Docket No. RP24- ___
Exhibit P
Exhibit No. T-0037

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transcontinental Gas Pipe Line Company, LLC **Docket No. RP24-___**

PREPARED DIRECT TESTIMONY OF DAVID J. HAAG ON BEHALF OF TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

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GLOSSARY OF TERMS

2008 Proxy Group Policy Statement	*Composition of Proxy Groups for Determining Gas and Oil Pipeline Return on Equity*, 123 FERC ¶ 61,048, *reh'g dismissed*, 123 FERC ¶ 61,259 (2008).
2020 ROE Policy Statement	*Policy Statement on Determining Return on Equity for Natural Gas and Oil Pipelines*, 171 FERC ¶ 61,155 (2020).
Arlington Storage	Arlington Storage Company, L.L.C.
Aux Sable	Aux Sable Companies
Bcf	Billion cubic feet
Bcf/d	Billion cubic feet per day
Bear Creek	Bear Creek Storage Company, L.L.C.
Black Marlin	Black Marlin Pipeline LLC
BWMQ	Brown, Williams, Moorhead & Quinn, Inc.
CAPM	Capital Asset Pricing Model
Cheniere	Collectively, Cheniere Energy Inc. / Cheniere Energy Partners L.P.
CIG	Colorado Interstate Gas Company, L.L.C.
Columbia Gas	Columbia Gas Transmission, LLC
Columbia Gulf	Columbia Gulf Transmission, LLC
Commission or FERC	Federal Energy Regulatory Commission
CSU	Colorado Springs Utilities
CWIP	Construction Work in Progress
D	Dividend
DCF	Discounted Cash Flow
Discovery	Discovery Gas Transmission, LLC
Dth	Dekatherms
Dth/d	Dekatherms per day
DTM	DT Midstream, Inc.
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization

EGTS	Eastern Gas Transmission and Storage, Inc.
EGT	Enable Gas Transmission, LLC
Enbridge	Enbridge Inc.
Energy Transfer	Energy Transfer LP
EOG	The East Ohio Gas Company
EO 14008	Tackling the Climate Crisis at Home and Abroad, Executive Order 14008, 86 Fed. Reg. 7619 (Feb. 1, 2021).
EPNG	El Paso Natural Gas Company, L.L.C.
Equitrans	Equitrans Midstream Corporation
FEP	Fayetteville Express Pipeline LLC
Fitch	Fitch Ratings Inc.
FGT	Florida Gas Transmission Company, LLC
g	Growth Rate
GIP	Global Infrastructure Partners
Guardian	Guardian Pipeline, L.L.C.
Gulfstream	Gulfstream Natural Gas System L.L.C.
Horizon Pipeline	Horizon Pipeline Company, L.L.C.
HP	Horsepower
IBES	Institutional Broker's Estimate System
IOC	Index of Customers
k	Cost of Equity
Kern River	Kern River Gas Transmission Company
Kern River Factors	From Opinion No. 486-C: i. the combined natural gas pipeline and distribution business of the firm make up at least 50% of its total business; ii. the natural gas pipeline business is at least equal to the distribution business, and iii. the firm's more risky exploration, production, and other market-oriented businesses are no greater than the less risky distribution business.
Kinder Morgan	Kinder Morgan, Inc.

KMEP	Kinder Morgan Energy Partners, LP
LDC	Local Distribution Company
LNG	Liquefied Natural Gas
Lotus Midstream	Lotus Midstream Operations, LLC
Magellan	Magellan Midstream Partners
MCMC	Mid-Continent Market Center, L.L.C.
MEP	Midcontinent Express Pipeline LLC
Midwestern	Midwestern Gas Transmission Company
Millennium	Millennium Pipeline, LLC
MLP	Master Limited Partnership
MMcf/d	Million Cubic Feet Per Day
MoGas	MoGas Pipeline LLC
Moody's	Moody's Investors Service, Inc.
MountainWest HoldCo	MountainWest Pipelines Holding Company
MountainWest	MountainWest Pipeline, LLC
MRT	Enable Mississippi River Transmission, LLC
MVP	Mountain Valley Pipeline
National Fuel	National Fuel Gas Company
NGLs	Natural Gas Liquids
NGPA	Natural Gas Policy Act
NGPL	Natural Gas Pipeline Company of America LLC
Northern Border	Northern Border Pipeline Company
Northwest	Northwest Pipeline LLC
NRG	NRG Energy Inc.
O&M	Operating and Maintenance
OGT	ONEOK Gas Transportation, L.L.C.
OkTex	OkTex Pipeline Company, L.L.C.
	Omega Pipeline

ONEOK	ONEOK, Inc.
Opinion No. 486, *et al.*	*Kern River Gas Transmission Co.*, Opinion No. 486, 117 FERC ¶ 61,077 (2006), *order on reh'g*, Opinion No. 486-A, 123 FERC ¶ 61,056 (2008), *order on reh'g*, Opinion No. 486-B, 126 FERC ¶ 61,034, *reh'g denied*, Opinion No. 486-C, 129 FERC ¶ 61,240 (2009), *order on reh'g,* Opinion No. 486-D, 133 FERC ¶ 61,162 (2010).
Opinion No. 510, *et al.*	*Portland Natural Gas Transmission System*, 134 FERC ¶ 61,129 (2011), *order on reh'g*, Order No. 510-A, 142 FERC ¶ 61,198 (2013), *order on reh'g*, Opinion No. 510-B, 150 FERC ¶ 61,106 (2015).
Opinion No. 524, *et al.*	*Portland Natural Gas Transmission System*, Opinion No. 524, 142 FERC ¶ 61,197 (2013), *order on reh'g*, Opinion No. 524-A*,* 150 FERC ¶ 61,107 (2015).
Opinion No. 528, *et al.*	*El Paso Natural Gas Co.,* Opinion No. 528, 145 FERC ¶ 61,040 (2013), *aff'd on reh'g in pertinent part*, Opinion No. 528, 154 FERC ¶ 61,120 (2016), *order on reh'g*, Opinion No. 528-B, 163 FERC ¶ 61,079 (2018), *pet. For review denied*, 966 F.3d 842 (D.C. Cir. 2020).
Opinion No. 546	*Seaway Crude Pipeline Co.*, Opinion No. 546, 154 FERC ¶ 61,070, (2016).
Opinion No. 569, *et al.*	*Association of Businesses Advocating Tariff Equity Coalition of MISO Transmission Customers v. Midcontinent Independent System Operator, Inc.*, 169 FERC ¶ 61,129 (2019), *order on reh'g*, Opinion No. 569-A, 171 FERC ¶ 61,154, *order on reh'g*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020), *pets. Granted in part and dismissed in part; vacated and remanded*, 45 F.4th 248 (D.C. Cir. 2022).
Opinion No. 885	*Panhandle E. Pipe Line Co.*, Opinion No. 885, 181 FERC ¶ 61,211 (2022).
Opinion No. 885-A	*Panhandle E. Pipe Line Co.*, Opinion No. 885-A, 184 FERC ¶ 61,181 (2023).

Order No. 637	*Regulation of Short-Term Natural Gas Transportation Services and Regulation of Interstate Natural Gas Transportation Services*, Order No. 637, 1996–2000 FERC Stats. & Regs., Regs. Preambles ¶ 31,091, *order on reh'g*, Order No. 637-A, 1996–2000 FERC Stats. & Regs., Regs. Preambles ¶ 31,099, *order on reh'g*, Order No. 637-B, 92 FERC ¶ 61,062 (2000), *aff'd in part and remanded in part*, *Interstate Natural Gas Ass'n v. FERC*, 285 F.3d 18 (D.C. Cir. 2002), *order on remand*, 101 FERC ¶ 61,127 (2002), *order on reh'g*, 106 FERC ¶ 61,088 (2004), *aff'd sub nom. Am. Gas Ass'n v. FERC*, 428 F.3d 255 (D.C. Cir. 2005).
Overthrust	MountainWest Overthrust Pipeline, LLC
OWT	ONEOK's WesTex Transmission, L.L.C.
P	Price
Panhandle	Panhandle Eastern Pipeline Company, LP
Pembina	Pembina Pipeline Corporation
Pine Needle	Pine Needle LNG Company, LLC
PHMSA	U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration
PNGTS	Portland Natural Gas Transmission System
PSNC	Public Service Company of North Carolina, Incorporated
Questar Gas	Questar Gas Company, collectively with WexPro
Roadrunner	Roadrunner Gas Transmission, LLC
ROE	Rate of return on equity, also sometimes referred to as the cost of equity
RMM	Rocky Mountain Midstream Holdings LLC
S&P	Standard & Poor's
SD02C	Department of Homeland Security, Memorandum to Covered Pipeline Owner/Operators, Revision to the Security Directive Pipeline-2021-02 series*: Pipeline Cybersecurity Mitigation Actions, Contingency Planning, and Testing* (July 21, 2022.
SEC	U.S. Securities and Exchange Commission
SESH	Southeast Supply Header, LLC
SNG	Southern Natural Gas Company, L.L.C.

Spire	Spire, Inc.
Stagecoach	Stagecoach Pipeline & Storage Company LLC
TC Energy	TC Energy Corporation
Tennessee Gas	Tennessee Gas Pipeline Company, L.L.C.
Texas Eastern	Texas Eastern Transmission, LP
Transco	Transcontinental Gas Pipe Line Company, LLC
Transco Proxy Group	Four entities: Energy Transfer LP; Kinder Morgan, Inc.; ONEOK, Inc. and The Williams Companies, Inc.
Transwestern	Transwestern Pipeline Company, LLC
Trunkline	Trunkline Gas Company, LLC
TSA	Transportation Security Administration
Value Line	Value Line Investment Survey
Viking	Viking Gas Transmission Company
VVNT	Vivint Smart Home, Inc.
WCSB	Western Canadian Sedimentary Basin
Wexpro	Wexpro Companies
WIC	Wyoming Interstate Gas Company, L.L.C.
White River Hub	White River Hub, LLC
Williams	The Williams Companies, Inc.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transcontinental Gas Pipe Line Company, LLC Docket No. RP24-___-000

**PREPARED DIRECT TESTIMONY OF
DAVID J. HAAG ON BEHALF OF
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC**

I. WITNESS AND CASE INTRODUCTION

Q.1 Please state your name, occupation and business address.

A. My name is David J. Haag. I am the President and Chief Executive Officer of Brown, Williams, Moorhead & Quinn, Inc. ("BWMQ"), a nationally recognized energy consulting firm based in the Washington, D.C. area.

Q.2 What is the nature of the work performed by your firm?

A. BWMQ offers technical, economic, and policy assistance to the natural gas pipeline industry, oil pipeline industry, and electric utility industry on a variety of business and regulatory matters.

Q.3 Please briefly state your educational and professional background.

A. My *curriculum vitae*, which is found in Exhibit No. T-0038, details my career and work experience in the energy industry, as briefly summarized below.

I joined BWMQ as Chief Executive Officer in September 2019 and became President and Chief Executive Officer in September 2020. Prior to this position, I was employed at a number of energy companies in roles of increasing responsibility, as detailed in Exhibit No. T-0038. Over the course of my career, I have participated in numerous rate case and certificate proceedings at the Federal

Energy Regulatory Commission ("Commission" or "FERC") on behalf of multiple regulated companies. I have filed expert testimony and/or submitted affidavits on numerous topics, including rate design, proxy groups, return on equity ("ROE"), cost of capital, business risk assessment, capital structure, cost classification, cost allocation, billing determinants, discount adjustments, market power, and other rate and tariff related issues.

I have a Master's Degree in Economics, with a specialization in Public Utility Regulation, from New Mexico State University. I also have a Bachelor's Degree in Economics with a minor in Management from the University of Calgary, Canada.

Since 2013, I have instructed a Seminar for the Center for Public Utilities at New Mexico State University on the determination of an interstate natural gas pipeline's regulated cost of service. I have also served as a Dean of the Energy Bar Association Energy Law Academy, where I was responsible for the courses on natural gas pipeline regulation.

Q.4 Have you previously testified or presented testimony before the Commission?

A. Yes. A list of the proceedings in which I have previously filed testimony before the Commission is included in my *curriculum vitae*, which is included as Exhibit No. T-0038.

Q.5 On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of Transcontinental Gas Pipe Line Company, LLC ("Transco").

Q.6 Please provide a brief description of the Transco system.

A. Transco is a 9,700-mile FERC-regulated natural gas pipeline system extending from Texas, Louisiana, Mississippi, and the Gulf of Mexico through Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, Pennsylvania, and New Jersey to the New York City metropolitan area. The Transco system serves customers in thirteen states, including major metropolitan areas in Georgia, North Carolina, Washington, D.C., Maryland, New York, New Jersey, and Pennsylvania. In addition, the Transco system has interconnections with numerous pipelines with access to shale gas production basins in the Gulf Coast as well as the Marcellus and the Utica. The Transco system currently has a system-wide delivery capacity totaling approximately 19.1 Bcf/d, which dwarfs most other natural gas pipelines. Transco's system includes 59 compressor stations, four underground storage fields, and is also connected to the Pine Needle LNG Company, LLC ("Pine Needle") storage facility. The total usable gas storage capacity available to Transco and its customers is nearly 200 Bcf of natural gas. The Transco system transports approximately 16% of the natural gas in the United States.

Q.7 What is the ownership structure of the Transco system?

A. Transco is a wholly-owned subsidiary of Williams Partners Operating LLC, a wholly-owned subsidiary of The Williams Companies, Inc. ("Williams").

II. OVERVIEW OF TESTIMONY

Q.8 Please provide a brief overview of your testimony.

A. My testimony in this proceeding covers a broad range of topics, briefly summarized by Section as follows:

- In Section III, I discuss the Commission's policy regarding the composition of proxy groups and ROE. I also review and explain the guidance the Commission has provided in various opinions and policy statements regarding proxy group candidates and why a proxy group needs to be representative of the risks of the entity whose return the Commission is seeking to set.
- In Section IV, I select a risk-appropriate proxy group for Transco (which I refer to as the "Transco Proxy Group" throughout my testimony), and I discuss in detail the companies that I have selected as being representative of the risks faced by Transco and their appropriateness for inclusion in the Transco Proxy Group in this proceeding. My testimony also provides a detailed analysis of the operations, assets, and earnings for each Transco Proxy Group member and demonstrates that they provide a proper risk comparison to Transco.
- In Section V, I define and discuss "business risk" and the general factors that need to be considered regarding the business risks of interstate natural gas pipelines.

- In Section VI, I provide an independent analysis of the business risks faced by Transco to determine where Transco falls within the zone of reasonable returns calculated from the Transco Proxy Group. I also examine the specific business risks currently faced by Transco and compare the business risks of Transco to the business risks of the Transco Proxy Group members using both qualitative and quantitative methods.
- In Section VII, I apply the Commission's DCF model to my recommended Transco Proxy Group to calculate the ROE metrics for the Transco Proxy Group.
- In Section VIII, I apply the Commission's CAPM model to my recommended Transco Proxy Group to calculate the ROE metrics for the Transco Proxy Group.
- In Section IX, I conclude that, based on my analysis, Transco has overall business risks that are, on balance, comparable to those faced by the Transco Proxy Group entities. I therefore recommend that Transco utilize an ROE that is reflective of the median result from the Transco Proxy Group when using both IBES and Value Line growth rates for its cost-of-service calculations in this proceeding.

Q.9 Are you sponsoring any exhibits in conjunction with your direct testimony?

A. Yes. I am sponsoring the following exhibits:

Exhibit No. T-0038: Curriculum Vitae of David J. Haag

Exhibit No. T-0039: Proxy Group Dividend History

Exhibit No. T-0040: Weighted Average Remaining Contract Life

Exhibit No. T-0041: Firm Contract Growth Analysis

Exhibit No. T-0042: Firm Customer Concentration

Exhibit No. T-0043: Return on Equity Study

Q.10 Was your testimony and each of these exhibits prepared by you or under your direction?

A. Yes. I prepared my testimony. All of the exhibits that I am sponsoring, as listed above, were also prepared by me or under my direction.

III. BACKGROUND ON ROE AND PROXY GROUPS

Q.11 What is return on equity?

A. Return on equity ("ROE") is a measure of the financial performance of a company. It is determined by dividing net income by shareholders' equity at a particular point in time. Given that shareholders' equity is equal to a company's assets minus its liabilities and debt, ROE is a general measure of how effectively a company is using its assets to create profits.

For a non-regulated entity operating in a competitive market, a company's management seeks to maximize ROE through decisions concerning all facets of its business, including overall production and pricing strategies to meet the demands of the market. However, a regulated entity, such as an interstate natural gas pipeline, is generally not permitted to alter its pricing or terms and conditions of service without first obtaining approval from its regulator, a process that can take considerable time to obtain. Therefore, under FERC ratemaking principles, a

regulated entity is instead given an opportunity to earn a pre-determined just and reasonable ROE.

Q.12 Has the Commission established that regulated pipeline facilities are entitled to an ROE?

A. Yes, the Commission has established that regulated natural gas pipelines are entitled to a just and reasonable ROE. Sometimes referred to as the cost of equity, ROE is the compensation a pipeline entity must offer investors in order to attract sufficient investment, or capital. The Commission views the cost of equity, as well as the cost of debt (together, the cost of capital) as a component of the cost of service for which a pipeline is entitled to be reimbursed through rates. Thus, to set a pipeline's rates, the Commission must determine a just and reasonable ROE.

Q.13 What guidance have the courts provided for the Commission to follow in determining a just and reasonable rate of ROE for a natural gas pipeline?

A. The U.S. Supreme Court's opinions in *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923), and *FPC v. Hope Natural Gas Co.,* 320 U.S. 591 (1944) provide that the ROE set by the Commission for a regulated interstate natural gas pipeline must maintain the financial integrity of the company, enable the company to attract new investment capital as required, and should be commensurate with the return on investments in other enterprises having corresponding risks.

Q.14 What rate of ROE is reasonable for an entity?

A. The rate of return ultimately earned by an unregulated entity is determined by the market, based on the overall financial and economic success of that entity. As such, observed rates of ROE may vary significantly from firm to firm within the same

industry and from one industry group or sector to another. In this light, investors must judge the reasonableness of the return that they are earning from a particular entity by comparing their realized return to the return generated by similar entities. Investors are ultimately seeking to obtain an acceptable return on their equity investment, on a risk-adjusted basis; *i.e.*, reflecting the general economic principle that the greater the potential risk, the greater the potential return should be. An investor can reasonably conclude that their return is acceptable when it is comparable to, or greater than, the average return for a company engaged in similar activities or a group of such companies facing similar levels of risks. This underlying concept, referred to as a "proxy group analysis," forms the basis for determining a reasonable ROE for a regulated entity.

Q.15 What unique considerations must be made regarding ROE for a regulated entity?

A. Among other things, the prices, terms, and conditions of service, as well as the permitted ROE for a regulated entity are determined by the regulator, as opposed to being determined by the market.

One of the fundamental premises of regulation is to ensure that the prices charged by a regulated entity for its services reflect the cost of providing such service, including all fixed and variable costs. This type of sound regulation provides protection for consumers and ratepayers against being charged excessive prices that may have otherwise been extracted from the market. At the same time, sound regulation must provide the regulated utility with a reasonable opportunity to earn a return on its required and prudently incurred capital investments and

ensure that the regulated entity's critical output remains available to consumers and ratepayers at reasonable prices. Thus, the regulated price set by the regulator must include recovery of all prudently incurred fixed and variable costs, as well as a reasonable rate of return to ensure that the utility remains financially solvent and is able to attract both the equity capital and debt needed to fund its ongoing operations, to the benefit of its customers. Under this regulatory compact, the Commission must find the proper balance between ratepayers and the regulated pipeline with regards to ROE.

Q.16 In setting a just and reasonable ROE for a pipeline rate applicant, what is the Commission's overall goal?

A. With respect to ROE in natural gas pipeline ratemaking, the overall goal is to calculate the ROE required by the market to attract investment in the individual pipeline company rate applicant, in this case, Transco.

Q.17 How is the market-required ROE determined by the Commission?

A. Since the 1980s, the Commission has used the Discounted Cash Flow ("DCF") model to analyze pipeline ROE. In May 2020, the Commission issued its *Policy Statement on Determining Return on Equity for Natural Gas and Oil Pipelines*, 171 FERC ¶ 61,155 (2020) (the "2020 ROE Policy Statement"), in which the Commission stated that it would determine natural gas pipeline ROEs based on the equally weighted average of the results of the DCF model and the Capital Asset Pricing Model ("CAPM"). Both the DCF and CAPM are financial models populated with data from the financial markets. Later in my testimony I provide a detailed discussion of both the DCF and CAPM models, including an overview of

how the models are used to estimate the ROE for a natural gas pipeline as well as the results generated by the models.

Q.18 Is a regulated pipeline guaranteed to earn its FERC-approved ROE?

A. No, there is no such guarantee. In order for a pipeline to earn the ROE set by the Commission, it would essentially have to sell all of its capacity at its approved tariff rates, 365 days of the year, and the costs on which the rates were set would have to remain unchanged. However, in the current competitive pipeline markets, such as those faced by Transco, and given current changing economic conditions, this would be an unusual circumstance.

Q.19 Can a rate applicant's required ROE be calculated directly using the DCF and CAPM without undertaking a proxy group analysis?

A. If a pipeline rate applicant was a stand-alone, dividend-paying, publicly traded entity with no other affiliates consolidated into its financial statements, it could be possible to apply the DCF and CAPM to the applicant's share price and dividend data and directly calculate the market-required ROE. However, nearly all pipeline rate applicants, including Transco, are not stand-alone publicly traded entities. Regulated pipeline entities do not typically have stand-alone common stock that is publicly traded, making it impossible to directly calculate a DCF or CAPM return for the single entity in question.

As such, we must instead calculate the market-required returns for a group of similar, publicly traded entities (*i.e.*, a proxy group) that own natural gas pipelines and use the results of this analysis as a "proxy" for the ROE that the market would require from an investment in the rate applicant. By applying the

DCF and CAPM models to a group of proxy companies, a range of ROEs can be calculated and an appropriate risk-adjusted ROE selected for the rate applicant from within that range.

Q.20 Please further explain the concept of a proxy group analysis.

A. A proxy group, as used by the Commission for natural gas ratemaking purposes, is a group of publicly traded entities that own natural gas pipelines. A proxy group is used to produce a range of reasonable returns for a particular rate applicant. The Commission generally assigns the rate applicant an ROE within the range of reasonable returns produced by the proxy group, adjusted to reflect the specific risks of that applicant as compared to the proxy group entities. The ultimate goal of the proxy group analysis in this proceeding, and for natural gas ratemaking in general, is to calculate the ROE required by the market for investors in an individual regulated entity, in this case, Transco.

Q.21 Has the Commission provided guidance regarding the selection of an appropriate proxy group?

A. Yes. The Commission has provided guidance regarding the selection of proxy groups in both the 2020 ROE Policy Statement and its *Composition of Proxy Groups for Determining Gas and Oil Pipeline Return on Equity*, 123 FERC ¶ 61,048 at P 51 ("2008 Proxy Group Policy Statement"), *reh'g dismissed*, 123 FERC ¶ 61,259 (2008), as well as in a number of individual rate case proceedings.

Q.22 What is the most recent instance of the Commission applying its proxy group formation policy and ROE analysis to a particular pipeline?

A. On December 16, 2022, the Commission issued Opinion No. 885,[1] the Commission's order on the Initial Decision in the Panhandle Eastern Pipeline Company, LP ("Panhandle") rate case proceeding. On rehearing, the Commission issued Opinion No. 885-A[2] in the Panhandle rate case proceeding on September 25, 2023. On January 5, 2024, the Commission issued Opinion No. 885-B, under which it continued to reach the same results as in Opinion No. 855-A.[3] These Opinions are the most recent instances of the Commission applying its proxy group formation policy and ROE analysis to a particular pipeline and the first time the Commission has applied the 2020 ROE Policy Statement. The Commission did not identify or discuss any refinements or departures from the guidance contained in the 2020 ROE Policy Statement in either Opinion 885 or Opinion 885-A or Opinion 885-B.

Q.23 What guidance has the Commission provided regarding the selection of an appropriate proxy group?

A. While the Commission had been utilizing proxy groups in individual rate proceedings since the 1980s, in 2008, the Commission issued a formal policy statement regarding proxy group formation, as referenced above. In the 2008 Proxy Group Policy Statement, the Commission explained that it will determine in each individual rate case which entities should be included in the proxy group used to

[1] *Panhandle E. Pipe Line Co.*, Opinion No. 885, 181 FERC ¶ 61,211 (2022).
[2] *Panhandle E. Pipe Line Co.*, Opinion No. 885-A, 184 FERC ¶ 61,181 (2023).
[3] *Panhandle E. Pipe Line Co.*, Opinion No. 885-B, 186 FERC ¶ 61,015 (2024).

determine the allowed ROE for the applicant. The Commission also expressed its preference that a proxy group consist of at least four members.

In the 2008 Proxy Group Policy Statement, the Commission also explained that applicants should include "as much information as possible regarding the business activities of each [proposed company]."[4] In this way, the Commission can determine whether a proxy group is risk appropriate for the given applicant. To ensure that companies included in proxy groups are risk-appropriate, the 2008 Proxy Group Policy Statement stated that each proxy group company should satisfy three criteria:

(1) the company's stock must be publicly traded;

(2) the company must be recognized as a natural gas or oil pipeline company and its stock must be recognized and tracked by an investment information service such as Value Line Investment Survey ("Value Line"); and

(3) pipeline operations must constitute a high proportion of the company's business.[5]

Regarding the third criteria, in determining whether a company's pipeline operations constitute a "high proportion" of its business, the Commission has historically applied a 50% standard requiring that the pipeline business account for,

[4] 2008 Proxy Group Policy Statement, 123 FERC ¶ 61,048 at P 51. Later in my testimony, I provide detailed information regarding the activities of each entity that I have proposed to be included in the proxy group for Transco in this proceeding.
[5] *Id.* at P 8.

on average, at least 50% of the company's assets or operating income over the most recent three-year period.[6]

The 2008 Proxy Group Policy Statement also established that master limited partnerships ("MLPs") may be included in proxy groups (with certain downward adjustments made to the long-term growth rates in the model); provided that the MLP is tracked by Value Line, has been in operation for at least five years, and derives at least 50% of its operating income from, or has 50% of its assets devoted to, interstate operations.[7]

In various individual rate case proceedings over the years, the Commission has applied and refined its approach to proxy group formation. In particular, given that the number of companies satisfying the Commission's three criteria has declined in recent years (and continues to decline) due to consolidation in the natural gas pipeline industry (resulting in the absorption of many pipeline companies into large, diversified energy companies), the Commission has at times relaxed the 50% standard when necessary to construct a proxy group of sufficient size, as discussed below. In addition, in various individual rate case proceedings, the Commission has developed additional guidance for proxy group inclusion, including that: (i) an entity must have an investment grade credit rating;[8] (ii) an

[6] *See Williston Basin Interstate Pipeline Co.*, 104 FERC ¶ 61,036, at P 35 n.46 (2003).
[7] 2008 Proxy Group Policy Statement, 123 FERC ¶ 61,048 at P 79.
[8] *See Portland Nat. Gas Transmission Sys.*, Opinion No. 510, 134 FERC ¶ 61,129, at P 222 n.301 (2011), *order on reh'g*, Order No. 510-A, 142 FERC ¶ 61,198 (2013), *order on reh'g*, Opinion No. 510-B, 150 FERC ¶ 61,106 (2015).

entity must not have recently reduced its dividend;[9] (iii) an entity should not have been involved in recent merger or acquisition activity which distorts its stock price;[10] and (iv) an entity must have a positive five-year earnings growth estimate as reported by the Institutional Broker's Estimate System ("IBES").[11]

Further, the Commission had previously stated that Canadian entities were not eligible for proxy group inclusion, but, as noted below, in the 2020 ROE Policy Statement, the Commission stated that going forward it would consider proposals to include otherwise-eligible Canadian entities in a proxy group, noting that the facts underlying its previous concerns may no longer be applicable.[12]

The 2020 ROE Policy Statement largely affirmed the approach outlined in the 2008 Proxy Group Policy Statement as applied in various individual rate case proceedings over the years, although the Commission made some changes. In the 2020 ROE Policy Statement, the Commission stated that it "will maintain a flexible approach to forming natural gas and oil pipeline proxy groups and continue to relax the 50% standard when necessary".[13] In addition, and in light of continuing challenges in forming sufficiently sized natural gas pipeline proxy groups, the Commission stated that going forward it would consider proposals to include

[9] *See Kern River Gas Transmission Co.*, Opinion No. 486-C, 129 FERC ¶ 61,240, at PP 86-88 (2009), *reh'g denied*, Opinion No. 486-D, 133 FERC ¶ 61,162 (2010).
[10] *See, e.g.*, *Kern River Gas Transmission Co.*, Opinion No. 486-B, 126 FERC ¶ 61,034, at P 81 (2009).
[11] *See* Opinion No. 510 at P 159; *Williston Basin*, 104 FERC ¶ 61,036 at P 29; *Seaway Crude Pipeline Co.*, Opinion No. 546, 154 FERC ¶ 61,070, at P 196 (2016).
[12] 2020 ROE Policy Statement at P 64.
[13] *Id.*

otherwise-eligible Canadian entities in a proxy group, noting that the facts underlying its previous concerns may no longer be applicable.[14]

While under the 2020 ROE Policy Statement the Commission maintained its preferred screens and methods for selecting companies to compose a proxy group, the Commission also now allows for pipelines to propose alternative screens and methods (if necessary) in rate case proceedings. Further, the Commission stated that it will also consider adjustments to its ROE policies where necessary, including the potential to depart from its general policy of determining ROE using the most recent data in the record.

As previously discussed, FERC Opinion Nos. 885 / 885-A / 885-B affirmed the approaches outlined in the 2020 ROE Policy Statement, the 2008 Proxy Group Policy Statement, and the precedent which has evolved in various individual rate case proceedings over the years.

Q.24 Does the Commission have a preferred minimum number of entities that should be included in a proxy group?

A. Yes. The Commission has stated on numerous occasions that a pipeline proxy group should consist of at least four members.[15] The Commission maintains a flexible approach to forming natural gas pipeline proxy groups and relaxes the 50% standard when necessary to obtain a sufficiently sized proxy group.

[14] *Id.*
[15] For example, see the 2008 Proxy Group Policy Statement at PP 16-19.

Q.25 What is the Commission's policy on relaxation of the 50% standard associated with the third criteria noted above?

A. For companies that meet the first and second initial criteria but fail to meet the 50% standard associated with the third criteria, the Commission has considered the following three additional factors when appropriate, which I refer to as the "Kern River Factors." These factors were initially utilized in the Commission's order in the Kern River Gas Transmission Company ("Kern River") rate proceeding[16] and have been recently affirmed in the Panhandle proceeding:

i. the combined natural gas pipeline and distribution business of the firm make up at least 50% of its total business;

ii. the natural gas pipeline business is at least equal to the distribution business; and

iii. the firm's more risky exploration, production, and other market-oriented businesses are no greater than the less risky distribution business.[17]

For companies that are not involved in gas distribution, exploration, production, or trading and marketing activities, the Commission considers whether the combined natural gas and oil transmission business exceeds 50 percent and whether the gas transmission business is at least as great as the oil transmission business for the entity.[18]

[16] *See* Opinion No. 486-C at P 71.
[17] Clearly these factors are directly applicable only to natural gas pipeline companies that have affiliates involved with both distribution and market-oriented businesses such as exploration and production.
[18] *See* Opinion No. 486-C at P 34.

As explained in Opinion No. 486-B, the Commission included Kinder Morgan Energy Partners, LP ("KMEP") in the proxy group for Kern River. At the time, KMEP did not meet the 50% criteria, as its natural gas pipelines accounted for only 35% of its total assets.[19] In allowing KMEP to be included in that proxy group, the Commission explained that when KMEP's oil pipeline component was counted, its combined FERC-jurisdictional transportation function was 70%, and that a diversified firm having components in natural gas and liquids transportation should not be precluded from inclusion in a proxy group.[20]

Q.26 Has the Commission recently used the Kern River Factors to develop a proxy group?

A. Yes. In Opinion No. 885 (and as affirmed in Opinion Nos. 885-A and 885-B), the Commission used the Kern River Factors to develop a proxy group after finding that all but two companies failed to meet the 50% standard associated with the Commission's third criteria.

Q.27 Why is it necessary for an entity to pay dividends to be included in a proxy group?

A. The DCF model used by the Commission is a dividend discount model. The model was originally developed and applied as a valuation model to explain the price of an asset. In its valuation form, it is expressed as:

$$P = D/(k-g)$$

where P = price, D = dividend, k = the cost of equity, and g = growth rate.

[19] Opinion No. 486 B at P 74.
[20] *Id*. at P 75.

This form of the model is commonly used to value stocks. As explained later in my testimony, this formula is rearranged to solve for "k" in FERC rate case proceedings.

Note that, in the formula above, if the dividend paid by an entity is $0, the valuation formula would yield a stock price of $0, which is clearly uninformative. It is for this reason that any proposed proxy group entity must pay dividends.

Q.28 Why is it important that a proxy group entity has not recently reduced its dividend?

A. The Commission has recognized that when an entity cuts its dividend, its calculated dividend yield immediately changes. A dividend cut also normally leads to a rapid decline in the company's stock price, as the cut is usually seen as a sign of a company's weakening financial position, which makes the company less attractive to investors. This often leads to changes in anticipated growth rates as well, causing even greater instability in the entity's stock price, thereby potentially distorting DCF results.

Q.29 What credit rating agencies have been utilized by the Commission to determine whether a proxy group entity has an investment grade credit rating?

A. The Commission has recognized Standard & Poor's ("S&P"), Moody's Investors Service, Inc. ("Moody's"), and Fitch Ratings Inc. ("Fitch") as credit rating agencies to determine if a proxy group entity is creditworthy.[21] To be considered creditworthy, the majority of the credit ratings for an entity must be investment

[21] *See El Paso Nat. Gas Co.*, Opinion No. 528, 145 FERC ¶ 61,040, at P 628 n.920 (2013), *aff'd on reh'g in pertinent part*, Opinion No. 528-A, 154 FERC ¶ 61,120 (2016), *order on reh'g*, Opinion No. 528-B, 163 FERC ¶ 61,079 (2018), *pet. for review denied*, 966 F.3d 842 (D.C. Cir. 2020).

grade, which is determined as follows: an S&P rating of at least BBB-; a Moody's rating of at least Baa3; and a Fitch rating of at least BBB-. [22]

The Commission also reviews whether the entity in question is deemed to be creditworthy as part of the risk assessment of the entity,[23] and has also referenced credit ratings in determining the subject entity's relative risk.[24]

Q.30 How would including an entity that has recently been involved in material merger or acquisition activity adversely impact a potential proxy group?

A. Major merger and/or acquisition activity (as well as material divestiture activity) will generally have an impact on an entity's share price. The magnitude of this impact will depend upon the specifics of the deal, including whether the market perceives the transaction to be an overall net benefit (*i.e.*, accretive to earnings). Market perceptions regarding the likelihood that the deal will actually be completed may also impact an entity's share price. Large-scale, material merger, divestiture, and/or acquisition activity (or even announcements thereof) can therefore distort share prices by creating uncertainty about the impact of a potential change (both positive and/or negative) in the underlying share value. These changes in share price also influence the dividend yield, which is an input in the ROE calculations for natural gas pipelines.

[22] *See* Opinion No. 524 at P 306
[23] *See* Opinion No. 510 at P 267
[24] *See* Opinion No. 486-B at P 137 and Opinion No. 528 at P 631.

Q.31 Are there any recent examples of how material merger or acquisition activity can impact a company's share price?

A. Yes. As an example, on December 6, 2022, prior to the markets opening for the day, NRG Energy Inc. ("NRG"), an integrated power company, announced that it had entered into a definitive agreement to acquire Vivint Smart Home, Inc. ("VVNT") for $5.2 billion. In December 2022, NRG's market capitalization was approximately $7.3 billion, and therefore this acquisition was certainly material to NRG. The market reacted to this major announcement. As reported by Yahoo! Finance, the VVNT stock jumped from a close of $8.99 per share on December 5, 2022, to an open of $11.89 on December 6, 2022, an increase of over 32%. The NRG stock fell from a close of $40.84 on December 5, 2022, to an open of $35.59 on December 6, 2022, a change of approximately 13%. Stock price changes of these magnitudes immediately impacted the calculated dividend yields for these entities, which in turn has a direct impact on the DCF results.

Q.32 Has the Commission provided guidance with regards to the short-term growth rates applicable to proposed proxy group entities?

A. Yes. In the 2020 ROE Policy Statement, the Commission stated that it would: (1) continue to prefer using the IBES three to five-year growth projections as the short-term growth projection in the two-step DCF analysis and (2) allow participants to propose using Value Line and/or IBES growth projections as the source of the short-term growth projection in the one-step DCF analysis embedded within the CAPM.[25] The Commission found that S&P 500 companies with growth

[25] 2020 ROE Policy Statement at P 37.

rates that are negative or in excess of 20% should be excluded from the CAPM analysis. Further, the Commission has been clear that it will exclude entities with growth projections that are "illogical" or "anomalous." For example, the Commission recently excluded an entity, TC Pipelines L.P., from the proxy group due to it having a negative IBES short-term growth rate, because negative growth rates are unsustainable over the longer term and it is illogical to include companies with negative rates in the analysis.[26]

Notwithstanding that the Commission has expressed a preference for utilizing IBES growth projections, as discussed later in my testimony, recent volatility in the IBES growth rates, particularly when compared to short-term growth rates published by Value Line, suggests that a plurality of growth rate data sources may be a preferable approach.

Q.33 Why is selecting a risk-appropriate proxy group so important for ratemaking purposes?

A. The Commission has a longstanding policy that, absent unusual circumstances showing that a pipeline faces anomalously high or low risks, FERC will set the ROE for the entity in question at the median ROE of the proxy group (as averaged between the DCF and CAPM models), which represents average risk and return. Therefore, selecting a risk-appropriate proxy group is critical, particularly given the main guiding principle that a pipeline's return to its equity owners should be commensurate with the return on investments in other enterprises having

[26] *See* Opinion No. 885 at P 149.

corresponding risks and to ensure that pipeline investors are properly compensated for the risks of their investment.

My testimony provides the necessary information and support required to show that the risks represented by the proxy group entities that I have selected for the Transco Proxy Group are representative of the general risks currently faced by Transco.

Q.34 Has the Commission ever found that a pipeline has an anomalously high level of risk compared to the proxy group median?

A. Yes. The Commission has in the past found that some pipelines do have anomalous levels of risk which warrant an adjustment of their allowed ROE above the median proxy group level. For example, in Opinion No. 486, the Commission set Kern River's ROE above the median, finding that because the proxy group was small and included companies with a relatively low proportion of pipeline business and substantial distribution operations, a 50-basis point adjustment above the median was appropriate at the time.[27]

Similarly, in 2013, the Commission recognized that the Portland Natural Gas Transmission System ("PNGTS") had significant business risk that required PNGTS to be placed at the top of the ROE range produced by the proxy group in that proceeding. The Commission explained:

> The Commission's traditional assumption with regard to relative risk is that natural gas pipelines generally fall into a broad range of average risk absent highly unusual circumstances that indicate an anomalously high or low risk as compared to other pipelines. Thus, unless a pipeline makes a very persuasive case in support of the need

[27] *Kern River Gas Transmission Co.*, Opinion No. 486, 117 FERC ¶ 61,077, at P 2 (2006), *order on reh'g*, Opinion No. 486-A, 123 FERC ¶ 61,056 (2008).

> for an adjustment and the level of the adjustment proposed, the Commission will set the pipeline's return at the median of the range of reasonable returns. However, the Commission permits parties to present evidence to support any return on equity that is within the zone of reasonableness, and the Commission has recognized that an examination of the risk factors specific to a particular pipeline may warrant setting its ROE either higher or lower than the middle of the zone of reasonableness established by the proxy group. In this case, for the first time since Opinion No. 414-A established our current policies concerning the assessment of a pipeline's risk as compared to the proxy group, we must determine the ROE for a pipeline with a below investment grade credit rating. We find that Portland's below investment grade credit rating, combined with its inability to reflect its unsubscribed capacity in its rate design, present highly unusual circumstances justifying setting Portland's ROE at the top of the range of reasonable returns.[28]

Although the Commission has indicated that it will consider specific risk factors on a case-by-case basis, it has not articulated a specific set of criteria for evaluating the relative business risk of a regulated entity.

Q.35 Does the Commission allow ROE calculations for a proxy group to be updated through the evidentiary phase of a natural gas pipeline rate case proceeding?

A. Yes. The Commission has historically updated ROE calculations with the most recent actual data available through the evidentiary phase of a rate case proceeding. Given that, under normal market conditions, the Commission prefers to use up-to-date information, it is important to continue to monitor all the proxy group candidates for changes which could affect the makeup of the proxy group. Companies which currently qualify for inclusion may undergo changes (such as acquisitions, mergers, and divestitures) which could then disqualify them from continued inclusion. Similarly, companies which do not currently qualify may

[28] *See Portland Nat. Gas Transmission Sys.*, Opinion No. 524, 142 FERC ¶ 61,197, at P 382 (2013), *order on reh'g*, Opinion No. 524-A, 150 FERC ¶ 61,107 (2015) (internal citations omitted).

qualify in the future. Thus, I will continue to monitor the companies listed in the next section of my testimony for potential inclusion in, or exclusion from, the Transco Proxy Group as this proceeding progresses and, if appropriate, propose modifications to the Transco Proxy Group.

IV. THE TRANSCO PROXY GROUP

Q.36 Please describe the purpose of this section of your testimony.

A. In this section of my testimony, I evaluate potential entities for inclusion in the Transco Proxy Group using the Commission's policy and precedent for proxy group formation. I then provide detailed information regarding the business activities of each of the entities that I recommend for inclusion in the Transco Proxy Group, as required in the Commission's 2008 Proxy Group Policy Statement.

Later in my testimony, I also calculate the financial rates of return for each entity I have selected for the Transco Proxy Group using the DCF and CAPM models. These calculations are used to determine the range of reasonable returns and the recommended rate of return for Transco in this proceeding.

A. <u>Selection of Entities for Inclusion in the Transco Proxy Group</u>

Q.37 Please describe the criteria which you used to develop the Transco Proxy Group.

A. As noted above, the Commission has established three initial criteria for a company to be eligible for inclusion in a proxy group:

(i) the company's stock must be publicly traded;

(ii) the company must be recognized as a natural gas or oil pipeline company and its stock must be recognized and tracked by an investment information service such as Value Line; and

(iii) pipeline operations must constitute a high proportion of the company's business.

As such, I applied the Commission's three criteria by generating a list of companies that are:

- publicly traded;
- recognized by Value Line as being either a natural gas or oil pipeline company (*i.e.*, entities that are part of either the "Oil/Gas Distribution" (a total of 13 entities) or "Pipeline MLP" industries (a total of 18 entities) as of March 2024); and
- have pipeline business accounting for, on average, at least 50% of the company's assets or operating income over the most recent three-year period.

In addition, knowing that the Commission has consistently expressed its willingness to be flexible to ensure a sufficiently sized proxy group, I broadened these three criteria by also considering:

- Canadian pipeline entities; and
- entities recognized as currently owning significant levels of FERC-regulated interstate natural gas pipelines (though not necessarily meeting the 50% threshold).

The entities that I have selected for potential inclusion in the Transco Proxy Group based on these criteria are listed in Table 1 below.

Q.38 Have you considered any additional entities for potential inclusion in the Transco Proxy Group?

A. Yes. Also included in Table 1 are four additional entities that I am aware of that own relatively material levels of FERC-regulated natural gas pipelines. The first one of these entities is Equitrans Midstream Corporation ("Equitrans"). The natural gas transmission and storage systems owned by Equitrans include approximately 950 miles of FERC-regulated interstate pipelines that interconnect with seven interstate pipelines and multiple Local Distribution Companies ("LDC"). Equitrans also currently holds ownership interests in both the Mountain Valley Pipeline ("MVP") project and the MVP Southgate project. Although my analysis in this proceeding is as of March 31, 2024, I do note that on July 22, 2024 Equitrans was acquired by EQT Corporation ("EQT").[29]

The second additional entity that I have included is DT Midstream, Inc. ("DTM"). DTM, which began trading on July 1, 2021, includes the former natural gas storage and pipeline businesses that were spun-off by DTE Energy Company. As of March 2024, DTM has a positive IBES growth rate, is paying regular quarterly dividends, and has a Value Line beta of 1.0. However, I note that DTM is classified by Value Line as a Diversified Natural Gas Company.

The third additional entity that I have included for potential proxy group inclusion is National Fuel Gas Company ("National Fuel"). While National Fuel does own some FERC regulated interstate natural gas pipeline and storage assets,

[29] See: https://www.prnewswire.com/news-releases/eqt-completes-acquisition-of-equitrans-midstream-302202704.html

it is also currently classified by Value Line as a Diversified Natural Gas Company. This is reflective of the other business lines of National Fuel, including exploration and production and LDC activities. However, in Opinion Nos. 885 / 885-A / 885-B, the Commission determined that National Fuel should be included in the Panhandle proxy group, despite failing to satisfy all of the criterion for proxy group inclusion. In light of the Commission's guidance in Opinion No. 885 / 885-A / 885-B, I have also included National Fuel in Table 1 for consideration as a potential Transco Proxy Group entity at this time.

The fourth additional entity that I have included for potential proxy group inclusion is Spire, Inc. ("Spire"). Although Spire is currently classified by Value Line as a Natural Gas Utility, it continues to increase its ownership of FERC regulated interstate natural gas pipeline and storage facilities, most recently acquiring MoGas Pipeline LLC ("MoGas") in January 2024. Spire's other business lines include LDC activities as well as a natural gas marketing segment.

Table 1 below lists all of the companies I reviewed for potential proxy group inclusion using this broader criteria.

Table 1 – Universe of Entities Considered for Potential Inclusion in the Transco Proxy Group

Publicly Traded Company Name	Value Line Classification	Significant FERC-Regulated Interstate Natural Gas Pipelines
Antero Midstream Corp.	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines
Cheniere Energy, Inc.	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines[30]
Cheniere Energy Partners, L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Clean Energy Fuels Corp.	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines
Delek Logistics Partners, LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
DT Midstream, Inc.	Diversified Natural Gas Company	Potential proxy group entity
Enbridge Inc.	Oil/Gas Distribution	Potential proxy group entity
Energy Transfer LP	Pipeline MLPs	Potential proxy group entity
EnLink Midstream, LLC	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines
Enterprise Products Partners L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Equitrans Midstream Corporation	Not currently tracked by Value Line	Potential proxy group entity
Genesis Energy LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Global Partners LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Hess Midstream Partners LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Kimbell Royalty Partners, LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Kinder Morgan, Inc.	Oil/Gas Distribution	Potential proxy group entity
Kinetik Holdings Inc.	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines
Lehigh Gas Partners LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Martin Midstream Partners L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
MPLX LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
National Fuel Gas Company	Diversified Natural Gas Company	Potential proxy group entity

[30] While Cheniere Energy Inc. / Cheniere Energy Partners L.P. (collectively, "Cheniere") do have ownership interests in three interstate natural gas pipelines regulated by the Commission, these investments currently represent a very small portion (*i.e.*, less than 10% of capital assets) of Cheniere's overall business. To this end, Cheniere does not separately report its pipeline investments as a separate business segment on its U.S. Securities and Exchange Commission ("SEC") Form 10-K.

Publicly Traded Company Name	Value Line Classification	Significant FERC-Regulated Interstate Natural Gas Pipelines
NGL Energy Partners LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
NuStar Energy LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
ONEOK, Inc.	Oil/Gas Distribution	Potential proxy group entity
Pembina Pipeline Corporation	Oil/Gas Distribution	Potential proxy group entity
Plains All American Pipeline L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Plains GP Holdings, L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Spire, Inc.	Natural Gas Utility	Potential proxy group entity
Suburban Propane Partners, L.P.	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
Summit Midstream Partners, LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
TC Energy Corporation	Oil/Gas Distribution	Potential proxy group entity
Tellurian Inc.	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines[31]
The Williams Companies, Inc.	Oil/Gas Distribution	Potential proxy group entity
Western Midstream Partners, LP	Pipeline MLPs	No material FERC-regulated interstate natural gas pipelines
World Kinect Energy Services	Oil/Gas Distribution	No material FERC-regulated interstate natural gas pipelines

As shown in the table above, applying my broader criteria to include entities that have significant FERC-regulated interstate pipelines, there are eleven potential proxy group entities, as follows:

1. DT Midstream, Inc.
2. Enbridge Inc.
3. Energy Transfer LP ("Energy Transfer")
4. Equitrans Midstream Corporation
5. Kinder Morgan, Inc. ("Kinder Morgan")

[31] While Tellurian Inc. does have an ownership interest in the proposed Driftwood Pipeline LLC project, Tellurian's primary business is LNG. Although now approved by the Commission, the Driftwood Pipeline project has not yet been placed into service.

6. National Fuel Gas Company

7. ONEOK, Inc. ("ONEOK")

8. Pembina Pipeline Corporation ("Pembina")

9. Spire, Inc.

10. TC Energy Corporation ("TC Energy")

11. The Williams Companies, Inc. ("Williams")

I further examine each of these entities for potential inclusion in the Transco Proxy Group in detail below.

Q.39 Are there concerns with potentially including a Natural Gas Utility such as Spire in the Transco Proxy Group?

A. Yes. The Commission has a longstanding policy to exclude companies whose primary business is gas distribution from natural gas pipeline proxy groups, since such companies have different operations and risk profiles.[32] Indeed the Commission has found that natural gas distribution activities are generally lower risk than interstate natural gas pipeline activities.[33]

However, because Spire continues to grow its interstate natural gas pipeline and storage business and to ensure a proxy group of sufficient size, I will nevertheless consider Spire for inclusion in the Transco proxy group at this time, keeping in mind that its LDC operations represent a lower risk profile than interstate natural gas pipeline operations.

[32] See, *e.g.*, *High Island Offshore System, L.L.C.*, 112 FERC ¶ 61,050 (2005), *EPGT Texas Pipeline L.P.*, 99 FERC ¶ 61,295 (2002), and *Williston Basin Interstate Pipeline Co.*, 87 FERC ¶ 61,264 (1999).
[33] *See, e.g.*, Opinion No. 486-B at P 141.

Q.40 Do each of these potential Transco Proxy Group entities currently have an investment grade credit rating?

A. No. As previously discussed, to be considered creditworthy, the majority of the credit ratings for a proxy group entity must be investment grade, determined as follows: an S&P rating of at least BBB-; a Moody's rating of at least Baa3; and a Fitch rating of at least BBB-. Table 2 below shows the credit ratings for each of the eleven entities as of March 2024. As shown, both DTM and Equitrans are not investment grade, so I will not include them in the proxy group for Transco at this time, leaving nine potential Transco Proxy Group entities.

Table 2 – Potential Proxy Group Entities – Credit Ratings

Company Name	Standard and Poor's	Moody's	Fitch Ratings
DT Midstream, Inc.	BB+	Ba1	BB+
Enbridge Inc.	BBB+	Baa1	BBB+
Energy Transfer LP	BBB	Baa3	BBB
Equitrans Midstream Corporation	BB-	n/a	n/a
Kinder Morgan, Inc.	BBB	Baa2	BBB
National Fuel Gas Company	BBB-	Baa3	BBB
ONEOK, Inc.	BBB	Baa2	BBB
Pembina Pipeline Corporation	BBB	n/a	n/a
Spire, Inc.	A-	Baa2	n/a
TC Energy Corporation	BBB+	Baa3	BBB+
The Williams Companies, Inc.	BBB	Baa2	BBB

Q.41 Does Transco have a stand-alone current credit rating from any of these agencies?

A. Yes. Transco issues is own debt is a creditworthy stand-alone entity. As of March 2024, Transco's ratings are BBB from Standard & Poor's, Baa1 from Moody's, and BBB+ from Fitch Ratings.

Q.42 Have any of the remaining nine entities reduced their dividend within the past six months?

A. No. As shown in my Exhibit No. T-0039, none of these entities have reduced their dividends over the past year ended March 31, 2024.

Q.43 Do each of these remaining nine entities have a positive five-year earnings growth estimate as reported by IBES?

A. No. Table 3 below shows the IBES growth rates for each of these entities as of March 31, 2024. As shown, both TC Energy and Pembina do not have positive IBES growth rate estimates and would therefore normally be excluded from the Transco Proxy Group at this time. The IBES growth estimates are publicly available from Yahoo! Finance.

Table 3 – Potential Proxy Group Entities – IBES Growth Estimate

Company Name	IBES Growth Estimate (March 31, 2024)
Enbridge Inc.	0.89%
Energy Transfer LP	8.20%
Kinder Morgan, Inc.	5.30%
National Fuel Gas Company	8.10%
ONEOK, Inc.	11.60%
Pembina Pipeline Corporation	-14.72%
Spire, Inc.	6.36%
TC Energy Corporation	-1.48%
The Williams Companies, Inc.	2.00%

As shown, a strict application of the Commission's requirement that each proxy group entity have a positive IBES growth rate would limit our potential proxy group to just seven possible entities at this point. I, therefore, recommend that the short-term Value Line growth rates for each of these potential entities also be examined

in conjunction with the IBES growth rates to ensure that a sufficiently sized proxy group can be assembled.

Q.44 Do you have any observations to offer with respect to recent IBES growth rates for natural gas pipeline companies?

A. I have observed that the IBES growth rates assigned to several natural gas pipeline companies have been consistently lower than the Value Line growth rates assigned to the same companies. For example, Table 4 below presents both the IBES and Value Line growth rates associated with TC Energy and Kinder Morgan, two of the largest natural gas pipeline entities, since June 2023.

Table 4 – Comparison of Growth Estimates

	TC Energy Corp.		Kinder Morgan, Inc.	
Month	**IBES Growth Rate**	**Value Line Growth Rate**	**IBES Growth Rate**	**Value Line Growth Rate**
Jun-23	-0.24%	7.00%	-6.40%	18.50%
Jul-23	-0.40%	7.00%	0.30%	18.50%
Aug-23	-0.54%	12.00%	0.30%	17.50%
Sep-23	-0.54%	12.00%	0.30%	17.50%
Oct-23	-0.53%	12.00%	0.30%	17.50%
Nov-23	-3.24%	12.00%	0.30%	17.50%
Dec-23	-2.11%	12.00%	0.30%	17.50%
Jan-24	-2.09%	12.00%	0.30%	17.50%
Feb-24	-1.48%	12.00%	3.71%	15.00%
Mar-24	-1.48%	12.00%	5.30%	15.00%

As shown in the table above, there has been, and continues to be, a large divergence between the IBES and Value Line Growth rates for both TC Energy and

Kinder Morgan. This divergence would suggest that an informed investor would likely not depend on only a single growth forecast (either IBES or Value Line) but would rather seek to better understand the underlying metrics associated with each estimate to make a more informed investment decision.

Q.45 Have you also examined the Value Line growth rates reported for the nine remaining entities?

A. Yes. I have reviewed the Value Line growth rates for each of these entities as reported in the Value Line Investment Survey dated February 23, 2024. As shown in Table 5 below, each of these entities has a positive short-term earnings growth rate estimate from Value Line.

Table 5 – Potential Proxy Group Entities – Value Line Growth Estimate

Company Name	Value Line Growth Estimate
Enbridge Inc.	5.0%
Energy Transfer LP	7.5%
Kinder Morgan, Inc.	15.0%
National Fuel Gas Company	5.5%
ONEOK, Inc.	13.5%
Pembina Pipeline Corporation	10.0%
Spire, Inc.	4.5%
TC Energy Corporation	12.0%
The Williams Companies, Inc.	10.0%

Q.46 Have any of these nine entities been involved in any material merger or acquisition activity in the past twelve months?

A. Yes. These entities are among some of the largest midstream energy companies in existence today. As such, each of these entities are regularly involved in the acquisition and/or divestiture of midstream assets, with the majority of these

transactions being relatively minor in comparison to the overall size and market capitalization of these entities. The following is a summary of recent material merger, acquisition, and divestiture activity for each of these entities announced during the twelve months ending March 2024, based on a review of the Investor Relations press releases issued by each entity.

Enbridge

On March 26, 2024, Enbridge announced that it had entered into an agreement with WhiteWater / I Squared Capital ("WhiteWater / I Squared") and MPLX LP ("MPLX") to form a joint-venture that will develop, construct, own, and operate natural gas pipeline and storage assets connecting Permian Basin natural gas supply to growing LNG and Gulf Coast markets.[34] Enbridge will own 19.0% of the joint venture.

On December 13, 2023, Enbridge announced that it had entered into an agreement to sell its 50.0% interest in the Alliance Pipeline L.P. ("Alliance"), its 42.7% interest in Aux Sable Companies ("Aux Sable") (one of the largest natural gas liquids extraction facilities in North America), as well as NRGreen, a small Canadian power generator to Pembina Pipeline Corporation for $3.1 billion, subject to customary closing adjustments.[35] As part of the transaction, Pembina, Enbridge's long-standing partner on Alliance and the current operator of Aux Sable, will also assume operatorship of Alliance. The sales proceeds will fund a portion of Enbridge's previously announced gas utilities acquisitions (see below)

[34] See: https://www.enbridge.com/media-center/news/details?id=123808&lang=en
[35] See: https://www.enbridge.com/media-center/news/details?id=123793&lang=en

and will also be used for debt reduction. The transaction was completed on April 1, 2024.[36]

On September 5, 2023, Enbridge announced that it had entered into definitive agreements with Dominion Energy, Inc. ("DEI") to acquire three gas utility companies, namely: (1) The East Ohio Gas Company ("EOG"), (2) Questar Gas Company ("Questar Gas") and its related Wexpro Companies ("Wexpro" and collectively with Questar Gas, "Questar"), and (3) Public Service Company of North Carolina, Incorporated ("PSNC") for a total aggregate purchase price of $14.0 billion.[37] Following these transactions, Enbridge will become North America's largest natural gas utility company, delivering over 9.0 Bcf/d to approximately seven million customers across multiple regulatory jurisdictions. Enbridge expects that the acquisitions will be accretive to both distributable cash flow and earnings per share in the first full year of ownership. On March 7, 2024, Enbridge announced that it had closed on its acquisition of EOG.[38] On June 3, 2024, Enbridge announced that it had closed on its acquisition of Questar, and that the acquisition of PSNC remained on track to close in 2024.[39]

On May 1, 2023, Enbridge announced that it has entered into a definitive agreement with FortisBC Holdings Inc. to acquire a 93.8% interest in the Aitken Creek Gas Storage facility and a 100% interest in Aitken Creek North Gas Storage

[36] See: https://www.newswire.ca/news-releases/enbridge-completes-sale-of-its-interests-in-alliancepipeline-and-aux-sable-844091612.html
[37] See: https://www.enbridge.com/media-center/news/details?id=123779&lang=en
[38] See: https://www.enbridge.com/media-center/news/details?id=123807&lang=en
[39] See: https://www.enbridge.com/media-center/news/details?id=123820&lang=en

facility for $CAD 400 million, subject to customary closing adjustments. Aitken Creek Storage is an underground reservoir located near Fort St. John, British Columbia ("B.C.") and is the largest and only underground natural gas storage facility in B.C., totaling 77 billion cubic feet ("Bcf") of working gas capacity. The transaction closed on November 1, 2023.[40]

Energy Transfer LP

Energy Transfer announced on August 16, 2023 that it had entered into a definitive merger agreement pursuant to which it would acquire Crestwood Equity Partners LP in an all-equity transaction valued at approximately $7.1 billion, including the assumption of $3.3 billion of debt.[41] The transaction closed on November 3, 2023.[42]

On May 2, 2023, Energy Transfer announced that it had completed its acquisition of Lotus Midstream Operations, LLC ("Lotus Midstream") in a transaction valued at approximately $1.45 billion. Lotus Midstream owns and operates Centurion Pipeline Company LLC, an integrated, crude midstream platform located in the Permian Basin.[43] This transaction was first announced on March 27, 2023.

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[40] *See* News Release, Enbridge, *Enbridge to Acquire Aitken Creek Natural Gas Storage from FortisBC Holdings Inc. for $400 million* (May 1, 2023) https://www.enbridge.com/media-center/news/details?id=123763&lang=en

[41] See https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-acquire-crestwood-71-billion-all-equity

[42] See https://ir.energytransfer.com/news-releases/news-release-details/energy-transfer-completes-acquisition-crestwood

[43] *See* Stephanie Kelly, *Energy Transfer acquires Lotus Midstream, raises 2023 earnings outlook*, REUTERS (May 2, 2023, 5:48 PM ET) https://www.reuters.com/business/energy/energy-transfer-acquires-lotus-midstream-raises-2023-earnings-outlook-2023-05-02/.

Kinder Morgan

On November 6, 2023, Kinder Morgan announced that it has agreed to acquire NextEra Energy Partners' South Texas assets, STX Midstream, for $1.815 billion. The STX Midstream pipeline system includes a set of integrated intrastate natural gas pipelines that connect the Eagle Ford basin to key growing Mexico and Gulf Coast demand markets.[44] The transaction was completed on December 28, 2023.[45]

National Fuel Gas Company

National Fuel has not announced any material merger or acquisition activity during the past twelve months ended March 2024.

ONEOK

On May 14, 2023, ONEOK announced that they had executed a definitive merger agreement under which ONEOK would acquire all outstanding units of Magellan Midstream Partners ("Magellan") in a transaction valued at approximately $18.8 billion including assumed debt, resulting in a combined company with a total enterprise value of $60.0 billion. The transaction was expected to provide immediate financial benefits, including cost, operational and

[44] *See* https://ir.kindermorgan.com/news/news-details/2023/Kinder-Morgan-to-Purchase-NextEra-Energy-Partners-STX-Midstream/default.aspx

[45] *See* https://ir.kindermorgan.com/news/news-details/2023/Kinder-Morgan-Closes-on-the-1.815-Billion-Acquisition-of-NextEra-Energy-Partners-South-Texas-Assets/default.aspx

tax synergies, supporting meaningful expected accretion.[46] ONEOK announced that its acquisition of Magellan was completed on September 25, 2023.[47]

Pembina

On December 13, 2023, Pembina announced that it had entered into an agreement to acquire Enbridge's interests in Alliance and Aux Sable as well as NRGreen (a small Canadian power generator) for an aggregate purchase price of approximately $3.1 billion (subject to certain adjustments), including approximately $327 million of assumed debt.[48] Upon closing of the acquisition, Pembina will become the operator of all of the Alliance, Aux Sable, and NRGreen businesses. The transaction was completed on April 1, 2024.[49]

Spire, Inc.

On January 19, 2024, Spire announced that it had completed its acquisition of MoGas, an interstate natural gas pipeline, and Omega Pipeline ("Omega"), a connected gas distribution system, from CorEnergy Infrastructure Trust, Inc. for $175 million.[50] The acquisition was first announced on May 25, 2023.[51]

TC Energy

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[46] *See* Andew Ziola et al., *Oneok to Acquire Magellan Midstream Partners in Transaction Valued at $18.8 Billion*, ONEOK (May 14, 2023), https://ir.oneok.com/news-and-events/press-releases/2023/05-14-2023-232007760.

[47] *See* Megan Patterson, *Oneok Announces Completion of Magellan Midstream Partners Acquisition*, ONEOK (Sept. 25, 2023) https://ir.oneok.com/news-and-events/press-releases/2023/09-25-2023-134815200.

[48] *See* https://www.pembina.com/media-centre/news/details/fd150028-cc5c-4882-8ef3-197c0d60bfeb

[49] *See* https://www.pembina.com/media-centre/news/details/7a72147a-9fcd-4ddc-a631-b69788ea7d11

[50] *See* https://investors.spireenergy.com/news/news-details/2024/Spire-completes-acquisition-of-MoGasand-Omega-pipeline-systems/default.aspx

[51] *See* https://investors.spireenergy.com/news/news-details/2023/Spire-to-acquire-MoGas-and-Omegapipeline-systems/default.aspx

On March 14, 2024, TC Energy announced that it had entered into a binding letter agreement with Nisga'a Nation and Western LNG regarding the sale of all outstanding shares in Prince Rupert Gas Transmission Holdings Ltd. and the limited partnership interests in Prince Rupert Gas Transmission Limited Partnership (collectively, "PRGT"). PRGT is a wholly owned subsidiary of TC Energy and the developer of a natural gas pipeline project in British Columbia, Canada. While the deal value also was not disclosed, TC Energy stated that the "initial proceeds from the sale are not expected to be material to TC Energy, with the potential to receive additional payments contingent upon the project achieving final investment decision and commercial operation."[52]

TC Energy announced on March 4, 2024, that it had entered into an agreement to sell its Portland Natural Gas Transmission System ("PNGTS") to BlackRock Inc. and Morgan Stanley Infrastructure Partners for $1.14 billion, which includes the assumption of $250 million of outstanding Senior Notes held at PNGTS.[53] The transaction is expected to close in mid-2024 and is subject to required approvals and customary closing conditions.

On July 24, 2023, TC Energy announced that it had entered into an agreement to divest and monetize a 40% interest in its Columbia Gas Transmission, LLC ("Columbia Gas") and Columbia Gulf Transmission, LLC ("Columbia Gulf") pipeline systems. The two pipelines will be held in a new joint venture partnership

[52] *See* https://www.tcenergy.com/announcements/2024/2024-03-14-tc-energy-enters-agreement-to-sell-prince-rupert-gas-transmission-entities-to-nisgaa-nation-and-western-lng/
[53] *See* https://www.tcenergy.com/announcements/2024/2024-03-04-tc-energy-announces-sale-of-portland-natural-gas-transmission-system/

with Global Infrastructure Partners ("GIP"). The total proceeds from the transaction are expected to be $3.9 billion in cash, subject to certain customary adjustments. The divestiture was completed on October 4, 2023.[54]

On July 27, 2023, TC Energy announced that its Board of Directors had approved plans for TC Energy to separate into two independent, publicly listed companies through the spinoff of TC Energy's Liquids Pipelines business. The spinoff is expected to be completed in the second half of 2024.[55]

Williams

On December 27, 2023, Williams announced that it had reached an agreement to acquire a portfolio of natural gas storage assets from an affiliate of Hartree Partners LP for $1.95 billion. The transaction included six underground natural gas storage facilities located in Louisiana and Mississippi with total capacity of 115 bcf, as well as 230 miles of gas transmission pipeline and 30 pipeline interconnects.[56] The acquisition was completed on January 3, 2024.[57]

On November 30, 2023, Williams announced that it has successfully closed two transactions in the DJ Basin. First, Williams acquired Cureton Front Range

[54] *See TC Energy Successfully Completes $5.3 Billion Sale of a 40 Percent Non-Controlling Equity Interest in Columbia Gas and Columbia Gulf*, TC ENERGY (Oct. 4, 2023), https://www.tcenergy.com/announcements/2023-10-04-tc-energy-successfully-completes-$5.3-billion-sale-of-a-40-per-cent-non-controlling-equity-interest-in-columbia-gas-and-columbia-gulf/.

[55] *See* TC Energy to Unlock Value by Creating Two Premium Energy Infrastructure Companies with Intension to Spin Off Liquids Pipelines Business, TC Energy (July 27, 2023), https://www.tcenergy.com/announcements/2023-07-27-tc-energy-to-unlock-value-by-creating-two-premium-energy-infrastructure-companies-with-intention-to-spin-off-liquids-pipelines-business/.

[56] *See:* https://investor.williams.com/news-releases/news-release-details/williams-announces-acquisition-strategic-gulf-coast-natural-gas

[57] *See:* https://investor.williams.com/news-releases/news-release-details/williams-closes-acquisition-majornatural-gas-storage-portfolio

LLC, whose assets include gas gathering pipelines and two processing plants serving producers across 225,500 dedicated acres. And second, the purchase of KKR & Co. Inc.'s 50% ownership interest in Rocky Mountain Midstream Holdings LLC ("RMM"), resulting in 100% ownership of RMM for Williams.[58] Williams first announced the Cureton and RMM transactions in its third quarter earnings materials on November 1, 2023. The acquisitions had a combined value of $1.27 billion.

Q.47 Should this merger and acquisition activity cause any of these entities to be excluded from the Transco Proxy Group?

A. To answer this question, there are two main factors I considered. First, I analyzed the share price impacts related to each announcement below, in order to determine whether or not these announced transactions had any measurable impact on the share price and therefore related dividend yields in the days immediately following the announcements. Second, I considered the length of time that has passed since the transaction was announced and also whether or not the announced transaction has already closed. The underlying share price impacts related to a transaction that has been completed have by definition already been factored into the share price and dividend yields of a company's stock.

Enbridge

Enbridge's March 26, 2024 announced joint venture agreement did not have a material impact on the Enbridge stock, as reported by Yahoo! Finance and shown

[58] *See:* https://investor.williams.com/news-releases/news-release-details/williams-completes-strategic-transactions-dj-basin

in Table 6 below. On the day of the acquisition announcement, the Enbridge share price closed at $35.65, which was a slight decrease from the previous trading day close of $35.94. In the days following the announcement, the Enbridge share price remained relatively flat.

Table 6 – Enbridge Share Price History

Date	Open	Close	Volume
3/25/2024	$35.62	$35.94	4,290,100
3/26/2024	$36.00	$35.65	2,572,100
3/27/2024	$35.65	$35.99	5,966,700
3/28/2024	$36.05	$36.18	3,883,700

Similarly, Enbridge's divestiture of Alliance, Aux Sable, and NRGreen, as announced on December 13, 2023, did not have a material impact on the Enbridge stock, as reported by Yahoo! Finance and shown in Table 7 below. On the day of the acquisition announcement, the Enbridge share price closed at $35.48, which was an increase of approximately 2.3% from the previous trading day close. In the days following the announcement, the Enbridge share price remained relatively flat. The transaction closed on April 1, 2024.

Table 7 – Enbridge Share Price History

Date	Open	Close	Volume
12/12/2023	$34.97	$34.68	3,926,700
12/13/2023	$34.76	$35.48	8,110,200
12/14/2023	$35.83	$35.56	7,858,100
12/15/2023	$35.46	$35.38	5,659,900

Enbridge's announced acquisition of EOG, Questar, and PSNC referenced above did have an impact on the Enbridge stock on the days following the

September 5, 2023 announcement, as reported by Yahoo! Finance and shown in Table 8 below. On the day of the acquisition announcement, the Enbridge share price closed at $35.29, which was relatively unchanged from the previous trading day. Following the announcement, which was made after the markets closed on September 5, 2023, the Enbridge share price opened on September 6, 2023 down $2.04 (approximately 6%). In addition, the volume of shares traded on that day was nearly eight times the amount of the previous trading day. Enbridge has now closed on the acquisitions of EOG and Questar. The acquisition of PSNC remains on track to close later in 2024.

Table 8 – Enbridge Share Price History

Date	Open	Close	Volume
9/1/2023	$35.30	$35.51	6,125,300
9/5/2023	$35.55	$35.29	4,631,900
9/6/2023	$33.25	$33.21	36,119,700
9/7/2023	$33.28	$33.22	9,020,300

Enbridge's announced acquisition of the Aitken Creek Storage facility referenced above did not have any measurable impact on the Enbridge stock on the days following the May 1, 2023 announcement, as reported by Yahoo! Finance and shown in Table 9 below. The transaction closed on November 1, 2023.

Table 9 – Enbridge Share Price History

Date	Open	Close	Volume
4/28/2023	$39.28	$39.76	2,291,200
5/1/2023	$39.58	$39.56	1,957,600
5/2/2023	$39.41	$38.56	4,680,100
5/3/2023	$38.32	$38.86	3,631,100

In summary, considering that there are two Enbridge transactions currently pending, and given both the downward movement in the Enbridge share price resulting from the announced acquisition of EOG, Questar, and PSNC and the overall size of the acquisition (i.e. $18.8 Billion which represents nearly 25% of Enbridge's current market capitalization of approximately $76.7 Billion as of March 2024), Enbridge is not a preferred candidate for inclusion in the Transco Proxy Group at this time.

Energy Transfer

Energy Transfer's August 16, 2023 announced acquisition of Crestwood Equity Partners LP referenced above did not have any measurable impact on the Energy Transfer stock on the days following the announcement, as reported by Yahoo! Finance and shown in Table 10 below. The transaction closed on November 3, 2023.

Table 10 –Energy Transfer Share Price History

Date	Open	Close	Volume
8/15/2023	$12.70	$12.56	11,578,300
8/16/2023	$12.56	$12.77	19,967,000
8/17/2023	$12.87	$12.90	14,856,800
8/18/2023	$12.85	$13.00	10,316,400

Similarly, the approximately $1.45 billion announced acquisition of Lotus Midstream, which closed on May 2, 2023, also does not raise any concerns related to the potential inclusion of Energy Transfer in a natural gas pipeline proxy group, particularly given the overall size of Energy Transfer. Energy Transfer has a market capitalization of over $50 billion as of March 2024. Indeed, as shown in Table 11 below, this transaction did not have any measurable impact on the Energy Transfer stock on the days following its March 27, 2023 announcement, as reported by Yahoo! Finance.

Table 11 – Energy Transfer Share Price History

Date	Open	Close	Volume
3/24/2023	$11.52	$11.70	11,410,800
3/27/2023	$11.83	$11.84	12,296,800
3/28/2023	$11.81	$12.05	9,275,300
3/29/2023	$12.16	$12.20	9,687,000

In summary, considering that neither of the Energy Transfer transactions are currently pending, and that neither of these transactions had a material impact on the Energy Transfer share price upon announcement, these activities should not disqualify Energy Transfer from being included in the Transco Proxy Group at this time.

Kinder Morgan

Kinder Morgan's November 6, 2023 announcement that it had agreed to acquire NextEra Energy Partners' South Texas assets did not have a material impact on its share price, as shown in Table 12 below. On the trading day prior to the acquisition announcement, the Kinder Morgan share price closed at $16.87. In the

day following the announcement, the share price opened down slightly at $16.53 (a decrease of less than 1%). The transaction was completed on December 28, 2023.

Table 12 – Kinder Morgan Share Price History

Date	Open	Close	Volume
11/3/2023	$16.90	$16.87	12,815,500
11/6/2023	$16.94	$16.67	11,851,700
11/7/2023	$16.53	$16.55	18,310,000
11/8/2023	$16.47	$16.34	10,910,500

Given that the acquisition of the South Texas assets has now closed, and that the transaction did not have a material impact on the Kinder Morgan share price, this transaction should not preclude Kinder Morgan from being included in the Transco Proxy Group at this time.

National Fuel Gas Company

As previously discussed, National Fuel has not announced any material merger or acquisition activity during the past twelve months ended March 2024.

ONEOK

Regarding the recent ONEOK activity, the May 14, 2023 announcement by ONEOK that it was acquiring Magellan did have an impact on the ONEOK share price, as shown in Table 13 below. On the trading day prior to the acquisition announcement, the ONEOK share price closed at $63.72. Following the announcement, which was made on Sunday May 14, 2023, the ONEOK share price opened down $4.27 (approximately 7%). In addition, the volume of shares traded on May 15, 2023 was nearly ten times the amount of the previous trading day.

Table 13 – ONEOK Share Price History

Date	Open	Close	Volume
5/12/2023	$63.25	$63.72	2,501,500
5/15/2023	$59.45	$57.95	20,718,300
5/16/2023	$57.55	$56.58	9,415,800
5/17/2023	$57.06	$57.20	5,842,500

Although the Magellan transaction did impact the ONEOK share price upon announcement, the acquisition was completed on September 25, 2023. Since this time the ONEOK share price has fully recovered, now trading well above $70.00 per share as of March 2024. As such, the now completed Magellan acquisition should not cause ONEOK to be excluded from the Transco Proxy Group at this time.

Pembina

Pembina's December 13, 2023 announcement that it would be acquiring Enbridge's interests in Alliance, Aux Sable, and NRGreen, had only a short-lived impact on its share price, as shown in Table 14 below. On the trading day prior to the acquisition announcement, the Pembina share price closed at $33.34. On the day following the announcement, the share price opened down slightly at $32.39 (a decrease of 3%). However, this loss in value was temporary, as the Pembina stock price rose back to its pre-announcement levels by December 19, 2023, when the share price closed at $33.64. The transaction closed on April 1, 2024.

Table 14 – Pembina Share Price History

Date	Open	Close	Volume
12/12/2023	$33.34	$33.34	1,340,000
12/13/2023	$33.41	$34.19	1,175,200
12/14/2023	$32.39	$33.42	4,111,000
12/15/2023	$33.28	$33.09	1,877,200

Therefore, Pembina's pending acquisition of the Alliance and Aux Sable systems from Enbridge should not be the sole reason to disqualify Pembina from the Transco Proxy Group. However, when coupled with Pembina's negative IBES growth rate, I do not recommend that Pembina be included in the Transco Proxy Group at this time.

Spire, Inc.

Spire's May 25, 2023 announcement that it would be acquiring MoGas and Omega did not have a material impact on its share price, as shown in Table 15 below. On the day of the announcement, the Spire share price closed at $65.65. In the day following the announcement, the share price opened up slightly at $65.67 (an increase of just $0.02 per share). The transaction was completed on January 19, 2024.

Table 15 – Spire Share Price History

Date	Open	Close	Volume
5/24/2023	$67.97	$66.04	335,200
5/25/2023	$66.00	$65.65	256,000
5/26/2023	$65.67	$65.72	198,700
5/30/2023	$65.76	$64.88	211,100

Therefore, Spire's acquisition of the MoGas and Omega systems should not disqualify Spire from the Transco Proxy Group.

TC Energy

Regarding the recent TC Energy activity, TC Energy's March 14, 2024, announced divestiture of its PRGT assets did not have a material impact on the TC Energy share price, as shown in Table 15 below. On the trading day prior to the divestiture announcement, the TC Energy share price closed at $40.84. On the day of the announcement, the TC Energy share price closed at $40.37, representing only a negligible decrease.

Table 15 – TC Energy Share Price History

Date	Open	Close	Volume
3/13/2024	$40.71	$40.84	3,146,800
3/14/2024	$40.80	$40.37	3,822,300
3/15/2024	$40.38	$40.21	3,202,700
3/18/2024	$40.21	$40.28	2,682,300

The March 4, 2024 announcement of the divestiture of the PNGTS system also did not have a material impact on the TC Energy share price, as shown in Table 16 below. On the trading day prior to the divestiture announcement, the TC Energy share price closed at $39.75. On the day of the announcement, the TC Energy share price closed at $39.78, representing only a negligible increase. The TC Energy stock price continued to generally increase on subsequent trading days to slightly above the $40 mark. The transaction is expected to close in mid-2024 and is subject to required approvals and customary closing conditions.

Table 16 – TC Energy Share Price History

Date	Open	Close	Volume
3/1/2024	$39.44	$39.75	1,339,900
3/4/2024	$39.87	$39.78	1,709,000
3/5/2024	$39.81	$39.92	1,368,900
3/6/2024	$40.26	$40.04	2,025,300

The July 24, 2023 announcement of the partial divestiture of two of its pipeline systems did have an impact on the TC Energy share price, as shown in Table 17 below. On the trading day prior to the divestiture announcement, the TC Energy share price closed at $39.53. On the day of the announcement, the TC Energy share price closed at $38.64, a decrease of approximately 2.3%. However, the stock continued to generally slide on subsequent trading days, amidst heavy trading volumes, closing at $37.07 on July 26, 2023 (down 6.2% from the July 21, 2023 close). The divestiture was completed on October 4, 2023.

Table 17 – TC Energy Share Price History

Date	Open	Close	Volume
7/21/2023	$39.37	$39.53	2,965,700
7/24/2023	$39.00	$38.64	6,791,000
7/25/2023	$38.13	$36.83	6,790,400
7/26/2023	$36.76	$37.07	3,522,993

Similarly, the referenced spinoff transaction, which was announced only three business days after the announcement of the partial divestiture, also had a continuing impact on the TC Energy share price, as shown in Table 18 below. On July 26, 2023 (the trading day prior to the announcement of the spinoff transaction), the TC Energy share price closed at $37.07. On the day of the spinoff

announcement, the TC Energy share price closed at $35.79, a decrease of approximately 3.5%. The stock continued to generally slide on subsequent trading days, amidst heavy trading volumes, closing at $34.17 on July 28, 2023 before recovering slightly. The spinoff is expected to be completed in the second half of 2024.

Table 18 – TC Energy Share Price History

Date	Open	Close	Volume
7/27/2023	$37.14	$35.79	6,541,800
7/28/2023	$35.63	$34.17	10,985,900
7/31/2023	$34.63	$35.87	6,162,000
8/1/2023	$35.55	$35.64	4,654,000

Therefore, the recent TC Energy divestiture and spinoff announcements, two of which remain pending at this time, do need to be considered with regards to whether or not TC Energy should be included in the Transco Proxy Group at this time. When also considering TC Energy's negative IBES growth rate, I do not recommend that TC Energy be included in the Transco Proxy Group at this time.

Williams

Williams' December 27, 2023 announcement that it would be acquiring the portfolio of natural gas storage assets from an affiliate of Hartree Partners LP for $1.95 billion did not have any measurable impact on Williams' share price as reported by Yahoo! Finance—see Table 19 below. The acquisition was completed on January 3, 2024.

Table 19 – Williams Share Price History

Date	Open	Close	Volume
12/26/2023	$35.23	$35.12	3,461,900
12/27/2023	$35.03	$35.03	4,289,100
12/28/2023	$35.00	$34.93	4,064,100
12/29/2023	$35.03	$34.83	3,686,500

Similarly, Williams' November 1, 2023, announcement that it would acquire Cureton Front Range LLC and a 100% ownership interest in RMM did not have any measurable impact on Williams' share price as reported by Yahoo! Finance—see Table 20 below. These transactions closed on November 30, 2023.

Table 20 – Williams Share Price History

Date	Open	Close	Volume
10/31/2023	$34.40	$34.40	6,446,900
11/01/2023	$34.52	$34.72	6,094,700
11/02/2023	$34.67	$35.79	8,445,100
11/03/2023	$36.00	$36.08	5,508,000

Even though Williams, a company with total market capitalization of nearly $45 billion as of March 2024, continues to regularly acquire additional assets, these acquisitions have not adversely impacted the Williams share price on a material basis. Given that Williams owns some of the largest natural gas pipelines in the United States today, and that the recent acquisitions are now all completed and have not been material to the overall Williams stock price, Williams should not be excluded from the Transco Proxy Group as a result of its recent acquisitions. Furthermore, the acquisitions show that Williams is continuing to solidify its presence in the natural gas pipeline space.

Q.48 Please summarize your findings with regards to which entities should still be potentially included in the Transco Proxy Group after considering the recent merger and acquisition activities discussed above.

A. After analyzing the recent material merger and/or acquisition activities of these nine entities, six entities remain for potential inclusion in the Transco Proxy Group, namely: Energy Transfer, Kinder Morgan, National Fuel, ONEOK, Spire, and Williams.

Q.49 Have you analyzed the pipeline-related operating income and asset holdings of the remaining six entities to determine if pipeline operations constitute a high proportion of the business of these entities?

A. Yes. Table 21 below provides the results of my initial analysis of the financial statements of the remaining six potential proxy group entities for the year ending 2023, which is the most recent annual data available. Note that, apart from the one exception denoted below, I have analyzed earnings before interest, taxes, depreciation, and amortization ("EBITDA") in lieu of operating income, as EBITDA is more consistently reported in financial reports.

Table 21 – Potential Proxy Group Entities – Pipeline Assets and EBITDA (2023)

Entity	Business Segment	Segment Assets ($ Millions)	% of Assets	Segment EBITDA ($Millions)	% of EBITDA
Energy Transfer LP	Interstate Transportation and Storage	**$17,708**	15.17%	**$2,009**	14.67%
Kinder Morgan Inc.	Natural Gas Pipelines	**$49,883**	70.24%	**$5,160**	64.33%
National Fuel Gas Company[59]	Pipeline and Storage	**$2,427**	29.31%	**$101**	21.08%[60]
ONEOK, Inc.	Natural Gas Pipelines	**$2,624**	5.94%	**$559**	10.52%
Spire, Inc.	Midstream	**$574.3**	5.89%	**$12**	4.77%[61]
The Williams Companies, Inc.	Transmission & Gulf of Mexico	**$21,357**	41.48%	**$3,068**	44.02%

As shown in Table 21, only Kinder Morgan currently has pipeline EBITDA and asset levels that meet the Commission's traditional 50% requirement and should therefore likely be included in the Transco Proxy Group.

Q.50 What is the difference between EBITDA and operating income?

A. The financial term EBITDA is an acronym that stands for "Earnings Before Interest, Taxes, Depreciation, and Amortization." EBITDA is a measure of profitability that removes the costs of debt and taxes, as well as depreciation and amortization expenses from the profit equation. EBITDA therefore provides investors with a view of a company's profitability resulting from its core operations.

Operating income is also a measure of profitability that subtracts operating expenses, including general and administrative costs and cost of goods sold from gross revenues. Similar to EBITDA, operating income conveys how much margin

[59] Results for National Fuel are as of September 30, 2022, which is the company's year-end.
[60] Percentage of Segment Net Income. National Fuel does not report EBITDA by segment.
[61] Percentage of Segment Net Income. Spire does not report EBITDA by segment.

a company generates from its core operations, without consideration for interest or tax expenses.

Q.51 How have you treated corporate adjustments in the calculations shown in Table 21 above?

A. The calculations shown in Table 21 above include all corporate adjustments (sometimes labeled "Eliminations and Other"), regardless of whether these adjustments were negative or positive. Including corporate adjustments is appropriate in this proceeding at this time, as none of the corporate adjustments reported for the six potential proxy group members have been overly material during the past three years. Accordingly, removing the corporate adjustments from the calculations would not change the conclusions reached with regards to the includability of these entities in the proxy group at this time.

Q.52 Do you have any observations of the overall size of the entities as reflected in Table 21?

A. Yes. The Transco system is the largest interstate natural gas pipeline in the United States. As reported in its most recent FERC Form 2, as of December 31, 2023, Transco has total Utility Plant in Service of nearly $18.5 Billion. Accordingly, the Transco system alone is larger than four of the six entities under consideration for inclusion in the Transco Proxy Group.

Q.53 Does the Commission recognize that smaller entities are generally more risky than larger entities?

A. Yes. For example, in Opinion No. 569, the Commission found that a sufficient amount of academic literature exists to indicate that many investors rely on a "size premia," which reflects that investment risk increases as company size diminishes,

all else being equal. Therefore, to ensure that the Transco Proxy Group provides a reasonable "apples-to-apples" risk comparison to Transco as a stand-alone entity, I will also consider the relative size of each potential entity's investment in regulated pipeline businesses as part of my review below.

Q.54 Would Energy Transfer be a reasonable candidate for inclusion in the Transco Proxy Group at this time?

A. Yes. As shown in Table 21 above, although only 15.17% of Energy Transfer's assets and 14.37% of its EBITDA is derived from its interstate transportation and storage business segment, Energy Transfer also has significant investments in regulated intrastate gas pipelines, liquids pipelines as well as regulated crude oil pipelines. Combining these other three business segments with its interstate transportation and storage segment results in 70.78% of Energy Transfer's EBITDA and 65.55% of Energy Transfer's total assets being associated with pipelines on average over the past three years. On an absolute dollar basis, Energy Transfer's combined investment in its regulated pipeline businesses totals nearly $76.5 Billion in assets 2023, which is much larger than the Transco system.

Thus, similar to the approach taken by the Commission in Opinion No. 486-B as discussed above, Energy Transfer should be considered to meet the Commission's 50% asset requirement when considering its combined interstate natural gas, intrastate natural gas, regulated liquids, and regulated crude oil pipelines.

Accordingly, Energy Transfer should be included in the Transco Proxy Group company at this time. I provide a detailed overview of the assets owned by Energy Transfer later in my testimony.

Q.55 Would Kinder Morgan be a reasonable candidate for inclusion in the Transco Proxy Group?

A. Yes. As shown in Table 21 above, 70.24% of Kinder Morgan's assets and 64.33% of its EBITDA is derived from its natural gas pipelines business segment, making it the strongest candidate for inclusion based on the data in Table 21. Kinder Morgan is one of the largest pipeline and storage companies in existence today. With approximately 82,000 miles of natural gas pipelines as of March 2024, Kinder Morgan owns an interest in and/or operates one of the largest natural gas networks in North America, serving the major consuming markets of the United States.

Q.56 Should National Fuel be included in the Transco Proxy Group?

A. As a starting point, National Fuel does not meet the 50% standard of their income or assets being in the natural gas pipeline business, nor does it have significant investment in regulated liquids pipelines. Thus, I proceeded to examine National Fuel consistent with the approach taken by the Commission in Opinion No. 486-B, referred to as the Kern River Factors, analyzing whether:

i. the combined natural gas pipeline and distribution business of the firm make up at least 50% of its total business;

ii. the natural gas pipeline business is at least equal to the distribution business; and

iii. the firm's more risky exploration, production, and other market-oriented businesses are no greater than the less risky distribution business.

I have reviewed these three metrics for National Fuel as reported for its three most recent fiscal years ending September 30, 2023; 2022; and 2021, examining both the Net Income and Asset metrics. The results of my net income analysis are as follows:

National Fuel – Kern River Factors (Net Income)

Net Income ($ Thousands)	2023	2022	2021	Average	Criteria 1 - combined natural gas pipeline and distribution businesses of the firm make up at least 50% of its total business	Criteria 2 - natural gas pipeline business is at least equal to the distribution business	Criteria 3 - the firm's more risky exploration, production, and other market oriented businesses are no greater than the less risky distribution business
Exploration and Production	$232,275	$306,064	$101,916	$213,418			$213,418
Pipeline and Storage	$100,501	$102,557	$92,542	$98,533	$98,533	$98,533	
Gathering	$99,724	$101,111	$80,274	$93,703			
Utility	$48,395	$68,948	$54,335	$57,226	$57,226	$57,226	$57,226
Other	($531)	($9)	$37,645	$12,368			
Corporate and Intersegment Eliminations	($3,498)	($12,650)	($3,065)	($6,404)			
Total Net Income	$476,866	$566,021	$363,647	$468,845	33.2%		
% FERC-Regulated Pipeline & Storage	**21.08%**	**18.12%**	**25.45%**	**21.55%**	**Does Not Pass**	**Pass**	**Does Not Pass**

The results of my asset based analysis are as follows:

National Fuel – Kern River Factors (Assets)

Assets ($ Thousands)	**2023**	**2022**	**2021**	**Average**	**Criteria 1 - combined natural gas pipeline and distribution businesses of the firm make up at least 50% of its total business**	**Criteria 2 - natural gas pipeline business is at least equal to the distribution business**	**Criteria 3 - the firm's more risky exploration, production, and other market oriented businesses are no greater than the less risky distribution business**
Exploration and Production	$2,814,218	$2,507,541	$2,286,058	$2,535,939			$2,535,939
Pipeline and Storage	$2,427,214	$2,394,697	$2,296,030	$2,372,647	$2,372,647	$2,372,647	
Gathering	$912,923	$878,796	$837,729	$876,483			
Utility	$2,247,743	$2,299,473	$2,148,267	$2,231,828	$2,231,828	$2,231,828	$2,231,828
Other	$4,795	$2,036	$4,146	$3,659			
Corporate and Intersegment Eliminations	($126,633)	($186,281)	($107,405)	($140,106)			
Total Assets	$8,280,260	$7,896,262	$7,464,825	$7,880,449	58.4%		
% FERC-Regulated Pipeline & Storage	**29.31%**	**30.33%**	**30.76%**	**30.13%**	**Pass**	**Pass**	**Does Not Pass**

As shown in the tables above, National Fuel does not pass two of the three Kern River Factors when considering Net Income and one of the three Kern River Factors when considering its assets. In Opinion No. 885, and as upheld in Opinion Nos. 885-A and 885-B, the Commission evaluated National Fuel under the Kern River Factors and found that National Fuel should nevertheless be included in the Panhandle proxy group, despite failing one of the Kern River Factors in that proceeding. In including National Fuel, the Commission reasoned:

> it is necessary to include a diversified company that does not satisfy all of the Commission's criteria. National Fuel has met the first two factors described in *Kern River* and its business segments are well balanced between its riskier and less risky components. Accordingly, National Fuel appears to be risk appropriate for use in Panhandle's ROE proxy group analysis.[62]

However, in addition to not passing two of the Kern River Factors (on a net income basis), the pipeline and storage assets owned by National Fuel total only $2.4 Billion in 2023, which is less than 13% of the size of Transco's pipeline and storage assets in 2023. Furthermore, the pipeline and storage assets owned by National Fuel are concentrated in a single area of the United States (i.e. the Northeast, primarily within the states of New York and Pennsylvania). National Fuel's total Pipeline and Storage segment includes just 77 Bcf of working gas storage capacity as well as only approximately 2,500 miles of pipeline facilities, providing supply and market access to only a geographically limited market area. Each of these metrics is significantly smaller than the comparable metrics for the Transco system, suggesting that National Fuel is not currently risk comparable to Transco.

Accordingly, to ensure that the Transco Proxy Group includes entities that are appropriately risk-comparable to Transco, I do not recommend that National Fuel be included in the Transco Proxy Group at this time.

[62] Opinion No. 885 at P 141 (internal citations omitted).

Q.57 Should ONEOK's natural gas and natural gas liquids ("NGLs") segments be consolidated for the purposes of determining whether ONEOK is an acceptable proxy group member in this proceeding?

A. Yes. As shown in Table 21 above, ONEOK has only 5.94% of its respective assets devoted to natural gas pipelines. Regarding EBITDA, only 10.52% of ONEOK's EBITDA is associated with its natural gas pipelines segment. Accordingly, ONEOK falls well short of the 50% threshold when considering solely its natural gas pipeline assets and revenues. However, as discussed in the 2023 ONEOK SEC Form 10-K, much of ONEOK's business is related to its investments in regulated NGL infrastructure and refined products and crude pipelines. The calculated percentages are well above the 50% threshold when ONEOK's NGL and Refined Products segments are also considered, reflecting pipeline totals of 83.99% of assets and 76.59% of EBITDA for 2023. On a dollar basis, ONEOK's combined investment in its regulated pipeline businesses totals over $37 Billion in assets 2023, which is larger than the Transco system.

Consolidating ONEOK's natural gas pipelines segment with its NGL and Refined Products segments is a reasonable approach that is similar to the approach taken by the Commission in Opinion No. 486-B, as the majority of ONEOK's NGL and Refined Products pipelines are FERC regulated. In addition, ONEOK's natural gas gathering and processing facilities primarily exist to transport natural gas to interstate pipeline facilities, complementing ONEOK's regulated interstate natural gas pipeline business.

Q.58 How do ONEOK's FERC-regulated NGL and Refined Products pipelines compare to natural gas pipelines from a risk perspective?

A. FERC-regulated NGL and Refined Products pipelines enjoy several regulatory features that reduce their risks relative to natural gas pipelines. For example, the Commission's regulations include a methodology for these pipelines to change their rates annually through the use of an index system that establishes ceiling levels for such rates, without the need for a full rate review.[63] Also, NGL and Refined Products pipelines, which are regulated pursuant to the Interstate Commerce Act, are subject to far fewer Commission regulations, such as those concerning standards of conduct and shipper-must-have-title requirements.

Q.59 Have you evaluated ONEOK using the Kern River Factors?

A. No. Each of the three Kern River Factors assess the relative levels of an entity's natural gas pipeline and distribution businesses. However, ONEOK does not currently have a natural gas distribution business segment, rendering the Kern River Factors inapplicable to ONEOK at this time.

Q.60 Should ONEOK be included in the Transco Proxy Group at this time?

A. For the reasons discussed above, I believe that ONEOK is a viable candidate for inclusion in the Transco Proxy Group at this time. In light of the fact that the Commission has not considered ONEOK in any recent natural gas pipeline proxy group, my testimony in sub-section 3 below includes detailed information regarding the ongoing operations and business risks of ONEOK.

[63] *See* 18 C.F.R. § 342 (2022).

Q.61 Should Spire be included in the Transco Proxy Group?

A. No. The overall pipeline and storage assets owned by Spire in its Midstream segment total only $574 Million in 2023, which is less than 3% of the size of Transco's pipeline and storage assets in 2023. Furthermore, these assets are geographically limited, primarily supporting the Missouri based assets of the Spire LDC segment through the Spire STL Pipeline, in addition to the 263-mile MoGas Pipeline. Spire's entire Midstream segment is materially smaller than the Transco system, suggesting that Spire is not currently risk comparable to Transco.

In addition, since Spire does not meet the 50% standard of its income or assets being in the natural gas pipeline business, nor does it have significant investment in regulated liquids pipelines, I proceeded to examine Spire using the Kern River Factors for its three most recent fiscal years ending December 31, 2023; 2022; and 2021, examining both the Net Income and Asset metrics. The results of my analysis for net income are as follows:

Spire – Kern River Factors (Net Income)

Net Income ($ Millions)	2023	2022	2021	Average	Criteria 1 - combined natural gas pipeline and distribution businesses of the firm make up at least 50% of its total business	Criteria 2 - natural gas pipeline business is at least equal to the distribution business	Criteria 3 - the firm's more risky exploration, production, and other market oriented businesses are no greater than the less risky distribution business
Gas Utility	$200.50	$198.60	$237.20	$212.10	$212.10	$212.10	$212.10
Gas Marketing	$39.10	$35.60	$44.80	$39.83			$39.83
Midstream (Interstate)	$12.00	$11.10	$11.10	$11.40	$11.40	$11.40	
Other	($34.10)	($24.50)	($21.40)	($26.67)			
Total Net Income	$251.60	$245.30	$293.10	$263.33			
					84.87%		
% Interstate Pipelines	**4.77%**	**4.53%**	**3.79%**	**4.36%**	**Pass**	**Does Not Pass**	**Pass**

The results of my analysis for assets are as follows:

Spire – Kern River Factors (Assets)

Assets ($ Millions)	2023	2022	2021	Average	Criteria 1 - combined natural gas pipeline and distribution businesses of the firm make up at least 50% of its total business	Criteria 2 - natural gas pipeline business is at least equal to the distribution business	Criteria 3 - the firm's more risky exploration, production, and other market oriented businesses are no greater than the less risky distribution business
Gas Utility	$8,846.70	$8,042.80	$7,615.40	$8,168.30	$8,168.30	$8,168.30	$8,168.30
Gas Marketing	$332.00	$638.70	$466.10	$478.93			$478.93
Midstream (Interstate)	$574.30	$446.00	$413.80	$478.03	$478.03	$478.03	
Other	$2,533.30	$2,705.50	$2,193.30	$2,477.37			
Eliminations	($1612.70)	($1749.30)	($1332.200	($1564.73)			
Total	$9,753.00	$9,127.50	$8,495.30	$9,125.27			
					94.75%		
% Interstate Pipelines	**5.89%**	**4.89%**	**4.87%**	**5.22%**	**Pass**	**Does Not Pass**	**Pass**

As shown in the tables above, Spire does not pass one of the three Kern River Factors when considering both net income and assets. Given: (1) the Commission's long standing policy to exclude LDC's from natural gas pipeline proxy groups as previously discussed, (2) the fact that Spire does not pass all of the Kern River Factors and (3) the very low percentages of interstate pipeline and storage assets currently owned by Spire as compared to Transco, I do not recommend that Spire be included in the Transco Proxy Group at this time.

Q.62 Is Williams an acceptable proxy group candidate in this proceeding?

A. Yes. In 2023, Williams reported 40.67% of its assets devoted to, and derived 38.29% of its EBITDA from, interstate natural gas pipelines, which are the second highest percentages of the four potential proxy group entities shown in Table 21 above. Williams' FERC-regulated interstate natural gas pipeline systems include some of the largest U.S. natural gas pipelines in existence today.

Q.63 Is it appropriate to include Transco's parent company in the Transco Proxy Group?

A. Yes. Williams is the sole owner of Transco and is therefore the closest publicly traded entity that an investor seeking to invest in Transco could acquire. Williams is a major energy infrastructure company that has significant assets dedicated to the movement of natural gas supplies. Further, the Commission found Williams to be an acceptable entity for inclusion in the natural gas proxy group in Opinion No. 885. Williams should be included in the Transco Proxy Group.

Q.64 What is your recommended proxy group for Transco in this proceeding?

A. For the reasons stated above, I recommend the following four entities be used as the Transco Proxy Group in this proceeding at this time. As previously discussed, the Commission also expressed its preference that a proxy group consist of at least four members.

1. Energy Transfer
2. Kinder Morgan
3. ONEOK
4. Williams

My testimony below includes detailed information regarding the ongoing operations and business risks of each of these entities as compared to Transco to demonstrate that each of these entities is indeed a risk-appropriate inclusion in the Transco Proxy Group and to assess Transco' overall level of risk relative to each individual member of the Transco Proxy Group.

B. Detail of Business Activities of Each Transco Proxy Group Entity

1. Energy Transfer

Q.65 Please describe the first entity in your recommended Transco Proxy Group.

A. The first entity in my recommended Transco Proxy Group is Energy Transfer. Energy Transfer directly owns and operates approximately 20,000 miles of interstate natural gas pipelines with over 20 Bcf/d of transportation capacity and another approximately 7,000 miles and 12 Bcf/d of transportation capacity through joint venture interests. Energy Transfer's vast interstate natural gas network spans the United States from Florida to California and Texas to Michigan, and is capable of transporting natural gas from nearly all Lower 48 onshore and offshore supply basins to customers in the Southeast, Gulf Coast, Southwest, Midwest, Northeast and into Canada.

Energy Transfer owns, or has an ownership interest in, the following onshore natural gas pipeline and storage facilities, which I discuss in greater detail below:

Energy Transfer Natural Gas Pipelines	Ownership Interest (%)
Florida Gas Transmission Company, LLC	50%
Transwestern Pipeline Company, LLC	100%

Panhandle Eastern Pipe Line Company, LP	100%
Trunkline Gas Company, LLC	100%
ETC Tiger Pipeline, LLC	100%
Fayetteville Express Pipeline LLC	50%
Rover Pipeline LLC	32.6%
Midcontinent Express Pipeline LLC	50%
Enable Gas Transmission, LLC	100%
Enable Mississippi River Transmission, LLC	100%
Southeast Supply Header, LLC	50%
Gulf Run Transmission, LLC	100%
Southwest Gas Storage Company	100%

Energy Transfer also wholly-owns two off-shore natural gas pipelines, Sea Robin Pipeline Company, LLC and Stingray Pipeline Company, L.L.C. Sea Robin Pipeline Company, LLC's system consists of two offshore Louisiana natural gas supply pipelines extending 120 miles into the Gulf of Mexico. Stingray Pipeline Company, L.L.C. consists of an interstate natural gas pipeline system with assets located in the western Gulf of Mexico and Johnson Bayou, Louisiana.

Florida Gas Transmission Company, LLC ("FGT") is an approximately 5,300-mile natural gas pipeline that transports natural gas from Texas to Florida. The system transports natural gas to various cogeneration facilities, electric utilities, independent power producers, municipal generators, and LDCs. FGT is a joint venture between Kinder Morgan and Energy Transfer and is operated by Energy Transfer.

Transwestern Pipeline Company, LLC ("Transwestern") transports natural gas supplies from the Permian Basin in West Texas and eastern New Mexico, the

San Juan Basin in northwestern New Mexico and southern Colorado, and the Anadarko Basin in the Texas and Oklahoma panhandles. The system has bi-directional capabilities and can access Texas and Midcontinent natural gas market hubs, as well as major western markets in Arizona, Nevada and California. The Transwestern system includes over 2,500 miles of pipeline and has a throughput capacity of approximately 2.1 Bcf/d.

Panhandle's transmission system consists of four large diameter mainline pipelines with bi-directional capabilities, extending approximately 1,300 miles from producing areas in the Anadarko Basin of Texas, Oklahoma and Kansas through Missouri, Illinois, Indiana, Ohio and into Michigan. The Panhandle system also includes access to over 73 Bcf of natural gas storage working gas capacity.

Trunkline Gas Company, LLC's ("Trunkline") transmission system consists of a single large diameter mainline pipeline with bi-directional capabilities, extending approximately 1,400 miles from the Gulf Coast areas of Texas and Louisiana through Arkansas, Mississippi, Tennessee, Kentucky, Illinois, Indiana and Michigan. Trunkline also includes one natural gas storage field located in Louisiana with a working gas capacity of approximately 13 Bcf/d.

ETC Tiger Pipeline, LLC is an approximately 200-mile long interstate natural gas pipeline system in the Haynesville Shale, Bossier Shale and Fort Worth Basin production areas. The 42-inch pipeline originates in Carthage, Texas, and ends near Delhi, Louisiana, with interconnects to multiple interstate pipelines.

The Fayetteville Express Pipeline LLC ("FEP") is a 185-mile natural gas pipeline system that originates in Conway County, Arkansas, and terminates at an interconnect with Energy Transfer's Trunkline Gas pipeline in Panola County, Mississippi. FEP has a capacity of approximately 2.0 Bcf/d and transports natural gas supplies from the Fayetteville Shale in Arkansas to pipelines serving the Midwest and Northeast. FEP is a joint venture between Kinder Morgan and Energy Transfer, and Energy Transfer operates the pipeline.

The Rover Pipeline LLC runs over 700 miles from West Virginia to southern Michigan. The system delivers gas from the Marcellus Shale for further delivery to other pipeline interconnects in Ohio and Michigan, where the gas is delivered for distribution to markets across the United States, as well as to Canadian markets.

Midcontinent Express Pipeline LLC ("MEP") is an approximately 500-mile natural gas pipeline that originates near Bennington, Oklahoma and terminates at an interconnection with Transco near Butler, Alabama. Kinder Morgan owns 50% of MEP and Energy Transfer owns the other 50%. MEP is operated by Kinder Morgan.

Enable Gas Transmission, LLC ("EGT") provides natural gas transportation and storage services to customers in Oklahoma, Texas, Arkansas, Louisiana, Missouri and Kansas. EGT has two underground storage facilities in Oklahoma and one underground natural gas storage facility in Louisiana. Through numerous pipeline interconnections along the system and at the Perryville Hub, EGT

customers have access to the Midwest and Northeast markets, as well as most of the major natural gas consuming markets east of the Mississippi River.

Enable Mississippi River Transmission, LLC ("MRT") provides natural gas transportation and storage services in Texas, Arkansas, Louisiana, Missouri and Illinois. MRT has underground natural gas storage facilities in Louisiana and Illinois. MRT receives natural gas from a variety of interstate and intrastate pipelines through its interconnections and delivers natural gas primarily to St. Louis area markets.

Energy Transfer has a 50% ownership interest in the Southeast Supply Header, LLC ("SESH"), an approximately 290-mile interstate pipeline with capacity of 1.1 Bcf/d, providing natural gas transportation services from the Perryville Hub in Louisiana to the Gulf Coast. The SESH pipeline has numerous interconnections with existing natural gas pipelines and access to multiple high-deliverability storage facilities. The pipeline provides access to major Southeast and Northeast markets and transports gas directly to generating facilities in Mississippi and Alabama and to interconnecting pipelines that supply companies generating electricity for the Florida power market. SESH is a joint venture with Enbridge, Inc.

Gulf Run Transmission, LLC is a 42-inch diameter 135-mile pipeline that runs from the heart of the Haynesville Shale in East Texas and North Louisiana to the Carthage and Perryville natural gas hubs and other key markets along the Gulf Coast.

The Southwest Gas Storage Company is a natural gas storage company that owns and operates a total of four interstate natural gas storage fields. All of Southwest Gas Storage Company's storage fields are directly connected to Panhandle. Panhandle is the only current customer of Southwest Gas Storage Company, contracting for a total of 55.1 Bcf of storage capacity. The Commission has granted market-based rate authority for the services provided by Southwest Gas Storage Company.

In addition to these 13 onshore interstate natural gas pipeline and storage systems, Energy Transfer also owns Lake Charles LNG, an LNG import terminal and regasification facility located on Louisiana's Gulf Coast near Lake Charles, Louisiana. The import terminal has approximately 9.0 Bcf of above ground LNG storage capacity and the regasification facility has a send out capacity of approximately 1.8 Bcf/d. Energy Transfer is currently working to convert the Lake Charles LNG import and regasification facility into an LNG export facility.

As previously discussed, in November 2023, Energy Transfer also acquired Crestwood Equity Partners, LP. Crestwood Equity Partners, LP's assets included various gathering and processing assets located in the Williston, Delaware and Powder River basins, including approximately 2.0 billion cubic feet per day of gas gathering capacity, 1.4 billion cubic feet per day of gas processing capacity and 340 thousand barrels per day of crude gathering capacity.

Q.66 Does Energy Transfer stress the importance of its natural gas pipelines business to investors?

A. Yes. For example, in its March 2024 Investor Presentation, Energy Transfer stresses that it has a well-balanced asset mix, equally weighted between natural gas, oil, and natural gas liquids, with approximately 90% of its earnings from fee-based contracts. Energy Transfer also discusses at length its comprehensive Permian Gas takeaway solutions, providing flexibility to provide natural gas deliveries to most market hubs, as well as the successful completion of its Gulf Run pipeline, which Energy Transfer states that it is now evaluating a potential expansion of this pipeline asset.[64]

Q.67 Have you calculated the EBITDA and asset percentages for Energy Transfer?

A. Yes. Energy Transfer reports its financial results in its 2023 SEC Form 10-K in six segments: (1) Intrastate Transportation and Storage, (2) Interstate Transportation and Storage (3) Midstream, (4) NGL and Refined Products Transportation and Services, (5) Crude Oil Transportation and Services, and (6) Other. Energy Transfer also separately reports as business segments its investments in Sunoco LP and USAC.

The Intrastate Transportation and Storage segment includes Energy Transfer's intrastate assets which are primarily focused on the transportation of natural gas to major markets from various prolific natural gas producing areas in

[64] *See Energy Transfer Investor Presentation*, ENERGY TRANSFER (March 2024), https://ir.energytransfer.com/static-files/71fede3c-83ea-465b-84ca-3e08a79fa786

Texas and Louisiana (the Permian Basin and Barnett, Haynesville and Eagle Ford shale plays) as well as Oklahoma (the Anadarko and Arkoma basins).

The Interstate Transportation and Storage segment includes Energy Transfer's interstate natural gas pipeline network which spans the United States from Florida to California and Texas to Michigan, offering a comprehensive array of pipeline and storage services.

Energy Transfer's Midstream segment includes natural gas gathering pipelines, natural gas processing plants, natural gas treating facilities, and natural gas conditioning facilities with an aggregate processing capacity of approximately 11.4Bcf/d. The midstream segment focuses on the gathering, compression, treating, blending and processing of natural gas, with operations currently concentrated in major producing basins and shales in Texas, New Mexico, West Virginia, Pennsylvania, Ohio, Oklahoma, Arkansas, Kansas, Louisiana, Montana, North Dakota, and Wyoming. Many of Energy Transfer's midstream assets are integrated with their intrastate transportation and storage assets and NGL assets.

The NGL and Refined Products Transportation and Services segment includes Energy Transfer's operations that transport, store and execute acquisition and marketing activities utilizing a complementary network of pipelines, storage and blending facilities, and strategic off-take locations that provide access to multiple markets.

The Crude Oil Transportation and Services segment is comprised of approximately 14,500 miles of crude oil trunk and gathering pipelines in the

southwestern, midcontinent, and midwestern United States. This segment includes ownership interests in seven crude oil pipeline systems: the Bakken Pipeline, Bayou Bridge Pipeline, White Cliffs Pipeline, Maurepas Pipeline, the Permian Express Pipeline, Enable South Central Pipeline and the Wink to Webster Pipeline. Energy Transfer's crude oil terminalling services operate with an aggregate storage capacity of approximately 65 MMBbls,

The Other segment includes other minor business activities that are not reportable segments.

The tables below show the business segment revenue and net assets which Energy Transfer reports for each of these segments for the years 2021, 2022, and 2023.

Energy Transfer LP – EBITDA (in $ millions)

Segment Adjusted EBITDA	**2023**	**2022**	**2021**	**Average**
Intrastate Transportation and Storage	$1,111	$1,396	$3,483	$1,997
Interstate Transportation and Storage	$2,009	$1,753	$1,515	$1,759
Midstream	$2,525	$3,210	$1,868	$2,534
NGL and Refined Products Transportation and services	$3,894	$3,025	$2,828	$3,249
Crude Oil Transportation and Services	$2,681	$2,187	$2,023	$2,297
Investment in Sunoco LP	$964	$919	$754	$879
Investment in USAC	$512	$426	$398	$445
All Other and Eliminations	$2	$177	$177	$119
Total Segment Adjusted EBITDA	**$13,698**	**$13,093**	**$13,046**	**$13,279**
% Interstate Transportation and Storage	14.67%	13.39%	11.61%	13.22%
% Interstate / NGL / Crude / Intrastate	70.78%	63.86%	75.49%	70.04%

Energy Transfer LP – Assets (in $ millions)

Segment Assets	**2023**	**2022**	**2021**	**Average**

Intrastate Transportation and Storage	$6,112	$6,609	$7,322	$6,681
Interstate Transportation and Storage	$17,708	$17,979	$17,774	$17,820
Midstream	$25,592	$21,851	$21,960	$23,134
NGL and Refined Products Transportation and services	$27,214	$27,903	$28,160	$27,759
Crude Oil Transportation and Services	$25,464	$19,200	$19,649	$21,438
Investment in Sunoco LP	$6,826	$6,830	$5,815	$6,490
Investment in USAC	$2,737	$2,666	$2,768	$2,724
All Other and Eliminations	$5,045	$2,605	$2,515	$3,388
Total Segment Assets	**$116,698**	**$105,643**	**$105,963**	**$109,435**
% Interstate Transportation and Storage	15.17%	17.02%	16.77%	16.32%
% Interstate / Intrastate / NGL / Crude / Intrastate	65.55%	67.86%	68.80%	67.41%

Q.68 Why is it appropriate to include Energy Transfer as a member of the Transco Proxy Group?

A. As shown in the tables above, only 16.32% of Energy Transfer's assets and just 13.22% of its EBITDA have been derived from its interstate transportation and storage business segment on average over the past three years. However, Energy Transfer also has significant investments in regulated liquids pipelines as well as regulated crude oil pipelines. Combining these other two business segments with its interstate transportation and storage segment results in 70.04% of Energy Transfer's EBITDA and 67.41% of assets being associated with pipelines on average over the past three years. As previously discussed, the Commission has in the past allowed companies to be included in a proposed proxy group even if their income or assets do not attain the 50% guideline. In *Kern River*, the Commission

allowed such an entity to be included in that proxy group, explaining that when the entities' oil pipeline component was counted, its combined FERC-jurisdictional transportation function was 70% and that a diversified firm having components in natural gas and liquids transportation should not be precluded from inclusion in a proxy group. Opinion No. 486-B at P 75. Energy Transfer, with its significant investment in regulated liquids and crude oil pipelines, is in a very similar situation and should therefore be treated similarly and included in the Transco Proxy Group.

Energy Transfer is one of the largest and most diversified midstream energy companies in North America with more than 125,000 miles of pipelines and associated energy infrastructure across 44 states. Given its extensive interstate natural gas pipeline and storage portfolio, and to ensure an adequately sized proxy group in this proceeding, Energy Transfer should be included in the Transco Proxy Group.

2. <u>Kinder Morgan, Inc.</u>

Q.69 Please describe the second entity in your recommended Transco Proxy Group.

A. The second entity in my proposed Transco Proxy Group is Kinder Morgan. Kinder Morgan is one of the largest pipeline and storage companies in existence today. With approximately 70,000 miles of natural gas pipelines, Kinder Morgan owns an interest in and/or operates one of the largest natural gas networks in North America, serving the major consuming markets in the United States. Kinder Morgan pipelines transport approximately 40% of the natural gas consumed in the United States, and the company has natural gas pipelines connected to every major natural

gas supply area, including the Eagle Ford, Marcellus, Bakken, Utica, Uinta, Permian, Haynesville, Fayetteville, and Barnett.

Kinder Morgan's 2023 SEC Form 10-K reports four business segments, with the largest business segment being its natural gas pipeline segment. In addition to natural gas pipelines, Kinder Morgan reports the following other segments: products pipelines, terminals, and CO2.

Q.70 How does Kinder Morgan describe its business operations to investors?

A. Kinder Morgan describes itself as a market leader in each of its main businesses—Natural Gas Pipelines, Products Pipelines, CO2, and Terminals. Its corporate profile states that it has an unparalleled, large footprint of diversified and strategically located assets that are core to North American energy infrastructure and help deliver needed energy products to high-demand markets. On its company website, Kinder Morgan highlights its Natural Gas Pipelines segment, stating that it owns one of the nation's largest natural gas networks with approximately 70,000 miles of natural gas pipelines, and stresses that the Kinder Morgan assets are connected to every important U.S. natural gas resource play, including the Eagle Ford, Marcellus, Utica, Uinta, Haynesville, Fayetteville, Bakken, Permian, and Barnett. Furthermore, Kinder Morgan states that it moves approximately 40% of all the natural gas consumed in the United States.

Q.71 Does Kinder Morgan emphasize to the investment community the importance of its natural gas assets and its planned growth in its business?

A. Yes. Kinder Morgan's January 2024 Investor Presentation stresses that Kinder Morgan owns the largest natural gas transmission network in the nation, with 64%

of its cash flows coming from natural gas. The presentation also highlights that of Kinder Morgan's $3.0 billion of its current growth capital projects, a full $1.6 billion (53%) are natural gas projects. Kinder Morgan also discusses its ongoing pipeline investments targeting LNG-export related demand and states that there are many additional future significant investment opportunities resulting from its expansive, strategically located natural gas pipeline network.

Q.72 Why is Kinder Morgan's emphasis important?

A. Kinder Morgan's 2023 SEC Form 10-K shows that the majority (*i.e.*, well over 50%) of the income and assets of Kinder Morgan are related to its natural gas pipelines and storage facilities. The tables below show the business segment assets and EBITDA as reported by Kinder Morgan for the years 2021 to 2023.

Kinder Morgan, Inc. – Assets

Assets($ Millions)	2023	2022	2021	Average
Natural Gas Pipelines	$49,883	$47,978	$47,746	$48,536
Products Pipelines	$8,781	$8,985	$9,088	$8,951
Terminals	$8,235	$8,357	$8,513	$8,368
CO2	$3,497	$3,449	$2,843	$3,263
Corporate Assets	$624	$1,309	$2,226	$1,386
Total Assets	**$71,020**	**$70,078**	**$70,416**	**$70,505**
% Natural Gas Pipelines	**70.24%**	**68.46%**	**67.81%**	**68.84%**

Kinder Morgan, Inc. – EBITDA

EBITDA ($ Millions)	2023	2022	2021	Average
Natural Gas Pipelines	$5,160	$4,942	$5,463	$5,188
Products Pipelines	$1,128	$1,107	$1,117	$1,117
Terminals	$1,040	$975	$908	$974
CO2	$693	$808	$754	$752
Total EBITDA	**$8,021**	**$7,832**	**$8,242**	**$8,032**
% Natural Gas Pipelines	**64.33%**	**63.10%**	**66.28%**	**64.57%**

Q.73 Why should Kinder Morgan be included in the Transco Proxy Group?

A. Kinder Morgan should be included in the Transco Proxy Group because it is one of the largest natural gas pipeline and energy infrastructure companies in the United States and its risks are therefore a solid barometer of general natural gas pipeline

industry risks. Kinder Morgan's twenty-two FERC regulated interstate natural gas pipeline and storage facilities as of April 2024 include:

Pipeline
Arlington Storage Company, L.L.C.
Bear Creek Storage Company, L.L.C.[65]
Cheyenne Plains Gas Pipeline Company, L.L.C.
Colorado Interstate Gas Company, L.L.C.
El Paso Natural Gas Company, L.L.C.
Elba Express Company, L.L.C.
Fayetteville Express Pipeline LLC[66]
Florida Gas Transmission Company, L.L.C.[67]
Horizon Pipeline Company, L.L.C.[68]
Kinder Morgan Illinois Pipeline LLC
Kinder Morgan Louisiana Pipeline LLC
Midcontinent Express Pipeline LLC[69]
Mojave Pipeline Company, L.L.C.
Natural Gas Pipeline Company of America LLC[70]
Sierrita Gas Pipeline LLC[71]
Southern LNG Company, L.L.C.
Southern Natural Gas Company, L.L.C.[72]
Stagecoach Pipeline and Storage Company LLC
Tennessee Gas Pipeline Company, L.L.C.
TransColorado Gas Transmission Company LLC
Wyoming Interstate Gas Company, L.L.C.
Young Gas Storage Company, Ltd.[73]

[65] Joint Venture of Tennessee Gas Pipeline Company, L.L.C. and Southern Natural Gas Company, L.L.C.
[66] Joint Venture with Energy Transfer Operating, L.P.
[67] Joint Venture with Energy Transfer Operating, L.P.
[68] Joint Venture with Nicor Gas.
[69] Joint Venture with Energy Transfer Operating, L.P.
[70] Joint Venture with Brookfield Infrastructure Partners L.P. and ArcLight Capital Partners LLC.
[71] Joint Venture with MGI Enterprises U.S. LLC and MIT Pipeline Investment Americas, Inc.
[72] Joint Venture with Southern Company.
[73] Joint Venture with Xcel Energy Corporation and Colorado Springs Utilities.

Given this extensive interstate pipeline and storage portfolio, Kinder Morgan should certainly be included in the Transco Proxy Group.

Q.74 Please briefly describe each of Kinder Morgan's FERC regulated natural gas pipeline and storage assets.

A. As referenced above, Kinder Morgan currently owns or has ownership interests in the following FERC-regulated interstate natural gas pipelines and storage facilities.

Arlington Storage Company, L.L.C. ("Arlington Storage") consists of the Adrian (sometimes referred to as Steuben), Thomas Corners, and Seneca Lake storage fields in New York, and has a combined certificated working gas capacity of 15 Bcf. The header system for Arlington Storage consists of two non-contiguous pipelines with an aggregate length of approximately 50 miles. Approximately 31 miles of pipeline connect Arlington Storage's Adrian and Thomas Corners storage facilities with the interstate gas pipeline systems of Eastern Gas Transmission and Storage, Inc. ("EGTS"), Millennium Pipeline Company, LLC ("Millennium"), and Tennessee Gas Pipeline Company ("Tennessee Gas"). These facilities are located in Steuben County, New York. Approximately 19 miles of pipeline connect Arlington Storage's Seneca Lake storage facility with the interstate pipeline systems of Millennium and EGTS. These facilities are located in Schuyler and Chemung counties, New York. Arlington storage provides storage services under its market-based rate authority.

Bear Creek Storage Company, L.L.C. ("Bear Creek") is located in Bienville Parish, Louisiana. The facility has a working natural gas storage capacity of approximately 59 Bcf. Bear Creek is a joint venture, equally owned by Southern

Natural Gas Company, L.L.C. ("SNG") and Tennessee Gas, and its working storage capacity is committed equally to Tennessee Gas and SNG. Bear Creek is not currently an open-access storage provider under Part 284 of the FERC Regulations.

The Cheyenne Plains Gas Pipeline Company, L.L.C. system consists of 410 miles of 36-inch diameter pipeline. It extends from near the Wyoming-Colorado border to South Central Kansas and serves market areas in the Midwest with connections to several mid-continent pipelines in Kansas.

Colorado Interstate Gas Company, L.L.C. ("CIG") is a 4,350-mile pipeline system that transports natural gas from production areas in the Rocky Mountains to customers in Colorado and Wyoming and indirectly to the Midwest, Southwest, California and Pacific Northwest markets. CIG has interests in five storage facilities located in Colorado and Kansas, which collectively have approximately 43 Bcf of underground working natural gas storage capacity.

El Paso Natural Gas Company, L.L.C. ("EPNG") is a large 10,140-mile pipeline system which transports natural gas from the San Juan, Permian and Anadarko basins to markets in California, Arizona, Nevada, New Mexico, Oklahoma, Texas and Northern Mexico. EPNG also owns approximately 44 Bcf of underground working natural gas storage capacity in Southeast New Mexico.

The Elba Express Company, L.L.C. system consists of a 200-mile bidirectional system that transports natural gas between the Elba Island LNG terminal near Savannah, Georgia, and the Transco pipeline in Hart County, Georgia, and Anderson County, South Carolina. In Georgia, the pipeline connects

with both Carolina Gas Transmission, LLC and the Transco system. The system also directly connects to various power plants and natural gas utility providers.

FEP is a 185-mile natural gas pipeline system that originates in Conway County, Arkansas, and terminates at an interconnect with Energy Transfer's Trunkline Gas pipeline in Panola County, Mississippi. FEP has a capacity of approximately 2.0 Bcf/d and transports natural gas supplies from the Fayetteville Shale in Arkansas to pipelines serving the Midwest and Northeast. FEP is a joint venture between Kinder Morgan and Energy Transfer, and Energy Transfer operates the pipeline.

FGT is an approximately 5,300-mile natural gas pipeline that transports natural gas from Texas to Florida. The system transports natural gas to various cogeneration facilities, electric utilities, independent power producers, municipal generators, and LDCs. FGT is also a joint venture between Kinder Morgan and Energy Transfer and is operated by Energy Transfer.

The Horizon Pipeline Company, L.L.C. ("Horizon Pipeline") is a joint venture of Kinder Morgan and Nicor Gas. It carries natural gas from Kinder Morgan's Natural Gas Pipeline Company of America LLC ("NGPL") pipeline Chicago supply hub into Nicor Gas's distribution systems in northern Illinois and Wisconsin. The Horizon Pipeline is a 73 mile long 36-inch diameter system and includes a lease of pipeline space from NGPL.

Kinder Morgan Illinois Pipeline LLC includes a lease of 360,000 Dth/day in approximately 26 miles of pipeline facilities owned by NGPL, as well as

approximately 3 miles of 24-inch-diameter pipeline to primarily serve People's Gas and other Chicago area markets.

Kinder Morgan Louisiana Pipeline LLC provides deliveries to the Cheniere Sabine Pass LNG Terminal in Cameron Parish, Louisiana from both Columbia Gulf in Evangeline Parish, Louisiana (owned by TC Energy Corporation) and NGPL. The pipeline system is 135 miles in length and has a total design capacity of 2.2 Bcf/d.

MEP is a 510-mile natural gas pipeline that originates near Bennington, Oklahoma and terminates at an interconnection with Transco near Butler, Alabama. Kinder Morgan owns 50% of MEP and Energy Transfer owns the other 50%. MEP is operated by Kinder Morgan.

Mojave Pipeline Company, L.L.C. is a 500-mile pipeline system that connects with the EPNG, the Transwestern pipeline system, and the Kern River pipeline system.

NGPL is the largest transporter of natural gas into the Chicago-area market as well as one of the largest interstate pipeline systems in the country. It is also a major transporter of natural gas to large LNG export facilities and other markets located on the Texas and Louisiana Gulf Coast. NGPL has approximately 9,100 miles of pipeline, more than 1 million compression horsepower, and 288 Bcf of working natural gas storage. NGPL provides its customers access to virtually all major natural gas supply basins directly and through its numerous interconnects with intrastate and interstate pipeline systems. NGPL is owned by Kinder Morgan,

Brookfield Infrastructure Partners L.P., and ArcLight Capital Partners LLC. The system is operated by Kinder Morgan.

Sierrita Gas Pipeline LLC is an approximately 61-mile, 36-inch diameter pipeline system that extends from the EPNG pipeline system, near Tucson, Arizona, to the United States-Mexico border near Sasabe, Arizona.

Southern LNG Company, L.L.C. owns the Elba Island LNG terminal located near Savannah, Georgia. The terminal has 11.5 Bcf of LNG storage capacity and 1,755 MMcf/d of peak vaporization send-out capacity and is directly connected to three major pipelines, including Transco.

SNG is an approximately 7,000-mile pipeline system extending from natural gas supply basins in Louisiana, Mississippi and Alabama, to market areas in Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina and Tennessee, including the metropolitan areas of Atlanta and Birmingham. The SNG system is also connected to the Elba Island LNG terminal near Savannah, Georgia. SNG is a joint venture of Kinder Morgan and Southern Company.

Stagecoach Pipeline & Storage Company LLC ("Stagecoach") consists of the Stagecoach storage field in Tioga, New York, which has a certificated working gas capacity of 26.2 Bcf. The header system for Stagecoach has an aggregate length of approximately 75 miles and interconnects with Millennium at its northern-most point, Transco at its southern-most point, and Tennessee Gas at about its midpoint. Stagecoach provides its storage services pursuant to its market-based rate authority.

Kinder Morgan's Tennessee Gas is an approximately 11,750-mile pipeline bi-directional system that has traditionally transported natural gas from Louisiana, the Gulf of Mexico and South Texas to the Northeast section of the United States, including New York City and Boston area markets. In addition, Tennessee gas now transports natural gas supplies from the Northeast United States to diverse end-use demand markets including New York City and Boston in the Northeast, as well as to Louisiana, the Texas Gulf Coast, and Mexico.

TransColorado Gas Transmission Company LLC is a 310-mile natural gas pipeline system that extends from the Greasewood, Colorado area to pipeline interconnects in Rio Blanco County, Colorado, to a point of interconnection with EPNG and Transwestern interstate pipelines at the Blanco Hub located in San Juan County, New Mexico.

Wyoming Interstate Gas Company, L.L.C. ("WIC") consists of approximately 850 miles of pipeline. The mainline extends from Western Wyoming to Northeast Colorado (to the Cheyenne Hub). It also has several lateral pipeline systems that extend from various interconnections along the WIC mainline into Western Colorado and Northeast Wyoming and also into Eastern Utah.

Young Gas Storage Company, Ltd. owns and operates a natural gas storage facility located in Morgan County, Colorado. The facility has a working natural gas storage capacity of approximately 5.8 Bcf. Young Gas Storage Company, Ltd. is a joint venture owned by Kinder Morgan, Xcel Energy Corporation and Colorado

Springs Utilities ("CSU"). The working storage capacity of the facility is committed to CIG and CSU.

Given its extensive interstate natural gas pipeline and storage portfolio, Kinder Morgan should be included in the Transco Proxy Group.

3. <u>ONEOK, Inc.</u>

Q.75 Please describe the third member of the Transco Proxy Group.

A. The third entity in my proposed Transco Proxy Group is ONEOK. ONEOK owns, in whole or in part: 1,500 miles of FERC-regulated interstate natural gas pipelines with 3.5 Bcf/d of peak transportation capacity; 5,100 miles of state-regulated intrastate transmission pipelines with peak transportation capacity of 4.3 Bcf/d; and 52.2 Bcf of total active working natural gas storage capacity. ONEOK is also a midstream service provider that owns some of the nation's premier natural gas liquids systems, connecting NGL supplies in the Mid-Continent, Permian and Rocky Mountain regions with key market centers and an extensive network of natural gas gathering, processing, storage, and transportation assets. In addition, ONEOK's Refined Products and Crude segment, which was recently acquired from Magellan Midstream Partners, transports, stores, and distributes refined petroleum products and crude, and includes FERC regulated crude oil pipelines.

ONEOK reports its operations in four business segments: (1) Natural Gas Gathering and Processing, (2) Natural Gas Liquids, (3) Natural Gas Pipelines, and (4) Refined Products and Crude.

Q.76 Please provide an overview of ONEOK's Natural Gas Pipeline Segment.

A. ONEOK's Natural Gas Pipelines segment includes ownership interests in Guardian Pipeline, L.L.C. ("Guardian"), Midwestern Gas Transmission Company ("Midwestern"), Northern Border Pipeline Company ("Northern Border"), OkTex Pipeline Company, L.L.C. ("OkTex"), and Viking Gas Transmission Company ("Viking"). ONEOK's FERC-regulated interstate natural gas pipelines are located in North Dakota, Minnesota, Wisconsin, Illinois, Indiana, Kentucky, Tennessee, Oklahoma, Texas, and New Mexico.

Guardian has approximately 263 miles of mainline pipeline, 100,225 horsepower ("HP") of compression and 18 meter stations. Guardian originates near Joliet, Illinois and extends to Green Bay, Wisconsin. The current design capacity of Guardian is 1,287,000 Dth/d. Guardian accesses all major North American supply basins through multiple upstream firm transportation providers, and is also connected with multiple providers of storage and related services.

Midwestern is a bidirectional system that interconnects with the Tennessee Gas pipeline near Portland, Tennessee, and with several other interstate pipelines that have access to both the Utica Shale and the Marcellus Shale at the Chicago market hub near Joliet, Illinois. Midwestern's interconnects include Guardian, Rockies Express Pipeline LLC, Texas Eastern, ANR Pipeline Company ("ANR"), Columbia Gulf, NGPL, Panhandle, East Tennessee Natural Gas, LLC, Alliance, Northern Border, Trunkline, and Texas Gas Transmission, LLC, providing bi-

directional service to markets in Tennessee, Kentucky, Indiana, and southern Illinois, as well as the growing Chicago market hub.

Northern Border extends from the Saskatchewan-Montana border southeast across the Midwest until terminating in Indiana, with a total of over 1,400 miles of pipeline. In addition to transporting Canadian-sourced supply, Northern Border is also able to receive and transport natural gas produced in the Williston and Powder River Basins. ONEOK is a 50% owner of Northern Border, with the remaining 50% being owned by TC Energy.

The OkTex system extends in a southernly direction from points of interconnection with the facilities of ONEOK Gas Transportation Company and Oklahoma Natural Gas Company to facilities owned by companies located in Texas, New Mexico, and Mexico.

Viking is a bidirectional system that interconnects with the TC Energy Canadian Mainline pipeline at the United States border near Emerson, Canada, and with ANR near Marshfield, Wisconsin. The system serves markets in North Dakota, Minnesota, and Wisconsin. Viking also connects with several other major pipeline systems, including Great Lakes Gas Transmission Limited Partnership and Northern Natural Gas Company.

The Natural Gas Pipelines segment also includes ONEOK's ownership interests in several intrastate natural gas pipelines and storage facilities. ONEOK's intrastate natural gas pipeline assets in Oklahoma transport natural gas through that state and have access to the major natural gas production areas in the Mid-Continent

region, which include the STACK and SCOOP areas and the Cana-Woodford Shale, Woodford Shale, Springer Shale, Meramec, Granite Wash, and Mississippian Lime formations. In Texas, ONEOK's intrastate natural gas pipelines are connected to the major natural gas producing formations in the Texas Panhandle, including the Granite Wash formation and the Delaware and Midland Basins in the Permian Basin. These pipelines are capable of transporting natural gas throughout the western portion of Texas, including the Waha area where other pipelines may be accessed for transportation to western U.S. markets, exports to Mexico, the Houston Ship Channel market to the east, and the Mid-continent market to the north. ONEOK's intrastate natural gas pipeline assets also have access to the Hugoton and Central Kansas Uplift Basins in Kansas.

Q.77 Please provide a brief overview of ONEOK's intrastate pipeline and storage interests.

A. ONEOK's intrastate pipeline interests include:

- ONEOK Gas Transportation, L.L.C. ("OGT"), an intrastate pipeline system in Oklahoma. The system has approximately 2,471 miles of transmission pipelines with a peak capacity of 2.1 Bcf/d. The transmission system operates high-pressure pipelines up to 1,100 psig and utilizes pipelines up to 30 inches in diameter. OGT offers both intrastate and Natural Gas Policy Act ("NGPA") Section 311 transportation services. The OGT system is also connected to six underground storage facilities, 35 processing plants and 130 producing fields within the Oklahoma. In addition to this connected

supply, OGT has 12 interstate pipeline interconnects and six intrastate pipeline interconnects.

- ONEOK Gas Storage, L.L.C. provides storage services from approximately 47 Bcf of working gas storage capacity contained in four fields connected to OGT. The four storage fields - Haskell, Osage, Edmond, and Depew - are depleted gas reservoirs located in Oklahoma. These storage fields have total maximum daily injection and withdrawal capabilities of approximately 700 MMcf and 1,500 MMcf, respectively.
- ONEOK Western Trail Pipeline, L.L.C., is an intrastate natural gas pipeline in western Oklahoma that consists of 130 miles of primarily 16-inch pipeline with throughput capacity of 220,000 Dth/d, and which serves industrial loads in western Oklahoma.
- ONEOK's WesTex Transmission, L.L.C. ("OWT"), is an intrastate pipeline system operating within Texas. OWT offers both intrastate and NGPA Section 311 transmission services. The OWT system consists of approximately 2,217 miles of pipeline of various sizes up to 24 inches in diameter, operating at pressures up to 1,200 psig, and has a peak day capacity of 777 MMcf/d. The OWT system is connected to major natural gas producing areas in the Texas Panhandle, Waha Hub, and Permian Basin.
- ONEOK Texas Gas Storage, L.L.C., offers natural gas storage services from a 4 Bcf working capacity storage complex located near the city of Loop in West Texas.

- Roadrunner Gas Transmission, LLC ("Roadrunner"), transports up to 640 MMcf/d of natural gas, with up to 570 MMcf/d transported to Mexico's growing markets. The Roadrunner pipeline extends from the OWT system at Coyanosa, Texas, west to an international border-crossing connection at the U.S.-Mexico border near San Elizario, Texas, where it connects with Fermaca's Tarahumara Gas Pipeline. ONEOK owns 50% of the Roadrunner pipeline.
- Mid-Continent Market Center, L.L.C. ("MCMC"), is a 204-mile intrastate pipeline system primarily located in Kingman, Sedgwick, and Butler counties in south central Kansas. MCMC offers both intrastate and NGPA 311 transportation services. MCMC has two storage facilities: Brehm and Konold. The Brehm storage facility has 1.989 Bcf of working capacity, 1,230 HP of compression, and the ability to deliver up to 35 MMcf/d and inject up to 20 MMcf/d. The Konold storage facility has 0.7 Bcf of working capacity, 720 HP of compression, and the ability to deliver and inject up to 10 MMcf/d.

Q.78 What is included in the ONEOK Natural Gas Gathering and Processing segment?

A. ONEOK's Natural Gas Gathering and Processing segment provides midstream services to producers in North Dakota, Montana, Wyoming, Kansas, and Oklahoma. Natural gas is typically gathered at the wellhead, compressed, and transported through gathering pipelines to ONEOK-owned processing facilities.

ONEOK then delivers processed, dry natural gas to natural gas pipelines, storage facilities, and end users.

Q.79 Please provide a brief overview of the major pieces of ONEOK's Natural Gas Liquids Segment.

A. The Natural Gas Liquids segment owns 9,130 miles of gathering pipelines, 4,350 miles of distribution pipelines, eight NGL fractionators with combined operating capacity of 920,000 barrels per day of net capacity, and 6 storage facilities with approximately 30 million barrels of capacity. The segment includes ONEOK's ownership interest in numerous NGL pipelines in Oklahoma, Kansas, Texas, New Mexico, Montana, North Dakota, Wyoming, and Colorado, and terminal and storage facilities in Missouri, Nebraska, Iowa, and Illinois. ONEOK also owns numerous FERC-regulated NGL pipelines in Kansas, Missouri, Nebraska, Iowa, Illinois, and Indiana that connect ONEOK's Mid-Continent assets with Midwest markets, including Chicago.

The segment also includes ONEOK's facilities that gather, fractionate, treat, and transport NGLs and store NGL products, primarily in Oklahoma, Kansas, Texas, New Mexico, and the Rocky Mountain region, which includes the Williston, Powder River and Denver-Julesburg Basins, and deliver those products to two primary market centers, one in the Mid-Continent in Conway, Kansas, and the other in the Gulf Coast in Mont Belvieu, Texas.

Q.80 Are any of ONEOK's NGL pipelines regulated by the FERC?

A. Yes. ONEOK's NGL pipelines are indeed FERC-regulated, including:

- ONEOK Arbuckle North Pipeline, L.L.C.

- ONEOK Arbuckle II Pipeline, L.L.C.
- ONEOK Bakken Pipeline, L.L.C.
- ONEOK Elk Creek Pipeline. L.L.C.
- ONEOK NGL Pipeline, L.L.C.
- ONEOK North System, L.L.C.
- Overland Pass Pipeline Company LLC (50% Ownership)
- ONEOK Southeast Texas NGL Pipeline, L.L.C.

In addition, the ONEOK West Texas NGL Pipeline is dually regulated by both the FERC and the State of Texas for certain intrastate movements as a Texas Common Carrier.

Q.81 Please provide a brief overview of the major pieces of ONEOK's Refined Products and Crude Segment.

A. The Refined Products and Crude segment includes approximately 2,200 miles of crude oil pipelines, a condensate splitter and storage facilities with an aggregate capacity of approximately 39 million barrels of storage and two marine storage terminals. ONEOK owns the longest common carrier pipeline system for refined products in the United States, extending approximately 9,800 miles from the Texas Gulf Coast and covering a 15-state area across the central U.S. The system includes 47 million barrels of aggregate usable storage capacity at 54 connected terminals.

Q.82 Are any of ONEOK's crude oil and refined products pipelines regulated by the FERC?

A. Yes. ONEOK's crude oil and refined products pipelines are indeed FERC-regulated. These pipelines include:

- BridgeTex Pipeline Company, LLC
- HoustonLink Pipeline Company, LLC
- Magellan Crude Oil Pipeline Company, L.P.
- Magellan Pipeline Company, L.P.
- Magellan Pipelines Holdings, L.P.
- Saddlehorn Pipeline
- Seabrook Pipeline, LLC

Q.83 Does ONEOK meet the 50% natural gas pipeline business criteria?

A. ONEOK reports the following metrics in their 2023 SEC From 10-K:

ONEOK, Inc. – Assets (in $ millions)

Assets ($ Millions)	2023	2022	2021	Average
Natural Gas Pipelines	$ 2,624	$ 2,254	$ 2,143	$ 2,340
Natural Gas Gathering and Processing	$ 7,078	$ 6,980	$ 6,769	$ 6,942
Natural Gas Liquids	$ 14,974	$ 14,643	$ 14,502	$ 14,706
Refined Products and Crude	$ 19,531	n/a	n/a	$ 19,531
Total	$ 44,207	$ 23,877	$ 23,414	$ 30,499
% Natural Gas Pipelines	**5.94%**	**9.44%**	**9.15%**	**8.18%**

% Pipelines / NGL / Crude	**83.99%**	**70.77%**	**71.09%**	**75.28%**

ONEOK, Inc. – EBITDA (in $ millions)

EBITDA ($ Millions)	**2023**	**2022**	**2021**	**Average**
Natural Gas Pipelines	$ 559	$ 488	$ 528	$ 525
Natural Gas Gathering and Processing	$ 1,244	$ 1,037	$ 889	$ 1,057
Natural Gas Liquids	$ 3,045	$ 2,095	$ 1,964	$ 2,368
Refined Products and Crude	$ 465	n/a	n/a	$ 465
Total EBITDA	$ 5,313	$ 3,620	$ 3,381	$ 4,105
% Natural Gas Pipelines	**10.52%**	**13.48%**	**15.62%**	**13.21%**
% Pipelines / NGL / Crude	**76.59%**	**71.35%**	**73.71%**	**73.88%**

As shown, ONEOK falls short of the 50% threshold when considering solely its natural gas pipeline assets and revenues. However, the percentages are well above the 50% threshold when ONEOK's Natural Gas Liquids and Refined Products and Crude segments are also considered. Consolidating these segments is a reasonable approach and is consistent with the approach taken by the Commission in Opinion No. 486-B, as the majority of ONEOK's NGL and crude oil pipelines are FERC-regulated. In addition, ONEOK's natural gas gathering and processing facilities primarily exist to transport gas to interstate pipeline facilities.

Q.84 How does ONEOK describe its business operations to investors?

A. ONEOK's investor presentations stress the importance of its Natural Gas Pipelines segment. For example, in their March 2024 Investor Update, ONEOK highlights that over 95% of its natural gas pipeline revenues are from fee-based demand charge contracts, providing revenue certainty and stability for investors and discusses the direct connectivity of ONEOK's natural gas pipelines to end-use markets including local gas distributions companies, electric generation facilities, and large industrial companies. It is clear that natural gas pipelines are an important and integral part of ONEOK's business.

Q.85 Please explain why ONEOK should be included in the Transco Proxy Group even though it currently does not have at least 50% of its income and assets devoted to the natural gas pipeline industry.

A. As I have previously discussed, the Commission has at times in the past relaxed the 50% natural gas pipeline business criteria to ensure that an acceptably sized proxy group can be compiled. While ONEOK's Natural Gas Pipelines segment does not alone meet the 50% threshold, if ONEOK's Natural Gas Liquids and Refined Products and Crude segments are added, the percentages for both Assets and EBITDA significantly exceed 50%. ONEOK should therefore be included in the Transco Proxy Group.

4. <u>The Williams Companies, Inc.</u>

Q.86 Please describe the fourth entity in the recommended Transco Proxy Group.

A. The fourth and final entity in my recommended Transco Proxy Group is Williams. Williams' FERC-regulated interstate natural gas pipeline systems include Transco; Northwest Pipeline LLC ("Northwest"); Gulfstream Natural Gas System L.L.C.

("Gulfstream") (50% interest); Discovery Gas Transmission, LLC ("Discovery"); Black Marlin Pipeline LLC ("Black Marlin"); MountainWest Pipeline, LLC ("MountainWest"), MountainWest Overthrust Pipeline, LLC, ("Overthrust") and a 50% interest in the White River Hub, LLC ("White River Hub"). Transco and Northwest are two of the largest U.S. natural gas pipeline systems and include significant natural gas storage capacity as well.

As previously discussed, the Transco system transports 16% of the natural gas in the United States. The Transco system is the largest natural gas transmission pipeline in the United States; the 2023 total Plant in Service for Transco was over $18 billion. Transco is a 9,700-mile FERC-regulated natural gas pipeline system extending from Texas, Louisiana, Mississippi, and the Gulf of Mexico through Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, Pennsylvania, and New Jersey to the New York City metropolitan area. The Transco system serves customers in thirteen states, including major metropolitan areas in Georgia, North Carolina, Washington, D.C., Maryland, New York, New Jersey, and Pennsylvania. In addition, the Transco system has interconnections with numerous pipelines with access to shale gas production basins in the Gulf Coast as well as the Marcellus and the Utica. The Transco system currently has a system-wide delivery capacity totaling approximately 19.1 Bcf/d, which dwarfs most other natural gas pipelines. Transco's system includes 59 compressor stations, four underground storage fields, and is also connected to the Pine Needle

storage facility. The total usable gas storage capacity available to Transco and its customers is nearly 200 Bcf of natural gas.

The Northwest system is a nearly 4,000-mile, 3.8 Bcf/d interstate natural gas transportation system which transports gas from the San Juan basin in New Mexico, northwest to northern Washington State. The pipeline serves natural gas customers in California, Arizona, New Mexico, Colorado, Utah, Oregon, and Washington, either directly or through interconnections with other pipeline companies and can be operated in a bi-directional manner. Northwest accesses significant natural gas supplies in the San Juan basin and the Rocky Mountain region, and also through imported Canadian gas supplies from the Western Canadian Sedimentary Basin ("WCSB"). In addition, Northwest owns an one-third interest in the Jackson Prairie underground storage natural gas facility in Washington. Northwest also owns and operates an LNG storage facility in Washington State. Northwest's storage facilities have an aggregate working natural gas storage capacity of 10.4 Bcf of natural gas.

Gulfstream is an approximately 745-mile interstate natural gas transmission system with associated compressor stations, owned and operated jointly with Enbridge. Gulfstream transports natural gas from Mississippi, Alabama, Louisiana, and Texas, crossing the Gulf of Mexico to markets in central and southern Florida. Williams owns approximately 50% of Gulfstream.

Discovery is an approximately 594-mile offshore pipeline which includes an offshore natural gas gathering system, as well as the Larose Gas Processing Plant

and Paradis fractionation facility. Discovery has a 30-inch mainline and an 18-inch lateral and serves South Timbalier, Grand Isle, Ewing Bank, Green Canyon, and Mississippi Canyon areas offshore Louisiana.

Black Marlin is an approximately 75-mile offshore pipeline which includes a 16-inch diameter gas pipeline located offshore Texas and extending from a point offshore in High Island Area Block 136 to Black Marlin's onshore terminal facility located at Texas City, Texas. A 16-inch diameter extension of this pipeline extends from High Island Block A-6 to a point of interconnection with the above-described pipeline in High Island Block 137. The Black Marlin system currently has no firm shippers.

MountainWest is an interstate natural gas pipeline company that provides transportation and underground storage services in Utah, Wyoming, and Colorado. The system includes approximately 1,867 miles of pipeline with a total daily capacity of 2.5 Bcf/d. MountainWest also owns and operates the Clay Basin storage facility, which is the largest underground storage reservoir in the Rocky Mountain Region with over 51 Bcf of working gas capacity.

Overthrust is a 261-mile pipeline located in southwestern Wyoming with a total daily capacity of 2.4 Bcf/d. The Overthrust system includes interconnects with several major pipeline systems in the Rocky Mountain region.

The White River Hub is a joint venture with Enterprise Products Partners L.P., consisting of four miles of 36-inch diameter pipe, and approximately seven miles of 30-inch diameter pipe, and related metering facilities. The White River

Hub provides more than 2.5 Bcf/d of firm and interruptible transportation service allowing producers, marketers and shippers to access downstream markets for natural gas volumes produced in northwest Colorado's Piceance Basin.

Williams also owns a minority interest in the stand-alone Pine Needle storage facility located near Stokesdale, North Carolina, consisting of two LNG storage tanks, each with a capacity of approximately 2 Bcf. The facility is capable of liquefying about 20 MMcf/d, with 400 MMcf/d of vaporization.

In addition to its intrastate NorTex Storage facilities, which consist of approximately 80 miles of natural gas pipelines and 36 Bcf of natural gas storage assets located in north Texas, Williams also now owns and operates six stand-alone interstate natural gas storage facilities as well as another intrastate storage facility, which were acquired from Hartree Partners in January 2024. These seven acquired facilities provide Williams with approximately 157.5 Bcf of additional natural gas storage capacity.

In short, Williams operates one of the largest midstream businesses in the nation. In addition to its pipelines, Williams' midstream business gathers and processes gas in Colorado, New Mexico, Wyoming, the Gulf of Mexico, Louisiana, Pennsylvania, West Virginia, New York, and Ohio.

Q.87 Has Williams described its primary business activity as focused on the natural gas pipeline industry?

A. Yes. In its February 14, 2024 Analyst Day presentation, Williams prominently highlighted that its business strategy is "fueled by natural gas," underscoring the importance of natural gas as its core business providing an immediate, reliable, and

affordable path to reduce emissions.[74] Williams stressed that it moves approximately 1/3rd of U.S. natural gas volumes, serving 12 key supply basins, and that it continues to execute on a significant portfolio of natural gas transmission growth projects, with 20 gas pipeline projects currently under development.

Furthermore, Williams' recent acquisition of the MountainWest assets further increases and solidifies its commitment to the natural gas pipeline business.

Q.88 Have you calculated Williams' EBITDA and asset percentages?

A. Yes. Williams reports its financial results in its 2023 SEC Form 10-K in five segments: (1) Transmission & Gulf of Mexico, (2) Northeast G&P, (3) West, (4) Gas & NGL Marketing Services, and (5) Other.

The Transmission & Gulf of Mexico segment is comprised of all of Williams' interstate natural gas pipelines and related storage facilities, as well as natural gas gathering and processing, crude oil production handling, and transportation assets in the Gulf Coast region.

The Northeast G&P segment is comprised of Williams' natural gas gathering, processing, and fractionation businesses in the Marcellus Shale region, primarily in Pennsylvania and New York, as well as the Utica Shale region of eastern Ohio and West Virginia.

The West segment is comprised of Williams' gas gathering, processing, and treating operations in the Rocky Mountain regions of Colorado and Wyoming, the Barnett Shale region of north-central Texas, the Eagle Ford Shale region of south

[74] https://investor.williams.com/static-files/ec1d82fd-f97a-4233-87d2-2a7c03f96cb7

Texas, the Haynesville Shale region of northwest Louisiana, and the Mid-Continent region which includes the Anadarko, Arkoma, and Permian basins.

The Gas & NGL Marketing Services segment includes Williams' NGL and natural gas marketing business, which provides asset management and the wholesale marketing, trading, storage, and transportation of natural gas for a diverse set of natural gas and electric utilities, municipalities, power generators, and producers and also markets natural gas from the production at its upstream properties.

The Other segment includes minor business activities that are not reportable segments such as corporate operations.

In order to calculate natural gas transmission related EBITDA, I have used the Transmission & Gulf of Mexico segment to estimate the percentage of FERC-regulated pipeline and storage for Williams, yielding an average of 43.34%, as shown in the table below.

The Williams Companies, Inc. – EBITDA (in $ millions)

EBITDA ($ Millions)	**2023**	**2022**	**2021**	**Average**
Transmission & Gulf of Mexico	$ 3,068	$ 2,674	$ 2,621	$ 2,788
Northeast G&P	$ 1,916	$ 1,796	$ 1,712	$ 1,808
West	$ 1,238	$ 1,211	$ 961	$ 1,137
Gas & NGL Marketing Services	$ 950	$ (40)	$ 22	$ 311

Other	$ 841	$ 434	$ 178	$ 484
Total EBITDA	$ 8,013	$ 6,075	$ 5,494	$ 6,527
% FERC-Regulated Natural Gas Transportation & Storage	**38.29%**	**44.02%**	**47.71%**	**43.34%**

Q.89 Have you calculated Williams' asset percentages?

A. Yes. Even though it is not a defined business segment, Williams separately reported its total natural gas transmission assets in its 2022 SEC Form 10-K. As shown in the table below, natural gas transmission represents an average of 41.87% over the past three years.

The Williams Companies, Inc. – Assets (in $ millions)

Assets ($ Millions)	2023	2022	2021	Average
Natural Gas Gathering and Processing	$21,357	$19,163	$18,203	$19,574
Natural Gas Transmission	$21,083	$19,521	$19,201	$19,935
Other	$9,402	$8,373	$6,780	$8,185
Total (Gross Plant)	$51,842	$47,057	$44,184	$47,694
% Natural Gas Transmission	**40.67%**	**41.48%**	**43.46%**	**41.87%**

Q.90 Why is it appropriate to include Williams as a member of the Transco Proxy Group?

A. Williams owns two of the largest assets in the natural gas pipeline industry, namely Transco and Northwest. The EBITDA associated with the Transmission & Gulf of Mexico segment averages 43.34% over the past three years, which requires only a minor adjustment to meet the Commission's 50% threshold. Williams was also included in the proxy group in Opinion No. 885. Williams is therefore an appropriate entity to include in the Transco Proxy Group at this time.

V. BUSINESS RISKS IMPACTING NATURAL GAS PIPELINES

Q.91 Please define the term "business risk" as it relates to the interstate natural gas transportation business.

A. The Commission has explained that business risk may be generally viewed as the chance that expected returns will not be realized.[75] Thus, in the context of the

[75] *See Generic Determination of Rate of Return on Common Equity for Electric Utilities, Notice of Proposed Regulations*, 47 Fed. Reg. 38,332, at 38,338-39 (1982), *order adopting final rule*, Order No. 389, 49 Fed. Reg. 29,946 (1984), *reh'g denied*, Order No. 389-A, 49 Fed. Reg. 46,351 (1984).

interstate natural gas pipeline business, the term "business risk" refers to the probability of a lower-than-expected return (or even a loss) inherent from an entity's operations and/or environment, arising from uncertainty.

The major components of business risk in the FERC-regulated interstate natural gas transportation business generally include competition, supply and market risk, operating risk, regulatory risk, as well as other adverse economic conditions that may impair a company's ability to realize its approved ROE on its investment. More specifically, pipeline transportation business risks are associated with items such as market competition, natural gas supply availability, customer contract commitments, customer credit quality, operational efficiency, safety, safety regulation, environmental legislation, cybersecurity threats, and changing FERC regulatory policies.

Other examples of business risk can include circumstances that drive unforeseen costs, such as unanticipated facility repairs or replacements.

Regulated pipeline facilities also face financial risks. The Commission has defined financial risk as the uncertainty introduced from the method of financing an investment. Financial risk represents that portion of total company risk, over and above business risk, which results from using debt.[76] Financial risk arises primarily because the use of debt requires a company to pay fixed interest charges prior to paying dividends to common stockholders. The greater the percentage of

[76] *See Generic Determination of Rate of Return on Common Equity for Electric Utilities, Notice of Proposed Regulations*, 47 Fed. Reg. 38,332, at 38,338-39 (1982), *order adopting final rule*, Order No. 389, 49 Fed. Reg. 29,946 (1984), *reh'g denied*, Order No. 389-A, 49 Fed. Reg. 46,351 (1984).

debt in a company's capital structure, the more uncertain are common stockholder's expected returns, because of the increased volatility of the residual earnings available to them with any given change in operating income.

In addition to the risk of not earning its approved ROE, two other major financial risks faced by regulated natural gas pipelines generally include credit risk, (*i.e.,* the potential for the pipeline to default on its debt repayment obligations), and counterparty risk (*i.e.*, the potential to incur bad-debt expense as a result of shipper defaults).

Q.92 How does the Commission assess the relative business risks of a regulated natural gas pipeline in determining its allowed ROE?

A. The Commission considers record evidence on business risks as part of its determination of an allowed ROE. For example, the Commission has referenced credit ratings to determine a subject company's relative risk.[77]

The Commission examines the ROE range of the proxy group companies, and then assigns the subject pipeline an ROE within this range based on its relative risk position.

Q.93 Has the Commission provided any guidance for evaluating business risks?

A. Yes. The Commission has indicated that its assessment of business risks is generally focused on circumstances beyond the entity's control. The Commission has explained:

> [T]he Commission will focus on risks faced by the pipeline that are attributable to circumstances outside the control of the pipeline's management, such as factors specific to the pipeline's markets, which

[77] *See, e.g.*, Opinion No. 486-B at P 137 and Opinion No. 528 at P 631.

> would include the degree and effectiveness of competition in the markets.[78]

In addition, in Opinion No. 528, the Commission stressed that the key issue in assessing business risk is to determine whose risk perceptions are driving the rate of return, finding that "the only relevant risk perceptions are those of investors in the capital markets."[79] While it is not possible to survey all investors in the market as to their risk perceptions regarding a specific company, the Commission stated that the "next best thing is to look to published investor services like S&P, which are likely relied on by investors when establishing their risk perceptions. By doing so, a nexus is established between risk and investors' required rate of return."[80] I discuss the risk perceptions of investors with regards to the entities in the Transco Proxy Group in the next section of my testimony.

Q.94 Which of the business risk factors are most relevant in assessing business risk?

A. In addition to assessing the perceptions of investors, all of the other business risk factors, to some degree, impact the required ROE for a natural gas pipeline company. Natural gas pipeline and storage investments are long-term, sunk capital costs that are recovered over many years. Accordingly, natural gas pipeline and storage investors generally require long-term contractual commitments from shippers in order to underwrite the business risks associated with the capital-intensive natural gas pipeline and storage business. Long-term commitments from

[78] *Transcon. Gas Pipe Line Corp.*, 84 FERC ¶ 61,084, at p. 61,427, *reh'g denied*, 85 FERC ¶ 61,323 (1998), *pet. for review denied sub nom. N.C. Utils. Comm'n v. FERC*, 203 F.3d 53 (D.C. Cir. 2000).
[79] *See,* Opinion No. 528 at P 693.
[80] Id.

credit-worthy shippers, particularly under negotiated rate agreements, serve to mitigate (but not eliminate) risk by increasing the certainty for investors that an expected portion of their capital investment will be recovered during the contracts' terms. Therefore, long-term contractual commitments are normally required for pipelines to obtain adequate debt and equity financing. Conversely, the absence of long-term contracts on pipelines creates risks for investors that a portion of their capital investment may not be recouped in the future, influencing the return demanded by investors today. Thus, an assessment of contractual commitments is an important component of assessing the risk of a natural gas pipeline entity.

While contractual commitment levels remain a key element of assessing the risk of an individual pipeline or storage facility, natural gas pipelines and storage facilities are also currently facing a number of adverse regulatory risks, including risks from recently implemented environmental legislation. I discuss how these regulatory risks directly impact Transco in detail below.

Q.95 Please briefly explain some of the other factors of natural gas pipeline business risk that you have identified.

A. Competition is one of the other factors. For regulated natural gas entities, competition refers to the presence and/or actions of other market participants (or potential market participants) that reduce the demand for the services of a subject pipeline facility. The Commission has generally encouraged competition in recent years. However, such competition has often led to lower rates being charged, particularly for those pipelines or storage facilities that face elevated levels of

unsubscribed capacity. Lower realized rates have a direct impact on the returns realized by investors.

Supply risk pertains to the continued availability of competitively priced natural gas supplies to support ongoing contracting and utilization. Similarly, market risk relates to the ability of shippers to receive sufficient netbacks from the markets served by the pipeline and/or storage facility on which they are contracted.

Operating risks refer to the inherent challenges of providing continuous firm service without interruption, which may require additional unexpected maintenance capital and drive additional unexpected operating and maintenance expenses. All else being equal, ongoing operating difficulties and service interruptions will impact the demand for continued firm service. Operating risks tend to increase with the age and condition of specific pipeline facilities, as older systems often naturally face higher operation and maintenance ("O&M") costs than more newly constructed systems.

Pipelines and storage facilities can be subject to multiple regulations and multiple regulators. Regulatory risks refer to the potential that new or changed regulations may have an adverse effect on a natural gas pipeline or storage facility.

The natural gas transported in Transco' business also competes with other forms of energy available to Transco' customers and end-users, including electricity, propane, fuel oils, conservation, and increasingly, renewable energy. Factors that influence the demand for natural gas and its related transportation include price changes, the availability of natural gas and other forms of energy,

levels of business activity, long-term economic conditions, conservation, legislation, governmental regulations, the ability to convert to alternative fuels, weather, and other factors.

VI. BUSINESS RISKS OF TRANSCO RELATIVE TO THE TRANSCO PROXY GROUP

Q.96 What is the purpose of this section of your testimony?

A. In this section of my testimony, I provide an analysis of several of the specific business risks faced by Transco relative to the Transco Proxy Group, focused on the risk factors that I have outlined above, as well as an assessment of investor perceptions of the risks of these proxy group entities. Other Transco witnesses, including Transco's witnesses Mr. Alexander J. Kirk and Mr. Chad A. Teply also discuss several business risks currently faced by Transco.

Q.97 As a starting point, have you assessed the perceptions of investors regarding the business risks of Transco?

A. As a stand-alone entity that is not publicly traded, it is not possible to directly assess investor perceptions of the risks related to Transco in isolation. However, I have assessed investor risk perceptions with regards to investing in Transco's parent company, Williams, as a proxy for investor perceptions of the riskiness of Transco.

As discussed above, while it is not possible to survey all investors in the market as to their risk perceptions regarding any specific company, the Commission has stated that the "next best thing is to look to published investor services like S&P, which are likely relied on by investors when establishing their risk

perceptions. By doing so, a nexus is established between risk and investors' required rate of return."[81]

Q.98 How does S&P investor services currently view an investment in Williams as compared to the other entities in the Transco Proxy Group?

A. As suggested by the Commission in Opinion No. 528, in order to assess investor risk perceptions, I have examined the latest S&P Global Ratings Annual Review[82] for each proxy group entity.

S&P Global Ratings Annual Reviews

The S&P Global Ratings Annual Review includes ratings on several unique risk factors including: business risk, country risk, industry risk, competitive position, financial risk, as well as cash flow / leverage metrics. Given that each of the Transco Proxy Group members operate in the same country and industry, I have focused my assessment on three of these metrics, namely business risk, competitive position, and financial risk. The S&P scores for Business Risk and Competitive Position are ranked (from least to most risk) as follows: Excellent / Strong / Satisfactory / Fair / Weak / Vulnerable. For Financial Risk, the ranking are as follows: Minimal / Modest / Intermediate / Significant / Aggressive / Highly Leveraged. [83] The table below summarizes the current scores on each of these three components for each member of the Transco Proxy Group.

[81] *See,* Opinion No. 528 at P 693.
[82] In an annual review, S&P Global Ratings reviews current credit ratings against the latest issuers/issues performance data as well as any recent market developments.
[83] *See* https://www.spglobal.com/ratings/en/research/pdf-articles/230418-corporate-rating-component-scores-north-america-q1-2023-101575576.

S&P Global Ratings – Annual Reviews

Entity	Business Risk	Competitive Position	Financial Risk	Review Date
Energy Transfer	Strong	Strong	Significant	04/25/2024
Kinder Morgan	Strong	Excellent	Significant	04/24/2023
ONEOK	Strong	Strong	Significant	03/19/2024
Williams	Strong	Strong	Significant	04/24/2024

As shown, Williams is ranked by S&P Global as an average risk entity within the Transco Proxy Group. Therefore, based on the current S&P Global Ratings, investors could potentially perceive Transco to have risks that are comparable to the other entities in the Transco Proxy Group, though riskier than Kinder Morgan in terms of competitive position. It is also noteworthy that S&P considers each of the Transco Proxy Group entities to have significant financial risk.

Q.99 How else have you compared the business risks of Transco with the business risks of the Transco Proxy Group entities?

A. I have used a number of quantitative and qualitative methods to compare the business risks of Transco with the business risks of the Transco Proxy Group entities, which I present in detail below. The quantitative measures that I have employed include: (1) an examination of weighted average remaining firm contract life, (2) a firm contract growth rate analysis, and (3) an examination of the levels of firm customer concentration. I have also undertaken a qualitative assessment for Transco as well as the Transco Proxy Group entities, examining the major risk factors that I discussed previously.

Q.100 Is your selected Transco Proxy Group generally representative of the business risks currently faced by interstate natural gas pipelines?

A. Yes. As discussed in my testimony above, the four entities that I have recommended for inclusion in the Transco Proxy Group at this time - Energy Transfer; Kinder Morgan; ONEOK; and Williams - all generally have large investments in interstate pipelines and storage facilities regulated by the Commission. In addition, as I have outlined, interstate natural gas transmission and storage assets are a focus for these entities, with their investments in pipeline assets being at least as large as the Transco system. Thus, it is reasonable to conclude that the overall business risks faced by the Transco Proxy Group entities are broadly representative of interstate natural gas pipelines, including Transco.

Q.101 Are the business risks faced by Transco represented by the Transco Proxy Group?

A. As a starting point for both the quantitative and qualitative risk assessments that I have undertaken for Transco, it is necessary to bear in mind that the goal of this instant analysis is to assess the risks of Transco as a stand-alone entity. As I discuss in detail below, Transco faces unique risks which are not shared by many of the entities represented in the Transco Proxy Group.

Q.102 Are the entities that you propose to be included in the Transco Proxy Group more diversified than Transco?

A. Yes. Each of these entities are midstream energy companies that: (1) own multiple natural gas pipelines and storage facilities which traverse numerous supply and market areas, and (2) engage in other business lines, including such activities as crude oil, NGLs, gas gathering / processing and other midstream activities. Their

size and geographic diversity, as well as the presence of multiple business lines, serves to diminish adverse impacts that unforeseen changes in a particular market or segment may bring to such an entity. These more diversified entities are therefore better able to withstand reduced returns or even losses for a longer period than for a smaller, less diversified entity, making them relatively lower risk investments, as their portfolios of assets are allocated across a broader range of geography with exposure to distinctly different markets.

Transco, by comparison, is engaged in a single business line—the transportation and storage of natural gas supplies, although the system does operate across a relatively wide geographic area for a natural gas pipeline.

A. Quantitative Assessments of Transco' Business Risks

Q.103 Please discuss the first quantitative assessment you used to compare the business risks of Transco with the business risks of the Transco Proxy Group members.

A. The first quantitative assessment that I have utilized is an examination of the weighted average remaining firm contract life for Transco compared to the Transco Proxy Group members. Firm contracts are the primary source of revenue (and therefore realized return) for natural gas transmission pipelines. The results of this analysis are found in my Exhibit No. T-0040.

Q.104 How have you calculated the weighted average remaining contract life for each entity?

A. The weighted average remaining contract life calculations are based on the April 2024 Index of Customers ("IOC") filed with the Commission by each onshore interstate natural gas pipeline owned by the entities in the Transco Proxy Group.

The IOCs show details related to each firm contract, both transportation and storage (as applicable), in effect as of April 1, 2024. Amongst other things, the contract details provided include rate schedule type, contract start and end dates, days remaining, and maximum daily quantity or maximum storage quantity, as applicable.

I determined the weighted average remaining contract life utilizing the end dates and days remaining provided in the IOC, weighted by the proportionate share of total reservation quantities (for both transportation and storage as applicable) for each contract. For contracts in evergreen status that did not report days remaining (or reported negative days remaining), I assigned a remaining term of one year, based on the premise that firm transportation and storage contracts can typically be turned back to the pipeline upon the shipper providing notice of one year or less.

Q.105 Has the Commission ever determined that pipelines with shorter contract terms face greater relative risk?

A. Yes. In Order No. 637, the Commission explained that shorter-term contracts are riskier for the pipeline.[84]

Q.106 How does Transco's weighted average remaining contract life compare with the totality of the Transco Proxy Group members?

A. As shown in Exhibit No. T-0040, as of April 2024, the weighted average remaining contract life for all firm contracts on Transco is 2.90 years. Transco therefore has

[84] *Regulation of Short-Term Natural Gas Transportation Services and Regulation of Interstate Natural Gas Transportation Services*, Order No. 637, 1996–2000 FERC Stats. & Regs., Regs. Preambles ¶ 31,091, *order on reh'g*, Order No. 637-A, 1996–2000 FERC Stats. & Regs., Regs. Preambles ¶ 31,099, *order on reh'g*, Order No. 637-B, 92 FERC ¶ 61,062 (2000), *aff'd in part and remanded in part*, *Interstate Natural Gas Ass'n v. FERC*, 285 F.3d 18 (D.C. Cir. 2002), *order on remand*, 101 FERC ¶ 61,127 (2002), *order on reh'g*, 106 FERC ¶ 61,088 (2004), *aff'd sub nom. Am. Gas Ass'n v. FERC*, 428 F.3d 255 (D.C. Cir. 2005).

the 10th shortest average remaining contract life out of the 37 onshore interstate pipelines represented in the Transco Proxy Group, and thus faces risks that are well above average on this metric as compared to the entities included in the Transco Proxy Group.[85]

Q.107 What do you conclude from the remaining contract life analysis?

A. Remaining contract life is an important factor considering the long-term investment horizon of a natural gas pipeline. Having a shorter average remaining contract life equates to greater relative risk. The Transco system bears a level of risk that is above average as compared to the Transco Proxy Group when considering this factor.

Q.108 Please discuss the second quantitative assessment you have undertaken to compare the business risks of Transco with the business risks of the Transco Proxy Group members.

A. The second quantitative assessment that I have utilized is an examination of the level of year-over-year growth in firm contracts, including both transportation and storage. My firm contract growth rate analysis seeks to quantify the relative levels of success that Transco, as well as each of the onshore interstate natural gas pipelines owned by the various entities in the Transco Proxy Group, have recently had in entering into additional firm contracts over the last year, which is a measure of growth. For the purposes of this analysis, I have examined the levels of all firm contracts reported on the publicly available IOC reports for Transco and each Transco Proxy Group member pipeline for April 2023 and April 2024.

[85] For the weighted average remaining contract life analysis, I have excluded the Fayetteville Express Pipeline as there were no firm contracts in place on Fayetteville Express as of April 2024.

I note that the IOC does not reflect, nor does it consider, the overall maximum subscription levels of each of these pipelines or storage facilities, meaning that the metric does not reflect that a fully contracted system cannot increase its level of firm contracts. This metric also does not assess the relative revenue contributions from each individual contract for each proxy group entity—i.e., on certain pipelines the base rates on some contracts may be significantly discounted or negotiated and may therefore contribute less revenues than a contract with lesser contracted quantities. However, despite these weaknesses, the contract growth analysis still provides an informative quantitative measure to assess the business risks of Transco relative to the business risks of the Transco Proxy Group members.

Q.109 What do you conclude from the firm contract growth rate analysis?

A. As shown in my Exhibit No. T-0041, Transco has observed a year-over-year growth rate in its total contracted firm capacity levels of 0.26%. Transco' growth rate ranks 21st on this metric out of the 37 entities represented in the Transco Proxy Group, demonstrating that it bears somewhat less risk on this metric when compared to the proxy group.

Q.110 What is the third quantitative assessment that you have employed?

A. The third quantitative assessment that I have completed is an examination of firm contract concentrations, based on the understanding that a more diversified customer base will (by definition) represent less risk when compared to a more concentrated customer base. A more concentrated customer base causes a pipeline

to be more dependent on a smaller number of shippers for its ongoing solvency. With high customer concentration levels, a deterioration in the creditworthiness of a major shipper causing default could lead to significant financial hardship, or even the bankruptcy of such a pipeline or storage facility.

Q.111 How have you assessed customer concentration?

A. As shown in my Exhibit No. T-0042, to assess customer concentration, I have calculated two concentration metrics, both based on the April 2024 publicly available IOC for Transco and each onshore interstate natural gas pipeline entity in the Transco Proxy Group.

My first concentration metric examines the percentage of total firm quantities held by the five largest shippers on the Transco system and on each applicable Transco Proxy Group entity's systems. Under this metric, the higher the concentration of the overall firm quantities held by a system's top five customers, the greater the business risk of the entity. This is true because the loss of any one of these large customers would expose that entity to greater potential financial losses and risks of not being able to re-sell all of the resulting unsubscribed capacity to other shippers, when compared to the loss of a smaller shipper.

My second concentration metric measures the average percentage of total firm quantities held by all of the individual shippers on each system. A pipeline with firm quantities dispersed among a broad and diverse shipper base will have lower average percentage quantities held by shipper, whereas a pipeline with a limited number of total shippers, or with just a few shippers holding relatively large

portions of capacity, will have higher percentages. An interstate pipeline with more evenly distributed quantities across its shipper base is less risky than one with a more concentrated quantity distribution.

Q.112 What are the results of your customer concentration analysis?

A. The customer concentration analysis suggests that the Transco system bears risks that are below the median on these two metrics, with 53.41% of its firm capacity held by its top five largest shippers and an average customer holding 0.57% of total contracted firm capacity.[86] Therefore, on this metric Transco' overall relative quantitative risks are less than the median of the data set.

Q.113 Please summarize the relative levels of Transco's risks based solely on the quantitative metrics that you have utilized.

A. The Transco system bears a level of risk that is above the median compared to the Transco Proxy Group when considering the average remaining firm contract life. With regards to the firm contract growth analysis metric, Transco's growth rate suggests that it bears risks that are slightly less than the median on this metric when compared to the proxy group. Transco also exhibits risks levels that are below the Transco Proxy Group average for both the percentage of capacity held by its top five customers and the average percentage of total firm quantities held by its individual shippers.

Therefore, the quantitative metrics that I have utilized demonstrate that, on balance, Transco exhibits risks that are slightly less than the median of the entities

[86] For the customer concentration analysis, I have excluded the Fayetteville Express Pipeline, as there were no firm contracts in place on Fayetteville Express as of April 2024.

contained in the Transco Proxy Group (based solely on these metrics). However, Transco's overall level of business risks must also be examined in light of several additional qualitative measures as well. As previously discussed, the four entities included in the Transco Proxy Group are significantly more diversified than Transco, and therefore also have lower overall aggregate business risks than Transco from this perspective.

B. Qualitative Assessments of Transco's Business Risks

Q.114 Please discuss the key qualitative business risk factors currently facing Transco.

A. The Transco system is subject to each of the business risk categories I discussed in my testimony above, including: supply and market risk, competition, operating risks, financial risks, and regulatory risks, amongst other risks. I further discuss each of these risk factors from a qualitative perspective below. Transco faces numerous unique qualitative risks that must be considered in concert with the quantitative metrics. Transco's witnesses Mr. Kirk and Mr. Teply also provide additional detailed discussion regarding many of the qualitative risks facing Transco.

C. Supply and Market Risks

Q.115 Where does Transco primarily receive natural gas supplies onto its system?

A. The Transco system was initially envisioned to bring abundant gas domestic supplies from Texas-area production fields to major consuming markets in the New York City area. When the Transco pipeline was placed into service, it was the longest pipeline system in the world and the largest single-project construction

venture ever attempted.[87] The first gas delivery was made in December 1950, bringing Texas natural gas supplies to the town of Danville, Virginia. Natural gas flows reached the New York City area shortly thereafter. Today, the Transco system receives gas supplies from a number of supply sources, including the Gulf Coast, Mid-Continent, and Appalachia.

Q.116 Does Transco face natural gas supply risk?

A. While the Transco system is fortunate to be connected to a number of major domestic supply sources, it must nevertheless compete with several other natural gas pipelines to access these supplies. Transco faces direct competition from numerous other interstate natural gas pipelines in each of its connected supply areas. Major competing pipelines include, but are not limited to: Texas Eastern, Tennessee Gas, ANR, Gulf South, SNG, Panhandle, and Iroquois.

Q.117 Is there competition for Transco's natural gas supplies for other uses?

A. Yes. The EIA expects LNG export capacity in the United States to increase by 9.7 Bcf/d by 2027 from a total of five new projects, with all five of these projects located near to Transco. [88] These projects include Golden Pass, Plaquemines, Corpus Christi Stage III, Rio Grande, and Port Arthur. LNG exports from Golden Pass LNG and Plaquemines LNG are anticipated to start in 2024. The additional demand for natural gas supplies near to the Transco system is expected to place

[87] https://www.williams.com/2021/05/06/critical-energy-infrastructure-to-power-americas-clean-energy-future/
[88] See: https://www.eia.gov/todayinenergy/detail.php?id=60944

upward pressure on regional supply prices in the Gulf Coast, which will have a direct impact on Transco's shippers.

Q.118 Is Transco subject to market risk?

A. Yes. As discussed in detail by Transco witness Mr. Teply, Transco serves relatively stable, high-quality markets; however, Transco still anticipates challenges in maintaining its firm contract subscriptions. Further, there are other elements of Transco's business circumstances that make it risky relative to other pipelines. Indeed, Transco's attractive metropolitan markets make it a prime target for competitors, particularly those that are leveraging access to more proximate Marcellus and Utica shale supplies to facilitate expansions into Transco's historic markets.

Q.119 Does Transco face any heightened risks related to its firm contract profile?

A. Most certainly. Many of Transco's contracts, including approximately 40% of its firm storage contracts and nearly 30% of its firm transportation contracts, are contracts outside of their primary term that roll-over on an annual basis under evergreen provisions. In addition, over 98% of Transco's firm storage contracts, and 46% of Transco's current firm transportation contracts are scheduled to expire within the next five years, an unusually high level in the industry. As discussed previously, Transco's current weighted average remaining firm contract life is only 2.9 years, which is much shorter than the average remaining firm contract life on the majority of the pipeline entities in the Transco Proxy Group.

D. Competition

Q.120 Does Transco compete with any other interstate natural gas pipelines?

A. Yes. As discussed above, just as Transco must compete directly with numerous other interstate natural gas pipelines and LNG facilities for supplies, it must also compete with many of these same facilities for markets. In addition, as discussed in detail by Transco's witness Mr. Teply, Transco's attractive metropolitan markets make it a prime target for competitors, particularly those that are leveraging access to Marcellus and Utica shale supplies to facilitate expansions into these markets.

Q.121 Has Transco been required to provide shippers with discounted or negotiated rate contracts (below the approved recourse rate) to attract or maintain shipper contracts?

A. Yes, in 2023, the percentage of firm transportation contract demand provided at rates below the approved maximum rates was 9.28%. In addition, a substantial number of Transco's contracts, including approximately 40% of its firm storage contracts and nearly 30% of its firm transportation contracts, are contracts outside of their primary term that roll-over on an annual basis under evergreen provisions and can therefore be turned-back with very limited notice, heightening Transco's risks of additional capacity turn-backs.

E. Operating Risks

Q.122 Does Transco face any major operational risks?

A. Yes. While the Transco system has been providing safe and reliable natural gas transportation and storage services for multiple decades, older facilities like Transco tend to have higher O&M costs than newer pipeline and storage facilities; such expenditures are required to allow Transco to ensure that its facilities remain

fit for service. Therefore, older facilities like Transco face higher operational risks and related costs. Indeed, Transco was first commissioned in the 1950's; therefore, some of its pipeline system dates back nearly 75 years.

In general, the relative age of the Transco system causes its integrity program to be more expensive than for a more recently constructed pipeline system. As such, Transco faces increased business risks due to the age of its pipeline facilities and risks associated with compliance costs with increasing environmental regulations and Pipeline and Hazardous Materials Safety Administration ("PHMSA") regulations.

To this end, Transco has incurred, and is expected to continue to incur, significant capital and maintenance costs related to its required and ongoing system integrity work to ensure the continued safety of the public and to comply with evolving environmental and PHMSA regulations.

Q.123 Does Transco face any other major operational risks?

A. Yes. An example of an operational risk currently facing Transco are cybersecurity issues. In fact, the FBI as recently as April 2024 has warned that hackers have burrowed into U.S. critical infrastructure, including energy companies, and are waiting, "for just the right moment to deal a devastating blow."[89] Cybersecurity threats are therefore a major and increasing operational risk facing critical pipeline infrastructure such as Transco. In response to a recent cyberattack that shut down

[89] See: https://www.reuters.com/technology/cybersecurity/fbi-says-chinese-hackers-preparing-attack-us-infrastructure-2024-04-18/#:~:text=An%20ongoing%20Chinese%20hacking%20campaign,a%20speech%20at%20Vanderbilt%20University

the Colonial Pipeline, the Transportation Security Administration ("TSA")—the federal agency which oversees pipeline security—on May 27, 2021, announced a new Security Directive that will enable the department to better identify, protect against, and respond to threats to critical companies in the pipeline sector.

The Security Directive requires critical energy infrastructure owners and operators to report confirmed and potential cybersecurity incidents to the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency and to designate a Cybersecurity Coordinator, to be available 24 hours a day, seven days a week. It also requires critical energy infrastructure owners and operators to review their current practices as well as to identify any gaps and related remediation measures to address cyber-related risks and report the results to TSA.

On July 20, 2021, the TSA announced the issuance of a second Security Directive that requires owners and operators of TSA-designated critical energy infrastructure operators (such as Transco) to implement a number of protections against cyber intrusions. This second Security Directive requires TSA-designated critical facilities to implement specific mitigation measures to protect against ransomware attacks and other known threats to information technology and operational technology systems, develop and implement a cybersecurity contingency and recovery plan, and conduct a cybersecurity architecture design review.

On July 21, 2022, TSA issued a follow-up security directive ("SD02C"), which became effective on July 27, 2022. SD02C includes requirements for natural

gas pipeline and storage facilities to: (1) establish and implement a TSA-approved Cybersecurity Implementation Plan; (2) develop and maintain a Cybersecurity Incident Response Plan to reduce the risk of operational disruption; (3) establish a Cybersecurity Assessment Program, and (4) submit an annual plan that describes how the Owner/Operator will assess the effectiveness of cybersecurity measures.

Most recently, on July 26, 2023, the TSA announced another update to its Security Directive regarding oil and natural gas pipeline cybersecurity. This revised directive follows the initial directive announced in July 2021 and renewed in July 2022, and includes additional updates that seek to strengthen the industry's defenses against cyberattacks.

These continuing TSA requirements require Transco to expend additional resources on securing its system from ongoing cyber-threats.

F. <u>Regulatory Risks</u>

Q.124 Is Transco facing any ongoing regulatory risks?

A. Yes. Transco is facing a number of ongoing and increasing regulatory risks, including changing regulatory and environmental policies, as well as significant challenges in constructing new pipeline capacity. In fact, as I discuss below, regulatory risks are increasingly becoming more of a major risk factor for Transco.

For example, Transco is facing greater and greater regulatory challenges in constructing pipeline projects, even after successfully obtaining a FERC Certificate of Public Convenience and Necessity ("Certificate"). On July 30, 2024, the U.S. Court of Appeals for the District of Columbia Circuit vacated the FERC's previous

Certificate approval of Transco's Regional Energy Access expansion project ("REA"), finding that the FERC failed to adequately consider certain evidence suggesting a lack of market need for the pipeline's additional capacity and New Jersey state laws mandating reductions in natural gas consumption.[90] The $950 Million REA project, which is already in-service, is an 829,400 Dth/d expansion of Transco's pipeline capacity to provide additional natural gas supplies to markets primarily in New Jersey, Pennsylvania, and Maryland was approved by the FERC on January 11, 2023 in Docket No. CP21-94.[91] Part of the project capacity was placed into initial service during the fourth quarter of 2023 with the remainder of the project brought fully online in August 2024.[92] While there are undoubtedly numerous legal and other issues that will be addressed in this ongoing proceeding, the potential for a Certificate to be revoked or modified significantly increases the risks borne by a pipeline. Once a pipeline accepts a certificate order, it commits to investing large sums of capital in reliance on the explicit terms and conditions contained in the order to construct the pipeline and place the project into service.

Other examples of risk borne by Transco include an increasing number of climate change mitigation policies being enacted that pose risk to natural gas pipelines being able to recover their long-term capital investments, as also discussed in detail by Transco's witness Mr. Kirk. At the national level, on January

[90] See United States Court of Appeals for the District of Columbia Circuit, Case No. 23-1064.
[91] See 182 FERC ¶ 61,006.
[92] See OEP/DG2E/Gas 2 Letter Order issued in Docket No. CP21-94 on July 26, 2024.

27, 2021, President Biden issued Executive Order ("EO") 14008.[93] EO 14008, Section 201, states that a goal of the Executive Order is to "put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050." Achieving net-zero emissions by 2050 will necessarily require a dramatic decline in the consumption, and therefore transportation of natural gas in the United States, including on Transco. Similar policies impact Transco at various state levels. Decreased demand for transportation services would likely require Transco to discount its future transportation contracts in an effort to maintain some firm contracts. Furthermore, as we near the end of President Biden's current term, it is likely that the administration will work to finalize multiple rules/regulations that have a direct impact on Transco.

Another example of a currently ongoing regulatory change impacting Transco are the ongoing Environmental Justice initiatives being proffered by the FERC. The Commission has recently created both the role of Senior Counsel for Environmental Justice and Equity and the Environmental Justice and Equity (EJ&E) Group within the Office of the General Counsel (collectively "EJ&E Group"). The EJ&E Group is "decisional" meaning that it participates or advises as to the findings, conclusions, or decisions of the Commission, however many of the underlying principles of the related analysis are still in their infancy. The related uncertainty in undertaking environmental justice analysis increased the risks related

[93] Tackling the Climate Crisis at Home and Abroad, Executive Order 14008, 86 Fed. Reg. 7619 (Feb. 1, 2021) ("EO 14008").

to Transco's numerous current and future certificate filings, which could potentially adversely impact Transco.

Q.125 Why do these types of regulatory changes impact pipeline risk?

A. Natural gas pipelines are long-lived, capital intensive assets that require significant up-front investment. Changes in the regulatory environment create uncertainty and can make investors reluctant to look at certain classes of assets. Regulatory risks, such as those outlined above and others, are something that investors must consider when evaluating natural gas pipelines such as Transco.

G. Financial Risks

Q.126 Is Transco currently facing any financial risks?

A. Yes. For example, in response to significantly escalating insurance premiums, Transco continues to evaluate its risk management strategies, in order to find the proper balance between shielding its shippers from the rising costs of insurance while still maintaining a suitable level of insurance coverage and related deductibles. While this strategy provides a lower cost of service, it also exposes Transco to higher financial risks if an unforeseen event were to occur.

Q.127 Please summarize the relative levels of Transco's risks based on the qualitative metrics that you have utilized.

A. The qualitative metrics that I have utilized demonstrate that the Transco system faces a number of qualitative risks that are greater than those faced by the median of the Transco Proxy Group. For example, Transco faces significant and ongoing regulatory risk, having just had its recent FERC Certificate for the $950 Million REA project vacated by the DC Circuit Court. Transco also faces competitive risks

with regards to the upcoming renewals of significant amounts of its firm transportation services as well as financial risks related to rising insurance premiums.

Therefore, on balance, Transco exhibits qualitative risks that exceed the median risks faced by the entities contained in the Transco Proxy Group.

VII. DCF ANALYSIS

Q.128 Please provide a brief overview of the DCF Model.

A. As explained by the Commission in the 2020 Policy Statement, the Commission has used the DCF model to determine natural gas pipeline ROEs dating back to the 1980s.[94] The Commission uses the DCF model as one of its models to estimate the return on equity in a rate proceeding. In its basic form, the DCF model, which is normally used to solve for the price of a stock, is represented by the following mathematical formula:

$$P = D / (k-g)$$

where "P" is the price of the stock, "D" is the current dividend, "k" is the discount rate or rate of return and "g" is the expected constant growth in dividend income to be reflected in capital appreciation.

The DCF model seeks to explain the value of an asset "P" as the present value of future expected cash flows "D" discounted at the appropriate risk-adjusted

[94] *See* Composition of Proxy Groups for Determining Gas and Oil Pipeline Return on Equity, 123 FERC ¶ 61,048, at P 3 (2008) (2008 Policy Statement).

rate of return. To produce a non-zero result, the DCF model requires that a company pays dividends on its common stock.

Q.129 How is the DCF model utilized to estimate the required rate of return on equity for a natural gas pipeline?

A. To calculate the required rate of return on equity for a natural gas pipeline, the DCF formula above is rearranged to solve for "k", which provides an estimate of the rate of return required by investors. The resulting equation is:

$$k = D/P + g$$

Solving for "k" calculates the current market cost of common equity for the specific entity in question.

The Commission has further refined the DCF model for natural gas pipeline rate-making purposes by utilizing a two-step procedure for determining the growth of dividends ("g") in the model, averaging short-term and long-term growth estimates.[95] Under the Commission's approach, the short-term growth forecast receives a two-thirds weighting and the long-term forecast receives a one-third weighting in calculating the growth rate in the DCF model.[96]

Q.130 What growth rates does the Commission utilize in the DCF analysis for natural gas pipelines?

A. For the long-term growth estimates, the Commission's methodology utilizes growth forecasts for the gross domestic product of the entire economy. The long-

[95] *See* Northwest Pipeline Corp., Opinion No. 396-B, 79 FERC ¶ 61,309, at 62,383 (1997); Williston Basin Interstate Pipeline Co., 79 FERC ¶ 61,311 at 62,389 (1997), aff'd in relevant part, Williston Basin Interstate Pipeline Co. v. FERC, 165 F.3d 54 at 57 (1999).

[96] *See* Transcontinental Gas Pipe Line Corp., Opinion No. 414-A, 84 FERC ¶ 61,084 at 61,423-24, reh'g denied, Opinion No. 414-B, 85 FERC ¶ 61,323, at 62,266-70 (1998), aff'd, CAPP v. FERC, 254 F.3d 289.

term growth projection used is an average of forecasts drawn from three different sources. These sources are: (1) S&P Global Connect (formerly IHS Markit): Long-Term Macro Forecast – Baseline (U.S. Economy 30-Year Focus); (2) Energy Information Administration, Annual Energy Outlook; and (3) the Social Security Administration. The long-term growth rate for any Master Limited Partnerships included in the DCF analysis is reduced by 50 percent, consistent with the Proxy Group Policy Statement.

For short-term growth estimates in the DCF model, the Commission has traditionally utilized the five-year growth forecasts for each proxy group entity as published by IBES.

Utilizing a two-step procedure with appropriate weightings given to both the short-term and long-term growth rates ensures that a proper balance is reflected in the growth rate utilized for the DCF model, as the DCF model (being a constant growth model) assumes that the growth in dividend yields will continue indefinitely. The short-term growth rate estimates provided by IBES are for a five-year period only and therefore should not be presumed to represent an indefinite growth rate for a given entity. Indeed, as a company and industry matures, we make the reasonable assumption that its long-term growth rate can be approximated by the overall growth rate of the economy in general, all else being equal.

Q.131 What data sources have you used for the long-term growth rates in your two-step DCF Model?

A. I have utilized the growth forecasts for the gross domestic product of the entire United States economy using the data sources preferred by the Commission

discussed above. Using three distinct data sources is consistent with the notion that rational investors will rely upon multiple sources of available data when making investment decisions.

I have compiled these estimates for long-term growth, as shown in the table below. The average of the three estimates, which I use as the estimated long-term growth rate in this proceeding, is 4.11%.

Long Term Growth Rates as of March 2024

Data Source	Long Term Growth Rates
Energy Information Administration[97]	4.33%
S&P Global Connect (formerly IHS Markit)[98]	3.94%
Social Security Administration[99]	4.05%
Average	**4.11%**

Q.132 What data sources have you used for the short-term growth rates in your two-step DCF Model?

A. For the short-term growth estimates in the DCF model, I have used both the five-year growth forecasts for each proxy group entity published by IBES (shown in Table 3 above), and the five-year growth forecasts published by Value Line (shown in Table 5 above). Similar to the approach used for calculating the long-term growth rates discussed above, I have calculated a short-term growth rate for each

[97] Report: Annual Energy Outlook 2023 - (Release Date: March 16, 2023): Table 20. Macroeconomic Indicators. Nominal GDP=(Real GDP)*(GDP Chain-Type Price index). https://www.eia.gov/outlooks/aeo/tables_ref.php (Table 20)
[98] S&P Global Connect (formerly IHS Markit): Long-Term Macro Forecast - Baseline (U.S. Economy 30-Year Focus, First Quarter - February 2024) (Release Date: February 29, 2024), Table Summary 1A.
[99] Social Security Administration: The 2023 OASDI Trustees Report (Release Date: March 31, 2023), Table VI.G4.-- OASDI and HI Annual and Summarized Income, Cost, and Balance as a Percentage of GDP, Calendar Years 2023-100, Intermediate Estimates. https://www.ssa.gov/OACT/TR/2023/

proxy group entity by using the average of the respective IBES and Value Line growth rates for each entity.

Q.133 Why have you used two different data sources for the short term growth rates?

A. Using two distinct data sources is consistent with the notion that rational investors will rely upon multiple sources of available data when making investment decisions. In addition, as previously discussed, recent volatility in the IBES growth rates, particularly when compared to the short-term growth rates published by Value Line, suggest that a plurality of growth rate data sources may be a preferable approach to ensure that a just and reasonable result is obtained. There has been, and continues to be, a large divergence between the IBES and Value Line Growth rates for many of the entities in the Transco Proxy Group, as shown in my Exhibit No. T-0043. This divergence suggests that an informed investor would likely not depend on only a single growth forecast (either IBES or Value Line) but would rather seek to incorporate the underlying metrics associated with both estimates to make a more informed investment decision.

Q.134 How have you computed the dividend yield component in the DCF Model?

A. Consistent with Opinion No. 510,[100] I have calculated the dividend yield using the average of the high and low stock prices for the six months ended March 2024; dividing the indicated annual dividend for each month by the average stock price for the same month (resulting in a dividend yield for each of the reported six months); and averaging these monthly dividend yields.

[100] *See* Opinion No. 510, 134 FERC ¶ 61,129, order on reh'g, 142 FERC ¶ 61,198.

In addition, I have also followed the Commission's convention[101] of multiplying the dividend yield (dividends divided by stock price or D/P) by (1+.5g) to account for the fact that dividends are paid on a quarterly basis, using only the short-term growth projections (*i.e.* the average of the IBES and Value Line growth rates for each proxy group entity).

As such, I have used the following DCF formula to estimate the required rate of return for each member of the proxy group:

$$k = D/P(1+0.5g) + g$$

Q.135 What are the results of your dividend yield computations?

A. The average dividend yield for each proxy group company is reported in the Table below. As discussed, I have multiplied the average dividend yields by (1+.5g), with "g" reflecting only the average of the short-term IBES and Value Line growth rate for this adjustment, to account for the fact that dividends are normally paid on a quarterly basis. The resulting adjusted average dividend yields are also shown in the table below.

[101] *See* Seaway Crude Pipeline Co. LLC, Opinion No. 546, 154 FERC ¶ 61,070, at PP 198-200 (2016).

Average Dividend Yield (Six months ended March 2024)

Proxy Group Entity	Average Dividend Yield	Average Short-Term Growth Rate	Adjusted Dividend Yield
Energy Transfer	8.99%	7.85%	9.34%
Kinder Morgan	6.58%	10.15%	6.91%
ONEOK	5.58%	12.55%	5.93%
Williams	5.12%	6.00%	5.27%

Q.136 Have you utilized any low-end or high-end outlier tests to assess the result of your DCF analysis?

A. Yes. I have applied a standard statistical test to examine whether any of the proxy group members could be considered outliers and thus removed from the analysis. Specifically, I examined whether any of the DCF results for the Transco Proxy Group were greater than two standard deviations from the mean of the sample and found that all of the results were within this range.[102]

Q.137 Please summarize the results of your DCF analysis.

A. Applying the DCF methodology to the Transco Proxy Group when averaging the IBES and Value Line growth rates yields calculated ROEs that range from 10.64% to 15.67%, with a median of 15.15%. The detailed DCF calculations are shown in my Exhibit T-0043.

VIII. CAPM ANALYSIS

Q.138 Please provide a brief overview of the CAPM model.

A. The CAPM model is based on the theory that the market-required rate of return for a security is equal to the "risk-free rate" plus a "market-risk premium" associated

[102] In statistical analysis, under a normal distribution, approximately 95% percent of all data will fall within one standard deviations from the mean.

with that security. Investors use CAPM analysis as a measure of the cost of equity relative to risk. The CAPM relies on the understanding that investors require higher expected rates of return as risk increases.

Q.139 How is the market-risk premium determined using the CAPM model?

A. To determine the CAPM market-risk premium for natural gas pipelines, the Commission has stated that it will: (1) use, as the risk-free rate, the 30-year U.S. Treasury average historical bond yield over a six-month period corresponding as closely as possible to the six-month financial study period used to produce the DCF study in the applicable proceeding, (2) estimate the expected market return using a forward-looking approach based on a one-step DCF analysis of all dividend paying companies in the S&P 500, and (3) exclude S&P 500 companies with growth rates that are negative or in excess of 20%. Further the Commission has stated that it is reasonable to use Value Line as the source for the betas in the CAPM analysis.[103] I have determined the market-risk premium in my CAPM analysis as reflected in my Exhibit No. T-0043, using IBES as the source for the short term growth rates and Value Line for the source of the betas required in the CAPM analysis. Using two distinct data sources for the CAPM analysis (i.e. IBES for the growth rates and Value Line for the beta) is consistent with the notion that rational investors will rely upon multiple sources of available data when making investment decisions.

[103] *See* 2020 Policy Statement at Paragraph 46.

Q.140 What is beta?

A. In finance, beta "measures a security's volatility in relation to that of the market as a whole and is generally computed from a linear regression analysis based on past realized returns over some past time period."[104] This volatility is assumed to equate to a security's implied investment risk. To measure beta, a comparison is made between the movements in the price of a given stock and a selected market index, such as the S&P 500 Index or the New York Stock Exchange Composite Index. Beta measures the relative risk of an entity compared to the market index as a whole by assessing the volatility of the asset as compared to the overall volatility of the market index. Thus, a beta of 1.00 indicates that an asset has a similar risk to the market as a whole (as represented by the index). A beta greater than 1.00 indicates that the asset has a greater inherent risk than the market as a whole, while a beta less than 1.00 indicates that an asset has lesser inherent risk than the market as a whole. As such, investors can utilize beta as a tool to evaluate the relative risk of individual entities.

Q.141 How is the CAPM model utilized for ROE estimation purposes for natural gas pipelines?

A. The CAPM model estimates the cost of equity by adding the risk-free rate to the market-risk premium multiplied by beta. Mathematically, the formula for the CAPM is represented as follows:

$$k = Rf + B * (Rm-Rf)$$

[104] See Roger A. Morin, New Regulatory Finance at 70 (Public Utilities Reports, Inc.) (2006).

where "k" is the cost of equity estimate, "Rf" is the risk-free rate, "Rm" is the expected market return, and "B" = *Value Line* beta, which measures the volatility of the security compared to the rest of the market.

The 2020 Policy Statement also permits the application of a size premium adjustment when determining the CAPM zone of reasonableness to account for the difference in size between the proxy group entities and the dividend paying companies in the S&P 500.[105]

Therefore, consistent with FERC guidance, the formula which I have utilized for the CAPM analysis is as follows:

$$k = Rf + B * (Rm-Rf) + s$$

where "s" is the size adjustment for the security to account for the notion that small company betas undercompensate for their risk and large company betas overcompensate for their risk in the CAPM model results.

Q.142 How are the CAPM results applied to the proxy group entities in this proceeding?

A. As shown mathematically above, the results of the CAPM model are applied to each of the members of the Transco Proxy Group by adding the risk-free rate to each entity's Value Line beta multiplied by the market risk premium (*i.e.,* Rm – Rf) calculated in the one-step DCF model applied to the applicable S&P 500

[105] See Opinion No. 569, 169 FERC ¶ 61,129 at P 298; see also Coakley v. Bangor Hydro-Elec. Co., Opinion No. 531-B, 150 FERC ¶ 61,165, at P 117 (2015) (citing Roger A. Morin, New Regulatory Finance, 187 (Public Utilities Reports, Inc. 2006) (Morin) (finding that use of a size premium adjustment is "a generally accepted approach to CAPM analyses")).

companies. A size adjustment is then added to this result to obtain the CAPM cost of equity for each entity in the proxy group.

Q.143 What risk-free rate "Rf" have you reflected in your CAPM analysis?

A. Consistent with the 2020 Policy Statement, to determine the risk-free rate "Rf" in the CAPM model I used the 30-year U.S. Treasury average historical bond yield for the six-month period ending March 2024 of 4.46 percent, as shown in the table below.[106]

30-year U.S. Treasury Average Historical Bond Yield as of March 31, 2024[107]

Month	30-Year Bond Yield
October 2023	4.95%
November 2023	4.66%
December 2023	4.14%
January 2024	4.26%
February 2024	4.38%
March 2024	4.36%
Six-Month Average	**4.46%**

Q.144 What are the beta "B" values for each of the proxy group entities?

A. The *Value Line* adjusted betas for each of the proxy group entities as of March 2024 are shown below in the table below. This data is publicly available at www.valueline.com.

Value Line Adjusted Betas as of March 2024

Proxy Group Entity	Value Line Adjusted Beta
Energy Transfer	1.10
Kinder Morgan	1.10
ONEOK	1.50
Williams	1.10

[106] *See* 2020 Policy Statement at Paragraph 39.
[107] Source: https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15

Q.145 How is the expected market return "Rm" determined by the CAPM model?

A. The expected market return "Rm" is determined using a forward-looking approach based on a one-step DCF analysis of all dividend-paying companies in the S&P 500, excluding any S&P 500 companies with IBES growth rates that are negative or in excess of 20%.

Q.146 Please describe how you have calculated the expected market return "Rm" and market risk premium.

A. As shown in my Exhibit No. T-0043, to calculate the "Rm", I have first removed the S&P 500 companies that (1) do not pay dividends, or (2) that have IBES growth rates that are negative or in excess of 20 percent to avoid anomalous results. The "Rm" is then calculated as the market-capitalization weighted average of the current market dividend yield of 1.77% plus the market-capitalization weighted average growth rate of 9.90% for each eligible stock, yielding a total Rm of 11.67%.

To calculate the market risk premium, we subtract the "Rf" of 4.46% from the applicable Rm, yielding a CAPM market risk premium of 7.22%. This market risk premium is then multiplied by each proxy group entity's Value Line beta and added to the risk-free rate to obtain the Unadjusted Returns shown in my Exhibit No. T-0043.

Q.147 Have you applied a size adjustment factor to the CAPM results?

A. Yes. I have applied a size adjustment factor "s" to the Unadjusted Return for each proxy group entity. In Opinion No. 569, the Commission explained that the CAPM analysis should incorporate the most recent size premium adjustments for each proxy group company calculated using market capitalization data from companies

in the NYSE.[108] The source for these adjustments was first published by Ibbotson Associates before coming under the name of Duff & Phelps, and has now been renamed Kroll,[109] which the Commission adopted as the source of the size adjustment factor for gas pipelines.[110]

Q.148 Have you utilized a low-end and/or high-end outlier test to assess the results for the CAPM analysis?

A. Yes. I have applied a standard statistical test to examine whether any of the proxy group members could be considered outliers. Specifically, I examined whether any of the CAPM results were greater than two standard deviations from the mean of the sample and found that all results were within this range.[111]

Q.149 Please summarize the results of your CAPM analysis.

A. Applying the CAPM methodology to the Transco Proxy Group yields a calculated ROE range from 12.34% to 15.22%, with a median result of 12.34%. The detailed CAPM calculations are shown in my Exhibit No. T-0043.

IX. RECOMMENDED RATE OF RETURN ON EQUITY

Q.150 What is the next step in determining the appropriate rate of return on equity for a natural gas pipeline?

A. Once the DCF and CAPM results have been calculated, the next step in determining the appropriate rate of return on equity is to assess the relative levels of risks faced

[108] Opinion No. 569, 169 FERC ¶ 61,129 at PP 296-303.
[109] In 2021, Duff & Phelps was renamed Kroll. See: https://www.kroll.com/en/about-us/news/duff-and-phelps-unifies-under-kroll-brand
[110] Id. P 300; 2020 Policy Statement at PP 44, 47.
[111] In statistical analysis, under a normal distribution, 95% percent of data will fall within two standard deviations from the mean.

by the entity under examination (*i.e.* Transco in this proceeding) compared to the entities included in the proxy group.

As previously discussed, regulated interstate natural gas pipelines are typically faced with the rebuttable presumption that all natural gas pipelines fall into a broad range of average risk absent highly unusual circumstances. Thus, as a starting point, an interstate natural gas pipeline's rate of return on equity is typically set at the median of the range of reasonable returns determined from a risk appropriate proxy group.

Q.151 How do Transco's overall levels of risk compare to the Transco Proxy Group?

A. As discussed previously in my testimony, Transco faces quantitative risks (which are beyond the control of its management) that are slightly below the median of the proxy group. At the same time, Transco faces qualitative risks that are well above the median of the proxy group. Transco faces risks related to the recovery of its capital investment in the wake of changing regulatory and environmental regulations, operating risks due to the advanced age of much of its pipeline, risks related to having much of its firm capacity scheduled to expire within five years, direct competitive risks, risks arising from changing regulations, as well as heightened financial risks. On balance, it is reasonable to conclude that Transco faces risks that are comparable to the median of the Transco Proxy Group at this time.

Q.152 What is your calculated range of reasonableness for Transco's ROE at this time?

A. In order to determine the ROE range of reasonableness for Transco in this proceeding, I have averaged the results of the DCF methodology and CAPM methodologies, as shown in detail in my Exhibit No. T-0043 and summarized in the table below.

ROE Determination – Transco Proxy Group

Method	Median	Low	High
CAPM	12.34%	12.34%	15.22%
DCF	15.15%	10.64%	15.67%
Average	13.74%	11.49%	15.44%

As shown above, the median ROE of the Transco Proxy Group is 13.74%, with a zone of reasonableness between 11.49% and 15.44%.

For this case, I therefore support a range of reasonableness between 11.49% and 15.44% and a median ROE of 13.74%, which is at the average of the median return of the DCF (15.15%) and the CAPM (12.34%).

Transco's witness Mr. Teply provides a recommendation for the placement of Transco within the proxy group range to reasonableness for this proceeding. However, if the depreciation and negative salvage rates or other major cost of service components are not approved as filed in this proceeding, Transco's risks may increase, which may necessitate an additional upward adjustment above this level for ratemaking purposes in this proceeding.

Q.153 Does this conclude your Prepared Direct Testimony?

A. Yes.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transcontinental Gas Pipe Line Company, LLC	)	Docket No. RP24-___-000

AFFIDAVIT OF
DAVID J. HAAG

David J. Haag, being first duly sworn, on oath states that he is the witness whose testimony appears on the preceding pages entitled "Prepared Direct Testimony of David J. Haag"; that, if asked the questions which appear in the text of said testimony, he would give the answers that are therein set forth; and that affiant adopts the aforesaid testimony as David J. Haag's sworn testimony in this proceeding.

David J. Haag

Subscribed and sworn to before me, a Notary Public in and for the District of Columbia this 22nd day of August, 2024.

STEPHANIE J. WILKERSON NOTARY PUBLIC EXP. 9-14-24 DISTRICT OF COLUMBIA

Notary Public

My Commission expires:

STEPHANIE J WILKERSON
Notary Public, District of Columbia
My Commission Expires September 14, 2024

CURRICULUM VITAE

NAME

David J. Haag

BUSINESS ADDRESS

P.O. Box 10
Sunderland, MD 20689-0010

PRESENT POSITION

President and Chief Executive Officer
Brown, Williams, Moorhead & Quinn, Inc.

EDUCATION

Master's in Economics
Public Utility Regulation
New Mexico State University

Bachelor's in Economics
with Management Minor
University of Calgary, Canada

TEACHING EXPERIENCE

Seminar Instructor (2013 – Present)
Center for Public Utilities
New Mexico State University
Pipeline Ratemaking Course
Seminars Taught:
• Determination of a Pipeline's Cost of Service

Dean of Energy Law Academy (2021 – 2024)
Energy Bar Association
The Energy Law Academy provides education regarding core regulatory and legal concepts and basic industry fundamentals.
Course Taught: Introduction to the Federal Regulation of the Natural Gas Industry
• Cost of Service Ratemaking
• Emerging Rate Case Issues

NATURE OF WORK PERFORMED WITH FIRM

Mr. Haag joined BWMQ in September 2019 as Chief Executive Officer and became President and Chief Executive Officer in September 2020. Brown Williams provides thorough analytical expertise and advocacy on behalf of clients across a wide range of energy issues, including Cost of Service and Rate Design, Certificate Applications, Depreciation, and Economic Analysis.

Mr. Haag is highly regarded in the natural gas pipeline industry as a pipeline cost of service, rate design, tariff, and regulatory expert, bringing to the role of President and CEO his extensive experience dealing with the Federal Energy Regulatory Commission, including the filing of expert testimony, management of numerous complex rate case filings, market-based rate studies, certificate filings, compliance filings, as well as gas pipeline and storage tariff filings.

Mr. Haag has filed expert testimony and / or affidavits on various rate and regulatory matters including business risk assessment, proxy groups, return on equity, capital structure, cost of service issues, rate design, cost classification, cost allocation, billing determinants, discount adjustments, market power tariffs, rate levelization, pipeline transportation values, and other rate-related issues.

Mr. Haag is well versed in Government, Public, and Stakeholder Relations, and maintains established relationships with FERC Staff as well as various industry trade associations.

Mr. Haag is also seasoned in the analysis of complex commercial, financial, and regulatory matters related to pipelines and storage, and is able to assist with regulatory oversight and FERC compliance matters for ongoing operations, new projects, acquisitions, mergers, and divestitures.

Finally, Mr. Haag is experienced in the management of oil pipeline tariffs under the Interstate Commerce Act, including the requisite depreciation and underlying cost of service issues pertaining to oil and products pipelines.

PREVIOUS EMPLOYMENT

Prior to joining BWMQ, Mr. Haag served as Vice President, Regulatory and Chief Compliance Officer for Tallgrass Energy, LP, where he was responsible for identifying, overseeing, and implementing regulatory strategies across each Tallgrass pipeline entity, including natural gas transmission pipelines, storage facilities, and crude oil pipelines. Mr. Haag was accountable for both the management of all rate and cost of service related filings (including Section 4 Rate Case filings, FERC Form 501-G filings, expert testimony, tariff filings, and the development of complex financial modeling for strategic analysis), as well as all Tallgrass FERC Certificate matters (including filings for the construction, modification, replacement, and abandonment of pipeline facilities).

As Chief Compliance Officer, Mr. Haag was responsible for ensuring that all Tallgrass regulated business was conducted in compliance and adherence with the FERC Standards of Conduct and other applicable regulations.

In addition, Mr. Haag also served at Tallgrass as Vice President of Commercial Operations, managing both the Trailblazer and Tallgrass Interstate Pipeline Systems. In this role, Mr. Haag was responsible to manage all commercial aspects of these businesses, including contracting, business development, and customer relationships across the two major pipelines.

Prior to joining Tallgrass, Mr. Haag served as Director of Rates for Boardwalk Pipeline Partners, L.P. where he was accountable for the various rate and cost of service matters across all regulated Boardwalk entities, including the provision of expert testimony and preparation of financial models and strategic analysis.

Mr. Haag was also previously employed as Manager, Rates and Regulatory Affairs for Portland Natural Gas Transmission, where he prepared, filed and managed all Portland regulatory filings; major filings included multiple Section 4 FERC rate case filings, FERC certificate applications, NAESB compliance filings, District Court matters, as well as the bankruptcy of a major shipper.

Earlier in his career, Mr. Haag also worked in both Sales and Marketing and Counterparty Risk Management for TransCanada Pipelines (now TC Energy Corp.) and is therefore also familiar with Canadian pipeline operations and regulations.

#	JURISDICTION	CASE OR DOCKET NO.	UTILITY/ORGANIZATION INITIATING PROCEEDING	SUBJECT MATTER
			PIPELINE RATE CASE PROCEEDINGS	
26	FERC	RP24-781	ALGONQUIN GAS TRANSMISSION, LLC	Business Risk / Proxy Group
25	FERC	RP24-780	MARITIMES & NORTHEAST PIPELINE, L.L.C.	Business Risk / Proxy Group
24	FERC	RP24-744	SOUTHERN NATURAL GAS COMPANY, L.L.C.	Return on Equity / Business Risk / Proxy Group
23	FERC	RP24-287	NORTHERN BORDER PIPELINE COMPANY	Zonal Rate Design
22	FERC	RP24-164	CAROLINA GAS TRANSMISSION, LLC	Dth-Mile Study / Business Risk / Proxy Group
21	FERC	RP23-1099	GAS TRANSMISSION NORTHWEST LLC	Zonal Rate Design
20	FERC	RP23-930	SALTVILLE GAS STORAGE COMPANY L.L.C.	Business Risk / Proxy Group
19	FERC	RP23-929	NATIONAL FUEL GAS SUPPLY CORPORATION	Business Risk / Proxy Group
18	FERC	RP23-377	WBI ENERGY TRANSMISSION, INC.	Business Risk / Proxy Group
17	FERC	RP22-1072	TUSCARORA GAS TRANSMISSION COMPANY	Business Risk / Proxy Group
16	North Carolina Utilities Commission	Docket No. G-39 Sub 47	CARDINAL PIPELINE COMPANY, LLC	Return on Equity / Cost of Capital / Business Risk / Proxy Group / Capital Structure
15	FERC	RP21-1188	TEXAS EASTERN TRANSMISSION, LP	Business Risk / Proxy Group
14	FERC	RP21-1187	EASTERN GAS TRANSMISSION AND STORAGE, INC.	Rate Design / Business Risk / Proxy Group
13	FERC	RP21-1001	TEXAS EASTERN TRANSMISSION, LP	Business Risk / Proxy Group
12	FERC	PR21-34	ENABLE OKLAHOMA INTRASTATE TRANSMISSION, LLC	Return on Equity / Proxy Group (Section 311 Proceeding)
11	FERC	RP20-1236	TC ENERGY PIPELINES	Public Interest Impacts of Potential Contract Abrogation
10	FERC	RP20-980	EAST TENNESSEE NATURAL GAS, LLC	Business Risk / Proxy Group / Capital Structure
9	FERC	RP20-921	MARITIMES & NORTHEAST PIPELINE, L.L.C.	Business Risk / Proxy Group / Capital Structure

#	JURISDICTION	CASE OR DOCKET NO.	UTILITY/ORGANIZATION INITIATING PROCEEDING	SUBJECT MATTER
8	FERC	RP20-908	ALLIANCE PIPELINE L.P.	Business Risk / Proxy Group / Capital Structure
7	FERC	RP20-467	DOMINION ENERGY COVE POINT LNG, LP	Business Risk / Proxy Group
6	FERC	RP20-131	ENABLE MISSISSIPPI RIVER TRANSMISSION	Discount Adjustment
5	FERC	RP18-922	TRAILBLAZER PIPELINE COMPANY, LLC	Section 4 Rate Case
4	FERC	RP16-137	TALLGRASS INTERSTATE GAS TRANSMISSION, LLC	Section 4 Rate Case
3	FERC	RP15-65	GULF SOUTH PIPELINE COMPANY, LP	Section 4 Rate Case
2	FERC	RP10-729	PORTLAND NATURAL GAS TRANSMISSION SYSTEM	Section 4 Rate Case
1	FERC	RP08-306	PORTLAND NATURAL GAS TRANSMISSION SYSTEM	Section 4 Rate Case

#	JURISDICTION	CASE OR DOCKET NO.	UTILITY/ORGANIZATION INITIATING PROCEEDING	SUBJECT MATTER
			SECTION 7 CERTIFICATE FILINGS	
4	FERC	CP18-103	ROCKIES EXPRESS PIPELINE, LLC	Installation of 6 new compressor units
3	FERC	CP18-102	CHEYENNE CONNECTOR, LLC	70 mile large-diameter greenfield pipeline
2	FERC	CP17-485	TALLGRASS INTERSTATE GAS TRANSMISSION, LLC	Partial facility abandonment application
1	FERC	CP15-137	ROCKIES EXPRESS PIPELINE, LLC	Capacity Enhancement Project – 800,000 Dth/d pipeline system expansion

#	JURISDICTION	CASE OR DOCKET NO.	UTILITY/ORGANIZATION INITIATING PROCEEDING	SUBJECT MATTER
			ELECTRIC RATE FILINGS	
3	FERC	ER22-1539-000	NRG POWER MARKETING LLC	Return on Equity / Proxy Group
2	FERC	ER21-1816-000	KES KINGSBURG, LP	Return on Equity / Proxy Group / Business Risk / Capital Structure
1	FERC	ER21-998-000	MIDWAY SUNSET COGENERATION COMPANY	Return on Equity / Proxy Group / Business Risk / Capital Structure

#	JURISDICTION	CASE OR DOCKET NO.	SUBJECT MATTER
		FEDERAL COURT PROCEEDINGS	
2	U.S. Bankruptcy Court for the Southern District of Texas – Houston Division	Case No. 20-35562 – GULFPORT ENERGY CORPORATION	Report on Motion to Reject Certain FERC Jurisdictional Contracts
1	U.S. Bankruptcy Court for the District of Delaware	Case No. 20-11548 – EXTRACTION OIL AND GAS, INC.	Report on Motion to Reject Certain FERC Jurisdictional Contracts

Transcontinental Gas Pipe Line Company, LLC
Proxy Group Analysis
Dividend Payment History

Docket No. RP24-_____
Statement P
Exhibit No. T-0039

Potential Proxy Group Entity	Dividend Payment History Payment Date		Dividend Amount	Source
Enbridge Inc. 1/	3/1/2024	$	0.9150	https://www.enbridge.com/investment-center/stock-and-dividend-information/dividends-and-common-shares
	12/1/2023	$	0.8875	
	9/1/2023	$	0.8875	
	6/1/2023	$	0.8875	
Energy Transfer LP	2/20/2024	$	0.3150	https://ir.energytransfer.com/distribution-history-et
	11/20/2023	$	0.3125	
	8/21/2023	$	0.3100	
	5/22/2023	$	0.3075	
Kinder Morgan, Inc.	2/15/2024	$	0.2825	https://ir.kindermorgan.com/stock-information/dividend-history/default.aspx
	11/15/2023	$	0.2825	
	8/15/2023	$	0.2825	
	5/15/2023	$	0.2825	
National Fuel Gas Company	1/12/2024	$	0.4950	https://investor.nationalfuelgas.com/stock-info/dividend-history/default.aspx
	10/13/2023	$	0.4950	
	7/14/2023	$	0.4950	
	4/14/2023	$	0.4750	
ONEOK, Inc.	2/14/2024	$	0.9900	https://ir.oneok.com/stock-information/dividend-history
	11/14/2023	$	0.9550	
	8/14/2023	$	0.9550	
	5/15/2023	$	0.9550	
Pembina Pipeline Corporation 1/	3/28/2024	$	0.6675	https://www.pembina.com/investors/stock-dividend
	12/29/2023	$	0.6675	
	9/29/2023	$	0.6675	
	6/30/2023	$	0.6675	
Spire, Inc.	1/3/2024	$	0.7550	https://investors.spireenergy.com/stock-info/dividends/default.aspx
	10/3/2023	$	0.7200	
	7/5/2023	$	0.7200	
	4/4/2023	$	0.7200	
TC Energy Corporation 1/	1/31/2024	$	0.9300	https://www.tcenergy.com/investors/dividends/
	10/31/2023	$	0.9300	
	7/31/2023	$	0.9300	
	4/28/2023	$	0.9300	
The Williams Companies, Inc.	3/25/2024	$	0.4750	https://investor.williams.com/stock-info/dividend-history/default.aspx
	12/26/2023	$	0.4475	
	9/25/2023	$	0.4475	
	6/26/2023	$	0.4475	

1/ As companies headquartered in Canada, Enbridge Inc., Pembina Pipeline Corporation and TC Energy Corporation pay their respective quarterly dividends in Canadian dollars.

Transcontinental Gas Pipe Line Company, LLC **Docket No. RP24-_____**
Proxy Group Analysis **Statement P**
Weighted Average Remaining Firm Contract Life as of April 1, 2024 **Exhibit No. T-0040**

Proxy Entity	Interstate Natural Gas Pipeline		Weighted Average Remaining Contract Life (in years)	Risk Rank (out of 37)
Transcontinental Gas Pipe Line Company, LLC			2.90	10
Energy Transfer LP	Enable Gas Transmission, LLC		5.54	24
	Enable Mississippi River Transmission, LLC		9.04	30
	ETC Tiger Pipeline, LLC		3.87	17
	Fayetteville Express Pipeline LLC		n/a	n/a
	Florida Gas Transmission Company, LLC		9.47	31
	Gulf Run Transmission, LLC		8.67	28
	Midcontinent Express Pipeline LLC		2.15	8
	Panhandle Eastern Pipe Line Company, LP		6.86	27
	Rover Pipeline LLC		9.75	34
	Southeast Supply Header		6.56	25
	Transwestern Pipeline Company, LLC		4.96	22
	Trunkline Gas Company, LLC		3.82	16
	Proxy Entity Average:	**6.43**		
Kinder Morgan Inc.	Cheyenne Plains Gas Pipeline		0.92	3
	Colorado Interstate Gas		4.31	19
	El Paso Natural Gas Pipeline Co.		6.66	26
	Elba Express		13.64	35
	Fayetteville Express Pipeline		n/a	n/a
	Florida Gas Transmission		9.47	31
	Horizon Pipeline Company		1.12	4
	Kinder Morgan Illinois Pipeline		3.75	14
	Kinder Morgan Louisiana Pipeline		16.44	37
	Midcontinent Express Pipeline		2.15	8
	Mojave Pipeline Co.		0.75	1
	Natural Gas Pipeline Company of America		3.07	12
	Sierrita Gas Pipeline		15.59	36
	Southern LNG		9.58	33
	Southern Natural Gas		1.20	6
	Tennessee Gas Pipeline		4.17	18
	TransColorado Gas Transmission		0.80	2
	Wyoming Interstate Co.		4.65	20
	Proxy Entity Average:	**5.78**		
ONEOK, Inc.				
	Guardian Pipeline, L.L.C.		1.13	5
	Midwestern Gas Transmission Company		2.96	11
	Northern Border Pipeline		3.37	13
	OkTex Pipeline Company, L.L.C.		1.73	7
	Viking Gas Transmission Company		2.81	9
	Proxy Entity Average:	**2.40**		
The Williams Companies, Inc.	Gulfstream Natural Gas System, LLC		8.76	29
	MountainWest Overthrust Pipeline, LLC		5.07	23
	MountainWest Pipeline, LLC		4.94	21
	Northwest Pipeline LLC		9.48	32
	Transcontinental Gas Pipe Line Company, LLC		2.90	10
	White River Hub, LLC		3.81	15
	Proxy Entity Average:	**5.83**		

Transcontinental Gas Pipe Line Company, LLC **Docket No. RP24-_____**
Proxy Group Analysis **Statement P**
Firm Customer Growth Analysis from April 2023 to April 2024 **Exhibit No. T-0041**

Proxy Entity	Interstate Natural Gas Pipeline		Year Over Year Growth	Risk Rank (out of 37)	April 2024 Total Dth	April 2023 Total Dth
Transcontinental Gas Pipe Line Company, LLC			**0.26%**	21	209,063,205	208,511,113
Energy Transfer LP	Enable Gas Transmission, LLC		-0.13%	8	18,791,541	18,816,389
	Enable Mississippi River Transmission, LLC		15.35%	36	33,141,959	28,731,362
	ETC Tiger Pipeline, LLC		-9.11%	2	2,217,751	2,440,000
	Fayetteville Express Pipeline LLC		n/a		-	-
	Florida Gas Transmission Company, LLC		0.44%	22	5,749,519	5,724,589
	Gulf Run Transmission, LLC		7.36%	31	3,054,829	2,845,309
	Midcontinent Express Pipeline LLC		-3.45%	3	1,260,000	1,305,000
	Panhandle Eastern Pipe Line Company, LP		-1.05%	6	43,389,990	43,848,269
	Rover Pipeline LLC		-2.32%	5	2,990,000	3,061,000
	Southeast Supply Header		5.58%	27	1,040,000	985,000
	Transwestern Pipeline Company, LLC		-3.07%	4	2,355,077	2,429,627
	Trunkline Gas Company, LLC		7.48%	32	8,978,874	8,353,667
	Proxy Entity Average:	**1.55%**				
Kinder Morgan Inc.	Cheyenne Plains Gas Pipeline		157.18%	37	98,500	38,300
	Colorado Interstate Gas		0.14%	20	5,389,610	5,382,287
	El Paso Natural Gas Pipeline Co.		0.04%	19	8,540,354	8,537,004
	Elba Express		0.00%	11	2,043,197	2,043,197
	Fayetteville Express Pipeline		n/a		-	-
	Florida Gas Transmission		-0.13%	8	5,749,519	5,724,589
	Horizon Pipeline Company		-21.05%	1	300,000	380,000
	Kinder Morgan Illinois Pipeline		0.00%	11	200,000	200,000
	Kinder Morgan Louisiana Pipeline		0.00%	11	1,580,000	1,580,000
	Midcontinent Express Pipeline		-3.45%	3	1,260,000	1,305,000
	Mojave Pipeline Co.		0.00%	11	492,936	492,936
	Natural Gas Pipeline Company of America		-0.08%	9	289,282,293	289,522,507
	Sierrita Gas Pipeline		0.00%	11	431,100	431,100
	Southern LNG		0.00%	11	11,761,920	11,761,920
	Southern Natural Gas		-0.08%	10	57,446,162	57,492,584
	Tennessee Gas Pipeline		2.99%	25	99,405,808	96,515,972
	TransColorado Gas Transmission		9.08%	33	360,500	330,500
	Wyoming Interstate Co.		6.41%	28	2,966,746	2,787,967
	Proxy Entity Average:	**8.88%**				
ONEOK, Inc.						
	Guardian Pipeline, L.L.C.		0.99%	23	2,371,916	2,348,599
	Midwestern Gas Transmission Company		7.19%	30	1,461,123	1,363,123
	Northern Border Pipeline		2.86%	24	4,251,732	4,133,530
	OkTex Pipeline Company, L.L.C.		0.00%	11	5,552	5,552
	Viking Gas Transmission Company		6.41%	28	685,902	648,802
	Proxy Entity Average:	**3.49%**				
The Williams Companies, Inc.						
	Gulfstream Natural Gas System, LLC		0.00%	11	1,388,000	1,388,000
	MountainWest Overthrust Pipeline, LLC		13.10%	35	2,308,862	2,041,462
	MountainWest Pipeline, LLC		3.65%	26	2,420,912	2,335,581
	Northwest Pipeline LLC		-0.55%	7	13,999,282	14,076,127
	Transcontinental Gas Pipe Line Company, LLC		0.26%	21	209,063,205	208,511,113
	White River Hub, LLC		10.00%	34	2,640,000	2,400,000
	Proxy Entity Average:	**4.41%**				

Transcontinental Gas Pipe Line Company, LLC | **Docket No. RP24-_____**
Proxy Group Analysis | **Statemnet P**
Firm Customer Concentration Analysis as of April 1, 2024 | **Exhibit No. T-0042**

Proxy Entity	Interstate Natural Gas Pipeline		Average % of Total Dth Held per Customer	Risk Rank (out of 37)		% of Total Dth From Top 5 Customers	Risk Rank (out of 37)
Transcontinental Gas Pipe Line Company, LLC			0.57%	34		53.41%	29
Energy Transfer LP	Enable Gas Transmission, LLC		0.18%	37		87.45%	18
	Enable Mississippi River Transmission, LLC		3.03%	22		90.74%	16
	ETC Tiger Pipeline, LLC		7.69%	16		81.07%	21
	Fayetteville Express Pipeline LLC		n/a			n/a	
	Florida Gas Transmission Company, LLC		1.45%	29		65.63%	26
	Gulf Run Transmission, LLC		11.11%	13		87.40%	19
	Midcontinent Express Pipeline LLC		3.45%	20		42.85%	35
	Panhandle Eastern Pipe Line Company, LP		0.85%	32		78.95%	22
	Rover Pipeline LLC		12.50%	11		96.66%	12
	Southeast Supply Header		7.69%	17		90.07%	17
	Transwestern Pipeline Company, LLC		2.13%	26		46.95%	31
	Trunkline Gas Company, LLC		1.28%	30		44.84%	32
	Proxy Entity Average:	**4.67%**			**73.87%**		
Kinder Morgan Inc.	Cheyenne Plains Gas Pipeline		14.29%	9		91.37%	15
	Colorado Interstate Gas		2.04%	27		94.62%	13
	El Paso Natural Gas Pipeline Co.		0.94%	31		29.76%	37
	Elba Express		12.50%	12		96.85%	11
	Fayetteville Express Pipeline		n/a			n/a	
	Florida Gas Transmission		1.45%	37		65.63%	18
	Horizon Pipeline Company		100.00%	1		100.00%	1
	Kinder Morgan Illinois Pipeline		100.00%	1		100.00%	1
	Kinder Morgan Louisiana Pipeline		50.00%	4		100.00%	1
	Midcontinent Express Pipeline		3.45%	20		42.85%	35
	Mojave Pipeline Co.		33.33%	7		100.00%	1
	Natural Gas Pipeline Company of America		0.79%	33		44.22%	33
	Sierrita Gas Pipeline		100.00%	1		100.00%	1
	Southern LNG		50.00%	4		100.00%	1
	Southern Natural Gas		0.55%	35		74.50%	24
	Tennessee Gas Pipeline		0.44%	36		36.31%	36
	TransColorado Gas Transmission		11.11%	13		91.54%	14
	Wyoming Interstate Co.		4.00%	19		63.66%	27
	Proxy Entity Average:	**28.52%**			**78.31%**		
ONEOK, Inc.							
	Guardian Pipeline, L.L.C.		8.33%	15		98.53%	9
	Midwestern Gas Transmission Company		2.78%	23		53.20%	30
	Northern Border Pipeline		2.22%	24		44.12%	34
	OkTex Pipeline Company, L.L.C.		50.00%	4		100.00%	1
	Viking Gas Transmission Company		2.22%	25		66.40%	25
	Proxy Entity Average:	**13.11%**			**72.45%**		
The Williams Companies, Inc.							
	Gulfstream Natural Gas System, LLC		14.29%	9		96.97%	10
	MountainWest Overthrust Pipeline, LLC		4.17%	18		60.00%	28
	MountainWest Pipeline, LLC		3.33%	21		77.53%	23
	Northwest Pipeline LLC		1.72%	28		84.29%	20
	Transcontinental Gas Pipe Line Company, LLC		0.57%	34		53.41%	29
	White River Hub, LLC		25.00%	8		100.00%	1
	Proxy Entity Average:	**8.18%**			**78.70%**		

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)

Summary of ROE Determinations

Recommended Proxy Group:
Energy Transfer LP
Kinder Morgan, Inc.
ONEOK, Inc.
Williams Companies

ROE Determinations

Method	Median	Low	High
CAPM	12.34%	12.34%	15.22%
DCF	15.15%	10.64%	15.67%
Average	**13.74%**	**11.49%**	**15.44%**

Risk Thirds

	Total Range		Lower Third		Middle Third		Upper Third	
Method	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
CAPM	12.34%	15.22%	12.34%	13.30%	13.30%	14.26%	14.26%	15.22%
DCF	10.64%	15.67%	10.64%	12.31%	12.31%	13.99%	13.99%	15.67%
Average	**11.49%**	**15.44%**	**11.49%**	**12.81%**	**12.81%**	**14.12%**	**14.12%**	**15.44%**

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)

Proxy Group ROE Calculations - Value Line
Return on Equity (Two-Stage DCF) Calculation
Six-Months Ended March 2024

(a) Ticker	(b) Company	(c) Average Dividend Yield	(d) IBES Growth Rate	(e) Value Line Growth Rate	(f) Average Growth Rate	(g) GDP Growth Rate	(h) Short-Term 2/3 Weighting	(i) GDP 1/3 Weighting	(j) Combined Growth Rate	(k) Adjusted Dividend Yield	(l) DCF Return
ET	Energy Transfer LP	8.99%	8.20%	7.50%	7.85%	2.06%	5.23%	0.68%	5.92%	9.34%	15.26%
KMI	Kinder Morgan, Inc.	6.58%	5.30%	15.00%	10.15%	4.11%	6.77%	1.37%	8.14%	6.91%	15.05%
OKE	ONEOK, Inc.	5.58%	11.60%	13.50%	12.55%	4.11%	8.37%	1.37%	9.74%	5.93%	15.67%
WMB	Williams Companies	5.12%	2.00%	10.00%	6.00%	4.11%	4.00%	1.37%	5.37%	5.27%	10.64%

Range	10.64%	to	15.67%
Mean			14.15%
Median			**15.15%**
Midpoint			13.15%
Standard Deviation			2.36%

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)
Dividend Yield Calculations

Ticker	Company	Stock Price Month	High	Low	Average	Annualized Dividend	Dividend Yield	Average Dividend Yield
ET	Energy Transfer LP	Mar-24	$15.81	$14.71	$15.260	$1.28	8.39%	
		Feb-24	$14.98	$13.79	$14.385	$1.28	8.90%	
		Jan-24	$14.65	$13.60	$14.125	$1.25	8.86%	
		Dec-23	$14.00	$13.12	$13.560	$1.25	9.23%	
		Nov-23	$13.91	$12.90	$13.405	$1.25	9.34%	
		Oct-23	$14.15	$12.97	$13.560	$1.25	9.23%	8.99%
KMI	Kinder Morgan, Inc.	Mar-24	$18.43	$17.34	$17.885	$1.13	6.33%	
		Feb-24	$17.44	$16.47	$16.955	$1.13	6.68%	
		Jan-24	$18.24	$16.85	$17.545	$1.13	6.45%	
		Dec-23	$17.90	$17.00	$17.450	$1.13	6.49%	
		Nov-23	$17.59	$16.10	$16.845	$1.13	6.72%	
		Oct-23	$17.44	$15.89	$16.665	$1.13	6.79%	6.58%
OKE	ONEOK, Inc.	Mar-24	$80.53	$74.81	$77.670	$3.96	5.10%	
		Feb-24	$75.68	$67.05	$71.365	$3.96	5.55%	
		Jan-24	$72.52	$68.21	$70.365	$3.96	5.63%	
		Dec-23	$71.44	$65.49	$68.465	$3.82	5.58%	
		Nov-23	$68.94	$63.33	$66.135	$3.82	5.78%	
		Oct-23	$70.56	$60.58	$65.570	$3.82	5.83%	5.58%
WMB	Williams Companies	Mar-24	$39.09	$35.74	$37.415	$1.92	5.13%	
		Feb-24	$36.23	$32.65	$34.440	$1.79	5.20%	
		Jan-24	$36.69	$33.48	$35.085	$1.79	5.11%	
		Dec-23	$37.45	$34.01	$35.730	$1.79	5.02%	
		Nov-23	$37.07	$33.80	$35.435	$1.79	5.06%	
		Oct-23	$36.22	$32.49	$34.355	$1.79	5.22%	5.12%

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)
GDP Growth Calculations

Energy Information Administration ("EIA") AEO 2023 Table A20

		Year	Amount	
Real Gross Domestic Product (Ave. Annual Growth 2028 to 2050)		2028	$21,681	
		2050	$33,405	
GDP Chain-Type Price Index (Ave. Annual Growth 2028 to 2050)		2028	1.475	
		2050	2.433	
	RGDP*Index	2028	$31,979	
	RGDP*Index	2050	$81,274	
GDP Growth				**4.33%**

S&P Global Connect (IHS Markit)

	Year	GI	
	2028	$33,321	
	2054	$91,025	
GDP Growth 2028 - 2054			**3.94%**

Social Security Administration ("SSA") Table VI.G.4 (2023)

	Year	SSA	
	2028	$32,778	
	2050	$78,438	
GDP Growth			**4.05%**

Average **4.11%**

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)

Proxy Group CAPM Calculations - IBES

Uses One Step DCF With Size Adjustment
as of March 2024

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
			Market Return								
Ticker	Company	S&P 500 Dividend Yield	S&P 500 Composite Growth Rate (IBES)	CAPM Cost of Equity	6-Month Hist Avg 30 Yr. Treasury Risk- Free Rate	CAPM Risk Premium	Value Line Adjusted Beta	Unadjusted Return	Market Cap $ Millions	Size Adjustment	CAPM Cost of Equity
ET	Energy Transfer LP	1.77%	9.90%	11.67%	4.46%	7.22%	1.10	12.40%	$ 52,331	-0.06%	12.34%
KMI	Kinder Morgan, Inc.	1.77%	9.90%	11.67%	4.46%	7.22%	1.10	12.40%	$ 40,288	-0.06%	12.34%
OKE	ONEOK, Inc.	1.77%	9.90%	11.67%	4.46%	7.22%	1.50	15.28%	$ 46,414	-0.06%	15.22%
WMB	Williams Companies	1.77%	9.90%	11.67%	4.46%	7.22%	1.10	12.40%	$ 46,903	-0.06%	12.34%

Range	12.34%	to	15.22%
Mean			13.06%
Median			**12.34%**
Midpoint			13.78%
Standard Deviation			1.44%

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)
CAPM Analysis - S&P 500 (March 2024)

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
A	Agilent Technologies	$ 147.37	0.60%	$ 43,185.59	0.15734%	8.05%	0.01267%	0.00094%
AAPL	Apple Inc.	$ 173.31	0.60%	$ 2,648,000.00	9.64743%	10.18%	0.98211%	0.05788%
ABBV	AbbVie Inc.	$ 180.35	3.40%	$ 318,487.45	1.16034%	3.71%	0.04305%	0.03945%
ABT	Abbott Labs.	$ 113.48	1.90%	$ 196,782.94	0.71694%	7.22%	0.05176%	0.01362%
ACN	Accenture Plc	$ 340.94	1.50%	$ 214,392.61	0.78109%	7.58%	0.05921%	0.01172%
ADP	Automatic Data Proc.	$ 248.33	2.30%	$ 101,989.13	0.37158%	10.93%	0.04061%	0.00855%
AEE	Ameren Corp.	$ 73.15	3.70%	$ 19,479.84	0.07097%	4.80%	0.00341%	0.00263%
AEP	Amer. Elec. Power	$ 84.80	4.20%	$ 44,620.48	0.16257%	5.72%	0.00930%	0.00683%
AES	AES Corp.	$ 17.25	4.00%	$ 11,552.20	0.04209%	7.50%	0.00316%	0.00168%
AFL	Aflac Inc.	$ 85.62	2.40%	$ 49,529.37	0.18045%	7.40%	0.01335%	0.00433%
AIG	Amer. Int'l Group	$ 78.34	1.80%	$ 53,963.72	0.19661%	10.00%	0.01966%	0.00354%
AIZ	Assurant Inc.	$ 187.41	1.50%	$ 9,737.07	0.03547%	5.10%	0.00181%	0.00053%
AJG	Gallagher (Arthur J.	$ 247.79	1.00%	$ 53,696.09	0.19563%	10.30%	0.02015%	0.00196%
ALLE	Allegion plc	$ 134.24	1.40%	$ 11,746.67	0.04280%	6.30%	0.00270%	0.00060%
AMAT	Applied Materials	$ 208.00	0.70%	$ 172,826.57	0.62966%	13.86%	0.08727%	0.00441%
AMCR	Amcor plc	$ 9.48	5.30%	$ 13,689.12	0.04987%	5.40%	0.00269%	0.00264%
AME	AMETEK, Inc.	$ 183.72	0.60%	$ 42,426.45	0.15457%	7.60%	0.01175%	0.00093%
AMGN	Amgen	$ 286.30	3.10%	$ 153,285.02	0.55846%	4.74%	0.02647%	0.01731%
AMP	Ameriprise Fin'l	$ 435.98	1.30%	$ 43,673.42	0.15911%	17.60%	0.02800%	0.00207%
AMT	Amer. Tower 'A'	$ 197.38	3.30%	$ 92,037.50	0.33532%	4.67%	0.01566%	0.01107%
AON	Aon plc	$ 333.79	0.80%	$ 66,290.69	0.24152%	9.20%	0.02222%	0.00193%
AOS	Smith (A.O.)	$ 88.85	1.40%	$ 13,107.77	0.04776%	10.00%	0.00478%	0.00067%
APD	Air Products & Chem.	$ 243.10	2.90%	$ 54,041.37	0.19689%	6.69%	0.01317%	0.00571%
APH	Amphenol Corp.	$ 115.30	0.80%	$ 69,053.17	0.25158%	9.40%	0.02365%	0.00201%
ATO	Atmos Energy	$ 118.26	2.80%	$ 17,837.62	0.06499%	7.50%	0.00487%	0.00182%
AVGO	Broadcom Inc.	$ 1,318.73	1.60%	$ 610,571.99	2.22449%	13.33%	0.29652%	0.03559%
AVY	Avery Dennison	$ 224.24	1.50%	$ 18,050.42	0.06576%	7.82%	0.00514%	0.00099%
AWK	Amer. Water Works	$ 121.50	2.50%	$ 23,659.69	0.08620%	7.50%	0.00646%	0.00215%
AXP	Amer. Express	$ 227.75	1.20%	$ 164,663.25	0.59992%	14.70%	0.08819%	0.00720%
BAC	Bank of America	$ 37.81	2.60%	$ 298,527.26	1.08762%	8.05%	0.08755%	0.02828%
BALL	Ball Corp.	$ 67.14	1.20%	$ 21,195.42	0.07722%	12.30%	0.00950%	0.00093%
BAX	Baxter Int'l Inc.	$ 42.69	2.70%	$ 21,670.85	0.07895%	4.07%	0.00321%	0.00213%
BBWI	Bath & Body Works	$ 49.45	1.60%	$ 11,249.00	0.04098%	5.02%	0.00206%	0.00066%
BDX	Becton, Dickinson	$ 246.53	1.60%	$ 71,223.01	0.25949%	8.65%	0.02245%	0.00415%
BEN	Franklin Resources	$ 27.63	4.50%	$ 13,669.50	0.04980%	9.65%	0.00481%	0.00224%
BFB	Brown-Forman 'B'	$ 52.04	1.70%	$ 10,468.00	0.03814%	7.90%	0.00301%	0.00065%
BK	Bank of NY Mellon	$ 56.93	3.00%	$ 43,229.45	0.15750%	10.90%	0.01717%	0.00472%
BLK	BlackRock, Inc.	$ 835.12	2.60%	$ 124,015.32	0.45182%	12.26%	0.05539%	0.01175%
BR	Broadridge Fin'l	$ 203.84	1.60%	$ 24,012.35	0.08748%	11.80%	0.01032%	0.00140%
BRO	Brown & Brown	$ 87.26	0.60%	$ 24,825.47	0.09045%	9.10%	0.00823%	0.00054%
BWA	BorgWarner	$ 34.70	1.30%	$ 7,973.50	0.02905%	10.90%	0.00317%	0.00038%
C	Citigroup Inc.	$ 62.75	3.40%	$ 119,420.40	0.43508%	9.26%	0.04029%	0.01479%
CAG	Conagra Brands	$ 29.49	4.80%	$ 14,096.36	0.05136%	0.42%	0.00022%	0.00247%
CAH	Cardinal Health	$ 112.54	1.80%	$ 27,459.76	0.10004%	15.27%	0.01528%	0.00180%
CARR	Carrier Global	$ 57.68	1.30%	$ 48,426.80	0.17643%	9.27%	0.01636%	0.00229%
CAT	Caterpillar Inc.	$ 364.65	1.40%	$ 182,097.82	0.66343%	12.66%	0.08399%	0.00929%
CB	Chubb Ltd.	$ 258.50	1.30%	$ 104,762.29	0.38168%	17.70%	0.06756%	0.00496%
CBOE	Cboe Global Markets	$ 180.17	1.20%	$ 20,198.31	0.07359%	8.12%	0.00598%	0.00088%
CDW	CDW Corp.	$ 257.87	1.00%	$ 34,580.36	0.12599%	7.90%	0.00995%	0.00126%
CFG	Citizens Fin'l Group	$ 35.82	4.80%	$ 16,707.09	0.06087%	0.85%	0.00052%	0.00292%
CHD	Church & Dwight	$ 104.21	1.10%	$ 25,338.97	0.09232%	9.10%	0.00840%	0.00102%
CI	Cigna Group	$ 363.34	1.50%	$ 106,278.40	0.38720%	11.95%	0.04627%	0.00581%
CINF	Cincinnati Financial	$ 123.29	2.60%	$ 19,356.53	0.07052%	18.20%	0.01283%	0.00183%
CL	Colgate-Palmolive	$ 89.95	2.20%	$ 73,886.09	0.26919%	8.38%	0.02256%	0.00592%
CLX	Clorox Co.	$ 152.74	3.10%	$ 18,952.13	0.06905%	13.57%	0.00937%	0.00214%
CMCSA	Comcast Corp.	$ 43.07	2.90%	$ 105,194.08	0.38325%	8.83%	0.03384%	0.01111%
CME	CME Group	$ 215.60	2.10%	$ 77,450.85	0.28218%	4.37%	0.01233%	0.00593%
CMI	Cummins Inc.	$ 294.69	2.30%	$ 41,787.04	0.15224%	7.10%	0.01081%	0.00350%
CMS	CMS Energy Corp.	$ 59.92	3.40%	$ 17,640.44	0.06427%	7.80%	0.00501%	0.00219%
CNP	CenterPoint Energy	$ 28.29	2.80%	$ 17,857.38	0.06506%	7.70%	0.00501%	0.00182%
COR	Cencora	$ 244.64	0.80%	$ 48,796.38	0.17778%	10.01%	0.01780%	0.00142%
COST	Costco Wholesale	$ 732.08	0.60%	$ 324,713.35	1.18302%	9.29%	0.10990%	0.00710%
CPB	Campbell Soup	$ 44.07	3.50%	$ 13,132.86	0.04785%	5.73%	0.00274%	0.00167%
CRM	Salesforce, Inc.	$ 301.38	0.50%	$ 292,639.98	1.06617%	16.22%	0.17293%	0.00533%
CSCO	Cisco Systems	$ 49.77	3.20%	$ 201,568.50	0.73437%	3.84%	0.02820%	0.02350%
CSX	CSX Corp.	$ 36.84	1.30%	$ 72,148.48	0.26286%	9.83%	0.02584%	0.00342%
CTAS	Cintas Corp.	$ 685.64	0.80%	$ 69,488.24	0.25317%	12.40%	0.03139%	0.00203%
CTRA	Coterra Energy	$ 27.86	3.00%	$ 20,922.86	0.07623%	13.00%	0.00991%	0.00229%
CTSH	Cognizant Technology	$ 73.62	1.60%	$ 36,662.76	0.13357%	6.66%	0.00890%	0.00214%
CTVA	Corteva, Inc.	$ 57.00	1.20%	$ 39,971.82	0.14563%	11.95%	0.01740%	0.00175%
CVS	CVS Health	$ 79.43	3.30%	$ 102,305.84	0.37273%	3.69%	0.01375%	0.01230%

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
D	Dominion Energy	$ 48.52	5.50%	$ 40,659.76	0.14814%	19.50%	0.02889%	0.00815%
DD	DuPont de Nemours	$ 76.50	2.00%	$ 32,903.41	0.11988%	10.09%	0.01210%	0.00240%
DGX	Quest Diagnostics	$ 131.06	2.30%	$ 14,547.66	0.05300%	5.16%	0.00273%	0.00122%
DHI	Horton D.R.	$ 162.05	0.80%	$ 53,831.38	0.19612%	5.88%	0.01153%	0.00157%
DHR	Danaher Corp.	$ 248.77	0.40%	$ 183,890.78	0.66997%	2.54%	0.01702%	0.00268%
DIS	Disney (Walt)	$ 120.98	0.60%	$ 227,563.38	0.82908%	16.94%	0.14045%	0.00497%
DOV	Dover Corp.	$ 177.22	1.20%	$ 24,792.36	0.09033%	8.43%	0.00761%	0.00108%
DPZ	Domino's Pizza	$ 492.13	1.20%	$ 17,089.70	0.06226%	12.04%	0.00750%	0.00075%
DRI	Darden Restaurants	$ 166.97	3.10%	$ 19,952.91	0.07269%	10.06%	0.00731%	0.00225%
DTE	DTE Energy	$ 111.30	3.70%	$ 22,967.53	0.08368%	5.10%	0.00427%	0.00310%
DUK	Duke Energy	$ 96.09	4.30%	$ 74,085.39	0.26991%	6.81%	0.01838%	0.01161%
EA	Electronic Arts	$ 131.87	0.60%	$ 35,341.16	0.12876%	11.70%	0.01506%	0.00077%
EBAY	eBay Inc.	$ 51.92	2.20%	$ 26,842.64	0.09780%	7.11%	0.00695%	0.00215%
ECL	Ecolab Inc.	$ 231.76	1.00%	$ 66,155.66	0.24102%	15.55%	0.03748%	0.00241%
ED	Consol. Edison	$ 90.05	3.70%	$ 31,104.71	0.11332%	5.66%	0.00641%	0.00419%
EFX	Equifax, Inc.	$ 262.40	0.60%	$ 32,353.92	0.11787%	18.83%	0.02220%	0.00071%
EIX	Edison Int'l	$ 69.40	4.50%	$ 26,644.39	0.09707%	7.30%	0.00709%	0.00437%
ELV	Elevance Health	$ 519.96	1.30%	$ 121,187.59	0.44152%	11.81%	0.05214%	0.00574%
EMN	Eastman Chemical	$ 99.58	3.30%	$ 11,680.03	0.04255%	4.83%	0.00206%	0.00140%
EMR	Emerson Electric	$ 113.45	1.90%	$ 64,859.36	0.23630%	12.28%	0.02902%	0.00449%
EQT	EQT Corp.	$ 36.07	1.70%	$ 15,145.64	0.05518%	15.00%	0.00828%	0.00094%
ES	Eversource Energy	$ 58.98	4.80%	$ 20,615.86	0.07511%	3.25%	0.00244%	0.00361%
ETN	Eaton Corp. plc	$ 314.40	1.20%	$ 125,571.36	0.45749%	11.45%	0.05238%	0.00549%
ETR	Entergy Corp.	$ 104.88	4.30%	$ 22,323.60	0.08133%	6.80%	0.00553%	0.00350%
EVRG	Evergy, Inc.	$ 53.05	4.90%	$ 12,187.12	0.04440%	2.50%	0.00111%	0.00218%
EXC	Exelon Corp.	$ 37.31	4.10%	$ 37,272.69	0.13580%	4.20%	0.00570%	0.00557%
EXR	Extra Space Storage	$ 146.75	4.60%	$ 31,005.19	0.11296%	6.00%	0.00678%	0.00520%
FANG	Diamondback Energy	$ 196.53	1.80%	$ 35,124.62	0.12797%	2.00%	0.00256%	0.00230%
FAST	Fastenal Co.	$ 77.28	2.00%	$ 44,202.76	0.16104%	6.33%	0.01019%	0.00322%
FDS	FactSet Research	$ 447.38	1.00%	$ 17,027.28	0.06204%	9.80%	0.00608%	0.00062%
FDX	FedEx Corp.	$ 287.88	1.80%	$ 70,841.79	0.25810%	17.90%	0.04620%	0.00465%
FE	FirstEnergy Corp.	$ 38.46	4.40%	$ 22,088.92	0.08048%	6.30%	0.00507%	0.00354%
FITB	Fifth Third Bancorp	$ 36.74	3.90%	$ 25,024.53	0.09117%	4.84%	0.00441%	0.00356%
FMC	FMC Corp.	$ 62.70	3.80%	$ 7,822.51	0.02850%	4.49%	0.00128%	0.00108%
FTV	Fortive Corp.	$ 86.02	0.40%	$ 30,167.21	0.10991%	8.60%	0.00945%	0.00044%
GD	Gen'l Dynamics	$ 281.90	2.00%	$ 77,127.84	0.28100%	12.69%	0.03566%	0.00562%
GEHC	GE HealthCare	$ 90.31	0.10%	$ 41,121.93	0.14982%	12.10%	0.01813%	0.00015%
GEN	Gen Digital Inc.	$ 22.10	2.30%	$ 14,077.70	0.05129%	11.70%	0.00600%	0.00118%
GILD	Gilead Sciences	$ 73.01	4.20%	$ 90,970.46	0.33143%	4.74%	0.01571%	0.01392%
GIS	Gen'l Mills	$ 69.66	3.50%	$ 39,323.07	0.14327%	7.46%	0.01069%	0.00501%
GL	Globe Life Inc.	$ 116.60	0.80%	$ 10,936.03	0.03984%	14.89%	0.00593%	0.00032%
GLW	Corning Inc.	$ 33.02	3.40%	$ 27,076.40	0.09865%	7.13%	0.00703%	0.00335%
GM	Gen'l Motors	$ 44.59	1.10%	$ 51,476.16	0.18754%	10.51%	0.01971%	0.00206%
GPC	Genuine Parts	$ 155.19	2.60%	$ 21,659.40	0.07891%	7.10%	0.00560%	0.00205%
GPN	Global Payments	$ 131.77	0.80%	$ 34,310.66	0.12500%	14.12%	0.01765%	0.00100%
GRMN	Garmin Ltd.	$ 147.98	2.00%	$ 28,379.16	0.10339%	5.60%	0.00579%	0.00207%
GS	Goldman Sachs	$ 415.25	2.60%	$ 134,281.88	0.48923%	9.85%	0.04819%	0.01272%
HAL	Halliburton Co.	$ 38.83	2.20%	$ 34,519.87	0.12577%	14.60%	0.01836%	0.00277%
HAS	Hasbro, Inc.	$ 56.48	5.00%	$ 7,838.80	0.02856%	11.60%	0.00331%	0.00143%
HCA	HCA Healthcare	$ 331.69	0.80%	$ 88,075.96	0.32089%	8.94%	0.02869%	0.00257%
HD	Home Depot	$ 385.89	2.30%	$ 382,802.88	1.39466%	3.98%	0.05551%	0.03208%
HES	Hess Corp.	$ 150.55	1.20%	$ 46,242.63	0.16848%	7.95%	0.01339%	0.00202%
HIG	Hartford Fin'l Svcs.	$ 102.30	1.80%	$ 30,533.68	0.11124%	10.50%	0.01168%	0.00200%
HII	Huntington Ingalls	$ 289.75	1.80%	$ 11,479.60	0.04182%	6.49%	0.00271%	0.00075%
HLT	Hilton Worldwide	$ 214.34	0.30%	$ 54,332.61	0.19795%	15.87%	0.03141%	0.00059%
HON	Honeywell Int'l	$ 205.13	2.10%	$ 133,703.73	0.48712%	8.61%	0.04194%	0.01023%
HPE	Hewlett Packard Ent.	$ 17.67	3.60%	$ 22,966.90	0.08368%	2.70%	0.00226%	0.00301%
HPQ	HP Inc.	$ 30.12	3.70%	$ 29,517.60	0.10754%	3.00%	0.00323%	0.00398%
HRL	Hormel Foods	$ 34.85	3.30%	$ 19,083.72	0.06953%	7.40%	0.00515%	0.00229%
HSY	Hershey Co.	$ 193.71	2.80%	$ 39,592.96	0.14425%	5.84%	0.00842%	0.00404%
HUBB	Hubbell Inc.	$ 413.86	1.20%	$ 22,237.11	0.08102%	7.50%	0.00608%	0.00097%
HUM	Humana Inc.	$ 349.50	1.00%	$ 42,717.28	0.15563%	5.19%	0.00808%	0.00156%
HWM	Howmet Aerospace	$ 68.08	0.30%	$ 27,906.94	0.10167%	17.62%	0.01791%	0.00031%
IBM	Int'l Business Mach.	$ 190.80	3.50%	$ 174,584.67	0.63606%	4.72%	0.03002%	0.02226%
ICE	Intercontinental Exc	$ 136.98	1.30%	$ 78,489.54	0.28596%	8.92%	0.02551%	0.00372%
IEX	IDEX Corp.	$ 245.09	1.10%	$ 18,560.42	0.06762%	12.00%	0.00811%	0.00074%
IFF	Int'l Flavors & Frag	$ 85.64	1.90%	$ 21,862.94	0.07965%	12.05%	0.00960%	0.00151%
INTU	Intuit Inc.	$ 648.74	0.60%	$ 181,663.41	0.66185%	14.39%	0.09524%	0.00397%
INVH	Invitation Homes	$ 34.90	3.30%	$ 21,357.33	0.07781%	12.09%	0.00941%	0.00257%
IP	Int'l Paper	$ 39.39	4.70%	$ 13,628.94	0.04965%	19.20%	0.00953%	0.00233%
IPG	Interpublic Group	$ 32.77	4.00%	$ 12,409.99	0.04521%	6.00%	0.00271%	0.00181%
IR	Ingersoll Rand Inc.	$ 95.26	0.10%	$ 38,422.83	0.13999%	9.14%	0.01279%	0.00014%
IRM	Iron Mountain	$ 80.14	3.20%	$ 23,412.34	0.08530%	4.70%	0.00401%	0.00273%
ITW	Illinois Tool Works	$ 268.21	2.10%	$ 80,275.25	0.29247%	4.32%	0.01263%	0.00614%
IVZ	Invesco Ltd.	$ 16.45	5.20%	$ 7,394.27	0.02694%	13.99%	0.00377%	0.00140%
J	Jacobs Solutions	$ 152.93	0.80%	$ 19,207.85	0.06998%	10.10%	0.00707%	0.00056%

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
JBHT	Hunt (J.B.)	$ 195.20	0.90%	$ 20,148.54	0.07341%	4.50%	0.00330%	0.00066%
JBL	Jabil Inc.	$ 135.94	0.20%	$ 17,488.27	0.06371%	13.30%	0.00847%	0.00013%
JCI	Johnson Ctrls. Int'l	$ 64.87	2.30%	$ 44,207.41	0.16106%	11.72%	0.01888%	0.00370%
JKHY	Henry (Jack) & Assoc	$ 172.26	1.30%	$ 12,550.51	0.04573%	7.70%	0.00352%	0.00059%
JNJ	Johnson & Johnson	$ 157.96	3.10%	$ 380,222.04	1.38526%	4.35%	0.06026%	0.04294%
JNPR	Juniper Networks	$ 37.28	2.40%	$ 11,940.78	0.04350%	11.00%	0.00479%	0.00104%
JPM	JPMorgan Chase	$ 199.52	2.30%	$ 573,951.00	2.09107%	1.11%	0.02321%	0.04809%
K	Kellanova	$ 56.65	4.00%	$ 19,294.31	0.07029%	7.90%	0.00555%	0.00281%
KDP	Keurig Dr Pepper	$ 30.59	2.90%	$ 42,533.74	0.15496%	7.13%	0.01105%	0.00449%
KHC	Kraft Heinz Co.	$ 36.53	4.40%	$ 44,493.54	0.16210%	3.93%	0.00637%	0.00713%
KLAC	KLA Corp.	$ 696.87	0.80%	$ 94,258.63	0.34341%	6.02%	0.02067%	0.00275%
KMB	Kimberly-Clark	$ 127.27	3.80%	$ 42,889.99	0.15626%	5.17%	0.00808%	0.00594%
KMI	Kinder Morgan Inc.	$ 18.15	6.20%	$ 40,288.09	0.14678%	5.30%	0.00778%	0.00910%
KO	Coca-Cola	$ 61.03	3.20%	$ 262,917.24	0.95788%	5.75%	0.05508%	0.03065%
KR	Kroger Co.	$ 56.90	2.00%	$ 40,968.00	0.14926%	8.00%	0.01194%	0.00299%
KVUE	Kenvue Inc.	$ 21.45	3.70%	$ 41,077.97	0.14966%	1.79%	0.00268%	0.00554%
L	Loews Corp.	$ 78.10	0.30%	$ 17,351.32	0.06322%	14.03%	0.00887%	0.00019%
LDOS	Leidos Hldgs.	$ 130.54	1.20%	$ 17,722.89	0.06457%	9.45%	0.00610%	0.00077%
LEN	Lennar Corp.	$ 168.50	1.20%	$ 47,339.73	0.17247%	0.60%	0.00103%	0.00207%
LH	Laboratory Corp.	$ 216.57	1.30%	$ 18,170.22	0.06620%	9.32%	0.00617%	0.00086%
LHX	L3Harris Technologie	$ 212.50	2.20%	$ 40,334.41	0.14695%	8.47%	0.01245%	0.00323%
LIN	Linde plc	$ 466.23	1.10%	$ 224,930.33	0.81949%	9.65%	0.07908%	0.00901%
LMT	Lockheed Martin	$ 456.78	2.80%	$ 109,627.20	0.39940%	6.35%	0.02536%	0.01118%
LNT	Alliant Energy	$ 49.77	3.60%	$ 12,745.94	0.04644%	6.55%	0.00304%	0.00167%
LOW	Lowe's Cos.	$ 253.33	1.70%	$ 145,664.75	0.53070%	5.20%	0.02760%	0.00902%
LRCX	Lam Research	$ 965.67	0.90%	$ 126,771.22	0.46186%	7.07%	0.03265%	0.00416%
LW	Lamb Weston Holdings	$ 106.30	1.40%	$ 15,346.31	0.05591%	16.80%	0.00939%	0.00078%
LYB	LyondellBasell Inds.	$ 102.95	4.90%	$ 33,405.52	0.12171%	8.43%	0.01026%	0.00596%
MA	MasterCard Inc.	$ 477.95	0.60%	$ 446,405.30	1.62638%	17.94%	0.29177%	0.00976%
MAR	Marriott Int'l	$ 253.56	0.80%	$ 73,659.18	0.26836%	14.50%	0.03891%	0.00215%
MAS	Masco Corp.	$ 77.85	1.50%	$ 17,173.71	0.06257%	9.48%	0.00593%	0.00094%
MCD	McDonald's Corp.	$ 282.02	2.40%	$ 203,815.85	0.74256%	6.86%	0.05094%	0.01782%
MCK	McKesson Corp.	$ 539.26	0.50%	$ 70,643.06	0.25737%	10.61%	0.02731%	0.00129%
MCO	Moody's Corp.	$ 390.24	0.80%	$ 71,207.87	0.25943%	13.17%	0.03417%	0.00208%
MDLZ	Mondelez Int'l	$ 70.10	2.40%	$ 94,528.65	0.34440%	8.43%	0.02903%	0.00827%
MDT	Medtronic plc	$ 86.92	3.20%	$ 115,573.43	0.42107%	3.48%	0.01465%	0.01347%
MET	MetLife Inc.	$ 73.92	2.80%	$ 54,022.28	0.19682%	11.50%	0.02263%	0.00551%
MKC	McCormick & Co.	$ 76.03	2.20%	$ 20,383.64	0.07426%	7.15%	0.00531%	0.00163%
MKTX	MarketAxess Holdings	$ 217.75	1.40%	$ 8,252.72	0.03007%	9.28%	0.00279%	0.00042%
MLM	Martin Marietta	$ 611.86	0.50%	$ 37,825.79	0.13781%	10.90%	0.01502%	0.00069%
MMC	Marsh & McLennan	$ 205.61	1.40%	$ 101,161.35	0.36856%	9.60%	0.03538%	0.00516%
MO	Altria Group	$ 43.66	9.00%	$ 76,992.75	0.28051%	2.59%	0.00727%	0.02525%
MS	Morgan Stanley	$ 93.50	3.60%	$ 152,108.41	0.55417%	8.00%	0.04433%	0.01995%
MSCI	MSCI Inc.	$ 557.00	1.10%	$ 44,053.68	0.16050%	13.13%	0.02107%	0.00177%
MSFT	Microsoft Corp.	$ 421.43	0.70%	$ 3,126,000.00	11.38892%	15.09%	1.71859%	0.07972%
MSI	Motorola Solutions	$ 353.41	1.10%	$ 58,736.74	0.21399%	9.31%	0.01992%	0.00235%
NDAQ	Nasdaq, Inc.	$ 63.00	1.40%	$ 36,235.01	0.13201%	7.04%	0.00929%	0.00185%
NDSN	Nordson Corp.	$ 273.74	1.00%	$ 15,655.73	0.05704%	13.00%	0.00741%	0.00057%
NEE	NextEra Energy	$ 63.79	3.20%	$ 130,897.08	0.47690%	7.86%	0.03748%	0.01526%
NI	NiSource Inc.	$ 27.46	3.90%	$ 12,285.10	0.04476%	7.30%	0.00327%	0.00175%
NKE	NIKE, Inc. 'B'	$ 94.13	1.60%	$ 142,795.21	0.52024%	12.44%	0.06472%	0.00832%
NRG	NRG Energy	$ 66.62	2.40%	$ 13,865.68	0.05052%	4.00%	0.00202%	0.00121%
NSC	Norfolk Southern	$ 251.72	2.10%	$ 56,808.42	0.20697%	8.54%	0.01768%	0.00435%
NTAP	NetApp, Inc.	$ 105.22	1.90%	$ 21,675.32	0.07897%	8.30%	0.00655%	0.00150%
NTRS	Northern Trust Corp.	$ 87.75	3.40%	$ 17,999.80	0.06558%	11.90%	0.00780%	0.00223%
NXPI	NXP Semi. NV	$ 245.44	1.70%	$ 63,124.71	0.22998%	9.17%	0.02109%	0.00391%
ODFL	Old Dominion Freight	$ 427.95	0.50%	$ 46,631.57	0.16989%	10.60%	0.01801%	0.00085%
OKE	ONEOK Inc.	$ 79.60	5.00%	$ 46,414.20	0.16910%	11.60%	0.01962%	0.00846%
OMC	Omnicom Group	$ 95.16	3.20%	$ 18,841.68	0.06865%	13.40%	0.00920%	0.00220%
ORCL	Oracle Corp.	$ 125.27	1.30%	$ 344,116.69	1.25372%	10.24%	0.12838%	0.01630%
OTIS	Otis Worldwide	$ 99.86	1.40%	$ 40,603.07	0.14793%	10.15%	0.01501%	0.00207%
OXY	Occidental Petroleum	$ 64.20	1.40%	$ 56,461.52	0.20571%	8.60%	0.01769%	0.00288%
PAYC	Paycom Software	$ 197.22	0.80%	$ 11,148.45	0.04062%	10.89%	0.00442%	0.00032%
PAYX	Paychex, Inc.	$ 121.53	3.20%	$ 43,726.49	0.15931%	8.51%	0.01356%	0.00510%
PCAR	PACCAR Inc.	$ 124.46	3.50%	$ 65,129.91	0.23729%	6.76%	0.01604%	0.00831%
PCG	PG&E Corp.	$ 16.74	0.30%	$ 35,716.43	0.13013%	10.20%	0.01327%	0.00039%
PEG	Public Serv. Enterpr	$ 66.65	3.60%	$ 33,191.70	0.12093%	5.25%	0.00635%	0.00435%
PEP	PepsiCo, Inc.	$ 173.57	3.00%	$ 238,485.18	0.86887%	7.01%	0.06091%	0.02607%
PFG	Principal Fin'l Grou	$ 86.07	3.20%	$ 20,350.21	0.07414%	10.60%	0.00786%	0.00237%
PG	Procter & Gamble	$ 162.61	2.30%	$ 382,624.74	1.39401%	7.46%	0.10399%	0.03206%
PH	Parker-Hannifin	$ 558.05	1.10%	$ 71,659.75	0.26108%	11.26%	0.02940%	0.00287%
PHM	PulteGroup, Inc.	$ 118.01	0.70%	$ 25,083.96	0.09139%	4.45%	0.00407%	0.00064%
PM	Philip Morris Int'l	$ 92.23	5.60%	$ 143,180.15	0.52165%	10.16%	0.05300%	0.02921%
PNC	PNC Financial Serv.	$ 159.97	4.00%	$ 63,672.69	0.23198%	10.96%	0.02542%	0.00928%
PNR	Pentair plc	$ 85.02	1.10%	$ 14,056.78	0.05121%	13.59%	0.00696%	0.00056%
PNW	Pinnacle West Capita	$ 74.03	4.80%	$ 8,396.77	0.03059%	6.90%	0.00211%	0.00147%

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
PPG	PPG Inds.	$ 144.54	1.70%	$ 33,997.39	0.12386%	10.42%	0.01291%	0.00211%
PPL	PPL Corp.	$ 27.42	3.80%	$ 20,212.10	0.07364%	6.50%	0.00479%	0.00280%
PRU	Prudential Fin'l	$ 117.02	4.40%	$ 42,035.45	0.15315%	10.20%	0.01562%	0.00674%
PWR	Quanta Services	$ 259.75	0.10%	$ 37,795.96	0.13770%	17.22%	0.02371%	0.00014%
PXD	Pioneer Natural Res.	$ 260.00	3.90%	$ 60,741.98	0.22130%	2.00%	0.00443%	0.00863%
QCOM	Qualcomm Inc.	$ 169.13	1.90%	$ 189,087.34	0.68890%	7.72%	0.05318%	0.01309%
RJF	Raymond James Fin'l	$ 127.40	1.40%	$ 26,584.04	0.09685%	13.10%	0.01269%	0.00136%
RL	Ralph Lauren	$ 186.50	1.60%	$ 11,917.35	0.04342%	15.00%	0.00651%	0.00069%
RMD	ResMed Inc.	$ 196.33	1.00%	$ 28,877.78	0.10521%	13.00%	0.01368%	0.00105%
ROK	Rockwell Automation	$ 291.21	1.70%	$ 33,372.66	0.12159%	7.12%	0.00866%	0.00207%
ROL	Rollins, Inc.	$ 46.70	1.30%	$ 22,606.53	0.08236%	12.80%	0.01054%	0.00107%
ROP	Roper Tech.	$ 559.18	0.50%	$ 59,776.34	0.21778%	7.70%	0.01677%	0.00109%
ROST	Ross Stores	$ 147.19	1.00%	$ 49,595.96	0.18069%	14.09%	0.02546%	0.00181%
RSG	Republic Services	$ 191.52	1.10%	$ 60,252.19	0.21952%	8.89%	0.01951%	0.00241%
RTX	RTX Corp.	$ 97.45	2.40%	$ 129,307.08	0.47110%	10.45%	0.04923%	0.01131%
RVTY	Revvity, Inc.	$ 105.41	0.30%	$ 13,010.33	0.04740%	8.47%	0.00401%	0.00014%
SBAC	SBA Communications	$ 218.08	1.80%	$ 23,563.54	0.08585%	12.98%	0.01114%	0.00155%
SBUX	Starbucks Corp.	$ 91.50	2.50%	$ 103,596.30	0.37743%	14.64%	0.05526%	0.00944%
SCHW	Schwab (Charles)	$ 72.38	1.40%	$ 131,985.65	0.48086%	10.93%	0.05256%	0.00673%
SHW	Sherwin-Williams	$ 346.89	0.80%	$ 88,298.42	0.32170%	11.37%	0.03658%	0.00257%
SJM	Smucker (J.M.)	$ 125.72	3.40%	$ 13,348.57	0.04863%	7.27%	0.00354%	0.00165%
SLB	Schlumberger Ltd.	$ 54.90	2.00%	$ 78,363.98	0.28550%	18.24%	0.05208%	0.00571%
SNA	Snap-on Inc.	$ 296.94	2.50%	$ 15,646.95	0.05701%	3.80%	0.00217%	0.00143%
SO	Southern Co.	$ 71.05	4.00%	$ 77,515.55	0.28241%	7.30%	0.02062%	0.01130%
SPG	Simon Property Group	$ 154.33	5.20%	$ 58,624.00	0.21358%	8.60%	0.01837%	0.01111%
SPGI	S&P Global	$ 422.81	0.90%	$ 136,144.82	0.49601%	12.77%	0.06334%	0.00446%
SRE	Sempra Energy	$ 71.25	3.50%	$ 44,989.53	0.16391%	5.90%	0.00967%	0.00574%
STE	STERIS plc	$ 225.52	1.00%	$ 22,283.18	0.08118%	10.00%	0.00812%	0.00081%
STT	State Street Corp.	$ 76.88	3.70%	$ 23,213.45	0.08457%	6.95%	0.00588%	0.00313%
STZ	Constellation Brands	$ 272.04	1.30%	$ 49,733.26	0.18119%	11.40%	0.02066%	0.00236%
SWK	Stanley Black & Deck	$ 97.06	3.40%	$ 14,910.35	0.05432%	13.91%	0.00756%	0.00185%
SWKS	Skyworks Solutions	$ 107.89	2.70%	$ 17,283.97	0.06297%	15.00%	0.00945%	0.00170%
SYF	Synchrony Financial	$ 42.28	2.40%	$ 17,202.71	0.06267%	13.00%	0.00815%	0.00150%
SYK	Stryker Corp.	$ 358.71	0.90%	$ 136,345.67	0.49675%	11.02%	0.05474%	0.00447%
SYY	Sysco Corp.	$ 81.94	2.40%	$ 41,273.34	0.15037%	12.20%	0.01835%	0.00361%
T	AT&T Inc.	$ 17.55	6.30%	$ 125,483.60	0.45717%	0.74%	0.00338%	0.02880%
TAP	Molson Coors Beverag	$ 67.34	2.60%	$ 14,363.62	0.05233%	9.08%	0.00475%	0.00136%
TECH	Bio-Techne Corp.	$ 69.42	0.50%	$ 10,908.79	0.03974%	6.59%	0.00262%	0.00020%
TEL	TE Connectivity	$ 144.93	1.80%	$ 44,844.09	0.16338%	7.50%	0.01225%	0.00294%
TER	Teradyne Inc.	$ 111.54	0.40%	$ 17,031.93	0.06205%	7.68%	0.00477%	0.00025%
TFX	Teleflex Inc.	$ 223.87	0.60%	$ 10,530.84	0.03837%	7.20%	0.00276%	0.00023%
TGT	Target Corp.	$ 174.67	2.50%	$ 80,640.77	0.29380%	18.34%	0.05388%	0.00734%
TJX	TJX Companies	$ 101.08	1.40%	$ 115,305.29	0.42009%	11.68%	0.04907%	0.00588%
TMO	Thermo Fisher Sci.	$ 579.37	0.30%	$ 224,011.67	0.81614%	6.74%	0.05501%	0.00245%
TPR	Tapestry Inc.	$ 46.68	3.00%	$ 10,708.39	0.03901%	11.00%	0.00429%	0.00117%
TROW	Price (T. Rowe) Grou	$ 120.86	4.20%	$ 27,065.14	0.09861%	0.70%	0.00069%	0.00414%
TRV	Travelers Cos.	$ 228.83	1.70%	$ 52,219.00	0.19025%	15.50%	0.02949%	0.00323%
TSCO	Tractor Supply	$ 260.44	1.70%	$ 28,121.26	0.10245%	5.33%	0.00546%	0.00174%
TT	Trane Technologies p	$ 299.71	1.10%	$ 68,086.01	0.24806%	13.56%	0.03364%	0.00273%
TXN	Texas Instruments	$ 172.87	3.00%	$ 157,138.83	0.57250%	10.00%	0.05725%	0.01718%
TXT	Textron, Inc.	$ 96.25	0.10%	$ 18,566.43	0.06764%	17.50%	0.01184%	0.00007%
UNH	UnitedHealth Group	$ 493.10	1.50%	$ 455,624.40	1.65997%	13.40%	0.22244%	0.02490%
UNP	Union Pacific	$ 244.63	2.20%	$ 149,151.88	0.54340%	9.13%	0.04961%	0.01195%
UPS	United Parcel Serv.	$ 147.33	4.50%	$ 125,643.02	0.45775%	10.22%	0.04678%	0.02060%
URI	United Rentals	$ 720.15	0.90%	$ 48,444.49	0.17650%	8.70%	0.01536%	0.00159%
USB	U.S. Bancorp	$ 44.00	4.50%	$ 68,551.69	0.24975%	6.00%	0.01499%	0.01124%
V	Visa Inc.	$ 279.02	0.80%	$ 512,280.72	1.86639%	12.30%	0.22957%	0.01493%
VFC	V.F. Corp.	$ 15.09	2.40%	$ 5,867.27	0.02138%	0.90%	0.00019%	0.00051%
VICI	VICI Properties	$ 29.75	5.60%	$ 31,020.41	0.11302%	6.30%	0.00712%	0.00633%
VMC	Vulcan Materials	$ 272.79	0.70%	$ 36,035.55	0.13129%	18.55%	0.02435%	0.00092%
VRSK	Verisk Analytics	$ 233.93	0.70%	$ 33,524.27	0.12214%	12.73%	0.01555%	0.00085%
VZ	Verizon Communic.	$ 41.54	6.40%	$ 174,645.00	0.63628%	1.39%	0.00884%	0.04072%
WAB	Wabtec Corp.	$ 145.87	0.50%	$ 25,935.68	0.09449%	12.15%	0.01148%	0.00047%
WEC	WEC Energy Group	$ 81.18	4.10%	$ 25,607.01	0.09329%	5.98%	0.00558%	0.00383%
WFC	Wells Fargo	$ 57.61	2.40%	$ 207,330.49	0.75536%	6.67%	0.05038%	0.01813%
WM	Waste Management	$ 213.97	1.40%	$ 85,899.32	0.31296%	10.00%	0.03130%	0.00438%
WMB	Williams Cos.	$ 38.54	4.90%	$ 46,903.18	0.17088%	2.00%	0.00342%	0.00837%
WMT	Walmart Inc.	$ 60.72	1.30%	$ 489,038.88	1.78171%	7.41%	0.13202%	0.02316%
WRB	Berkley (W.R.)	$ 88.17	0.50%	$ 22,619.57	0.08241%	9.00%	0.00742%	0.00041%
WST	West Pharmac. Svcs.	$ 394.10	0.20%	$ 28,966.35	0.10553%	7.64%	0.00806%	0.00021%
WTW	Willis Towers Wat. p	$ 275.92	1.20%	$ 28,292.28	0.10308%	10.80%	0.01113%	0.00124%
WY	Weyerhaeuser Co.	$ 35.93	2.20%	$ 26,220.02	0.09553%	5.00%	0.00478%	0.00210%
XEL	Xcel Energy Inc.	$ 53.38	4.20%	$ 29,622.80	0.10792%	6.43%	0.00694%	0.00453%
XRAY	Dentsply Sirona	$ 33.31	1.90%	$ 6,901.83	0.02515%	14.10%	0.00355%	0.00048%
XYL	Xylem Inc.	$ 129.38	1.10%	$ 31,258.20	0.11388%	11.90%	0.01355%	0.00125%
YUM	Yum! Brands	$ 137.32	1.90%	$ 38,586.92	0.14058%	12.89%	0.01812%	0.00267%

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
ZBH	Zimmer Biomet Hldgs.	$ 132.61	0.70%	$ 27,264.61	0.09933%	6.93%	0.00688%	0.00070%
ZTS	Zoetis Inc.	$ 168.51	1.00%	$ 77,239.42	0.28141%	9.73%	0.02738%	0.00281%
				$ 27,447,729.00	**100.00000%**		**9.89941%**	**1.77433%**
						CAPM Weighted Return >		**11.67%**

Excluded Entities

AAL	Amer. Airlines	$ 15.30	0.00%	$ 10,010.37		48.69%
ABNB	Airbnb, Inc.	$ 166.41	0.00%	$ 106,169.58		22.13%
ACGL	Arch Capital Group	$ 91.48	0.00%	$ 34,158.63		19.70%
ADBE	Adobe Inc.	$ 504.40	0.00%	$ 229,502.00		12.37%
ADI	Analog Devices	$ 193.33	1.90%	$ 95,873.89		-1.51%
ADM	Archer Daniels Midl'	$ 62.99	2.90%	$ 32,313.87		-1.40%
ADSK	Autodesk, Inc.	$ 260.97	0.00%	$ 55,847.58		12.14%
AKAM	Akamai Technologies	$ 109.63	0.00%	$ 16,579.67		6.60%
ALB	Albemarle Corp.	$ 128.80	1.20%	$ 15,115.45		-8.76%
ALGN	Align Techn.	$ 327.90	0.00%	$ 24,617.09		12.50%
ALL	Allstate Corp.	$ 169.84	2.20%	$ 44,498.08		107.60%
AMD	Advanced Micro Dev.	$ 179.59	0.00%	$ 290,217.44		23.11%
AMZN	Amazon.com	$ 179.83	0.00%	$ 186,717.48		14.81%
ANET	Arista Networks	$ 288.41	0.00%	$ 90,054.58		19.40%
ANSS	ANSYS, Inc.	$ 347.93	0.00%	$ 30,237.20		9.15%
APA	APA Corp.	$ 33.71	3.60%	$ 10,233.54		-7.00%
APTV	Aptiv PLC	$ 78.64	0.00%	$ 21,943.15		23.79%
ARE	Alexandria Real Esta	$ 127.68	4.00%	$ 21,949.59		-5.92%
AVB	AvalonBay Communitie	$ 185.56	3.80%	$ 26,354.00		-11.27%
AXON	Axon Enterprise	$ 315.64	0.00%	$ 23,768.00		17.30%
AZO	AutoZone Inc.	$ 3,192.79	0.00%	$ 55,273.58		11.60%
BA	Boeing	$ 191.95	0.00%	$ 116,996.40		233.49%
BBY	Best Buy Co.	$ 81.87	4.70%	$ 17,634.79		-1.10%
BG	Bunge Global SA	$ 102.42	2.70%	$ 14,991.01		-9.10%
BIIB	Biogen	$ 216.34	0.00%	$ 31,347.66		2.80%
BIO	Bio-Rad Labs. 'A'	$ 349.56	0.00%	$ 9,968.75		17.80%
BKNG	Booking Holdings	$ 3,673.50	0.00%	$ 126,361.05		22.06%
BKR	Baker Hughes	$ 33.09	2.50%	$ 33,014.19		30.20%
BLDR	Builders FirstSource	$ 209.68	0.00%	$ 25,550.97		-12.30%
BMY	Bristol-Myers Squibb	$ 53.25	4.50%	$ 106,393.50		-2.80%
BRKB	Berkshire Hathaway '	$ 416.93	0.00%	$ 909,253.00		23.30%
BSX	Boston Scientific	$ 68.62	0.00%	$ 100,577.02		12.28%
BX	Blackstone Inc.	$ 130.89	2.40%	$ 94,156.76		21.98%
BXP	Boston Properties	$ 63.15	6.20%	$ 9,910.82		-50.84%
CBRE	CBRE Group	$ 96.84	0.00%	$ 29,525.45		11.00%
CCI	Crown Castle Int'l	$ 105.59	5.90%	$ 45,826.06		-10.87%
CCL	Carnival Corp.	$ 17.19	0.00%	$ 21,728.16		271.70%
CDNS	Cadence Design Sys.	$ 311.34	0.00%	$ 84,592.94		17.05%
CE	Celanese Corp.	$ 169.64	1.70%	$ 18,474.81		21.47%
CEG	Constellation Energy	$ 184.89	0.80%	$ 58,610.13		26.30%
CF	CF Industries	$ 82.61	2.40%	$ 15,546.21		-25.80%
CHRW	C.H. Robinson	$ 74.32	3.30%	$ 8,678.19		-1.33%
CHTR	Charter Communic.	$ 293.51	0.00%	$ 42,624.98		11.84%
CMA	Comerica Inc.	$ 54.23	5.20%	$ 7,152.82		-10.70%
CMG	Chipotle Mex. Grill	$ 2,923.46	0.00%	$ 80,178.81		22.84%
CNC	Centene Corp.	$ 78.35	0.00%	$ 41,876.82		11.71%
COF	Capital One Fin'l	$ 144.51	1.70%	$ 54,970.15		-0.97%
COO	Cooper Cos.	$ 101.84	0.00%	$ 20,235.60		11.25%
COP	ConocoPhillips	$ 126.84	1.90%	$ 149,430.45		-10.12%
CPAY	Corpay	$ 305.52	0.00%	$ 22,170.00		13.32%
CPRT	Copart, Inc.	$ 57.24	0.00%	$ 55,025.44		22.30%
CPT	Camden Property Trus	$ 97.16	4.30%	$ 10,578.58		-36.40%
CRL	Charles River	$ 269.37	0.00%	$ 13,828.91		9.19%
CSGP	CoStar Group	$ 96.22	0.00%	$ 39,267.38		20.00%
CTLT	Catalent, Inc.	$ 56.48	0.00%	$ 10,222.88		32.82%
CVX	Chevron Corp.	$ 156.35	4.20%	$ 291,694.06		-4.63%
CZR	Caesars Entertainmen	$ 43.36	0.00%	$ 9,357.13		230.70%
DAL	Delta Air Lines	$ 47.31	0.80%	$ 30,441.47		20.12%
DAY	Dayforce, Inc.	$ 66.05	0.00%	$ 10,300.00		21.86%
DE	Deere & Co.	$ 409.14	1.40%	$ 113,887.39		-6.80%
DECK	Deckers Outdoor	$ 937.90	0.00%	$ 24,057.13		19.00%
DFS	Discover Fin'l Svcs.	$ 128.00	2.20%	$ 32,013.18		-7.29%
DG	Dollar General	$ 154.21	1.50%	$ 33,847.55		-2.86%
DLR	Digital Realty Trust	$ 143.74	3.40%	$ 44,790.53		-23.97%
DLTR	Dollar Tree, Inc.	$ 132.50	0.00%	$ 28,872.67		9.48%
DOC	Healthpeak Propertie	$ 18.75	6.60%	$ 13,305.00		-12.59%
DOW	Dow Inc.	$ 58.14	4.90%	$ 40,831.31		29.52%
DVA	DaVita Inc.	$ 136.85	0.00%	$ 12,155.56		15.00%

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
DVN	Devon Energy	$ 49.46	3.60%	$ 31,441.72		-2.94%		
DXCM	DexCom Inc.	$ 139.48	0.00%	$ 53,755.59		33.40%		
EG	Everest Group	$ 395.79	1.80%	$ 17,177.28		26.80%		
EL	Lauder (Estee)	$ 145.04	1.80%	$ 51,986.10		20.93%		
ENPH	Enphase Energy	$ 119.80	0.00%	$ 16,259.49		14.80%		
EOG	EOG Resources	$ 126.39	3.00%	$ 73,414.89		-1.00%		
EPAM	EPAM Systems	$ 276.37	0.00%	$ 15,970.59		7.10%		
EQIX	Equinix, Inc.	$ 815.31	2.10%	$ 77,029.67		24.30%		
EQR	Equity Residential	$ 63.11	4.20%	$ 23,954.00		-1.06%		
ESS	Essex Property Trust	$ 241.41	4.00%	$ 15,499.24		-0.39%		
ETSY	Etsy, Inc.	$ 67.99	0.00%	$ 8,095.50		22.60%		
EW	Edwards Lifesciences	$ 95.15	0.00%	$ 57,194.66		9.33%		
EXPD	Expeditors Int'l	$ 121.24	1.10%	$ 17,442.31		-16.80%		
EXPE	Expedia Group	$ 138.99	0.00%	$ 19,047.88		21.30%		
F	Ford Motor	$ 13.06	10.10%	$ 54,290.42		-4.67%		
FCX	Freep't-McMoRan Inc.	$ 45.88	1.30%	$ 65,837.80		-0.99%		
FFIV	F5, Inc.	$ 188.84	0.00%	$ 11,103.22		9.40%		
FI	Fiserv Inc.	$ 159.33	0.00%	$ 94,642.02		15.05%		
FICO	Fair Isaac	$ 1,258.51	0.00%	$ 31,310.47		27.70%		
FIS	Fidelity Nat'l Info.	$ 73.46	2.00%	$ 42,827.18		-0.60%		
FOX	Fox Corp. 'B'	$ 28.60	1.82%	$ 14,210.00		n/a		
FRT	Federal Rlty. Inv. T	$ 102.12	4.30%	$ 8,535.00		-10.85%		
FSLR	First Solar, Inc.	$ 167.45	0.00%	$ 17,891.53		67.40%		
FTNT	Fortinet Inc.	$ 67.27	0.00%	$ 51,192.47		14.62%		
GE	Gen'l Electric	$ 180.12	0.20%	$ 196,045.48		37.32%		
GNRC	Generac Holdings	$ 124.59	0.00%	$ 7,492.59		-1.44%		
GOOG	Alphabet Inc.	$ 151.94	0.00%	$ 189,317.24		17.82%		
GOOGL	Alphabet Inc. 'A'	$ 150.87	0.00%	$ 187,984.02		19.25%		
GWW	Grainger (W.W.)	$ 1,020.17	0.70%	$ 50,311.72		27.95%		
HBAN	Huntington Bancshs.	$ 13.79	4.50%	$ 19,972.33		-5.50%		
HOLX	Hologic, Inc.	$ 77.35	0.00%	$ 18,141.97		7.40%		
HSIC	Schein (Henry)	$ 75.15	0.00%	$ 9,712.98		7.25%		
HST	Host Hotels & Resort	$ 20.68	3.90%	$ 14,758.00		28.40%		
IDXX	IDEXX Labs.	$ 539.57	0.00%	$ 44,801.57		12.00%		
ILMN	Illumina Inc.	$ 138.68	0.00%	$ 22,050.12		22.90%		
INCY	Incyte Corp.	$ 57.12	0.00%	$ 12,811.27		22.50%		
INTC	Intel Corp.	$ 43.77	1.10%	$ 185,059.56		39.88%		
IQV	IQVIA Holdings	$ 252.57	0.00%	$ 45,841.45		11.48%		
ISRG	Intuitive Surgical	$ 400.10	0.00%	$ 140,955.23		12.36%		
IT	Gartner Inc.	$ 480.84	0.00%	$ 37,668.04		10.80%		
KEY	KeyCorp	$ 15.64	5.20%	$ 14,647.86		-5.80%		
KEYS	Keysight Technologie	$ 155.84	0.00%	$ 27,256.41		4.34%		
KIM	Kimco Realty	$ 19.61	5.10%	$ 13,220.00		66.41%		
KMX	CarMax, Inc.	$ 86.98	0.00%	$ 13,744.66		6.30%		
LKQ	LKQ Corp.	$ 53.15	2.30%	$ 14,201.68		33.50%		
LLY	Lilly (Eli)	$ 778.18	0.70%	$ 738,787.75		50.67%		
LULU	lululemon athletica	$ 389.46	0.00%	$ 49,164.65		12.30%		
LUV	Southwest Airlines	$ 29.27	2.50%	$ 17,459.93		22.46%		
LVS	Las Vegas Sands	$ 51.48	1.60%	$ 38,764.44		29.00%		
LYV	Live Nation Entertai	$ 106.81	0.00%	$ 24,919.09		80.30%		
MAA	Mid-America Apt.	$ 130.80	4.50%	$ 15,263.57		-4.43%		
MCHP	Microchip Technology	$ 89.19	2.10%	$ 48,197.20		-6.30%		
META	Meta Platforms	$ 493.86	0.40%	$ 1,264,775.46		24.07%		
MGM	MGM Resorts Int'l	$ 46.60	0.00%	$ 15,217.23		11.90%		
MHK	Mohawk Inds.	$ 128.92	0.00%	$ 8,210.39		-4.58%		
MMM	3M Company	$ 104.59	5.80%	$ 57,794.44		-0.74%		
MNST	Monster Beverage	$ 59.20	0.00%	$ 61,661.00		14.30%		
MOH	Molina Healthcare	$ 418.60	0.00%	$ 24,278.80		16.77%		
MOS	Mosaic Company	$ 32.01	2.60%	$ 10,374.53		-39.50%		
MPC	Marathon Petroleum	$ 196.99	1.70%	$ 72,492.32		-9.00%		
MPWR	Monolithic Power Sys	$ 673.14	0.70%	$ 32,329.56		25.00%		
MRK	Merck & Co.	$ 131.75	2.30%	$ 333,542.64		67.56%		
MRNA	Moderna, Inc.	$ 110.59	0.00%	$ 42,245.38		-47.33%		
MRO	Marathon Oil Corp.	$ 27.71	1.70%	$ 15,988.67		-8.79%		
MTB	M&T Bank Corp.	$ 144.80	3.70%	$ 24,056.49		n/a		
MTCH	Match Group	$ 35.88	0.00%	$ 9,647.77		26.13%		
MTD	Mettler-Toledo Int'l	$ 1,335.84	0.00%	$ 28,755.29		9.20%		
MU	Micron Technology	$ 119.25	0.40%	$ 132,009.75		-2.43%		
NCLH	Norwegian Cruise Lin	$ 21.34	0.00%	$ 9,081.17		48.20%		
NEM	Newmont Corp.	$ 35.25	2.80%	$ 40,608.00		n/a		
NFLX	Netflix, Inc.	$ 613.53	0.00%	$ 265,511.24		22.84%		
NOC	Northrop Grumman	$ 477.36	1.70%	$ 71,656.03		29.39%		
NOW	ServiceNow, Inc.	$ 759.00	0.00%	$ 155,385.51		21.15%		
NUE	Nucor Corp.	$ 198.56	1.00%	$ 48,627.74		-7.50%		
NVDA	NVIDIA Corp.	$ 902.50	0.02%	$ 2,259,000.00		35.08%		
NVR	NVR, Inc.	$ 7,980.74	0.00%	$ 25,498.46		-3.66%		

Ticker	Name	3/27/2024 Price	Current Dividend Yield	Market Cap @ 3/27/2024	Market Cap Weighting	IBES 5 Year Annual Growth Rate	Weighted Growth Rate	Weighted Dividend Yield
NWS	News Corp. 'B'	$ 27.13	0.74%	$ 15,535.31		n/a		
O	Realty Income Corp.	$ 53.77	5.70%	$ 40,459.77		22.62%		
ON	ON Semiconductor	$ 75.61	0.00%	$ 32,239.04		4.61%		
ORLY	O'Reilly Automotive	$ 1,135.52	0.00%	$ 67,078.57		11.50%		
PANW	Palo Alto Networks	$ 282.26	0.00%	$ 91,085.30		17.83%		
PARA	Paramount Global	$ 11.70	1.70%	$ 7,640.10		29.37%		
PFE	Pfizer, Inc.	$ 27.78	6.00%	$ 156,845.88		-1.11%		
PGR	Progressive Corp.	$ 206.15	0.20%	$ 120,659.59		26.00%		
PKG	Packaging Corp.	$ 188.94	2.60%	$ 16,933.74		-14.29%		
PLD	Prologis	$ 128.86	3.00%	$ 119,117.02		-6.05%		
PODD	Insulet Corp.	$ 169.18	0.00%	$ 11,826.86		18.10%		
POOL	Pool Corp.	$ 414.62	1.10%	$ 15,902.75		-8.75%		
PSA	Public Storage	$ 288.10	4.20%	$ 50,610.81		-20.02%		
PSX	Phillips 66	$ 158.96	2.80%	$ 68,426.71		-11.10%		
PTC	PTC Inc.	$ 189.71	0.00%	$ 22,659.91		15.93%		
PYPL	PayPal Holdings	$ 66.57	0.00%	$ 71,363.04		18.33%		
QRVO	Qorvo Inc.	$ 114.60	0.00%	$ 11,079.52		10.00%		
RCL	Royal Caribbean	$ 139.72	0.00%	$ 35,827.56		27.50%		
REG	Regency Centers Corp	$ 60.17	4.50%	$ 11,079.28		-5.59%		
REGN	Regeneron Pharmac.	$ 966.30	0.00%	$ 105,713.22		7.36%		
RF	Regions Financial	$ 20.68	4.70%	$ 19,074.05		-0.88%		
RHI	Robert Half Inc.	$ 78.18	2.70%	$ 8,225.23		-1.30%		
SMCI	Super Micro Computer	$ 1,023.29	0.00%	$ 57,219.30		48.20%		
SNPS	Synopsys, Inc.	$ 573.35	0.00%	$ 87,456.51		18.76%		
STLD	Steel Dynamics	$ 146.99	1.30%	$ 23,521.04		-15.40%		
STX	Seagate Technology p	$ 94.58	3.00%	$ 19,814.98		213.07%		
TDG	TransDigm Group	$ 1,233.80	0.00%	$ 68,504.27		17.44%		
TDY	Teledyne Technologie	$ 429.01	0.00%	$ 20,305.90		6.04%		
TFC	Truist Fin'l	$ 38.59	5.60%	$ 51,469.14		-1.20%		
TMUS	T-Mobile US	$ 162.01	1.60%	$ 193,732.69		26.51%		
TRGP	Targa Resources	$ 111.05	2.70%	$ 24,720.95		22.70%		
TRMB	Trimble Inc.	$ 63.30	0.00%	$ 15,603.45		10.00%		
TSLA	Tesla, Inc.	$ 179.83	0.00%	$ 572,758.55		14.16%		
TSN	Tyson Foods 'A'	$ 58.81	3.30%	$ 20,995.17		53.70%		
TTWO	Take-Two Interactive	$ 146.92	0.00%	$ 25,049.86		52.00%		
TYL	Tyler Technologies	$ 420.60	0.00%	$ 17,786.75		10.60%		
UA	Under Armour 'C'	$ 6.97	0.00%	$ 3,033.50		21.80%		
UAL	United Airlines Hldg	$ 47.24	0.00%	$ 15,495.61		42.79%		
UBER	Uber Technologies	$ 78.11	0.00%	$ 161,777.05		47.00%		
UDR	UDR, Inc.	$ 37.01	4.70%	$ 13,302.00		21.18%		
UHS	Universal Health `B'	$ 181.85	0.40%	$ 12,217.04		20.99%		
ULTA	Ulta Beauty	$ 513.52	0.00%	$ 24,987.36		7.19%		
VLO	Valero Energy	$ 167.81	2.40%	$ 55,931.40		-17.40%		
VLTO	Veralto Corp.	$ 89.74	0.41%	$ 21,858.00		n/a		
VRSN	VeriSign Inc.	$ 189.10	0.00%	$ 19,155.83		8.00%		
VRTX	Vertex Pharmac.	$ 417.32	0.00%	$ 107,541.27		12.97%		
VTR	Ventas, Inc.	$ 43.63	4.20%	$ 17,543.66		-19.70%		
VTRS	Viatris Inc.	$ 11.83	4.70%	$ 14,204.93		-2.70%		
WAT	Waters Corp.	$ 345.19	0.00%	$ 20,426.96		5.04%		
WBA	Walgreens Boots	$ 21.02	4.80%	$ 18,122.75		-4.65%		
WBD	Warner Bros. Discove	$ 8.64	0.00%	$ 21,298.00		20.00%		
WDC	Western Digital	$ 67.64	0.00%	$ 22,050.64		-26.80%		
WELL	Welltower Inc.	$ 92.80	2.70%	$ 49,394.47		-32.93%		
WRK	WestRock Co.	$ 49.20	2.50%	$ 12,644.40		-18.40%		
WYNN	Wynn Resorts	$ 101.79	1.00%	$ 11,373.70		154.60%		
XOM	Exxon Mobil Corp.	$ 114.97	3.30%	$ 456,545.87		-1.85%		
ZBRA	Zebra Techn. 'A'	$ 299.16	0.00%	$ 15,370.54		4.62%		

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)

CAPM - Current 30-Year Treasury Yields

Month	Risk-Free Rate 30-Year 1/
Oct-23	4.95
Nov-23	4.66
Dec-23	4.14
Jan-24	4.26
Feb-24	4.38
Mar-24	4.36
Six-Month Average	4.46%

1/ 6-month average of 30-year U.S. Treasury Constant Maturity Rate series, St. Louis FRED.
Source: Federal Reserve statistical release H.15 (Column Y)
https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15

Transcontinental Gas Pipe Line Company, LLC - Return on Equity Study (March 2024)
2023 Kroll Size Premium Adjustments

Decile	Max Market Cap (millions)				Size Premium
(a)	(b)			(c)	(d)
	$ 2,662,326.048	–		<	
1	$ 36,942.976	–	$	2,662,326.048	-0.06%
2	$ 14,910.719	–	$	36,391.113	0.46%
3	$ 7,493.607	–	$	14,820.048	0.61%
4	$ 4,622.261	–	$	7,461.284	0.64%
5	$ 3,011.224	–	$	4,621.785	0.95%
6	$ 1,864.293	–	$	3,010.806	1.21%
7	$ 1,050.083	–	$	1,862.491	1.39%
8	$ 555.880	–	$	1,046.037	1.14%
9	$ 213.039	–	$	554.523	1.99%
10	$ 1.576	–	$	212.644	4.70%
	<	–	$	1.576	

Source: Kroll Cost of Capital Navigator as of December 31, 2023.