

**JOHN J. REED**

Chairman and Chief Executive Officer

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Mr. Reed is a financial and economic consultant with more than 42 years of experience in the energy industry. Mr. Reed has also been the CEO of an NASD member securities firm, and Co-CEO of the nation's largest publicly traded management consulting firm (NYSE: NCI). He has provided advisory services in the areas of mergers and acquisitions, asset divestitures and purchases, strategic planning, project finance, corporate valuation, energy market analysis, rate and regulatory matters and energy contract negotiations to clients across North and Central America. Mr. Reed's comprehensive experience includes the development and implementation of nuclear, fossil, and hydroelectric generation divestiture programs with an aggregate valuation in excess of \$20 billion. Mr. Reed has also provided expert testimony on financial and economic matters on more than 400 occasions before the FERC, Canadian regulatory agencies, state utility regulatory agencies, various state and federal courts, and before arbitration panels in the United States and Canada. After graduation from the Wharton School of the University of Pennsylvania, Mr. Reed joined Southern California Gas Company, where he worked in the regulatory and financial groups, leaving the firm as Chief Economist in 1981. He served as an executive and consultant with Stone & Webster Management Consulting and R.J. Rudden Associates prior to forming REED Consulting Group (RCG) in 1988. RCG was acquired by Navigant Consulting in 1997, where Mr. Reed served as an executive until leaving Navigant to join Concentric as Chairman and Chief Executive Officer.

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**REPRESENTATIVE PROJECT EXPERIENCE**

## Executive Management

- As an executive-level consultant, worked with CEOs, CFOs, other senior officers, and Boards of Directors of many of North America's top electric and gas utilities, as well as with senior political leaders of the U.S. and Canada on numerous engagements over the past 25 years. Directed merger, acquisition, divestiture, and project development engagements for utilities, pipelines and electric generation companies, repositioned several electric and gas utilities as pure distributors through a series of regulatory, financial, and legislative initiatives, and helped to develop and execute several "roll-up" or market aggregation strategies for companies seeking to achieve substantial scale in energy distribution, generation, transmission, and marketing.

## Financial and Economic Advisory Services

- Retained by many of the nation's leading energy companies and financial institutions for services relating to the purchase, sale or development of new enterprises. These projects included major new gas pipeline projects, gas storage projects, several non-utility generation projects, the purchase and sale of project development and gas marketing firms, and utility acquisitions. Specific services provided include the development of corporate expansion plans, review of acquisition candidates, establishment of divestiture standards, due diligence on



acquisitions or financing, market entry or expansion studies, competitive assessments, project financing studies, and negotiations relating to these transactions.

#### Litigation Support and Expert Testimony

- Provided expert testimony on more than 400 occasions in administrative and civil proceedings on a wide range of energy and economic issues. Clients in these matters have included gas distribution utilities, gas pipelines, gas producers, oil producers, electric utilities, large energy consumers, governmental and regulatory agencies, trade associations, independent energy project developers, engineering firms, and gas and power marketers. Testimony has focused on issues ranging from broad regulatory and economic policy to virtually all elements of the utility ratemaking process. Also frequently testified regarding energy contract interpretation, accepted energy industry practices, horizontal and vertical market power, quantification of damages, and management prudence. Has been active in regulatory contract and litigation matters on virtually all interstate pipeline systems serving the U.S. Northeast, Mid-Atlantic, Midwest, and Pacific regions.
- Also served on FERC Commissioner Terzic's Task Force on Competition, which conducted an industry-wide investigation into the levels of and means of encouraging competition in U.S. natural gas markets and served on a "Blue Ribbon" panel established by the Province of New Brunswick regarding the future of natural gas distribution service in that province.

#### Resource Procurement, Contracting and Analysis

- On behalf of gas distributors, gas pipelines, gas producers, electric utilities, and independent energy project developers, personally managed or participated in the negotiation, drafting, and regulatory support of hundreds of energy contracts, including the largest gas contracts in North America, electric contracts representing billions of dollars, pipeline and storage contracts, and facility leases.
- These efforts have resulted in bringing large new energy projects to market across North America, the creation of hundreds of millions of dollars in savings through contract renegotiation, and the regulatory approval of a number of highly contested energy contracts.

#### Strategic Planning and Utility Restructuring

- Acted as a leading participant in the restructuring of the natural gas and electric utility industries over the past fifteen years, as an adviser to local distribution companies, pipelines, electric utilities, and independent energy project developers. In the recent past, provided services to most of the top 50 utilities and energy marketers across North America. Managed projects that frequently included the redevelopment of strategic plans, corporate reorganizations, the development of multi-year regulatory and legislative agendas, merger, acquisition and divestiture strategies, and the development of market entry strategies. Developed and supported merchant function exit strategies, marketing affiliate strategies, and detailed plans for the functional business units of many of North America's leading utilities.



## **PROFESSIONAL HISTORY**

### **Concentric Energy Advisors, Inc. (2002 – Present)**

Chairman and Chief Executive Officer

### **CE Capital Advisors (2004 – Present)**

Chairman, President, and Chief Executive Officer

### **Navigant Consulting, Inc. (1997 – 2002)**

President, Navigant Energy Capital (2000 – 2002)

Executive Director (2000 – 2002)

Co-Chief Executive Officer, Vice Chairman (1999 – 2000)

Executive Managing Director (1998 – 1999)

President, REED Consulting Group, Inc. (1997 – 1998)

### **REED Consulting Group (1988 – 1997)**

Chairman, President and Chief Executive Officer

### **R.J. Rudden Associates, Inc. (1983 – 1988)**

Vice President

### **Stone & Webster Management Consultants, Inc. (1981 – 1983)**

Senior Consultant

Consultant

### **Southern California Gas Company (1976 – 1981)**

Corporate Economist

Financial Analyst

Treasury Analyst

## **EDUCATION**

### **Wharton School, University of Pennsylvania**

B.S., Economics and Finance, 1976

Licensed Securities Professional: NASD Series 7, 63, 24, 79 and 99 Licenses

## **BOARDS OF DIRECTORS (PAST AND PRESENT)**

Concentric Energy Advisors, Inc.

Navigant Consulting, Inc.

Navigant Energy Capital

Nukem, Inc.

New England Gas Association

R. J. Rudden Associates

REED Consulting Group



## **AFFILIATIONS**

American Gas Association  
Energy Bar Association  
Guild of Gas Managers  
International Association of Energy Economists  
Northeast Gas Association  
Society of Gas Lighters  
Society of Utility and Regulatory Financial Analysts

## **ARTICLES AND PUBLICATIONS**

“Maximizing U.S. federal loan guarantees for new nuclear energy,” Bulletin of the Atomic Scientists  
(with John C. Slocum), July 29, 2009  
“Smart Decoupling – Dealing with unfunded mandates in performance-based ratemaking,” Public  
Utilities Fortnightly, May 2012



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Alaska Regulatory Commission</b>				
Chugach Electric	12/86	Chugach Electric	U-86-11	Cost Allocation
Chugach Electric	5/87	Enstar Natural Gas Company	U-87-2	Tariff Design
Chugach Electric	12/87	Enstar Natural Gas Company	U-87-42	Gas Transportation
Chugach Electric	11/87 2/88	Chugach Electric	U-87-35	Cost of Capital
Anchorage Municipal Light & Power	9/17	Anchorage Municipal Light & Power	U-16-094 U-17-008	Project Prudence
Municipality of Anchorage ("MOA") d/b/a Municipal Light and Power	8/19 10/19	Municipality of Anchorage ("MOA") d/b/a Municipal Light and Power	U-18-102 U-19-020 U-19-021	Merger Standard for Approval
<b>Alberta Utilities Commission</b>				
Alberta Utilities (AltaLink, EPCOR, ATCO, ENMAX, FortisAlberta, AltaGas)	1/13	Alberta Utilities	Application 1566373, Proceeding ID 20	Stranded Costs
<b>Arizona Corporation Commission</b>				
Tucson Electric Power	7/12	Tucson Electric Power	E-01933A-12-0291	Cost of Capital
UNS Energy and Fortis Inc.	1/14	UNS Energy, Fortis Inc.	E-04230A-00011 E-01933A-14-0011	Merger
<b>California Energy Commission</b>				
Southern California Gas Co.	8/80	Southern California Gas Co.	80-BR-3	Gas Price Forecasting



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>California Public Utility Commission</b>				
Southern California Gas Co.	3/80	Southern California Gas Co.	TY 1981 G.R.C.	Cost of Service, Inflation
Pacific Gas Transmission Co.	10/91 11/91	Pacific Gas & Electric Co.	App. 89-04-033	Rate Design
Pacific Gas Transmission Co.	7/92	Southern California Gas Co.	A. 92-04-031	Rate Design
San Diego Gas & Electric Company	4/19 8/19	San Diego Gas & Electric Company	A. 19-04-017	Risk Premium, Return on Equity
<b>Colorado Public Utilities Commission</b>				
AMAX Molybdenum	2/90	Commission Rulemaking	89R-702G	Gas Transportation
AMAX Molybdenum	11/90	Commission Rulemaking	90R-508G	Gas Transportation
Xcel Energy	8/04	Xcel Energy	031-134E	Cost of Debt
Public Service Company of Colorado	6/17	Public Service Company of Colorado	17AL-0363G	Return on Equity (Gas)
<b>CT Public Utilities Regulatory Authority</b>				
Connecticut Natural Gas	12/88	Connecticut Natural Gas	88-08-15	Gas Purchasing Practices
United Illuminating	3/99	United Illuminating	99-03-04	Nuclear Plant Valuation
Southern Connecticut Gas	2/04	Southern Connecticut Gas	00-12-08	Gas Purchasing Practices
Southern Connecticut Gas	4/05	Southern Connecticut Gas	05-03-17	LNG/Trunkline
Southern Connecticut Gas	5/06	Southern Connecticut Gas	05-03-17PH01	LNG/Trunkline



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Southern Connecticut Gas	8/08	Southern Connecticut Gas	06-05-04	Peaking Service Agreement
SJW Group and Connecticut Water Service	4/19	SJW Group and Connecticut Water Service	19-04-02	Customer Benefits, Public Interest
<b>District of Columbia PSC</b>				
Potomac Electric Power Company	3/99 5/99 7/99	Potomac Electric Power Company	945	Divestiture of Gen. Assets & Purchase Power Contracts
AltaGas Ltd./WGL Holdings	4/17 8/17 10/17	AltaGas Ltd./WGL Holdings	1142	Merger Standards, Public Interest Standard
<b>Federal Energy Regulatory Commission</b>				
Safe Harbor Water Power Corp.	8/82	Safe Harbor Water Power Corp.	-	Wholesale Electric Rate Increase
Western Gas Interstate Company	5/84	Western Gas Interstate Company	RP84-77	Load Forecast Working Capital
Southern Union Gas	4/87 5/87	El Paso Natural Gas Company	RP87-16-000	Take-or-Pay Costs
Connecticut Natural Gas	11/87	Penn-York Energy Corporation	RP87-78-000	Cost Allocation/Rate Design
AMAX Magnesium	12/88 1/89	Questar Pipeline Company	RP88-93-000	Cost Allocation/Rate Design
Western Gas Interstate Company	6/89	Western Gas Interstate Company	RP89-179-000	Cost Allocation/Rate Design, Open-Access Transportation
Associated CD Customers	12/89	CNG Transmission	RP88-211-000	Cost Allocation/Rate Design



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Utah Industrial Group	9/90	Questar Pipeline Company	RP88-93-000, Phase II	Cost Allocation/Rate Design
Iroquois Gas Trans. System	8/90	Iroquois Gas Transmission System	CP89-634-000/001 CP89-815-000	Gas Markets, Rate Design, Cost of Capital, Capital Structure
Boston Edison Company	1/91	Boston Edison Company	ER91-243-000	Electric Generation Markets
Cincinnati Gas and Electric Co., Union Light, Heat and Power Company, Lawrenceburg Gas Company	7/91	Texas Gas Transmission Corp.	RP90-104-000 RP88-115-000 RP90-192-000	Cost Allocation, Rate Design, Comparability of Service
Ocean State Power II	7/91	Ocean State Power II	ER89-563-000	Competitive Market Analysis, Self-dealing
Brooklyn Union/PSE&G	7/91	Texas Eastern	RP88-67, et al	Market Power, Comparability of Service
Northern Distributor Group	9/92 11/92	Northern Natural Gas Company	RP92-1-000, et al	Cost of Service
Canadian Association of Petroleum Producers and Alberta Pet. Marketing Comm.	10/92 7/97	Lakehead Pipeline Co. L.P.	IS92-27-000	Cost Allocation, Rate Design
Colonial Gas, Providence Gas	7/93 8/93	Algonquin Gas Transmission	RP93-14	Cost Allocation, Rate Design
Iroquois Gas Transmission	94	Iroquois Gas Transmission	RP94-72-000	Cost of Service, Rate Design
Transco Customer Group	1/94	Transcontinental Gas Pipeline Corporation	RP92-137-000	Rate Design, Firm to Wellhead
Pacific Gas Transmission	2/94 3/95	Pacific Gas Transmission	RP94-149-000	Rolled-In vs. Incremental Rates, Rate Design





SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Tennessee GSR Group	1/95 3/95 1/96	Tennessee Gas Pipeline Company	RP93-151-000 RP94-39-000 RP94-197-000 RP94-309-000	GSR Costs
PG&E and SoCal Gas	8/96 9/96	El Paso Natural Gas Company	RP92-18-000	Stranded Costs
Iroquois Gas Transmission System, L.P.	97	Iroquois Gas Transmission System, L.P.	RP97-126-000	Cost of Service, Rate Design
BEC Energy - Commonwealth Energy System	2/99	Boston Edison Company/ Commonwealth Energy System	EC99-33-000	Market Power Analysis - Merger
Central Hudson Gas & Electric, Consolidated Co. of New York, Niagara Mohawk Power Corporation, Dynegy Power Inc.	10/00	Central Hudson Gas & Electric, Consolidated Co. of New York, Niagara Mohawk Power Corporation, Dynegy Power Inc.	EC01-7-000	Market Power 203/205 Filing
Wyckoff Gas Storage	12/02	Wyckoff Gas Storage	CP03-33-000	Need for Storage Project
Indicated Shippers/Producers	10/03	Northern Natural Gas	RP98-39-029	Ad Valorem Tax Treatment
Maritimes & Northeast Pipeline	6/04	Maritimes & Northeast Pipeline	RP04-360-000	Rolled-In Rates
ISO New England	8/04 2/05	ISO New England	ER03-563-030	Cost of New Entry
Transwestern Pipeline Company, LLC	9/06	Transwestern Pipeline Company, LLC	RP06-614-000	Business Risk



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Portland Natural Gas Transmission System	6/08	Portland Natural Gas Transmission System	RP08-306-000	Market Assessment, Natural Gas Transportation, Rate Setting
Portland Natural Gas Transmission System	5/10 3/11 4/11	Portland Natural Gas Transmission System	RP10-729-000	Business Risks, Extraordinary and Non-recurring Events  Pertaining to Discretionary Revenues
Morris Energy	7/10	Morris Energy	RP10-79-000	Impact of Preferential Rate
Gulf South Pipeline	10/14	Gulf South Pipeline	RP15-65-000	Business Risk, Rate Design
BNP Paribas Energy Trading, GP  South Jersey Resource Group, LLC	2/15	Transcontinental Gas Pipeline Corporation	RP06-569-008 RP07-376-005	Regulatory Policy, Incremental Rates, Stacked Rate
Tallgrass Interstate Gas Transmission, LLC	10/15 12/15	Tallgrass Interstate Gas Transmission, LLC	RP16-137-000	Market Assessment, Rate Design, Rolled-in Rate Treatment
Tennessee Valley Authority	2/21 3/21	Athens Utility Board, Gibson Electric Membership Corp., Joe Wheeler Electric Membership Corp., and Volunteer Energy Cooperative v. Tennessee Valley Authority	EL21-40-000 TX21-01-000	Public Policy, Competition, Economic Harm



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Florida Impact Estimating Conference</b>				
Florida Power and Light Co. on behalf of the Florida Investor-Owned Utilities	2/19 3/19	Florida Power and Light Co. on behalf of the Florida Investor-Owned Utilities	Right to Competitive Energy Market for Customers of Investor-Owned Utilities; Allowing Energy Choice	Economic and Financial Impact of Deregulation on Customers and Market Design and Function
<b>Florida Public Service Commission</b>				
Florida Power and Light Co.	10/07	Florida Power & Light Co.	070650-EI	Need for New Nuclear Plant
Florida Power and Light Co.	5/08	Florida Power & Light Co.	080009-EI	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/09 8/09	Florida Power & Light Co.	080677-EI	Benchmarking in Support of ROE
Florida Power and Light Co.	3/09 5/09 8/09	Florida Power & Light Co.	090009-EI	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/10 5/10 8/10	Florida Power & Light Co.	100009-EI	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/11 7/11	Florida Power & Light Co.	110009-EI	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/12 7/12	Florida Power & Light Co.	120009-EI	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/12 8/12	Florida Power & Light Co.	120015-EI	Benchmarking in Support of ROE
Florida Power and Light Co.	3/13 7/13	Florida Power & Light Co.	130009	New Nuclear Cost Recovery, Prudence



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Florida Power and Light Co.	3/14	Florida Power & Light Co.	140009	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	3/15 7/15	Florida Power & Light Co.	150009	New Nuclear Cost Recovery, Prudence
Florida Power and Light Co.	10/15	Florida Power and Light Co.	150001	Recovery of Replacement Power Costs
Florida Power and Light Co.	3/16	Florida Power & Light Co.	160021-EI	Benchmarking in Support of ROE
<b>Florida Senate Committee on Communication, Energy and Utilities</b>				
Florida Power and Light Co.	2/09	Florida Power & Light Co.	-	Securitization
<b>Hawai'i Public Utility Commission</b>				
Hawaiian Electric Light Company, Inc.	6/00	Hawaiian Electric Light Company, Inc.	99-0207	Standby Charge
NextEra Energy, Inc. Hawaiian Electric Companies	4/15 8/15 10/15	Hawaiian Electric Company, Inc.; Hawaii Electric Light Company, Inc., Maui Electric Company, Ltd., NextEra Energy, Inc.	2015-0022	Merger Application
<b>Idaho Public Utilities Commission</b>				
Hydro One Limited and Avista Corporation	9/18 11/18	Hydro One Limited and Avista Corporation	AVU-E-17-09 AVU-G-17-05	Governance, Financial Integrity and Ring-fencing Merger Commitments



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Illinois Commerce Commission</b>				
Renewables Suppliers (Algonquin Power Co., EDP Renewables North America, Invenergy, NextEra Energy Resources)	3/14	Renewables Suppliers	13-0546	Application for Rehearing and Reconsideration, Long-term Purchase Power Agreements
WE Energies Corporation	8/14 12/14 2/15	WE Energies/Integrays	14-0496	Merger Application
<b>Indiana Utility Regulatory Commission</b>				
Northern Indiana Public Service Company	10/01	Northern Indiana Public Service Company	41746	Valuation of Electric Generating Facilities
Northern Indiana Public Service Company	1/08 3/08	Northern Indiana Public Service Company	43396	Asset Valuation
Northern Indiana Public Service Company	8/08	Northern Indiana Public Service Company	43526	Fair Market Value Assessment
Indianapolis Power & Light Company	12/14	Indianapolis Power & Light Company	44576	Asset Valuation
Indianapolis Power & Light Company	12/16	Indianapolis Power & Light Company	44893	Rate Recovery for New Plant Additions, Valuation of Electric Generating Facilities
Indianapolis Power & Light Company D/B/A AES Indiana	8/21	Indianapolis Power & Light Company D/B/A AES Indiana	45591	Power Project Development and PPA Evaluation



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Iowa Utilities Board</b>				
Interstate Power and Light	7/05	Interstate Power and Light and FPL Energy Duane Arnold, LLC	SPU-05-15	Sale of Nuclear Plant
Interstate Power and Light	5/07	City of Everly, Iowa	SPU-06-5	Municipalization
Interstate Power and Light	5/07	City of Kalona, Iowa	SPU-06-6	Municipalization
Interstate Power and Light	5/07	City of Wellman, Iowa	SPU-06-10	Municipalization
Interstate Power and Light	5/07	City of Terril, Iowa	SPU-06-8	Municipalization
Interstate Power and Light	5/07	City of Rolfe, Iowa	SPU-06-7	Municipalization
<b>Kansas Corporation Commission</b>				
Great Plains Energy Kansas City Power and Light Company	1/17	Great Plains Energy, Kansas City Power & Light Company, and Westar Energy	16-KCPE-593-ACQ	Merger Standards, Acquisition Premium, Ring-Fencing, Public Interest Standard
Great Plains Energy Kansas City Power and Light Company	8/17 2/18	Great Plains Energy, Kansas City Power & Light Company, and Westar Energy	18-KCPE-095-MER	Merger Standards, Transaction Value, Merger Benefits, Ring-Fencing,
<b>Maine Public Utility Commission</b>				
Northern Utilities	5/96	Granite State and PNGTS	95-480 95-481	Transportation Service and PBR
Maine Water Company	7/19 8/19	Maine Water Company	2019-00096	Merger Standards, Net Benefits to Customers, Ring-fencing



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Maryland Public Service Commission</b>				
Eastalco Aluminum	3/82	Potomac Edison	7604	Cost Allocation
Potomac Electric Power Company	8/99	Potomac Electric Power Company	8796	Stranded Cost & Price Protection
AltaGas Ltd./WGL Holdings	4/17 9/17 1/18 2/18	AltaGas Ltd./WGL Holdings	9449	Merger Standards, Public Interest Standard
Washington Gas Light Company	8/20	Washington Gas Light Company	9622	Regulatory Policy
<b>Mass. Department of Public Utilities</b>				
Haverhill Gas	5/82	Haverhill Gas	DPU #1115	Cost of Capital
New England Energy Group	1/87	Commission Investigation	-	Gas Transportation Rates
Energy Consortium of Mass.	9/87	Commonwealth Gas Company	DPU-87-122	Cost Allocation, Rate Design
Mass. Institute of Technology	12/88	Middleton Municipal Light	DPU #88-91	Cost Allocation, Rate Design
Energy Consortium of Mass.	3/89	Boston Gas	DPU #88-67	Rate Design
PG&E Bechtel Generating Co./ Constellation Holdings	10/91	Commission Investigation	DPU #91-131	Valuation of Environmental Externalities
Coalition of Non-Utility Generators		Cambridge Electric Light Co. & Commonwealth Electric Co.	DPU 91-234 EFSC 91-4	Integrated Resource Management



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
The Berkshire Gas Company Essex County Gas Company Fitchburg Gas and Elec. Light Co.	5/92	The Berkshire Gas Company Essex County Gas Company Fitchburg Gas & Elec. Light Co.	DPU #92-154	Gas Purchase Contract Approval
Boston Edison Company	7/92	Boston Edison	DPU #92-130	Least Cost Planning
Boston Edison Company	7/92	The Williams/Newcorp Generating Co.	DPU #92-146	RFP Evaluation
Boston Edison Company	7/92	West Lynn Cogeneration	DPU #92-142	RFP Evaluation
Boston Edison Company	7/92	L'Energia Corp.	DPU #92-167	RFP Evaluation
Boston Edison Company	7/92	DLS Energy, Inc.	DPU #92-153	RFP Evaluation
Boston Edison Company	7/92	CMS Generation Co.	DPU #92-166	RFP Evaluation
Boston Edison Company	7/92	Concord Energy	DPU #92-144	RFP Evaluation
The Berkshire Gas Company Colonial Gas Company Essex County Gas Company Fitchburg Gas and Electric Company	11/93	The Berkshire Gas Company Colonial Gas Company Essex County Gas Company Fitchburg Gas and Electric Co.	DPU #93-187	Gas Purchase Contract Approval
Bay State Gas Company	10/93	Bay State Gas Company	93-129	Integrated Resource Planning
Boston Edison Company	94	Boston Edison	DPU #94-49	Surplus Capacity





SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Hudson Light & Power Department	4/95	Hudson Light & Power Dept.	DPU #94-176	Stranded Costs
Essex County Gas Company	5/96	Essex County Gas Company	96-70	Unbundled Rates
Boston Edison Company	8/97	Boston Edison Company	97-63	Holding Company Corporate Structure
Berkshire Gas Company	6/98	Berkshire Gas Mergeco Gas Co.	D.T.E. 98-87	Merger Approval
Eastern Edison Company	8/98	Montaup Electric Company	D.T.E. 98-83	Marketing for Divestiture of its Generation Business
Boston Edison Company	98	Boston Edison Company	D.T.E. 97-113	Fossil Generation Divestiture
Boston Edison Company	2/99	Boston Edison Company	D.T.E. 98-119	Nuclear Generation Divestiture
Eastern Edison Company	12/98	Montaup Electric Company	D.T.E. 99-9	Sale of Nuclear Plant
NStar	9/07 12/07	NStar, Bay State Gas, Fitchburg G&E, NE Gas, W. MA Electric	DPU 07-50	Decoupling, Risk
NStar	6/11	NStar, Northeast Utilities	DPU 10-170	Merger Approval
Town of Milford	1/19 3/19 5/19	Milford Water Company	DPU 18-60	Valuation Analysis
<b>Mass. Energy Facilities Siting Council</b>				
Mass. Institute of Technology	1/89	M.M.W.E.C.	EFSC-88-1	Least-Cost Planning
Boston Edison Company	9/90	Boston Edison	EFSC-90-12	Electric Generation Markets
Silver City Energy Ltd. Partnership	11/91	Silver City Energy	D.P.U. 91-100	State Policies, Need for Facility



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Michigan Public Service Commission</b>				
Detroit Edison Company	9/98	Detroit Edison Company	U-11726	Market Value of Generation Assets
Consumers Energy Company	8/06 1/07	Consumers Energy Company	U-14992	Sale of Nuclear Plant
WE Energies	12/11	Wisconsin Electric Power Co	U-16830	Economic Benefits, Prudence
Consumer Energy Company	7/13	Consumers Energy Company	U-17429	Certificate of Need, Integrated Resource Plan
WE Energies	8/14 3/15	WE Energies/Integrus	U-17682	Merger Application
<b>Minnesota Public Utilities Commission</b>				
Xcel Energy/No. States Power	9/04	Xcel Energy/No. States Power	G002/GR-04-1511	NRG Impacts
Interstate Power and Light	8/05	Interstate Power and Light and FPL Energy Duane Arnold, LLC	E001/PA-05-1272	Sale of Nuclear Plant
Northern States Power Company d/b/a Xcel Energy	11/05	Northern States Power Company	E002/GR-05-1428	NRG Impacts on Debt Costs
Northern States Power Company d/b/a Xcel Energy	09/06 10/06 11/06	NSP v. Excelsior	E6472/M-05-1993	PPA, Financial Impacts
Northern States Power Company d/b/a Xcel Energy	11/06	Northern States Power Company	G002/GR-06-1429	Return on Equity
Northern States Power	11/08 05/09	Northern States Power Company	E002/GR-08-1065	Return on Equity



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Northern States Power	11/09 6/10	Northern States Power Company	G002/GR-09-1153	Return on Equity
Northern States Power	11/10 5/11	Northern States Power Company	E002/GR-10-971	Return on Equity
Northern States Power Company	1/16	Northern States Power Company	E002/GR-15-826	Industry Perspective
Northern States Power Company	11/19	Northern States Power Company	E002/GR-19-564	Return on Equity
<b>Missouri House Committee on Energy and the Environment</b>				
Ameren Missouri	3/16	Ameren Missouri	HB 2816	Performance Based Ratemaking
<b>Missouri Public Service Commission</b>				
Missouri Gas Energy	1/03 04/03	Missouri Gas Energy	GR-2001-382	Gas Purchasing Practices, Prudence
Aquila Networks	2/04	Aquila-MPS, Aquila L&P	ER-2004-0034 HR-2004-0024	Cost of Capital, Capital Structure
Aquila Networks	2/04	Aquila-MPS, Aquila L&P	GR-2004-0072	Cost of Capital, Capital Structure
Missouri Gas Energy	11/05 2/06 7/06	Missouri Gas Energy	GR-2002-348 GR-2003-0330	Capacity Planning
Missouri Gas Energy	11/10 1/11	KCP&L	ER-2010-0355	Natural Gas DSM
Missouri Gas Energy	11/10 1/11	KCP&L GMO	ER-2010-0356	Natural Gas DSM
Laclede Gas Company	5/11	Laclede Gas Company	CG-2011-0098	Affiliate Pricing Standards



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Union Electric Company d/b/a Ameren Missouri	2/12 8/12	Union Electric Company	ER-2012-0166	Return on Equity, Earnings Attrition, Regulatory Lag
Union Electric Company d/b/a Ameren Missouri	6/14	Noranda Aluminum Inc.	EC-2014-0223	Ratemaking, Regulatory and Economic Policy
Union Electric Company d/b/a Ameren Missouri	1/15 2/15	Union Electric Company	ER-2014-0258	Revenue Requirements, Ratemaking Policies
Great Plains Energy Kansas City Power and Light Company	8/17 2/18 3/18	Great Plains Energy, Kansas City Power & Light Company, and Westar Energy	EM-2018-0012	Merger Standards, Transaction Value, Merger Benefits, Ring-Fencing,
Union Electric Company d/b/a Ameren Missouri	6/19	Union Electric Company d/b/a Ameren Missouri	EO-2017-0176	Affiliate Transactions, Cost Allocation Manual
Union Electric Company d/b/a Ameren Missouri	7/19 1/20 2/20	Union Electric Company d/b/a Ameren Missouri	ER-2019-0335	Reasonableness of Affiliate Services and Costs
Union Electric Company d/b/a Ameren Missouri	3/21	Union Electric Company d/b/a Ameren Missouri	GR-2021-0241	Affiliate Transactions
Union Electric Company d/b/a Ameren Missouri	3/21	Union Electric Company d/b/a Ameren Missouri	ER-2021-0240	Affiliate Transactions
Empire District Electric Company	5/21	Empire District Electric Company	ER-2021-0240	Return on Equity
<b>Missouri Senate Committee on Commerce, Consumer Protection, Energy and the Environment</b>				
Ameren Missouri	3/16	Ameren Missouri	SB 1028	Performance Based Ratemaking



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Montana Public Service Commission</b>				
Great Falls Gas Company	10/82	Great Falls Gas Company	82-4-25	Gas Rate Adjustment Clause
<b>National Energy Board (now the Canada Energy Regulator)</b>				
Alberta-Northeast	2/87	Alberta Northeast Gas Export Project	GH-1-87	Gas Export Markets
Alberta-Northeast	11/87	TransCanada Pipeline	GH-2-87	Gas Export Markets
Alberta-Northeast	1/90	TransCanada Pipeline	GH-5-89	Gas Export Markets
Independent Petroleum Association of Canada	1/92	Interprovincial Pipeline, Inc.	RH-2-91	Pipeline Valuation, Toll
The Canadian Association of Petroleum Producers	11/93	Trans Mountain Pipeline	RH-1-93	Cost of Capital
Alliance Pipeline L.P.	6/97	Alliance Pipeline L.P.	GH-3-97	Market Study
Maritimes & Northeast Pipeline	97	Sable Offshore Energy Project	GH-6-96	Market Study
Maritimes & Northeast Pipeline	2/02	Maritimes & Northeast Pipeline	GH-3-2002	Natural Gas Demand Analysis
TransCanada Pipelines	8/04	TransCanada Pipelines	RH-3-2004	Toll Design
Brunswick Pipeline	5/06	Brunswick Pipeline	GH-1-2006	Market Study
TransCanada Pipelines Ltd.	12/06 4/07	TransCanada Pipelines Ltd.: Gros Cacouna Receipt Point Application	RH-1-2007	Toll Design
Repsol Energy Canada Ltd	3/08	Repsol Energy Canada Ltd	GH-1-2008	Market Study



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Maritimes & Northeast Pipeline	7/10	Maritimes & Northeast Pipeline	RH-4-2010	Regulatory Policy, Toll Development
TransCanada Pipelines Ltd	9/11 5/12	TransCanada Pipelines Ltd.	RH-3-2011	Business Services and Tolls Application
Trans Mountain Pipeline LLC	6/12 1/13	Trans Mountain Pipeline LLC	RH-1-2012	Toll Design
TransCanada Pipelines Ltd	8/13	TransCanada Pipelines Ltd	RE-001-2013	Toll Design
NOVA Gas Transmission Ltd	11/13	NOVA Gas Transmission Ltd	OF-Fac-Gas-N081-2013-1001	Toll Design
Trans Mountain Pipeline LLC	12/13	Trans Mountain Pipeline LLC	OF-Fac-Oil-T260-2013-0301	Economic and Financial Feasibility, Project Benefits
Energy East Pipeline Ltd.	10/14	Energy East Pipeline	Of-Fac-Oil-E266-2014-0102	Economic and Financial Feasibility, Project Benefits
NOVA Gas Transmission Ltd	5/16	NOVA Gas Transmission Ltd	GH-003-2015	Certificate of Public Convenience and Necessity
TransCanada PipeLines Limited	4/17 9/17	TransCanada PipeLines Limited	Dawn LTFP Service Application	Public Interest, Toll Design
NOVA Gas Transmission Ltd	10/17	NOVA Gas Transmission Ltd	MH-031-2017	Toll Design
NOVA Gas Transmission Ltd	3/19 11/19	NOVA Gas Transmission Ltd	RH-001-2019	Tolling Changes
Enbridge Pipelines Inc.	12/19 6/20 8/20 4/21	Enbridge Pipelines Inc.	RH-001-2020	Market and Scarcity Conditions; Reasonableness of Tolls, Terms, and Conditions; Public Interest; Open Season Process



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
NOVA Gas Transmission LTD.	5/21	NOVA Gas Transmission LTD.	Service Application	Toll Design
<b>New Brunswick Energy and Utilities Board</b>				
Atlantic Wallboard/JD Irving Co	1/08	Enbridge Gas New Brunswick	MCTN #298600	Rate Setting for EGNB
Atlantic Wallboard/Flakeboard	9/09 6/10 7/10	Enbridge Gas New Brunswick	NBEUB 2009-017	Rate Setting for EGNB
Atlantic Wallboard/Flakeboard	1/14	Enbridge Gas New Brunswick	NBEUB Matter 225	Rate Setting for EGNB
<b>New Hampshire Public Utilities Commission</b>				
Bus & Industry Association	6/89	P.S. Co. of New Hampshire	DR89-091	Fuel Costs
Bus & Industry Association	5/90	Northeast Utilities	DR89-244	Merger & Acquisition Issues
Eastern Utilities Associates	6/90	Eastern Utilities Associates	DF89-085	Merger & Acquisition Issues
EnergyNorth Natural Gas	12/90	EnergyNorth Natural Gas	DE90-166	Gas Purchasing Practices
EnergyNorth Natural Gas	7/90	EnergyNorth Natural Gas	DR90-187	Special Contracts, Discounted Rates
Northern Utilities, Inc.	12/91	Commission Investigation	DR91-172	Generic Discounted Rates
Public Service Co. of New Hampshire	7/14	Public Service Co. of NH	DE 11-250	Prudence
Public Service Co. of New Hampshire	7/15 11/15	Public Service Co. of NH	14-238	Restructuring and Rate Stabilization



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>New Jersey Board of Public Utilities</b>				
Hilton/Golden Nugget	12/83	Atlantic Electric	BPU 832-154	Line Extension Policies
Golden Nugget	3/87	Atlantic Electric	BPU 837-658	Line Extension Policies
New Jersey Natural Gas	2/89	New Jersey Natural Gas	BPU GR89030335J	Cost Allocation, Rate Design
New Jersey Natural Gas	1/91	New Jersey Natural Gas	BPU GR90080786J	Cost Allocation, Rate Design
New Jersey Natural Gas	8/91	New Jersey Natural Gas	BPU GR91081393J	Rate Design, Weather Normalization Clause
New Jersey Natural Gas	4/93	New Jersey Natural Gas	BPU GR93040114J	Cost Allocation, Rate Design
South Jersey Gas	4/94	South Jersey Gas	BRC Dock No. GR080334	Revised Levelized Gas Adjustment
New Jersey Utilities Association	9/96	Commission Investigation	BPU AX96070530	PBOP Cost Recovery
Morris Energy Group	11/09	Public Service Electric & Gas	BPU GR 09050422	Discriminatory Rates
New Jersey American Water Co.	4/10	New Jersey American Water Co.	BPU WR 1040260	Tariff Rates and Revisions
Electric Customer Group	1/11	Generic Stakeholder Proceeding	BPU GR10100761 ER10100762	Natural Gas Ratemaking Standards and pricing
<b>New Mexico Public Service Commission</b>				
Gas Company of New Mexico	11/83	Public Service Co. of New Mexico	1835	Cost Allocation, Rate Design
Southwestern Public Service Co., New Mexico	12/12	SPS New Mexico	12-00350-UT	Rate Case, Return on Equity





SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
PNM Resources	12/13 10/14 12/14	Public Service Co. of New Mexico	13-00390-UT	Nuclear Valuation, In Support of Stipulation
<b>New York State Public Service Commission</b>				
Iroquois Gas Transmission	12/86	Iroquois Gas Transmission System	70363	Gas Markets
Brooklyn Union Gas Company	8/95	Brooklyn Union Gas Company	95-6-0761	Panel on Industry Directions
Central Hudson, ConEdison and Niagara Mohawk	9/00	Central Hudson, ConEdison and Niagara Mohawk	96-E-0909 96-E-0897 94-E-0098 94-E-0099	Section 70, Approval of New Facilities
Central Hudson, New York State Electric & Gas, Rochester Gas & Electric	5/01	Joint Petition of NiMo, NYSEG, RG&E, Central Hudson, Constellation and Nine Mile Point	01-E-0011	Section 70, Rebuttal Testimony
Rochester Gas & Electric	12/03	Rochester Gas & Electric	03-E-1231	Sale of Nuclear Plant
Rochester Gas & Electric	1/04	Rochester Gas & Electric	03-E-0765 02-E-0198 03-E-0766	Sale of Nuclear Plant; Ratemaking Treatment of Sale
Rochester Gas and Electric and NY State Electric & Gas Corp	2/10	Rochester Gas & Electric NY State Electric & Gas Corp	09-E-0715 09-E-0716 09-E-0717 09-E-0718	Depreciation Policy
National Fuel Gas Corporation	9/16 9/16	National Fuel Gas Corporation	16-G-0257	Ring-fencing Policy
NextEra Energy Transmission New York	8/18	NextEra Energy Transmission New York	18-T-0499	Certificate of Need for Transmission Line, Vertical Market Power
NextEra Energy Transmission New York	2/19 8/19	NextEra Energy Transmission New York	18-E-0765	Certificate of Need for Transmission Line, Vertical Market Power



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Nova Scotia Utility and Review Board</b>				
Nova Scotia Power	9/12	Nova Scotia Power	P-893	Audit Reply
Nova Scotia Power	8/14	Nova Scotia Power	P-887	Audit Reply
Nova Scotia Power	5/16	Nova Scotia Power	2017-2019 Fuel Stability Plan	Used and Useful Ratemaking
NSP Maritime Link ("NSPML")	12/16 2/17 5/17	NSP Maritime Link ("NSPML")	M07718 NSPML Interim Cost Assessment Application	Used and Useful Ratemaking
NSP Maritime Link ("NSPML")	10/19	NSP Maritime Link ("NSPML")	M09277 NSPML 2020 Interim Assessment Application	Recovery of Depreciation and Return, Costs and Customer Benefits, Debt Service Coverage Ratio
Nova Scotia Power	2/21	Nova Scotia Power	M10013 Annapolis Tidal Generation Station Retirement: Request for Accounting Treatment and Net Book Value Recovery	Generation Plant Cost Recovery
NSP Maritime Link ("NSPML")	8/21	NSP Maritime Link ("NSPML")	M10206 NSPML Final Cost Assessment Application	Prudence Review
<b>Oklahoma Corporation Commission</b>				
Oklahoma Natural Gas Company	6/98	Oklahoma Natural Gas Company	PUD 980000177	Storage Issues
Oklahoma Gas & Electric Company	5/05 9/05	Oklahoma Gas & Electric Company	PUD 200500151	Prudence of McLain Acquisition



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Oklahoma Gas & Electric Company	3/08	Oklahoma Gas & Electric Company	PUD 200800086	Acquisition of Redbud Generating Facility
Oklahoma Gas & Electric Company	8/14 1/15	Oklahoma Gas & Electric Company	PUD 201400229	Integrated Resource Plan
<b>Ontario Energy Board</b>				
Market Hub Partners Canada, L.P.	5/06	Natural Gas Electric Interface Roundtable	File No. EB-2005-0551	Market-based Rates for Storage
Ontario Power Generation	9/13 2/14 5/14	Ontario Power Generation	EB-2013-0321	Prudence Review of Nuclear Project Management Processes
<b>Oregon Public Utilities Commission</b>				
Hydro One Limited and Avista Corporation	8/18 10/18	Hydro One Limited and Avista Corporation	UM 1897	Reasonableness and Sufficiency of the Governance, Bankruptcy, and Financial Ring-Fencing Stipulated Settlement Commitments
<b>Pennsylvania Public Utility Commission</b>				
ATOC	4/95	Equitrans	R-00943272	Rate Design, Unbundling
ATOC	3/96 4/96	Equitrans	P-00940886	Rate Design, Unbundling
<b>Rhode Island Public Utilities Commission</b>				
Newport Electric	7/81	Newport Electric	1599	Rate Attrition
South County Gas	9/82	South County Gas	1671	Cost of Capital
New England Energy Group	7/86	Providence Gas Company	1844	Cost Allocation, Rate Design
Providence Gas	8/88	Providence Gas Company	1914	Load Forecast, Least-Cost Planning



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Providence Gas Company and The Valley Gas Company	1/01 3/02	Providence Gas Company and The Valley Gas Company	1673 1736	Gas Cost Mitigation Strategy
The New England Gas Company	3/03	New England Gas Company	3459	Cost of Capital
<b>Texas Public Utility Commission</b>				
Southwestern Electric	5/83	Southwestern Electric	-	Cost of Capital, CWIP
P.U.C. General Counsel	11/90	Texas Utilities Electric Company	9300	Gas Purchasing Practices, Prudence
Oncor Electric Delivery Company	8/07	Oncor Electric Delivery Company	34040	Regulatory Policy, Rate of Return, Return of Capital and Consolidated Tax Adjustment
Oncor Electric Delivery Company	6/08	Oncor Electric Delivery Company	35717	Regulatory policy
Oncor Electric Delivery Company	10/08 11/08	Oncor, TCC, TNC, ETT, LCRA TSC, Sharyland, STEC, TNMP	35665	Competitive Renewable Energy Zone
CenterPoint Energy	6/10 10/10	CenterPoint Energy/Houston Electric	38339	Regulatory Policy, Risk, Consolidated Taxes
Oncor Electric Delivery Company	1/11	Oncor Electric Delivery Company	38929	Regulatory Policy, Risk
Cross Texas Transmission	8/12 11/12	Cross Texas Transmission	40604	Return on Equity
Southwestern Public Service	11/12	Southwestern Public Service	40824	Return on Equity
Lone Star Transmission	5/14	Lone Star Transmission	42469	Return on Equity, Debt, Cost of Capital



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Houston Electric, LLC	6/15	CenterPoint Energy Houston Electric, LLC	44572	Distribution Cost Recovery Factor
NextEra Energy, Inc.	10/16 2/17	Oncor Electric Delivery Company LLC, NextEra Energy	46238	Merger Application, Ring-fencing, Affiliate Interest, Code of Conduct
CenterPoint Energy Houston Electric, LLC	4/19 6/19	CenterPoint Energy Houston Electric, LLC	49421	Incentive Compensation
Sun Jupiter Holdings LLC ad IIF US Holding 2 LP	11/19	Sun Jupiter Holdings LLC and IIF US Holding 2 LP Acquisition of El Paso Electric Company	49849	Public Interest Standard, Ring-fencing, Regulatory Commitments, Rate Credit and Economic Considerations, Ownership and Governance Post-closing, Tax Matters
Texas-New Mexico Power Company and Avangrid, Inc. and NM Green Holdings, Inc.	3/21	Texas-New Mexico Power Company and Avangrid, Inc. and NM Green Holdings, Inc.	51547	Merger Approval Conditions
<b>Texas Railroad Commission</b>				
Western Gas Interstate Company	1/85	Southern Union Gas Company	5238	Cost of Service
Atmos Pipeline Texas	9/10 1/11	Atmos Pipeline Texas	GUD 10000	Ratemaking Policy, Risk
Atmos Pipeline Texas	1/17 4/17	Atmos Pipeline Texas	GUD 10580	Ratemaking Policy, Return on Equity, Rate Design Policy
<b>Texas State Legislature</b>				
CenterPoint Energy	4/13	Association of Electric Companies of Texas	SB 1364	Consolidated Tax Adjustment Clause Legislation



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Utah Public Service Commission</b>				
AMAX Magnesium	1/88	Mountain Fuel Supply Company	86-057-07	Cost Allocation, Rate Design
AMAX Magnesium	4/88	Utah P&L/Pacific P&L	87-035-27	Merger & Acquisition
Utah Industrial Group	7/90 8/90	Mountain Fuel Supply	89-057-15	Gas Transportation Rates
AMAX Magnesium	9/90	Utah Power & Light	89-035-06	Energy Balancing Account
AMAX Magnesium	8/90	Utah Power & Light	90-035-06	Electric Service Priorities
Questar Gas Company	12/07	Questar Gas Company	07-057-13	Benchmarking in Support of ROE
<b>Vermont Public Service Board</b>				
Green Mountain Power	8/82	Green Mountain Power	4570	Rate Attrition
Green Mountain Power	12/97	Green Mountain Power	5983	Cost of Service
Green Mountain Power	7/98 9/00	Green Mountain Power	6107	Rate Development
<b>Virginia Corporation Commission</b>				
Virginia Electric and Power Company d/b/a Dominion Energy Virginia	3/21 5/21	Virginia Electric and Power Company d/b/a Dominion Energy Virginia	PUR-2021-00058	Regulatory Policy
<b>Washington Utilities and Transportation Commission</b>				
Hydro One Limited and Avista Corporation	9/18	Hydro One Limited and Avista Corporation	U-170970	Reasonableness and Sufficiency of the Governance, Bankruptcy, and Financial Ring-Fencing Stipulated Settlement Commitments



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>Wisconsin Public Service Commission</b>				
WEC & WICOR	11/99	WEC	9401-YO-100 9402-YO-101	Approval to Acquire the Stock of WICOR
Wisconsin Electric Power Company	1/07	Wisconsin Electric Power Co.	6630-EI-113	Sale of Nuclear Plant
Wisconsin Electric Power Company	10/09	Wisconsin Electric Power Co.	6630-CE-302	CPCN Application for Wind Project
Northern States Power Wisconsin	10/13	Xcel Energy (dba Northern States Power Wisconsin)	4220-UR-119	Fuel Cost Adjustments
Wisconsin Electric Power Company	11/13	Wisconsin Electric Power Co.	6630-FR-104	Fuel Cost Adjustment
Wisconsin Gas LLC	5/14	Wisconsin Gas LLC	6650-CG-233	Gas Line Expansion, Reasonableness
WE Energy	8/14 1/15 3/15	WE Energy/Integrus	9400-YO-100	Merger Approval
Wisconsin Public Service Corporation	1/19	Madison Gas and Electric Company and Wisconsin Public Service Corporation	5-BS-228	Evaluation of Models Used in Resource Investment Decisions



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>American Arbitration Association</b>				
Michael Polsky	3/91	M. Polsky vs. Indeck Energy	-	Corporate Valuation, Damages
ProGas Limited	7/92	ProGas Limited v. Texas Eastern	-	Gas Contract Arbitration
Attala Generating Company	12/03	Attala Generating Co v. Attala Energy Co.	16-Y-198-00228-03	Power Project Valuation, Breach of Contract, Damages
Nevada Power Company	4/08	Nevada Power v. Nevada Cogeneration Assoc. #2	-	Power Purchase Agreement
Sensata Technologies, Inc./EMS Engineered Materials Solutions, LLC	1/11	Sensata Technologies, Inc./EMS Engineered Materials Solutions, LLC v. Pepco Energy Services	11-198-Y-00848-10	Change in Usage Dispute, Damages
Sandy Creek Energy Associates, L.P.	9/17	Sandy Creek Energy Associates, L.P. vs. Lower Colorado River Authority	01-16-0002-6892	Power Purchase Agreement, Analysis of Damages
Dynegy Midwest Generation, LLC	1/21 2/21	BNSF Railway Company and Norfolk Southern Railway Company v. Dynegy Midwest Generation, LLC	01-18-0001-3283	Electric Generation Asset Management
<b>Canadian Arbitration Panel</b>				
Hydro-Québec	4/15 5/16 7/16	Hydro-Fraser et al v. Hydro-Québec	-	Electric Price Arbitration
<b>Commonwealth of Massachusetts, Appellate Tax Board</b>				
NStar Electric Company	8/14	NStar Electric Company	F316346 F319254	Valuation Methodology





SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Western Massachusetts Electric Company	2/16	Western Massachusetts Electric Company v. Board of Assessors of The City of Springfield	315550 319349	Valuation Methodology
<b>Commonwealth of Massachusetts, Suffolk Superior Court</b>				
John Hancock	1/84	Trinity Church v. John Hancock	C.A. No. 4452	Damages Quantification
<b>Court of Common Pleas of Philadelphia County, Civil Division</b>				
Sunoco Marketing & Terminals L.P.	11/16	Sunoco Marketing & Terminals, L.P. v. South Jersey Resources Group	150302520	Damages Quantification
<b>State of Colorado District Court, County of Garfield</b>				
Questar Corporation, et al	11/00	Questar Corporation, et al.	00CV129-A	Partnership Fiduciary Duties
<b>State of Delaware, Court of Chancery, New Castle County</b>				
Wilmington Trust Company	11/05	Calpine Corporation vs. Bank of New York and Wilmington Trust Company	C.A. No. 1669-N	Bond Indenture Covenants
<b>Illinois Appellate Court, Fifth Division</b>				
Norweb, PLC	8/02	Indeck No. America v. Norweb	97 CH 07291	Breach of Contract, Power Plant Valuation
<b>Independent Arbitration Panel</b>				
Alberta Northeast Gas Limited	2/98	ProGas Ltd., Canadian Forest Oil Ltd., AEC Oil & Gas	-	
Ocean State Power	9/02	Ocean State Power vs. ProGas Ltd.	2001/2002 Arbitration	Gas Price Arbitration
Ocean State Power	2/03	Ocean State Power vs. ProGas Ltd.	2002/2003 Arbitration	Gas Price Arbitration



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Ocean State Power	6/04	Ocean State Power vs. ProGas Ltd.	2003/2004 Arbitration	Gas Price Arbitration
Shell Canada Limited	7/05	Shell Canada Limited and Nova Scotia Power Inc.	-	Gas Contract Price Arbitration
<b>International Court of Arbitration</b>				
Wisconsin Gas Company, Inc.	2/97	Wisconsin Gas Co. vs. Pan-Alberta	9322/CK	Contract Arbitration
Minnegasco, A Division of NorAm Energy Corp.	3/97	Minnegasco vs. Pan-Alberta	9357/CK	Contract Arbitration
Utilicorp United Inc.	4/97	Utilicorp vs. Pan-Alberta	9373/CK	Contract Arbitration
IES Utilities	97	IES vs. Pan-Alberta	9374/CK	Contract Arbitration
Mitsubishi Heavy Industries, Ltd., and Mitsubishi Nuclear Energy Systems, Inc.	12/15 2/16	Southern California Edison Company, Edison Material Supply LLC, San Diego Gas & Electric Co., and the City of Riverside vs. Mitsubishi Heavy Industries, Ltd., and Mitsubishi Nuclear Energy Systems, Inc.	19784/AGF/RD	Damages Arising Under a Nuclear Power Equipment Contract
<b>International Chamber of Commerce</b>				
Senvion GmbH	4/17	Senvion GmbH v. EDF Renewable Energy, Inc.	01-15-0005-4590	Breach-Related Damages, Unfair Competition, Unjust Enrichment
Senvion GmbH	9/17	Senvion GmbH v. EEN CA Lac Alfred Limited Partnership, et al.	21535	Breach-Related Damages



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Senvion GmbH	12/17	Senvion GmbH v. EEN CA Massif du Sud Limited Partnership, et al.	21536	Breach-Related Damages
EDF Inc.	3/21	Exelon Generating Company, LLC v. EDF Inc.	25479/MK	Valuation of Nuclear Power Plants
<b>State of New Jersey, Mercer County Superior Court</b>				
Transamerica Corp., et al.	7/07 10/07	IMO Industries Inc. vs. Transamerica Corp., et al.	L-2140-03	Breach-Related Damages, Enterprise Value
<b>State of New York, Nassau County Supreme Court</b>				
Steel Los III, LP	6/08	Steel Los II, LP & Associated Brook, Corp v. Power Authority of State of NY	Index No. 5662/05	Property Seizure
<b>State of South Carolina, U.S. District Court for the District of South Carolina</b>				
Toshiba Corporation	4/20	Lightsey v. Toshiba Corp.	Action No. 9:18-cv-190	Project Delays and Cost Overruns Analyses
<b>Province of Alberta, Court of Queen's Bench</b>				
Alberta Northeast Gas Limited	5/07	Cargill Gas Marketing Ltd. vs. Alberta Northeast Gas Limited	Action No. 0501-03291	Gas Contracting Practices
<b>Quebec Superior Court, District of Gaspé</b>				
Senvion Canada and Senvion GmbH	2/19	Senvion Canada and Senvion GmbH v. Suspendem Rope Access	-	Breach-Related Damages, Reimbursement of Liquidated Damages, Reimbursement of Scheduled Maintenance Penalties



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>State of New Hampshire, Board of Tax and Land Appeals</b>				
Public Service Company of New Hampshire d/b/a Eversource Energy	11/18	Appeal of Public Service Company of New Hampshire d/b/a Eversource Energy	28873-14-15-16-17PT	Valuation of Transmission and Distribution Assets
<b>State of New Hampshire, Judicial Court-Rockingham Superior Court</b>				
Public Service Company of New Hampshire d/b/a Eversource Energy	10/18	Public Service Company of New Hampshire d/b/a Eversource Energy v. City of Portsmouth	218-2016-CV-00899 218-2017-CV-00917	Valuation of Transmission and Distribution Assets
<b>State of New Hampshire, Superior Court-Merrimack County</b>				
Public Service Company of New Hampshire d/b/a Eversource Energy	3/18	Public Service Company of New Hampshire d/b/a Eversource Energy v. Town of Bow	217-2015-CV-00469 217-2016-CV-00474 217-2017-CV-00422	Valuation of Transmission and Distribution Assets
<b>State of Rhode Island, Providence City Court</b>				
Aquidneck Energy	5/87	Laroche vs. Newport	-	Least-Cost Planning
<b>State of Texas, Hutchinson County Court</b>				
Western Gas Interstate	5/85	State of Texas vs. Western Gas Interstate Co.	14,843	Cost of Service
<b>State of Utah, Third District Court</b>				
PacifiCorp & Holme, Roberts & Owen, LLP	1/07	USA Power & Spring Canyon Energy vs. PacifiCorp. et al.	Civil No. 050903412	Breach-Related Damages
<b>U.S. Bankruptcy Court, District of New Hampshire</b>				
EUA Power Corporation	7/92	EUA Power Corporation	BK-91-10525-JEY	Pre-Petition Solvency



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>U.S. Bankruptcy Court, District of New Jersey</b>				
Ponderosa Pine Energy Partners, Ltd.	7/05	Ponderosa Pine Energy Partners, Ltd.	05-21444	Forward Contract Bankruptcy Treatment
<b>U.S. Bankruptcy Court, No. District of New York</b>				
Cayuga Energy, NYSEG Solutions, The Energy Network	09/09	Cayuga Energy, NYSEG Solutions, The Energy Network	06-60073-6-sdg	Going Concern
<b>U.S. Bankruptcy Court, So. District of New York</b>				
Johns Manville	5/04	Enron Energy Mktg. v. Johns Manville; Enron No. America v. Johns Manville	01-16034 (AJG)	Breach of Contract, Damages
<b>U.S. Bankruptcy Court, Northern District of Texas</b>				
Southern Maryland Electric Cooperative, Inc., and Potomac Electric Power Company	11/04	Mirant Corporation, et al. v. SMECO	03-4659; Adversary No. 04-4073	PPA Interpretation, Leasing
<b>U.S. Bankruptcy Court, Southern District of Texas</b>				
Ultra Petroleum Corp. et al	3/17	Ultra Petroleum Corp. et al	16-32202 (MI)	Valuation
<b>U.S. Court of Federal Claims</b>				
Boston Edison Company	7/06 11/06	Boston Edison Company v. United States	99-447C 03-2626C	Spent Nuclear Fuel Breach, Damages
Consolidated Edison Company	7/07	Consolidated Edison Company	06-305T	Evaluation of Lease Purchase Option
Consolidated Edison Company	2/08 6/08	Consolidated Edison Company v. United States	04-0033C	Spent Nuclear Fuel Breach, Damages



<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET NO.</b>	<b>SUBJECT</b>
Vermont Yankee Nuclear Power Corporation	6/08	Vermont Yankee Nuclear Power Corporation v. United States	03-2663C	Spent Nuclear Fuel Breach, Damages
Virginia Electric and Power Company d/b/a Dominion Virginia Power	3/19	Virginia Electric and Power Company d/b/a Dominion Virginia Power v. United States	17-464C	Double Recovery, Cost Recovery of Infrastructure Improvements
<b>U. S. District Court, Boulder County, Colorado</b>				
KN Energy, Inc.	3/93	KN Energy vs. Colorado GasMark, Inc.	92 CV 1474	Gas Contract Interpretation
<b>U. S. District Court, Northern California</b>				
Pacific Gas & Electric Co./PGT  PG&E/PGT Pipeline Exp. Project	4/97	Norcen Energy Resources Limited	C94-0911 VRW	Fraud Claim
<b>U. S. District Court, District of Connecticut</b>				
Constellation Power Source, Inc.	12/04	Constellation Power Source, Inc. v. Select Energy, Inc.	Civil Action 304 CV 983 (RNC)	ISO Structure, Breach of Contract
<b>U.S. District Court, Northern District of Illinois, Eastern Division</b>				
U.S. Securities and Exchange Commission	4/12	U.S. Securities and Exchange Commission v. Thomas Fisher, Kathleen Halloran, and George Behrens	07 C 4483	Prudence, PBR
<b>U. S. District Court, Massachusetts</b>				
Eastern Utilities Associates & Donald F. Pardus	3/94	NECO Enterprises Inc. vs. Eastern Utilities Associates	Civil Action No. 92-10355-RCL	Seabrook Power Sales



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>U. S. District Court, Montana</b>				
KN Energy, Inc.	9/92	KN Energy v. Freeport MacMoRan	CV 91-40-BLG-RWA	Gas Contract Settlement
<b>U.S. District Court, New Hampshire</b>				
Portland Natural Gas Transmission and Maritimes & Northeast Pipeline	9/03	Public Service Company of New Hampshire vs. PNGTS and M&NE Pipeline	C-02-105-B	Impairment of Electric Transmission Right-of-Way
<b>U. S. District Court, Southern District of New York</b>				
Central Hudson Gas & Electric	11/99 8/00	Central Hudson v. Riverkeeper, Inc., Robert H. Boyle, John J. Cronin	Civil Action 99 Civ 2536 (BDP)	Electric Restructuring, Environmental Impacts
Consolidated Edison	3/02	Consolidated Edison v. Northeast Utilities	Case No. 01 Civ. 1893 (JGK) (HP)	Industry Standards for Due Diligence
Merrill Lynch & Company	1/05	Merrill Lynch v. Allegheny Energy, Inc.	Civil Action 02 CV 7689 (HB)	Due Diligence, Breach of Contract, Damages
<b>U. S. District Court, Eastern District of Virginia</b>				
Aquila, Inc.	1/05 2/05	VPEM v. Aquila, Inc.	Civil Action 304 CV 411	Breach of Contract, Damages
<b>U. S. District Court, Western District of Virginia</b>				
Washington Gas Light Company	8/15 9/15	Washington Gas Light Company v. Mountaineer Gas Company	Civil Action No. 5:14-cv-41	Nominations and Gas Balancing, Lost and Unaccounted for Gas, Damages



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
<b>U. S. District Court, Portland Maine</b>				
ACEC Maine, Inc. et al.	10/91	CIT Financial vs. ACEC Maine	90-0304-B	Project Valuation
Combustion Engineering	1/92	Combustion Eng. vs. Miller Hydro	89-0168P	Output Modeling, Project Valuation
<b>U.S. Securities and Exchange Commission</b>				
Eastern Utilities Association	10/92	EUA Power Corporation	File No. 70-8034	Value of EUA Power
<b>U.S. Tax Court in Illinois</b>				
Exelon Corporation	4/15 6/15	Exelon Corporation, as Successor by Merger to Unicom Corporation and Subsidiaries et al. v. Commission of Internal Revenue	29183-13 29184-13	Valuation of Analysis of Lease Terms and Quantify Plant Values
<b>Council of the District of Columbia Committee on Consumer and Regulatory Affairs</b>				
Potomac Electric Power Co.	7/99	Potomac Electric Power Co.	Bill 13-284	Utility Restructuring



SUMMARY OF ROE ANALYSES RESULTS

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	8.32%	9.90%	12.06%
90-Day Average	8.50%	10.08%	12.24%
180-Day Average	8.65%	10.23%	12.39%
Multi-Stage DCF			
	Low Growth	Mean Growth	High Growth
90-Day Average	9.27%	9.70%	10.36%
90-Day Median	9.05%	9.59%	10.37%
Capital Asset Pricing Model			
	Bloomberg Beta		Value Line Beta
CAPM	12.21%		12.46%
<b>Overall CAPM Average Result</b>	<b>12.33%</b>		
Expected Earnings			
Average	9.01%		
Median	8.02%		
Treasury Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Analysis	9.50%	9.64%	10.00%

PROXY GROUP SCREENING DATA AND RESULTS - FINAL PROXY GROUP

	[1]	[2]	[3]	[4]	[6]	[7]	[8]	
Company	Ticker	Dividends	S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Positive Growth Rates From At Least 2 Sources	Regulated Operating Income of Total Income > 70%	Regulated Gas Income of Total Regulated Income > 60%	Announced Merger within 180 days from 5/28/21
Atmos Energy Corporation	ATO	Yes	A-	Yes	Yes	100%	67%	No
NiSource Inc.	NI	Yes	BBB+	Yes	Yes	100%	61%	No
Northwest Natural Gas Company	NWN	Yes	A+	Yes	Yes	100%	91%	No
ONE Gas Inc.	OGS	Yes	BBB+	Yes	Yes	100%	100%	No
South Jersey Industries, Inc.	SJI	Yes	BBB	Yes	Yes	100%	100%	No
Southwest Gas Corporation	SWX	Yes	BBB+	Yes	Yes	80%	100%	No
Spire, Inc.	SR	Yes	A-	Yes	Yes	97%	100%	No
Mean						96.8%	88%	

Notes:

[1] Source: Bloomberg Professional

[2] Source: SNL Financial

[3] Source: Yahoo! Finance and Zacks

[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks

[5] Source: SNL Financial

[6] - [7] Source: Form 10-Ks for 2017, 2018 & 2019, three-year average

[8] SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	ATO	\$2.50	\$101.13	2.47%	2.56%	7.00%	7.17%	7.30%	7.16%	9.56%	9.72%	9.86%
NiSource Inc.	NI	\$0.88	\$25.69	3.43%	3.54%	9.50%	3.52%	6.20%	6.41%	7.01%	9.94%	13.09%
Northwest Natural Gas Company	NWN	\$1.92	\$54.26	3.54%	3.62%	5.50%	3.80%	3.90%	4.40%	7.41%	8.02%	9.14%
ONE Gas Inc.	OGS	\$2.32	\$77.51	2.99%	3.08%	6.50%	5.00%	5.00%	5.50%	8.07%	8.58%	9.59%
South Jersey Industries, Inc.	SJI	\$1.21	\$25.44	4.76%	4.93%	11.50%	4.80%	5.40%	7.23%	9.67%	12.16%	16.53%
Southwest Gas Corporation	SWX	\$2.38	\$69.42	3.43%	3.53%	9.00%	4.00%	5.50%	6.17%	7.50%	9.70%	12.58%
Spire, Inc.	SR	\$2.60	\$74.87	3.47%	3.60%	10.00%	7.31%	5.50%	7.60%	9.07%	11.21%	13.65%
PROXY GROUP MEAN				3.44%	3.55%	8.43%	5.09%	5.54%	6.35%	8.32%	9.90%	12.06%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-day average as of May 28, 2021
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

90-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	ATO	\$2.50	\$95.53	2.62%	2.71%	7.00%	7.17%	7.30%	7.16%	9.71%	9.87%	10.01%
NiSource Inc.	NI	\$0.88	\$23.90	3.68%	3.80%	9.50%	3.52%	6.20%	6.41%	7.27%	10.21%	13.36%
Northwest Natural Gas Company	NWN	\$1.92	\$51.35	3.74%	3.82%	5.50%	3.80%	3.90%	4.40%	7.61%	8.22%	9.34%
ONE Gas Inc.	OGS	\$2.32	\$75.11	3.09%	3.17%	6.50%	5.00%	5.00%	5.50%	8.17%	8.67%	9.69%
South Jersey Industries, Inc.	SJI	\$1.21	\$24.56	4.93%	5.11%	11.50%	4.80%	5.40%	7.23%	9.85%	12.34%	16.71%
Southwest Gas Corporation	SWX	\$2.38	\$66.73	3.57%	3.68%	9.00%	4.00%	5.50%	6.17%	7.64%	9.84%	12.73%
Spire, Inc.	SR	\$2.60	\$71.20	3.65%	3.79%	10.00%	7.31%	5.50%	7.60%	9.25%	11.39%	13.83%
PROXY GROUP MEAN				3.61%	3.73%	8.43%	5.09%	5.54%	6.35%	8.50%	10.08%	12.24%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of May 28, 2021
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

180-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	ATO	\$2.50	\$95.34	2.62%	2.72%	7.00%	7.17%	7.30%	7.16%	9.71%	9.87%	10.02%
NiSource Inc.	NI	\$0.88	\$23.47	3.75%	3.87%	9.50%	3.52%	6.20%	6.41%	7.34%	10.28%	13.43%
Northwest Natural Gas Company	NWN	\$1.92	\$48.95	3.92%	4.01%	5.50%	3.80%	3.90%	4.40%	7.80%	8.41%	9.53%
ONE Gas Inc.	OGS	\$2.32	\$74.62	3.11%	3.19%	6.50%	5.00%	5.00%	5.50%	8.19%	8.69%	9.71%
South Jersey Industries, Inc.	SJI	\$1.21	\$22.92	5.28%	5.47%	11.50%	4.80%	5.40%	7.23%	10.21%	12.70%	17.08%
Southwest Gas Corporation	SWX	\$2.38	\$65.58	3.63%	3.74%	9.00%	4.00%	5.50%	6.17%	7.70%	9.91%	12.79%
Spire, Inc.	SR	\$2.60	\$65.49	3.97%	4.12%	10.00%	7.31%	5.50%	7.60%	9.58%	11.72%	14.17%
PROXY GROUP MEAN				3.75%	3.87%	8.43%	5.09%	5.54%	6.35%	8.65%	10.23%	12.39%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-day average as of May 28, 2021
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))

30-DAY MULTI-STAGE DCF -- MEAN GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$101.13	\$2.50	7.00%	7.17%	7.30%	7.16%	6.88%	6.60%	6.32%	6.05%	5.77%	5.49%	8.49%
NiSource Inc.	NI	\$25.69	\$0.88	9.50%	3.52%	6.20%	6.41%	6.25%	6.10%	5.95%	5.80%	5.64%	5.49%	9.48%
Northwest Natural Gas Company	NWN	\$54.26	\$1.92	5.50%	3.80%	3.90%	4.40%	4.58%	4.76%	4.94%	5.13%	5.31%	5.49%	9.11%
ONE Gas Inc.	OGS	\$77.51	\$2.32	6.50%	5.00%	5.00%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	8.77%
South Jersey Industries, Inc.	SJI	\$25.44	\$1.21	11.50%	4.80%	5.40%	7.23%	6.94%	6.65%	6.36%	6.07%	5.78%	5.49%	11.35%
Southwest Gas Corporation	SWX	\$69.42	\$2.38	9.00%	4.00%	5.50%	6.17%	6.05%	5.94%	5.83%	5.72%	5.60%	5.49%	9.42%
Spire, Inc.	SR	\$74.87	\$2.60	10.00%	7.31%	5.50%	7.60%	7.25%	6.90%	6.55%	6.19%	5.84%	5.49%	9.85%
Mean														9.50%
Median														9.42%

Notes

[1] Source: Bloomberg Professional, equals 30-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Average ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth)

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

90-DAY MULTI-STAGE DCF -- MEAN GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.53	\$2.50	7.00%	7.17%	7.30%	7.16%	6.88%	6.60%	6.32%	6.05%	5.77%	5.49%	8.68%
NiSource Inc.	NI	\$23.90	\$0.88	9.50%	3.52%	6.20%	6.41%	6.25%	6.10%	5.95%	5.80%	5.64%	5.49%	9.79%
Northwest Natural Gas Company	NWN	\$51.35	\$1.92	5.50%	3.80%	3.90%	4.40%	4.58%	4.76%	4.94%	5.13%	5.31%	5.49%	9.33%
ONE Gas Inc.	OGS	\$75.11	\$2.32	6.50%	5.00%	5.00%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	8.88%
South Jersey Industries, Inc.	SJI	\$24.56	\$1.21	11.50%	4.80%	5.40%	7.23%	6.94%	6.65%	6.36%	6.07%	5.78%	5.49%	11.56%
Southwest Gas Corporation	SWX	\$66.73	\$2.38	9.00%	4.00%	5.50%	6.17%	6.05%	5.94%	5.83%	5.72%	5.60%	5.49%	9.59%
Spire, Inc.	SR	\$71.20	\$2.60	10.00%	7.31%	5.50%	7.60%	7.25%	6.90%	6.55%	6.19%	5.84%	5.49%	10.08%
Mean														9.70%
Median														9.59%

Notes

[1] Source: Bloomberg Professional, equals 90-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Average ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

180-DAY MULTI-STAGE DCF -- MEAN GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.34	\$2.50	7.00%	7.17%	7.30%	7.16%	6.88%	6.60%	6.32%	6.05%	5.77%	5.49%	8.68%
NiSource Inc.	NI	\$23.47	\$0.88	9.50%	3.52%	6.20%	6.41%	6.25%	6.10%	5.95%	5.80%	5.64%	5.49%	9.87%
Northwest Natural Gas Company	NWN	\$48.95	\$1.92	5.50%	3.80%	3.90%	4.40%	4.58%	4.76%	4.94%	5.13%	5.31%	5.49%	9.52%
ONE Gas Inc.	OGS	\$74.62	\$2.32	6.50%	5.00%	5.00%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	8.90%
South Jersey Industries, Inc.	SJI	\$22.92	\$1.21	11.50%	4.80%	5.40%	7.23%	6.94%	6.65%	6.36%	6.07%	5.78%	5.49%	12.00%
Southwest Gas Corporation	SWX	\$65.58	\$2.38	9.00%	4.00%	5.50%	6.17%	6.05%	5.94%	5.83%	5.72%	5.60%	5.49%	9.66%
Spire, Inc.	SR	\$65.49	\$2.60	10.00%	7.31%	5.50%	7.60%	7.25%	6.90%	6.55%	6.19%	5.84%	5.49%	10.48%
Mean														9.87%
Median														9.66%

Notes

[1] Source: Bloomberg Professional, equals 180-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Average ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200



30-DAY MULTI-STAGE DCF -- LOW GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth				Third Stage Growth	ROE	
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$101.13	\$2.50	7.00%	7.17%	7.30%	7.00%	6.75%	6.50%	6.24%	5.99%	5.74%	5.49%	8.46%
NiSource Inc.	NI	\$25.69	\$0.88	9.50%	3.52%	6.20%	3.52%	3.85%	4.18%	4.50%	4.83%	5.16%	5.49%	8.79%
Northwest Natural Gas Company	NWN	\$54.26	\$1.92	5.50%	3.80%	3.90%	3.80%	4.08%	4.36%	4.64%	4.93%	5.21%	5.49%	8.97%
ONE Gas Inc.	OGS	\$77.51	\$2.32	6.50%	5.00%	5.00%	5.00%	5.08%	5.16%	5.24%	5.33%	5.41%	5.49%	8.66%
South Jersey Industries, Inc.	SJI	\$25.44	\$1.21	11.50%	4.80%	5.40%	4.80%	4.91%	5.03%	5.14%	5.26%	5.37%	5.49%	10.53%
Southwest Gas Corporation	SWX	\$69.42	\$2.38	9.00%	4.00%	5.50%	4.00%	4.25%	4.50%	4.74%	4.99%	5.24%	5.49%	8.91%
Spire, Inc.	SR	\$74.87	\$2.60	10.00%	7.31%	5.50%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.31%
Mean														9.09%
Median														8.91%

Notes

[1] Source: Bloomberg Professional, equals 30-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Minimum ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

90-DAY MULTI-STAGE DCF -- LOW GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth				Third Stage Growth	ROE	
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.53	2.5	7.00%	7.17%	7.30%	7.00%	6.75%	6.50%	6.24%	5.99%	5.74%	5.49%	8.64%
NiSource Inc.	NI	\$23.90	0.88	9.50%	3.52%	6.20%	3.52%	3.85%	4.18%	4.50%	4.83%	5.16%	5.49%	9.05%
Northwest Natural Gas Company	NWN	\$51.35	1.92	5.50%	3.80%	3.90%	3.80%	4.08%	4.36%	4.64%	4.93%	5.21%	5.49%	9.18%
ONE Gas Inc.	OGS	\$75.11	2.32	6.50%	5.00%	5.00%	5.00%	5.08%	5.16%	5.24%	5.33%	5.41%	5.49%	8.77%
South Jersey Industries, Inc.	SJI	\$24.56	1.21	11.50%	4.80%	5.40%	4.80%	4.91%	5.03%	5.14%	5.26%	5.37%	5.49%	10.72%
Southwest Gas Corporation	SWX	\$66.73	2.38	9.00%	4.00%	5.50%	4.00%	4.25%	4.50%	4.74%	4.99%	5.24%	5.49%	9.05%
Spire, Inc.	SR	\$71.20	2.6	10.00%	7.31%	5.50%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.51%
Mean														9.27%
Median														9.05%

Notes

[1] Source: Bloomberg Professional, equals 90-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Minimum ([3], [4], [5])

[7] Equals  $[6] + ([12] - [6]) / 6$

[8] Equals  $[7] + ([12] - [6]) / 6$

[9] Equals  $[8] + ([12] - [6]) / 6$

[10] Equals  $[9] + ([12] - [6]) / 6$

[11] Equals  $[10] + ([12] - [6]) / 6$

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

180-DAY MULTI-STAGE DCF -- LOW GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.34	\$2.50	7.00%	7.17%	7.30%	7.00%	6.75%	6.50%	6.24%	5.99%	5.74%	5.49%	8.65%
NiSource Inc.	NI	\$23.47	\$0.88	9.50%	3.52%	6.20%	3.52%	3.85%	4.18%	4.50%	4.83%	5.16%	5.49%	9.12%
Northwest Natural Gas Company	NWN	\$48.95	\$1.92	5.50%	3.80%	3.90%	3.80%	4.08%	4.36%	4.64%	4.93%	5.21%	5.49%	9.37%
ONE Gas Inc.	OGS	\$74.62	\$2.32	6.50%	5.00%	5.00%	5.00%	5.08%	5.16%	5.24%	5.33%	5.41%	5.49%	8.79%
South Jersey Industries, Inc.	SJI	\$22.92	\$1.21	11.50%	4.80%	5.40%	4.80%	4.91%	5.03%	5.14%	5.26%	5.37%	5.49%	11.11%
Southwest Gas Corporation	SWX	\$65.58	\$2.38	9.00%	4.00%	5.50%	4.00%	4.25%	4.50%	4.74%	4.99%	5.24%	5.49%	9.11%
Spire, Inc.	SR	\$65.49	\$2.60	10.00%	7.31%	5.50%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.87%
Mean														9.43%
Median														9.12%

Notes

[1] Source: Bloomberg Professional, equals 180-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Minimum ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

30-DAY MULTI-STAGE DCF -- HIGH GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$101.13	\$2.50	7.00%	7.17%	7.30%	7.30%	7.00%	6.70%	6.39%	6.09%	5.79%	5.49%	8.52%
NiSource Inc.	NI	\$25.69	\$0.88	9.50%	3.52%	6.20%	9.50%	8.83%	8.16%	7.49%	6.83%	6.16%	5.49%	10.32%
Northwest Natural Gas Company	NWN	\$54.26	\$1.92	5.50%	3.80%	3.90%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.38%
ONE Gas Inc.	OGS	\$77.51	\$2.32	6.50%	5.00%	5.00%	6.50%	6.33%	6.16%	5.99%	5.83%	5.66%	5.49%	8.99%
South Jersey Industries, Inc.	SJI	\$25.44	\$1.21	11.50%	4.80%	5.40%	11.50%	10.50%	9.50%	8.49%	7.49%	6.49%	5.49%	12.97%
Southwest Gas Corporation	SWX	\$69.42	\$2.38	9.00%	4.00%	5.50%	9.00%	8.41%	7.83%	7.24%	6.66%	6.07%	5.49%	10.18%
Spire, Inc.	SR	\$74.87	\$2.60	10.00%	7.31%	5.50%	10.00%	9.25%	8.50%	7.74%	6.99%	6.24%	5.49%	10.54%
Mean														10.13%
Median														10.18%

Notes

- [1] Source: Bloomberg Professional, equals 30-day average as of 05/28/2021
- [2] Source: Bloomberg Professional
- [3] Source: Value Line
- [4] Source: Yahoo! Finance
- [5] Source: Zacks
- [6] Equals Maximum ([3], [4], [5])
- [7] Equals  $[6] + ([12] - [6]) / 6$
- [8] Equals  $[7] + ([12] - [6]) / 6$
- [9] Equals  $[8] + ([12] - [6]) / 6$
- [10] Equals  $[9] + ([12] - [6]) / 6$
- [11] Equals  $[10] + ([12] - [6]) / 6$
- [12] Source: Exhibit JJR-5.4 GDP Growth
- [13] Equals internal rate of return of cash flows for Year 0 through Year 200

90-DAY MULTI-STAGE DCF -- HIGH GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.53	2.5	7.00%	7.17%	7.30%	7.30%	7.00%	6.70%	6.39%	6.09%	5.79%	5.49%	8.71%
NiSource Inc.	NI	\$23.90	0.88	9.50%	3.52%	6.20%	9.50%	8.83%	8.16%	7.49%	6.83%	6.16%	5.49%	10.68%
Northwest Natural Gas Company	NWN	\$51.35	1.92	5.50%	3.80%	3.90%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.61%
ONE Gas Inc.	OGS	\$75.11	2.32	6.50%	5.00%	5.00%	6.50%	6.33%	6.16%	5.99%	5.83%	5.66%	5.49%	9.10%
South Jersey Industries, Inc.	SJI	\$24.56	1.21	11.50%	4.80%	5.40%	11.50%	10.50%	9.50%	8.49%	7.49%	6.49%	5.49%	13.23%
Southwest Gas Corporation	SWX	\$66.73	2.38	9.00%	4.00%	5.50%	9.00%	8.41%	7.83%	7.24%	6.66%	6.07%	5.49%	10.37%
Spire, Inc.	SR	\$71.20	2.6	10.00%	7.31%	5.50%	10.00%	9.25%	8.50%	7.74%	6.99%	6.24%	5.49%	10.79%
Mean														10.36%
Median														10.37%

Notes

[1] Source: Bloomberg Professional, equals 90-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Maximum ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Exhibit JJR-5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

180-DAY MULTI-STAGE DCF -- HIGH GROWTH RATE

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Stock Price	Annualized Dividend	Value Line EPS Growth	Yahoo! Finance EPS Growth	Zacks EPS Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy Corporation	ATO	\$95.34	\$2.50	7.00%	7.17%	7.30%	7.30%	7.00%	6.70%	6.39%	6.09%	5.79%	5.49%	8.71%
NiSource Inc.	NI	\$23.47	\$0.88	9.50%	3.52%	6.20%	9.50%	8.83%	8.16%	7.49%	6.83%	6.16%	5.49%	10.78%
Northwest Natural Gas Company	NWN	\$48.95	\$1.92	5.50%	3.80%	3.90%	5.50%	5.50%	5.50%	5.49%	5.49%	5.49%	5.49%	9.82%
ONE Gas Inc.	OGS	\$74.62	\$2.32	6.50%	5.00%	5.00%	6.50%	6.33%	6.16%	5.99%	5.83%	5.66%	5.49%	9.13%
South Jersey Industries, Inc.	SJI	\$22.92	\$1.21	11.50%	4.80%	5.40%	11.50%	10.50%	9.50%	8.49%	7.49%	6.49%	5.49%	13.77%
Southwest Gas Corporation	SWX	\$65.58	\$2.38	9.00%	4.00%	5.50%	9.00%	8.41%	7.83%	7.24%	6.66%	6.07%	5.49%	10.46%
Spire, Inc.	SR	\$65.49	\$2.60	10.00%	7.31%	5.50%	10.00%	9.25%	8.50%	7.74%	6.99%	6.24%	5.49%	11.25%
Mean														10.56%
Median														10.46%

Notes

[1] Source: Bloomberg Professional, equals 180-day average as of 05/28/2021

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Source: Yahoo! Finance

[5] Source: Zacks

[6] Equals Maximum ([3], [4], [5])

[7] Equals  $[6] + ([12] - [6]) / 6$

[8] Equals  $[7] + ([12] - [6]) / 6$

[9] Equals  $[8] + ([12] - [6]) / 6$

[10] Equals  $[9] + ([12] - [6]) / 6$

[11] Equals  $[10] + ([12] - [6]) / 6$

[12] Source: Exhibit JJR 5.4 GDP Growth

[13] Equals internal rate of return of cash flows for Year 0 through Year 200

CALCULATION OF LONG-TERM GDP GROWTH RATE	
Real GDP (\$ Billions) [1]	
1929	\$ 1,109.4
2020	\$ 18,426.1
<b>Compound Annual Growth Rate</b>	<b>3.14%</b>
Consumer Price Index (YoY % Change) [2]	
2027-2031	2.20%
Average	2.20%
Consumer Price Index (All-Urban) [3]	
2031	3.26
2050	5.00
Compound Annual Growth Rate	2.27%
GDP Chain-type Price Index (2012=1.000) [3]	
2031	1.42
2050	2.21
Compound Annual Growth Rate	2.37%
<b>Average Inflation Forecast</b>	<b>2.28%</b>
<b>Long-Term GDP Growth Rate</b>	<b>5.49%</b>

## Notes:

[1] Bureau of Economic Analysis, May 31, 2021

[2] Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[3] Energy Information Administration, Annual Energy Outlook 2021 at Table 20, February 3, 2021

MARKET RISK PREMIUM DERIVED FROM S&P 500 DIVIDEND YIELD

[1] Estimate of the S&P 500 Dividend Yield	1.46%
[2] Estimate of the S&P 500 Growth Rate	12.15%
[3] S&P 500 Estimated Required Market Return	13.70%

Notes:

- [1] Sum of [6]  
 [2] Sum of [8]  
 [3] Equals  $([1] \times (1 + 0.5 \times [2])) + [2]$

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]
		Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	0.11%	4.01%	0.00%	0.00%	0.00%
American Express Co	AXP	0.38%	1.07%	0.00%	6.00%	0.02%
Verizon Communications Inc	VZ	0.68%	4.44%	0.03%	3.50%	0.02%
Broadcom Inc	AVGO	0.56%	3.05%	0.02%	27.00%	0.15%
Boeing Co/The	BA	0.00%	n/a	n/a	0.00%	0.00%
Caterpillar Inc	CAT	0.39%	1.71%	0.01%	8.50%	0.03%
JPMorgan Chase & Co	JPM	1.45%	2.19%	0.03%	6.50%	0.09%
Chevron Corp	CVX	0.59%	5.16%	0.03%	23.50%	0.14%
Coca-Cola Co/The	KO	0.70%	3.04%	0.02%	6.50%	0.05%
AbbVie Inc	ABBV	0.58%	4.59%	0.03%	6.50%	0.04%
Walt Disney Co/The	DIS	0.95%	n/a	n/a	14.00%	0.13%
FleetCor Technologies Inc	FLT	0.07%	n/a	n/a	11.00%	0.01%
Extra Space Storage Inc	EXR	0.06%	2.67%	0.00%	3.50%	0.00%
Exxon Mobil Corp	XOM	0.72%	5.96%	0.04%	2.50%	0.02%
Phillips 66	PSX	0.11%	4.27%	0.00%	20.00%	0.02%
General Electric Co	GE	0.36%	0.28%	0.00%	4.00%	0.01%
HP Inc	HPQ	0.11%	2.65%	0.00%	14.00%	0.01%
Home Depot Inc/The	HD	0.99%	2.07%	0.02%	8.00%	0.08%
Monolithic Power Systems Inc	MPWR	0.05%	0.70%	0.00%	17.50%	0.01%
International Business Machines Corp	IBM	0.38%	4.56%	0.02%	1.50%	0.01%
Johnson & Johnson	JNJ	1.30%	2.51%	0.03%	10.00%	0.13%
McDonald's Corp	MCD	0.51%	2.21%	0.01%	10.00%	0.05%
Merck & Co Inc	MRK	0.56%	3.43%	0.02%	8.00%	0.04%
3M Co	MMM	0.34%	2.92%	0.01%	4.50%	0.02%
American Water Works Co Inc	AWK	0.08%	1.55%	0.00%	8.50%	0.01%
Bank of America Corp	BAC	1.06%	1.70%	0.02%	4.50%	0.05%
Baker Hughes Co	BKR	0.00%	2.95%	0.00%	0.00%	0.00%
Pfizer Inc	PFE	0.63%	4.03%	0.03%	9.50%	0.06%
Procter & Gamble Co/The	PG	0.96%	2.58%	0.02%	7.00%	0.07%
AT&T Inc	T	0.61%	7.07%	0.04%	2.50%	0.02%
Travelers Cos Inc/The	TRV	0.12%	2.20%	0.00%	8.00%	0.01%
Raytheon Technologies Corp	RTX	0.39%	2.30%	0.01%	1.00%	0.00%
Analog Devices Inc	ADI	0.18%	1.68%	0.00%	8.50%	0.02%
Walmart Inc	WMT	1.17%	1.55%	0.02%	6.00%	0.07%
Cisco Systems Inc/Delaware	CSCO	0.65%	2.80%	0.02%	6.00%	0.04%
Intel Corp	INTC	0.67%	2.43%	0.02%	7.00%	0.05%
General Motors Co	GM	0.25%	n/a	n/a	11.00%	0.03%
Microsoft Corp	MSFT	5.49%	0.90%	0.05%	15.00%	0.82%
Dollar General Corp	DG	0.14%	0.83%	0.00%	10.50%	0.01%
Cigna Corp	CI	0.26%	1.55%	0.00%	11.00%	0.03%
Kinder Morgan Inc	KMI	0.12%	5.89%	0.01%	19.00%	0.02%
Citigroup Inc	C	0.48%	2.59%	0.01%	5.00%	0.02%
American International Group Inc	AIG	0.13%	2.42%	0.00%	28.50%	0.04%
Honeywell International Inc	HON	0.47%	1.61%	0.01%	8.00%	0.04%
Altria Group Inc	MO	0.27%	6.99%	0.02%	6.50%	0.02%
HCA Healthcare Inc	HCA	0.21%	0.89%	0.00%	10.50%	0.02%
Under Armour Inc	UA	0.01%	n/a	n/a	11.00%	0.00%
International Paper Co	IP	0.07%	3.25%	0.00%	6.50%	0.00%
Hewlett Packard Enterprise Co	HPE	0.06%	3.01%	0.00%	6.50%	0.00%
Abbott Laboratories	ABT	0.61%	1.54%	0.01%	11.50%	0.07%
Aflac Inc	AFL	0.11%	2.33%	0.00%	7.00%	0.01%
Air Products and Chemicals Inc	APD	0.19%	2.00%	0.00%	12.00%	0.02%
Royal Caribbean Cruises Ltd	RCL	0.00%	n/a	n/a	0.00%	0.00%



[2] Sum of [8]

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

Hess Corp	HES	0.00%	1.19%	0.00%	0.00%	0.00%
Archer-Daniels-Midland Co	ADM	0.11%	2.22%	0.00%	7.50%	0.01%
Automatic Data Processing Inc	ADP	0.24%	1.90%	0.00%	9.00%	0.02%
Verisk Analytics Inc	VRSK	0.08%	0.67%	0.00%	7.50%	0.01%
AutoZone Inc	AZO	0.09%	n/a	n/a	14.50%	0.01%
Avery Dennison Corp	AVY	0.05%	1.23%	0.00%	9.50%	0.01%
Enphase Energy Inc	ENPH	0.06%	n/a	n/a	40.00%	0.02%
MSCI Inc	MSCI	0.11%	0.67%	0.00%	16.00%	0.02%
Ball Corp	BLL	0.08%	0.73%	0.00%	20.00%	0.02%
Carrier Global Corp	CARR	0.00%	1.05%	0.00%	0.00%	0.00%
Bank of New York Mellon Corp/The	BK	0.13%	2.38%	0.00%	3.00%	0.00%
Otis Worldwide Corp	OTIS	0.00%	1.23%	0.00%	0.00%	0.00%
Baxter International Inc	BAX	0.12%	1.36%	0.00%	8.50%	0.01%
Becton Dickinson and Co	BDX	0.21%	1.37%	0.00%	7.50%	0.02%
Berkshire Hathaway Inc	BRK/B	0.00%	n/a	n/a	0.00%	0.00%
Best Buy Co Inc	BBY	0.09%	2.41%	0.00%	8.50%	0.01%
Boston Scientific Corp	BSX	0.18%	n/a	n/a	17.50%	0.03%
Bristol-Myers Squibb Co	BMJ	0.43%	2.98%	0.01%	12.50%	0.05%
Fortune Brands Home & Security Inc	FBHS	0.04%	1.01%	0.00%	10.00%	0.00%
Brown-Forman Corp	BF/B	0.00%	0.89%	0.00%	0.00%	0.00%
Cabot Oil & Gas Corp	COG	0.02%	2.68%	0.00%	14.50%	0.00%
Campbell Soup Co	CPB	0.04%	3.04%	0.00%	5.00%	0.00%
Kansas City Southern	KSU	0.08%	0.73%	0.00%	12.50%	0.01%
Hilton Worldwide Holdings Inc	HLT	0.00%	n/a	n/a	0.00%	0.00%
Carnival Corp	CCL	0.00%	n/a	n/a	0.00%	0.00%
Qorvo Inc	QRVO	0.06%	n/a	n/a	18.00%	0.01%
Lumen Technologies Inc	LUMN	0.04%	7.23%	0.00%	2.50%	0.00%
UDR Inc	UDR	0.04%	3.04%	0.00%	6.00%	0.00%
Clorox Co/The	CLX	0.06%	2.51%	0.00%	6.50%	0.00%
Paycom Software Inc	PAYC	0.06%	n/a	n/a	19.50%	0.01%
CMS Energy Corp	CMS	0.05%	2.77%	0.00%	7.50%	0.00%
Newell Brands Inc	NWL	0.00%	3.21%	0.00%	0.00%	0.00%
Colgate-Palmolive Co	CL	0.21%	2.15%	0.00%	5.00%	0.01%
Comerica Inc	CMA	0.03%	3.47%	0.00%	2.50%	0.00%
IPG Photonics Corp	IPGP	0.03%	n/a	n/a	18.50%	0.01%
Conagra Brands Inc	CAG	0.05%	2.89%	0.00%	5.00%	0.00%
Consolidated Edison Inc	ED	0.08%	4.01%	0.00%	4.00%	0.00%
Corning Inc	GLW	0.11%	2.20%	0.00%	20.00%	0.02%
Cummins Inc	CMI	0.11%	2.10%	0.00%	7.50%	0.01%
Caesars Entertainment Inc	CZR	0.00%	n/a	n/a	0.00%	0.00%
Danaher Corp	DHR	0.53%	0.33%	0.00%	18.00%	0.10%
Target Corp	TGT	0.33%	1.20%	0.00%	13.00%	0.04%
Deere & Co	DE	0.33%	1.00%	0.00%	14.00%	0.05%
Dominion Energy Inc	D	0.18%	3.31%	0.01%	12.00%	0.02%
Dover Corp	DOV	0.06%	1.32%	0.00%	6.50%	0.00%
Alliant Energy Corp	LNT	0.04%	2.82%	0.00%	5.50%	0.00%
Duke Energy Corp	DUK	0.23%	3.85%	0.01%	7.00%	0.02%
Regency Centers Corp	REG	0.03%	3.68%	0.00%	10.00%	0.00%
Eaton Corp PLC	ETN	0.17%	2.09%	0.00%	5.50%	0.01%
Ecolab Inc	ECL	0.18%	0.89%	0.00%	6.00%	0.01%
PerkinElmer Inc	PKI	0.05%	0.19%	0.00%	11.00%	0.01%
Emerson Electric Co	EMR	0.17%	2.11%	0.00%	9.50%	0.02%
EOG Resources Inc	EOG	0.14%	2.05%	0.00%	12.50%	0.02%
Aon PLC	AON	0.17%	0.81%	0.00%	7.00%	0.01%
Entergy Corp	ETR	0.06%	3.61%	0.00%	3.00%	0.00%
Equifax Inc	EFX	0.08%	0.66%	0.00%	5.50%	0.00%
IQVIA Holdings Inc	IQV	0.13%	n/a	n/a	14.00%	0.02%
Gartner Inc	IT	0.06%	n/a	n/a	15.50%	0.01%
FedEx Corp	FDX	0.24%	0.83%	0.00%	8.50%	0.02%
FMC Corp	FMC	0.04%	1.65%	0.00%	8.50%	0.00%
Ford Motor Co	F	0.17%	n/a	n/a	46.00%	0.08%
NextEra Energy Inc	NEE	0.42%	2.10%	0.01%	10.50%	0.04%
Franklin Resources Inc	BEN	0.05%	3.27%	0.00%	11.50%	0.01%
Freeport-McMoRan Inc	FCX	0.18%	0.70%	0.00%	32.50%	0.06%
Gap Inc/The	GPS	0.04%	1.43%	0.00%	25.00%	0.01%
Dexcom Inc	DXCM	0.00%	n/a	n/a	0.00%	0.00%
General Dynamics Corp	GD	0.16%	2.51%	0.00%	5.00%	0.01%
General Mills Inc	GIS	0.11%	3.25%	0.00%	3.50%	0.00%
Genuine Parts Co	GPC	0.06%	2.49%	0.00%	7.00%	0.00%
Atmos Energy Corp	ATO	0.04%	2.52%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	0.07%	1.40%	0.00%	7.50%	0.01%
Halliburton Co	HAL	0.06%	0.80%	0.00%	7.00%	0.00%

[2] Sum of [8]

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

L3Harris Technologies Inc	LHX	0.00%	1.87%	0.00%	0.00%	0.00%
Healthpeak Properties Inc	PEAK	0.05%	3.59%	0.00%	-13.00%	-0.01%
Catalent Inc	CTLT	0.05%	n/a	n/a	21.00%	0.01%
Fortive Corp	FTV	0.07%	0.39%	0.00%	6.00%	0.00%
Hershey Co/The	HSY	0.07%	1.86%	0.00%	5.50%	0.00%
Synchrony Financial	SYF	0.08%	1.86%	0.00%	4.50%	0.00%
Hormel Foods Corp	HRL	0.08%	2.02%	0.00%	9.00%	0.01%
Arthur J Gallagher & Co	AJG	0.09%	1.31%	0.00%	12.50%	0.01%
Mondelez International Inc	MDLZ	0.26%	1.98%	0.01%	8.00%	0.02%
CenterPoint Energy Inc	CNP	0.04%	2.53%	0.00%	8.00%	0.00%
Humana Inc	HUM	0.16%	0.64%	0.00%	11.00%	0.02%
Willis Towers Watson PLC	WLTV	0.10%	1.09%	0.00%	11.50%	0.01%
Illinois Tool Works Inc	ITW	0.21%	1.97%	0.00%	11.00%	0.02%
CDW Corp/DE	CDW	0.07%	0.97%	0.00%	11.00%	0.01%
Trane Technologies PLC	TT	0.00%	1.27%	0.00%	0.00%	0.00%
Interpublic Group of Cos Inc/The	IPG	0.04%	3.21%	0.00%	12.00%	0.00%
International Flavors & Fragrances Inc	IFF	0.10%	2.17%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	0.05%	0.59%	0.00%	12.50%	0.01%
Generac Holdings Inc	GNRC	0.06%	n/a	n/a	19.50%	0.01%
NXP Semiconductors NV	NXPI	0.17%	1.06%	0.00%	11.00%	0.02%
Hanesbrands Inc	HBI	0.02%	3.07%	0.00%	6.50%	0.00%
Kellogg Co	K	0.07%	3.54%	0.00%	3.00%	0.00%
Broadridge Financial Solutions Inc	BR	0.05%	1.44%	0.00%	10.50%	0.01%
Perrigo Co PLC	PRGO	0.02%	2.08%	0.00%	-2.00%	0.00%
Kimberly-Clark Corp	KMB	0.13%	3.49%	0.00%	5.50%	0.01%
Kimco Realty Corp	KIM	0.03%	3.19%	0.00%	-2.00%	0.00%
Oracle Corp	ORCL	0.66%	1.63%	0.01%	9.50%	0.06%
Kroger Co/The	KR	0.08%	1.95%	0.00%	5.00%	0.00%
Leggett & Platt Inc	LEG	0.02%	3.05%	0.00%	10.00%	0.00%
Lennar Corp	LEN	0.08%	1.01%	0.00%	7.00%	0.01%
Eli Lilly & Co	LLY	0.56%	1.70%	0.01%	9.00%	0.05%
L Brands Inc	LB	0.06%	0.86%	0.00%	28.50%	0.02%
Charter Communications Inc	CHTR	0.38%	n/a	n/a	26.50%	0.10%
Lincoln National Corp	LNK	0.04%	2.41%	0.00%	9.00%	0.00%
Loews Corp	L	0.04%	0.43%	0.00%	12.00%	0.01%
Lowe's Cos Inc	LOW	0.40%	1.64%	0.01%	15.50%	0.06%
IDEX Corp	IEX	0.05%	0.97%	0.00%	7.50%	0.00%
Marsh & McLennan Cos Inc	MMC	0.21%	1.34%	0.00%	9.50%	0.02%
Masco Corp	MAS	0.04%	1.56%	0.00%	7.50%	0.00%
S&P Global Inc	SPGI	0.27%	0.81%	0.00%	8.50%	0.02%
Medtronic PLC	MDT	0.50%	1.99%	0.01%	7.00%	0.03%
Viartis Inc	VTRS	0.00%	2.89%	0.00%	0.00%	0.00%
CVS Health Corp	CVS	0.33%	2.31%	0.01%	6.00%	0.02%
DuPont de Nemours Inc	DD	0.00%	1.42%	0.00%	0.00%	0.00%
Micron Technology Inc	MU	0.28%	n/a	n/a	12.50%	0.03%
Motorola Solutions Inc	MSI	0.10%	1.38%	0.00%	7.00%	0.01%
Cboe Global Markets Inc	CBOE	0.03%	1.51%	0.00%	12.00%	0.00%
Laboratory Corp of America Holdings	LH	0.08%	n/a	n/a	9.50%	0.01%
Newmont Corp	NEM	0.17%	2.99%	0.01%	14.50%	0.02%
NIKE Inc	NKE	0.51%	0.81%	0.00%	24.00%	0.12%
NiSource Inc	NI	0.03%	3.45%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	0.21%	1.41%	0.00%	9.00%	0.02%
Principal Financial Group Inc	PFG	0.05%	3.73%	0.00%	5.50%	0.00%
Eversource Energy	ES	0.08%	2.97%	0.00%	5.50%	0.00%
Northrop Grumman Corp	NOC	0.17%	1.72%	0.00%	7.00%	0.01%
Wells Fargo & Co	WFC	0.56%	0.86%	0.00%	5.00%	0.03%
Nucor Corp	NUE	0.09%	1.58%	0.00%	8.00%	0.01%
PVH Corp	PVH	0.02%	n/a	n/a	12.50%	0.00%
Occidental Petroleum Corp	OXY	0.07%	0.15%	0.00%	36.50%	0.03%
Omnicom Group Inc	OMC	0.05%	3.40%	0.00%	6.00%	0.00%
ONEOK Inc	OKE	0.07%	7.09%	0.00%	9.50%	0.01%
Raymond James Financial Inc	RJF	0.05%	1.18%	0.00%	6.50%	0.00%
Parker-Hannifin Corp	PH	0.12%	1.34%	0.00%	13.00%	0.02%
Rollins Inc	ROL	0.05%	0.94%	0.00%	11.50%	0.01%
PPL Corp	PPL	0.07%	5.70%	0.00%	3.00%	0.00%
ConocoPhillips	COP	0.22%	3.09%	0.01%	10.50%	0.02%
PulteGroup Inc	PHM	0.04%	0.97%	0.00%	7.00%	0.00%
Pinnacle West Capital Corp	PNW	0.03%	3.93%	0.00%	5.00%	0.00%
PNC Financial Services Group Inc/The	PNC	0.24%	2.36%	0.01%	3.00%	0.01%
PPG Industries Inc	PPG	0.12%	1.20%	0.00%	3.00%	0.00%
Progressive Corp/The	PGR	0.17%	0.40%	0.00%	5.00%	0.01%
Public Service Enterprise Group Inc	PEG	0.09%	3.28%	0.00%	3.50%	0.00%

[2] Sum of [8]

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

Robert Half International Inc	RHI	0.03%	1.71%	0.00%	7.50%	0.00%
Edison International	EIX	0.00%	4.74%	0.00%	0.00%	0.00%
Schlumberger NV	SLB	0.13%	1.60%	0.00%	8.50%	0.01%
Charles Schwab Corp/The	SCHW	0.39%	0.97%	0.00%	7.50%	0.03%
Sherwin-Williams Co/The	SHW	0.22%	0.78%	0.00%	10.00%	0.02%
West Pharmaceutical Services Inc	WST	0.07%	0.20%	0.00%	17.00%	0.01%
J M Smucker Co/The	SJM	0.04%	2.70%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	0.04%	1.93%	0.00%	5.00%	0.00%
AMETEK Inc	AME	0.09%	0.59%	0.00%	10.00%	0.01%
Southern Co/The	SO	0.20%	4.13%	0.01%	5.00%	0.01%
Truist Financial Corp	TFC	0.24%	2.91%	0.01%	5.50%	0.01%
Southwest Airlines Co	LUV	0.11%	n/a	n/a	1.50%	0.00%
W R Berkley Corp	WRB	0.04%	0.62%	0.00%	14.50%	0.01%
Stanley Black & Decker Inc	SWK	0.10%	1.29%	0.00%	6.00%	0.01%
Public Storage	PSA	0.14%	2.83%	0.00%	2.50%	0.00%
Arista Networks Inc	ANET	0.08%	n/a	n/a	4.50%	0.00%
Sysco Corp	SY	0.12%	2.32%	0.00%	11.50%	0.01%
Corteva Inc	CTVA	0.00%	1.14%	0.00%	0.00%	0.00%
Texas Instruments Inc	TXN	0.51%	2.15%	0.01%	5.50%	0.03%
Textron Inc	TXT	0.05%	0.12%	0.00%	7.50%	0.00%
Thermo Fisher Scientific Inc	TMO	0.54%	0.22%	0.00%	13.00%	0.07%
TJX Cos Inc/The	TJX	0.24%	1.54%	0.00%	12.00%	0.03%
Globe Life Inc	GL	0.03%	0.75%	0.00%	8.00%	0.00%
Johnson Controls International plc	JCI	0.14%	1.62%	0.00%	8.50%	0.01%
Ulta Beauty Inc	ULTA	0.06%	n/a	n/a	12.50%	0.01%
Union Pacific Corp	UNP	0.44%	1.90%	0.01%	10.00%	0.04%
Keysight Technologies Inc	KEYS	0.08%	n/a	n/a	17.00%	0.01%
UnitedHealth Group Inc	UNH	1.14%	1.21%	0.01%	12.00%	0.14%
Unum Group	UNM	0.02%	3.87%	0.00%	3.50%	0.00%
Marathon Oil Corp	MRO	0.00%	1.32%	0.00%	0.00%	0.00%
Varian Medical Systems Inc	VAR	0.00%	n/a	n/a	0.00%	0.00%
Bio-Rad Laboratories Inc	BIO	0.04%	n/a	n/a	11.50%	0.00%
Ventas Inc	VTR	0.06%	3.25%	0.00%	4.50%	0.00%
VF Corp	VFC	0.09%	2.46%	0.00%	5.50%	0.01%
Vornado Realty Trust	VNO	0.03%	4.48%	0.00%	-18.50%	0.00%
Vulcan Materials Co	VMC	0.07%	0.81%	0.00%	10.00%	0.01%
Weyerhaeuser Co	WY	0.08%	1.79%	0.00%	20.50%	0.02%
Whirlpool Corp	WHR	0.04%	2.36%	0.00%	5.50%	0.00%
Williams Cos Inc/The	WMB	0.09%	6.23%	0.01%	12.00%	0.01%
WEC Energy Group Inc	WEC	0.09%	2.89%	0.00%	6.50%	0.01%
Adobe Inc	ADBE	0.70%	n/a	n/a	14.50%	0.10%
AES Corp/The	AES	0.05%	2.37%	0.00%	24.00%	0.01%
Amgen Inc	AMGN	0.40%	2.96%	0.01%	6.00%	0.02%
Apple Inc	AAPL	6.07%	0.71%	0.04%	14.50%	0.88%
Autodesk Inc	ADSK	0.00%	n/a	n/a	0.00%	0.00%
Cintas Corp	CTAS	0.11%	0.85%	0.00%	13.00%	0.01%
Comcast Corp	CMCSA	0.77%	1.74%	0.01%	8.00%	0.06%
Molson Coors Beverage Co	TAP	0.03%	n/a	n/a	41.00%	0.01%
KLA Corp	KLAC	0.14%	1.14%	0.00%	17.50%	0.02%
Marriott International Inc/MD	MAR	0.14%	n/a	n/a	17.50%	0.02%
McCormick & Co Inc/MD	MKC	0.06%	1.53%	0.00%	5.50%	0.00%
PACCAR Inc	PCAR	0.09%	1.49%	0.00%	5.50%	0.01%
Costco Wholesale Corp	COST	0.49%	0.84%	0.00%	9.50%	0.05%
First Republic Bank/CA	FRC	0.10%	0.46%	0.00%	12.50%	0.01%
Stryker Corp	SYK	0.28%	0.99%	0.00%	11.00%	0.03%
Tyson Foods Inc	TSN	0.07%	2.24%	0.00%	6.50%	0.00%
Lamb Weston Holdings Inc	LW	0.04%	1.14%	0.00%	2.50%	0.00%
Applied Materials Inc	AMAT	0.37%	0.69%	0.00%	9.00%	0.03%
American Airlines Group Inc	AAL	0.05%	n/a	n/a	-3.50%	0.00%
Cardinal Health Inc	CAH	0.05%	3.50%	0.00%	12.00%	0.01%
Cerner Corp	CERN	0.07%	1.12%	0.00%	9.00%	0.01%
Cincinnati Financial Corp	CINF	0.06%	2.07%	0.00%	13.50%	0.01%
ViacomCBS Inc	VIAC	0.08%	2.26%	0.00%	8.00%	0.01%
DR Horton Inc	DHI	0.10%	0.84%	0.00%	10.50%	0.01%
Electronic Arts Inc	EA	0.12%	0.48%	0.00%	9.00%	0.01%
Expeditors International of Washington Inc	EXPD	0.06%	0.92%	0.00%	8.50%	0.01%
Fastenal Co	FAST	0.09%	2.11%	0.00%	8.00%	0.01%
M&T Bank Corp	MTB	0.06%	2.74%	0.00%	4.00%	0.00%
Xcel Energy Inc	XEL	0.11%	2.58%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	0.22%	n/a	n/a	13.00%	0.03%
Fifth Third Bancorp	FITB	0.09%	2.56%	0.00%	7.00%	0.01%
Gilead Sciences Inc	GILD	0.24%	4.30%	0.01%	3.50%	0.01%

[2] Sum of [8]

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

Hasbro Inc	HAS	0.04%	2.83%	0.00%	12.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	0.05%	3.78%	0.00%	6.00%	0.00%
Welltower Inc	WELL	0.09%	3.26%	0.00%	3.50%	0.00%
Biogen Inc	BIIB	0.12%	n/a	n/a	7.00%	0.01%
Northern Trust Corp	NTRS	0.07%	2.31%	0.00%	7.00%	0.01%
Packaging Corp of America	PKG	0.04%	2.69%	0.00%	5.00%	0.00%
Paychex Inc	PAYX	0.11%	2.61%	0.00%	6.50%	0.01%
People's United Financial Inc	PBCT	0.02%	3.86%	0.00%	2.50%	0.00%
QUALCOMM Inc	QCOM	0.44%	2.02%	0.01%	16.50%	0.07%
Roper Technologies Inc	ROP	0.14%	0.50%	0.00%	10.00%	0.01%
Ross Stores Inc	ROST	0.13%	0.90%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc	IDXX	0.14%	n/a	n/a	13.50%	0.02%
Starbucks Corp	SBUX	0.39%	1.58%	0.01%	16.00%	0.06%
KeyCorp	KEY	0.07%	3.21%	0.00%	9.50%	0.01%
Fox Corp	FOXA	0.00%	1.23%	0.00%	0.00%	0.00%
Fox Corp	FOX	0.00%	1.27%	0.00%	0.00%	0.00%
State Street Corp	STT	0.09%	2.39%	0.00%	6.50%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	0.00%	n/a	n/a	0.00%	0.00%
US Bancorp	USB	0.26%	2.76%	0.01%	4.50%	0.01%
A O Smith Corp	AOS	0.03%	1.46%	0.00%	5.00%	0.00%
NortonLifeLock Inc	NLOK	0.05%	1.81%	0.00%	7.00%	0.00%
T Rowe Price Group Inc	TROW	0.13%	2.26%	0.00%	8.00%	0.01%
Waste Management Inc	WM	0.17%	1.63%	0.00%	6.00%	0.01%
Constellation Brands Inc	STZ	0.12%	1.27%	0.00%	6.50%	0.01%
Xilinx Inc	XLNX	0.09%	n/a	n/a	7.50%	0.01%
DENTSPLY SIRONA Inc	XRAY	0.04%	0.66%	0.00%	5.50%	0.00%
Zions Bancorp NA	ZION	0.03%	2.35%	0.00%	7.00%	0.00%
Alaska Air Group Inc	ALK	0.00%	n/a	n/a	0.00%	0.00%
Invesco Ltd	IVZ	0.04%	2.38%	0.00%	12.00%	0.00%
Linde PLC	LIN	0.00%	1.41%	0.00%	0.00%	0.00%
Intuit Inc	INTU	0.35%	0.54%	0.00%	14.50%	0.05%
Morgan Stanley	MS	0.49%	1.54%	0.01%	8.50%	0.04%
Microchip Technology Inc	MCHP	0.13%	1.05%	0.00%	9.00%	0.01%
Chubb Ltd	CB	0.22%	1.88%	0.00%	10.00%	0.02%
Hologic Inc	HOLX	0.05%	n/a	n/a	25.00%	0.01%
Citizens Financial Group Inc	CFG	0.06%	3.13%	0.00%	12.00%	0.01%
O'Reilly Automotive Inc	ORLY	0.11%	n/a	n/a	11.00%	0.01%
Allstate Corp/The	ALL	0.12%	2.37%	0.00%	5.00%	0.01%
FLIR Systems Inc	FLIR	0.00%	n/a	n/a	0.00%	0.00%
Equity Residential	EQR	0.08%	3.11%	0.00%	2.00%	0.00%
BorgWarner Inc	BWA	0.04%	1.33%	0.00%	5.50%	0.00%
Host Hotels & Resorts Inc	HST	0.04%	n/a	n/a	8.00%	0.00%
Incyte Corp	INCY	0.00%	n/a	n/a	0.00%	0.00%
Simon Property Group Inc	SPG	0.12%	4.05%	0.00%	-0.50%	0.00%
Eastman Chemical Co	EMN	0.05%	2.20%	0.00%	5.00%	0.00%
Twitter Inc	TWTR	0.14%	n/a	n/a	29.00%	0.04%
AvalonBay Communities Inc	AVB	0.08%	3.07%	0.00%	1.00%	0.00%
Prudential Financial Inc	PRU	0.12%	4.30%	0.01%	4.50%	0.01%
United Parcel Service Inc	UPS	0.45%	1.90%	0.01%	10.50%	0.05%
Walgreens Boots Alliance Inc	WBA	0.13%	3.55%	0.00%	6.00%	0.01%
STERIS PLC	STE	0.05%	0.84%	0.00%	10.00%	0.00%
McKesson Corp	MCK	0.09%	0.87%	0.00%	9.00%	0.01%
Lockheed Martin Corp	LMT	0.31%	2.72%	0.01%	7.50%	0.02%
AmerisourceBergen Corp	ABC	0.07%	1.53%	0.00%	6.50%	0.00%
Capital One Financial Corp	COF	0.21%	1.00%	0.00%	5.50%	0.01%
Waters Corp	WAT	0.06%	n/a	n/a	6.00%	0.00%
Dollar Tree Inc	DLTR	0.07%	n/a	n/a	9.50%	0.01%
Darden Restaurants Inc	DRI	0.05%	2.46%	0.00%	14.50%	0.01%
Domino's Pizza Inc	DPZ	0.05%	0.88%	0.00%	13.00%	0.01%
NVR Inc	NVR	0.05%	n/a	n/a	8.00%	0.00%
NetApp Inc	NTAP	0.05%	2.48%	0.00%	6.00%	0.00%
Citrix Systems Inc	CTXS	0.04%	1.29%	0.00%	9.00%	0.00%
DXC Technology Co	DXC	0.03%	n/a	n/a	2.50%	0.00%
Old Dominion Freight Line Inc	ODFL	0.09%	0.30%	0.00%	9.00%	0.01%
DaVita Inc	DVA	0.04%	n/a	n/a	15.00%	0.01%
Hartford Financial Services Group Inc/The	HIG	0.07%	2.14%	0.00%	8.50%	0.01%
Iron Mountain Inc	IRM	0.04%	5.68%	0.00%	7.50%	0.00%
Estee Lauder Cos Inc/The	EL	0.21%	0.69%	0.00%	11.00%	0.02%
Cadence Design Systems Inc	CDNS	0.10%	n/a	n/a	9.50%	0.01%
Tyler Technologies Inc	TYL	0.05%	n/a	n/a	8.00%	0.00%
Universal Health Services Inc	UHS	0.04%	0.50%	0.00%	10.00%	0.00%
Skyworks Solutions Inc	SWKS	0.08%	1.18%	0.00%	11.50%	0.01%

[2] Sum of [8]

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

NOV Inc	NOV	0.00%	n/a	n/a	0.00%	0.00%
Quest Diagnostics Inc	DGX	0.05%	1.88%	0.00%	7.00%	0.00%
Activision Blizzard Inc	ATVI	0.22%	0.48%	0.00%	14.50%	0.03%
Rockwell Automation Inc	ROK	0.09%	1.62%	0.00%	6.50%	0.01%
Kraft Heinz Co/The	KHC	0.16%	3.67%	0.01%	1.50%	0.00%
American Tower Corp	AMT	0.34%	1.99%	0.01%	10.00%	0.03%
HollyFrontier Corp	HFC	0.02%	4.31%	0.00%	2.50%	0.00%
Regeneron Pharmaceuticals Inc	REGN	0.15%	n/a	n/a	12.50%	0.02%
Amazon.com Inc	AMZN	4.75%	n/a	n/a	28.50%	1.35%
Jack Henry & Associates Inc	JKHY	0.03%	1.19%	0.00%	10.50%	0.00%
Ralph Lauren Corp	RL	0.02%	2.22%	0.00%	6.00%	0.00%
Boston Properties Inc	BXP	0.05%	3.33%	0.00%	1.50%	0.00%
Amphenol Corp	APH	0.12%	0.86%	0.00%	11.00%	0.01%
Howmet Aerospace Inc	HWM	0.05%	n/a	n/a	12.00%	0.01%
Pioneer Natural Resources Co	PXD	0.11%	1.47%	0.00%	17.50%	0.02%
Valero Energy Corp	VLO	0.10%	4.88%	0.00%	2.00%	0.00%
Synopsys Inc	SNPS	0.11%	n/a	n/a	12.50%	0.01%
Western Union Co/The	WU	0.03%	3.84%	0.00%	6.00%	0.00%
Etsy Inc	ETSY	0.06%	n/a	n/a	27.00%	0.02%
CH Robinson Worldwide Inc	CHRW	0.04%	2.10%	0.00%	8.00%	0.00%
Accenture PLC	ACN	0.52%	1.25%	0.01%	9.50%	0.05%
TransDigm Group Inc	TDG	0.10%	n/a	n/a	9.50%	0.01%
Yum! Brands Inc	YUM	0.10%	1.67%	0.00%	10.50%	0.01%
Prologis Inc	PLD	0.25%	2.14%	0.01%	8.50%	0.02%
FirstEnergy Corp	FE	0.06%	4.12%	0.00%	11.50%	0.01%
VeriSign Inc	VRSN	0.07%	n/a	n/a	9.50%	0.01%
Quanta Services Inc	PWR	0.04%	0.25%	0.00%	12.50%	0.00%
Henry Schein Inc	HSIC	0.03%	n/a	n/a	6.50%	0.00%
Ameren Corp	AEE	0.06%	2.61%	0.00%	6.00%	0.00%
ANSYS Inc	ANSS	0.09%	n/a	n/a	8.00%	0.01%
NVIDIA Corp	NVDA	1.18%	0.10%	0.00%	14.50%	0.17%
Sealed Air Corp	SEE	0.03%	1.41%	0.00%	13.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	0.11%	1.34%	0.00%	6.50%	0.01%
SVB Financial Group	SIVB	0.09%	n/a	n/a	8.00%	0.01%
Intuitive Surgical Inc	ISRG	0.29%	n/a	n/a	15.00%	0.04%
Take-Two Interactive Software Inc	TTWO	0.06%	n/a	n/a	15.50%	0.01%
Republic Services Inc	RSG	0.10%	1.56%	0.00%	7.50%	0.01%
eBay Inc	EBAY	0.12%	1.18%	0.00%	16.50%	0.02%
Goldman Sachs Group Inc/The	GS	0.37%	1.34%	0.00%	7.00%	0.03%
SBA Communications Corp	SBAC	0.10%	0.78%	0.00%	43.50%	0.04%
Sempra Energy	SRE	0.12%	3.25%	0.00%	10.00%	0.01%
Moody's Corp	MCO	0.18%	0.74%	0.00%	9.00%	0.02%
Booking Holdings Inc	BKNG	0.28%	n/a	n/a	14.00%	0.04%
F5 Networks Inc	FFIV	0.03%	n/a	n/a	7.00%	0.00%
Akamai Technologies Inc	AKAM	0.05%	n/a	n/a	9.50%	0.01%
MarketAxess Holdings Inc	MKTX	0.05%	0.57%	0.00%	15.00%	0.01%
Devon Energy Corp	DVN	0.00%	1.66%	0.00%	0.00%	0.00%
Alphabet Inc	GOOGL	0.00%	n/a	n/a	0.00%	0.00%
Teleflex Inc	TFX	0.05%	0.34%	0.00%	14.50%	0.01%
Netflix Inc	NFLX	0.65%	n/a	n/a	23.50%	0.15%
Allegion plc	ALLE	0.04%	1.03%	0.00%	9.00%	0.00%
Agilent Technologies Inc	A	0.12%	0.56%	0.00%	11.00%	0.01%
Anthem Inc	ANTM	0.28%	1.14%	0.00%	12.50%	0.04%
Trimble Inc	TRMB	0.06%	n/a	n/a	14.50%	0.01%
CME Group Inc	CME	0.23%	1.65%	0.00%	8.00%	0.02%
Juniper Networks Inc	JNPR	0.03%	3.04%	0.00%	5.50%	0.00%
BlackRock Inc	BLK	0.39%	1.88%	0.01%	9.50%	0.04%
DTE Energy Co	DTE	0.08%	3.15%	0.00%	6.00%	0.00%
Nasdaq Inc	NDAQ	0.08%	1.29%	0.00%	5.00%	0.00%
Celanese Corp	CE	0.05%	1.64%	0.00%	5.50%	0.00%
Philip Morris International Inc	PM	0.44%	4.98%	0.02%	5.00%	0.02%
salesforce.com Inc	CRM	0.64%	n/a	n/a	39.50%	0.25%
Ingersoll Rand Inc	IR	0.00%	n/a	n/a	0.00%	0.00%
Huntington Ingalls Industries Inc	HII	0.03%	2.11%	0.00%	7.00%	0.00%
MetLife Inc	MET	0.17%	2.94%	0.00%	6.50%	0.01%
Under Armour Inc	UA	0.00%	n/a	n/a	0.00%	0.00%
Tapestry Inc	TPR	0.04%	n/a	n/a	1.50%	0.00%
CSX Corp	CSX	0.22%	1.12%	0.00%	8.50%	0.02%
Edwards Lifesciences Corp	EW	0.17%	n/a	n/a	13.00%	0.02%
Ameriprise Financial Inc	AMP	0.09%	1.74%	0.00%	13.00%	0.01%
Zebra Technologies Corp	ZBRA	0.08%	n/a	n/a	11.00%	0.01%
Zimmer Biomet Holdings Inc	ZBH	0.10%	0.57%	0.00%	8.50%	0.01%

[2] Sum of [8]

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

CBRE Group Inc	CBRE	0.09%	n/a	n/a	8.50%	0.01%
Mastercard Inc	MA	1.04%	0.49%	0.01%	12.50%	0.13%
CarMax Inc	KMX	0.05%	n/a	n/a	11.00%	0.01%
Intercontinental Exchange Inc	ICE	0.19%	1.17%	0.00%	8.00%	0.01%
Fidelity National Information Services Inc	FIS	0.27%	1.05%	0.00%	28.00%	0.08%
Chipotle Mexican Grill Inc	CMG	0.11%	n/a	n/a	18.50%	0.02%
Wynn Resorts Ltd	WYNN	0.04%	n/a	n/a	27.00%	0.01%
Live Nation Entertainment Inc	LYV	0.00%	n/a	n/a	0.00%	0.00%
Assurant Inc	AIZ	0.03%	1.64%	0.00%	11.50%	0.00%
NRG Energy Inc	NRG	0.02%	4.04%	0.00%	-1.50%	0.00%
Regions Financial Corp	RF	0.07%	2.65%	0.00%	9.00%	0.01%
Monster Beverage Corp	MNST	0.15%	n/a	n/a	11.50%	0.02%
Mosaic Co/The	MOS	0.04%	0.83%	0.00%	30.00%	0.01%
Expedia Group Inc	EXPE	0.00%	n/a	n/a	0.00%	0.00%
Evergy Inc	EVRG	0.04%	3.45%	0.00%	8.00%	0.00%
Discovery Inc	DISCA	0.02%	n/a	n/a	15.50%	0.00%
CF Industries Holdings Inc	CF	0.03%	2.26%	0.00%	14.50%	0.00%
Leidos Holdings Inc	LDOS	0.04%	1.32%	0.00%	9.50%	0.00%
APA Corp	APA	0.00%	0.48%	0.00%	0.00%	0.00%
Alphabet Inc	GOOG	2.28%	n/a	n/a	15.00%	0.34%
Cooper Cos Inc/The	COO	0.06%	0.02%	0.00%	14.50%	0.01%
TE Connectivity Ltd	TEL	0.13%	1.47%	0.00%	8.00%	0.01%
Discover Financial Services	DFS	0.10%	1.50%	0.00%	5.50%	0.01%
Visa Inc	V	1.12%	0.56%	0.01%	12.00%	0.13%
Mid-America Apartment Communities Inc	MAA	0.05%	2.55%	0.00%	0.50%	0.00%
Xylem Inc/NY	XYL	0.06%	0.95%	0.00%	10.50%	0.01%
Marathon Petroleum Corp	MPC	0.12%	3.75%	0.00%	3.50%	0.00%
Tractor Supply Co	TSCO	0.06%	1.14%	0.00%	9.50%	0.01%
Advanced Micro Devices Inc	AMD	0.28%	n/a	n/a	24.00%	0.07%
ResMed Inc	RMD	0.09%	0.76%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	0.09%	n/a	n/a	11.50%	0.01%
Copart Inc	CPRT	0.09%	n/a	n/a	10.00%	0.01%
Albemarle Corp	ALB	0.06%	0.93%	0.00%	4.00%	0.00%
Fortinet Inc	FTNT	0.10%	n/a	n/a	19.00%	0.02%
Essex Property Trust Inc	ESS	0.06%	2.83%	0.00%	1.00%	0.00%
Realty Income Corp	O	0.07%	4.12%	0.00%	6.00%	0.00%
Seagate Technology Holdings PLC	STX	0.06%	2.80%	0.00%	4.00%	0.00%
Westrock Co	WRK	0.05%	1.65%	0.00%	6.50%	0.00%
IHS Markit Ltd	INFO	0.12%	0.76%	0.00%	11.50%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	0.05%	0.58%	0.00%	9.50%	0.00%
Pool Corp	POOL	0.05%	0.73%	0.00%	15.00%	0.01%
Western Digital Corp	WDC	0.07%	n/a	n/a	1.00%	0.00%
PepsiCo Inc	PEP	0.60%	2.91%	0.02%	6.00%	0.04%
Diamondback Energy Inc	FANG	0.04%	2.00%	0.00%	0.50%	0.00%
Maxim Integrated Products Inc	MXIM	0.08%	n/a	n/a	8.00%	0.01%
ServiceNow Inc	NOW	0.27%	n/a	n/a	44.50%	0.12%
Church & Dwight Co Inc	CHD	0.06%	1.18%	0.00%	8.00%	0.00%
Duke Realty Corp	DRE	0.05%	2.20%	0.00%	-2.50%	0.00%
Federal Realty Investment Trust	FRT	0.03%	3.71%	0.00%	-2.00%	0.00%
MGM Resorts International	MGM	0.06%	0.02%	0.00%	25.00%	0.02%
American Electric Power Co Inc	AEP	0.13%	3.44%	0.00%	6.50%	0.01%
JB Hunt Transport Services Inc	JBHT	0.05%	0.70%	0.00%	8.00%	0.00%
Lam Research Corp	LRCX	0.27%	0.80%	0.00%	12.50%	0.03%
Mohawk Industries Inc	MHK	0.04%	n/a	n/a	6.50%	0.00%
Pentair PLC	PNR	0.03%	1.16%	0.00%	5.50%	0.00%
Vertex Pharmaceuticals Inc	VRTX	0.16%	n/a	n/a	28.50%	0.04%
Amcor PLC	AMCR	0.00%	3.98%	0.00%	0.00%	0.00%
Facebook Inc	FB	2.30%	n/a	n/a	15.50%	0.36%
T-Mobile US Inc	TMUS	0.52%	n/a	n/a	8.50%	0.04%
United Rentals Inc	URI	0.07%	n/a	n/a	7.50%	0.01%
ABIOMED Inc	ABMD	0.04%	n/a	n/a	10.00%	0.00%
Alexandria Real Estate Equities Inc	ARE	0.08%	2.45%	0.00%	13.00%	0.01%
Delta Air Lines Inc	DAL	0.09%	n/a	n/a	49.00%	0.04%
United Airlines Holdings Inc	UAL	0.00%	n/a	n/a	0.00%	0.00%
News Corp	NWS	0.00%	0.78%	0.00%	0.00%	0.00%
Centene Corp	CNC	0.13%	n/a	n/a	9.50%	0.01%
Martin Marietta Materials Inc	MLM	0.07%	0.63%	0.00%	6.00%	0.00%
Teradyne Inc	TER	0.06%	0.30%	0.00%	10.50%	0.01%
PayPal Holdings Inc	PYPL	0.89%	n/a	n/a	19.00%	0.17%
Tesla Inc	TSLA	0.00%	n/a	n/a	0.00%	0.00%
DISH Network Corp	DISH	0.04%	n/a	n/a	0.00%	0.00%
Dow Inc	DOW	0.00%	4.09%	0.00%	0.00%	0.00%

[2] Sum of [8]

[3] Equals  $([1] \times (1 + 0.5 \times [2])) + [2]$

Alexion Pharmaceuticals Inc	ALXN	0.11%	n/a	n/a	19.50%	0.02%
Penn National Gaming Inc	PENN	0.04%	n/a	n/a	27.00%	0.01%
Everest Re Group Ltd	RE	0.03%	2.38%	0.00%	10.50%	0.00%
Teledyne Technologies Inc	TDY	0.06%	n/a	n/a	7.50%	0.00%
News Corp	NWSA	0.00%	0.74%	0.00%	0.00%	0.00%
Exelon Corp	EXC	0.13%	3.39%	0.00%	5.50%	0.01%
Global Payments Inc	GPX	0.17%	0.40%	0.00%	16.50%	0.03%
Crown Castle International Corp	CCI	0.24%	2.81%	0.01%	11.50%	0.03%
Aptiv PLC	APTIV	0.12%	n/a	n/a	15.50%	0.02%
Advance Auto Parts Inc	AAP	0.04%	2.11%	0.00%	11.00%	0.00%
Align Technology Inc	ALGN	0.14%	n/a	n/a	17.00%	0.02%
Illumina Inc	ILMN	0.17%	n/a	n/a	14.00%	0.02%
LKQ Corp	LKQ	0.04%	n/a	n/a	10.50%	0.00%
Nielsen Holdings PLC	NLSN	0.00%	0.88%	0.00%	0.00%	0.00%
Garmin Ltd	GRMN	0.08%	1.88%	0.00%	10.50%	0.01%
Zoetis Inc	ZTS	0.25%	0.57%	0.00%	10.00%	0.02%
Equinix Inc	EQIX	0.19%	1.56%	0.00%	14.50%	0.03%
Digital Realty Trust Inc	DLR	0.12%	3.06%	0.00%	7.00%	0.01%
Las Vegas Sands Corp	LVS	0.13%	n/a	n/a	19.00%	0.02%
Discovery Inc	DISCK	0.00%	n/a	n/a	0.00%	0.00%

Notes:

[4] Source: Bloomberg Professional

[5] Source: Bloomberg Professional

[6] Equals [4] x [5]

[7] Source: Value Line, as of May 28, 2021

[8] Equals [4] x [7]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	2.30%	0.80	13.70%	11.40%	11.42%
NiSource Inc.	NI	2.30%	0.85	13.70%	11.40%	11.99%
Northwest Natural Gas Company	NWN	2.30%	0.85	13.70%	11.40%	11.99%
ONE Gas Inc.	OGS	2.30%	0.80	13.70%	11.40%	11.42%
South Jersey Industries, Inc.	SJI	2.30%	1.05	13.70%	11.40%	14.27%
Southwest Gas Corporation	SWX	2.30%	0.95	13.70%	11.40%	13.13%
Spire, Inc.	SR	2.30%	0.85	13.70%	11.40%	11.99%
Mean						12.31%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q3 2021 - Q3 2022)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	2.64%	0.80	13.70%	11.06%	11.49%
NiSource Inc.	NI	2.64%	0.85	13.70%	11.06%	12.04%
Northwest Natural Gas Company	NWN	2.64%	0.85	13.70%	11.06%	12.04%
ONE Gas Inc.	OGS	2.64%	0.80	13.70%	11.06%	11.49%
South Jersey Industries, Inc.	SJI	2.64%	1.05	13.70%	11.06%	14.25%
Southwest Gas Corporation	SWX	2.64%	0.95	13.70%	11.06%	13.15%
Spire, Inc.	SR	2.64%	0.85	13.70%	11.06%	12.04%
Mean						12.36%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 2

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]



## CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE &amp; VL BETA

$$K = R_f + \beta (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2022 - 2026)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	3.50%	0.80	13.70%	10.20%	11.66%
NiSource Inc.	NI	3.50%	0.85	13.70%	10.20%	12.17%
Northwest Natural Gas Company	NWN	3.50%	0.85	13.70%	10.20%	12.17%
ONE Gas Inc.	OGS	3.50%	0.80	13.70%	10.20%	11.66%
South Jersey Industries, Inc.	SJI	3.50%	1.05	13.70%	10.20%	14.21%
Southwest Gas Corporation	SWX	3.50%	0.95	13.70%	10.20%	13.19%
Spire, Inc.	SR	3.50%	0.85	13.70%	10.20%	12.17%
Mean						12.46%

## Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14

[2] Source: Value Line

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

## CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE &amp; BLOOMBERG BETA

$$K = R_f + \beta (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	2.30%	0.80	13.70%	11.40%	11.39%
NiSource Inc.	NI	2.30%	0.85	13.70%	11.40%	12.03%
Northwest Natural Gas Company	NWN	2.30%	0.77	13.70%	11.40%	11.06%
ONE Gas Inc.	OGS	2.30%	0.87	13.70%	11.40%	12.21%
South Jersey Industries, Inc.	SJI	2.30%	0.90	13.70%	11.40%	12.59%
Southwest Gas Corporation	SWX	2.30%	0.94	13.70%	11.40%	13.05%
Spire, Inc.	SR	2.30%	0.84	13.70%	11.40%	11.91%
Mean						12.03%

## Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional

[3] Source: Value Line

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q3 2021 - Q3 2022)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)
Atmos Energy Corporation	ATO	2.64%	0.80	13.70%	11.06%	11.46%
NiSource Inc.	NI	2.64%	0.85	13.70%	11.06%	12.08%
Northwest Natural Gas Company	NWN	2.64%	0.77	13.70%	11.06%	11.14%
ONE Gas Inc.	OGS	2.64%	0.87	13.70%	11.06%	12.25%
South Jersey Industries, Inc.	SJI	2.64%	0.90	13.70%	11.06%	12.62%
Southwest Gas Corporation	SWX	2.64%	0.94	13.70%	11.06%	13.07%
Spire, Inc.	SR	2.64%	0.84	13.70%	11.06%	11.96%
Mean						12.08%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 2  
[2] Source: Bloomberg Professional  
[3] Source: Value Line  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2022 - 2026)	Beta ( $\beta$ )	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)
Atmos Energy Corporation	ATO	3.50%	0.80	13.70%	10.20%	11.64%
NiSource Inc.	NI	3.50%	0.85	13.70%	10.20%	12.20%
Northwest Natural Gas Company	NWN	3.50%	0.77	13.70%	10.20%	11.34%
ONE Gas Inc.	OGS	3.50%	0.87	13.70%	10.20%	12.36%
South Jersey Industries, Inc.	SJI	3.50%	0.90	13.70%	10.20%	12.71%
Southwest Gas Corporation	SWX	3.50%	0.94	13.70%	10.20%	13.12%
Spire, Inc.	SR	3.50%	0.84	13.70%	10.20%	12.10%
Mean						12.21%

Notes:

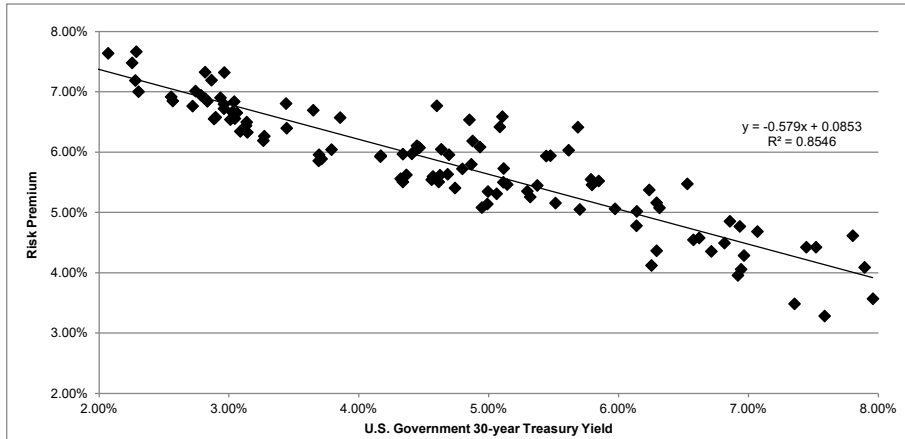
- [1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14  
[2] Source: Bloomberg Professional  
[3] Source: Value Line  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

Risk Premium -- Electric Utilities

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1992.1	12.42%	7.80%	4.62%
1992.2	11.98%	7.89%	4.09%
1992.3	11.87%	7.45%	4.42%
1992.4	11.94%	7.52%	4.42%
1993.1	11.75%	7.07%	4.68%
1993.2	11.71%	6.86%	4.85%
1993.3	11.39%	6.31%	5.07%
1993.4	11.16%	6.14%	5.02%
1994.1	11.12%	6.57%	4.55%
1994.2	10.84%	7.35%	3.48%
1994.3	10.87%	7.58%	3.28%
1994.4	11.53%	7.96%	3.57%
1995.2	11.00%	6.94%	4.06%
1995.3	11.07%	6.71%	4.35%
1995.4	11.61%	6.23%	5.37%
1996.1	11.45%	6.29%	5.16%
1996.2	10.88%	6.92%	3.96%
1996.3	11.25%	6.96%	4.29%
1996.4	11.19%	6.62%	4.58%
1997.1	11.31%	6.81%	4.49%
1997.2	11.70%	6.93%	4.77%
1997.3	12.00%	6.53%	5.47%
1997.4	10.92%	6.14%	4.78%
1998.2	11.37%	5.85%	5.52%
1998.3	11.41%	5.47%	5.94%
1998.4	11.69%	5.10%	6.59%
1999.1	10.82%	5.37%	5.44%
1999.2	11.25%	5.79%	5.46%
1999.4	10.38%	6.25%	4.12%
2000.1	10.66%	6.29%	4.36%
2000.2	11.03%	5.97%	5.06%
2000.3	11.33%	5.79%	5.55%
2000.4	12.10%	5.69%	6.41%
2001.1	11.38%	5.44%	5.93%
2001.2	10.75%	5.70%	5.05%
2001.4	10.65%	5.30%	5.35%
2002.1	10.67%	5.51%	5.15%
2002.2	11.64%	5.61%	6.03%
2002.3	11.50%	5.08%	6.42%
2002.4	11.01%	4.93%	6.08%
2003.1	11.38%	4.85%	6.53%
2003.2	11.36%	4.60%	6.76%
2003.3	10.61%	5.11%	5.50%
2003.4	10.84%	5.11%	5.73%
2004.1	11.06%	4.88%	6.18%
2004.2	10.57%	5.32%	5.25%
2004.3	10.37%	5.06%	5.31%
2004.4	10.66%	4.86%	5.79%
2005.1	10.65%	4.69%	5.96%
2005.2	10.54%	4.47%	6.07%
2005.3	10.47%	4.44%	6.03%
2005.4	10.32%	4.68%	5.63%
2006.1	10.68%	4.63%	6.05%
2006.2	10.60%	5.14%	5.46%
2006.3	10.34%	4.99%	5.34%
2006.4	10.14%	4.74%	5.40%
2007.1	10.52%	4.80%	5.72%
2007.2	10.13%	4.99%	5.14%
2007.3	10.03%	4.95%	5.08%
2007.4	10.12%	4.61%	5.50%
2008.1	10.38%	4.41%	5.97%
2008.2	10.17%	4.57%	5.60%
2008.3	10.55%	4.44%	6.11%
2008.4	10.34%	3.65%	6.69%
2009.1	10.24%	3.44%	6.81%
2009.2	10.11%	4.17%	5.94%
2009.3	9.88%	4.32%	5.56%
2009.4	10.31%	4.34%	5.97%
2010.1	10.24%	4.62%	5.61%
2010.2	9.99%	4.36%	5.62%
2010.3	10.43%	3.86%	6.57%
2010.4	10.09%	4.17%	5.93%
2011.1	10.10%	4.56%	5.54%
2011.2	9.85%	4.34%	5.51%
2011.3	9.65%	3.69%	5.96%
2011.4	9.88%	3.04%	6.84%
2012.1	9.63%	3.14%	6.50%
2012.2	9.83%	2.93%	6.90%
2012.3	9.75%	2.74%	7.01%
2012.4	10.06%	2.86%	7.19%

Risk Premium -- Electric Utilities

	[1]	[2]	[3]
	Average Authorized Gas ROE	U.S. Govt. 30-year Treasury	Risk Premium
2013.1	9.57%	3.13%	6.44%
2013.2	9.47%	3.14%	6.33%
2013.3	9.60%	3.71%	5.89%
2013.4	9.83%	3.79%	6.04%
2014.1	9.54%	3.69%	5.85%
2014.2	9.84%	3.44%	6.39%
2014.3	9.45%	3.26%	6.19%
2014.4	10.28%	2.96%	7.32%
2015.1	9.47%	2.55%	6.91%
2015.2	9.43%	2.88%	6.55%
2015.3	9.75%	2.96%	6.79%
2015.4	9.68%	2.96%	6.72%
2016.1	9.48%	2.72%	6.76%
2016.2	9.42%	2.57%	6.85%
2016.3	9.47%	2.28%	7.19%
2016.4	9.67%	2.83%	6.84%
2017.1	9.60%	3.04%	6.56%
2017.2	9.47%	2.90%	6.58%
2017.3	10.14%	2.82%	7.32%
2017.4	9.70%	2.82%	6.88%
2018.1	9.68%	3.02%	6.66%
2018.2	9.43%	3.09%	6.34%
2018.3	9.71%	3.06%	6.65%
2018.4	9.53%	3.27%	6.26%
2019.1	9.55%	3.01%	6.54%
2019.2	9.73%	2.78%	6.94%
2019.3	9.95%	2.29%	7.66%
2019.4	9.73%	2.25%	7.48%
2020.1	9.35%	1.89%	7.46%
2020.2	9.55%	1.38%	8.17%
2020.3	9.52%	1.37%	8.15%
2020.4	9.47%	1.62%	7.86%
2021.1	9.71%	2.07%	7.64%
2021.2	9.30%	2.30%	7.00%
AVERAGE	10.46%	4.59%	5.87%
MEDIAN	10.35%	4.62%	5.94%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.924425754
R Square	0.854562975
Adjusted R Square	0.85326443
Standard Error	0.003907432
Observations	114

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.010047776	0.010047776	658.0927579	1.04627E-48
Residual	112	0.001710019	1.5268E-05		
Total	113	0.011757794			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.085279652	0.001098553	77.62910402	3.2055E-99	0.083103011	0.08745629	0.083103011	0.087456293
U.S. Govt. 30-year Treasury	-0.579010669	0.022570595	-25.6533187	1.04627E-48	-0.62373141	-0.5342899	-0.62373141	-0.534289928

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	2.30%	7.20%	9.50%
Blue Chip Consensus Forecast (Q2 2021 - Q2 2022) [5]	2.64%	7.00%	9.64%
Blue Chip Consensus Forecast (2022-2026) [6]	3.50%	6.50%	10.00%
<b>AVERAGE</b>			<b>9.71%</b>

Notes:

- [1] Source: Regulatory Research Associates, gas distribution rate cases through May 28, 2021
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional, 30-day average as of May 28, 2021
- [5] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 6, June 1, 2021, at 14
- [7] See notes [4] & [5]
- [8] Equals  $0.085280 + (-0.579011 \times \text{Column [6]})$
- [9] Equals Column [6] + Column [7]

EXPECTED EARNINGS ANALYSIS

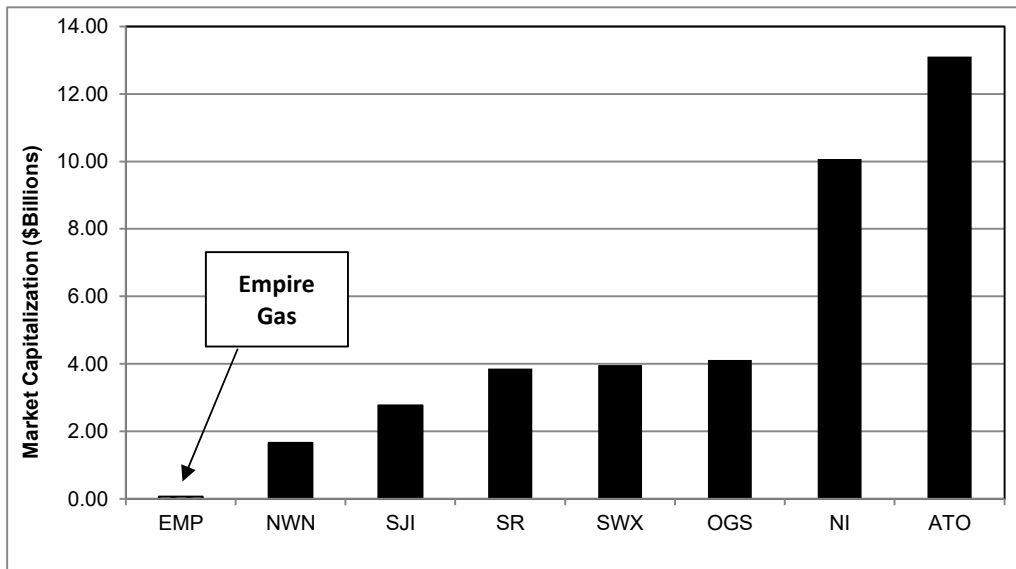
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Value Line ROE 2024-2026	Value Line Total Capital 2020	Value Line Common Equity Ratio 2020	Total Equity 2020	Value Line Total Capital 2024-2026	Value Line Common Equity Ratio 2024-2026	Total Equity 2024-2026	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
Atmos Energy Corporation	ATO	7.50%	11,323	60.00%	6,794	22,700	60.00%	13,620	14.92%	1.069	8.02%
NiSource Inc.	NI	11.50%	15,058	32.90%	4,954	18,330	40.00%	7,332	8.16%	1.039	11.95%
Northwest Natural Gas Company	NWN	7.00%	1,749	50.80%	888	2,550	57.00%	1,454	10.35%	1.049	7.34%
ONE Gas Inc.	OGS	6.50%	38,155	58.50%	22,320	8,000	53.00%	4,240	-28.26%	0.835	5.43%
South Jersey Industries, Inc.	SJI	11.50%	4,437	37.40%	1,660	6,600	39.50%	2,607	9.45%	1.045	12.02%
Southwest Gas Corporation	SWX	10.00%	5,407	49.50%	2,677	7,850	52.00%	4,082	8.81%	1.042	10.42%
Spire, Inc.	SR	7.50%	4,946	51.00%	2,522	7,500	55.00%	4,125	10.34%	1.049	7.87%
Mean											9.01%
Median											8.02%

Notes:

- [1] Source: Value Line
- [2] Source: Value Line
- [3] Source: Value Line
- [4] Equals [2] x [3]
- [5] Source: Value Line
- [6] Source: Value Line
- [7] Equals [5] x [6]
- [8] Equals  $([7] / [4])^{(1/5)} - 1$
- [9] Equals  $2 \times (1 + [8]) / (2 + [8])$
- [10] Equals [1] x [9]

RELATIVE MARKET CAPITALIZATION  
AS OF May 31, 2021

Company	Ticker	[1]	[2]
		Market Capitalization (\$billions)	Market to Book Ratio
Empire [3]	EMP	0.07	
Northwest Natural Gas Company	NWN	1.66	1.77
South Jersey Industries, Inc.	SJI	2.77	1.59
Spire, Inc.	SR	3.86	1.55
Southwest Gas Corporation	SWX	3.97	1.43
ONE Gas Inc.	OGS	4.12	1.79
NiSource Inc.	NI	10.07	1.99
Atmos Energy Corporation	ATO	13.11	1.68
Proxy Group Average		5.65	1.69
Proxy Group Median		3.97	1.68



Notes

[1] and [2] Source: Bloomberg Professional as of May 28, 2021.

[3] Empire Gas' implied market capitalization was derived by multiplying the proposed rate base of approximately \$80 million by the proposed common equity ratio of 52.44% by the price/book ratio for the proxy group of 1.69 as of 5/31/2021 (Source: Bloomberg)

**COMPARISON OF EMPIRE GAS AND PROXY GROUP COMPANIES  
RISK ASSESSMENT**

Company	Jurisdiction/Service	Test Year	Rate Base	Non-Volumetric Rate Design							Capital Cost Recovery					
				Revenue			Formula-Based		Non-Volumetric	Capital Tracking	CWIP Allowed in Rate	Capital Cost				
				Decoupling	Rates	Rate Design	Mechanism	Base or Equivalent					Recovery			
Atmos Energy Corporation	Kansas - Gas	Historical	Year End	Partial	No	Yes	Yes	Yes	Yes	Yes						
	Kentucky - Gas	Fully Forecast	Average	Partial	No	Yes	Yes	No	Yes							
	Louisiana - Gas	Historical	Year End	Partial	Yes	Yes	Yes	Yes	Yes							
	Mississippi - Gas	Partially Forecast	Average	Partial	Yes	Yes	Yes	Yes	Yes							
	Tennessee - Gas	Fully Forecast	Average	Partial	Yes	Yes	No	Yes	No							
NiSource Inc.	Texas - Gas	Historical	Year End	Partial	Yes	Yes	Yes	Yes	No	Yes						
	Indiana - Electric	Fully Forecast	Year End	Partial	No	Yes	Yes	Yes	Yes							
	Indiana - Gas	Fully Forecast	Year End	No	No	No	Yes	Yes	Yes							
	Kentucky - Gas	Fully Forecast	Average	Partial	No	Yes	Yes	No	Yes							
	Maryland - Gas	Partially Forecast	Average	Partial	No	Yes	Yes	Yes	No	Yes						
	Ohio - Gas	Partially Forecast	Year End	SFV	No	Yes	Yes	Yes	Yes	Yes						
	Pennsylvania - Gas	Fully Forecast	Year End	Partial	No	Yes	Yes	No	Yes							
	Virginia - Gas	Historical	Average	Partial	No	Yes	Yes	Yes	Yes							
Northwest Natural Gas Company	Oregon - Gas	Fully Forecast	Average	Partial	No	Yes	No	No	No							
	Washington - Gas	Historical	Average	No	No	No	No	Yes	Yes							
ONE Gas, Inc.	Kansas - Gas	Historical	Year End	Partial	No	Yes	Yes	Yes	Yes							
	Oklahoma - Gas	Historical	Year End	Partial	No	Yes	No	Yes	Yes							
	Texas - Gas	Historical	Year End	Partial	Yes	Yes	Yes	No	Yes							
South Jersey Industries, Inc.	New Jersey - Gas	Partially Forecast	Year End	Full	No	Yes	Yes	No	Yes							
Southwest Gas Corporation	Arizona - Gas	Historical	Year End	Full	No	Yes	Yes	No	Yes							
	California - Gas	Fully Forecast	Average	Full	No	Yes	No	No	No							
	Nevada - Gas	Historical	Year End	Full	No	Yes	Yes	Yes	Yes							
Spire, Inc.	Alabama - Gas	Fully Forecast	Average	Partial	Yes	Yes	No	No	No							
	Missouri East - Gas	Historical	Year End	Partial	No	Yes	Yes	No	Yes							
	Missouri West - Gas	Historical	Year End	No	No	No	Yes	No	Yes							
Proxy Group Totals	Fully Forecast	9	Year End	15	Full	4	Yes	6	Yes	22	Yes	19	Yes	11	Yes	21
	Partially Forecast	4	Average	10	Partial	17	No	19	No	3	No	6	No	14	No	4
	Historical	12			SFV	1										
				No	3											
	Forecast	52.00%	Year End	60.00%	RDM	88.00%	Yes	24.00%	Yes	88.00%	CCRM	76.00%	Yes	44.00%	Yes	84.00%

**Notes**

[1] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 5/31/21

[2] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 5/31/21

[3] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.

[4] Source: S&P Global Market Intelligence, Alternative Ratemaking Plans in the U.S., dated April 16, 2020.

[5] Equals Yes if either [3] or [4] equal Yes

[6] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.

[7] Sources: Regulatory Research Associates, "Regulatory Focus: Construction Work in Progress." April 22, 2013; Regulatory Research Associates, "Regulatory Focus: Missouri Regulatory Review." January 10, 2019. Regulatory Research Associates, "Regulatory Focus: Wisconsin Regulatory Review." August 12, 2020 (Wisconsin's PSC typically authorizes a premium to allow for a rate of return equivalent to a certain CWIP level in rate base).

[8] Equals Yes if either [6] or [7] equal Yes

[9] Data provided by Empire Gas



CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	58.31%	58.43%	58.31%
NiSource Inc.	NI	54.43%	54.33%	54.43%
Northwest Natural Gas Company	NWN	47.44%	49.19%	47.44%
One Gas Inc.	OGS	60.07%	63.28%	60.07%
South Jersey Industries, Inc.	SJI	54.73%	52.88%	54.73%
Southwest Gas Corporation	SWX	47.67%	48.52%	47.67%
Spire Inc.	SR	58.51%	60.72%	58.51%
MEAN		54.45%	55.34%	54.45%
LOW		47.44%	48.52%	47.44%
HIGH		60.07%	63.28%	60.07%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES [2]

Company Name	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	58.31%	58.43%	58.31%
Columbia Gas of Kentucky, Inc.	NI	54.68%	54.23%	54.68%
Columbia Gas of Maryland, Inc.	NI	54.95%	52.38%	54.95%
Columbia Gas of Ohio, Inc.	NI	50.45%	53.00%	50.45%
Columbia Gas of Pennsylvania, Inc.	NI	55.68%	55.59%	55.68%
Columbia Gas of Virginia, Inc.	NI	43.69%	42.53%	43.69%
Northern Indiana Public Service Company LLC	NI	58.01%	56.43%	58.01%
Northwest Natural Gas Company	NWN	47.44%	49.19%	47.44%
Kansas Gas Service Company, Inc.	OGS	60.33%	63.55%	60.33%
Oklahoma Natural Gas Company	OGS	59.85%	63.10%	59.85%
Texas Gas Service Company, Inc.	OGS		63.23%	63.23%
South Jersey Gas Company	SJI	54.73%	52.88%	54.73%
Southwest Gas Corporation	SWX	47.67%	48.52%	47.67%
Spire Alabama Inc.	SR	64.35%	66.82%	64.35%
Spire Gulf Inc.	SR	40.55%	37.18%	40.55%
Spire Missouri Inc.	SR	56.68%	59.05%	56.68%

Notes:

[1] Ratios are weighted by actual common capital and long-term debt of operating subsidiaries.

[2] Operating subsidiaries where data was unavailable for 2019 and 2020 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]				
Proxy Group Company	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	41.69%	41.57%	41.69%
NiSource Inc.	NI	45.57%	45.67%	45.57%
Northwest Natural Gas Company	NWN	52.56%	50.81%	52.56%
One Gas Inc.	OGS	39.93%	36.72%	39.93%
South Jersey Industries, Inc.	SJI	45.27%	47.12%	45.27%
Southwest Gas Corporation	SWX	52.33%	51.48%	52.33%
Spire Inc.	SR	41.49%	39.28%	41.49%
MEAN		45.55%	44.66%	45.55%
LOW		39.93%	36.72%	39.93%
HIGH		52.56%	51.48%	52.56%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES [2]				
Company Name	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	41.69%	41.57%	41.69%
Columbia Gas of Kentucky, Inc.	NI	45.32%	45.77%	45.32%
Columbia Gas of Maryland, Inc.	NI	45.05%	47.62%	45.05%
Columbia Gas of Ohio, Inc.	NI	49.55%	47.00%	49.55%
Columbia Gas of Pennsylvania, Inc.	NI	44.32%	44.41%	44.32%
Columbia Gas of Virginia, Inc.	NI	56.31%	57.47%	56.31%
Northern Indiana Public Service Company LLC	NI	41.99%	43.57%	41.99%
Northwest Natural Gas Company	NWN	52.56%	50.81%	52.56%
Kansas Gas Service Company, Inc.	OGS	39.67%	36.45%	39.67%
Oklahoma Natural Gas Company	OGS	40.15%	39.54%	40.15%
Texas Gas Service Company, Inc.	OGS		36.77%	36.77%
South Jersey Gas Company	SJI	45.27%	47.12%	45.27%
Southwest Gas Corporation	SWX	52.33%	51.48%	52.33%
Spire Alabama Inc.	SR	35.65%	33.18%	35.65%
Spire Gulf Inc.	SR	59.45%	62.82%	59.45%
Spire Missouri Inc.	SR	43.32%	40.95%	43.32%

Notes:

[1] Ratios are weighted by actual common capital and long-term debt of operating subsidiaries.

[2] Operating subsidiaries where data was unavailable for 2019 and 2020 were removed from the analysis.