.01%           Western Digital Corp         POOL         39.05         385.61         15,088.46         0.05%         1.04%         0.00%         14,00%         0.01%           Western Digital Corp         WDC         317.65         43.95         13,960.72         0.05%         1.04%         0.00%         6.50%         0.00%           PepsiCo Inc         PEP         1,377.71         171.02         235.615.79         0.83%         2.69%         0.02%         6.50%         0.05%           Diamondback Energy Inc         FANG         181.86         146.12         26,573.24         6.19%         45.00%         6.00%         0.00%           ServiceNow Inc         NOW         203.00         455.13         92,391.39         0.07%         1.30%         0.00%         6.00%         0.00%           Federal Realty Investment Trus         FRT         81.21         111.53         90,57.24         0.03%         3.8							4 40%	0.01%		
Westingbouse Air Brake Technologies Corp         WAB         181.87         103.81         18,879.72         0.07%         0.58%         0.00%         9.50%         0.01%           Pool Corp         POOL         39.05         385.61         15.088.46         0.05%         1.04%         0.00%         14.00%         0.11%           Western Digital Corp         WDC         317.65         43.95         13.960.72         0.05%         1.69%         0.02%         6.50%         0.00%           PepsicO Inc         PEP         1,377.71         171.02         225,615.79         0.83%         2.69%         0.02%         6.50%         0.05%           Diamondback Energy Inc         FANG         181.86         146.12         26,573.24         6.19%         45.50%         1.00%         6.19%         45.50%         0.00%         6.19%         45.50%         0.00%         6.19%         45.50%         0.00%         6.19%         45.50%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6.00%         0.00%         6										
Western Digital Corp         WDC         317.65         43.95         13.960.72         0.0%         6.50%         0.00%           PepsiCo Inc         PEP         1,377.71         171.02         235,615.79         0.83%         2.69%         0.02%         6.50%         0.00%           Diamondback Energy Inc         FANG         181.86         146.12         26,573.24         6.19%         6.19%           ServiceNow Inc         NOW         203.00         455.13         92,391.39         1.30%         0.00%         45.50%           Church & Dwight Co Inc         CHD         243.87         80.86         19,719.17         0.07%         1.30%         0.00%         2.50%         0.00%           Federal Realy Investment Trus         FRT         81.21         111.53         9.057.24         0.03%         3.87%         0.00%         2.50%         0.00%           Federal Realy Investment Trus         FRT         81.21         111.53         9.057.24         0.03%         3.87%         0.00%         2.50%         0.00%           American Electric Power Co Inc         AEP         513.86         93.96         48.282.66         0.17%         3.53%         0.01%         6.50%         0.01%           Solar-Edge Technologies In	Westinghouse Air Brake Technologies Corp				18,879.72					
Pepsico Inc         PEP         1,377.71         171.02         235,615.79         0.83%         2,69%         0.02%         6.50%         0.05%           Diamondback Energy Inc         FANG         181.86         146.12         255,73.24         61.9%         52.0%         0.0%         0.0%         0.0%         0.0%         0.0%         55.0%         0.0%         0.0%         0.0%         6.0%         0.0%         6.0%         0.0%         0.0%         6.0%         0.0%         6.0%         0.0%         0.0%         6.0%         0.0%         0.0%         6.0%         0.0%							1.04%	0.00%		
Diamondback Energy Inc   FANG   181.86   146.12   26,573.24   6.19%							2 60%	0.02%		
ServiceNow In						0.0370		0.02/0	0.5070	0.0370
Federal Realty Investment Trus	ServiceNow Inc	NOW	203.00	455.13	92,391.39					
MGM Resorts International         MGM MGM         384.02         41.41         15.902.27         0.02%         25.00%           American Electric Power Co Inc         AEP         513.86         93.96         48.282.66         0.17%         3.53%         0.01%         6.50%         0.01%           SolarEdge Technologies Inc         SEDG         55.90         319.13         17,837.77         22.00%         22.00%           Invitation Homes Inc         INVH         611.41         32.50         19,870.83         2.71%         27.90         29.00%           PTC Inc         PTC         118.15         134.88         15,996.61         0.07%         0.89%         0.00%         11.50%         0.01%           JB Hunt Transport Services Inc         JBHT         103.54         189.05         19,573.67         0.07%         0.89%         0.00%         11.00%         0.01%           Lam Research Corp         LRCX         134.94         50.01         67,481.49         0.24%         1.38%         0.00%         14.00%         0.03%										
American Electric Power Co Inc AEP 513.86 93.96 48,282.66 0.17% 3.53% 0.01% 6.50% 0.01% SolarEdge Technologies Inc SEDG 55.90 319.13 17,837.77 22.00% Univation Homes Inc INVH 611.41 32.50 19,870.83 2.71% 21.00% PTC 118.15 134.88 15,936.61 29.00% 29.00% 29.00% 11.50% 0.01% 13.54 189.05 19,573.67 0.07% 0.89% 0.00% 11.50% 0.01% 13.64 189.05 19,573.67 0.07% 0.89% 0.00% 11.50% 0.01% 13.64 189.05 19,573.67 0.07% 0.89% 0.00% 11.50% 0.01% 13.64 189.05 19,573.67 0.07% 0.89% 0.00% 11.50% 0.01% 13.64 189.05 19,573.67 0.07% 0.24% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 13.89% 0.00% 11.00% 0.03% 13.64 19.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.64 19.00% 0.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.64 19.00% 0.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.89% 0.00% 14.00% 0.03% 13.64 19.00% 0.00% 13.64 19.00% 0						0.03%		0.00%		0.00%
SolarEdge Technologies In						0.17%		0.01%		0.01%
Invitation Homes Inc						//	/9			,
JB Hunt Transport Services Inc JBHT 103.54 189.05 19,573.67 0.07% 0.89% 0.00% 11.50% 0.01% Lam Research Corp LRCX 134.94 500.10 67,481.49 0.24% 1.38% 0.00% 14.00% 0.03%	Invitation Homes Inc	INVH	611.41	32.50	19,870.83		2.71%			
Lam Research Corp LRCX 134.94 500.10 67,481.49 0.24% 1.38% 0.00% 14.00% 0.03%						0.070/	0.000/	0.000/		0.010/
							1.30/0	0.0070		

[1] Estimate of the S&P 500 Dividend Yield	1.75%
[2] Estimate of the S&P 500 Growth Rate	10.65%
[3] S&P 500 Estimated Required Market Return	12.50%

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
								Value Line	Cap-Weighted
		Shares		Market	Weight in	Estimated	Cap-Weighted	Long-Term	Long-Term
Name	Ticker	Outst'g	Price	Capitalization	Index	Dividend Yie	ld Dividend Yield	Growth Est.	Growth Est.
Pentair PLC	PNR	164.50	55.38	9,109.90	0.03%	1.59%	0.00%	12.00%	0.00%
GE HealthCare Technologies Inc	GEHC	453.93	69.52	31,556.94					
Vertex Pharmaceuticals Inc	VRTX	256.69	323.10	82,936.86	0.29%			12.50%	0.04%
Amcor PLC	AMCR	1,489.02	12.06	17,957.58	0.06%	4.06%	0.00%	14.50%	0.01%
Meta Platforms Inc	META	2,255.32	148.97	335,975.17	1.19%			11.00%	0.13%
T-Mobile US Inc	TMUS	1,244.15	149.31	185,764.63	0.66%			16.50%	0.11%
United Rentals Inc	URI	69.36	440.95	30,584.29	0.11%	1.34%	0.00%	18.00%	0.02%
Honeywell International Inc	HON	672.32	208.48	140,165.69	0.50%	1.98%	0.01%	12.00%	0.06%
Alexandria Real Estate Equities Inc	ARE	173.09	160.74	27,822.00	0.10%	3.01%	0.00%	10.00%	0.01%
Delta Air Lines Inc	DAL	641.19	39.10	25,070.45					
Seagate Technology Holdings PLC	STX	206.48	67.78	13,995.49	0.05%	4.13%	0.00%	11.50%	0.01%
United Airlines Holdings Inc	UAL	326.73	48.96	15,996.65					
News Corp	NWS	193.28	20.44	3,950.56		0.98%			
Centene Corp	CNC	566.26	76.24	43,171.66	0.15%			10.00%	0.02%
Martin Marietta Materials Inc	MLM	62.09	359.64	22,330.41	0.08%	0.73%	0.00%	4.50%	0.00%
Teradyne Inc	TER	155.76	101.70	15,840.39	0.06%	0.43%	0.00%	11.50%	0.01%
PayPal Holdings Inc	PYPL	1,140.03	81.49	92,900.88	0.33%			12.00%	0.04%
Tesla Inc	TSLA	3,164.10	173.22	548,085.92				51.50%	
Arch Capital Group Ltd	ACGL	369.87	64.35	23,801.33	0.08%			19.50%	0.02%
DISH Network Corp	DISH	292.27	14.39	4,205.78				-1.50%	
Dow Inc	DOW	703.76	59.35	41,768.10	0.15%	4.72%	0.01%	15.00%	0.02%
Everest Re Group Ltd	RE	39.17	349.69	13,695.61	0.05%	1.89%	0.00%	9.50%	0.00%
Teledyne Technologies Inc	TDY	46.87	424.26	19,885.49	0.07%			11.50%	0.01%
News Corp	NWSA	382.35	20.26	7,746.43		0.99%			
Exelon Corp	EXC	991.76	42.19	41,842.23		3.20%			
Global Payments Inc	GPN	270.40	112.72	30,479.60	0.11%	0.89%	0.00%	17.00%	0.02%
Crown Castle Inc	CCI	433.00	148.11	64,131.63	0.23%	4.23%	0.01%	12.00%	0.03%
Aptiv PLC	APTV	270.95	113.09	30,641.74				26.00%	
Advance Auto Parts Inc	AAP	59.25	152.28	9,023.20	0.03%	3.94%	0.00%	12.00%	0.00%
Align Technology Inc	ALGN	78.11	269.73	21,069.15	0.07%			17.00%	0.01%
Illumina Inc	ILMN	157.30	214.20	33,693.66	0.12%			6.50%	0.01%
Targa Resources Corp	TRGP	226.38	75.02	16,982.65		1.87%			
LKQ Corp	LKQ	267.18	58.96	15,752.64	0.06%	1.87%	0.00%	13.00%	0.01%
Zoetis Inc	ZTS	466.07	165.49	77,130.26	0.27%	0.91%	0.00%	11.00%	0.03%
Equinix Inc	EQIX	92.54	738.13	68,305.07	0.24%	1.68%	0.00%	15.00%	0.04%
Digital Realty Trust Inc	DLR	287.52	114.62	32,955.77		4.26%		-3.50%	
Las Vegas Sands Corp	LVS	764.17	59.00	45,085.79					
Molina Healthcare Inc	MOH	58.40	311.83	18,210.87	0.06%			11.00%	0.01%
27									

Molina Healthcare Inc
Notes:

[1] Equals sum of Col. [9]

[2] Equals sum of Col. [11]

[3] Equals [1] x (1 + (0.5 x [2]))) + [2]

[4] Source: Bloomberg Professional as of January 31, 202:

[5] Source: Bloomberg Professional as of January 31, 202:

[6] Equals [4] x [5]

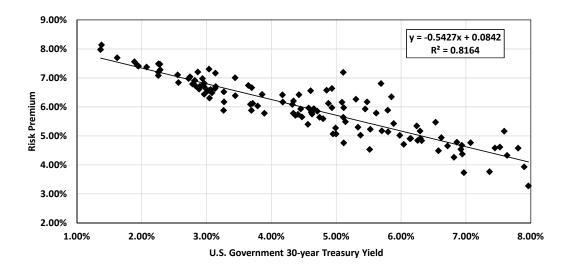
[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and≤20%

[8] Source: Bloomberg Professional as of January 31, 202:

[9] Equals [7] x [8]

[10] Source: Value Line, as of January 31, 202:

[11] Equals [7] x [10]



### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.903448
R Square	0.816218
Adjusted R Square	0.814724
Standard Error	0.004275
Observations	125.000000

## ANOVA

	df	SS	MS	F	Significance F
Regression	1.000000	0.009983	0.009983	546.270060	0.000000
Residual	123.000000	0.002248	0.000018		
Total	124.000000	0.012231			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0842	0.0011	75.0021	0.0000	0.0820	0.0865	0.0820	0.0865
U.S. Govt. 30-year Treasury	(0.5427)	0.0232	(23.3724)	0.0000	(0.5886)	(0.4967)	(0.5886)	(0.4967)

	[7]	[8]	[9]
	30-Year		
	Treasury	Risk	
	Bond Yield	Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	3.71%	6.41%	10.12%
Blue Chip Near-Term Projected Forecast (Q2/2023 - Q2/2024) [5]	3.82%	6.35%	10.17%
Blue Chip Long-Term Projected Forecast (2024-2028) [6]	3.90%	6.31%	10.21%
AVERAGE			10.17%

- [1] Regulatory Research Associates, rate cases through January 31, 2023
- [2] S&P Capital IQ Pro, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] Column [2]
- [4] S&P Capital IQ Pro, 30-day average as of January 31, 2023
- [5] Blue Chip Financial Forecasts , Vol. 42, No. 2, February 1, 2023, at 2  $\,$
- [6] Blue Chip Financial Forecasts, Vol. 41, No. 12, December 2, 2022, at 14
- [7] See notes [4], [5] and [6]
- [8] Equals 0.084312 + (-0.543602 x Column [7]) [9] Equals Column [7] + Column [8]

# BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average		
	Authorized	U.S. Govt. 30-	Risk
Quarter	Electric ROE	year Treasury	Premium
1992.1	12.38%	7.81%	4.58%
1992.2	11.83%	7.90%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.76%
1993.2 1993.3	11.64% 11.15%	6.86%	4.78% 4.84%
		6.32%	4.84% 4.91%
1993.4	11.04%	6.14%	
1994.1	11.07% 11.13%	6.58%	4.49%
1994.2		7.36%	3.77%
1994.3 1994.4	12.75% 11.24%	7.59% 7.96%	5.16% 3.28%
1994.4	11.24%	7.63%	4.33%
1995.1	11.32%	6.94%	4.35%
1995.2	11.32%	6.72%	4.65%
1995.3	11.57%	6.24%	5.35%
1995.4	11.46%	6.29%	5.33% 5.17%
1996.1	11.46%	6.92%	4.54%
1996.3	10.70%	6.97%	3.73%
1996.4	11.56%	6.62%	4.94%
1990.4	11.08%	6.82%	4.26%
1997.1	11.62%	6.94%	4.68%
1997.2	12.00%	6.53%	5.47%
1997.4	11.06%	6.15%	4.91%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.48%	6.17%
1998.4	12.30%	5.11%	7.19%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.80%	5.14%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.26%	4.84%
2000.1	11.21%	6.30%	4.92%
2000.2	11.00%	5.98%	5.02%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.45%	5.93%
2001.2	10.88%	5.70%	5.17%
2001.3	10.76%	5.53%	5.23%
2001.4	11.57%	5.30%	6.27%
2002.1	10.05%	5.52%	4.53%
2002.2	11.41%	5.62%	5.79%
2002.3	11.25%	5.09%	6.16%
2002.4	11.57%	4.93%	6.63%
2003.1	11.43%	4.85%	6.57%
2003.2	11.16%	4.60%	6.56%
2003.3	9.88%	5.11%	4.76%
2003.4	11.09%	5.11%	5.98%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.34%	5.30%
2004.3	10.75%	5.11%	5.64%
2004.4	10.91%	4.93%	5.98%
2005.1	10.56%	4.71%	5.85%
2005.2	10.13%	4.47%	5.65%
2005.3	10.85%	4.42%	6.42%
2005.4	10.59%	4.65%	5.94%
2006.1	10.38%	4.63%	5.75%

# BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average		
	Authorized	U.S. Govt. 30-	Risk
Quarter	Electric ROE	year Treasury	Premium
2006.2	10.63%	5.14%	5.49%
2006.3	10.06%	5.00%	5.07%
2006.4	10.39%	4.74%	5.64%
2007.1	10.39%	4.80%	5.59%
2007.2	10.27%	4.99%	5.28%
2007.3	10.02%	4.95%	5.07%
2007.4	10.43%	4.61%	5.81%
2008.1	10.15%	4.41%	5.74%
2008.2	10.54%	4.57%	5.96%
2008.3	10.38%	4.45%	5.93%
2008.4	10.39%	3.64%	6.74%
2009.1	10.45%	3.44%	7.01%
2009.2	10.58%	4.17%	6.41%
2009.3	10.41%	4.32%	6.09%
2009.4	10.54%	4.34%	6.20%
2010.1	10.45%	4.62%	5.82%
2010.2	10.08%	4.37%	5.71%
2010.3	10.29%	3.86%	6.43%
2010.4	10.34%	4.17%	6.17%
2011.1	9.96%	4.56%	5.40%
2011.2	10.12%	4.34%	5.78%
2011.3	10.36%	3.70%	6.66%
2011.4	10.34%	3.04%	7.31%
2012.1	10.30%	3.14%	7.17%
2012.2	9.92%	2.94%	6.98%
2012.3	9.78%	2.74%	7.04%
2012.4	10.07%	2.86%	7.21%
2013.1	9.77%	3.13%	6.64%
2013.2	9.84%	3.14%	6.70%
2013.3	9.83%	3.71%	6.12%
2013.4	9.82%	3.79%	6.04%
2014.1	9.57%	3.69%	5.88%
2014.2	9.83%	3.44%	6.39%
2014.3	9.79%	3.27%	6.52%
2014.4	9.78%	2.96%	6.81%
2015.1	9.66%	2.55%	7.11%
2015.2	9.50%	2.88%	6.61%
2015.3	9.40%	2.96%	6.44%
2015.4	9.65%	2.96%	6.69%
2016.1	9.70%	2.72%	6.98%
2016.2	9.41%	2.57%	6.84%
2016.3	9.76%	2.28%	7.48%
2016.4	9.55%	2.83%	6.72%
2017.1	9.61%	3.05%	6.57%
2017.2	9.61%	2.90%	6.71%
2017.3	9.73%	2.82%	6.91%
2017.4	9.74%	2.82%	6.92%
2018.1	9.59%	3.02%	6.57%
2018.2	9.57%	3.09%	6.49%
2018.3	9.66%	3.06%	6.60%
2018.4	9.44%	3.27%	6.17%
2019.1	9.57%	3.01%	6.55%
2019.2	9.58%	2.78%	6.79%
2019.3	9.57%	2.29%	7.28%
2019.4	9.74%	2.26%	7.49%
2020.1	9.45%	1.89%	7.56%
2020.2	9.52%	1.38%	8.14%

# BOND YIELD PLUS RISK PREMIUM

	[1]	[2]	[3]
	Average		
	Authorized	U.S. Govt. 30-	Risk
Quarter	Electric ROE	year Treasury	Premium
2020.3	9.34%	1.37%	7.98%
2020.4	9.32%	1.62%	7.69%
2021.1	9.45%	2.07%	7.38%
2021.2	9.46%	2.26%	7.20%
2021.3	9.37%	1.93%	7.43%
2021.4	9.36%	1.95%	7.41%
2022.1	9.34%	2.25%	7.08%
2022.2	9.35%	3.05%	6.30%
2022.3	9.14%	3.26%	5.88%
2022.4	9.67%	3.89%	5.78%
2023.1	9.77%	3.68%	6.09%
AVERAGE	10.51%	4.56%	5.95%
MEDIAN	10.39%	4.61%	5.98%

# 2023-2027 CAPITAL EXPENDITURES AS A PERCENTAGE OF 2022 NET PLANT (\$ Millions)

			[1]		[2]		[3]		[4]		[5]		[6]	[7]
														2023-2027 Cap. Ex. / 2021
			2022		2023		2024		2025		2026		2027	Net Plant
ALLETE, Inc.		ALE												
ALLETE, IIIC.	Capital Spending per Share Common Shares Outstanding	ALL		\$	5.95 58	\$	6.60 60	\$	7.25 61	\$	7.25 61	\$	7.25 61	
	Capital Expenditures			\$	345.10	\$	392.70	\$	442.25	\$	442.25	\$	442.25	39.59%
Alliant Energy (	Net Plant	LNT	\$ 5,215											
Amant Energy C	Capital Spending per Share	LIVI		\$	5.90	\$	6.08	\$	6.25	\$	6.25	\$	6.25	
	Common Shares Outstanding				252		252		253		253		253	
	Capital Expenditures Net Plant		\$ 16,025	\$	1,483.85	\$	1,532.42	\$	1,581.25	\$	1,581.25	\$	1,581.25	48.42%
Ameren Corpora		AEE	ψ 10,025											
_	Capital Spending per Share			\$	12.55	\$	12.78	\$	13.00	\$	13.00	\$	13.00	
	Common Shares Outstanding Capital Expenditures			-\$	267 3,350.85	\$	274 3,493.96	\$	3,640.00	\$	3,640.00	\$	280 3,640.00	56.89%
	Net Plant		\$ 31,225	Ψ	3,330.03	Ψ	3,473.70	Ψ	3,040.00	Ψ	3,040.00	Ψ	3,040.00	30.0770
American Electr	ric Power Company, Inc.	AEP		ф	1415	Φ.	1400	Ф	14.00	Ф	1400	Ф	1400	
	Capital Spending per Share Common Shares Outstanding			\$	14.15 523	\$	14.08 534	\$	14.00 545	\$	14.00 545	\$	14.00 545	
	Capital Expenditures			\$	7,400.45	\$	7,516.05	\$	7,630.00	\$	7,630.00	\$	7,630.00	53.51%
	Net Plant		\$ 70,650											
Avista Corporat	Capital Spending per Share	AVA		\$	6.40	\$	6.20	\$	6.00	\$	6.00	\$	6.00	
	Common Shares Outstanding				77	Ť	80		83	-	83		83	
	Capital Expenditures Net Plant		¢ 5.450	\$	492.80	\$	496.00	\$	498.00	\$	498.00	\$	498.00	45.56%
Duke Energy Co		DUK	\$ 5,450											
27	Capital Spending per Share			\$	16.75	\$	16.75	\$	16.75	\$	16.75	\$	16.75	
	Common Shares Outstanding			Ø 1	770 2,897.50	Ø 1	770	¢.	770	ø	770	<b>d</b> 1	770	£4.700/
	Capital Expenditures Net Plant		\$117,725	\$1	2,897.30	<b>\$</b> 1	2,897.50	Ф.	12,897.50	Э	12,897.50	\$1	12,897.50	54.78%
Edison Internati		EIX	, ,,,											
	Capital Spending per Share			\$	15.10	\$	15.80	\$		\$	16.50	\$	16.50	
	Common Shares Outstanding Capital Expenditures			\$	382 5,768.20	\$	386 6,098.80	\$	390 6,435.00	\$	390 6,435.00	\$	390 6,435.00	58.05%
	Net Plant		\$ 53,700		,		ĺ		ĺ		ĺ		,	
Entergy Corpora	ation Capital Spending per Share	ETR		\$	19.00	\$	19.38	\$	19.75	\$	19.75	\$	19.75	
	Common Shares Outstanding			Ф	209	Ф	212	Φ	214	Ф	214	Ф	214	
	Capital Expenditures			\$	3,971.00	\$	4,097.81	\$	4,226.50	\$	4,226.50	\$	4,226.50	47.42%
Eversource Ener	Net Plant	ES	\$ 43,750											
Lversource Ener	Capital Spending per Share	LS			10.5	\$	10.00		9.5		9.5		9.5	
	Common Shares Outstanding				351		358		365		365		365	
	Capital Expenditures Net Plant		\$ 36,025	\$	3,685.50	\$	3,580.00	\$	3,467.50	\$	3,467.50	\$	3,467.50	49.04%
	Tot I failt		Ψ 50,025											
Evergy, Inc.		EVRG		ф	0.20	Φ.	0.25	Ф	0.50	Ф	0.50	Ф	0.50	
	Capital Spending per Share Common Shares Outstanding			\$	9.20 230	Þ	9.35 230	2	9.50 230	<b>3</b>	9.50 230	\$	9.50 230	
	Capital Expenditures			\$	2,116.00	\$		\$	2,185.00	\$		\$		48.97%
IDACORD I	Net Plant	ID 4	\$ 22,100											
IDACORP, Inc.	Capital Spending per Share	IDA		\$	14.20	\$	12.15	\$	10.10	\$	10.10	\$	10.10	
	Common Shares Outstanding			_	51		52		52		52		52	
	Capital Expenditures			\$	724.20	\$	625.73	\$	525.20	\$	525.20	\$	525.20	55.72%

## 2023-2027 CAPITAL EXPENDITURES AS A PERCENTAGE OF 2022 NET PLANT (\$ Millions)

Common Shares Outstanding Capital Expenditures Net Plant NorthWestern Corporation NWE   S110,925   S17,010.00   S17,010.	\$ 9.20 \$ 2025 \$18,630.00 \$ 7.80 62 \$ 483.60	\$ 2025 \$20,250.00 \$ 6.50	\$20,250.00 \$ 6.50	\$ 10.00 2025 \$20,250.00 \$ 6.50 62 \$ 403.00	2023-2027 Cap. Ex. / 2021 Net Plant 86.90%
NextEra Energy, Inc.         NEE         8.40         8           Capital Spending per Share Common Shares Outstanding Capital Expenditures Net Plant         \$110,925         \$17,010.00 <td>2025 \$18,630.00 \$ 7.80</td> <td>\$ 2025 \$20,250.00 \$ 6.50 2 62</td> <td>\$ 2025 \$20,250.00 \$ 6.50 \$ 62</td> <td>2025 \$20,250.00 \$ 6.50</td> <td></td>	2025 \$18,630.00 \$ 7.80	\$ 2025 \$20,250.00 \$ 6.50 2 62	\$ 2025 \$20,250.00 \$ 6.50 \$ 62	2025 \$20,250.00 \$ 6.50	
NextEra Energy, Inc.	2025 \$18,630.00 \$ 7.80	\$ 2025 \$20,250.00 \$ 6.50 2 62	\$ 2025 \$20,250.00 \$ 6.50 \$ 62	2025 \$20,250.00 \$ 6.50	
Capital Spending per Share	2025 \$18,630.00 \$ 7.80	\$ 2025 \$20,250.00 \$ 6.50 2 62	\$ 2025 \$20,250.00 \$ 6.50 \$ 62	2025 \$20,250.00 \$ 6.50	
Common Shares Outstanding Capital Expenditures Net Plant NorthWestern Corporation NWE   S110,925   S17,010.00   S17,010.	2025 \$18,630.00 \$ 7.80	\$ 2025 \$20,250.00 \$ 6.50 2 62	\$ 2025 \$20,250.00 \$ 6.50 \$ 62	2025 \$20,250.00 \$ 6.50	
NorthWestern Corporation	\$18,630.00 \$ 7.80	\$20,250.00 \$ 6.50 2 62	\$20,250.00 \$ 6.50 62	\$20,250.00 \$ 6.50	
Net Plant         NWE         \$ 110,925           NorthWestern Corporation         NWE         \$ 9,10 \$ \$ 62 \$ \$ \$ 64.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ \$ 564.20 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	\$ 7.80	\$ 6.50 2 62	\$ 6.50 62	\$ 6.50	
NorthWestern Corporation		2 62	62		40.09%
Capital Spending per Share		2 62	62		40.09%
Common Shares Outstanding   Solution   Sol		2 62	62		40.09%
Capital Expenditures         \$ 5,630         \$ 564.20         \$ 564.20         \$ 5,630           OGE Energy Corporation         OGE         \$ 4.75         \$ 200           Capital Spending per Share Common Shares Outstanding Capital Expenditures         \$ 10,345         \$ 5.90         \$ 5.90         \$ 5.90         \$ 5.90         \$ 247.21	\$ 483.60			\$ 403.00	40.09%
Net Plant         \$ 5,630           OGE Energy Corporation         OGE           Capital Spending per Share Common Shares Outstanding Capital Expenditures Net Plant         \$ 4.75         \$ 200           Otter Tail Corporation         OTTR         \$ 5.90         \$ 5.90         \$ 5.90         \$ 247.21 <td>403.00</td> <td>Ψ 403.00</td> <td>ψ 405.00</td> <td>Ψ 405.00</td> <td>70.07/0</td>	403.00	Ψ 403.00	ψ 405.00	Ψ 405.00	70.07/0
OGE Energy Corporation         OGE         4.75         \$         200					
Capital Spending per Share   200					
Common Shares Outstanding   200   \$ 950.95	\$ 4.75	\$ 4.75	\$ 4.75	\$ 4.75	
Capital Expenditures   Net Plant   S 10,345   OTTR	200			200	
Net Plant         \$ 10,345           Otter Tail Corporation         OTTR           Capital Spending per Share         \$ 5.90         \$ 5.90         \$ 247.21 </td <td>\$ 950.95</td> <td>\$ 950.95</td> <td>\$ 950.95</td> <td>\$ 950.95</td> <td>45.96%</td>	\$ 950.95	\$ 950.95	\$ 950.95	\$ 950.95	45.96%
Otter Tail Corporation         OTTR           Capital Spending per Share         \$ 5.90 \$           Common Shares Outstanding         42           Capital Expenditures         \$ 2,210           Net Plant         POR           Portland General Electric Company         POR           Capital Spending per Share         \$ 8.25 \$           Common Shares Outstanding         94.5           Capital Expenditures         \$ 779.63 \$           Net Plant         \$ 8,325           Xcel Energy Inc.         XEL           Capital Spending per Share         \$ 9.00 \$			,		
Capital Spending per Share					
Common Shares Outstanding   24   247.21   8   247.21	\$ 6.08	\$ 6.25	\$ 6.25	\$ 6.25	
Capital Expenditures	42	2 43		43	
Net Plant       \$ 2,210         Portland General Electric Company       POR         Capital Spending per Share       \$ 8.25         Common Shares Outstanding       94.5         Capital Expenditures       \$ 779.63         Net Plant       \$ 8,325         Xcel Energy Inc.       XEL         Capital Spending per Share       \$ 9.00	\$ 256.37	\$ 265.63	\$ 265.63	\$ 265.63	58.84%
Capital Spending per Share       \$ 8.25       \$ 94.5         Common Shares Outstanding Capital Expenditures       \$ 779.63       \$ 779.63         Net Plant       \$ 8,325         Xcel Energy Inc.       XEL         Capital Spending per Share       \$ 9.00       \$ \$					
Common Shares Outstanding Capital Expenditures Net Plant  Xcel Energy Inc.  Capital Spending per Share  Sometimes outstanding 94.5  \$ 779.63 \$ \$ 779.63 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$					
Common Shares Outstanding Capital Expenditures Net Plant  Xcel Energy Inc.  Capital Spending per Share  South State Stat	\$ 8.38	\$ 8.50	\$ 8.50	\$ 8.50	
Net Plant \$8,325  Xcel Energy Inc. XEL  Capital Spending per Share \$9.00 \$	97	7 100.0	100.0	100.0	
Xcel Energy Inc. XEL Capital Spending per Share \$ 9.00 \$	\$ 814.47	\$ 850.00	\$ 850.00	\$ 850.00	49.78%
Capital Spending per Share \$ 9.00 \$					
1 1 81					
Common Shares Outstanding	e 0.00	\$ 9.00	\$ 9.00	\$ 9.00	
Common Shares Outstanding 550	\$ 9.00	561	561	561	
Capital Expenditures \$ 4,950.00 \$	\$ 9.00 556	\$ 5,049.00	\$ 5,049.00	\$ 5,049.00	52.04%
Net Plant \$ 48,225					
Liberty Utilities (Granite State Electric) Corp. LUGSE  Capital Expenditures [8] \$ 18.42 \$   Net Plant [9] \$ 242.21	556				53.50%

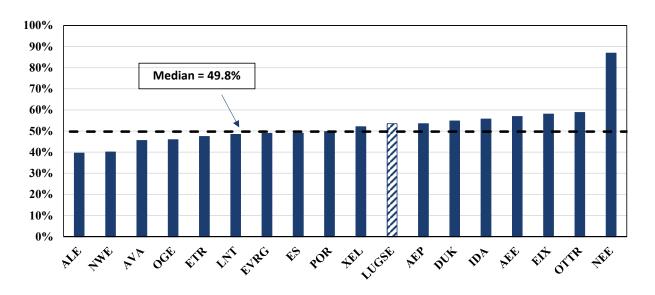
Notes:

[1] - [6] Value Line, dated January 20, 2023, December 9, 2022, and November 11, 2022

[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]

[8] Provided by the Company

<sup>[9]</sup> Provided by the Company



Projected CAPEX/2022 Net Plant

		Projected CAREY /
Company	Ticker	CAPEX / 2022 Net Plant
1 ALLETE, Inc.	ALE	40%
2 NorthWestern Corporation	NWE	40%
3 Avista Corporation	AVA	46%
4 OGE Energy Corporation	OGE	46%
5 Entergy Corporation	ETR	47%
6 Alliant Energy Corporation	LNT	48%
7 Evergy, Inc.	EVRG	49%
8 Eversource Energy	ES	49%
9 Portland General Electric Company	POR	50%
10 Xcel Energy Inc.	XEL	52%
11 Liberty Utilities (Granite State Electric) Corp.	LUGSE	53%
12 American Electric Power Company, Inc.	AEP	54%
13 Duke Energy Corporation	DUK	55%
14 IDACORP, Inc.	IDA	56%
15 Ameren Corporation	AEE	57%
16 Edison International	EIX	58%
17 Otter Tail Corporation	OTTR	59%
18 NextEra Energy, Inc.	NEE	87%
Proxy Group Median		49.8%
Liberty Utilities (Granite State Electric) Corp. as % of N	<b>1</b> edian	1.07



Attachment AEB/CMW-11, p. 1 col. [7]

# COMPARISON OF LIBERTY GRANITE STATE AND PROXY GROUP COMPANIES REGULATORY RISK ASSESSMENT

Capago					[1]	[2]	[3]	[4] ie Stabilization	[5]	[6]
March   Marc		0 5 61 17	6				Formula- Based	Straight Fixed Variable	Overall Revenue	
Blanch Emproy Copyonation						Decoupling				
Income Prove 2 Light City   Income	ALLETE, Inc.									
Waters   Per   Water	Amant Energy Corporation						No	No		
American Ellisot Co.    Comparison   Compari		Wisconsin Power & Light Co.	Wisconsin	Electric	Fully Forecast	No	No	No	No	No
Amena Illands Co.    March   M		Wisconsin Power & Light Co.		Gas				No		
Lone   Libert   Lib	Ameren Corporation									
Month   Service   Month   Se										
March   Marc		Union Electric Co.	Missouri							Yes
Remarks   Pour Co.   Remarks   Education   Fally Florecast   Year   No.   No.   Year	American Electric Power Company,	Ir Southwestern Electric Power Co.	Arkansas		Historical	Yes	Yes	No	Yes	Yes
Southwestern Electric Power Co.   Louisian   Electric Power Co.   Color		Indiana Michigan Power Co.			Fully Forecast					
Section Medical Property Co.   Section   Sec		Kentucky Power Co.			Fully Forecast					
Gillip Power Co.   Column		Indiana Michigan Power Co.		Electric	Fully Forecast			No No		
Pablic Service Cut of Chilabona   Children										
AFF TEAS  APP TE		Public Service Co. of Oklahoma			Historical	Yes			Yes	Yes
South-event Electric Power Co.   Tests   Bilentic   Bilentic   South   So   No   No   No   No   No   No   No		Kingsport Power Co.								
Appelachin Power Co. Appelachi										
Applichation Power Co. Wheeling Power Co.   Veri Virginia   Electric   Hindreal   No   No   No   No   No   No   No   N										
Author   Composition			West Virginia							Yes
Avisia Corp.  Avisia Corp.  Avisia Corp.  Vanishington Avisia Corp.  Vanish	Avista Corporation			Electric	Historical	No	No	No	No	No
Aviat Corp.  Aviat Corp.  Wahling Becrit:  Wahling Wahling Becrit:  Wahlin	•	Avista Corp.								
Avisia Corp.  Avisia Corp.  Washington  Avisia Corp.  Washington  Gas.  Avisia Corp.  Washington  Gas.  Historical  Yo.  No.  No.  No.  No.  Yo.  No.  No.										
Avisit Corp.  Weshington  And Energy Fordal LLC  Dake Energy Semisely he.  Care  Dake Energy Commonly he.  Dake Energy Colha he.  Dake Ene										
Dake Energy Florids LLC   Bodan   Electric   Fully Forecast   Ye   No   No   No   No   Ye   Ye   Ye   Dake Energy Florids LLC   Bodan   Electric   Historical   Ye   No   No   No   Ye   Ye   Ye   Dake Energy Florids   Electric   Historical   No   No   No   Ye   Ye   Ye   Public Florids   Ye   No   No   Ye   Ye   Ye   Ye   Ye   Ye   Ye   Y		Avista Corp.								
Date Energy Mentals LLC   Date Energy Mentals LLC   Date Energy Commist LLC   Date Energy Combines L	Duke Energy Corporation	Duke Energy Florida LLC	Florida	Electric	Fully Forecast	No	No	No	No	Yes
Date Energy, Kennachy Re.   Rennacky Cas   Parlily Forecast   Ven   No   No   No   No   No   No   No   N		Duke Energy Indiana LLC								Yes
Date Energy Carolinas LLCOhate Energy Progress Is North Carollina   Electric   Historical   No										Yes
Pedmort Named Gas Co. Rec.   Noth Carolina   Gas   Historical   Yes   No   No   Yes   Yes   Yes   No   Dake Energy Chol Inc.										
Dake Energy Chile Inc.   Ohio   Electric   Dake Energy Continue LLCDude Energy Progress   Look Continue   Electric   El										Yes
Delic Energy Carolinan LLCPube Energy Prosposed Carolina   Polithone Namaria Gas Co. Inc.   Polithone Namaria Gas Co. Inc.   Family Forecast   Family Fore										Yes
Picificano Nitural Gas Co. Inc.   South Carolina   Gas   Historical   Yes   No   No   Yes   Ye										Yes
Piedmont Natural Gas Co. Br.   Temesace   Gas   Fully Forecast   Yes   No   No   Yes   No   No   Yes   Yes   No   Yes										Yes
Southern California Edition Co.   California   Electric   Fully Forecast   Yes   No   No   Yes										
Entergy Achamsa LLC	idican International									
Entrogy New Orleans LLC	intergy Corporation									Yes
Entropy Louisiana LLC	mergy corporation	Entergy New Orleans LLC	Louisiana-NOCC	Electric		No	Yes		Yes	Yes
Entergy Louisiana LLC								No		
Entergy Mississippi LLC   Mississippi   Electric   Fully Forecast   Yes   Yes   No   No   No   No   No   No   No   N		Entergy Louisiana LLC	Louisiana			Yes		No		
Entergy Teas Inc.			Louisiana							
Vergy, Inc.   Evergy, Kanasa Central Inc   Evergy Metro Inc.   Kanasa   Electric   Historical   Ves   No   No   Ves		Entergy Texas Inc.	Texas				No.			
Evergy Metro Inc.   Kansas   Electric   Historical   No   No   No   No   Yes   Yes   Yes   Evergy Missouri   Electric   Historical   Yes   No   No   Yes	Evergy, Inc.	Evergy Kansas Central Inc								
Evergy Missouri West Inc.		Evergy Metro Inc.	Kansas	Electric	Historical	No	No	No	No	Yes
Versource Energy										
Yankee Gas Services Co.   Connecticut   Gas		Evergy Missouri West Inc.								
Evenouree Gas Company of MA   Massachusetts   Gas   Historical   Yes   Yes   No   Yes   Yes   Yes   No   Yes   Yes   Yes   No   Yes   Yes   Yes   No   Yes   Yes   Yes   Yes   No   Yes	Eversource Energy	Connecticut Light and Power Co.								
NSTAR Electric Co.   Massachusetts   Electric   Historical   Yes   Yes   No   Yes   Yes   Yes   No   Yes   Yes   Yes   Public Service Co. of New Hampshire   New Hampshire   Electric   Electric   Electric   Electric   Electric   Historical   Yes   Yes   No   No   Yes								No		
Public Service Co. of New Hampshire   New Hampshire   Electric   Historical   Yes   No   No   Yes   Yes   No   No   No   No   No   No   No   N		NSTAR Electric Co.	Massachusetts					No		Yes
Maho		NSTAR Gas Co.								Yes
Electric   Fully Forecast   No										
Electric   Fully Forecast   No	DACORP, Inc.									
Proval Utility Holdings Inc.   Florida   Gas   Fully Forecast   No   No   No   No   No   Ves	NextEra Energy, Inc.	Florida Power & Light Co			Fully Forecast			No	No	
Lose Star Transmission LLC	amag, at.									
NorthWestern Corporation   South Dakota   Electric   Historical   No   No   No   No   No   No   No   N		Lone Star Transmission LLC	Texas	Electric	Historical	No	No	No	No	Yes
NorthWestern Corporation   Northwestern Corporation   Northwestern Corporation   South Dakota   Electric   Historical   No   No   No   No   No   No   No   N	NorthWestern Corporation	NorthWestern Corporation								
NorthWestern Corporation   South Dakota   Electric   Historical   No   No   No   No   No   No   No   N		North Western Corporation								
NorthWestern Corporation   South Dakota   Gas   Historical   No   No   No   No   No   No   No   N		NorthWestern Corporation		Gas Electric	Historical	No No	No No	No No	No No	No No
Oklahoma Gas and Electric Company   Arkansas   Electric   Historical   Yes   Yes   No   Yes   Yes   Yes   Ves		NorthWestern Corporation								
Oklahoma (as and Electric Company)  Otter Tail Power North Dakota Electric Fully Forecast No	OGE Energy Corporation	Oklahoma Gas and Electric Company	Arkansas	Electric	Historical	Yes	Yes	No	Yes	Yes
Otter Tail Power		Oklahoma Gas and Electric Company				Yes	No		Yes	Yes
Otter Tail Power	Otter Tail Corporation									Yes
ortand General Electric Company         Portland General Electric Co.         Oregon         Electric         Fully Forecast         No         No         No         Yes										
Public Service Co. of Colonado   Electric   Historical   Yes   No   No   Yes   Yes   No   No   Yes   Yes   No   No   Yes   Yes   No   No   Yes   Yes   Yes   No   No   Yes   Yes   Yes   No   No   Yes   Yes   Yes   Yes   No   No   Yes	Portland General Electric Company									Yes Yes
Public Service Co. of Colonado   Colonado   Gas   Historical   Yes   No   No   Yes   Y										Yes
Northern States Power Co Minuscota	***									Yes
Southwestern Public Service Co.   New Mexico   Electric   Historical   No   No   No   No   No   No   No   N										Yes
Northern States Power Co-Minimesota										Yes
Northern States Power Co Minnesota   North Dakota   Cas										
Northern States Power Co Minesota   South Dakotra   Electric   Historical   Yes   No   No   No   No   No   No   No   N										
Southwestern Public Service Co.   Texas   Electric   Historical   No   No   No   No   No   No   No   N		Northern States Power CoMinnesota		Electric		Yes	No	No	Yes	Yes
Northern States Power CoWisconsin Wisconsin Gas Fully Forecast No						No				No
Fully Forecast 27 Partially Forecas 7 Partially Forecas 7 Historical 49 No 35 No 26 % Forecast 41.0% % Yes 57.8% % Yes 68.7%										No
Partially Forecas 7 Yes 48 Yes 57 Historical 49 No 35 No 26 % Forecast 41.0% % Yes 57.8% % Yes 68.7%		Northern States Power CoWisconsin	Wisconsin	Gas	Fully Forecast	No	No	No	No	No
Historical 49 No 3.5 No 2.6 % Forceast 41.0% % Yes 57.8% % Yes 68.7%	Proxy Group Totals								Ves 48	Ves 57
% Forecast 41.0% % Yes 57.8% % Yes 68.7%										
iherty Utillities (Granite State Electric) Corp. [7] New Hampshire Electric Proposed Yes Proposed No Yes No				% Forecast	41.0%				% Yes 57.8%	% Yes 68.7%
	iberty Utilities (Granite State Electr	ric) Corp. [7]	New Hampshire	Electric	Proposed	Yes	Proposed	No	Yes	No

Notes:
[Regulatory Research Associates, effective as of December 31, 202
[2] S&P Ghola Market Inteligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit. A designation of "Yes" indicates full or partial decoup [2] Company Form IO-Ks., Company Time 171, and S&P Capital IO Frod [4] S&P Ghola Market Intelligence, Regulatory Focus: Adjustment Clauses, dated July 18, 2022. Operating subsidiaries not covered in this report were excluded from this exhibit.
[5] Equals IF (AND) [3] No. [4] Post. [5] Post. [6] Post.

# COMPARISON OF LIBERTY GRANITE STATE AND PROXY GROUP COMPANIES RRA JURISDICTIONAL RANKINGS

		[1]	[2]
	Operation State	RR. Rank	A Numeric Rank
ALLETE, Inc.	Minnesota	Average / 2	5
Alliant Energy Corporation	Iowa	Above Average / 3	3
	Wisconsin	Above Average / 3	3
Ameren Corporation	Illinois	Average / 2	5
	Missouri	Average / 3	6
American Electric Power Company, Inc.	Arkansas	Average / 1	4
	Indiana	Average / 1	4
	Kentucky	Average / 2	5
	Louisiana (PSC)	Average / 2	5
	Michigan	Above Average / 3	3
	Ohio	Average / 3	6
	Oklahoma	Average / 2	5
	Tennessee	Above Average / 3	3
	Texas (PUC)	Average / 3	6
	Virginia	Average / 1	4
	West Virginia	Below Average / 2	8
Avista Corporation	Alaska	Below Average / 1	7
	Idaho	Average / 2	5
	Oregon	Average / 2	5
	Washington	Average / 3	6
Duke Energy	Florida	Above Average / 2	2
	Indiana	Average / 1	4
	Kentucky	Average / 2	5
	North Carolina	Above Average / 3	3
	Ohio	Average / 3	6
	South Carolina	Average / 3	6
	Tennessee	Above Average / 3	3
Edison International	California	Average / 1	4
Entergy	Arkansas	Average / 1	4
	Louisiana (NOCC	, .	6
	Louisiana (PSC)	Average / 2	5
	Mississippi	Above Average / 3	3
_	Texas (PUC)	Average / 3	6
Eversource Energy	Connecticut	Below Average / 1	7
	Massachusetts	Average / 2	5
	New Hampshire	Average / 2	5
Evergy, Inc.	Kansas	Below Average / 1	7
D. GODD J	Missouri	Average / 3	6
DACORP, Inc.	Idaho	Average / 2	5
	Oregon	Average / 2	5
NextEra Energy, Inc.	Florida	Above Average / 2	2
I dw . C	Texas (PUC)	Average / 3	6
NorthWestern Corporation	Montana	Below Average / 1	7
	Nebraska	Average / 1	4
on n	South Dakota	Average / 2	5
OGE Energy Corporation	Arkansas	Average / 1	4
	Oklahoma	Average / 2	5
Otter Tail Corporation	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
Andread Committee de la Commit	South Dakota	Average / 2	5
Portland General Electric Company	Oregon	Average / 2	5
Kel Energy Inc.	Colorado	Average / 1	4
	Minnesota	Average / 2	5
	North Dakota	Average / 1	4
	New Mexico	Below Average / 2	8
	South Dakota	Average / 2	5
	Texas (PUC)	Average / 3	6
	Wisconsin	Above Average / 3	3
Provy Group Avorago		Average / 2	1 96
roxy Group Average		Average / 2	4.86
iberty Utilities (Granite State Electric) Corp.	New Hampshire	Average / 2	5
, , , , , , , , , , , , , , , , , , , ,	r	-0	-

Notes
[1] State Regulatory Evaluations, Regulatory Research Associates, December 28 2022.
[2] AA/1= 1, AA/2= 2, AA/3= 3, A/1= 4, A/2= 5, A/3=6, BA/1= 7, BA/2= 8, BA/3= 9

# SIZE PREMIUM CALCULATION

Proxy Group Market Capitalization and Market-to-Book Ratio

			[1]		[2]
		N	<b>Market</b>		
		Capi	italization	M	arket-to-
Company	Ticker	(\$1	billions)	Во	ok Ratio
ALLETE, Inc.	ALE	\$	3.66		1.37
Alliant Energy Corporation	LNT	\$	13.76		2.20
Ameren Corporation	AEE	\$	22.79		2.23
American Electric Power Company, Inc.	AEP	\$	48.59		2.00
Avista Corporation	AVA	\$	3.14		1.40
Duke Energy Corporation	DUK	\$	79.20		1.64
Edison International	EIX	\$	25.43		1.90
Entergy Corporation	ETR	\$	22.29		1.84
Eversource Energy	ES	\$	28.95		1.89
Evergy, Inc.	<b>EVRG</b>	\$	14.35		1.49
IDACORP, Inc.	IDA	\$	5.39		1.94
NextEra Energy, Inc.	NEE	\$	163.94		4.24
NorthWestern Corporation	NWE	\$	3.34		1.31
OGE Energy Corporation	OGE	\$	7.89		1.78
Otter Tail Corporation	OTTR	\$	2.52		2.13
Portland General Electric Company	POR	\$	4.31		1.56
Xcel Energy Inc.	XEL	\$	38.31		2.34
Median		\$	14.35		1.89
Liberty Granite State					
Rate Year 1 Rate Base (2023/2024) (\$millions)	[3]			\$	195.93
Company-Projected Common Equity Ratio	[4]				55.00%
Implied Common Equity (\$millions)	[5]			\$	107.76
Implied Market Capitalization (\$millions)	[6]			\$	203.54
Market Capitalization of Proxy Group (median) (\$millions)	[7]			\$ 1	4,345.18
In % of Proxy Group Market Capitalization (median)	[8]			•	1.42%

# Kroll Cost of Capital Navigator -- Size Premium

			[9]	[10]
			Market	
		Ca	apitalization	
			of Largest	
			Company	Size
Breakdown of Deciles 1-10		(	\$ millions)	Premium
1-Largest		\$ 2	2,203,381.29	-0.26%
2		\$	31,316.51	0.45%
3		\$	12,323.85	0.57%
4		\$	5,916.02	0.58%
5		\$	3,769.88	0.93%
6		\$	2,365.08	1.16%
7		\$	1,389.12	1.37%
8		\$	782.38	1.18%
9		\$	373.88	2.15%
10-Smallest		\$	218.23	4.83%
Liberty Implied Market Capitalization	[6]	\$	203.54	4.83%
Proxy Group Market Capitalization (median)	[7]	\$	14,345.18	0.45%
Size Premium	[11]			4.38%

# Notes:

- [1]-[2] S&P Capital IQ Pro, equals 30-day average as of January 31, 2023
- [3] Data provided by the Company
- [4] Data provided by the Company
- [5] Equals [3] x [4]
- [6] Equals [5] x median market-to-book ratio of proxy group
- [7] Equals median market capitalization of proxy group x 1000
- [8] Equals [6] / [7]
- [9]-[10] Kroll Cost of Capital Navigator Size Premium: Annual Data as of 12/31/2022
- [11] Size Premium of Liberty less Size Premium of Proxy Group

### FLOTATION COST ADJUSTMENT

		[1]	[2]	[3]		[4]		[5]		[6]		[7]		[8]	[9]
				Under-						Total					
		Shares		writing	C	Offering			F	lotation	Gı	ross Equity	N	et Proceeds	Flotation
		Issued	Offering	Discount	E	xpense	Ne	t Proceeds Per		Costs	Is	sue Before		(\$000)	Cost
Company	Date [i]	(000)	Price	[ii]	(	(\$000)		Share		(\$000)	Co	osts (\$000)		[iii]	Percentage
Algonquin Power & Utilities Corporation	11/8/2021	44,080	\$ 18.15	\$ 0.73	\$	1,400	\$	17.39	\$	33,402	\$	800,052	\$	766,650	4.17%
Algonquin Power & Utilities Corporation	10/10/2019	23,000	\$ 13.50	\$ 0.53	\$	400	\$	12.96	\$	12,510	\$	310,500	\$	297,991	4.03%
									\$	45,912	\$	1,110,552	\$	1,064,640	4.13%

[i] Offering Completion Date

[iii] Underwriting discount is calculated as the market price minus the offering price when not explicitly given in the prospectus.

[iii] Algonquin Power & Utilities Corporation 2021 and 2019 SEC Form 10-K.

The flotation cost adjustment is derived by dividing the dividend yield by 1-F (where F= flotation costs expressed in percentage terms), or by 0.9587, and adding that result to the constant growth rate to determine the cost of equity. Using the formulas shown previously in my testimony, the Constant Growth DCF calculation is modified as follows to accommodate an adjustment for flotation costs:

$$k = \frac{D \times (1 + 0.5g)}{P \times (1 - F)} + g$$

		[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	
						Expected						Equity	
					Expected	Dividend Yield	Value Line		Zacks	Average	Cost of	Adjusted fo	r
		Annualized	Stock	Dividend	Dividend	Adjusted for	Earnings	Yahoo! Finance	Earnings	Earnings	Equity: Mean	Flotation	
Company	Ticker	Dividend	Price	Yield	Yield	Flotation Costs	Growth	Earnings Growth	Growth	Growth	Growth Rate	Costs	_
ALLETE, Inc.	ALE	\$2.60	\$64.09	4.06%	4.22%	4.40%	6.00%	8.70%	9.60%	8.10%	12.32%	12.50%	
Alliant Energy Corporation	LNT	\$1.81	\$54.38	3.33%	3.42%	3.57%	6.00%	5.55%	5.80%	5.78%	9.21%	9.36%	
Ameren Corporation	AEE	\$2.36	\$88.15	2.68%	2.77%	2.89%	6.50%	6.64%	6.90%	6.68%	9.45%	9.57%	
American Electric Power Company, Inc.	AEP	\$3.32	\$94.56	3.51%	3.62%	3.78%	6.50%	6.15%	6.10%	6.25%	9.87%	10.03%	
Avista Corporation	AVA	\$1.76	\$42.48	4.14%	4.24%	4.42%	3.50%	5.20%	5.20%	4.63%	8.87%	9.06%	
Duke Energy Corporation	DUK	\$4.02	\$102.85	3.91%	4.01%	4.19%	5.00%	5.65%	5.50%	5.38%	9.40%	9.57%	
Edison International	EIX	\$2.95	\$66.39	4.44%	4.55%	4.74%	6.49%	4.40%	3.00%	4.63%	9.18%	9.37%	
Entergy Corporation	ETR	\$4.28	\$109.55	3.91%	4.01%	4.19%	4.00%	6.19%	6.00%	5.40%	9.41%	9.58%	
Eversource Energy	ES	\$2.55	\$83.08	3.07%	3.17%	3.31%	6.50%	6.42%	6.50%	6.47%	9.64%	9.78%	
Evergy, Inc.	EVRG	\$2.45	\$62.50	3.92%	4.02%	4.19%	7.50%	2.43%	5.30%	5.08%	9.10%	9.27%	
IDACORP, Inc.	IDA	\$3.16	\$106.55	2.97%	3.02%	3.15%	4.50%	3.40%	3.40%	3.77%	6.79%	6.92%	
NextEra Energy, Inc.	NEE	\$1.70	\$82.50	2.06%	2.16%	2.26%	10.50%	10.21%	9.00%	9.90%	12.07%	12.16%	
NorthWestern Corporation	NWE	\$2.52	\$57.74	4.36%	4.43%	4.63%	3.50%	4.50%	1.70%	3.23%	7.67%	7.86%	
OGE Energy Corporation	OGE	\$1.66	\$39.21	4.22%	4.32%	4.51%	6.50%	1.90%	5.00%	4.47%	8.79%	8.97%	
Otter Tail Corporation	OTTR	\$1.65	\$60.44	2.73%	2.82%	2.94%	4.50%	9.00%	n/a	6.75%	9.57%	9.69%	
Portland General Electric Company	POR	\$1.81	\$48.17	3.76%	3.83%	4.00%	5.00%	1.39%	5.30%	3.90%	7.73%	7.89%	
Xcel Energy Inc.	XEL	\$1.95	\$69.89	2.79%	2.88%	3.00%	6.00%	7.01%	6.50%	6.50%	9.38%	9.51%	
Mean											9.32%	9.48%	_
Median											9.38%	9.51%	
Flotation Cost Adjustment (Mean)												0.16%	[21
Flotation Cost Adjustment (Median)												0.12%	[22

- Notes:

  [1]-[4] Algonquin Power & Utilities Corp. 2021 SEC Form 10-K, at 11; Algonquin Power & Utilities Corp. 2019 SEC Form 10-K, at 7.

  [5] Equals [8]/[1]

  [6] Equals [4] + ([1] x [3])

  [7] Equals [1] x [2]

  [8] Equals [7] [6]

  [9] Equals [6] /[7]

  [10] Bloomberg Professional

  [11] Bloomberg Professional, equals 30-day average as of January 31, 2023

- [12] Equals [10] / [11] [13] Equals [12] x (1 + 0.5 x [18]) [14] Equals [13] / (1 Flotation Cost) [15] Value Line
- [16] Yahoo! Finance

- [16] xanoo! Finance
  [17] Zacks Investment Research
  [18] Equals Average of [15], [16], [17]
  [19] Equals [13] + [18]
  [20] Equals [14] + [18]
  [21] Equals [20] (Mean) [19] (Mean)
  [22] Equals [20] (Median) [19] (Median)

# CAPITAL STRUCTURE ANALYSIS

Most Recent 8 Quarters (Q4/2020 - Q3/2022)

		Most Recent 8 Quarters (Q4/2020 - Q3/2022)							
	-	Common	Long-Term	Preferred	Short-term				
		Equity	Debt	Equity	Debt	Total			
Proxy Group Company	Ticker	Ratio	Ratio	Ratio	Ratio	Capitalization			
ALLETE, Inc.	ALE	57.22%	42.69%	0.00%	0.10%	100.00%			
Alliant Energy Corporation	LNT	51.34%	46.60%	0.79%	1.26%	100.00%			
Ameren Corporation	AEE	52.39%	45.62%	0.62%	1.37%	100.00%			
American Electric Power Company,	AEP	47.40%	51.00%	0.00%	1.60%	100.00%			
Avista Corporation	AVA	48.10%	47.51%	0.00%	4.39%	100.00%			
Duke Energy Corporation	DUK	52.33%	46.07%	0.00%	1.59%	100.00%			
Edison International	EIX	41.38%	48.41%	4.55%	5.65%	100.00%			
Entergy Corporation	ETR	46.19%	53.71%	0.10%	0.00%	100.00%			
Evergy, Inc.	<b>EVRG</b>	57.96%	37.67%	0.00%	4.37%	100.00%			
Eversource Energy	ES	53.09%	44.56%	0.72%	1.63%	100.00%			
IDACORP, Inc.	IDA	54.07%	45.65%	0.28%	0.00%	100.00%			
NextEra Energy, Inc.	NEE	60.17%	38.36%	0.00%	1.48%	100.00%			
NorthWestern Corporation	NWE	47.68%	52.04%	0.00%	0.28%	100.00%			
OGE Energy Corporation	OGE	53.03%	45.19%	0.00%	1.78%	100.00%			
Otter Tail Corporation	OTTR	52.85%	44.56%	0.00%	2.59%	100.00%			
Portland General Electric Company	POR	45.35%	53.38%	0.00%	1.27%	100.00%			
Xcel Energy Inc.	XEL	53.84%	45.48%	0.00%	0.68%	100.00%			
Average	51.43%	46.38%	0.42%	1.77%					
Median	52.39%	45.65%	0.00%	1.48%					
Maximum	60.17%	53.71%	4.55%	5.65%					
Minimum	41.38%	37.67%	0.00%	0.00%					

# Notes:

<sup>[1]</sup> Ratios are weighted by actual common capital, preferred capital, long-term debt and short-term debt of the operating subsidi

<sup>[2]</sup> Electric and Natural Gas operating subsidiaries with data listed as N/A from S&P Capital IQ have been excluded from the a