

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Inquiry Regarding the Commission's
Policy for Determining Return on
Equity

Docket No. PL19-4-000

**COMMENTS OF THE ALUMINUM ASSOCIATION, THE AMERICAN
CHEMISTRY COUNCIL, THE AMERICAN FOREST & PAPER
ASSOCIATION, THE AMERICAN PUBLIC POWER ASSOCIATION,
THE ELECTRICITY CONSUMERS RESOURCE COUNCIL, THE
INDUSTRIAL ENERGY CONSUMERS OF AMERICA, THE
NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION,
AND THE TRANSMISSION ACCESS POLICY STUDY GROUP**

June 26, 2019

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I. INTRODUCTION

The Aluminum Association, American Chemistry Council, American Forest and Paper Association, American Public Power Association, Electricity Consumers Resource Council, Industrial Energy Consumers of America, National Rural Electric Cooperative Association, and Transmission Access Policy Study Group (collectively, “Associations”) hereby provide their comments in response to *Inquiry Regarding the Commission’s Policy for Determining Return on Equity*, 166 FERC ¶ 61,207 (2019) (the “NOI”).¹ Associations appreciate the opportunity to provide their collective view² on these important issues.

The Federal Power Act’s consumer-protection standard, as elaborated upon by decades of Commission and judicial case law, requires that base Returns on Equity (“ROEs”) stay attuned to the cost of equity, as that cost rises or falls over the years. Considered in light of that objective, the approach floated in the NOI (and in the *Coakley* and MISO Briefing Orders it references³) is seriously flawed. Among other problems, three stand out as especially grievous:

- There is no rational basis to treat the expected Earnings-to-Book (“E/B”) ratios of exchange-traded holding companies as estimates of the return opportunities available to utility investors;
- The Capital Asset Pricing Model (“CAPM”) should not be distorted by pretending that a market-wide equity portfolio can sustain long-term growth vastly exceeding GDP growth; and

¹ Abbreviations and defined terms are used as those terms are used in the Notice of Inquiry. We refer to particular stocks by their exchange tickers.

² These Comments respond to the NOI, and necessarily (like the NOI itself) reference other pending proceedings to which individual members of the various associations are parties. Nothing in these Comments is intended to modify the position of individual parties in those proceedings.

³ *Coakley v. Bangor Hydro-Elec. Co.*, 165 FERC ¶ 61,030 (2018) (“*Coakley* Briefing Order”); *Ass’n of Bus. advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 165 FERC ¶ 61,118 (2018) (“MISO Briefing Order”).

- There is no statutory basis to presume that existing allowed ROEs remain just and reasonable despite exceeding the current cost of equity.

The Associations have sponsored expert testimony from two witnesses. The first is Dr. Bradford Cornell, Emeritus Professor of Finance at Anderson Graduate School of Management at the University of California, Los Angeles, who is a leading academic in the field of finance. His testimony, marked Exhibit A-1, addresses the choice between financial models, issues related to book values and market/book ratios, as well as details of how the Discounted Cash Flow (“DCF”) and CAPM models should be used. Dr. Cornell’s principle recommendations are that the Expected Earnings model not be used and that the specification of the DCF and CAPM models account for long-term limits to growth.

The second is Michael Gorman, Managing Principal of Brubaker & Associates, who has frequently testified on cost of capital issues before the Commission and numerous state regulatory commissions. His testimony, marked Exhibit A-2, addresses issues that have arisen in the Commission’s cases, including specific issues related to the conduct of the DCF, CAPM, Expected Earnings, and Risk Premium methodologies.

II. DESCRIPTION AND INTERESTS OF ASSOCIATIONS

The American Public Power Association (“APPA”) is the national service organization representing the interests of not-for-profit state, municipal and other locally owned electric utilities throughout the United States. More than 2,000 public power utilities provide over fifteen percent of all kilowatt-hour sales to ultimate customers and to businesses in every state except Hawaii. Collectively, public power systems serve over forty-nine million people. APPA utility members’ primary goal is providing customers in the communities they serve with reliable electric power and energy at the lowest reasonable cost, consistent with good environmental

stewardship. This orientation aligns the interests of APPA member electric utilities with the long-term interests of the residents and businesses in their communities.

The National Rural Electric Cooperative Association (“NRECA”) is the national service organization representing the interests of the nation’s almost 900 member-owned, not-for-profit rural electric utilities. Rural electric cooperatives provide electric service to approximately forty-two million people in forty-seven states, representing twelve percent of the nation’s electric customers, while delivering about thirteen percent of all electric energy (kilowatt-hours) sold in the United States. NRECA’s member cooperatives include 831 distribution cooperatives and sixty-two generation and transmission (“G&T”) cooperatives. The distribution cooperatives provide power directly to their end-of-the-line member-consumers. Nearly eighty percent of the distribution cooperatives are member-owners of G&T cooperatives that generate and transmit power to them. The remaining distribution cooperatives receive power directly from other generation sources within the electric utility sector. Both distribution and G&T cooperatives share an obligation to serve their members by providing safe, reliable, and affordable electric service. Many electric cooperatives are transmission customers of public utilities subject to the Commission’s jurisdiction and thus will be directly affected by the Commission’s policies to determine the allowed ROE in public utilities’ transmission rates.

The Electricity Consumers Resource Council (“ELCON”) is the national association representing large industrial consumers of electricity. ELCON member companies produce a wide range of products from virtually every segment of the manufacturing community. ELCON members operate hundreds of major facilities and are consumers of electricity in the footprints of all organized markets and other regions throughout the United States. Reliable electricity supply at just and reasonable rates is essential to our members' operations.

The Transmission Access Policy Study Group (“TAPS”) is an association of transmission-dependent utilities (“TDUs”) in more than thirty-five states promoting open and non-discriminatory transmission access.⁴ Representing entities entirely or predominantly dependent on transmission facilities owned and controlled by others, TAPS has long recognized the need for a robust transmission infrastructure to provide non-discriminatory transmission access and foster competition, thereby enabling TAPS members to meet their load reliably and affordably. As TDUs, TAPS members pay transmission rates that are substantially increased when the Commission allows ROEs that exceed the cost of equity. TAPS has therefore participated actively in numerous Commission proceedings concerning transmission planning, pricing, and incentives policies.

The Aluminum Association (“Association”), based in Arlington, VA, represents U.S. producers and sellers of primary aluminum, aluminum recyclers, producers of fabricated aluminum products, and industry suppliers. Overall, the aluminum industry directly and indirectly contributes nearly 1% of the U.S. GDP. The Association’s policy priorities are focused on trade, infrastructure and transportation, environment and recycling, energy, and workforce development. In the energy area, the Association helps facilitate industrial access to diverse, affordable and reliable energy and raw materials and supports market-oriented, transparent and modernized regulations on energy transmission and ratemaking that reflect the needs of energy-intensive industries and other electricity consumers.

The American Chemistry Council (“ACC”) represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people’s lives better, healthier and safer. ACC is committed to

⁴ David Geschwind, Southern Minnesota Municipal Power Agency, chairs the TAPS Board. Jane Cirrincione, Northern California Power Agency, is TAPS Vice Chair. John Twitty is TAPS Executive Director.

improved environmental, health and safety performance through Responsible Care®; common sense advocacy designed to address major public policy issues; and health and environmental research and product testing. The business of chemistry is a \$526 billion enterprise and a key element of the nation's economy. It is among the largest exporters in the nation, accounting for ten percent of all U.S. goods exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.

The American Forest & Paper Association (“AF&PA”) serves to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy. AF&PA member companies make products essential for everyday life from renewable and recyclable resources and are committed to continuous improvement through the industry's sustainability initiative –Better Practices, Better Planet 2020. The forest products industry accounts for approximately 4% of the total U.S. manufacturing GDP, manufactures over \$200 billion in products annually, and employs approximately 900,000 men and women. The industry meets a payroll of approximately \$50 billion annually and is among the top 10 manufacturing sector employers in 45 states. AF&PA members own and operate facilities throughout the United States that rely upon the transmission of electricity by FERC-jurisdictional transmission owners. Accordingly, any changes to the Commission's transmission incentives policy will have a direct financial impact on AF&PA members.

The Industrial Energy Consumers of America (“IECA”) is a nonpartisan association of leading manufacturing companies with \$1.0 trillion in annual sales, over 3,700 facilities

nationwide, and with more than 1.7 million employees worldwide. It is an organization created to promote the interests of manufacturing companies through advocacy and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA membership represents a diverse set of industries including: chemicals, plastic, steel, iron ore, aluminum, paper, food processing, fertilizer, insulation, glass, industrial gases, pharmaceutical, building products, automotive, brewing, independent oil refining, and cement.

III. COMMENTS

Our comments are organized to track the NOI outline. Each subpart begins by quoting (in italics) the NOI Question(s) to which it principally responds. Where doing so adds clarity and avoids repetition, we group and respond collectively to multiple consecutive questions.

A. *The Commission's base ROE policy should be designed to keep allowed base ROEs aligned with the cost of equity*

1. A sound approach will detect changes to financial market conditions or to the riskiness of the subject utility, and otherwise hold steady

A1. To what extent would the ROE methodology described in the Coakley and MISO Briefing Orders impact the predictability of ROE determinations and the costs for market participants of making or intervening in such proceedings?

A2. How would using the ROE methodology described in the Coakley and MISO Briefing Orders affect an investor's ability to forecast the ROE the Commission would establish in a litigated proceeding and the ability of participants to propose, contest, and settle base ROEs as compared to using only the DCF methodology?

A3. Currently, public utilities in different Independent System Operators (ISOs) or RTOs may receive different ROEs, despite all using national proxy groups, due primarily to differences in when FPA section 205 or 206 proceedings were initiated. Are such variations justified, and, if not, should the Commission consider applying the same ROE to all utilities in RTOs/ISOs based on the most recent proceeding?

These three questions are inter-related; they all concern the predictability and variability of the proposed “new approach”⁵ described in the *Coakley* and MISO Briefing Orders (hereinafter, the “Proposed New Approach” or “PNA”). Before addressing them, it is worth taking a step back to identify the objectives that should frame review and adjustment of base ROEs. These objectives should not be controversial.

- Base ROEs should be set at, and adjusted to stay attuned to, the cost of equity, as that cost rises or falls over the years.⁶
- The approach⁷ used to estimate the cost of equity should achieve reasonably consistent and predictable results across cases and over time. This objective requires that the approach and its underlying methods take account of changed financial market conditions, without being overly sensitive to minor variations in proxy group composition or study period. When the regulated entity at issue is more or less risky (compared to one at issue in another contemporaneous case), or when financial market conditions change moderately, the approach used should produce *commensurately* higher or lower results.
- The approach used to identify the cost of equity should be designed to do that specific job well. Base ROEs (which apply to utilities’ entire rate bases, including facilities built long ago) should not be distorted in pursuit of policy goals related to providing incentives for new construction or other initiatives. Rather, those policy goals should be addressed through explicit, tailored, and explicitly justified incentives. And the approach used to determine base ROEs should not be distorted in an effort to produce ranges that have a desired effect in allowing or cabining incentive ROE adders.
- These objectives, not past practice, should drive the resolution of the issues raised in the NOI. This means that techniques other than the Commission’s longstanding DCF

⁵ *Coakley* Briefing Order PP 19, 31.

⁶ See Part III.F.3, *infra* (addressing NOI Question F3).

⁷ As discussed in Parts III.E and III.H.1.b), *infra*, in future cases, the Commission could reasonably employ a combination of market-based techniques for estimating the cost of equity, such as DCF, CAPM, and risk premium. We will hereafter use the singular “approach” to encompass integration of multiple techniques—but we do so for ease of reading, not to prejudge that issue.

method should be used *if but only if* doing so promotes accurate and predictable equity cost estimation. It also means that practices that were adopted to deal with past case-specific situations should be discarded if they are no longer useful.

An approach that meets these objectives will advance the Commission's primary mission of keeping regulated rates cost-based, and produce a host of other benefits. If the ROE determination method is sound, it will produce similar results over time, absent a substantial change to financial market conditions or to the riskiness of the subject utility. Consequently, absent such changes, neither regulated entities nor potential complainants would find it worthwhile to seek to change an existing allowed ROE. And if they did, by producing consistent and predictable results, a well-designed approach will promote settlement and otherwise enable more rapid resolution of ROE litigation. Relatedly, a well-designed approach would keep the focus of ROE litigation on issues that will be instructive for subsequent cases, rather than on one-off controversies such as whether particular companies belong in the proxy group for a particular case.

Unfortunately, the PNA does not meet these design objectives. The particular flaws in its underlying cost-estimating methods will be addressed below, in the Parts addressing specific techniques.⁸ But one over-arching flaw bears discussion here, because it goes directly to NOI Question A1 regarding predictability.

Any approach that relies on *ranges* of proxy results (that is, on the single lowest and single highest retained result among the larger number of results generated by a sizeable proxy group), rather than utilizing all of the information found in the *distribution* of retained proxy group results, is antithetical to predictability. Elementary statistics teach that the extremes of ranges vary widely from sample to sample. Consequently, discarding information on the

⁸ See Parts III.E and III.H, *infra*.

distribution of proxy results and considering only their extremes is statistically indefensible.⁹ Reviewing courts have likewise recognized this point.¹⁰ *Emera Maine v. FERC*¹¹ found it significant that the 10.57% percent base ROE of Opinion No. 531 “was higher than 35 of the 38 data points FERC used to construct its DCF zone of reasonableness.”¹² The reason is obvious: each of the retained proxy results from a properly-conducted study provides important information on the cost of equity. The midpoint of a range is “an obvious place to begin” only when there is no other information provided by the distribution of results within that range. *See Emera Maine* at 30 (quoting *Tenn. Gas Pipeline Co. v. FERC*, 926 F.2d 1206, 1213 (D.C. Cir. 1994)).

Here is an experiential proof of this point. Select at random fifteen of the U.S.’s fifty states, and rank them by land area.¹³ Your sample’s median-size (eighth-largest) state is similar in size to Wisconsin and Florida (each about 53,000 square miles), right? But what’s the sample’s smallest state? It will vary widely, depending on whether or not you happened to draw Rhode Island, or Delaware, or neither. And what’s the sample’s largest state? It too will vary widely, depending on whether or not you happened to draw Alaska, or Texas, or neither.

Objections have frequently been raised regarding the Commission’s use of the midpoint of the proxy group range of returns to set the authorized base ROE for transmission owners (“TOs”) in ISO-NE and MISO, with parties arguing that use of the midpoint places too much emphasis on highest and lowest proxy group results. While Associations are gratified that the

⁹ *See, e.g., S. Cal. Edison Co.*, 131 FERC ¶ 61,020 (2010), *reh’g denied*, 137 FERC ¶ 61,016 (2011) *review granted in part and denied in part sub nom. S. Cal. Edison Co.*, 717 F.3d 177 (D.C. Cir. 2013); *Nw. Pipeline Corp.*, 99 FERC ¶ 61,305 (2002).

¹⁰ *See S. Cal. Edison Co v. FERC*, 717 F.3d 177 (D.C. Cir. 2013).

¹¹ 854 F.3d 9 (D.C. Cir. 2017).

¹² *Id.* at 28.

¹³ This example is based on the sortable list of state land areas by size at column six of https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_area.

Commission may be willing to consider revisiting that policy,¹⁴ the PNA, as proposed, would rely on ranges in contexts where that problematic measure has not previously been used. For example, if “applying the same ROE to all utilities in RTOs/ISOs based on the most recent proceeding” (as proposed in Question A3) meant extending to other Regional Transmission Operators (“RTOs”) the range-based (midpoint, or upper midpoint) technique heretofore used only in MISO and New England, the result would be arbitrary. Such an approach would erroneously discard the Commission’s correct and judicially-affirmed determination that medians serve better than midpoints in capturing the representative value from a proxy distribution. Much the same can be said of the PNA’s “quartile” proposal, under which an existing ROE would be presumed to remain just and reasonable unless it exceeded the center of a composite range by one eighth of a composite range width.¹⁵ Beyond the other shortcomings of that proposal,¹⁶ relying on one eighth of the range width would give erratic, range-based measures new and wider significance.

A fortiori, the Commission should not consider applying the same ROE to all utilities in RTOs/ISOs based on the most recent ROE proceeding, as proposed in Question A3. Such an approach would err in ignoring differences between different RTO participants and rate contexts. For example, in *New York Independent System Operator, Inc.*¹⁷ the Commission approved a settlement agreement that incorporated a 9.65% base ROE for New York Transco, LLC, an RTO participant¹⁸. In Docket No. ER19-1553, Southern California Edison (“SCE”) is contending that wildfire-related risks make California transmission ownership uniquely risky and warrant a base

¹⁴ See Part III.D.6, *infra* (addressing Question D10).

¹⁵ See Part III.G, *infra*.

¹⁶ See *id.*

¹⁷ 161 FERC ¶ 61,161 (2017).

¹⁸ See N.Y. Transco LLC, Explanatory Statement in Support of Offer of Settlement at 6 (Aug. 21, 2017), eLibrary No. 20170821-5036.

ROE of 17.12%.¹⁹ An approach under which the most recent RTO-participant transmission ROE result controls the ROE for all RTO-participating TOs, such that both SCE and N.Y. Transco would receive the same base ROE, would imply either *per se* disregard of SCE’s claim to unique risks, or that SCE’s allowed ROE would control the allowed base ROE for N.Y. Transco, notwithstanding its 2017 settlement. Neither approach would be reasonable. SCE’s allowed ROE should reflect the record evidence as to SCE’s particular cost of transmission equity, and that outcome should not be imputed to N.Y. Transco.

2. “Vintage” ROEs would fail to track the capital costs of continued ownership

A4. Should the ROE reflect the cost of capital at the time of the investment or be subject to adjustment to reflect the contemporary ROE required by investors?

A4.a. Should the Commission consider a “vintage approach,” with ROE fixed for the life of the asset at the time that each asset was completed?

A4.b. Would such a “vintage approach” need to be coupled with an annual national default ROE for investments made in that year, so as to minimize the need for numerous annual litigated ROE proceedings for each public utility that made an investment during that year? What procedure should be used to determine such a default ROE?

A utility company’s cost of equity is the return that equity investors require in order to be induced to have their capital invested in the company’s assets used to provide regulated utility service.²⁰ But investors invest in the utility company, not in particular assets. The utility company’s current cost of the equity invested in a long-lived utility asset is not the cost (or, rather, costs²¹) of equity when the asset was built, or its costs when the asset entered service, any

¹⁹ See SEC, Transmission Owner Tariff Transmission Rate Filing, Transmittal Letter at 11 (Apr. 11, 2019), eLibrary No. 20190411-5001; see also *S. Cal. Edison Co.*, 167 FERC ¶ 61,214 (2019) (establishing hearing procedures).

²⁰ See *Coakley* Briefing Order P 36 n.73 (“A utility’s cost of equity is the return that the utility must provide its shareholders in order to induce them to invest their capital in that utility. A utility’s ROE is the return that the utility generates by using that invested capital in its operations.”); *MISO* Briefing Order P 38 n.68 (same).

²¹ Construction takes time, and transmission projects may be completed and placed into service in phases. Thus, in addition to the conceptual error addressed in the text, a “vintage approach” would require more than one allowed base ROE per rate base asset.

more than the cost of natural gas or coal burned in a generating plant stays tied to the low, or high, costs that the relevant fuel had when the plant was being built or entered service. Because capital is mobile, at any given time the original cost of inducing it to stay invested in a utility company is the market-based cost of capital attraction, which equals the return then available in capital markets for other investments of comparable risk. For example, the vast majority of new equity capital raised by utilities or their parents is raised by retaining earnings (rather than issuing new stock). The cost of inducing shareholders to allow their company's earnings to be reinvested rather than paid out to shareholders is those shareholders' "opportunity cost," meaning the return that "stockholders themselves could earn on alternative investments of equivalent risk."²²

If a "vintage approach" to ROEs were correct, a logical way to apply it to electric utilities would be to permanently tie each asset's ROE to its Allowance for Funds Used During Construction ("AFUDC") rate, as specified in the Uniform System of Accounts, 18 C.F.R. pt. 101, Electric Plant Instruction No. 3(17), including its weighted reflection of the cost of short-term debt. But that approach would be erroneous, because the short-term debt and other funds that finance the initial construction of a long-lived asset do not remain invested in that asset permanently. Rather, they are refinanced when they mature or the cost of capital declines, whichever comes first.

The proposed approach likewise runs contrary to settled law. The capital attraction standard of *Hope*²³ and *Bluefield*²⁴ contemplates that ROE results will vary over time as the cost

²² Michael C. Ehrhardt & Eugene F. Brigham, *Corporate Finance: A Focused Approach* at 344-45 (4th ed. 2011), <https://epdf.pub/download/corporate-finance-a-focused-approach-4th-edition-2010.html>.

²³ *FPC v. Hope Nat'l Gas Co.*, 320 U.S. 591, 603 (1944) ("*Hope*") (A just and reasonable return is "commensurate with returns on investments in other enterprises having corresponding risks" and "should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain [a utility's] credit and to attract capital.").

²⁴ *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679, 693 (1923) ("*Bluefield*") ("The

of capital changes: “A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.”²⁵ When the cost of capital rises, that means investors expect a correspondingly higher cost-based return, even if the utility in which their capital has been invested does not issue new shares or increase its net rate base. As debt rolls off a prudent utility’s balance sheet and is replaced with new debt bearing a different interest rate (whether due to re-financing or bond issuances reaching maturity), the utility’s cost of debt changes. In effect, a comparable form of capital cost updating applies to equity, only it occurs continuously rather than as debt revolves. Indeed, a utility’s capital structure generally will vary over time, in part because the relative cost of debt and equity changes over time. Nobody would contend that a utility that meets the standards for application of an actual capital structure should have multiple asset-by-asset capital structures with each asset’s capital structure permanently tied to what it was during construction. Capital structures change. This variation proves that over the course of its long life, a given utility asset is not funded exclusively by the financing that was in place when it entered service.

In short, the capital cost of continuing to own an asset is not fixed at the cost of capital prevailing when it was built or completed. Accordingly, a “vintage approach” would depart from the ongoing cost of continuing to finance assets.

In addition to being conceptually erroneous, a “vintage approach” risks causing financial distress to utilities or their customers. When inflation, interest rates, and the cost of equity soared

return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.”).

²⁵ *Id.*; see also *Hope* at 615 (“This is not an order for all time. The Act contains machinery for obtaining rate adjustments.”).

in the 1970s, utility rate bases largely consisted of assets that had entered service when capital costs were much lower. If their allowed ROEs had been pegged to pre-1970s costs of equity, they would have greatly under-recovered their capital costs, suffering an extreme version of “regulatory lag” at a time of rising costs. Conversely, vintage ROEs established when capital costs are high could become excessive when capital costs decline. If adopted, the “vintage approach” described in the NOI would set the industry up for either scenario. In extreme circumstances, a public utility might claim a vintage approach deprives it of the return required by the Constitution and the FPA, and measures to avoid that result could devolve into a one-way street in which too-low vintage ROEs are raised to market levels but excessive vintage ROEs remain in place—inflating the company’s overall allowed return.

B. Pipeline stocks’ E/B ratios illuminate those ratios’ disconnection from the cost of equity

B3. Given the tendency of the Expected Earnings methodology to produce more high-end outliers than the other methodologies, would there be a sufficient number of natural gas and oil pipeline proxy members to implement the Expected Earnings methodology for gas and oil pipelines?

Associations’ relevant interests center on electric transmission issues, and Associations therefore take no collective position in these comments on issues specific to ROEs for pipelines. However, Question B3 bears on electric transmission ROEs, because the E/B ratios of pipeline stocks illuminate how arbitrary it would be to view E/B ratios as indicating the cost of equity. The “Expected Earnings” component of the PNA would look to the E/B ratios forecast by Value Line for the period three-to-five years ahead.²⁶ For exchange-traded major stocks classified by Value Line as in the “oil/gas distribution” industry (the sector in which Value Line classifies pipeline stocks), those forecasts currently include 37.0% for Cheniere Energy,²⁷ 22.0% for

²⁶ Coakley Briefing Order PP 49-50.

²⁷ May 31, 2019 Value Line report for LNG (forecast return on shareholder book equity).

Enterprise Product Partners, L.P.;²⁸ 42.0% for Magellan Midstream Partners, L.P.;²⁹ 26.5% for Oneok, Inc.;³⁰ and 16.0% TransCanada Corp.³¹ Because Commission-allowed pipeline ROEs are much lower, if those E/B ratios corresponded to pipelines' actual costs of equity, pipelines would be vastly under-recovering their cost of equity, and consequently would not be investing in new assets. But the facts are to the contrary.

Accordingly, the fundamental problem with the E/B method is not that it produces too few data points to be used for pipelines. The fundamental problem is that the data points it produces do not indicate the cost of equity.

C. The DCF model performs well across wide variations in interest rates and stock prices

C1. The DCF model assumes stock prices are equal to the present value of projected future cash flows. Is there evidence of situations when these assumptions are inaccurate?

C2. Have current and projected proxy company earnings over the last 10 to 20 years increased in a manner that would justify any increases in their stock prices over the same period, consistent with DCF model assumptions?

C3. How does the DCF methodology perform over a wide range of interest rate conditions?

C3.a. What specific assumptions of the DCF model, if any, do not work well in low or high interest rate environments?

C3.b. Is there evidence that the volatility of price-to-earnings ratios over the last 10 to 20 years, assumed to be constant in the DCF methodology, has been driven by the wide swings in interest rates over this period? If so, would the constant P/E assumption impact the award of reasonable ROEs?

The use of DCF modelling is well-accepted among both academic researchers and finance industry practitioners, including for electric utility stocks. The DCF model does assume that stock prices are equal to the present value of projected future cash flows, but that is an

²⁸ May 31, 2019 Value Line report for EPD (forecast return on partners' book capital).

²⁹ May 31, 2019 Value Line report for MMP (forecast return on partners' book capital).

³⁰ May 31, 2019 Value Line report for OKE (forecast return on shareholder book equity).

³¹ May 31, 2019 Value Line report for TRP (forecast return on book common equity).

entirely reasonable assumption: future cash flows are what investors receive in exchange for putting present liquid funds into stocks, and there is no evidence that stock prices fail to reflect the discounted present value of investors' projected future cash flows. As Mr. Gorman explains,³² the DCF method is especially well-suited to electric utility stocks, given that both the method and utility stocks focus on present and future dividends as the means through which investors obtain returns.

Contrary to the NOI's implicit premises, none of the DCF method's assumptions depends on a specific interest rate environment or on a constant price-to-earnings ("P/E") ratio. Indeed, when the Commission first embraced the DCF method—in the early 1980s—interest rates were much more historically atypical than they are now. *See, e.g., Generic Determination of Rate of Returns on Common Equity for Pub. Utils.*, Order No. 420 31 FERC ¶ 61,168, FERC Stats. & Regs. at 31,344 (concluding that DCF-based benchmark public utility ROE of 15.25% was consistent with the "12.0-12.25 percent average interest rate on U.S. government bonds for the base year" and the "13.5 percent interest rate on newly issued public utility bonds for the base year").³³ Similarly, P/E ratios varied widely from the time the Commission began considering use of the DCF method (in the late 1970s³⁴), through its early 1980s embrace of the method, and thereafter.³⁵ The Commission relied on the DCF method, alone, through widely diverse financial

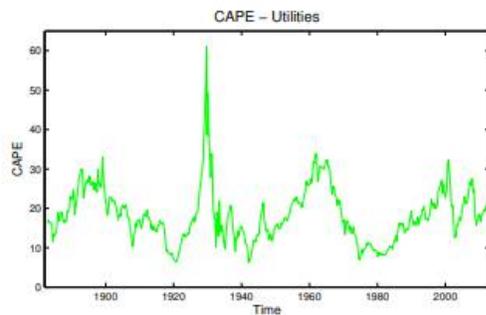
³² *See* Ex. No. A-2, § C3.

³³ *Reh'g denied*, Order 420-A, 32 FERC ¶ 61,257 (1985).

³⁴ *See Coakley v. Bangor Hydro-Elec. Co.*, Op. No. 531, 147 FERC ¶ 61,234, P 14 n.26 (2014) ("The Commission first took cognizance of the DCF methodology in public utility cases as far back as the 1970's. *See, e.g., Minn. Power and Light Co.*, 3 FERC ¶61,045, at 61,132-33 (1978). . . .")

³⁵ *See* Oliver D. Bunn & Robert J. Shiller, Cowles Found. Discussion Paper No. 1950, *Changing Times, Changing Values: A Historical Analysis of Sectors Within The US Stock Market 1872-2013* at 17 (June 2014), <https://cowles.yale.edu/sites/default/files/files/pub/d19/d1950.pdf>. These leading authors on P/E ratios present this chart of cyclically-adjusted utility P/E ratios:

market conditions, such as those of study periods that encompassed the exceptionally strong economic recovery of 1984–85,³⁶ the market turmoil following the terrorist attacks of September 2001,³⁷ the financial crisis of late 2008,³⁸ and the recovery of mid-2010.³⁹ Dr. Morin, in the textbook cited by the NOI, enumerates both “[t]he four crucial assumptions of the general DCF model” and four additional assumptions underlying the mathematically more tractable “standard DCF model.”⁴⁰ None of these eight assumptions requires a constant interest rate or a constant P/E ratio.⁴¹ In a later passage labelled “Musings on DCF,” Morin asserts that the “infinite growth DCF model assumes a constant market valuation multiple, that is, a constant price/earnings (P/E) ratio,”⁴² but this assertion is tied to the flawed model in which first-stage earnings growth is assumed to continue forever.⁴³



³⁶ See *Bos. Edison Co. v. FERC*, 885 F.2d 962, 965-66 (1st Cir. 1989) (affirming exclusive reliance on DCF analysis for a study period of November 1984–April 1985).

³⁷ See *Midwest Indep. Transmission Sys. Operator, Inc.*, 99 FERC ¶ 63,011, P 33, *aff'd*, 100 FERC ¶ 61,292 (2002), *reh'g denied*, 102 FERC ¶ 61,143 (2003), *remanded sub nom. Pub. Servs. Comm'n of Ky. v. FERC*, 2004 WL 222900, *on remand*, 106 FERC ¶ 61,302 (2004) (“MISO”), *aff'd in part sub nom. Pub. Serv. Comm'n of Ky. v. FERC*, 397 F.3d 1004 (D.C. Cir.) (“PSCKY”), *on remand*, 111 FERC ¶ 61,355 (2005).

³⁸ See *S. Cal. Edison Co. v. FERC*, 717 F.3d 177, 180 (D.C. Cir. 2013).

³⁹ See *Atl. Grid Operations A LLC*, 135 FERC ¶ 61,144, PP 94-95 & n.62 (2011).

⁴⁰ Roger A. Morin, *New Regulatory Finance* at 251-52, 255-56 (Pub. Utils. Reports 2006).

⁴¹ The terminal stock price variant of the DCF model assumes a constant ratio, but the Commission has not used that variant, and should not adopt it now.

⁴² *Id.* at 432.

⁴³ See *id.*; see also *id.* at 433-34 (providing a hypothetical that turns on equating investors’ expected return with their return over a single year next during which the P/E ratio rises, rather than the long-term expected return provided through expected dividends and the price appreciation they induce).

Thus, when Question C2 asks whether utility proxy company earnings have increased in recent decades “in a manner that would justify any increases in their stock prices over the same period, consistent with DCF model assumptions,” it misstates what the DCF model assumes. This error has multiple dimensions. First, the DCF model is forward-looking, and forward expectations of utility earnings can increase even if past earnings have been flat. Second, the earnings-related factor that is central to the DCF method projects earnings *growth* (not earnings as such), because the earnings growth rate is a key factor in predicting the sustainable rate of growth in dividends. Third, if investors’ willingness to defer consumption increases—that is, if the discount rate for which the DCF method solves decreases—then share prices will increase even if nothing else changes, because future dividends will have a higher present value. Fourth, “[a] utility’s cost of equity is determined, at least in part, by comparison with other potential investments. As the return on those investments fluctuates, so too will the utility’s cost of equity and, by extension, the ROE needed to service that cost of equity.”⁴⁴

Fifth and most fundamentally, the market price of stocks, including the electricity sector stocks referenced in Question C2, reflects supply and demand. Both of those factors reflect the returns available on other, risk-comparable investments,⁴⁵ and both can change for reasons independent of the stock’s risk. As shown in the figure below (reproduced from the Credit Suisse *Global Wealth Report*⁴⁶), total global wealth has nearly *tripled* since 2000, as China’s economy boomed, Eastern Europe transitioned to market economics, *etc.* Even before most of this growth,

⁴⁴ *Coakley* Briefing Order P 29; *MISO* Briefing Order P 31.

⁴⁵ The demand side of this equation is intuitively obvious. The supply side may not be as obvious, but it too exists; low debt costs make it more likely that utilities needing new financing will issue debt rather than new equity shares.

⁴⁶ Credit Suisse Research Inst., *Global Wealth Report 2018*, at 13 fig. 2 (2018) <https://www.credit-suisse.com/corporate/en/research/research-institute/global-wealth-report.html>.

Ben Bernanke, who subsequently chaired the Federal Reserve, observed⁴⁷ the existence of a “global savings glut” that was increasing security prices. Meanwhile, population growth has slowed,⁴⁸ and with it the demand for investments in new durable assets to serve growing populations. For example, the sizeable increase in European wealth (shown in the second-from-bottom band of Credit Suisse’s Figure 2 below) occurred even while “[f]ertility in all European countries is now below the level required for replacement of the population in the long run (around 2.1 births per woman, on average) and, in most cases, has been below the replacement level for several decades.”⁴⁹ Contemporaneously, foreign capital has flooded into U.S. utility ownership. As of 2017 (the most recent year available), foreign *direct* investment in U.S. electric power generation, transmission, & distribution totaled almost \$76 billion, a 23% increase over five years,⁵⁰ and foreign ownership of shares of U.S. utility equities is likely several times larger.⁵¹ Much as electricity consumers should benefit when fuel supplies outstrip fuel demand

⁴⁷ Ben S. Bernanke, *The Global Saving Glut and the U.S. Current Account Deficit* (Mar. 10, 2005), <http://www.federalreserve.gov/boarddocs/speeches/2005/200503102/>.

⁴⁸ See U.N. Dep’t of Econ. & Soc. Affairs, Population Div., *World Population Prospects 2019*, <https://population.un.org/wpp/> (last visited June 21, 2019). Using the U.N.’s interactive data query function, from 1950-1990, the average annual rate of population change (averaged in five-year increments) ranged from 1.78% to 2.05%. That average declined steadily from 1990 to 2015, declining from 1.51% to 1.18%. Currently (from 2015 to 2020, combining actual data with projections), it is 1.09%. Over the succeeding 40 years, it is projected to continue declining steadily, from 0.98% to 0.38%.

⁴⁹ U.N. Dep’t of Econ. & Soc. Affairs, Population Div., *World Population Prospects: Key Findings and Advance Tables*, at 5 (rev. 2017), (https://population.un.org/wpp/Publications/Files/WPP2017_KeyFindings.pdf).

⁵⁰ Org. for Int’l Invest., *Foreign Direct Investment in the United States 2018*, App. B (2018), <https://ofii.org/dmfile/FDIUS-2018-Report.pdf>.

⁵¹ Data on such ownership broken out by sector is not readily available, but taking U.S. equities as a whole, non-U.S. investors currently hold approximately \$7.3 trillion of U.S. corporate equities. See Bd. of Governors of the Fed. Reserve Sys., *Financial Accounts Guide*, tbl.L.133 (June 6, 2019), <https://www.federalreserve.gov/apps/FOF/guide/L133.pdf>. That is 24% of U.S. equities’ market capitalization, which was \$30.4 trillion as of year-end 2018. See World Bank, *Market Capitalization of Listed Domestic Companies (Current US\$)*, (last visited June 21, 2019) <https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?locations=US>. Applying that 24% ratio to the year-end 2018 market capitalization of the 43 utility equities included in the Edison Electric Institute Index (\$731 billion, see Edison Elec. Inst., *Stock Performance* tbl.XI (Q4 20-18), <http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/QtrlyFinancialUpdates/Pages/default.aspx>, one can estimate that non-direct, portfolio investment by foreign investors in U.S. utilities is approximately \$175 billion.

and thereby decrease the market price of fuel, electricity consumers should benefit when capital supplies outstrip capital demand and thereby decrease the market price of capital.

In short, the cost of equity identified by the DCF method reflects factors such as investors' relative preference for current dollars in comparison to future dollars, investors' risk perceptions of utilities, returns on alternative investments, and capital supply and demand. Consequently, utility stock prices can vary if any of these factors change, even with no change to realized or expected utility earnings.⁵²

⁵² See *Generic Determination of Rate of Return on Common Equity for Pub. Utils.*, Order No. 489, 42 FERC ¶ 61,122, FERC Stats. & Regs. at 30,990 (finding that prices in the DCF model change in response to “expectations about the real interest rates, the expected rate of inflation, and the ‘risks’ associated with owning a particular stock.”), *reh’g denied*, Order No. 489-A, 42 FERC ¶ 61,390 (1988); Berry Aff., Initial Paper Hearing Brief of MISO Complainant-Aligned Parties, Ex. No. OMS-100, P 23, *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, No. EL14-12-003 (Feb. 13, 2019), eLibrary No. 20190213-5140; *See also id.*, Solomon Test., Ex. No. JCI-100, at 22-23 (the required rate of return for which the DCF formula solves “certainly changes over time and is influenced by a myriad of factors in addition to expected growth in earnings/dividends. Such factors include expected opportunity costs, or expected returns that might be earned on alternative investments, changes in risk perceptions, changes in risk tolerance, changes in a desire for current income versus longer-term capital gains, expectations about inflation, expectations about real interest rates, expectations about the U. S. economy in general and various sectors of the U. S. economy specifically as well as expectations about the global economy, among others. Under the DCF theory, as those factors change, stock prices will change even if earnings or expected growth

D. When setting electric utility ROEs, dividend-paying U.S. electric utility stocks screened by credit ratings can provide risk-comparable and amply-sized proxy groups

1. Risk comparability is the core consideration in forming proxy groups, and in most cases can be achieved through bright-line standards

D1. Should proxy groups for electric utilities, as well as natural gas and oil pipelines, consist only of companies with corresponding regulated businesses?

D1.a. For companies with a combination of regulated and unregulated businesses, should a company be required to derive a certain percentage of its revenues from the applicable regulated business in order for that company to be included in the proxy group that is used to determine an ROE for a company in that regulated business?

D1.b. Are the corresponding proxy groups sufficiently large given the continued consolidation in the industries?

D2. Should risk be considered both in the proxy group selection and in the placement within the zone of reasonableness?

D2.a. Should the Commission's approach to proxy group selection change depending on which financial models it considers when determining the just and reasonable ROE and, if so, how?

D3. Should the Commission consider non-energy companies when selecting proxy groups?

D3.a. What non-energy industries or securities have comparable risk to public utilities and natural gas and oil pipelines, if any?

D3.b. Do certain non-energy industries or securities feature fewer outliers?

Opinion No. 531 correctly recited precedent setting forth the purpose of proxy groups, and the corresponding touchstone in determining what companies to include:

[T]he purpose of the proxy group is to 'provide market-determined stock and dividend figures from public companies comparable to a target company for which those figures are unavailable. . . . It is thus crucial that the firms in the proxy group be comparable to the regulated firm whose rate is being determined. In other words, as the court emphasized in *Petal*, the proxy group must be risk-appropriate.⁵³

in earnings/dividends do not change.”)

⁵³ Opinion No. 531, P 46 n.184 (quoting *Petal Gas Storage, L.L.C. v. FERC*, 496 F.3d 695, 699 (D.C. Cir. 2007)) (internal quotation marks omitted); *Composition of Proxy Groups for Determining Gas and Oil Pipeline Return on*

Thus, the primary consideration in forming proxy groups is that they be tightly representative of the subject utility's risk. An important secondary consideration is that all else equal, a larger group provides more assurance that a reasonable statistical interpretation of the results from financially modelling that group will resemble what would result if the subject utility could be modeled directly.⁵⁴ In practice, those two goals are in tension: loosening proxy group composition criteria enlarges the resulting proxy group, but brings in companies that are less representative.

The best way to balance these competing considerations depends on how the proxy group results are used. If the Commission were to focus on the *range* of proxy results (erroneously, in our view⁵⁵) then the proxy group should be small and very tightly representative, as the disparate results from modeling less-representative proxies are likely to determine the range.⁵⁶ In the remainder of this subpart, however, we will assume that the Commission avoids that error, and looks to the median (or other applicable percentile) of the proxy group distribution.⁵⁷ In that case, the best way to balance individual-proxy representativeness with larger-group statistical reliability would involve three principles. The Commission should

- One, promulgate generally-applicable criteria for proxy group formation that will produce amply-sized proxy groups in the great majority of cases;

Equity, 123 FERC ¶ 61,048, at P 48 (2008).

⁵⁴ All else equal, with a larger proxy, the unavoidable respects in which any one proxy group member differs from the subject utility will be offset by countervailing differences of other proxy group members.

⁵⁵ See Part III.A.1, *supra*, and Parts III.D.2 and III.D.6, *infra*.

⁵⁶ See *Ark. Elec. Coop. v. ALLETE, Inc.*, 155 FERC ¶ 63,030, PP 51-53 (2016) (characterizing as “sound,” and applying, argument that where range ends determine the allowed ROE, a “conservative” (i.e., restrictive) approach should be taken in admitting candidate stocks into the proxy group), *corrected*, No. EL15-45-000 (July 1, 2016), 156 FERC ¶ 63,004 (2016), and 165 FERC ¶ 63,021 (2018).

⁵⁷ The *Coakley* Briefing Order suggests an intention to “continue to use the midpoint of the zone of reasonableness as the appropriate measure of central tendency for a diverse group of average risk utilities and the median as the measure of central tendency for a single utility.” *Id.* P 17 n.46. The representative distribution's median (or other risk-appropriate percentile) certainly should continue to be used in single utility cases, but, as discussed herein, the Commission should reconsider its proposal to rely on the midpoint of the zone of reasonableness when establishing an RTO-wide ROE.

- Two, identify a minimum number of proxies and provide that some criteria may be relaxed if necessary to gather that minimum number; and
- Three, provide that where proxy group composition criteria are relaxed in order to gather more proxies, the placement of the allowed base ROE within the proxy group distribution will be adjusted to reflect any resulting lack of proxy-utility risk comparability.

We further suggest the following specific population targets for the first and second principles, in electric utility cases. The generally-applicable proxy group criteria should be designed to usually produce initial proxy groups with ten to thirty members. That is, the generally-applicable criteria should be considered overly stringent if they usually identify fewer than ten candidate proxies, and overly loose if they usually produce more than thirty candidate proxies. In a particular case where the standard bright-line criteria and any further judgmental criteria (such as excluding companies engaged in substantial mergers or acquisitions) produce a group with fewer than four members (the minimum proxy group size identified in prior case law, and reasonably so⁵⁸), the proxy group composition criteria should be loosened for that case, and the third principle should then come into play.

In that framework, each of the PNA's three bright-line exclusion criteria is reasonable. These criteria require exclusion of companies that either (1) are not classified by Value Line as exchange-traded U.S. electric utility stocks; (2) have no credit rating from either Moody's or S&P, or have a rating from either source that is more than one notch different from that of the subject utility; or (3) either pay no dividends or have made or announced a dividend cut during

⁵⁸ See *High Island Offshore Sys., L.L.C.*, 110 FERC ¶ 61,043, PP 117, 118, 124, *reh'g denied*, 112 FERC ¶ 61,050, *clarified*, 113 FERC ¶ 61,280 (2005), *aff'd in part and vacated in part sub nom. Petal Gas Storage L.L.C. v. FERC*, 496 F.3d 695 (D.C. Cir. 2007); *Kern River Gas Transmission Co.*, Op. No. 486, 117 FERC ¶ 61,077 (2006), *on reh'g*, Op. No. 486-A, 123 FERC ¶ 61,056 (2008), *on reh'g*, Op. No. 486-B, 126 FERC ¶ 61,034, *reh'g denied*, Op. No. 486-C, 129 FERC ¶ 61,240 (2009), *reh'g denied*, Op. No. 486-D, 133 FERC ¶ 61,162 (2010); *S. Cal. Edison Co.*, Op. No. 445, 92 FERC ¶ 61,070 (2000), *reh'g denied*, 108 FERC ¶ 61,085 (2004).

the six month study period.⁵⁹ Each of these criteria is simple to apply and usefully promotes risk comparability between the proxy group and the subject utility. There is no need to degrade risk comparability by referencing as proxies entities that lack qualifying utility-industry participation or risk-comparable bond ratings, or which have recently been forced to take the extraordinary step of cutting dividends. Applied conjunctively, these criteria will usually leave ten to thirty eligible proxy candidates, as there are currently around forty stocks classified by Value Line as U.S. electric utilities, and in most cases the credit rating and dividend screens will admit more than one-quarter but fewer than three-quarters of those forty stocks. Absent extraordinary circumstances, therefore, it would not be productive to invite litigants to argue that companies excluded by one or more of these bright-line tests are nonetheless “comparable” to companies engaged in rate-regulated electric transmission.

The Question D1.a suggestion of a further criterion requiring a minimum percentage of revenues from the applicable regulated business is sound in theory, but not practical as applied to electric transmission ROEs. Few, if any, exchange-traded companies consistently receive the majority of their revenues from rate-regulated electric transmission.⁶⁰ Segmented reporting is not uniform across companies, making it difficult to compare across candidate proxies the share of revenues, earnings, or assets associated with rate-regulated electric transmission. Accordingly, the practical test for substantiality of regulated electric business, which should be retained, is the PNA’s bright-line requirement that a stock be classified by Value Line as a U.S. electric utility in order to be included in an electric case proxy group. That said, the use of proxy results should

⁵⁹ See *Coakley* Briefing Order, P 49.

⁶⁰ ITC Holdings did so, but has been acquired by Fortis, Inc. Eversource Energy may now be the stock with the highest share of its revenues derived from U.S. electric transmission, but even for it, electric transmission contributed only about 41% (\$427.2 million of \$1.033 billion) of 2018 earnings. See News Release, Eversource Energy, *Eversource Energy Reports Full Year 2018 Results* (Feb. 20, 2019), https://www.eversource.com/content/docs/default-source/investors/eversource-fourth-quarter-earnings-2018.pdf?sfvrsn=2909cb62_0.

recognize that exchange-traded stocks are imperfect proxies for regulated operating utilities, and even less perfect as proxies for those utilities' transmission segments. The fact that no individual proxy maps directly to regulated utilities' transmission risks is another reason to reference the distribution rather than range of proxy group results. Relatedly, to the extent ranges are referenced, the share of revenues, earnings, or assets associated with the business segment for which an ROE is at issue should be considered as a basis for excluding outliers.

A further criterion is needed, however, if the Commission relies on the "Expected Earnings" method, despite that method's lack of cost basis and other flaws.⁶¹ Candidate proxies' E/B results are highly correlated with their M/B ratios⁶² and capital structure equity ratios.⁶³ Accordingly, a study of proxy companies' E/B ratios will not meaningfully indicate the E/B ratio that subject utility would have as a stand-alone entity, unless the proxies, for purposes of that study, are limited to companies that are similar to the subject utility in terms of M/B ratios and equity ratios. As operating utilities that are not publicly traded generally⁶⁴ have no visible M/B ratio, it will generally be unclear whether the first of these two criteria is met, but the equity ratio criterion can readily be applied. One way to do so would be to utilize, for purposes of an E/B study, a proxy group consisting of a subset of the proxies used for other purposes, selecting those with equity ratios closest to that of the subject utility. For example, if thirty proxies were used for

⁶¹ See Parts III.A.1, III.E.1, III.F, III.H.1, and III.H.2.c).

⁶² Woolridge Aff., Ex. No. CAP-500, at 50-51, CAPS' Paper Hearing Principal Initial Brief, *Coakley v. Bangor Hydro-Elec. Co.*, No. EL11-66 (Jan. 11, 2019), eLibrary No. 20190111-5238 ("CAP-500"); Solomon Test., Ex. No. JCI-200, at 33 n.47, Initial Paper Hearing Brief of the MISO Complainant-Aligned Parties, *Ark. Elec. Coop. Corp. v. ALLETE, Inc.*, No. EL15-45 (Feb. 13, 2019), eLibrary No. 20190213-5141 ("The market-to-book ratios for the MISO II Proxy Group, before the application of economic outlier tests, range from 1.15 to 3.38 and the median and midpoint values are 1.60 and 2.27, respectively"); *id.* at 46-49 ("there is a clear trend where utilities that have a higher expected return on book common equity generally have a higher market-to-book ratio, demonstrating that investors bid up the share price as a result of their required rate of return being less than the utility's projected book rate of return"); *id.*, Ex. No. JCI-205, at 1.

⁶³ See Ex. No. CAP-500, at 55-57 and the subsidiary exhibits cited therein.

⁶⁴ As discussed in Part III.F.2, *infra*, there are exceptions to this generality: from time to time, operating utilities or an asset-defined portion thereof are purchased at an identifiable price, thus identifying an operating utility M/B ratio.

the DCF and CAPM studies, the E/B study could look to the ten of those proxies whose equity ratio is closest to that of the subject utility.

If the application of proxy group formation criteria results in a group that is not representative of the subject utility, that difference should be taken into account in placing the allowed ROE within the proxy group distribution. The need for the latter measure should generally be avoidable, because it should usually be possible to form a representative proxy group. However, there will be exceptions, as where it is necessary to relax proxy group formation criteria in order to form a proxy group of sufficient size. Another such exception would arise if the filtering for equity ratios discussed above does not produce a proxy group with equity ratios resembling that of the subject utility. In that case, if E/B ratios are referenced, an adjustment based on equity ratios should be made to the proxy group E/B result in inferring the expected E/B ratio of the subject utility. The need for an above- or below-center placement of the allowed base ROE on such grounds should be considered on a case-by-case basis.

2. A properly distribution-based use of proxy group results would diminish the need to filter outlier results; with an (erroneous) range-based approach, improved filtering would be needed.

D4. What, if any, are appropriate high- and low-end outlier tests?

D4.a. The Commission currently excludes from the proxy group companies whose ROE fails to exceed the average 10-year bond yield by approximately 100 basis points. Should the low-end outlier test continue to be based on a fixed value relative to the costs of debt or (a) should it be based on its value relative to the median (i.e., less than 50 percent of the median); or (b) still reflect the cost of debt but vary based on interest rates?

D4.b. How, if at all, should the Commission's approach to outliers vary among different financial models?

When the Commission applies range-based ROE determination methods—when it (a) uses midpoints (or lower or upper midpoints) to distill the distribution of proxy results to a single value; or (b) uses a range-based measure (such as the midpoint of a range plus half a

“quartile” of the range, i.e., the point 5/8 of the way up a range); or (c) uses the top of a range rather than some other metric to cap ROE incentive adders—it elicits erratic outcomes and an undue focus on locating the range ends. As the Commission recognized in 1984, “[t]he data used in cost of capital analyses of individual companies may vary for reasons having nothing to do with those companies’ cost of equity capital. In the industry average, these spurious variations tend to cancel each other out.”⁶⁵ The same is true of the median statistic, as the “spurious variation[.]” present in a proxy value taken from the thick of a results distribution is bounded by countervailing variations related to its near neighbors.⁶⁶ But it is not true of range statistics, as the two most extreme values in a proxy distribution may well have come to occupy those positions because of such spurious variation.

The erratic outcomes that result from reliance on ranges are exemplified by the implausibly different proxy-result ranges found in, respectively, Opinion No. 551 and the Docket No. EL14-86 Initial Decision.⁶⁷ These two decisions applied virtually identical proxy groups⁶⁸ and virtually identical study periods.⁶⁹ For these very similar studies, Opinion No. 551 found and retained proxy results ranging from 7.23% to 11.35%, whereas the EL14-86 Initial Decision

⁶⁵ *Generic Determination of Rate of Return on Common Equity for Electric Utilities*, Order No. 389, 28 FERC ¶ 61,068, FERC Stats. & Regs. at 31,021, *reh’g denied*, Order No. 389-A, 29 FERC ¶ 61,223 (1984).

⁶⁶ CAP-500, § VI.D, at 75-77; *Woolridge Test.*, Ex. No. CAP-1, at 54-74, *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, No. EL13-33 (Dec. 30, 2014), eLibrary No. 20141230-5278; *Rebuttal Testimony and Exhibits of Professor J. Randall Woolridge*, Ex. No. CAP-19, at 47-52, *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, No. EL13-33 (May 18, 2015), eLibrary No. 20150518-5306.

⁶⁷ *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Op. No. 551, 156 FERC ¶ 61,234 (2016); *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, 154 FERC ¶ 63,024, *corrected*, 155 FERC ¶ 63,006 (2016).

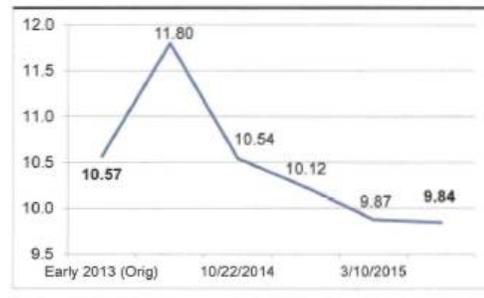
⁶⁸ The groups were formed using identical criteria (Value Line U.S. electric utility stocks, and credit ratings ranging from BBB- to A. All 33 members of the Opinion No. 551 proxy group likewise appear as members of the EL14-86 proxy group. The only difference is that the latter added four proxies due to merger activity having ended (SCANA Corp., Exelon Corp., PNM Resources, and Unifit Corp.); none of those added proxies affected the latter decision’s results range.

⁶⁹ Respectively, November 2014-April 2015 and January-June 2015. Thus, four overlapping months were used for both decisions’ study periods.

found and retained proxy results ranging from 7.04% to 12.19%.⁷⁰ The 84 basis-point rise of the range top reflected a transient fluctuation in the last-published IBES growth estimate for TECO. The IBES estimate for TECO was “6.43 percent on January 31, 2015, 7.08 percent in February and March, 9.20 percent from March through June, and 7.68 percent on July 13, 2015.”⁷¹ Opinion No. 551 used TECO’s IBES growth rate as of July 13, 2015—7.68%,⁷² whereas the EL14-86 ID used TECO’s IBES growth rate as of May 22, 2015—9.20%.⁷³

The unstable capriciousness of range-based measures has troubled Wall Street. Deutsche Bank cited this “quirk” as an example of “the considerable uncertainty and volatility inherent in the commission’s two-step DCF model as currently

Figure 3: Changes in UBS's FERC ROE MtM



Source: Company Filings, FactSet, Yahoo! Finance, and UBS Estimates

formulated.”⁷⁴ Deutsche Bank also noted that basing ROEs on such fluctuating ranges is an “inherent inefficienc[y] in FERC’s new model which is creating significant uncertainty for investors—precisely the opposite of FERC’s intent in last year’s New England decision,” and characterized this effect on the DCF model as “capricious.”⁷⁵ Similarly, UBS has taken to producing frequent updates of its “MtM” (mark-to-market) quantification of the Top Quarter of an Op. No. 531 method “FERC ROE,” highlighting to investors the variability of that quantification, as depicted in the inset “Figure 3.”⁷⁶ Wolfe Research has similarly noted that with

⁷⁰ Op. No. 551, P 65; *ENE (Env’t Ne.)*, 154 FERC ¶ 63,024, P 524.

⁷¹ See *Ass’n of Bus. Advocating tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 153 FERC ¶ 63,027, P 101 (2015), *aff’d*, Op. No. 551, 156 FERC ¶ 61,234 (2016).

⁷² See *id.*, P 90, P 102, App. B.

⁷³ See *ENE (Env’t Ne.)*, 154 FERC ¶ 63,024, P 909 (Initial Decision reproducing Ex. No. NET-2004).

⁷⁴ Deutsche Bank Mkt. Research, *Transmission ROE Flash* at 1 (June 8, 2015), Ex. No. CAP-135, *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, No. EL13-33, eLibrary No. 20150709-5192.

⁷⁵ Deutsche Bank Mkt. Research, *Transmission ROE Flash* at 1 (June 12, 2015), Ex. No. CAP-135, *supra*.

⁷⁶ “Figure 3” (numbering in the original) is excerpted from Ex. No. CAP-119, at 3, *ENE (Env’t Ne.) v. Bangor*

a range-based approach, the “timing of the data is key,” as the “ALJ rec[ommendation] in the latest NE-ISO case will use 6-months of data through 5/26/15” [sic], thereby “determin[ing] the ZoR [zone of reasonableness]”, making the DCF input timing “everything.”⁷⁷ Wolfe’s appraisal: “FERC seems to not appreciate the uncertainty it is creating.”⁷⁸

While these criticisms focused on erratic variation of the DCF range (because under the Commission’s then-applicable approach, only the DCF range factored directly into the result), their gist also applies to ranges found using other methods. For example, over the course of the four New England complaints, the E/B range top, as presented by NETO’s paper hearing witness, varied from 16.1% to 15.66% to 18.24% to 19.59%. Focusing on Dominion Resources (which generally set the E/B range top during 2012-17, due to its contemporaneous, especially high, M/B ratio and capital structure equity ratio), its E/B as calculated by the same witness rose from 15.12% as of a study period that ended January 2015⁷⁹ to 18.24% as of a study period that ended three months later.⁸⁰

More recently, FirstEnergy Corp. (“FE”) has commonly provided transmission owner witnesses’ highest E/B result.⁸¹ It does so because Value Line’s fifth-year E/B projection for that company jumped from 12.5% as of February 16, 2018 to 15.5% as of May 18, 2018.⁸² Between those two consecutive quarterly Value Line reports, FE’s projected share count and projected

Hydro-Elec. Co., No. EL13-33, eLibrary No. 20150709-5192 (UBS Global Research, *US Electric Utilities & IPPs: How Low is Too Low? MISO Transcos Strike Back* (Apr. 27, 2015)).

⁷⁷ Wolfe Res., *Utilities & Power: Don’t you FERCEd about ROE, Don’t Don’t Don’t Don’t!* at 1, 11 (Apr. 6, 2015), Ex. No. NET-1602, *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, No. EL13-33, eLibrary No. 20150709-5128.

⁷⁸ *Id.* at 1.

⁷⁹ See MTO-8 in EL14-12 (providing E/B for D as of pre-update study period in that docket).

⁸⁰ See NET-1706 in EL14-86. Elimination of outliers based on the 150%-of-median test discussed the *Coakley* and MISO briefing orders (at PP 54 and 55, respectively) may mitigate some of this variability, but introduces a different form of erraticism, as high values may come in and out of the retained proxy results depending on whether they are just over or just under the outlier test.

⁸¹ Ex. No. A-2, at 61:3-4.

⁸² *Id.* at 61:4-6.

dividends did not change, and its projected earnings and earnings/share actually declined. The change that drove the increase in FE's projected E/B ratio was a 25% decrease in projected book value per share, from \$24 to \$18, apparently due to accounting changes associated with the bankruptcy filing of FE's nonregulated subsidiaries.⁸³ While that drastic decrease in the denominator of FE's E/B ratio had an outsized effect on the highest E/B ratio to be found among electric utility stocks, there is no basis to infer a corresponding change to such stocks' *representative* E/B ratio, much less the ratio representative of operating utility companies.

An undue focus on non-representative results can be seen in the NOI itself. The NOI devotes considerable attention to outlier screening and to tests for excluding companies engaged in merger and acquisition ("M&A") activity. Seven NOI questions focus on these issues directly,⁸⁴ and other NOI questions relate to them as well.⁸⁵ Case-specific ROE adjudications before the Commission also commonly focus on these issues.⁸⁶ This NOI, of course, is not the place to address case-specific issues; the disputes referenced in the preceding footnote will have to be resolved based on the records of those dockets. We note them here because the NOI's rethinking of ROE determination policy presents a golden opportunity to return ROE litigation to its proper focus: not which proxy companies and sample results should be trimmed or added at

⁸³ *Id.*

⁸⁴ Questions D3.b, D4, D4.a, D4.b, D8, D8.a, and H.1.4.a.

⁸⁵ *See, e.g.*, Questions G3, G4, and G4.a.

⁸⁶ For example, Opinion No. 531 addressed at length whether PSEG should be excluded at the DCF range bottom, and whether the growth rate used for UIL Holdings at the DCF range top should be sampled according to the *ex ante* procedural schedule or based on NETOs' motion for an *ad hoc* further update. The pending paper hearing briefs in the subsequent New England ROE complaint matters address at length the New England TOs' proposal to add ITC Holdings to the DCF range top in Docket No. EL13-33, customers' proposal to remove TECO from the DCF range top in Docket No. EL14-86, and the New England TOs' proposal to add Algonquin Utilities to the DCF range top, while excluding NWE, IDA, AEP, and PCG from the range bottom, in Docket No. EL16-64. Similarly, the pending paper hearing briefs in the MISO ROE complaint matters address at length the MISO TOs' proposals in Docket No. EL14-12 to remove OGEE, ED, and PSEG from the DCF range bottom and add ITC to the E/B range top; MISO CAPs' proposal in Docket No. EL14-12 to exclude TECO from the proxy group due to M&A activity; MISO TOs' proposals in Docket No. EL15-45 to remove IDA, CNP, and OGEE from the DCF range bottom; and MISO CAPs' proposal in Docket No. EL15-45 to exclude Vectren from the E/B range top.

the margins, but rather, for the many stocks whose use as proxies is not subject to genuine dispute, what study-period cost of equity they collectively imply.

As a policy for future cases, therefore, we recommend a new approach. The Commission should stop relying in any respect on the *range* of proxy results. Instead, the Commission should look to an applicable percentile⁸⁷ of the proxy distribution, both to evaluate whether an existing base ROE remains just and reasonable and to set a replacement ROE.⁸⁸ The Commission should do so both in individual-utility cases or when determining a common ROE for multiple utilities. (By referring to an “applicable percentile,” we contemplate that the median (i.e., the 50th percentile) would be the principal measure employed, while recognizing that in cases where an accurately risk-comparable proxy group cannot be assembled, it may be necessary to apply a higher or lower percentile.⁸⁹) With that change and the continued availability of large proxy groups in most cases, the significance of whether low and high outlier results are retained would be greatly diminished, as the median or other applicable percentile would be determined from the thick cluster of proxy results at the distribution’s center, and the addition or exclusion of results at either end of the distribution would have little or no effect. Accordingly, it would be

⁸⁷ By “applicable percentile,” we contemplate that the median (i.e., the 50th percentile) would be the principal measure employed, while recognizing that in cases where an accurately risk-comparable proxy group cannot be assembled, it may be necessary to apply a higher or lower percentile, such as the 25th percentile applied in *Potomac-Appalachian Transmission Highline, LLC*, Opinion No. 554, 158 FERC ¶ 61,050 (2017) (“*PATH*”).

⁸⁸ As we discuss in Part III.G, *infra*, Associations maintain that the statutory evaluation of whether an existing base ROE remains reasonable requires a direct comparison of the ROE charged at a given time to the contemporaneous study-indicated cost of equity. However, even if the Commission were to adopt a rebuttable presumption that existing ROEs exceeding the cost of equity by some margin remain just and reasonable, that margin should be based on a percentile of the proxy results distribution rather than some fraction of the range of proxy results. Whether ranges should serve as a bound on incentive ROE adders is at issue in Notice of Inquiry, *Inquiry Regarding the Commission’s Electric Transmission Incentives Policy*, Docket No. PL19-3, particularly Question No. 97. As the Commission noted in that question, an upper bound on ROE adders can be established without using ranges of proxy results to quantify that upper bound.

⁸⁹ For example, the Commission set the ROE at the 25th percentile where the subject utility was not an operating company and served solely to recover the abandoned plant costs associated with a cancelled project. *See PATH*.

reasonable in that context to adopt bright-line tests for filtering of low and high proxy results, thereby eliminating most or all judgment calls and the associated litigation of these issues.

One such approach would be to retain all proxy results (of an amply-sized proxy group) for purposes of determining the proxy group median, eliminating at one swoop all disputes over “natural break” tests, comparisons to bond yields at the low end, and statistical tests for skew at the high end. Tests for the economic “logic” of low and high proxy results are can be dispensed with where the effect of a sample result that is arguably illogical on its own is limited to influencing the determination of which *other*, central, individually logical proxy results are most representative of the distribution of results for the proxy group as a whole. For example, when the first-stage growth rate estimates for a proxy company are so low that its DCF-implied cost of equity is below the benchmark utility bond yield, the specific DCF result found for that proxy may be economically “illogical,” but it is not illogical to conclude that the true DCF-indicated cost of equity for that proxy company is somewhere below the DCF median, and to therefore retain that proxy result solely for the purpose of identifying the proxy group median. A parallel observation applies to high outliers. Retaining all proxy results while using those retained results only to identify the median (or other applicable percentile) of a large proxy group would both simplify ROE litigation and produce results that, over the run of cases, would be both more stable and more accurately cost-based. This approach would also go a long way toward addressing the arbitrariness and unpredictability that has troubled Wall Street commentators.

If range-based measures are applicable, however, outlier tests will be needed, and should be stringent, transparent, and evenhandedly applicable to low-end and high-end outliers alike. The specific tests suggested in the PNA do not meet those standards, and should be reconsidered.

First, the PNA provides no reasoned basis for its use of a large multiplier (150%) in identifying the high-outlier threshold.⁹⁰ Under any regimen that places significance on range ends, some such test is needed to, in the Commission’s words (*id.*), “identify those companies whose cost of equity under the model in question is so far above the cost of equity of a typical proxy company as to suggest that it is the result of atypical circumstances not representative of the risk profile of a more normal utility.”⁹¹ However, the PNA’s proposed high-end outlier test (under which the median of a pre-exclusions proxy distribution would be multiplied by 150%) is arbitrary and unsupported. There are several accepted and objective statistical tests for outliers.⁹² From among them, Associations would recommend using two standard deviations as the high-outlier threshold.⁹³

Second, the PNA’s “natural break” standard is too vague and open to dispute, thus inviting result-oriented manipulation of its application.⁹⁴ To avoid arbitrary results, if the ROE determination relies on ranges rather than medians (or other percentiles), an objective quantification of the “natural break” standard would be necessary. Witness in the MISO and

⁹⁰ See *Coakley* Briefing Order P 53.

⁹¹ Cf. *PSCKY* at 1011 (approvingly citing the Commission’s “acknowledge[ment] that some distributions are *too* skewed for such an analysis,” i.e., to support reliance on their midpoint).

⁹² See, e.g., Frank Grubbs, *Sample Criteria for Testing Outlying Observations*, 21 *Annals of Mathematical Statistics* 27 (1950), https://projecteuclid.org/download/pdf_1/euclid.aoms/117729885; Armin Böhler, *One-Sided and Two-Sided Critical Values for Dixon’s Outlier Test for Sample Sizes up to n = 30*, 23 *Econ. Quality Control* 5 (2008), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.560.8754&rep=rep1&type=pdf>.

⁹³ See *Affidavit of Dr. J. Randall Woolridge*, Ex. No. CAP-500, at 7-9, Docket Nos. EL11-66 *et al.*, eLibrary No. 20190111-5238 (Jan. 11, 2019) (describing the merits of using two standard deviations as the high-outlier threshold).

⁹⁴ For example, the PNA would continue to apply the Opinion No. 531, P 123 finding that the 101 bp jump in the Opinion No. 531 Appendix (First Complaint DCF) distribution between El Paso Electric (7.03%) and PSEG (5.62%) constitutes a “natural break” that supports excluding PSEG’s low result, while not finding that the nearly identical (107 bp) jump from Dominion to UIL warrants excluding UIL at the high end. Similarly, *MISO* Briefing Order, P 55, proposes to retain Vectren’s 15.21% E/B ratio (because it is 116 bp below the next-highest result) even though that 15.21% is also 127 bp above the next-lowest result (13.94% for CMS), indicating that the “natural break” in that distribution is located *below* Vectren.

New England paper hearings have suggested specific tests for this purpose.⁹⁵ The Associations support those tests.

3. Credit ratings should continue to be used to form risk-comparable proxy groups

D5. How, if at all, does the Commission's use of credit ratings in ROE determinations incentivize public utilities to behave in certain ways, such as issuing more debt, and does this affect public utilities' credit ratings?

D6. What would be the impact of the Commission modifying the credit rating screen to include all investment-grade utilities in the proxy group?

D7. To what extent do credit ratings correspond to the ROE required by investors?

Credit ratings are a primary indicator of relevant risks—widely publicized, produced by reputable third-party sources, easy to apply, and well-established in Commission precedents and practice.⁹⁶ Although it is sometimes claimed that credit ratings address debt rather than equity risks, in fact they address both: if revenues are insufficient to cover debt obligations, equity investors must make up the difference. And notwithstanding contrary data-mining in an EEI whitepaper, credit ratings do correspond to DCF results and the cost of equity⁹⁷—as one would expect, given the fundamental relationship between risk and return. Consequently, the impact of modifying the credit rating screen to include as proxies all stocks with investment-grade credit

⁹⁵ See, e.g., *Affidavit of Dr. J. Randall Woolridge*, Ex. No. CAP-500, at 7-9, Docket Nos. EL11-66 *et al.*, eLibrary No. 20190111-5238 (Jan. 11, 2019); *Affidavit of Jonathan A. Lesser*, Ex. No. EMC-0200, Docket No. EL11-66 *et al.*, eLibrary No. 20190111-5120 (Jan. 11, 2019); *Direct Testimony and Exhibits of J. Bertram Solomon*, Ex. No. JCI-200, at 12-16, Docket No. EL15-45-000, eLibrary No. 20190213-5141 (Feb. 13, 2019).

⁹⁶ See Op. No. 531, P 106; Op. No. 445, at 61,264; *Potomac-Appalachian Transmission Highline, L.L.C.*, 122 FERC ¶ 61,188, P 101-102 (2008), *on reh'g*, 133 FERC ¶ 61,152 (2010).

⁹⁷ Compare Edison Elec. Inst., *Transmission Investment: Revisiting the Federal Energy Regulatory Commission's Two-Step DCF Methodology for Calculating Allowed Returns on Equity* at 22 (Dec. 2017), <http://www.eei.org/issuesandpolicy/transmission/Documents/ROE%20White%20Paper.pdf>, with Am. Pub. Power Ass'n, *A Customer Coalition Response to the Edison Electric Institute's Whitepaper on the Federal Energy Regulatory Commission's Two-Step DCF Methodology for Calculating Allowed Returns on Equity* at 9 & attachment 2 (June 2018), <https://www.cooperative.com/programs-services/government-relations/regulatory-issues/Documents/Final%20Customer%20Coalition%20Whitepaper%20Response.pdf>.

ratings would be to make proxy groups less risk-representative, degrading the accuracy of the resulting studies of equity's cost.

We are not aware of any evidence that utilities game their credit ratings as suggested by Question D5—issuing debt in order to secure a lower credit rating and thereby obtain a higher ROE associated with higher-risk companies. That would likely be a losing game: even though it might marginally raise the ROE allowed to the utility in rates regulated by FERC, those rates represent a small share of most utilities' business, and an increase therein would be offset by higher costs of debt for both the utility and its parent.

4. A properly distribution-based use of proxy group results would enable simplified, bright-line screening of proxies for significant merger and acquisition activity

D8. The Commission excludes from the proxy group companies with merger activity during the six-month study period that is significant enough to distort study inputs. Should the Commission continue using our existing merger screen?

D8.a. If so, should the Commission revise its standards for what conduct constitutes merger and acquisition activity?

The Commission should continue screening for M&A, although it may be possible to simplify and improve this screening. In Part III.D.2, *supra*, we explain that by relying on *distribution* rather than the *range* of proxy results, the Commission could reduce judgment calls about proxy group composition and the filtering of results. This point also applies to ex ante screening for M&A activity by candidate proxies. If distortion of an individual proxy's result due to M&A activity will be attenuated through reference to the distribution (not range) of a large proxy group, each individual proxy result will have relatively little effect on the ultimate decision. In that context, therefore, the test for significant M&A activity that leads to exclusion from the proxy group could be made simpler and more bright-line. For example, a candidate proxy could be excluded for M&A activity if, but only if, the candidate is directly or indirectly

acquiring or disposing of assets or entity/ies valued at or above some large fraction (say, one third) of the candidate proxy.⁹⁸

5. When a reasonably risk-representative proxy group cannot be formed, the available proxy group's results should be distilled to a percentile other than the median

D9. What circumstances or factors, if any, warrant an adjustment from the midpoint/median to other points within the zone of reasonableness (e.g., lower or upper midpoint/median)?

In electric utility ROE cases, it will usually be possible to form a proxy group that is both risk-representative and adequately sized. *See* Part III.D.1. In that prevalent situation, the evaluation of whether the existing base ROE remains reasonable, and the selection of a replacement base ROE if it does not, should apply the median of the resulting, representative distribution.

In the few cases where a risk-representative proxy group is infeasible, the best available course is to form a sub-optimally representative proxy group of adequate size, and apply a percentile other than the median, deviating from the median based on an informed judgment as to the direction and extent to which the sub-optimal proxy group's median overstates or understates the subject utility's equity cost. Opinion No. 554 rightly followed this approach, applying the 25th percentile because the subject utility, as the owner of a non-operating, abandoned transmission project for which cost recovery is assured by a formula rate, is less risky than the operating utility parents that are available as exchange-traded proxies.⁹⁹

However, it would be arbitrary to restrict the choice of percentiles to the 50th percentile (median) in cases where the proxy group is risk-representative, the 25th percentile where it is riskier than the subject utility, and the 75th percentile it is less risky than the subject utility. As

⁹⁸ Such a bright-line test would exclude from the proxy group a candidate proxy that is being acquired, as in that case the acquisition would be of the entire candidate proxy, not a fraction thereof.

⁹⁹ Op. No. 554, PP 268-273.

the Commission held, and the D.C. Circuit confirmed in *Emera Maine*, “requiring the ROE to be set at one of only three possible positions in the range established by reference to the proxy companies does not give the Commission the necessary flexibility required to evaluate the specific circumstances of each case.”¹⁰⁰ For example, where the subject utility is operating and has a credit rating, but the standard “one notch” credit rating screen would leave too few proxies to form an adequately-sized proxy group, the screen criteria can be relaxed until sufficient proxies are identified. The equity cost significance of each notch of deviation can then be assessed, by, e.g., quantifying the change in the equity cost indication that results from varying the credit rating criteria and/or benchmarking against the bond yield differences associated with different bond ratings. Such comparisons can lead to the identification of a reasonable case-specific substitute percentile, rationally connected to, and selected on the basis of, the record evidence in that proceeding.

6. Midpoints are inherently erratic and unrepresentative; the Commission should extend to RTO-wide ROEs the statistically superior policy, already applicable to most public utilities and all pipelines, of relying instead on medians

D10. The Commission currently uses midpoints to determine the central tendency of the zone of reasonableness when determining RTO-wide ROEs. Should the Commission adopt a policy of using medians for this purpose?

D10.a. Would the use of multiple ROE methodologies, as proposed in the Coakley Briefing Order, undercut the Commission’s current rationale for using the midpoint in RTO-wide base ROE?

D10.b. Should the size of the proxy group be considered in this decision?

¹⁰⁰ *Transcontinental Gas Pipeline Corp.*, Op. No. 414-A, 84 FERC ¶ 61,084, at 61,427-3 (1998) (subsequent history omitted); see also Op. No. 531, P 151 n.306 (quoting same); *Emera Me. v. FERC*, 854 F.3d 9, 30 (D.C. Cir. 2017) (quoting Op. No. 531, and holding that by assuming the upper midpoint was the only available above-midpoint ROE, the Commission failed to rationally connect its base ROE placement to the record).

ROE determinations should reflect all retained proxy results, not just the extreme ones, so that estimation errors cancel out instead of being amplified.¹⁰¹ Each proxy result contains measurement error, and a more accurate cost of equity result is obtained by combining those results in a way that makes those errors tend to cancel out. Medians do that; midpoints don't.

The witness most commonly employed by TOs nationwide, including both the MISO and New England TOs for the ongoing paper hearings, has conceded that there is no basis to vary the measure of central tendency as between regional and single-utility cases. He testifies that using midpoints in one and medians in the other is unreasonable, because “differentiating between a proceeding involving a single transmission utility and a joint filing of multiple RTO members ignores the requirements of investors, which are based on comparable-risk opportunities available in the capital markets.”¹⁰² Given the Commission's correct and judicially-affirmed finding that the median best represents investor requirements in single-utility cases, it follows that the median should be applied in all cases.

The Commission has previously offered only two rationales for using the midpoint rather than the median in regionwide-ROE cases: *stare decisis*, and minimizing the extent to which a single regional base ROE is unsuited for the region's least- and most-risky utilities. But neither has any rational application in conjunction with the PNA.

¹⁰¹ See Ex. No. A-2, §§ D9-D10; see also *Direct Testimony of Professor J. Randall Woolridge*, Ex. No. CAP-1 at 54-74, Docket No. EL13-33-002 *et al.*, eLibrary No. 20150709-5192 (focused on estimation errors in the context of a DCF study, though applicable to estimation errors in CAPM and E/B studies); Brief on Exceptions of the Complaint-Aligned Parties, at 55-56, Docket No. EL16-64-002, eLibrary No. 20180426-6392 (Apr. 26, 2018) (demonstrating that the inclusion or exclusion of companies in the proxy group has significant impact on the midpoint results but very little impact on the median results).

¹⁰² *McKenzie Answering Test.* at 20-21, Ex. No. SER-0001, *Ark. Elec. Corp. v. ALLETE Inc.*, EL17-41 (Mar. 20, 2019), eLibrary No. 20190320-5185.

Stare decisis. Past practice is the PNA’s only stated basis for referencing the midpoint.¹⁰³ But the PNA’s proxy group screening criteria provide for inclusion of proxies whose bond ratings are within “one notch” of those of the group of firms at issue, thus potentially encompassing a range of risks that is even broader than the broad risk range of the public utilities participating as TOs in an RTO with a region-wide rate. Given the resulting proliferation of proxies and the PNA’s radical changes to what had been established Commission methodology,¹⁰⁴ adherence to a past practice cannot support the continued use of a statistically invalid midpoint approach. Even if reference to the *DCF* midpoint could somehow be considered a settled practice, there is *no* precedent, nor any statistical basis, for referencing the midpoint of E/B and CAPM distributions, rather than their medians (to the extent they are considered at all). There is no one-to-one mapping of proxy results to the cost of equity of individual public utility RTO participants; rather, given the large number of proxies with relatively high risks, the proxy group results will tend to include a highest result that exceeds the costs of equity of the riskier participants.

Moreover, the PNA does not actually propose to set the base ROE at the midpoint of its proposed zone of reasonableness. As illustratively quantified in *Coakley* Briefing Order (PP 57 and 59), the *midpoint* of the zone of reasonableness would be 10.3%. Yet the PNA would set the base ROE higher, at 10.41%, by bringing a risk premium result into the average. This eleven-basis-point difference belies the statement in *Coakley* Briefing Order that “[w]e are not making an adjustment above the midpoint/median as we did in Opinion No. 531.”¹⁰⁵

¹⁰³ See *Coakley* Briefing Order P 17 nn.45-46, P 57 n.114.

¹⁰⁴ If *stare decisis* does not prevent, for example, direct reliance on expected earnings on book equity, notwithstanding the contrary precedents cited in Part III.H.2.c)(1), *infra*, then neither does it justify reference to the midpoint.

¹⁰⁵ *Coakley* Briefing Order P 44.

Second, in *Midwest ISO*, the Commission also required that all of the proxy companies be located in the same region as the subject companies.¹⁰⁶ The Commission subsequently abandoned the regional proxy group requirement and currently relies on national proxy groups for electric utilities.¹⁰⁷ Third, the Commission is now proposing to reference risk premium studies that include no screening of the risk premium inputs for risk comparability to MISO TOs, and studies of per-book earnings in which there is no screening of the proxies for capital structure and market/book comparability to the MISO TOs.

Because the PNA would deviate from the DCF midpoint, and because there is no precedent for referencing the midpoints of other methods, the Commission cannot reasonably stand on precedent in failing to address the equity cost indications provided by the medians of its adopted studies.

Fitting disparate-risk RTO participants. The past practice referenced in *Coakley* rests on *Midwest Independent Transmission System Operator, Inc.*, 106 FERC ¶ 61,302 (2004) (“*MISO*”), *aff’d in relevant part sub nom. Pub. Serv. Comm’n of Ky. v. FERC*, 397 F.3d 1004 (D.C. Cir. 2005) (“*PSCKY*”). The Commission there reasoned that where the members of the proxy group and the Regional Transmission Organization participants sharing a single regional ROE were substantially identical, using the midpoint as the single regional base ROE would make that ROE a better fit for the region’s least- and most-risky utilities. That is, under “unique . . . circumstances” where “the proxy group used to define the range of reasonableness . . . consist[ed] of a subset of the Midwest ISO TOs to which the ROE will

¹⁰⁶ *Midwest Indep. Transmission Sys. Operator, Inc.*, 100 FERC ¶ 61,292 (2002), *remanded sub nom. Pub. Serv. Comm’n of Ky. v. FERC*, 2004 WL 222900 (D.C. Cir. 2004).

¹⁰⁷ *S. Cal. Edison Co.*, 13 FERC ¶ 61,020, PP 27-30.

actually apply,”¹⁰⁸ the midpoint rationally “emphasize[d] the endpoints of the proxy group range, ensuring that outlier as well as average TOs receive just and fair compensation.”¹⁰⁹

The PNA approach, in contrast, presents no reason to assume that the range ends of the retained DCF, CAPM, and E/B results correspond to the return requirements for the least and most risky RTO participants. Any such rationale would fail at the outset given the Commission’s declarations that MISO TO and NETOs are “of average risk.”¹¹⁰ And even if the Commission were to set those declarations aside, there still would be no basis to infer any correspondence between the proxy group range ends and the most disparate-risk public utilities that place their transmission systems under RTO functional control. In fact, any such inference would fail for multiple reasons:

- In each of the six pending MISO TO and NETO ROE cases, there is no remaining dispute that the proxy group will be national, with many more members than there are respondents in those cases. A larger proxy group inherently tends to produce a more dispersed range of proxy group results.¹¹¹ Consequently, the dispersion of proxy group results does not indicate the dispersion of RTO participants’ costs of equity.
- Under the “one notch” test used in forming those proxy groups,¹¹² the proxy groups’ risk range as measured by bond ratings is intentionally broader than that of the respondent TOs.
- The distribution of the proxies’ bond ratings is skewed toward the risky end of their range.
- Other proxy characteristics that raise the top of the CAPM and Expected Earnings distributions, when those methods are applied in the manner suggested by the PNA—

¹⁰⁸ *MISO* PP 8-9.

¹⁰⁹ *PSKCY*, 397 F.2d at 1008 (summarizing *MISO* at 62,192-93).

¹¹⁰ See *MISO* Briefing Order P 58; *Coakley* Briefing Order P 57.

¹¹¹ Observe the mid-day traffic passing by Commission headquarters outside 888 First Street NE. The range of passing vehicle lengths will be wider over the course of an hour than over a minute. See Ex. No. A-2, at 35.

¹¹² See *MISO* Briefing Order P 50; *Coakley* Briefing Order P 49.

e.g., the “size adjustment” made to the CAPM results, and the use of proxies with unusually high market-to-book ratios in referencing E/B ratios)—disconnect the tops of those ranges from any correspondence to specific respondent TOs.

- The PNA’s reference to *separate* DCF, CAPM, and Expected Earnings ranges, rather than using those three methods together to estimate each proxy’s equity cost and *then* identify the range of those estimates, makes the three methods’ range ends and midpoints especially susceptible to the *Coakley* and MISO Briefing Orders’ asserted “model risk.” *See* Part III.E.3, *infra*.
- As referenced in the PNA, the E/B ratio for each proxy is based on the projection of a single Value Line analyst¹¹³ for a single five-year-ahead period, which Value Line then rounds using its idiosyncratic convention.¹¹⁴ Given this basis, the range ends under that application of the E/B method are inherently imprecise.
- When RTO planning processes function properly and in compliance with Order No. 1000¹¹⁵, they result in major new transmission projects being assigned to, and built by, entities whose capital and other costs are relatively low. Thus, construction assignments will be inversely proportionate to equity costs. This is an important change in circumstances from *PSCKY*. In this new context, those RTO participants who have relatively high equity costs will tend to avoid the risks associated with building new facilities, which over time will reduce their riskiness and cost of equity.¹¹⁶

¹¹³ *See Coakley v. Bangor Hydro-Elec. Co.*, 166 FERC ¶ 61,013, P 8 & n.26 (2019) (identifying bases for illustrative calculations, including NET-709 as the basis for the E/B portion); Docket No. EL11-66, NET-709 (sourcing its forecast E/B ratios from Value Line); Op. No. 551, P 62 (Value Line estimates represents a single analyst estimate, not a consensus); *Nw. Pipeline Corp.* 87 FERC ¶ 61,266, at 62,059 (1999) (same), *on reh’g*, 92 FERC ¶ 61,287 (2000), *review denied in part and dismissed in part sub nom. Canadian Ass’n of Petroleum Producers v. FERC*, 308 F.3d 11 (D.C. Cir. 2002).

¹¹⁴ *See, e.g.*, NET-709, col. a, and the underlying workpapers at NET-710 at 1-56. The expected returns on book equity (prior to the column c adjustment to “covert year-end return to an average rate of return”) are presented as if they were precise to a tenth of a percent, but they all end with a zero or five.

¹¹⁵ *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 136 FERC ¶ 61,051 (2011), *reh’g denied*, Order No. 1000-A, 139 FERC ¶ 61,132, *on reh’g*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012), *review denied sub nom. S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41 (D.C. Cir. 2014) (per curiam), *reh’g en banc denied*, No. 12-1232 (D.C. Cir. Oct. 17, 2014).

¹¹⁶ *Cf.* Op. No. 554.

The bottom line is that in both New England and MISO, the distribution of proxy results provides useful information on the cost of equity for the public utility operating companies participating as transmission owners in the respective RTO, and that information should not be discarded in identifying the region-wide base ROE. The median (or other risk-appropriate percentile) reflects that distribution information and should be the take-away from the proxy-based methods; the midpoint does not, and it should not be used.

7. Associations are not commenting on proxy group size in pipeline cases

D11. Can the Commission continue to construct proxy groups of sufficient size for natural gas and oil pipeline companies using the DCF methodology, or in general for the alternative methodologies, particularly considering the increased amount of merger and acquisition activity involving master limited partnerships (MLPs) and the multiple recent conversions of MLPs to C-corporations?

Associations take no collective position on this pipeline-related question.

E. Combining multiple financial models advances reasonable ratemaking only if the added models are well-designed to identify the market cost of equity

1. Models based on E/B ratios or unrealistic equity portfolio returns do not aid in identifying the cost of equity

E1. What models do investors use to evaluate utility equities?

E2. What role do current capital market conditions play in the choice of model used by investors to evaluate utility equities?

E2.a. If capital market conditions factor into the choice of model, how do investors determine and evaluate those conditions?

E3. Are any models thought to be superior or inferior to others? If so, why?

We read these questions as inquiring about widely applied models for inferring the values of exchange-traded utility-sector stocks from financial market information.¹¹⁷ The common

¹¹⁷ There are so many investors, and so many investment decisions are made in private, that it is impossible to characterize all of the methods investors apply. And it is clear that some investors apply irrational methods that would not withstand judicial review if applied by the Commission, such as astrology. See Simon van Zuylen-Wood,

foundation of such models is the Efficient Market Hypothesis, which is solidly established among not only investors but also academia and the D.C. Circuit.¹¹⁸ It holds that publicly available information is efficiently incorporated into the prices of exchange-traded stocks.¹¹⁹ All of the methods collected in the NOI's touchstone textbook as "Cost of Capital Methodologies"—namely, DCF, CAPM, and risk premium¹²⁰—build on that analytical foundation. The investment community's practical application of this bedrock understanding is exemplified by Credit Suisse, *Estimating the Cost of Capital: A Practical Guide to Assessing Opportunity Cost* (2013).¹²¹ Consistent with the DCF model, it states that "[t]he cost of capital is the rate at which you need to discount future cash flows in order to determine the value today."¹²² In explaining how to estimate that discount rate for a particular company, it emphasizes a CAPM model, in which (as of the guide's publication date, October 8, 2013) "the model developed by Credit Suisse's equity strategy group implied a warranted ERP [Equity Risk Premium] of 4.5 percent."¹²³

Dr. Cornell explains that surveys of financial professionals in 2010 and 2013 showed that between 79% and 87% of respondents use DCF techniques for investment valuation generally and the CAPM model for estimating a firm's cost of equity.¹²⁴ The academic literature confirms that the DCF and CAPM are the most established and widely used financial models.¹²⁵

Is the Key to Beating the Market Written in the Stars?, Business Week (July 27, 2018), <https://www.bloomberg.com/news/features/2018-07-27/is-the-key-to-beating-the-market-written-in-the-stars>.

¹¹⁸ See Part III.H.1.b), *infra*; *Tenn. Gas Pipeline Co. v. FERC*, 926 F.2d 1206, 1210-11 (D.C. Cir. 1991).

¹¹⁹ See *id.*

¹²⁰ See Morin, *supra*, at 427-28. Morin's list includes a separate entry for a CAPM variant known as the "Arbitrage Pricing Model" ("APM"). It too is based on the Efficient Market Hypothesis.

¹²¹ https://research-doc.credit-suisse.com/docView?language=ENG&source=ulg&format=PDF&document_id=805810190&serialid=OI/G4SnL/qh5FOIYS9MKXLznnvRJnu1XiYUvUZAo%2BIE%3D.

¹²² *Id.* at 3.

¹²³ *Id.* at 13.

¹²⁴ Ex. No. A-1, § E1.

¹²⁵ *Id.*

Notwithstanding the claims, based on supposedly “anomalous” market conditions, that advocates of high ROEs have presented to the Commission in recent years, there is no evidence that actual investors in electric utility stocks—that is, those who want to accurately assess what a given security will yield and what other investors will be willing to pay for that security—have lost faith in DCF or other market-based valuation techniques, or peg their choice of financial models (as distinguished from model inputs) to particular points on the business cycle.

The contrary is evidenced by the many years of annual documentation of “Long-Term Capital Market Assumptions” published by J.P. Morgan Asset Management (“J.P. Morgan”).¹²⁶ In 2012, the earliest year for which full documentation remains readily available, J.P. Morgan stated that for “as in previous years,” it used a “building blocks” approach to equity valuation under which its expectations for equity returns equaled “Inflation + real earnings growth + dividend yield +/- impact of valuation changes.”¹²⁷ This was essentially a DCF model, in which the long-term earnings growth term is decomposed into inflation plus real earnings growth, and provision is then made for other factors that might impact valuation. While the 2009 iteration of this document predates J.P. Morgan’s posted archive, a contemporaneous J.P. Morgan presentation shows that it employed the same approach then.¹²⁸ Following a non-cyclical refinement of this model in 2015, for 2019, J.P. Morgan continues to base its equity return forecasts on “EPS growth . . . × Price return / EPS growth (valuations) + Dividends”¹²⁹—again, essentially a DCF model, adjusted for reversion of P/E ratios toward historical norms. Thus, J.P.

¹²⁶ <https://am.jpmorgan.com/global/institutional/library/lcma-previous-versions>.

¹²⁷ J.P. Morgan Asset Mgmt., *Long-Term Capital Market Return Assumptions: 2012 Estimates and the Thinking Behind the Numbers* at 6 (2011), <https://am.jpmorgan.com/blobcontent/1414922158825/83456/lcma-2012.pdf>.

¹²⁸ J.P. Morgan Asset Mgmt., *On the “non-normality” of Asset Classes*, at 32 (2009) (estimating 9.0% return over 10-15 years on U.S. large cap stocks purchased at that market low, based on “Sum of below building blocks (U.S. Large Cap EPS Growth (nominal) + Dividend Yield + P/E return impact”).

¹²⁹ J.P. Morgan Asset Mgmt., *Turning a Corner: Returns Hold Steady* at 2 (2018), <https://am.jpmorgan.com/gi/getdoc/1383581777246>.

Morgan has applied a DCF-based model for at least ten years (and likely longer), encompassing the Great Recession, today's much better financial market and economic conditions, and all intervening years and conditions. Dr. Cornell confirms that there is no basis in academic theory for the claim that investors' model choices vary with capital market conditions.¹³⁰

Notably, none of these sources reference E/B ratios as a measure of the cost of equity. By 1985, that approach had been “thoroughly discredited” and “replaced by three market-oriented (as opposed to accounting-oriented) approaches: (i) the DCF method, (ii) the bond-yield-plus-risk-premium method, and (iii) the CAPM, which is a specific version of the generalized bond-yield-plus-risk-premium approach.”¹³¹ As summarized by a leading textbook on corporate finance:

[W]e can employ the principles described in Chapters 6 and 7 to produce reasonably good estimates for the cost of equity. Three methods are typically used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the over-own-bond-yield-plus-judgmental-risk-premium approach. These methods are not mutually exclusive: When estimating a company's cost of equity, we generally use all three methods and then use an average, weighted on the basis of our confidence in the data used for each method.¹³²

A published, peer-reviewed “comprehensive survey that describe[d] the current practice of corporate finance”¹³³ based on responses by 392 chief financial officers, concludes that “executives use the mainline techniques that business schools have taught for years, NPV¹³⁴]

¹³⁰ Ex. No. A-1, § E2.

¹³¹ Eugene F. Brigham, Dilip K. Shome, & Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, 14 *Fin. Mgmt.* 33, 33 (1985).

¹³² Ehrhardt & Brigham, *supra*, at 345.

¹³³ John R. Graham & Campbell R. Harvey, *The Theory and Practice of Corporate Finance: Evidence from the Field*, *J. Fin. Econ.* 61 (2001), <https://faculty.fuqua.duke.edu/~jgraham/website/SurveyPaper.PDF>.

¹³⁴ NPV refers to Net Present Value, discount-rate-based project-specific technique that is based on the same principles as the DCF method for estimating the discount rate investors apply to an entire publicly-traded company.

and CAPM, to value projects and to estimate the cost of equity.”¹³⁵ It found *no* evidence that anyone uses E/B ratios.

Although investors consider earnings in gauging utilities’ future profitability and financial health, they “parse the information in earnings in order to estimate *growth*.”¹³⁶ Even that use is limited: A comprehensive study of the information affecting stock market prices over twenty years (1993-2013) found that

[W]hereas the information contribution of analysts and SEC nonaccounting filings increased markedly over the past 20 years (in 2013, SEC filings and analysts forecasts contributed 25 percent and 20 percent, respectively, of total information used by investors), the contribution of the financial reports (including earnings announcement and quarterly and annual filings with the SEC) decreased by almost a half (from 10 percent to 5-6 percent).¹³⁷

More to the point, there is simply no evidence that investors consider earnings/book equity (E/B) *ratios*—the focus of the “Expected Earnings” method—to be any kind of measure of the return that investors expect, or require, from their investments in market-priced utility stocks.¹³⁸ One will search in vain to find any institutional investor, investment analyst, market opinion leader, chief financial officer, or academic economist still referencing E/B ratios as a measure of equity’s cost. The reason is plain: Investors have no opportunity to purchase stock at its book rather than market value.

As explained by Ehrhardt and Brigham, the “opportunity cost” that companies must pay their equity investors to attract their reinvestment through retained earnings is what

¹³⁵ *Id.* at 21.

¹³⁶ Stephen D. Hasset, *The RPF Model for Calculating the Equity Market Risk Premium and Explaining the Value of the S&P with Two Variables*, 22 *J. Applied Corp. Fin.* 118, 120 (2010) (emphasis added).

¹³⁷ Baruch Lev & Feng Gu, *The End of Accounting and the Path Forward for Investors and Managers* 45 (John Wiley & Sons 2016).

¹³⁸ *See Ex. No. A-1* at 6.

“stockholders themselves could earn on alternative investments of equivalent risk.”¹³⁹ Or as explained to investors by Credit Suisse: “The opportunity cost an investor demands is based on the prevailing asset price, not the level at which the company recorded the debt or equity on the balance sheet.”¹⁴⁰ Accordingly, there is no rational basis to conclude that E/B ratios indicate the return that investors expect to receive on their alternative, comparable-risk investment opportunities, and, therefore, would require in order to be attracted to having their funds invested instead in the subject utility’s regulated operations.¹⁴¹

To be sure, current investors’ expectations of utility stocks’ earnings per book equity are generally high. But that is because utility stocks’ market/book ratios are generally well above unity, which signifies that the earnings/book that investors expect utilities’ parent companies to realize significantly exceeds the returns that investors require on their own investments. As the Commission is well aware, the *Hope* and *Bluefield* standards do not guarantee investors any particular level of expected profits, only the level of return required to attract investment and maintain the financial health of the utility.¹⁴² That level is tied to what investors require on their own investment, not their expectations as to utility holding companies’ earnings/book ratios.

2. Combining multiple market-based models is reasonable *if* each applied model is well-designed

E4. How are alternative models redundant or complementary with each other and/or the DCF model?

E5. To what extent do alternative models avoid any deficiencies of the DCF model and/or operate better in diverse capital market conditions?

¹³⁹ Ehrhardt & Brigham, *supra*, at 344-45 (emphasis omitted).

¹⁴⁰ *Estimating the Cost of Capital*, *supra* n.121, at 8.

¹⁴¹ See also Parts III.A, III.E.1, III.F, III.H.1.b) and III.H.2.c).

¹⁴² *FPC v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”); *Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm’n*, 262 U.S. 679, 692-693 (1923) (“*Bluefield*”).

Estimating the unobservable cost of equity somewhat resembles estimating the length of an unseen fish that slipped the hook. If you know what fish were running that day, you can attempt to infer what species it may have been, and then consult data on those species' usual size in that season; if you know what fish were caught in those same waters on the same day, you can apply a statistically valid summary (such as the median) of that sample, etc. Associations are not contesting herein the common-sense proposition that applying multiple good techniques can assist in reaching a best feasible estimate. But common sense also instructs that if you want an accurate estimate, you won't get one by asking anglers to tell tales about "the one that got away." In short, the issue facing the Commission is not whether multiple models are better than one, but whether the specific models that have been proposed for use alongside the proven DCF model are well-founded and well-designed, such that they deserve similar trust. As Dr. Cornell observes, it would not be unreasonable for the Commission to continue using DCF alone, adhering to an established and judicially affirmed agency practice. *See* Ex. No. A-1, § E1, at 5 n.4.

The burden to prove the trustworthiness of each proposed additional model properly lies on those advancing a change in Commission policy to reference non-DCF methods. Prior to Opinion No. 531, the Commission had consistently rejected reliance on CAPM, E/B, and Risk Premium studies. Eleven years ago, the Commission noted that DCF "is a well established method of determining the equity cost of capital, and other methods such as the risk premium model have [i.e., had then] not been used by the Commission for almost two decades [now three decades]." ¹⁴³ The Commission continued to reject CAPM, E/B, and RP studies in electric transmission ROE cases decided both shortly before and after Opinion No. 531. ¹⁴⁴

¹⁴³ *Composition of Proxy Grps. for Determining Gas & Oil Pipeline Return on Equity*, 123 FERC ¶ 61,048, P 53

The burden to prove the trustworthiness of each proposed additional model cannot be carried by a claim of “anomalous” market conditions. The rationale originally invoked for referencing risk premium and other non-DCF methods in Opinion No. 531—that financial market conditions were “anomalous” as of the underlying October 2012-March 2013 study period, in a way that made the DCF model less reliable—has not withstood the test of time, as the supposedly short-term “anomaly” of 10-year treasury yields below 3% persisted for years, and can now be seen to be aligned with the long-term decline in treasury yields from their Volker-era peak.¹⁴⁵ In any event, a conclusion that the DCF model should not be relied upon on its own cannot validate the specific additional models that would be used to dilute its result. Thus, claims of “anomalous market conditions” provide no insight as to what additional models should be used, nor as to how to specify those additional models’ implementing parameters.

Nor is the burden to prove the trustworthiness of each proposed additional model carried by assertions that “the DCF methodology may no longer singularly reflect how investors make their decisions” because they “have increasingly used a diverse set of data sources and models to inform their investment decisions,” and that reliance on multiple models reduces ““model risk.””¹⁴⁶ Accepting those unsupported assertions for the sake of argument, they provide no basis

(footnote omitted), *reh’g dismissed*, 123 FERC ¶ 61,259 (2008).

¹⁴⁴ See, e.g., *Pac. Gas & Elec. Co.*, 141 FERC ¶ 61,168 (2012); *S. Cal. Edison Co.*, 131 FERC ¶ 61,020, PP 114-116 (2010), *reh’g denied*, 137 FERC ¶ 61,016 (2011), *aff’d in relevant part sub nom. S. Cal. Edison Co. v. FERC*, 717 F.3d 177 (D.C. Cir. 2013); Op. No. 554, PP 270-271 & n.489 (placing the ROE at 8.11% and relying exclusively on DCF analysis and the riskiness of the subject company relative to the DCF proxy group, after considering the company’s “Brief on Exceptions 35-39”). The referenced Brief on Exceptions (Brief on Exceptions of Potomac-Appalachian Transmission Highline, LLC, on Behalf of PATH West Virginia Company, LLC and PATH Allegheny Transmission Company, LLC, *Potomac-Appalachian Transmission Highline, LLC*, Docket No. ER09-1256-002 (Oct. 14, 2015), eLibrary No. 20151014-5330), cites (at 38) “Dr. Avera’s analyses of the same alternative benchmark methodologies that the Commission found reliable in Opinion No. 531.”

¹⁴⁵ See *Rebuttal Testimony and Exhibits of Professor J. Randall Woolridge*, Ex. No. CAP-19, at 11-12 & Figure 2, *ENE (Env’t Ne.) v. Bangor Hydro-Elec. Co.*, No. EL13-33 (May 18, 2015), eLibrary No. 20150518-5306 (reproducing and discussing chart and study by former Federal Reserve Chairman Bernanke which displayed and concluded that “[l]ow interest rates are not a short-term aberration, but part of a long-term trend”).

¹⁴⁶ *Coakley* Briefing Order PP 38, 40.

for reliance on E/B, or on the particular forms of CAPM or RP commonly urged by transmission owners seeking higher allowed returns. There is no evidence that investors rely on *those* models, or anything like them.

Tellingly, the support cited in the *Coakley* Briefing Order for the proposition that investors “appear to base their decisions on numerous data points and models, including the DCF, CAPM, Risk Premium, and Expected Earnings methodologies” consisted of: (1) testimony and an academic reference to the effect that *CAPM* analysis is widely used; (2) NETOs’ testimony that risk premium analysis was referenced in Opinion No. 531; and (3) NETOs’ testimony that ““expected earned returns on invested capital provide a direct benchmark for investors’ opportunity costs.””¹⁴⁷ Investors’ widespread use of CAPM analysis is not evidence that they likewise rely on E/B or RP methods, and the CAPMs on which they rely do not utilize equity risk premiums or equity portfolio returns nearly as high of those of NETOs’ witnesses. The Commission’s reference to RP analysis in Opinion No. 531 is not evidence that investors rely on that method. And expected returns on book-value equity are *not* a direct benchmark for the returns available on investors’ *market*-priced investment opportunities.

It is also significant that the only indicator of financial market anomaly cited in Opinion No. 531 was that “bond yields are at historic lows.”¹⁴⁸ Relatedly, the *Coakley* Briefing Order (PP 41-42) notes that yields on U.S. treasuries generally exceeded 4% from the mid-1980s to 2008. Unlike the DCF method, the risk premium method (and to a lesser extent, the CAPM method) rely directly on bond yields. They are therefore *more* exposed to distortion due to the claimed anomalous market conditions than is the DCF method. Moreover, the risk premium method requires a linear relationship (not necessarily 1:1, but necessarily linear) between debt yields and

¹⁴⁷ See *Coakley* Briefing Order P 40 & nn.81-82.

¹⁴⁸ Op. No. 531, P 145 n.285.

equity costs. It also implicitly assumes that the subject utility's equity is risk-comparable to the utilities at issue in the historic data-set cases used in estimating past risk premiums (that is, it makes no provision for comparing the risks of the subject utility and data-set utilities, and thus implicitly assumes they are identical). Due to these inherent features of the risk premium approach, if low interest rate conditions somehow make the DCF method unreliable, they make the risk premium method even less reliable.

E/B ratios are likewise more susceptible than the DCF method to behaving strangely during periods of low bond yields or other "unusual" financial market conditions. When the earnings of utilities' exchange-traded parents increase because they or their subsidiaries are able to refinance high-cost debt at reduced interest rates, their equity market prices increase commensurately, but their equity book value does not. Consequently, E/B ratios are *more* exposed to distortion by "unusual" interest rates than is the DCF method. Similarly, when expected or realized corporate tax cuts or inflation produce heightened nominal-dollar forecast earnings, they have no effect on accounting book values per share, and they therefore increase E/B ratios. In contrast, the DCF method accounts for the effect of taxes and inflation in ways that properly offset—e.g., inflated dollars produce both higher nominal-dollar dividends and higher nominal-dollar stock prices, producing a dividend yield that is not distorted by inflation.

To support referencing multiple methods, the *Coakley* Briefing Order cites (indirectly) *Distrigas of Massachusetts Corp.*, Op. No. 241, 41 FERC ¶ 61,205, at 61,550 (1987) ("*Distrigas*"), *reh 'g granted*, Op. No. 291-A, 42 FERC ¶ 61,225, *reh 'g denied*, 43 FERC ¶ 61,192 (1988).¹⁴⁹ *Distrigas* explains that "[t]he weight to be given the results of each such methodology rests on the accuracy and sensibleness of the judgmental i[n]puts and factors that

¹⁴⁹ See *Coakley* Briefing Order P 40 n.82 (citing NET-1300 at 27, which in turn cites *Distrigas*).

the respective witnesses employed.”¹⁵⁰ By that standard, the “Expected Earnings” method should be given no weight, because E/B ratios do not measure at all, much less measure accurately and sensibly, the return that investors require in order to invest in the market-priced equity that in turn funds public utilities’ transmission-related assets. Moreover, the E/B method produces excessive ROEs when utility holding companies are looking profitable and insufficient ROEs when those companies are looking distressed, and is thus poorly equipped to provide sound regulatory outcomes over time.

3. The technique used for combining multiple models should integrate model results for each proxy

E6. To the extent that investors use multiple models, should the Commission combine them in its analysis or use the “best” one that would apply in all market conditions?

E7. If the Commission were to consider multiple models, how should it weigh them?

If the use of multiple methods improves cost estimation accuracy (as the PNA posits), then it follows that the identification of each proxy’s equity cost is improved if the multiple methods are combined in identifying *that proxy’s* equity cost. Accordingly, rather than forming the “composite range” by averaging the range bottoms of the DCF, CAPM, and E/B methods to set the composite range’s bottom, and then averaging the range tops of the DCF, CAPM, and E/B methods to set the composite range’s top, the order of operations should produce a composite distribution in which each proxy’s return is estimated by averaging that particular proxy’s DCF and CAPM results (along with its E/B result, if used). That modified composite distribution would then be used to locate the composite median, or other applicable percentile.

The range-based computational sequence used in the PNA would wrongly treat its three proxy-based methods as if they were studying three different proxy groups. Doing so would

¹⁵⁰ *Distrigas* at 61,550-51.

erroneously ignore that each of the three methods is attempting to estimate the same thing: each proxy's cost of equity. *See Coakley Briefing Order P 53* (recognizing that each model's result for each proxy company represents an estimate of *that proxy's* "cost of equity"). Given that common underlying reality, the proper sequence is: (i) determine each proxy's cost of equity under each of the utilized methods, (ii) average those multiple results to get a single cost of equity estimate for each member of the proxy group, and (iii) create a composite proxy group distribution and range using these averaged results for each proxy group member.

Because the methods that would be combined presently remain under review, it is difficult to speak to what weighting should be applied in that combination. As a general proposition, leaving the weighting for resolution in a case-specific dispute would invite unproductive, result-driven testimony and briefing in which each side seeks greater weight for those studies currently producing a result closer to their desired allowed ROE. Better use would be made of participant and Commission resources by devoting ample attention now to ensuring that all utilized methods are well-designed to produce reliably market-based indications of a subject utility's market-based cost of equity and then weighting those models' results equally.

4. Simple versus complex models

E8. To what extent is it reasonable for the Commission to use a simplified version of a model that does not reflect all the variables that investors consider?

*E8.a. Is the use of a simplified model justified for ease of administration and predictability of result?*¹⁵¹

The Commission cannot practicably hope, and should not try, to capture every one of the myriad models or variables employed by some subset of the world's many equity investors. It should apply no more than a handful of well-tested, market-based, academically-supported

¹⁵¹ We intentionally skip here from Question E8.a to Question E11. Questions E9–E10, concerning reference to state-allowed ROEs, are addressed in Part III.E.6, *infra*.

methods.¹⁵² And those methods' integrity should be respected. That is, the Commission should not let itself be led into selective complexification, in which standard models are "refined" by adding features that tend to move their result in a particular direction, while omitting other refinements, supported by the same sources or reasons, that would have a countervailing effect. *See, e.g.,* Part III.H.2.b)(3), *infra* (addressing attempts to selectively make a "size effect" adjustment to the CAPM while ignoring countervailing adjustments supported by the same sources used to justify a size adjustment). As Dr. Cornell explains, adding more variables can actually increase measurement error and is almost certain to lead to unnecessary controversy.¹⁵³

5. Models versus "judgment"

*E11. To what extent, if any, should the Commission exercise judgment in using financial models to set ROEs under various capital market conditions?*¹⁵⁴

The Commission should exercise careful judgment in selecting methods and the continuing features of implementing models. A good model will work in a very wide range of capital market conditions (as the DCF model does), so there is no good reason to vary the choice of model (as distinguished from the specific study-period data that is input to the model) by financial market condition. *See* Part III.C, *supra*.

Having specified reliable models, the Commission should trust them. Applying "judgment" to override good models' indication of what equity costs would amount to allowing preconceived notions of what ROEs should be allowed to override the best available empirical

¹⁵² *See* Ex. No. A-1, § E8 ("All models are simplifications. Adding more variables does not necessarily increase accuracy. Importantly, the Commission should use models tested and endorsed by the academic literature as well as investors.")

¹⁵³ *Id.*

¹⁵⁴ *See, infra*, Section III.E.6 for responses to Questions E9 and E10.

evidence of what equity actually costs.¹⁵⁵ As such, it would evoke this exchange from the Marx Brothers movie *Duck Soup* (Paramount 1933):

Teasdale: Your Excellency, I thought you left.
Chicolini: Oh no. I no leave.
Teasdale: But I saw you with my own eyes.
Chicolini: Well, who ya gonna believe me or your own eyes?

Market-based empirical models are the only available “eyes” through which the Commission can perceive the cost of equity, and they should be believed.

To be clear, model-based determination of what equity *costs* does not preclude the application of regulatory judgment to decide to set the allowed ROE for a particular utility above or below the costs of equity, on incentive or other grounds. For example, if the Commission seeks to avoid large, rapid changes in allowed ROEs (as Opinion No. 551 stated¹⁵⁶), it could craft stabilization rules that would limit the rapidity with which a utility’s allowed ROE may change, in either direction. As discussed in Part III.E.6, *infra*, such stabilization could be accomplished by referencing state-allowed ROEs. But all such deviations from cost-based ROEs should be explicit, explicitly justified, and designed to be fair to both ratepayers and shareholders as the cost of equity varies bi-directionally over time.

6. If properly used, state-allowed ROEs can provide a lagging, but useful, indicator of utilities’ equity costs.

E9. How, if at all, should the Commission consider state ROEs?

E9.a. How and why do state ROEs vary by state?

E9.b. How are certain state ROEs more or less comparable to Commission ROEs?

¹⁵⁵ See Ex. No. A-1, § E11 (“both the CAPM and the DCF model reflect capital market conditions and offer different perspectives on the same problem. . . . However, without a new and better model, exercising judgment to adjust the ROEs determined by academically tested and endorsed models likely introduces additional measurement error and speculation.”)

¹⁵⁶ See Op. No. 551, PP 262-63.

E10. If the Commission considers state ROEs, how should it compare FERC-jurisdictional transmission ROEs with state ROEs that apply to utilities that are (a) distribution and transmission companies; or (b) distribution, generation, and transmission companies?

State ROEs exhibit considerable gradualism and lag,¹⁵⁷ which presently (in the current declining-equity-cost era) means they tend to overstate the cost of equity. Nonetheless, there are reasonable ways in which the Commission can reference state-allowed ROEs. One way is through a Risk Premium study.¹⁵⁸ To the extent the Commission relies on Risk Premium results based on past regulatory outcomes, it could look to ROEs allowed by state commissions. Notwithstanding the intuitive appeal of using past FERC allowances to set FERC-jurisdictional rates, reference to state allowances is reasonable if they are properly used. State-allowed ROEs:

- Are collected and published by third-party sources—in particular, by Regulatory Research Associates (“RRA”), the source recommended by Morin’s *New Regulatory Finance*.¹⁵⁹
- Are closely aligned with the information on which investors rely, as RRA’s reports are part of S&P Market Intelligence (formerly SNL Financial), an investor-oriented research service.¹⁶⁰
- Are generally the allowed base ROE for a specific company, not a group of unrelated companies, and without inventive adders.
- Provide a large and thus reliable set of recent inputs.
- Reflect the fact that most transmission-owning public utilities receive the lion’s share of their transmission revenues through bundled retail rates, outside of federal rate regulation.

¹⁵⁷ See Ex. No. A-2, at 41.

¹⁵⁸ The Commission could also moderate ROE changes in either direction by consistently referencing the representative value from a large number of recent state-allowed ROEs for comparable utilities.

¹⁵⁹ See Morin, *supra*, at 123.

¹⁶⁰ See CAP-500 at n.70 & accompanying text.

- As compiled by RRA, have formed the basis for risk premium studies endorsed and presented by witnesses sponsored by transmission owners.¹⁶¹

When taken out of context, certain state-allowed ROEs may appear to be out of line with industry norms, even though the resulting pre-incentive WACC is in line with industry norms. Such variations make the *range* of state-allowed ROEs uninformative in identifying either the cost of equity or a reasonable ROE stabilization method.¹⁶² Thus, for any purpose, in regulating typical transmission ROEs, the Commission should look to recent state commission decisions concerning non-generator electric utilities, because investors perceive the cost-recovery risks associated with the transmission segment and distribution segment as being similar, and perceive both of these “wires” segments as being less risky than generation.¹⁶³

F. No “mismatch” results from applying the market cost of equity to net plant rate base

1. The cost that utilities incur to attract equity is determined in financial markets

F1. Does the mismatch between market-based ROE determinations and a book value rate base support current market values? Is this mismatch a problem?

Question F1 seeks comment on the theory that market-based ROE determinations are conceptually mismatched with rate bases measured by depreciated original cost. It thereby raises

¹⁶¹ See testimony submitted by the New England Transmission Owners in EL11-66 *et. al.* (NET-02200, at 94:10-12; NET-1320; NET-1708). We are not suggesting that any aspect of this study be repeated for use in future proceedings, other than the general fact of its reference to state commission allowances, as it included a clearly erroneous mismatch. It used *average* utility bond yields to compute the bond yield difference between the multi-year baseline period and the six-month study period, and then added the resulting equity risk premium to higher-yield, *Baa-rated* bond yields. This study also made a dubious choice by including ROEs for retail power sales by generation-owning utilities.

¹⁶² Ex. No. A-2 at 41 (explaining the problem, and stating that it “can be avoided through an approach that combines a large number of recent state-allowed ROEs, by utilizing them for risk premium analysis or by referencing their median or mean”).

¹⁶³ *Id.* at 43. For example, Standard & Poor’s documentation of its credit rating methodology for utilities, S&P Global RatingsDirect, *Key Credit Factors for the Regulated Utilities Industry* (Nov. 19, 2013) categorizes as less risky (and is therefore more tolerant of higher leveraging) if “[a] vast majority of operating cash flows come from regulated operations that are predominantly at the low end of the utility risk spectrum (e.g., a ‘network,’ or distribution/transmission business unexposed to commodity risk and with very low operating risk).” *Id.* at 17.

the question whether the allowed ROE should reflect the E/B method, which divides projected earnings by an equity book value that supposedly matches the net book value rate base to which the allowed ROE will apply. While we address the main issues with the E/B method in Parts III.H.1 and III.H.2.c), *infra*, we here address this “matching” theory. For multiple reasons, the E/B approach does *not* provide an allowed ROE that better matches a net book value rate base than the longstanding approach of applying a market cost of equity to net plant rate base.

First, the “mismatch” theory is based on a fundamental conceptual error. The cost of equity to a regulated utility is not the accounting return that it, or comparable firms, have received or expect to receive on book value equity. Several leading academic texts confirm that economic rates of return are not the same as accounting-based rates of return. Dr. Cornell cites several leading academic texts that demonstrate that “accounting based rates of return do not provide meaningful estimates of economic rates of return,” and that accounting-based rates of return should not be used to estimate ROEs for regulated utilities.¹⁶⁴

As the Commission has recognized, the cost of equity to the utility is the return that equity investors require in order to be induced to have their capital invested in the assets used to provide regulated utility service.¹⁶⁵ Because capital is fungible and mobile, at any given time the original cost of inducing it to stay invested in utility assets is the market-based cost of capital attraction, which equals the return then available in capital markets for other investments of comparable risk. Thus, there is no mismatch in applying a cost-based ROE found by estimating the market cost of equity capital to a cost-based net plant rate base. When utilities procure other inputs (e.g., land or labor) at a price determined by competitive markets, nobody contends that including those competitively-priced costs in rates based on net original cost is any kind of

¹⁶⁴ Ex. No. A-1, § F1 (citing Fisher & McGowan (1983), Robichek (1978), and Lev & Gu (2016)).

¹⁶⁵ See *Coakley* Briefing Order P 36 n.73.

“mismatch.” There is likewise no “mismatch” when ROEs set at the market-indicated cost of equity are applied to net plant values. Rather, the reasonableness of this approach is the fundamental teaching of *Hope*, which has served long and successfully as the bedrock of ROE determination and rate-setting policy under the Federal Power Act and Natural Gas Act. In the modern financial world, where more than a hundred trillion dollars in fluid global capital hunts opportunities to earn returns, utilities that offer such risk-comparable market returns will be able to attract capital.

If the allowed return on the equity-funded share of the rate base is kept in line with the market cost of equity as it varies over time, then at any given time, investors will (by definition) be allowed the same return on their rate-based investments as they would have earned on an investment in a comparable-risk unregulated enterprise. It follows that over the economic life of each rate base asset, the cumulative allowed return will align with what investors would have received by investing in comparable-risk unregulated enterprises. An example provided by Alfred Kahn demonstrates that the supposed “inconsistency” between a market-determined cost of equity and original-cost accounting incoherently “assumes at one and the same time that the commission allows returns on equity (r) in *excess* of and *equal* to the cost of capital (k)”¹⁶⁶ More recent academic texts confirm that a firm’s “market-to-book value exceeds 1.0 when investors expect ROE to consistently exceed the cost of equity for the firm.”¹⁶⁷

It might be contended that the market value of utility assets generally exceeds their regulatory book value, and that it would somehow promote fairness to apply a higher ROE to a rate base valued by the latter measure. That argument was rejected in *Hope*. It is also belied by

¹⁶⁶ I Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* at 49-50 & n.72 (M.I.T. Press 1988) (emphasis altered).

¹⁶⁷ Ex. No. A-1, § F2 (citing Penman (2016) and Holthausen & Zmijewski (2019)).

the Commission’s provision for recovery of “stranded investment” in Order No. 888.¹⁶⁸ Utilities argued then that the advent of robust competition for generation sales left the market value of certain generation investments below their regulatory book value. The Commission accepted that premise and provided procedures for recovery of the difference. The Commission has similarly protected “stranded” investment in transmission assets whose market value, due to technological progress, has fallen below their book value.¹⁶⁹ If it is fair to provide for recovery of a market cost of equity on book value that exceeds market value, then it is likewise fair to provide for recovery of a market cost of equity on book value that is below market value.

Second, the factual premise of the “mismatch” theory is false. The equity book value of utility companies’ traded parents (the divisor of the E/B ratio) is *not* equivalent to utilities’ book-value rate base. To be sure, transmission owner witnesses have repeatedly suggested this analogy, as a rationalization for referencing the E/B ratio. But even at the parent (consolidated financial statement) level, large and pervasive differences exist between equity book value and net plant book value. This difference can readily be seen in the same Value Line reports from which the proposed E/B method would take its inputs.

For example, consider the February 15, 2019 Value Line for FirstEnergy Corp. (focusing on that parent company because it provided the highest proxy E/B ratio in a recent study presented to the Commission), looking to the same projection period (2022-24) as would be used

¹⁶⁸ See *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, 75 FERC ¶ 61,080, FERC Stats. & Regs. at 31,788-89 (1996), *on reh’g*, Order No. 888-A, 78 FERC ¶ 61,220, *on reh’g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *on reh’g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff’d in relevant part sub nom. Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff’d sub nom. New York v. FERC*, 535 U.S. 1 (2002).

¹⁶⁹ See *Smart Grid Policy*, 128 FERC ¶ 61,060, P 141 (2009) (“the Commission will allow single issue rate treatment of otherwise stranded costs for jurisdictional legacy systems being replaced by jurisdictional smart grid equipment, provided that proposals to recover these costs are supported by an equipment migration plan that minimizes the stranding of unamortized costs of legacy systems”).

under the NOI's contemplated approach. For that company and period, the expected book value common equity is about \$10.7 billion.¹⁷⁰ Yet for the same company and period, the "Net Plant" is \$36 billion, and the equity ratio share of Net Plant is about \$12.1 billion.¹⁷¹ Thus, the supposedly equivalent book value and net plant values diverge by about \$1.4 billion, exceeding 13% of the book value common equity—a percentage larger than a typical allowed return on transmission equity. And in this case, the >13% difference relates to a holding company that has almost entirely shed its non-utility operations. For most proxies, the purported analogy between the equity book value of utility companies' traded parents and utility net plant is further confounded by the fact that at the parent-level, consolidated earnings commonly include substantial earnings on unregulated or diversified operations, which may well have a higher ratio of earnings to net plant.

For an example of this difference between parent-level and utility-level E/B ratios, consider Wisconsin Energy ("WEC"), which provided the highest proxy E/B ratio in the illustrative calculations of *Coakley* Briefing Order P 54, and referencing the March 22, 2013 Value Line report underlying that calculation.¹⁷² As of that study, WEC's most recent actual E/B (for 2012) was 13.2%, and its fifth-year projected E/B was a roughly similar 14.0%. But the same year's actual E/B at the operating-utility level, for WEC's principal subsidiary Wisconsin Electric Power Company, was 10.8%.¹⁷³ WEC's corporate annual report for that year¹⁷⁴ explains this difference. It shows that 36% of WEC's 2012 consolidated earnings came from "Non-

¹⁷⁰ Book value/share of \$19.50 x 550.00 million shares outstanding = \$10.725 billion.

¹⁷¹ "Net Plant" of \$36.000 billion x "Common Equity Ratio" of 33.5% = \$12.06 billion.

¹⁷² See Docket No. EL11-66, Ex. No. NET-709 and Ex. No. NET-710, at 55.

¹⁷³ See WEPCO's FERC Form 1 for 2012, eLibrary No. 20130501-8001, at 117, l. 78 (Net Income of \$367,328,610) and 112, l. 16 (Proprietary Capital of \$3,396,880,705). Taking those accounting entries' ratio, WEPCO's utility-level realized E/B for 2012 was 10.81%.

¹⁷⁴ Wis. Energy Corp., *Standing the Test of Time: 2012 Annual Report* (2013), https://s22.q4cdn.com/994559668/files/doc_financials/annual/wec2012_annualreport.pdf.

Utility Energy,” which “consist[ed] primarily of our PTF units (PWGS 1, PWGS 2, OC 1 and OC 2),” i.e., Port Washington Generating Station Units 1&2, and Oak Creek expansion Units 1 & 2.¹⁷⁵

Large differences between equity book value and net plant book value can arise for any number of reasons. These include timing differences in depreciation and tax accounting, and the application of “mark to market” accounting for some purposes at the parent-company level.¹⁷⁶ Major differences in E/B ratios also arise due to differences equity ratios at the traded parent and operating utility levels. Almost without exception, traded parents are more leveraged (have lower equity ratios) than their operating subsidiaries. In the same FE Value Line referenced above, FE’s most recent fully-historical (2017) equity ratio was only 15.7%, whereas the equity ratio of its transmission-owning subsidiary was approximately 58.0%.¹⁷⁷ Consequently, FirstEnergy’s parental E/B was exceptionally high in part because highly leveraged parental debt represented a balance sheet liability that reduced the divisor of that ratio.

Real-world differences like these belie the hypothetical example that Dr. Morin (showing his background as a witness retained by utilities to support their requested ROEs) presents as purported demonstration that “the DCF cost rate understates . . . the investor’s required return when stock prices are well above . . . book.”¹⁷⁸ His example is based on a simplistic, and factually incorrect, assumption that the rate base to which allowed ROE is applied equals the equity book value divisor of the M/B ratio. It also assumes a 100% equity capital structure for a

¹⁷⁵ *Id.* at F-13; *see id.* at F-7 (explaining acronyms and describing “Non-Utility Energy Segment”), F-9 (reporting consolidated earnings by segment).

¹⁷⁶ *See* Ex. A-1 at 15-17.

¹⁷⁷ *See* Am. Transmission Sys., Inc., Annual Report (FERC Form 1), at 112, ll. 16, 24, (Mar. 30, 2018), eLibrary No. 20180330-8022) (Total Proprietary Capital of \$1,514,011,052, and Total Long-Term-Debt of \$1,096,346,454; the ratio of the first figure to the sum of the two figures is 58.0%).

¹⁷⁸ Morin, *supra*, at 435.

publicly-traded operating company that has only rate-regulated revenues. In this unrealistic hypothetical, a utility with a 2:1 M/B ratio (per share, \$100 market price/\$50 book value) is allowed a 10% ROE, developed on a DCF-like basis by adding a 5% dividend yield to 5% growth, and applied to a rate base of \$50/share that exactly equals the \$50/share book value. On those contrived premises, the DCF-based 10% allowed ROE appears to produce only enough return to fund dividends, with no retained earnings left to fund growth. But suppose the true cost of equity is a constant 10%, and the utility again has per-share market value of \$100 and share book value of \$50, but also has net plant rate base of \$90/share, exceeding its share book value. (As shown above, there is no reason to assume the latter two amounts are identical, and ample reason to expect the plant asset base to exceed share book value.) In this revised scenario, the utility would be allowed \$9/share in return and would have \$4/share in retained earnings from which to fund growth. Moreover, while in this hypothetical the DCF method would initially produce a return 1% below the assumed cost of equity (9% rather than 10%), that model error would be self-correcting, because investors would value (price) the stock such that its dividend yield would rise until the sum of its dividend yield and growth aligned with the utility's cost of equity. That is because the DCF method's reference to market prices makes it self-correct differences between allowed returns and the cost of equity, whereas the E/B method perpetuates those differences.

2. The M/B ratios of utilities' *parents* exceed unity by much more than do the M/B ratios of utilities themselves

F2. Why have most or all utility market-to-book ratios consistently exceeded one?

Question F2 asks why "utility" market-to-book ratios typically exceed unity. This question, however, is imprecisely worded. As is recited elsewhere in the NOI, utility operating

companies are not publicly traded and, therefore, have no readily visible “market” stock price.¹⁷⁹ Accordingly, the market-to-book ratios of utilities themselves cannot be said to typically exceed unity.

One can, however, with considerable effort, extract benchmark M/B ratios at the operating company level from time to time, by scrutinizing the prices paid by holding companies or their subsidiaries to acquire operating utilities, such as NextEra’s recent acquisition (from Southern Company) of Gulf Power Company. The difficulty of such benchmarking is indicated by the fact that the price paid by NextEra does not appear in the public record of Docket No. EC18-117, where the Commission reviewed that transaction. It seems, however, that NextEra paid approximately Gulf Power Company’s net book value: On January 1, 2019, it paid “approximately \$4.47 billion in cash consideration” and assumed “approximately \$1.3 billion of Gulf Power debt,”¹⁸⁰ thus committing approximately \$5.77 billion. In exchange, it acquired an operating utility with a year-end 2018 regulatory book value of \$5.32 billion.¹⁸¹ Thus, this transaction indicates a utility-level M/B ratio of approximately 1.08, much closer to unity than the contemporaneous M/B ratios of NextEra (approximately 2.53¹⁸²) or Southern (approximately 1.78¹⁸³).

¹⁷⁹ See NOI Question H.1.3 (“The Commission adjudicates cases at the operating company level, for which there is no public data like stock prices, growth rates, and betas.”).

¹⁸⁰ NextEra, Inc., Annual Report (SEC Form 10-K) at 98 (Feb. 15, 2019).

¹⁸¹ Gulf Power Co., Annual Report (FERC Form 1) at 111, l. 85 (Apr. 17, 2019), eLibrary No. 201901418-8005 (“Total Assets” of \$5,320,620,672).

¹⁸² Yahoo Finance identifies NextEra Energy’s (ticker NEE) year-end 2018 market price as \$172.67. See <https://finance.yahoo.com/quote/NEE/history?p=NEE&.tsrc=fin-srch>. The February 15, 2019 Value Line for NEE estimates a year-end 2018 book value per share of \$68.30. Applying those amounts’ ratio, NEE’s year-end 2018 M/B was approximately 2.53.

¹⁸³ Yahoo Finance identifies The Southern Company’s (ticker SO) year-end 2018 market price as \$43.38. See <https://finance.yahoo.com/quote/SO/history?p=SO>. The February 15, 2019 Value Line for SO estimates a year-end 2018 book value per share of \$24.35. Applying those amounts’ ratio, SO’s year-end 2018 M/B was approximately 1.78.

An even lower M/B ratio for an operating utility is indicated by the April 2013 acquisition of Atlantic Path 15 by Duke-American Transmission Company. The seller received “a total sale price of approximately \$56 million,”¹⁸⁴ in exchange for an entity whose book value equity (“Total Proprietary Capital”) exceeded \$60 million.¹⁸⁵ Thus, the M/B ratio indicated¹⁸⁶ by that transaction is below unity.

Circa 2007, Alliant subsidiary Interstate Power and Light Company (“IPL”) sold its transmission system to the nascent ITC Midwest—not only selling the associated transmission assets, but doing so as a going concern with its transmission personnel transferred to ITC Midwest.¹⁸⁷ IPL expected to receive approximately \$165.7 million in “Net Proceeds Above Net Book Value of Assets,” which were estimated to be \$432.2 million at the anticipated time of closing.¹⁸⁸ Thus, this transaction indicates a utility-level M/B ratio of approximately 1.38,¹⁸⁹ a significant portion of which presumably reflected the market value of ITC Holdings’ substantial non-cost incentive ROE adders and ability to profit through double-leveraging. At the exchange-traded parent level, as of year-end 2007, ITC Holdings’ M/B ratio was approximately 4.3.¹⁹⁰

Similarly, when Monongahela Power Company sold its Ohio operations to Columbus Southern (a subsidiary of AEP) at year-end 2005, it did so for a utility-level M/B ratio of

¹⁸⁴ Atl. Power Corp. Quarterly Report (SEC Form 10-Q), at 12 (May 8, 2013).

¹⁸⁵ Atl. Path 15, LLC, Quarterly Report (FERC Form 3-Q), at 112, l. 16 (Apr. 30, 2013), (eLibrary No. 20130430-8004. The transaction also included assumption of debt, which is excluded from both sides of the foregoing comparison.

¹⁸⁶ The SEC Form 10-Q also states (at 12) that Atlantic Power “recorded a gain on sale of approximately \$7.0 million,” which would suggest an M/B ratio slightly more than unity rather than slightly less than unity.

¹⁸⁷ See generally *ITC Holdings Corp.* 121 FERC ¶ 61,229 (2007).

¹⁸⁸ See *In re Interstate Power & Light Co.*, No. SPU-2007-0011, Ex. No. CAH-1, sched. K (Iowa Utils. Bd. Mar. 30, 2007).

¹⁸⁹ That is, in \$ millions, $(165.7 + 432.2)/432.2 = 1.38$.

¹⁹⁰ According to the September 16, 2016, Value Line for ITC Holdings, its split-adjusted, year-end 2007 book value per share was \$4.37, and its contemporaneous market price was between \$12.6 and \$19.5; Historic Stock Price.com. <https://www.historicalstockprice.com>, specifies \$18.81. The ratio $\$18.81/\4.37 exceeds 4.3.

approximately 1.17—much closer to unity than the M/B ratios of either FE (1.64) or AEP (1.58).¹⁹¹

The logical next question is why the M/B ratios of extant¹⁹² proxy companies such as AEP, FE, NEE, and SO exceed unity by so much more than is the case for their operating electric utility subsidiaries. The reasons will vary by company, but the likely explanations include the following. One, proxies' business commonly includes substantial profitable activities that generate revenues mainly from human and intellectual capital rather than booked assets. Examples include power trading, non-utility home maintenance and energy efficiency services,¹⁹³ infrastructure services,¹⁹⁴ and more. Such revenue enlarges the numerator of the M/B ratio, without a corresponding increase to the divisor. A 2012 academic publication¹⁹⁵ explains:

In a growing number of companies, the role and the amount of intangibles (e.g., human, structural, managerial, technological and customer capital, patents, etc.) increase to such points that their value completely overwhelms the value of all the other assets combined (Hirschey et al. 2001; Daum 2003, Hand and Lev 2003). Nevertheless, these important assets are not captured on the balance sheet. For example, R&D and advertising expenditures are often regarded as investments in future value creation but, due to their uncertain nature, are being expensed, contributing to the gap between book and market value of equity.¹⁹⁶

Two, post-restructuring, power is sold at market prices disconnected from net plant. Again, the resulting revenue enlarges the numerator of the M/B ratio, without a corresponding increase to

¹⁹¹ Ex. No. A-2, at 64:1-4.

¹⁹² ITC Holdings is no longer publicly traded, having been acquired by Fortis and an entity owned by Singapore. See *Consumers Energy Co. v. Int'l Transmission Co.*, 165 FERC ¶ 61,021, P 10 (2018).

¹⁹³ See, e.g., BGE Home, <https://www.bgehome.com/>.

¹⁹⁴ See, e.g., CenterPoint Energy and Vectren Merger: Delivering Energy, Service and Value at 10 (Apr. 23, 2018), <http://investors.centerpointenergy.com/static-files/344a0236-4d9a-4aeb-bf04-ec646b55d75f> (Vectren Infrastructure Services Corp. is “[o]ne of the largest US providers of underground construction and repair services to LDCs and pipelines” and contributed 14% of Vectren’s 2017 net income; Vectren Energy Services, which provides project services involving “energy performance contracting” and “sustainable infrastructure,” contributed another 5%).

¹⁹⁵ M. Aleksanyan & K. Karim, *Searching for Value Relevance of Book Value and Earnings: a Case of Premium vs. Discount Firms*, 41 Rev. Quantitative Fin. & Acct 489 (2013), <http://eprints.gla.ac.uk/68615/>.

¹⁹⁶ *Id.* at 491-92 (footnote omitted).

the divisor. Three, market and book values diverge due to regulatory timing differences related to depreciation, taxes, and the like. Four, differential leveraging at the parent and operating subsidiary levels means that operating subsidiaries commonly receive an equity return on a higher equity ratio than applies at the consolidated, parental level.¹⁹⁷ In effect, the consolidated entity receives an equity-level return on assets funded by debt. The numerator of the M/B ratio is raised by the equity-level return, while the liability for the associated debt reduces the numerator of that ratio.¹⁹⁸ None of these situations constitute reasons to diverge from the longstanding rule that the market-based cost of equity is applied to book-value rate base.

3. As nearly as is practical, allowed base ROEs should be set at the cost of equity

F3. How should the ROE level be set relative to the cost of equity?

NOI Question F3 asks a simple question: “How should the ROE level be set relative to the cost of equity?” The correspondingly simple answer is that, in principle, the allowed ROE should be set *at* the cost of equity. As the Commission stated in 1988:

There is compelling economic justification for relying on the market cost of capital as the standard for rate of return decisions. Furthermore, a market cost of capital approach addresses both the comparable earnings and attraction of capital standards of the *Hope* decision.¹⁹⁹

The Federal Power Act aims to protect consumers from “exorbitant rates,”²⁰⁰ completely prevent “excessive rates and charges,”²⁰¹ and does not permit “even ‘a little unlawfulness.’”²⁰² As summarized by a leading textbook on corporate finance: “Because it has a monopoly, an

¹⁹⁷ See, *infra*, Part III.H.

¹⁹⁸ See generally, Ex. No. A-1, § F.2.

¹⁹⁹ Order No. 489, FERC Stats. & Regs. at 30,993.

²⁰⁰ *Am. Pub. Power Ass’n v. FPC*, 522 F.2d 142, 147 (D.C. Cir. 1975) (Bazelon, J., concurring).

²⁰¹ *Atl. Ref. Co. v. Pub. Serv. Comm’n*, 360 U.S. 378, 388 (1959).

²⁰² *Consumers Fed’n of Am. v. FPC*, 515 F.2d 347, 358 n.64 (D.C. Cir. 1975) (quoting *FPC v. Texaco, Inc.*, 417 U.S. 380, 399 (1974)).

unregulated electric . . . company could exploit its customers. Therefore, regulators (1) determine the cost of the capital investors have provided the utility and then (2) set rates designed to permit the company to earn its cost of capital, no more and no less.”²⁰³ The “no more” portion of this restatement has dispositive support in governing D.C. Circuit case law: ““The cost of capital is the *minimum* rate of return necessary to attract capital to an investment.””²⁰⁴

There are, of course, practical and statutory-procedures limitations to that principle. The cost of equity cannot be directly observed and must, therefore, be inferred through one or more of the time-tested techniques that translate study-period financial market data into a comparable-risk equity cost estimate. Consequently, each utility’s cost of equity cannot be re-studied and re-set every day. The proper occasions to do so are whenever an entity with standing to do so seeks an ROE change pursuant to FPA section 205 or 206. Incentive adders present separate questions; we address them in the companion response to the Docket No. PL19-3 Incentives NOI. But none of those qualifiers alter the basic principle: As nearly as practicable, the base ROE allowed in FERC-regulated rates should be set at the best available estimate of the contemporaneous market cost of the equity invested by utilities in the assets used to provide the associated FERC-regulated services. Allowing less risks depriving the utility of needed capital and compromising its ability to serve the public. Allowing more risks exploits consumers and allows utilities to earn monopoly rents, contrary to the Commission’s consumer-protection mission.

²⁰³ Ehrhardt & Brigham, *supra*, at 336 n.1.

²⁰⁴ *Tenn. Gas Pipeline Co. v. FERC*, 926 F.2d 1206, 1208 (D.C. Cir. 1991) (emphasis added) (quoting A. Lawrence Kolbe, *et al.*, *The Cost of Capital: Estimating the Rate of Return for Public Utilities* at 13 (1984)).

4. The DCF model's dividend yield term should not be replaced with dividends divided by book value

F4. Should the Commission revise our use of these models to account for the mismatch between market-based ROE determinations and book-value rate base? If so, how? For example, should the Commission adjust the dividend yield used in the DCF model to represent a yield on book value rather than a yield on stock price?

Replacing the dividend yield term of the DCF model with dividends divided by book value would violate the basic principles of the DCF method, and was rightly rejected in *Orange & Rockland Utilities, Inc.*²⁰⁵

As explained by the D.C. Circuit, “The premise of the DCF model is that the price of a stock is equal to the stream of expected dividends, discounted to their present value.” *Williston Basin Interstate Pipeline Co. v. FERC*, 165 F.3d 54, 57 (D.C. Cir. 1999). Thus,

DCF analysis works from the proposition that the price of a stock is the current value of all expected future cashflows, discounted at the rate of return.⁶ The key equation, $[k] = D_1 / P_0 + g$, employs the current price of the utility, because that price is understood to represent the best possible assessment of the available information about the utility. See, e.g., Morin, *Utilities' Cost of Capital* 119-20.

⁶ This can be stated as $P_0 = D_1 / ([k] - g)$, i.e., the price of a stock equals the value of next year's dividends divided by the cost of capital net of the steady future growth rate of dividends. See Kolbe, *The Cost of Capital* 54; Morin, *Utilities' Cost of Capital* 82. This can then be restated to focus on what the regulator is seeking to discover, the cost of capital: $[k] = D_1 / P_0 + g$.

Tenn. Gas Pipeline Co., 926 F.2d at 1210 & n.6.²⁰⁶

Dividends/Book Value have no place in these equations, for the simple and dispositive reason that the price paid by study-period investors (“P₀”) is the market price, not book value.

²⁰⁵ Op. No. 314, 44 FERC ¶ 61,253, at 61,952, *on reh'g*, Op. No. 314-A, 45 FERC ¶ 61,252 (1998), *reconsideration denied*, 46 FERC ¶ 61,036 (1999).

²⁰⁶ To avoid confusion when this passage is read together with other sources, we have re-lettered the variable representing the cost of equity as “k,” rather than “r” as in the original. Re-labelling the variable, of course, makes no substantive difference.

Consequently, substituting book value for the P_0 term of the equation “[k] = $D_1 / P_0 + g$ ” would result in miscalculation of k , the cost of equity.

5. ROEs should be set so as to track the cost of equity, not to drive M/B ratios towards unity

F5. Should the Commission consider adjusting ROEs to account for market-to-book ratios above or below one? Would doing so introduce circularity into Commission ROEs by setting the ROE at whatever level of earnings the market expected, rather than making an independent assessment of the appropriate ROE?

Question F5 appears to ask whether ROEs should be set so as to drive M/B ratios towards unity. We do not argue for doing so. There may have been arguments for that approach when operating utilities’ stock was traded publicly, utility revenues derived almost exclusively from regulated return on net plant, and utilities’ net plant rate bases and equity book values were equivalent. In that context, it was commonly argued that an M/B ratio exceeding unity indicated a market expectation that the utility would receive more than its cost of equity (and, conversely, that an M/B ratio below unity indicated a market expectation that the utility would receive less than its cost of equity), and that regulators could home in on allowing only the cost-based return by raising or lowering returns until M and B converged.²⁰⁷ But that context no longer applies.

First, utilities’ net plant rate bases and equity book values are not equivalent. As the Commission can readily confirm from the FERC Form 1 accounting information it collects, the equity-financed shares of utilities’ net plant rate bases consistently exceed their proprietary capital. For example, consider Florida Power & Light (“FPL”), one of the nation’s largest electric²⁰⁸ utility operating companies. Its 2018 FERC Form 1 reports factors that produce an

²⁰⁷ See, e.g., Robert J. Gelhaus & Gary D. Wilson, Note, *An Earnings-Price Approach to Fair Rate of Return in Regulated Industries*, 20 Stanford L. Rev. 287 (Jan. 1968); see also Kahn, *supra*, 48-50 & nn.69-70.

²⁰⁸ We use FPL for this example rather than, e.g., Pacific Gas & Electric, because FPL is not a combination gas-electric utility.

equity-ratio net book value of \$24.6 billion,²⁰⁹ considerably exceeding its \$21 billion²¹⁰ in proprietary capital. This difference arises, in part, because Accumulated Deferred Income Tax is subtracted only from the latter. Second, regulated investor-owned operating utilities are now generally owned as subsidiaries of holding companies and not exchange-traded themselves, and their parents are not rate-regulated. This parent-subsidiary relationship further disconnects the actual and projected E/B ratios of proxy companies from operating utilities' returns on net plant. It also means that trying to make the M/B ratios of exchange-traded, non-regulated holding companies converge on unity would be a dubious regulatory goal, if it could even be accomplished, as those companies' M/B ratios may well result from expectations of the profitability of non-utility and/or non-regulated business.

Conversely, however, high M/B ratios at the holding company level should not produce high allowed ROEs at the operating company level. Yet that would be the consequence if actual or projected E/B ratios were used to determine allowed ROEs. High M/B ratios translate directly into high E/B ratios, as the two ratios share a common denominator, and their respective numerators (M for Market value, also known as "P" for market Price) tend to move in tandem, because earnings inure to shareholders' benefit. Consequently, "[c]ompanies with relatively high rates of return on [book] equity generally sell at higher multiples of book value than those with low returns."²¹¹ But for the same reasons that counsel against attempting to steer the M/B ratios of utilities' exchange-traded parent toward unity, high M/B and E/B ratios at the exchange-traded parent level do not indicate the cost of equity to operating utilities. Consequently, the E/B

²⁰⁹ See Fla. Power & Light Co., Annual Report (FERC Form 1) at 112, ll. 16, 24, eLibrary No. 20190419-8034 (Total Proprietary Capital of \$21,021,282,579 and Total Long-Term Debt of \$11,636,301,317, i.e., an equity ratio of 64.4%); *id.* at 200, l. 15 (Net Utility Plant of \$38,213,486,574; multiplying that amount by 64.4% produces the referenced \$24.6 billion).

²¹⁰ See *id.* at 112, l. 16.

²¹¹ Ehrhardt & Brigham, *supra*, at 101.

method should not be used, and if it were to be used, it would be necessary to adjust its results to recognize that the E/B ratios of proxies (exchange-traded parents) with high M/B ratios are not representative of the E/B ratios associated with operating utilities.²¹²

Ironically, the difference between exchange-traded parents and operating utility companies attenuates concerns that proxy company earnings (whether actual or expected) are affected by the ROEs allowed by regulators, including FERC. Such a feedback loop could formerly be seen in the E/B studies wherein ITC Holdings Corp., with its entirely FERC-jurisdictional business model, former large incentive earnings, and an equity-heavy ratemaking capital structure at the operating utility level, had E/B ratios at or near the top of the E/B distribution.²¹³ However, where the FERC-allowed ROEs for the operating subsidiaries of ITC Holdings Corp. used to represent the lion's share of that parent's earnings, they now represent a considerably smaller share of the earnings of Fortis, Inc.²¹⁴ And because ITC's FERC-regulated allowed ROEs now represent a smaller portion of the numerator of its parent's E/B ratio, that ratio is now less sensitive to FERC-allowed ROEs. Such mixture of FERC-regulated earnings with larger non-FERC-regulated earnings is now typical of the exchange-traded parents that could be included in a risk-representative proxy group. Thus, there is now more reason to be concerned about whether the financial metrics associated with exchange-traded parents are representative of operating utilities than about whether operating utilities' allowed ROEs will feed back into parent-level financial metrics. To the limited extent that exchange-traded parents are representative proxies for operating utilities, however, allowing parental E/B ratios to feed

²¹² See Part III.F.2, *supra*.

²¹³ See, e.g., Docket No. EL14-12, Ex. No. MTO-31.

²¹⁴ See, e.g., Fortis's 2018 annual report to shareholders, *The Power of Focus: 2018 Annual Report* at 34 (2019), <https://www.fortisinc.com/docs/default-source/finance-regulatory-reports/annual-reports/fortis-2018-annual-report-final1.pdf> (the ITC segment contributed only \$361 million to Fortis' \$1,100 million in "Net Earnings Attributable to Common Equity Shareholders).

into operating companies' allowed ROEs would create an unreasonable feedback loop in which utilities' above-cost allowed ROEs would raise parental E/B ratios, and both would spiral up from there.

We address that feedback loop in case such feedback is what Question F5 means by “circularity.” As used in the relevant academic literature, however, “circularity” has a different, and more important sense. It means a method that does not reference securities prices, and thus never enables market price information to correct starting-point differences between allowed ROEs and the cost of equity. As shown in Part III.H.2.c)(1) below, the E/B method is circular in that way.

G. *Base ROEs exceeding the cost of equity should not be presumed just and reasonable*

1. To assess whether existing ROEs remain just and reasonable, the Commission should compare them to the cost of equity indicated by well-designed market-based methods

G1. How should the Commission determine if existing ROEs are just and reasonable?

The “just and reasonable” standard of FPA sections 205 and 206 is meant to “afford consumers a complete, permanent and effective bond of protection from excessive rates and charges,” *Atl. Ref. Co.*, 360 U.S. at 388, and permits “not even ‘a little unlawfulness.’”

Consumers Fed’n of Am., 515 F.2d at 358 n.64 (quoting *Texaco*, 417 U.S. at 399). “The ‘just and reasonable’ lodestar is no loftier under section 206 than under section 205. . . .”²¹⁵

Accordingly, FPA section 206 empowers the Commission to reduce any rate that is not the “lowest reasonable rate,” even if the existing rate is within a “zone of reasonableness,” *FPC v. Nat. Gas Pipeline Co. of Am.*, 315 U.S. 575, 585-86 (1942) (quoting Natural Gas Act § 5(a), 15

²¹⁵ *FirstEnergy Serv. Co. v. FERC*, 758 F.3d 346, 353 (D.C. Cir. 2014).

U.S.C. § 717d(a)), and mandates that whenever a rate is found to be unjust, unreasonable, or unduly discriminatory, the Commission “*shall*” fix a substitute rate.²¹⁶

These authorities, and the Commission’s foundational policy that base ROEs should track the cost of equity,²¹⁷ cannot be squared with the “quartile approach” discussed in Part III.A.1, *infra*, under which complaints would be dismissed unless the existing ROE, having been shown to exceed the cost of equity, was further shown to exceed the cost of equity by an arbitrarily wide margin. Such a policy would be legally erroneous, as the Commission has an unquestioned statutory obligation to reduce existing rates that are shown to have become unjust, unreasonable, or unduly discriminatory.

In short, the substantive standard for assessing whether an existing base ROE remains just and reasonable should be that an existing base ROE is no longer just and reasonable if it is found to exceed the cost of equity, as measured by the best available empirical tool(s), applied to an appropriate study period. As discussed elsewhere in these Comments,²¹⁸ the reasonable set of such empirical tools includes neither actual E/B ratios, nor forecast E/B ratios, nor implausible equity market risk premiums, nor miscalculated utility rate case risk premiums. We address an associated procedural issue in Part III.G.3, *infra*.

2. Base ROEs exceeding the indicated equity cost should not be presumed to remain reasonable

G2. Is the quartile approach that the Commission proposed in the Coakley and MISO Briefing Orders appropriate? If not, how should the Commission revise this methodology?

The referenced “quartile approach” would create a presumption under which FPA section 206 complainants challenging an existing base ROE would bear a special burden to show that it

²¹⁶ FPA § 206(a), 16 U.S.C. § 824e(a) (emphasis added).

²¹⁷ See, e.g., *Coakley* Briefing Order P 36 & n.73.

²¹⁸ See Parts III.E.1, III.F.1, III.H.2.b)(1), III.H.2.c), & III.H.2.d).

exceeds a level set above the indicated cost of equity (hereinafter, the “shield” level”). The shield level would be set above the center of a composite range, by adding one-eighth of that range’s width. If adopted, the presumption would contravene the FPA’s consumer-protection purpose, as cited in Part III.G.1, *supra*. It would also introduce an illegal asymmetry between the treatment of FPA section 205 and 206 filings; distort the D.C. Circuit’s *Emera Maine* decision; and be arbitrary in its specifics. The vague potential for “rebutting” the presumption does not cure its legal infirmities.

Illegal asymmetry: Such a presumption would introduce an unfair asymmetry between FPA section 205 and FPA section 206. Public utilities filing changes in rates under section 205 apparently would continue to be able to obtain approval of a proposed rate increase if they could show that their cost of equity exceeds their existing allowed ROE by *any* amount. But under the proposed presumption, customers filing section 206 complaints would have to show that the cost of equity is so far below the existing allowed ROE that the difference exceeds the “shield” margin.

Such divergent treatment cannot be squared with the statutory structure. As explained in the foundational *Mobile* and *Sierra* cases,²¹⁹ a rate increase filing made and suspended under FPA section 205 and rate decrease complaint filed under FPA section 206 are both subject to the same “scope and purpose”²²⁰ of Commission review. In both instances, the rates at issue are “subject to being modified by the Commission upon a finding that they are unlawful.”²²¹

This asymmetry also contravenes the 1988 Regulatory Fairness Act, Pub. L. No. 100-473, 102 Stat. 2299 (“RFA”), which, the Commission has found (citing legislative history), was

²¹⁹ *United Gas Pipe Line Co. v. Mobile Gas Serv. Corp.*, 350 U.S. 332 (1956) (“*Mobile*”); *FPC v. Sierra Pac. Power Co.*, 350 U.S. 348 (1956) (“*Sierra*”).

²²⁰ *Mobile* at 341.

²²¹ *Id.*

“‘intended to add symmetry’ between the Commission’s treatment of section 205 rate-increase filings and section 206 complaints seeking rate decreases.”²²² As described by its principal Senate sponsor, the 1988 Regulatory Fairness Act was intended to make “the system for bringing utility rates down . . . similar to the system for bringing rates up.”²²³ The RFA’s principal House sponsor explained: “[w]hen utility costs go up, utilities deserve a rate adjustment. We do not change that. But . . . when the economic factors go in the other direction, consumers deserve just and reasonable rate reductions,” in “the same way that utilities receive just and reasonable rate increases.”²²⁴ Moreover, Congress expected that under the RFA, the Commission would “grant refunds under section 206 with comparable frequency to its granting of refunds under section 205.”²²⁵

Under section 205, when the Commission determines that a rate previously accepted subject to refund exceeds the just and reasonable cost-based rate by *any* amount, the Commission typically requires refunds such that the ultimately settled rate is conformed to the just and reasonable cost-based level. Correspondingly, refunds in FPA section 206 complaint proceedings should be applied such that refunds are due and owing if the existing ROE is found to exceed the

²²² *ENE v. Bangor Hydro-Elec. Co.*, 151 FERC ¶ 61,125, P 28 & n.73 (2015) (quoting *Consumer Advocate I*, 67 FERC ¶ 61,288 at 62,000, *order on reh’g*, *Consumer Advocate II*, 68 FERC ¶ 61,207, at 61,997 (citing 133 Cong. Rec. S10925 (daily ed. July 30, 1987) (statement of Sen. Chafee) (“[u]nder the current law, . . . section 205 and section 206 filings are not treated in the same manner, and this inequality serves to favor the wholesale supplier over the wholesale customers and their residential and commercial customers”); 134 Cong. Rec. H9030 (daily ed. Oct. 27, 1987) (statement of Rep. Bruce) (the Regulatory Fairness Act, in setting a “refund effective date for consumers . . . [uses] essentially the same system used to grant rate increases”); 134 Cong. Rec. H8095 (daily ed. Sept. 23, 1988) (statement of Rep. Gejdenson) (“[t]his legislation represents an attempt to make the current regulatory process more equitable, giving electric consumers the same protections and considerations that supplying utilities currently receive . . . ”)).

²²³ *Regulatory Fairness Act: Hearing Before the Comm. on Energy & Nat. Res.*, 100th Cong., S. Hrg. No. 100-542 at 2 (Nov. 18, 1987) (statement of Sen. Bumpers).

²²⁴ *Id.* at 26 (statement of Rep. Bruce).

²²⁵ S. Rep. No. 100-491, at 6 (1988), *reprinted in* 1988 U.S.C.C.A.N. 2684, 2688.

just and reasonable cost-based ROE, any amount, without application of a presumption that says an overcharge of up to one eighth of a composite range width is permissible.

Emera Maine: The *Coakley* Briefing Order (P 27) presents its shield level as responding to the D.C. Circuit’s observation in *Emera Maine* that there exists a “broad range of potentially lawful ROEs.”²²⁶ But nothing in *Emera Maine* calls for the Commission to create a range within which an existing ROE that is found to exceed the cost of equity is nonetheless shielded from section 206 challenge. *Emera Maine*’s reference to “broad range of *potentially* lawful ROEs” was to the full breadth of the DCF range,²²⁷ as to which *Emera Maine* specifically affirmed the Commission’s Opinion No. 531 ruling that the range is not one of immunity from section 206 rate reduction.²²⁸ Moreover, in the same passage, *Emera Maine* took no issue with the Commission “eventually reduc[ing] the zone of reasonableness to a *single* ROE.”²²⁹ Thus, *Emera Maine* held that although there is a broad range within which an existing ROE *potentially* remains just and reasonable, at any given time, and for the particular circumstances of each case, there is ultimately a *single* level that *is* just and reasonable. Nothing in *Emera Maine* contemplates a presumption that a broad range of base ROEs—extending well above the central estimated equity cost value—are all *finally* reasonable for use in setting cost-based transmission rates, such that an existing ROE anywhere in that range should be presumptively immunized against change. Such a presumption would fly in the face of the D.C. Circuit’s agreement that the zone of reasonableness finally collapses to a single ROE.

Rather than stating that a range of ROEs is presumptively shielded from reduction via section 206, *Emera Maine* presented the quoted observation about a “broad range” by way of

²²⁶ *Emera Maine* at 26.

²²⁷ *Id.* (emphasis added).

²²⁸ *See id.*

²²⁹ *See id.* (emphasis added).

explaining that bare identification of a new and lower cost of equity, *standing alone*, was not sufficient to explain why a prior, higher ROE was *necessarily* unreasonable. The court read Opinion No. 531-B as containing only a “bare conclusion” that any prior ROE standing below the newly determined level was “*per se* unjust and unreasonable,” without making any discernable “actual finding as to the lawfulness of Transmission Owners’ existing base ROE,” and without providing “*any* further explanation.”²³⁰ The court remanded the First Complaint so that the Commission could supply the required finding and explanation, not to vindicate the NETOs’ judicially-rejected argument that “FERC must accept as just and reasonable all ROEs within the discounted cash flow zone”²³¹ by adopting a similar policy of accepting as just and reasonable all ROEs within a sub-range of a broadened and elevated composite zone.

The court demanded further explanation because “a number of factors” might bear on the question whether an existing ROE remains reasonable,²³² and the Commission had not stated clearly which of those factors led it to conclude that the prior 11.14% ROE had become unreasonable. The “mere fact”²³³ that the Commission had found 10.57% to be reasonable did not inherently supply that explanation, because the Commission, having been overly terse, *might* have reached that conclusion on a basis that did not rule out other ROEs also being reasonable. Now, however, the *Coakley* Briefing Order has stated that the Commission intends to set base ROEs at the estimated cost of equity. The *Coakley* Briefing Order refers to the “cost of equity” repeatedly and pervasively—some 46 times in all, and recognizes that “a comparison between the existing ROE and the just and reasonable ROE that the Commission would establish under

²³⁰ *Id.* (emphasis added).

²³¹ *Id.* at 23.

²³² *Id.*

²³³ *Id.* at 26.

current circumstances is relevant—and, in some cases, determinative—for whether the existing ROE remains just and reasonable.”²³⁴

The policy that the Commission seeks to set the base ROE at its best estimate of the cost of equity was left implicit, not stated clearly, in Opinion No. 531-A. Paragraph 10 of that opinion, in which the Commission explicitly (albeit, perhaps overly tersely) explained what made the prior base ROE no longer reasonable, relied on but did not explicitly reference that policy. Once properly placed in the context of that policy, a finding that the rationally identified cost of equity is less than the existing base ROE compels the conclusion that the existing base ROE is no longer just and reasonable.

While this reasoning was unfortunately omitted from Opinion No. 531-A, it is far from novel. Opinion No. 551 affirmed rulings that a base ROE that ““authorized a utility to collect more than is necessary to satisfy the requirements of *Hope* and *Bluefield* would exploit consumers and, therefore, would be unjust and unreasonable,”” and that the burden borne by complainants is that of ““proving that [the existing] . . . Base ROE exceed[s] that level.””²³⁵ In *Bangor Hydro-Elec. Co.*, 122 FERC ¶ 61,038, P 14 (2008), the Commission explained that once it “determines the just and reasonable rate, here, an ROE, that particular rate should be used to calculate refunds, rather than the zone of reasonableness, because that specific rate is the product of the Commission’s considered reflection about what is just and reasonable in that particular case.” And in the foundational *Sierra* case, the Commission concluded that a contract rate that produced a 2.6% rate of return was unreasonably low, simply because it was determined (by stipulation) “that 5.5% was normally a reasonable rate of return for PG&E’s operations.”²³⁶ On

²³⁴ *Coakley* Briefing Order P 20.

²³⁵ Op. No. 551, PP 10, 13 (quoting Initial Decision, 153 FERC ¶ 63,027, P 24 (2015)).

²³⁶ *Sierra* at 353-54.

review, the Supreme Court stated that if the Commission had been correct in disregarding the contract rate, “no further findings were necessary”²³⁷—meaning that in a context where (as here) the allowed return is dictated by cost rather than contract, a finding that the existing return diverges from the cost-based return is a sufficient basis to find the existing return unreasonable.

Nothing in *Emera Maine* finds fault with, or casts any doubt on, that logic. Where the base ROE is intended to be cost-based, it is clearly logical to proceed from a rational finding that X represents the cost of equity to a ruling that it is not reasonable to continue setting rates using a base ROE of X+Y. The only problem with Opinion No. 531-A, in this respect, is that it left this logic unstated.

Emera Maine, in short, does not contemplate, let alone require, a presumption that an above-cost ROE remains just and reasonable unless it exceeds the cost-based level by more than one eighth of the composite range. See *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1503 (D.C. Cir. 1984) (holding that FERC may not, other than as a well-calibrated incentive, allow ““creamy returns”” that exceed the cost-based level, and citing as an example of such non-statutory excess *San Antonio v. United States*, 631 F.2d 831, 851-52 (D.C. Cir. 1980), in which rates would have been allowed to exceed the cost-based level by “seven percent.”).

The proposed presumption, moreover, would have the effect of presumptively barring small ROE reductions unless and until the difference between the indicated cost of equity and the allowed ROE became so large as to trigger a major reduction. In Opinion No. 551²³⁸ and in its brief to the D.C. Circuit in *Emera Maine*,²³⁹ the Commission expressed concern that investors

²³⁷ *Id.* at 354.

²³⁸ Op. No. 551, PP 262-63.

²³⁹ Brief of Respondent Federal Energy Regulatory Commission at 66, *Emera Maine* (D.C. Cir. 2016) (No. 15-1118) (“a 175 basis point decline . . . could be of a sufficient magnitude to undermine Transmission Owners’ ability to attract capital”) (citing Op. No. 531, P 150).

might be disconcerted by an overly large decrease implemented all at once. But the approach proposed in the *Coakley* Briefing Order would create a presumption against small ROE decreases. The proposed change of policy direction, from seeking to limit the size of large ROE decreases, to seeking to limit the frequency of small ROE decreases, is both striking and unexplained. The only consistent theme is that demonstrated reductions in the cost of equity would not to be fully tracked by reductions in allowed ROEs. The resulting bias towards investors and upward departure from cost-based ROEs would be inconsistent with *Hope*, *Bluefield*, and the Federal Power Act.

Arbitrary “Quartile”: The PNA would use one eighth of the composite range’s width as the increment by which the existing base ROE can exceed the composite range’s center and still be found reasonable. The *Coakley* and MISO Briefing Orders rationalize reliance on this one-eighth increment by stating that if the subject utilities were riskier than average, their ROE would be set at the upper midpoint, and it “would be unjust and unreasonable for an average-risk utility to receive an ROE that is closer to the ROE that would be just and reasonable for a utility of above- or below-average risk.”²⁴⁰ While we take no issue with the quoted statement, it does not support the converse proposition, namely, that an ROE is reasonable if it exceeds the risk-appropriate ROE but is *closer* to the risk-appropriate ROE than it is to an even more risk-inappropriate ROE. The rates charged by an average-risk utility should be set using a base ROE that is no more than what would be just and reasonable for an average-risk utility. The observation that an ROE lies closer to the just and reasonable ROE than to some risk-inappropriate unjust ROE does not render that ROE just and reasonable. ROEs within the zone of reasonableness that are close to the just and reasonable ROE may be a little less unjust and

²⁴⁰ *Coakley* Briefing Order P 26; MISO Briefing Order, P 27.

unreasonable, but remain unjust and unreasonable nonetheless. As the D.C. Circuit has ruled, the just and reasonable standard does not permit ““even a little unlawfulness.””²⁴¹

The reference to “quartiles” and the resulting application of one eighth of the composite range rests an implicit and unfounded assumption that there are only three categories of utilities (low-risk, average-risk, and high-risk), as illustrated by the three brackets at the top of the *Coakley* Briefing Order’s Figure 1. The Commission could just as well divide the universe of utilities into, say, five categories (very-low-risk, moderately-low-risk, average-risk, and moderately-high-risk, and very-high-risk). In that case there would be five brackets at the top of a revised Figure 1, and the Order’s purported logic would then indicate that the presumptively reasonable additional increment should be measured by one twelfth, not one eighth, of the width of the composite range. *Emera Maine* specifically rejected the proposition that the midpoint of the upper half was the only available above-midpoint ROE.²⁴² It follows that it would be reversible error to set the shield level on the basis of the same unfounded assumption.

Even if some form of presumption were permissible, the arbitrariness of the Commission’s shield proposal is exacerbated by relying on the width of the composite range to determine the increment by which the shield level may exceed the distribution-indicated cost of equity, because that approach disregards the distribution of results within the composite range. *See* Response to NOI Question A2, *supra*. This arbitrariness echoes an error for which *Emera Maine* reversed Opinion No. 531. The 10.57% base ROE adopted in Opinion No. 531 exceeded 35 of the 38 DCF proxy values, which the *Emera Maine* court noted as a ground for skepticism as to that placement of the base ROE.²⁴³

²⁴¹ *Consumer Fed’n of Am.*, 515 F.2d at 358 n.64 (quoting *Texaco*, 417 U.S. at 399).

²⁴² *See Emera Maine* at 29-30.

²⁴³ *See Emera Maine* at 28 (noting, skeptically, that the Commission had adopted a base ROE that “was higher than

“Rebuttable” character of presumption. The *Coakley* Briefing Order describes its identified “quartile” as one within which continued reasonableness would be merely “presumed,” but the Commission has provided only scant and self-contradictory guidance as to what showing could rebut the presumption. The *Coakley* Briefing Order states (P 29) that the presumption could be rebutted by “changes in the returns on investments in other enterprises having corresponding risks.” Well-conducted DCF and CAPM studies of corresponding-risk proxy groups *are* evidence of those returns, as are returns recently allowed by state commissions to generation-divested electric utilities. If such studies point to results below the existing allowed ROE, then those studies, by themselves, meaningfully “indicate that the existing ROE has become unjust and unreasonable,” *id.* See *Richmond Power & Light v. FPC*, 481 F.2d 490, 498 (D.C. Cir. 1973) (a Commission finding that a new rate is reasonable implies “that the [former] rate was unreasonable”). A Commission policy of rejecting the results of meaningful studies of what equity costs would be arbitrary, especially when those same studies are deemed sufficiently reliable to form the basis for the shield level. Thus, the same evidence used to quantify the presumption inherently rebuts it, making the presumption logically self-defeating.

To bootstrap its way out of that self-contradiction, the *Coakley* Briefing Order suggests (at P 28) that any rebuttal would have to involve “additional evidence.” But what that additional evidence might be is unknown. Under the Order’s proposed sequence, the presumption would be applied *after* all of the data and evaluation needed to apply four approved methodologies has been gathered, reviewed, and deemed sufficiently reliable to form the basis for quantifying the shield level. And the shield level then comes into play when that extensive analysis shows that

35 of the 38 data points FERC used to construct its DCF zone of reasonableness”).

the existing base ROE exceeds the cost of equity. Such a showing itself rebuts the presumption, and the presumption therefore serves no statutorily valid purpose.

3. Base ROE Complainants should remain obliged to present a *prima facie* case that the Base ROE being charged exceeds the equity cost indicated by applicable market-based empirical models

G3. When a successive complaint is filed while the current ROE is being adjudicated (i.e., a pancake complaint), should the subsequent complainant be required to make a prima facie showing of sufficient change in market conditions to meet the Coakley and MISO Briefing Order’s proposed determination of whether an existing ROE remains just and reasonable? If so, what type of information or showing should the complainant provide to demonstrate that market conditions have changed, and what standard should the Commission apply when assessing whether to deny the subsequent complaint without setting it for hearing?

Whether or not a prior complaint remains pending, complainants challenging an existing base ROE should be required to make a *prima facie* showing that it exceeds the cost of equity. That is longstanding Commission policy; the Commission has, in fact, rejected ROE complaints that failed to present a sufficient *prima facie* showing.²⁴⁴ If by “sufficient change in market conditions” Question G3 means a change in the subject utility’s equity cost that brings its equity cost below its existing allowed base ROE, that is an appropriate standard. The straightforward way to meet it is to present equity cost studies, using the Commission’s approved market-based equity cost estimation method(s)—that is, a DCF study of a risk-comparable proxy group, accompanied by, and combined with, studies applying any other methods that will have been adopted by the Commission—and compare the resulting empirical indication of what equity now costs the subject utility to that utility’s allowed base ROE.

Importantly, a change in general financial market conditions is *not* the only type of change that could result in this approach indicating that an existing base ROE is excessive. If the

²⁴⁴ See, e.g., *La. Pub. Serv. Comm’n v. Sys. Energy Res., Inc.*, 124 FERC ¶ 61,003, P 15 (2008) (dismissing ROE complaint that failed to present essential supporting data, “such as a list of the utilities in the comparison group or the DCF methodology used for the DCF analysis,” and “only provided statistical evidence of a change in bond yields, without making clear what effect this information alone has on [the target utility’s] cost of equity.”).

subject utility has become less risky, then its cost of equity, as indicated by good empirical tools, will decline, even if general financial market conditions remain essentially unchanged. Such utility-specific cost reduction is currently prevalent, as the operating margins and credit ratings of operating utilities have improved markedly in recent years.²⁴⁵

Equally important, the pendency of a prior challenge to an existing base ROE should not preclude consideration of a subsequent challenge that can meet the *prima facie* standard. Because general financial market conditions and the riskiness of subject utilities changes over time, the allowed ROE resulting from a first-filed complaint, which will be pegged to a study period corresponding to the refund period for that complaint, may exceed the cost of equity that would result from a second-filed complaint. “Utilities are free to file for successively higher rate increases based on later common equity cost data without regard to the status of their prior requests, and a fair symmetry requires that complainants also be free to file complaints requesting further rate decreases based on later common equity cost data without regard to the status of their prior complaints.” *Consumer Advocate Div. v. Allegheny Generating Co.*, 67 FERC ¶ 61,288, at 62,000 (footnote omitted), *on reh’g*, 68 FERC ¶ 61,207 (1994). The FPA requires that complaints supported by a showing of equity-cost decline be reviewed on their merits. As described by its principal sponsors, the 1988 Regulatory Fairness Act was intended to make “the system for bringing utility rates down . . . similar to the system for bringing rates

²⁴⁵ See, e.g., S&P Global Ratings, *Industry Top Trends 2019: North America Regulated Utilities* at 2, chart 3 (Nov. 8, 2018), <https://www.spratings.com/documents/20184/5665906/ITT+2019+North+America+Regulated+Utilities.pdf/28fe982a-3e70-5795-005c-965bf8f28e69> (showing that for “North America Regulated Utilities” from 2011 through 2018, there were far more ratings upgrades than ratings downgrades); Moody’s Investors Service, *Announcement: US Regulated Utilities 2018 Outlook Remains Stable* (Nov. 2, 2017), https://www.moody.com/research/Moodys-US-regulated-utilities-2018-outlook-remains-stable--PR_374886 (“Since 2007, revenues have increased at an average rate of 2% per year, the majority of which has been spurred through investments in property, plant and equipment (PP&E). Additionally, utilities’ efforts to cut costs have paid off, as operating margins have grown to 36% today from 25% in 2007.”); Docket No. EL11-66, Ex. No. CAP-500 at 4-5 & fig. 1 (“the vast majority of utility bond rating changes in this time frame [2013 to 2017]—97.2% of them in 2014, and 70% to 75% of them in the other years—were rating upgrades”).

up.”²⁴⁶ That is, “[w]hen utility costs go up, utilities deserve a rate adjustment. We do not change that. But . . . when the economic factors go in the other direction, consumers deserve just and reasonable rate reductions,” in “the same way that utilities receive just and reasonable rate increases.”²⁴⁷ Moreover, any kind of “one complaint at a time” rule, under which the pendency of a section 206 proceeding would raise a hurdle to additional section 206 proceedings, would incent respondents to drag out complaints, by, e.g., insisting that they be litigated rather than settled.

The argument for a “one complaint at a time” rule rests on a false legal formalism. It is contended that because section 206(a) requires ROE complainants to identify the ROE that is in effect at the time they file, complaints may not be pursued where that ROE is subject to change through a prior proceeding.²⁴⁸ But section 206(a) requires only what it says—that complaints seeking to “initiate” a section 206 proceeding “state the change or changes to be made in the rate . . . then in force”²⁴⁹; it does not require that complaints predict the rate that will be in force at the time an extended section 206 proceeding ends. And a parallel (indeed, stronger) requirement to identify the rate to be changed appears in section 205(d), which provides that notice of section 205 rate changes “shall be given by filing with the Commission . . . new schedules stating plainly the change or changes to be made in the schedule . . . then in force”²⁵⁰ Thus, if a rate change made in one proceeding were deemed to nullify all unresolved rate change filings that had identified the rate thereby superseded as the pre-existing

²⁴⁶ S. Hrg. No. 100-542, at 2.

²⁴⁷ *Id.* at 26 (statement of Rep. Bruce).

²⁴⁸ Compare Carmen Gentile, *Time to Put Kibosh on Pancaking Section 206 Complaints: FERC Must Act*, 157 Pub. Utils. Fortnightly, Apr. 2019, at 42 (Apr. 2019) with David Pomper, *Response to “Time to Put the Kibosh on Pancaking Section 206 Complaints,”* Pub. Utils. Fortnightly, June 2019, at 100.

²⁴⁹ 16 U.S.C. § 824e(a) (emphasis added).

²⁵⁰ 16 U.S.C. § 824d(d).

rate, then that rule would have to apply symmetrically to sections 205 and 206. The Commission, however, has long entertained, and addressed on their cost-based merits, pancaked rate increase filings under section 205. *See, e.g., Boston Edison Co.*, Op. No. 53, 8 FERC ¶ 61,077, at 61,277, *reh'g denied*, Op. No. 53-A, 9 FERC ¶ 61,002 (1979). The statutory language and history discussed above make clear that the Commission must symmetrically consider the cost-based merits of section 206 rate decrease filings.

In short, the statutory way to discourage unmeritorious follow-on complaints, without improperly burdening meritorious ones, is straightforward. The Commission should adhere consistently to an empirical approach that accurately estimates what utility equity costs at any given time. Filing and following through on an ROE complaint requires substantial legal and expert fees, and ratepayer representatives know that ratepayers ultimately bear both sides' litigation costs (especially if the utility has a formula transmission rate). Accordingly, they file and prosecute ROE complaints only when they predict that equity costs will be found to have declined substantially below the ROEs stated in rates. If the Commission's empirical approach is transparent, known, and stable, and produces predictable results, then all stakeholders will be able to predict litigation outcomes. With such predictability, complaints will be brought only when a utility's equity cost as measured by the Commission's known empirical approach has declined significantly, and is expected to stay low or decline further.

4. Any sub-range that would be added to the indicated equity cost of equity to determine the presumptively shielded level *should* be narrow, in both single-utility and regional ROE cases

G4. In single utility rate cases, the Commission determines the central tendency of the zone of reasonableness based on the median of the proxy group ROEs. Is the approach outlined in the Coakley and MISO briefing orders appropriate in single utility rate cases given that the proxy company ROEs tend to cluster near the center of the zone of reasonableness, making the middle quartile relatively narrow?

G4.a. Would it be reasonable to determine the central tendencies of the upper and lower halves of the zone of reasonableness for single utilities based on a midpoint analysis, so as to produce approximately equal ranges of presumptively just and reasonable ROEs for below average, average, and above average risk utilities?

The shield-level presumption underlying Questions G4 and G4.a should not be adopted. See Parts III.G.1-2, *supra*. If the Commission were, nonetheless, to adopt a shield-level presumption, the shield level should not be tied in any way to the range ends of proxy results. This means it should not be set by adding one eighth of the composite range width to either the median or the midpoint of the composite distribution or range. Instead, following the *Coakley* Briefing Order’s suggestion that the shield level should not be closer to that upper central tendency measure than it is to the middle central tendency measure, the shield level should be placed halfway between the median and the upper median. In this context, “halfway” could mean either the 62.5th percentile, or the average of the indicated returns for the proxies at the 50th and 75th percentiles. The former would be more statistically reliable, as it more fully embraces reliance on distributions rather than ranges.

The potential for such a percentile-based approach to produce “relatively narrow” quartiles—that is, the fact that the distance from the 50th percentile to the 62.5th percentile (or to the average of the indicated returns at the 50th and 75th percentiles) may be less than one eighth of the composite range width—is not a problem. Rather, the narrower the referenced increment, the narrower the difference between the process of evaluating existing base ROEs and the statutorily appropriate approach. Again, the existing base ROE (a point value) should be compared to the best available estimate of the cost of equity (another point value).

Moreover, if any increment must to be added to the point-value indication of the cost of equity in evaluating whether an existing base ROE remains just and reasonable, it would be arbitrary to tie that increment to the width of the composite range, which varies erratically, and

effectively randomly, with variations in the most extreme study results.²⁵¹ At the broadest, any such increment should be measured by the number of basis points that will result in a rate consequence greater than the regulatory expense of re-determining the utility's equity cost. A recent Commission decision quantified a rate case's expense at \$1.103 million, for a case that encompassed ROE and numerous other issues.²⁵² Even at that hefty level, four years of a 20 basis point reduction applicable to a utility with a 50% equity ratio, 30% income tax-gross-up factor, and \$500 million rate base would more than justify the expense.

H. The “mechanics and implementation” of equity cost estimation models should be designed to identify the study-period cost of equity

1. General and multi-model issues
 - a) Where the DCF distribution is what matters, analyst growth estimates should use a sources-weighted combination of IBES and a comparable aggregator

H.1.1 Are IBES data a good proxy for “investor consensus?”

H.1.1.a If not, are there better alternatives, such as Bloomberg, Zacks, S&P Capital, Morningstar, and Value Line?

H.1.1.b Should the Commission combine data from multiple sources?

H.1.1.c What weight, if any, should be given to an estimate if the number and identity of analysts contributing to the estimate is not available?²⁵³

H.1.5. Should growth rates be based on Value Line, IBES, or alternative estimates?

H.1.6. Should the same growth rate sources be used across models, if more than one model is used to determine the ROE?

The ideal sourcing of analysts' growth rates would capture all of the sources referenced by investors, weighted in proportion to their followership and influence; show transparently

²⁵¹ See Part III.D.6, *supra*.

²⁵² See *Midwest Indep. Transmission Sys. Operator, Inc.*, Op. No. 534, 148 FERC ¶61,206, P 218 (2014) (quantifying expense of rate case involving myriad issues; the ROE issues therein were litigated through prefiled testimony but settled prior to trial).

²⁵³ In order to streamline our discussion of analyst growth rate sourcing, we intentionally skip here from Question H.1.1c to Question H.1.5. The intervening questions are addressed in Part III.H.1.b), *infra*.

which and how many analysts contributed to each source; exclude estimates not contemporaneous with the applicable study period; exclude growth estimates for which the baseline period precedes the period reviewed in screening proxies for comparability; prevent gaming in which parties selectively reference only those sources that include growth rates favorable to their position; be sufficiently small in number to make data entry manageable; and cost nothing. Unfortunately, these multiple ideals are not all compatible.

The sources referenced by investors are myriad. Two-plus sources of “consensus” growth rates are currently available to the public without charge: IBES, as posted on either Yahoo Finance or reuters.com, and Zacks. However, the Yahoo Finance version of IBES shows neither the number of contributing analysts nor their identity, and the reuters.com version of IBES does not show the latter. Zacks shows neither. Value Line is widely available at low or no cost (e.g., through public libraries), but it presents an estimate from one source, not a consensus,²⁵⁴ and unlike the analysts who contribute to consensus estimates, it generally does not adjust baseline earnings (on which growth estimates depend) to remove nonrecurring events that can distort the resulting growth rate.²⁵⁵ Instead, its baseline uses GAAP-style earnings averaged over three past years—including years predating the period used in screening proxies for dividend cuts, M&A activity, and the like.

The other consensus growth rate sources recently referenced in DCF studies presented to the Commission by ROE witnesses are private or proprietary. These include (to extents that vary both across witnesses and in the same witness’s presentation as tailored from case to case) Bloomberg, S&P Capital IQ (each listed in the NOI²⁵⁶), and also FactSet, Nasdaq IR Insight

²⁵⁴ See Op. No. 551, PP 62-65, and other sources cited therein.

²⁵⁵ Ex. No. A-2, at 49.

²⁵⁶ Morningstar is also listed in the NOI, but it does not compile consensus estimates, and its proprietary standard.

(a.k.a. First Call), and SNL. Bloomberg and Nasdaq IR Insight are relatively transparent in their sourcing (showing the number of contributing analysts, and their identity where not masked by the contributor). But each of these sources requires a subscription, and according to recent testimony, these subscriptions cost \$15,000-\$30,000 per source, annually. If the Commission were to reconsider its prior statements indicating a preference for reliance on IBES,²⁵⁷ and instead invite reference to any or all of these sources, regulatory expenses would increase, and the Commission would find it difficult to guard against submissions that selectively rely on those sources that happen to collect favorable growth rates at a particular time.

The key to harmonizing the foregoing considerations, as on so many ROE issues, is to incorporate a reasonably comprehensive set of inputs into a combined proxy distribution, and then utilize all of the information in that distribution, instead of proliferating ranges and relying on their extremes. While the highest and lowest (and associated midpoint) growth rates applicable to a large proxy group will vary widely across sources, the median growth rate will not. For example, testimony on behalf of the transmission owners in Docket No. EL16-64 included six separate DCF distributions, based on analyst growth rates from six different aggregators: the midpoints of the six resulting distributions varied widely, ranging from 7.29% to 11.65%; the medians of the six resulting distributions were much closer to each other, ranging from 7.91% to 8.60%. Consequently, reliance on distributions rather than ranges will considerably lower the stakes involved in growth rate sourcing, reducing the incentive to data-

reports on individual stocks, while widely available at low cost, do not systematically present a multi-year earnings growth rate forecast. *Id.* at 50.

²⁵⁷ See Op. No. 551, PP 62-65; *Composition of Proxy Grps.*, 123 FERC ¶ 61,048, at P 84 (“the growth projections to be used in the DCF model are those reported by IBES. If they are the same growth projections posted by Thomson Financial Data on Yahoo.com, then they are acceptable for the DCF model.”); *Enbridge Pipelines (KPC)*, 100 FERC ¶ 61,260, P 234 (2002), *reh’g denied*, 102 FERC ¶ 61,310 (2003); *Nw. Pipeline Corp.*, 87 FERC ¶ 61,266, at 62,058-59 (1999), *on reh’g*, 92 FERC ¶ 61,287 (2000), *review dismissed in part and denied in part sub nom. Canadian Ass’n of Petroleum Producers v. FERC*, 308 F.3d 11 (D.C. Cir. 2002).

shop. Furthermore, if multiple sources are combined at the outset (averaging each of the utilized sources' growth rates for each proxy company to produce a composite growth rate for that company, rather than using each source to generate a distinct range), the resulting estimate of each proxy's DCF cost of equity will better mirror the process by which multiple analyst estimates contribute to price formation in the market for each proxy's stock. Doing so will also address the Commission's concern about relatively few analysts contributing to IBES.

Accordingly, the Commission should consider adopting the following policy, prospectively,²⁵⁸ for DCF studies of electric-utility parent stocks,²⁵⁹ and subject to case-specific variation where justified. The first-stage growth rate for each proxy could be based on the weighted average of two sources: the IBES aggregate (as reported on reuters.com or another IBES-based source that identifies the number of contributing analysts) and either Bloomberg or First Call (whichever is the witness's usual source), weighted by the number of contributing analysts.²⁶⁰ This averaged first-stage growth rate, combined with the GDP-based second-stage growth rate and other DCF inputs, would produce a combined-source DCF distribution, from which the median (or other applicable percentile) would provide the DCF component of the indicated cost of equity.

The foregoing is addressed mainly to actual DCF studies of electric-utility proxies, as distinguished from DCF studies of large-cap stocks (dividend paying members of the S&P 500) that are sometimes used in estimating an equity portfolio return for purposes of a CAPM study.

²⁵⁸ Given their considerable cumulative cost and the Commission's past statements that IBES is its preferred source, it would be unfair to penalize participants for not having referenced these sources in the past. On the other hand, the subscription cost it is not so large that it would be unreasonable to expect professional expert witnesses to subscribe to one (or more) of these sources following an announced change in the Commission's preferred sourcing.

²⁵⁹ Subscription cost aside, while referencing multiple sources would be feasible for proxy groups of several dozen utility-industry stocks, it would not be practical if that approach were extended to CAPM-input DCF studies of the approximately 400 dividend-paying members for the S&P 500, as suggested in NOI Question H.2.b.1.

²⁶⁰ Ex. No. A-2 at 51 (describing this approach).

In the latter context, the choice of growth rate sources is relatively unimportant, as each source will supply estimates for approximately 400 stocks, and the DCF-for-CAPM study will be used to produce a single portfolio growth value, inherently diminishing the significance of an unrepresentative growth rate for any one stock. In that context, a requirement to use sources that identify the number of analysts and to weight by the number of analysts (as recommended above for DCF studies proper) may not be warranted. It remains the case, however, that Value Line's earnings baselines, and thus Value Line's earnings growth rates, are derived differently than those aggregated by IBES and comparable sources. Consequently, Value Line growth rates should not be used for this purpose either.

- b) The Commission should rely on market-based models applied to exchange-traded proxies

H.1.2. To what extent does model risk affect all ROE methodologies?

H.1.3. The DCF model incorporates data at the parent/holding company level (e.g., stock price). The Commission adjudicates cases at the operating company level, for which there is no public data like stock prices, growth rates, and betas. What impact does this disparity have on the results of the DCF and other models?

H.1.4. Should the Commission continue to rely on the efficient market hypothesis, which underlies the DCF and CAPM models? Why or why not?

H.1.4.a. If yes, should the Commission continue to employ outlier screens, M&A screens, etc., for the DCF and CAPM models since these models need to incorporate all relevant information?

Some models are better than others; no model is perfect. Therefore, combining multiple credible market-based models can be sensible. But that is no reason to include models that are inherently disconnected from the market cost of equity. Models that apply well-honed techniques to market data on equity prices provide sound estimates of the cost of equity, because the efficient market hypothesis is sound.

That fundamental tenet is solidly established in the economic and financial literature, and in D.C. Circuit case law. The Commission has long been “quite wedded to DCF analysis,” and,

“as its theoretical mainstay,” to the “efficient market” proposition that the stock market “assimilates . . . with lightning speed” information concerning “money supply, inflation, [and] real economic activity.” See *Tenn. Gas*, 926 F.2d at 1211. The textbook cited pervasively in the NOI and related orders rightly calls the efficient market hypothesis a “cornerstone of modern investment theory.”²⁶¹ A leading corporate finance textbook explains:

[I]f stock prices deviate from their intrinsic values, investors will *quickly* take advantage of this mispricing by buying undervalued stocks and selling overvalued stocks. Thus, investors’ actions work to drive prices to their new equilibrium level based on new information. Even if some investors behave irrationally, as by holding losers too long and/or selling winners too quickly, this does not imply that the markets are not efficient. . . .

. . . .

What is the bottom line on market efficiency? Based on our reading of the evidence, we believe that for most stocks, for most of the time, it is generally safe to assume that the market is reasonably efficient in the sense that the intrinsic price is approximately equal to the actual market price²⁶²

The efficient market hypothesis holds that all stocks (including proxy stocks) efficiently incorporate into their price all relevant public information. But that doesn’t mean that every stock must be included in a study based on security market prices, and does not make every stock a good proxy for a non-traded operating utility. The screening criteria and related issues discussed in Section III.D, *supra*, are designed to, and if properly applied will suffice to, assure that the distribution of results from models applied to referenced proxies is reasonably representative of what those models would show if they could be applied to the subject utility itself. Well-designed models will make their median results representative of the subject utility’s cost of equity.

²⁶¹ Morin, *supra*, at 279 n.3.

²⁶² Ehrhardt & Brigham, *supra*, at 292.

In order for a model's results to benefit from the wealth of information incorporated into security market prices, however, the model must *use* security market prices. Both the DCF and CAPM methods do so: The DCF method is based directly on study-period dividend yields (combined with forecasts of growth rates related to future dividends), and the CAPM method uses the relative volatility of proxy and market-wide equity prices. The RP method uses actual bond market prices to derive bond yields, and compares those yields to past ROE allowances that, if the RP data set is well selected, will in turn reflect past financial market prices. But the E/B method is completely disconnected from security market prices and, therefore, cut off from any reality check on the cost of attracting capital. This can be seen vividly in the E/B ratios of leading stocks such as Apple ("AAPL"), Amazon ("AMZN"), Facebook ("FB"), Alphabet ("GOOG"), and Microsoft ("MSFT"), as forecast by Value Line for the 2022-24 period in recent (circa May 2019) company-specific reports. The forecast E/B ratios for these titans of American industry are, respectively, 41.0%, 17.5%, 20.0%, 15.0%, and 39.0%. If these companies' costs of attracting capital were anything like those E/B ratios, they would not be attracting capital, as investors buying those stocks now have no hope of sustaining returns in that neighborhood. But they are attracting capital, because investors do not require returns resembling forecast E/B ratios to be attracted to market-priced stocks.

2. Model-specific questions

a) DCF

- (1) The longstanding composite-growth DCF model remains appropriate for electric utilities; if it were to be re-considered, the Commission should apply a multi-stage model

H.2.a.1. Should the Commission continue to use a dividend DCF model or should the Commission use a different DCF model, for example, one based on free cash flow?

H.2.a.2. Could terminal stock value be used in place of long-term growth projections? If so, how should terminal stock value be determined?

H.2.a.3. Do investment analysts project earnings/dividends growth beyond five years, and if not, why not, and is GDP an appropriate proxy for long-term growth?

H.2.a.4 How should the Commission weight short-term and long-term earnings/dividend growth projections?

H.2.a.5. The Commission uses a constant growth DCF model. Should the Commission consider using a multi-stage DCF model? If so, how would the Commission determine the length of each stage of a proxy company's growth?

The composite-growth form of the DCF model, which the Commission has used for pipelines (both natural gas and oil) for over two decades,²⁶³ and for electric utilities since 2014,²⁶⁴ remains reasonable. When its outputs are distilled through a statistically valid measure (i.e., the median rather than midpoint), the group-indicated cost of equity is appropriately responsive to broader market trends, without being erratic, and is consistent with the results of other market-based estimation methods when those methods are reasonably applied. By weighting near-term earnings growth rates at two thirds in projecting the constant rate of dividend growth, the Commission's composite-growth method already assumes that this near-term growth will continue for decades.²⁶⁵ Accordingly, there is no compelling reason to revise the DCF model that the Commission uses to estimate each proxy's cost of equity.

²⁶³ See *Nw. Pipeline Corp.*, Op. No. 396-B, 79 FERC ¶ 61,309 (adopting constant dividend growth DCF model, with dividends' constant growth rate estimated as the simple average of the first-stage consensus (IBES) earnings growth rate forecast and a long-term multi-source GDP growth rate forecast), *reh'g denied*, Op. No. 396-C, 81 FERC ¶ 61,036 (1997), *review dismissed in part, remanded in part, and denied in part sub nom. Canadian Ass'n of Petroleum Producers v. FERC*, 254 F.3d 289 (D.C. Cir. 2001); *Transcontinental Gas Pipe Line Corp.*, Op. No. 414-A, 84 FERC ¶ 61,084 (modifying the weighting of the short-term and long-term growth forecasts used to produce the composite dividend growth rate, such that the short-term rate receives double weighting), *on reh'g*, Op. No. 414-B, 85 FERC ¶ 61,323 (1998), *review denied sub nom. N.C. Utils. Comm'n v. FERC*, 203 F.3d 53 (2000) (*per curiam*).

²⁶⁴ See Ops. Nos. 531, 551, 554, and *Midcontinent Indep. Sys. Operator, Inc.*, Op. No. 556, 161 FERC ¶ 61,059 (2017).

²⁶⁵ See generally *Williston Basin Interstate Pipeline Co.*, 104 FERC ¶ 61,036, P. 29 (2003) (this method "is equivalent to averaging 33 years of the short-term growth projection with 17 years of the lower long-term GDP growth rate"), *reh'g granted*, 107 FERC ¶ 61,164 (2004).

If any such revision were to be made, the Commission should switch from a fractional weighting of the first-stage and terminal-stage growth rates within a constant-growth form of the DCF model to a formally multi-stage DCF model that permits more precise intertemporal modeling of dividend growth rates. Dr. Cornell elaborates on this point. *See* Ex. No. A-1, § H.2.a.5.

Elimination or reduced weighting of the second-stage, GDP-based constraint on the per-share earnings that fund dividend growth would be error, for the reasons explained in Part III.H.2.b)(1), *infra*.

(2) A six-month DCF study period remains reasonable

H.2.a.6. Are six months of average high/low historical monthly stock prices an appropriate measure for the current stock price “P”?

As now-Justice Breyer explained in *Boston Edison Co. v. FERC*, 885 F.2d 962, 966 (1st Cir. 1989) (“*Boston Edison*”), the length of the DCF study period balances “such factors as the risk that aberrations will unfairly distort the results of a shorter time period against the risk that the longer time period will inappropriately weight the earlier results in a changing market.” The Commission has long held that a six-month study period appropriately balances these factors. *See id.*; *see also Generic Determination of Rate of Return on Common Equity for Public Utilities*, Order No. 442, 33 FERC ¶ 61,426, FERC Stats. & Regs. at 30,086 (1985) (“The Commission believes the use of a 12-month moving average as suggested by some commenters would not provide a sufficiently current estimate of the dividend yield . . . [whereas] the use of the last preceding quarter, as originally proposed, creates too great a risk that an abrupt change will occur or that short-run volatility will greatly affect the outcome.”), *on reh’g*, Order No. 442-A, 35 FERC ¶ 61,323 (1986). After adopting six months as its standard DCF study period length

in the mid-1980s,²⁶⁶ the Commission has continued to apply that length through a wide variety of financial market conditions, ranging from the highly bullish markets of the mid-1980s, later 1990s, and later 2010s, to the multiple intervening recessions and bear markets. We see no reason to change it now.

b) CAPM

The *Coakley* Briefing Order explains that “the CAPM methodology estimates the cost of equity by taking the ‘risk-free rate’ and adding to it the ‘market-risk premium’ multiplied by ‘beta.’”²⁶⁷ Rearranging terms and noting that the “market risk premium” is the difference between the “equity market return”—that is, the return on a fully-diversified equity portfolio—and the risk-free rate, this basic CAPM equation can be restated as providing that each proxy’s implied equity cost equals: *equity market return* – [*market risk premium* x (1 – β)]. For typical utility stocks (which invariably have betas smaller than one), this equation means that the implied cost of equity will be less than the expected returns on a fully diversified equity portfolio. As we show below, the expected equity market return is now well under ten percent.

- (1) Assuming perpetual growth at analysts’ near-term rate does not produce a plausible equity-market risk premium

H.2.b.1. If the market risk premium is determined by applying the DCF methodology to a representative market index, should a long-term growth rate be used, as in the Commission’s two-step DCF methodology?

For a CAPM study to produce meaningful results, it is essential that the market-wide return used to identify the equity risk premium realistically represent the return that investors expect from a market-wide equity index or portfolio. Dr. Cornell, citing Aswath Damodaran’s influential paper, explains that the solution is to use a proper two-stage model and solve for the

²⁶⁶ The six-month study period that was affirmed in *Boston Edison* ended in April 1985. See *Bos. Edison Co.*, Op. No. 299, 42 FERC ¶ 61,374, at 62,093, *reh’g denied*, Op. No. 299-A, 43 FERC ¶ 61,309 (1988), *aff’d sub nom. Bos. Edison Co. v. FERC*, 885 F2d 962 (1st Cir. 1989).

²⁶⁷ *Coakley* Briefing Order at 61,182 (quoting Morin, *supra*, at 150); see also Op. No. 551, P 138.

discount rate.²⁶⁸ If that return is estimated using a DCF model (one of the several reasonable ways to do so), the DCF model should recognize what the NOI states at P 11 n.24:

Incorporating a long-term growth estimate in the DCF methodology is consistent with the underlying theory of the constant growth DCF model because

from the standpoint of the DCF model that extends into perpetuity, analysts' horizons are too short, typically five years. It is often unrealistic for such growth to continue in perpetuity. A transition must occur between the first stage of growth forecast by analysts for the first five years and the company's long-term sustainable growth rate. . . . It is useful to remember that eventually all company growth rates, especially utility services growth rates, converge to a level consistent with the growth rate of the aggregate economy.

Roger A. Morin, *New Regulatory Finance* 308 (Public Utilities Reports, Inc. 2006) (Morin).

Morin's textbook makes a similar point in its discussion of the CAPM model, in a passage cited by the *Coakley* Briefing Order (P 14): "The expected common stock return is based on long-term cash flows, regardless of an individual's holding time period. Utility asset investments generally have long-term useful lives and should be correspondingly matched with long-term maturity financing instruments."²⁶⁹

For the same reason that Opinion No. 531 et seq. extended to electric utilities the two-stage DCF method long used for pipeline ROEs, any DCF study used as the basis for the market risk premium must also account for the long-term constraints on near-term earnings growth forecasts. Neither utility stocks nor large-cap stocks can perpetually grow their earnings more rapidly than the economy as a whole. *See, e.g.,* Shlomit Azgad-Tromer & Eric Talley, *The Utility*

²⁶⁸ Ex. No. A-1, § H.2.b.1.

²⁶⁹ Morin, *supra*, at 151-52. *See also* Docket Nos. EL11-66 et al., CAP-500, Sections III.A & III.C (explaining that in conducting a CAPM study, the risk-free rate and the market-risk premium must be estimated over the same timeframe).

of Finance at 13 (Columbia Univ. School of Law, Ctr. for Law and Economic Studies, Working Paper No. 569, 2017) (“a long-term perpetuity growth rate for a firm in excess of the anticipated GDP growth rate would imply that the firm in question would mechanically come to dominate the entire economy in the long term”); Order No. 420 FERC Stats. & Regs. at 31,344 (finding that inflated equity cost estimates result when analyses estimate risk premiums using “DCF estimates of the investors’ required rate of return” on “common stock,” because “the use of analysts’ short-term forecasts overstate[s] investors’ long term growth expectations”).

The witness appearing for respondents in both the *Coakley* and MISO paper hearings has elsewhere recognized that a CAPM study should reflect investors’ long-horizon expectations:

Unlike debt instruments, common equity is a perpetuity and as a result, any application of the CAPM to estimate the return that investors require must be predicated on their expectations for the firm’s long-term risks and prospects. This does not mean that every investor will buy and hold a particular common stock into perpetuity. Rather, it recognizes that even an investor with a relatively short holding period will consider the long-term, because of its influence on the price that he or she ultimately receives from the stock when it is sold. This is also the basic assumption underpinning the DCF model, which in theory considers the present value of all future dividends expected to be received by a share of stock.²⁷⁰

In inferring what investors expect as the long-term earnings growth associated with a market-wide equity portfolio, the Commission should heed Warren Buffet’s plain-spoken caution against believing that stocks’ long-term earnings growth could exceed GDP growth:

You know, someone once told me that New York has more lawyers than people. I think that’s the same fellow who thinks profits will become larger than GDP. When you begin to expect

²⁷⁰ Prepared Rebuttal Testimony and Exhibits of William E. Avera and Adrien M. McKenzie on Behalf of Entergy Services, Inc., Ex. No., ESI-123, at 57:4-12, *Entergy Ark., Inc.*, No. ER13-1508-001 (Dec. 11, 2014), eLibrary No. 20141211-5192.

the growth of a component factor to forever outpace that of the aggregate, you get into certain mathematical problems.²⁷¹

Mr. Buffet owns much of Berkshire Hathaway and, thus, indirectly owns large shares of MidAmerican Energy Co., NV Energy, and PacifiCorp, and as such may well be both the largest and most-followed individual investor in U.S. electric utilities.

Indeed, the caution against assuming long-term continuation of analysts' growth projections for a horizon ending at five years is *especially* applicable to the large-cap stocks that constitute the dividend-paying members of the S&P 500, as they already have large earnings and must find commensurately large new sources of profit if they are to sustain their dividend growth. Investors are well aware of these realities. For example, J.P. Morgan's 2019 annual report on "Long-Term Capital Market Assumptions" reminded investors that "[a]lthough the size of the gap between economic growth and returns varies, both as a function of the starting point and of the high volatility inherent in emerging equities, over most periods and most countries [equity market] returns lag real GDP growth on an average annualized basis."²⁷² The 2015 edition of this annual report explained why:

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

²⁷¹ Mr. Buffet on the Stock Market, Fortune, Nov. 22, 1999, at 212, https://money.cnn.com/magazines/fortune/fortune_archive/1999/11/22/269071/.

²⁷² J.P. Morgan Asset Mgmt., *Long-Term Capital Market Assumptions: Time-Tested Projections to Build Stronger Portfolios* at 64 (2019), <https://am.jpmorgan.com/gi/getdoc/1383581744857>.

developing economies new enterprises may account for the lion's share of overall economic growth.²⁷³

There is no evidence that real-world investors expect sustained returns on a fully diversified equity portfolio (the foundation of the CAPM model) at the stratospheric levels (exceeding 12%) commonly presented by TO-sponsored witnesses. To the contrary, the 2019 release of J.P. Morgan's Long-Term Capital Market Assumptions projects a 5.25% total return on U.S. large-cap stocks.²⁷⁴

When the Commission adopted a two-stage DCF methodology, it did so as a general rule absent an industry-specific exception, based on a finding that “a projection limited to five years, with no evidence of what is anticipated beyond that point, is not consistent with the DCF model and cannot be relied on in a DCF analysis.”²⁷⁵ This precedent correctly recognizes that, as summarized by a leading textbook on corporate finance, “analysts’ forecasts often involve nonconstant growth,” and should be averaged in the DCF model with a longer-term growth rate.²⁷⁶ Dr. Morin likewise favors “[a] multiple-stage DCF model that better mirrors the pattern of future dividend growth”²⁷⁷

The Opinion No. 531 ruling that extended this approach to electric utilities terminated what had been an electric-industry-specific *exception* to that general rule, which had rested on two findings that differentiated electric utilities from all other industries. One, the Commission

²⁷³ David Sharp et al., J.P. Morgan Asset Mgmt., *Long-Term Capital Market Assumptions 2015 Estimates and the Thinking Behind the Numbers* at 25 (2014) (as quoted in Docket No. EL13-33, CAP-19, at 73-74), https://am.jpmorgan.com/blobcontent/1413613727995/83456/LTCMA_Assumptions_White_Paper_2015_US.pdf.

²⁷⁴ Pete Klingelkofer, et al., J.P. Morgan Asset Mgmt., *Turning a Corner: Returns Hold Steady* at 5 (2018), <https://am.jpmorgan.com/gi/getdoc/1383581777246>.

²⁷⁵ *Ozark Gas Transmission Sys.*, 68 FERC ¶ 61,032, at 61,105 (1994), *reh'g dismissed*, 71 FERC ¶ 61,138 (1995); *see also, e.g., Williston Basin Interstate Pipeline Co.*, 87 FERC ¶ 61,264, at 62,006, *on reh'g*, 88 FERC ¶ 61,301 (1999) (“in the absence of a reliable, industry-specific long-term growth projection, the best economy-wide approach to projecting long-term growth is to use growth in GDP”).

²⁷⁶ Ehrhardt & Brigham, *supra*, at 354.

²⁷⁷ Morin, *supra*, at 308.

found that as of the turn of the millennium, one major investment firm “treat[ed] electric utilities differently from all of the other industrial companies when estimating growth rates.”²⁷⁸ Two, the Commission found that the electric industry was then just beginning a major restructuring transition from regulated, cost-based pricing to de-regulated, market-based pricing.²⁷⁹ Thus, the one-stage DCF methodology that was used for a time for electric utilities but has since been abandoned was an exception to the general rule. The exception applied only to a particular industry that had recently begun to transition from being regulated to being unregulated. Present electric utility stocks fall outside that exception, as do the non-utilities that make up most of the equity market (and, thus, most of the S&P 500).

In the subsequently-vacated Opinion No. 531-B, the Commission asserted that the earnings of the 390-company portfolio used to derive the market-wide return for the CAPM analysis referenced therein could be assumed to sustain those companies’ near-term growth rates, because “[w]hile an individual company cannot be expected to sustain high short-term growth rates in perpetuity, the same cannot be said for a stock index like the S&P 500 that is regularly updated to contain only companies with high market capitalization.”²⁸⁰ This assertion glossed over four fatal flaws. First, the referenced CAPM analysis was based on a DCF analysis of 390 specific large-cap stocks, not the S&P index itself. Second, it referenced those 390 dividend-paying members of the S&P 500 *as a proxy* for the entire equity market, and, regardless of index

²⁷⁸ *S. Cal. Edison Co.*, Op. No. 445, 92 FERC ¶ 61,070, at 61,262 (2000) (emphasis added), *reh’g denied*, Op. No. 445-A, 108 FERC ¶ 61,085 (2004).

²⁷⁹ *See id.* at 61,261 (“We find that our rationale in Opinion No. 396-B does not support the use of GDP data in developing a growth rate estimate in this proceeding. Unlike the gas pipeline industry, which was nearly through with major restructuring at the time we issued Opinion No. 396-B, on June 11, 1997, the electric industry is just beginning a significant new phase of its restructuring. In particular, SoCal Edison had just begun to restructure from a vertically integrated utility when it made its filing in the instant proceeding.”). At that time, California was transitioning from traditional rate-regulated, service-territory retail service to de-regulated “retail choice.”

²⁸⁰ Opinion No. 531-B, P 113; *see also* NET-02700 (Revised) at 115:22-116:1.

composition, the equity market as a whole cannot sustainably grow faster than the economy.²⁸¹

Third, the S&P 500 index does *not* grow through this substitution effect; rather, when a stock that has recently reached the level of large-cap valuation (meaning it has a high price) replaces one that has recently lost that status (meaning it has a low price), the index value is held constant, as if the indexed portfolio traded a large number of shares representing a cross-section of the portfolio for a small number of the shares of the newly-added, high-priced stock. For example, when Amazon replaced AT&T in the S&P 500, the Wall Street Journal noted that “[w]hen S&P adds a company, it recalculates its divisor—the figure used to calculate the value of the index—to account for the difference in market capitalization between the company being added and the one deleted.”²⁸² Consequently, there is no basis to assume that such substitution results in a net increase in the earnings that will flow through to a portfolio investor. Fourth, multiple independent projections of the five-year earnings growth for the S&P 500 have been presented to the Commission in recent proceedings, and in each case, they are much lower than the result of assuming perpetuation of analysts’ near-term growth forecasts.²⁸³

Opinion No. 551 similarly asserted that “While it is often unrealistic and unsustainable for high short-term growth rates for an individual company to continue in perpetuity, the S&P 500 is regularly updated to only include companies with high market capitalization.”²⁸⁴ Again, regardless of its market capitalization, *no* company can continue in perpetuity short-term growth rates that outpace the growth of the economy into which it sells, and companies with high market

²⁸¹ See Ex. No. A-1, at 28.

²⁸² David A. Gaffen, *Amazon Joins Few Web Names In S&P 500*, Wall St. J. (Nov. 16, 2005), <https://www.wsj.com/articles/SB113207902652797811>.

²⁸³ See, e.g., Docket No. EL13-33, CAP-22 (Goldman Sachs report projecting 2013-18 S&P 500 EPS growth of 7.0%); CAP-19 at 87 & n.105 (discussing and extracting Goldman Sachs’ projection); Docket No. EL16-64EMC-0001 (Revised) at 50:12-13 (“The most recent IHS forecast shows average earnings growth for the S&P 500 as a whole for the five-year period 2017-2022 is 5.82%.”).

²⁸⁴ Op. No. 551, P 170.

capitalization and/or high initial growth rates are likely to hit their limits to growth even *sooner* than other companies. To contend otherwise is like contending that because baseball teams replace veterans with rookies, they can eventually hit more than one home run per at-bat.

Historically achieved returns provide a useful reference point in inferring a realistic forward-looking expected return on a market-wide equity portfolio. Historical returns are useful notwithstanding the forward-looking nature of investors' expectations for long-run equity market returns, because investors look to the past as a guide to the future. Indeed, the textbook cited in the NOI recommends averaging a forward-looking equity market risk premium with an historical one.²⁸⁵ The historical record demonstrates the absurdity of imputing to investors an expectation that the growth rates projected by analysis for the next three to five years will continue forever. Such imputation would suggest a long-term equity market return exceeding 12%,²⁸⁶ thus nearing or exceeding 10% after adjusting for inflation,²⁸⁷ even though long-term realized inflation-adjusted equity market returns have been approximately 7%,²⁸⁸ and even though future U.S. economic growth and equity market returns are expected to be *lower* than they were in the past.²⁸⁹

Duff & Phelps, whose forward-looking CAPM model is widely used in valuing U.S. investments, is currently projecting an equity market return of 9.0%, consisting of a 3.5%

²⁸⁵ See Morin, *supra*, at 157 (“The best estimate of the future risk premium is the historical mean,” because “over very long periods, investor expectations coincide with realizations; otherwise, investors would never invest any money”).

²⁸⁶ See, e.g., Docket No. NET-708 (applying, in the CAPM study referenced in the *Coakley* Briefing Order, a 12.5% equity market return derived on that basis).

²⁸⁷ In the Energy Information Administration’s 2019 Annual Energy Outlook central (“Reference”) case projection, the Consumer Price Index is expected to rise from 2.51 in 2018 to 5.24 in 2050, i.e., at a long-term annual average rate of 2.33% $((5.24/2.51)^{1/(2050-2018)}=1.02327)$. See *id.*, App. B (Macroeconomic growth cases), tbl. B4, https://www.eia.gov/outlooks/aeo/section_appendices.php.

²⁸⁸ See Roger Grabowski, Carla Nunes, & James Harrington, *U.S. Equity Risk Premium Recommendation* (Feb. 19, 2019), <https://www.investopedia.com/ask/answers/042415/what-average-annual-return-sp-500.asp>.

²⁸⁹ See Robert J. Gordon, *The Rise and Fall of American Growth: The U.S. Standard of Living Since the Civil War* (2016); Bradford Cornell, *Economic Growth and Equity Investing*, *Fin. Analysts J.*, (Jan.-Feb. 2010), at 54.

normalized risk-free return and an equity risk premium of 5.5%.²⁹⁰ Its past forecasts have been similar, and consistently far below the spurious equity market returns and equity risk premiums suggested by assuming perpetual growth at analysts' near-term forecast rates. After a comprehensive survey of both historical and forward-looking approaches to estimating the market-wide equity risk premium, the authors of a leading corporate finance textbook provided their similar bottom line: "we'd be suspicious of an estimated market premium that is less than 3.0% or greater than 6.5%."²⁹¹

Many of the Commission's international peers rely on CAPM models to estimate the cost of equity invested in electric transmission and other utility assets. When they reference equity portfolio DCF returns to estimate the equity market return and equity risk premium, their models apply two-stage or multi-stage growth rates that apply macroeconomic limits to growth.²⁹² The Commission should do so as well.

H.2.b.2. Beta is a measure of a security's risk relative to the broader market, such as the S&P 500, not of its absolute risk. Do CAPM's assumptions break down if both utility stocks and the broader market become riskier over time on an absolute basis, but the relative increase in risk in utility stocks rises more slowly?

As worded, NOI Question H.2.b.2 is ahistorical: There is no basis to conclude that utility stocks or the overall equity market have become riskier over time. For the overall market, risk as measured by volatility—the relevant measure for CAPM purposes, as it is the basis for the "beta" measure of risk used in that model—has generally declined over the almost three-decade history of the VIX index; it soared during the 2008 financial crisis and the Great Recession that followed, but more recently has been, and remains, below its average level from the index's 1990

²⁹⁰ <https://www.duffandphelps.com/insights/publications/valuation-insights/valuation-insights-first-quarter-2019/us-equity-risk-premium-recommendation>.

²⁹¹ Ehrhardt & Brigham, *supra*, at 351.

²⁹² See *Reply Affidavit of Dr. J. Randall Woolridge*, Ex. No. CAP-600 at 37-47, *Coakley v. Bangor Hydro-Elec. Co.*, No. EL11-66 (Mar. 8, 2019), eLibrary No. 20190308-5263.

launch through 2007.²⁹³ Applying a related measure that is available for a longer historical period, “stock market volatility since 2010 has been quite similar to past decades.”²⁹⁴

Nor have utility stocks become more risky. To be sure, studies of the overall equity market have indicated that the betas of most stocks tend to converge toward unity— high-beta stocks tend to become as volatile as the market, which means they tend to become less risky over time, and low-beta stocks tend to become as volatile as the market, which means they tend to become more risky over time.²⁹⁵ This general convergence is the basis of the “Blume” adjustment that Value Line and certain other sources of betas make to their observed results. Because utilities generally have betas below 1.0, it might therefore be expected that their betas will likewise converge toward 1.0, which in their case would mean they rise over time. However, a 2013 study of the betas of 57 exchange-traded U.S. public utility stocks from 1962-2007 demonstrated empirically that “public utility betas do not have a tendency to converge to 1”; rather, they converge toward 0.59.²⁹⁶ This utility-specific trend means that any CAPM study that uses utility proxy betas that include the usual “Blume” adjustment inflates the estimated equity costs for utilities.

In any event, the CAPM model does not depend on these absolute or relative risks staying constant over time, as Question H.2.b.2 seems to presume. Changes in the absolute risk of a diversified equity portfolio or index will be reflected in updated forward-looking measures of the equity risk premium, whether derived from surveys, properly-constructed DCF studies, or other

²⁹³ See <https://finance.yahoo.com/quote/%5EVIX/chart/>; see also Ex. No. A-1 § H.2.b.2 (charting market volatility and concluding there is no evidence of an upward trend).

²⁹⁴ Ray E. Levitre, *Is the Stock Market More Volatile Now Than Ever Before?* (July 5, 2018), <https://www.kiplinger.com/article/investing/T047-C032-S014-is-the-stock-market-more-volatile-now-than-ever.html>.

²⁹⁵ Marshall E. Blume, *On the Assessment of Risk*, 26 J. Fin. 1 (1971).

²⁹⁶ Richard A. Michelfelder & Panayiotis Theodossiou, *Public Utility Beta Adjustment and Biased Costs of Capital in Public Utility Rate Proceedings*, 60 Elec. J. 60, 67 (2013).

valid sources. Changes in the risk of proxy companies relative to the overall equity market will be reflected in their updated betas, as the sources of published betas use a defined look-back period that inherently focuses on recent information.²⁹⁷ To be sure, the CAPM method assumes continuity between the past and future when it uses data from the past several years to identify a proxy stock's volatility relative to that of the entire market. If a proxy stock's relative volatility was greatly different over the multi-year period used to derive betas than it was over an ROE case study period, then that stock's beta would not produce an accurate estimate of that stock's study-period cost of equity. However, the continuity in average betas for utility stocks over time²⁹⁸ indicates that this is not really a problem, provided the focus is properly kept on the distribution rather than range of proxy results.

- (2) Value Line betas for electric utilities are conservatively high, and should not be used in conjunction with a DCF-based equity market return for which the growth rate reflects analyst forecasts with only a five-year horizon

H.2.b.3. What are appropriate data sources for the beta value?

The conventional source of betas used in CAPM studies presented to the Commission (e.g., those referenced in the *Coakley* Briefing Order) has been Value Line. Other reputable sources publish estimates of beta too, though there are differences between their calculation methodologies.²⁹⁹ For example, Value Line observes each utility stock's weekly volatility compared to that of the NYSE Composite Index over the past five years, and then makes a "Blume" adjustment toward unity, i.e., generally upward.³⁰⁰ That is not an ideal source, when

²⁹⁷ See note 299, *infra*.

²⁹⁸ See note 296, *supra*.

²⁹⁹ Ex. No. A-1, § H.2.b.3.

³⁰⁰ See Andrew J. Cueter, *Using Beta* (Oct. 2, 2012), http://www.valueline.com/Tools/Educational_Articles/Stocks/Using_Beta.aspx#XMlhVDBKhjU ("At Value Line, we derive the Beta coefficient from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Composite Index over a period of five years. In the

paired with an equity risk premium based, in part, on the expected growth of the approximately 400 dividend-paying members of the S&P 500. “For reasons of consistency, the market index employed should be the same as the market index used in deriving estimates of beta.”³⁰¹ Value Line betas are derived from a volatility comparison to the New York Stock Exchange (NYSE) Composite Index, which contains more than 2000 stocks and is, therefore, stabilized by diversification effects.³⁰² Thus, Value Line betas compare the proxy companies to a larger and more diverse set of stocks than are used for those studies’ equity risk premium. This imperfectly-matched comparison produces betas that are higher than would be found if the proxies’ volatility was compared to the same stocks as are used to estimate the equity market return.

Although their use of NYSE market variation and a “Blume” adjustment makes Value Line betas for electric utility proxy companies err on the high side, their use would remain on the reasonable side of “conservatively high,” provided it is recognized that utility stocks do not converge upward toward unity with any observable rapidity. Accordingly, Value Line betas should not be used in conjunction with a DCF-based equity market return for which the growth rate reflects analyst forecasts with only a five-year horizon. Also, the Commission should not make adjustments to the beta calculated by Value Line (or any other reputable publisher), as “such adjustments are likely to increase, not decrease, measurement error.”³⁰³

case of shorter price histories, a shorter time period is used, but two years is the minimum. Value Line then adjusts these Betas to account for their long-term tendency to converge toward 1.00. (Though the scope of this convergence is beyond our purposes here, readers can refer to M. Blume, “On the Assessment of Risk,” *Journal of Finance*, March 1971 for further details.)”).

³⁰¹ Morin, *supra*, at 159-160.

³⁰² Cueter, *supra*. This documentation of Value Line’s Beta is available to the Commission as Docket No. EL13-33, Ex. No. NET-1705. *See id.* at 1.

³⁰³ Ex. No. A-1, § H.2.b.3.

- (3) Selective changes to the standard CAPM model should be rejected

H.2.b.4. Should the Commission employ more sophisticated versions of the CAPM model that consider more variables instead of only beta, such as the Fama-French Model?

The standard CAPM model, as accurately described in the NOI (at P 14), requires only three inputs: (i) the risk-free rate, (ii) the equity market return (from which the risk-free rate is subtracted to identify the market-risk premium), and (iii) the beta for the subject stock (or for Commission purposes, the beta for each proxy stock). This simple model is widely used by investors and regulators.

Dr. Cornell recommends, and Associations urge, that the Commission rely on the basic version of the CAPM model unless and until the academic literature concludes that another model is clearly superior.³⁰⁴ Neither the original three-factor Fama-French model (which disaggregates the simple, volatility-based “Beta” measure of risk into three components: volatility, size, and M/B ratios) nor the subsequent five-factor Fama-French model (which adds two additional components, namely operating profitability and the rate of change in total assets)³⁰⁵ currently meets this standard.

In any event, the Commission should not accept selective “refinements” that systematically increase the resulting indicated cost of equity, such as the “size adjustment” that has been applied by transmission owner witnesses in recent cases. When either version of the Fama-French model applies a version of a size adjustment, it does so in conjunction with other factors, and it multiplies the size factor by a regression slope specific to that factor. In particular, the Fama-French model posits at least two factors beyond the standard Beta factor: (a) the

³⁰⁴ See Ex. No. A-1, § H.2.b.4.

³⁰⁵ See Eugene F. Fama & Kenneth R. French, *A Five-Factor Asset Pricing Model* (2014), <https://www8.gsb.columbia.edu/programs/sites/programs/files/finance/Finance%20Seminar/spring%202014/ken%20french.pdf>.

realized (and thus expected) returns of relatively small companies have been higher than predicted by a one-factor model, and (b) the realized (and thus expected) returns of companies with relatively low M/B ratios have been lower than predicted by a one-factor model. The former is known as the “SMB” (small minus big) factor, and the latter is known as the “HML” (high minus low) factor. *Both* of these revisions to the standard CAPM model should be used, if either is. Because operating utilities’ parent companies have lower M/B ratios than the overall market³⁰⁶ (and because the M/B ratios of operating utilities are even lower³⁰⁷), the “HML” factor produces a downward adjustment to the beta-indicated result. That adjustment should not be ignored if the “SMB” factor is applied in the other direction.

Similarly, when Morningstar/Duff & Phelps³⁰⁸ applies a different “size adjustment,” it does so in the context of a further industry-classification adjustment that, for utilities, points in the offsetting direction.³⁰⁹ And its quantification of its size adjustment is meant for use with observed betas, not betas which have been regressed toward 1.0 (i.e., increased, in the case of electric utility betas). Combining that adjustment with proxy CAPM results that use regression-increased betas wrongly exaggerates the size adjustment.³¹⁰

Taking a “size adjustment” out of these contexts and applying it on its own is not appropriate. To the contrary, academic research indicates that the size adjustment does not apply to electric utilities,³¹¹ and the same historical data that underlies application of the “size

³⁰⁶ See *Price and Value to Book Ratio by Sector (US)* (Jan. 2019) http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/pbvdata.html

³⁰⁷ See Part III.F.2, *supra*.

³⁰⁸ The data commonly used to “size adjust” CAPM results is the “Stocks, Bonds, Bills, and Inflation” series of yearbooks, also known as “SBBI.” This series was formerly published by Morningstar, and is now published by Duff & Phelps. Accordingly, we refer to these successive sources in the singular.

³⁰⁹ See Ex. No. A-2, § H.2.b.4.

³¹⁰ See Docket No. EL14-12, JC-100 at 18-19.

³¹¹ See Annie Wong, *Utility Stocks and the Size Effect: An Empirical Analysis*, 33 J. Midwest Fin. Ass’n 95 (1993).

adjustment” to non-utility firms demonstrates that no size adjustment is appropriate for firms that, like utility company proxies, have betas below 1.0.³¹²

The so-called “Empirical” CAPM advanced by certain transmission owner witnesses involves similar cherry-picking. This adjustment is identical in form to the “Blume” adjustment discussed in III.H.2.b)(2), *supra*, but uses a factor of 0.25 rather than 0.33 to regress observed betas toward unity. It rests on a study of the relationship between achieved equity returns and non-Blume-adjusted betas for the period 1926-1984, in which “the risk-free rate . . . was approximately 6% and . . . the [historical] market risk premium was 8%.”³¹³ There is no empirical or theoretical basis for applying this adjustment together with a “Blume” adjustment, especially given today’s much different financial market conditions, which feature a lower risk-free rate and a lower market risk premium.³¹⁴

c) Expected earnings

H.2.c.1 Should the use of utilities in the proxy group for the Expected Earnings model be predicated on the Expected Earnings analysis being forward-looking?

H.2.c.2. What, if any, concerns regarding circularity are there with using the Expected Earnings analysis to determine the base ROE, as opposed to using the analysis for corroborative purposes?

H.2.c.2.i. If there are circularity concerns, are there ways to mitigate these concerns for the Expected Earnings analysis? If these concerns exist, are these concerns more significant than those surrounding the DCF methodology, which effectively separates Expected Earnings and ROE into its dividend yield and growth rate subcomponents?

- (1) The ratio of earnings to book equity is disconnected from the cost of equity, and therefore circular

The “Expected Earnings” method, also known as E/B, is inherently circular, irrespective of whether the E/B ratios on which it is based are achieved or forecast, because at no point does

³¹² See Ex. No. A-2 at 60.

³¹³ Morin, *supra*, at 190 n.12.

³¹⁴ See Parts III.C and III.H.2.b)(1), *supra*.

that method reference security prices or other measures of *investor* opportunity costs and thereby align its outputs with financial market realities.

The circularity of E/B ratios and the need to reference *investors'* opportunity cost were explained in in a seminal 1972 article by Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*.³¹⁵ Myers explained that reference to E/B ratios “ignores capital markets,” which is seriously problematic because “the variable of interest,” as specified by the Supreme Court in *Hope*, is “the return to the equity owner,” and

The shareholder is not directly interested in the ratio of book earnings to the book value of a company he invests in. He looks at anticipated dividends and capital gains relative to the stock price he has to pay. Thus, it is more relevant to interpret the opportunity cost of capital as the return on securities with risks similar to the stock of the utility in question.³¹⁶

Myers further explained that E/B ratios are circular, because utilities' book returns “reflect past regulatory actions and thus do not provide an independent standard.”³¹⁷

Alexander A. Robichek, the President of the American Finance Association, elaborated on this circularity problem.³¹⁸ Robichek explained that the “comparable earnings” E/B approach “leads to circularity. If all regulatory commissions looked merely at each other, no deviations of any magnitude would ever occur even if economic conditions were to warrant a change.” He also identified the key to breaking this vicious circle: “Investments in equity shares are made by the purchase of shares at market prices. Therefore, the fairness of the rate of return to the investor

³¹⁵ 3 Bell J. Econ. & Mgmt. Sci. 58, 62 (1972) (quoting *Hope* at 603).

³¹⁶ *Id.*

³¹⁷ *Id.* at 77.

³¹⁸ Alexander A. Robichek, *Regulation and Modern Finance Theory*, 33 J. Fin. 693, 700 (1978).

must be judged from the investor's point of view in the market place and not on the basis of book value."³¹⁹

The inherent disconnect between investors' opportunity costs and utility stocks' E/B ratios was explained in depth by economists associated with the Massachusetts Institute of Technology and Charles River Associates, published in the *American Economic Review*. It concluded that even *after* making numerous heroic assumptions, "[I]t is impossible to infer either the magnitude or direction of differences in economic rates of return from differences in accounting rates of return. This is because such inferences require not only correction for growth rates, but *also* knowledge of the time shapes of returns."³²⁰

Rejection of reference to E/B ratios rapidly became the financial academy's equivalent of black-letter law. "This [E/B] procedure has now been thoroughly discredited (see Robichek [15]), and it has been replaced by three market-oriented (as opposed to accounting-oriented) approaches: (i) the DCF method, (ii) the bond-yield-plus-risk-premium method, and (iii) the CAPM, which is a specific version of the generalized bond-yield-plus-risk-premium approach."³²¹ Even a textbook authored by experts who have often appeared before this Commission as witnesses for utilities seeking increased ROEs states emphatically: "[A]re book rates of return estimates of the cost of equity? . . . [T]he answer to this question is a resounding 'no.'"³²²

From the 1980s until the about-face attempted in the vacated Opinion No. 531, the Commission agreed. It held that E/B does not measure the cost of equity; rather, it reports

³¹⁹ *Id.* at 701.

³²⁰ Franklin M. Fisher & John J. McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 *Am. Econ. Rev.* 82, 89 (1983).

³²¹ Eugene F. Brigham, Dilip K. Shome, & Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, 14 *Fin. Mgmt.* 33 (1985).

³²² Bente Villadsen, et al., *Risk and Return for Regulated Industries* 129 (Academic Press 2017).

“[a]ccounting rates of return are not reliable measures of the current cost of capital, since they do not reflect the current market prices that are determined in competitive capital markets.”³²³ The same perspective was advanced by the Edison Electric Institute (“EEI”) at that time, arguing in the Order No. 461 proceeding³²⁴ that returns on book equity were unrelated to the cost of equity and that ROEs should be set at “[t]he current market cost of common equity,”³²⁵ estimated via the DCF method.³²⁶

For the three decades that followed (until the arbitrary and subsequently vacated change of course attempted in Opinion No. 531), the Commission sought to base ROEs on the DCF-indicated “current market cost of common equity.” Attempts to revive the “thoroughly discredited” E/B method were rare, and never successful. For example, Opinion No. 429 reiterated that a methodology based on earnings divided by book value equity is not a “market oriented methodolog[y],”³²⁷ and that “[n]o direct market-determined cost rate can be derived from this approach because the nature of the analysis is related to book values.”³²⁸ It remains true that base ROEs should reflect the current market cost of common equity, even though E/B ratios now exceed, rather than understate, that market cost. Base ROEs should be set at the cost-based return that investors require on their *market-priced* equity investments—that is, “the return that

³²³ Order No. 420, FERC Stats. & Regs. at 31,367.

³²⁴ *Generic Determination of Rate of Return on Common Equity for Pub. Utils.*, Order No. 461, 37 FERC ¶ 61,287 (1986), *reh’g denied*, Order No. 461-A, 38 FERC ¶ 61,160 (1987).

³²⁵ Reply Comments of the Edison Electric Institute at 12, *Generic Determination of Rate of Return on Common Equity for Pub. Utils.*, No. RM86-12-000 (Sept. 30, 1986), eLibrary No. 19861002-0263. EEI advanced this position in response to comments by APPA, which had discussed the difference between the market-based cost of equity and book returns. Based on a risk-adjusted version of the latter, APPA had argued that allowed returns could be set below the market-indicated DCF level. See Comments of American Public Power Association, *Generic Determination of Rate of Return on Common Equity For Pub. Utils.*, No. RM86-12-000 (Sept. 2, 1986), eLibrary No. 19860904-0078. The Commission disagreed with APPA’s position, and the issue is now well-settled (or was, prior to Opinion No. 531).

³²⁶ See Reply Comments of the Edison Electric Institute, *supra*, at 5.

³²⁷ *Consumers Energy Co.*, Op. No. 429, 85 FERC ¶ 61,100, at 61,362 (1998), *on reh’g*, Op. No. 429-A, 89 FERC ¶ 61,138 (1989), *reh’g denied*, Op. No. 429-B, 95 FERC ¶ 61,084 (2001).

³²⁸ *Id.* (quoting Ex. CP 4, at 39).

the utility must provide its shareholders in order to induce them to invest their capital in that utility.”³²⁹

The NOI proposal to discard all of that learning and return to referencing E/B ratios—even though the significance of accounting reports in determining stock market prices has sharply *declined* in the interim³³⁰—is premised on the notion that these ratios “are relevant to determining [a regulated] utility’s cost of equity, because those returns on book equity help investors determine the opportunity cost of investing in that particular utility instead of other companies of comparable risk.”³³¹ But that notion is not factual. Investors cannot buy into any investment’s actual or expected E/B ratio, because they must transact at shares’ market price. As stated in the textbook repeatedly cited in the NOI,

Accounting rates of return are not opportunity costs in the economic sense. . . . Only stock market price is sensitive to a change in investor requirements. Investors can only purchase new shares of common stock at current market prices and not at book value.³³²

The esteemed regulated-utilities economist Alfred Kahn made the same point: “comparable earnings” on book-value equity does not reflect what “purchasers of their [public utility companies’] stocks could obtain on their dollars elsewhere,” because “[t]he cost of capital, which is what a utility company must match if it is to attract funds, is what investors could obtain by buying the *securities* of other companies in the open market—not what the companies themselves earn on a dollar of additional investment.”³³³

³²⁹ *Coakley* Briefing Order, P 36 & n.73.

³³⁰ *See* note 137, *supra*.

³³¹ NOI P 15.

³³² *Morin*, *supra*, at 393.

³³³ *Kahn*, *supra*, at 52 & n.79.

Similarly, one of the witnesses most commonly employed by transmission owners has admitted that investors contemplating an equity investment in regulated utilities' parents have no opportunity to do so at the *book* value of those shares, but rather must pay the market price,³³⁴ and that E/B ratios therefore do not provide a market-based measure of transmission owners' cost of equity.³³⁵ Indeed, this method does not “attempt[] to estimate the cost of equity” at all.³³⁶

In other words, investors can only buy into shares' E/M ratio (a.k.a. E/P) — which is always smaller when M exceeds B, as it almost universally does for reasons discussed in Part III.F.2, *supra*. When an investor must pay more than book value to gain the right to the future expected earnings on book value, that investor must be expecting to earn something less than the forecast earnings per book value on the higher amount of investment in the company.³³⁷ That is why financial theory holds, as the Commission recognized in Opinion No. 314, that “when the price-to-book ratio is greater than one, the rate of return investors expect [the company] to earn on [book] common equity is greater than the rate of return investors require from their investment in [the company's] common stock.”³³⁸

The mistaken contention that E/B ratios reflect “opportunity cost” is often attributed³³⁹ to Judge Learned Hand's opinion in *Consolidated Gas Co. v. Newton*, 267 F. 231, 237 (S.D.N.Y. 1920). But Judge Hand's discussion of opportunity costs was a comparison of investors' *market-priced* opportunities, i.e., “profits *available* elsewhere”:

³³⁴ EL16-64 Tr. at 784:5-20.

³³⁵ *Id.* at 783:20-21 (“The expected earnings approach is not a market-based method” (McKenzie)); *Id.* at 786:6-7 (“It's not a market-based model”); *see also id.* at 447:1-20 (expected earnings model is not linked to the Efficient Market Hypothesis).

³³⁶ *Id.* at 786:6-7.

³³⁷ Morin, *supra*, at 395.

³³⁸ *Orange & Rockland Utils., Inc.*, Op. No. 314, 44 FERC ¶ 61,253, at 61,952, *on reh'g*, Op. No. 314-A, 45 FERC ¶ 61,252 (1988), *reconsideration denied*, 46 FERC ¶ 61,036 (1989).

³³⁹ *See, e.g.*, Charles F. Phillips, Jr., *The Regulation of Public Utilities: Theory and Practice* 397 & n.124 (Pub. Utils. Reports 1993).

The recurrent appeal to a just rate and a fair value assumes that the effort is to insure such a profit as would induce the venture originally and that the public will keep its faith so impliedly given. That, I think, involves a tacit comparison of the profit possible under the rate with *profits available elsewhere*; i.e., under those competitive enterprises which *offer an alternative investment*. The implication is that the original adventurer would compare future rates, varying as they would with the going profit, and would find them enough, but no more than enough, to induce him to choose this investment. By insuring such a return it is assumed that the supply of capital will be secured necessary to the public service. As the *profits in the supposed alternative investment* will themselves vary, so it is assumed to be a condition of the investors' bargain that their profit shall measurably follow the general rates.

Id. (emphasis added). “Stated another way, the opportunity cost of capital concept holds that ‘capital should not be committed to any venture unless it can earn a return commensurate with that *prospectively available* in alternative employments of similar risk.’”³⁴⁰ E/B ratios are disconnected from prospectively available returns because “[t]he book value is a record of the past, showing the cumulative amount that stockholders have invested, either directly by purchasing newly issued shares or indirectly through retaining earnings. In contrast, the market price is forward-looking, incorporating investors’ expectations of future cash flows.”³⁴¹ Thus, while the opportunity-cost concept supports using market-based financial metrics of comparable-risk companies to estimate the cost of equity for a particular at-issue utility, it does not support using those proxies’ E/B ratios.

Relatedly, NOI Question H.2.c.2.i. creates a false similarity between the DCF method and E/B models when it asserts that the DCF method “effectively separates Expected Earnings and ROE into its dividend yield and growth rate subcomponents.” In the E/B method, earnings (realized and/or expected) are divided by equity book value. In the DCF method, the divisor of

³⁴⁰ Phillips, *supra*, at 397 & n.123 (quoting testimony of a witness for Tampa Electric Company in the Florida Public Service Commission Docket No. 800011-EU; emphasis added).

³⁴¹ Ehrhardt & Brigham, *supra*, at 102.

the dividend yield term reflects market rather than book values; the growth rate term connects actual recent earnings to projected future earnings, and neither baseline nor projected earnings are divided by book value equity.

A clarifying hypothetical³⁴² will demonstrate the circularity inherent in the E/B method. Suppose that the U.S. electric transmission industry consisted of eleven public utilities, each exchange-traded, and each with a constant equity ratio that, multiplied by its net plant value rate base, happens to equal its equity book value. The utilities are regulated exclusively by this Commission, which adopts as its ROE determination method the median of the eleven utilities' expected E/B ratios, and does not allow incentive ROE adders. Investors expect that regulatory regimen to continue. In Year 1, they are earning (and are expected to continue earning) from 10.0% to 11.0% returns on their mid-year³⁴³ book value equity (and rate base), distributed equally over that range. Applying the proxy group median E/B ratio, the Commission sets the utilities' allowed ROEs at 10.5%. Now suppose that from Year 2 forward, those utilities' actual financial market equity cost is 12.5%. Because every utility in the proxy group would be expected to continue receiving the 10.5% ratio of every utility's earnings to its equity book value, their 10.5% allowed ROE would never change; updated financial market information would never interrupt the ceaseless replication of the starting-point 10.5%. Or, rather, it would change only when the utilities, unable to attract capital because their allowed ROEs fall short of equity's market cost and, thus, unable to replace aging facilities, began to suffer service

³⁴² That these assumptions are unrealistic creates further problems for the E/B method. *See* Parts III.F.2. .5, *supra*. But we here focus on what would be the best possible scenario for use of the E/B method, by assuming validity of the false analogy (between holding company equity book values and operating utility net plant values) that has been used to rationalize it.

³⁴³ To keep this hypothetical simple, we gloss over the minor adjustment for mid-year versus year-end book value that was made in the E/B exhibits referenced in the PNA.

degradation and lose load to self-supply and the like, leading to lower expected earnings, even further below the capital attraction level.³⁴⁴

- (2) The justifications proffered for using E/B ratios in the vacated Opinion No. 531-B were not valid

In the vacated Opinion No. 531-B, criticisms of Expected Earnings studies were dismissed on several invalid grounds. In light of the PNA's use of E/B ratios, we address those grounds here.

First, Opinion No. 531-B asserted, with no substantial evidentiary basis,³⁴⁵ that “[i]nvestors rely on both the market cost of equity and the book return on equity in determining whether to invest in a utility, because investors are concerned with both the return the regulator will allow the utility to earn *and* the company's ability to actually earn that return.”³⁴⁶ The proxy companies' “book return on equity,” i.e., their returns divided by their book equity, do not indicate utility companies' ability to actually earn a return on each dollar invested by present investors, because the proxy companies' book equity is not aligned with the market-priced equity sold to present investors.

Second, Opinion No. 531-B responded (P 128) to CAPs' citation of Opinion No. 314 by asserting that the specific proposal at issue there was to use the book value return on equity (r) for the subject utility as the divisor for its DCF dividend yield, and that the rejected proposal

³⁴⁴ Alternatively, suppose that from Year 2 forward, the actual cost of capital for those utilities is 8.5%. Again, that updated financial market information would never interrupt the ceaseless replication of the starting-point 10.5%. Or, rather, it would change only when the utilities, flush with cash in excess of their system re-investment needs because their allowed ROEs are well above the market cost of equity, used it to purchase diversified lines of business with even higher returns, leading to higher expected earnings, even further above the capital attraction level.

³⁴⁵ As its only basis for this assertion, Opinion No. 531-B, P 129 nn. 277-78, cited “Tr. 637:6-12.” But the referenced transcript citation has nothing to do with this subject; it consists of inapposite cross-examination testimony regarding NETOs' risk premium study. Although the cited transcript includes the truism that “[t]he allowed ROE is a starting point, and then there is the ability of the company to actually earn that,” nothing in that testimony supports reference to the proxies' return on *book* equity rather than on *market-priced* equity. Tr. at 637:8-9, May 8, 2013, *In re Coakley*, Docket No. EL11-66-001, eLibrary No. 20130508-4007.

³⁴⁶ Op. No. 531-B, P 129.

“would have had the effect of *setting* Orange & Rockland’s base ROE at Orange & Rockland’s own expected return on book equity.” Notwithstanding those attempted distinctions, the underlying finding in Opinion No. 314 (at 61,952) that “market determinations of capital cost” require reference to the expected return on market-priced equity (k) rather than expected return on book equity (r) is directly relevant to NETOs’ “expected earnings” studies. Those studies’ *only* input (prior to a minor adjustment for the difference between year-end and year-end book value equity) is expected return on book equity, (r), exactly the same input that was rejected in Opinion No. 314. Nor is there any meaningful distinction in the fact that the (r) rejected in Opinion No. 314 was the subject utility’s own (r) rather than proxy group (r) values. Whether the (r) belongs to a single utility or a group, it represents expected return on book equity, not expected return on any opportunity available to present utility investors.

Third, Opinion No. 531-B asserted that “all else being equal, an investor is more likely to invest in a utility that it expects will have the opportunity to earn a comparable amount on its book equity as other enterprises of comparable risk are expected to earn.”³⁴⁷ This assertion misses the point: “all else” is not equal, because market-to-book ratios vary, which makes the assertion meaningless as a justification for considering per-book earnings rather than earnings on market price.³⁴⁸ As explained by a leading treatise on public utility ratemaking:

If a . . . stock is selling for two times its book value, and earning 20 percent per year on book equity, it would be erroneous to suggest that a new or prospective investor in this stock would receive a return on his or her investment of 20 percent. The investor’s “book” value is the purchase price, and that return, given the assumptions would be 10 percent. Thus, comparing book returns of

³⁴⁷ Op. No. 531-B, P 129.

³⁴⁸ See CAP-500 at 47-51.

companies with quite different market to book ratios is highly questionable at best.³⁴⁹

For all these reasons, reference to proxy group E/B ratios distorts and inflates the estimation of investors' required return on market-priced equity. Accordingly, E/B analysis should be disregarded.

- (3) If E/B ratios are used, they should reflect multiple years' ratios

If return on holding companies' book equity is to be referenced at all, it is important that the referenced return accurately capture what investors can expect to earn from long-held investments in utility stock. Accordingly, rather than rely solely on Value Line's estimate of per-book earnings five years ahead (as was done in the NET-709 study that Op. No. 531 illustratively cites), any such study should be based on the proxies' representative return over the longest readily available period, both historic and projected.

At least four considerations commend this approach. First, the textbook cited in the NOI recommends that in any study of per-book earnings, "the time period should include at least one full business cycle that is representative of prospective economic conditions for the next cycle."³⁵⁰ Dr. Morin warns that selecting a short-term period may not be reflective of the firm's expected long-run earnings, and recommends that in order "to dampen cyclical aberrations and remove the effects of cyclical peaks and troughs in profitability, an average over several time periods should be employed."³⁵¹ Similarly, the pipeline witness in the *Trailblazer* case referenced in NOI P 32, Question B4 n.59, while not affirmatively supporting reliance on E/B

³⁴⁹ James C. Bonbright, Albert L. Danielsen & David R. Kamerschen, *Principles of Public Utility Rates* 330 (2d ed. 1988). Although the full quoted statement refers at the ellipsis to "nonregulated" stock, its mathematical observation obviously applies also to the stock of publicly-traded utility holding companies.

³⁵⁰ Morin, *supra*, at 383-84.

³⁵¹ *Id.* at 383.

ratios, testified that “[i]t is appropriate to consider a relatively long measurement period in the Comparable Earnings approach [encompassing both historical E/B ratios and projections] in order to cover conditions over an entire business cycle.”³⁵² One estimate five years out does not capture a full business cycle. Second, including in the reference period past years in which per-book earnings represent actual accounting figures will help to address the PNA’s stated reluctance to rely on the forward estimates of a single analyst.³⁵³ Third, including all three projection periods would be consistent with the Commission’s former use of multi-period Value Line “r” estimates as part of the $br+sv$ form of DCF analysis.³⁵⁴ Fourth, the only utility investors with an “opportunity” to earn a return matching their firm’s E/B ratio are those who bought in decades ago, before market-to-book ratios grew to exceed unity. Thus, the only measure of E/B that bears even a passing resemblance to the *Coakley* Briefing Order’s basis for referencing E/B is long-term E/B.

- (4) If used, E/B ratios should be adjusted to account for how the proxies’ equity ratios differ from those of the subject utility, and for how the proxies’ M/B ratios differ from those of operating utilities

Proxy companies typically have considerably thinner equity ratios than do operating transmission-owning utilities, i.e., are considerably more leveraged.³⁵⁵ This equity ratio difference directly affects the proxies’ “expected earnings,” as more leverage entails more earnings for each dollar of book equity, raising the E/B ratio that (after a small adjustment for the difference between year-long and year-end earnings) constitutes each proxy’s “Expected

³⁵² Supplemental Direct Testimony of Paul R. Moul on Behalf of Trailblazer Pipeline Company LLC, Ex. No. TPC-0117, at 37:11-13, *Trailblazer Pipeline Co.*, No. RP19-922-002 (May 21, 2019), eLibrary No. 20190521-5165.

³⁵³ See *Coakley* Briefing Order, P 47.

³⁵⁴ See, e.g., *Midwest Indep. Transmission Sys. Operator, Inc.*, 100 FERC ¶ 61,292, PP 14-17 (2002).

³⁵⁵ See, e.g., Docket Nos. EL11-66 et al., Ex. No. CAP-500, § IV.A.

Earnings.” It is no surprise, therefore, that statistical analysis shows that proxies’ expected earnings correlate to their equity ratios.³⁵⁶

Accordingly, to the extent that the proxies’ expected earnings are referenced at all, the resulting indication of the *proxy companies*’ expected earnings cannot be considered a meaningful indicator of *subject utilities*’ expected earnings without adjusting for the difference between the equity ratios of proxy companies and operating utilities. With such adjustment, the expected earnings results align much more closely with the DCF results.³⁵⁷

Accounting for the equity ratio difference between the proxies and subject utilities themselves is essential to a meaningful application of E/B ratios, because E/B ratios themselves take no account of the proxy stocks’ market price. The Commission has declined to adjust *DCF* results for differences between proxy and subject-utility equity ratios, reasoning that the subject utilities’ equity ratios affect their credit ratings, which in turn bound the selection of proxies, so the DCF results already select for stocks with appropriately high credit ratings and associated low risk, and less-risky proxies generally have lower DCF results.³⁵⁸ But the reasons that less-risky proxies generally have lower DCF results is that investors bid up the market price of equities that offer a favorable reward for a given level of risk, reducing such proxies’ dividend yields and DCF results. No such effect reduces the E/B ratio of proxy companies whose equity ratio is not comparable to that of the subject utilities. Because the difference between proxy and subject utility equity ratios is not accounted for directly through E/B inputs, it must be accounted for after identifying the proxies’ E/B ratios.

³⁵⁶ *See id.*

³⁵⁷ *See id.*

³⁵⁸ *See* Opinion No. 551, P 288.

d) Risk premium

The Risk Premium (“RP”) method seeks to extrapolate a present cost of equity from past regulatory decisions by identifying a linear relationship between the cost of equity and cost of debt implicit in those decisions, and then adding the implied current difference to the present cost of debt. This method is inherently less accurate than a well-constructed DCF or CAPM study, as it relies on echoes of the financial market conditions referenced in past cases, whereas the DCF and CAPM methods apply a market-based method to primary data. Moreover, RP results tend to replicate the regulatory lag and inertial continuation of past returns that affected past regulatory decisions. Consequently, in this period of declining equity costs, RP results will tend to exceed the current cost of equity. Nonetheless, the RP method directly reflects current financial market conditions (at least, current bond market conditions) and given that feature and its simplicity, it remains in fairly common regulatory use. Accordingly, while we do not favor reference to RP, neither do we strongly oppose it, as a general method.

But that acquiescence is limited to the general concept of referencing some version of the RP method. It does not encompass the particular versions of RP that transmission owners have commonly presented to the Commission in recent cases. In particular,

- RP studies should not use two different bond yield measures to calculate the equity minus debt yield risk premium and the bond yield to which that risk premium is added—that is, after calculating the risk premium using low actual bond yields, they should not add the resulting risk premium to high projected bond yields;
- The data set of past regulatory decisions used in RP studies to identify the past cost of equity as an input to the equity risk premium should exclude, or adjust the bond yield comparison dates of, decisions that did not determine an updated base cost of equity; and

- RP studies should account for risk differences between the subject utility and the utilities at issue in the data set cases.

Below, we elaborate on these points and relate them to NOI Questions H.2.d.1 through H.2.d.3.ii.

- (1) Risk premium studies should compare the cost of equity as found for prior study periods to those study periods' contemporaneous actual bond yield

H.2.d.1 Should the analysis be historical or forward-looking?

The MISO I Initial Decision relied on MISO TOs' historical risk premium analysis, and rejected reliance on projected bond yields as "speculative":

Dr. Avera also produces a risk premium analysis using bond yields projected for 2016-20. This Initial Decision rejects those studies. Projected yields are speculative, and, therefore, a less reliable basis for a study than historical yields.³⁵⁹

On exceptions, the Commission affirmed this determination:

The Presiding Judge held that projected yields used in risk premium analyses are speculative and less reliable than historical yields, and rejected Dr. Avera's use of projected Baa-rated bond yields. . . . [W]e agree with the Presiding Judge. . . .³⁶⁰

That ruling remains sound. The issue here is not really one of choosing between "historical" and "forward-looking" analyses; it is which measure of bond yields should be added to the risk premium derived from historical data in order to produce a reliable forward-looking estimate of equity's cost. Given that purpose, as Mr. Gorman explains,³⁶¹ it would not be rational to derive a risk premium based on actual past utility bond yields, and then add that risk premium

³⁵⁹ *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 153 FERC ¶ 63,027, P 257 (2015) (footnote omitted), *aff'd*, Op. No. 551, 156 FERC ¶ 61,234 (2016).

³⁶⁰ Op. No. 551, P 194. *See also Potomac-Appalachian Transmission Highline, L.L.C.*, 122 FERC ¶ 61,188, P 102 (rejecting "speculative forecasting of th[e] indexed cost of debt" as a basis to raise the low-end test used to filter proxies' DCF results).

³⁶¹ *See Ex. No. A-2, H.2.d.1.*

to current forecasts of future utility bond yields. We have seen no instance in which transmission owners advocating for use of projected bond yields have presented an internally consistent RP study in which projected bond yields are used to derive the risk premium as well as the yield to which it is added.

Even if projected bond yields were used consistently to derive the risk premium as well as the yield to which it is added, such a study would not be useful. Projected bond yields are not actually available to study-period investors, and thus do not represent the known and measurable cost of capital. Projected bond yields are also highly unreliable, as bond investors know—which is why they price bonds at their present yield rather than waiting for bonds’ prices to fall and yields to rise.³⁶² In recent years, economists’ projections of future yields have generally exceeded current yields, and with equal consistency, their projections of yield increases have proved to be incorrect. Through a comparison of actual observable yields and projections of future changes in yields over the period December 2000 through December 2014, Mr. Gorman’s study for the MISO ROE paper hearing demonstrated that using analysts’ projected changes in yield does not produce a reliable estimate of what the actual cost of capital will be at some point in the future. Investors are aware of that reality, as the prices in bond markets demonstrate. Thus, projected bond yields do not accurately reflect investor return requirements, are not an actual depiction of changes in return requirements for future periods, and are not a known and measurable estimate of what the investor-required return on a bond or stock will be. Therefore, using projected bond yields in a Risk Premium analysis to measure the current market cost of equity is not reasonable.

Using actual utility bond yields consistently, a reasonable risk premium study can be conducted by comparing those bond yields to the base ROEs contemporaneously allowed by

³⁶² See Docket No. EL14-12, Ex. No. JCA-11, at 24-26; *id.* at 37-38 (Stephen Hill explaining why the use of projected bond yields in determining the current cost of equity capital produces unreliable results).

state commissions for generation-divested electric utilities.³⁶³ Use of state-allowed rather than FERC-allowed ROEs brings to bear a larger set of case results. It also avoids the distortion caused by treating cases in which FERC did not re-study the base cost of equity (e.g., simply approved an incentive ROE adder, extended to new MISO participants the 12.38% base ROE that had been identified as cost-based using a six-month study period encompassing September 11, 2001) as if they identified a refreshed cost of equity. As numerous witnesses have demonstrated,³⁶⁴ that misdirected approach makes false comparisons between older base ROEs and later bond yields, and thereby upwardly distorts the indicated risk premium and cost of equity.

- (2) The risk premium method assumes a linear relationship between cost of equity and bond yields; that assumption is not compatible with a finding of “anomalous capital market conditions”

H.2.d.2. Is a Risk Premium analysis compatible with a finding of anomalous capital market conditions? Why or why not?

As discussed in the introduction to this Part III.H.2.d), *supra*, the RP method relies directly on bond yields, requires a linear relationship between debt yields and equity costs, and assumes that the subject utility’s equity is risk-comparable to the utilities at issue in past cases. These assumptions make the risk premium method incompatible with a finding that bond yields, or other market conditions, are “anomalous.”

³⁶³ See, e.g., Dockets No. EL11-66 et al., Exhibit No. CAP-500, Affidavit of Dr. J. Randall Woolridge (Jan. 11, 2019), Part V.B., and the supporting exhibits referenced therein. Similarly, in *System Energy Resources, Inc.*, Docket Nos. EL17-41, et al., Dr. S. Keith Berry has presented risk premium studies based on annual average state-allowed ROEs collected by Regulatory Research Associates, for the 1991-forward period covered by RRA’s summary. See Ex. No. SAM-0001 (Direct Testimony of) at 38-41 and associated Exs. Nos. SAM-0015 and SAM-0023.

³⁶⁴ See, e.g., Dockets No. EL11-66 et al., Ex. No. CAP-500, Affidavit of Dr. J. Randall Woolridge (Jan. 11, 2019), Parts V.A and V.C.; Docket No. EL15-45, Ex. No. RPG-9 at 18-26, and the supporting exhibits cited in each of these testimonies.

This conceptual incompatibility was directly visible in two decisions issue on June 19, 2014: Opinion No. 531, and the contemporaneous decision in *SCE*,³⁶⁵ which has not been vacated and remains good law. Prior to those June 2014 decisions, the Commission had a policy of adjusting the allowable ROE as indicated by study-period DCF results so as to track trends in treasury yields from the study period to the final order date.³⁶⁶ Although not labelled as such, this was a risk premium method: it combined a measure of what equity cost in the past with bond yield trends to infer equity's updated cost. In the cited June 2014 decisions, the Commission determined that the relationship between bond yields and the cost of equity had become non-linear, and that it therefore would no longer apply an adjustment to track bond yield trends.³⁶⁷ Logically, that same finding also precludes use of the risk premium method.

- (3) If used, the risk premium method should be adjusted for the subject utility's relative risk

H.2.d.3. Unlike the financial models discussed above, the Risk Premium analysis produces a single ROE rather than a zone of reasonableness. Does this characteristic require the Commission to use the Risk Premium model differently than the other models?

H.2.d.3.i. Is there a method by which the Risk Premium ROE could be adjusted upward for an above average utility or downward for a below average risk utility? If not, is it reasonable to consider the results of a Risk Premium analysis when determining the ROE of an above or below average risk utility?

H.2.d.3.ii. Is it appropriate to use a Risk Premium analysis when conducting the first prong of the section 206 evaluation?

By combining erroneous assumptions about the RP method and the section 206 evaluation of whether an existing ROE remains reasonable, Question H.2.d.3 and its subparts create avoidable dilemmas. These questions assume that the first-prong section 206 evaluation must be based on ranges, rather than distributions, of proxy-based results. They also assume that

³⁶⁵ *So. Cal. Edison Co.*, 147 FERC ¶ 61,240 (2014) ("*SCE*").

³⁶⁶ *See id.* P 8 and cases cited therein.

³⁶⁷ *See id.* P 9.

the RP method necessarily produces only a single point value, applicable only to an average-risk utility. Although it would follow from these premises that the RP method should not be used within the first prong, nor used within the second prong for atypically low-risk or high-risk subject utilities, all of these premises are false. If the risk premium method is applied reasonably, it will produce alternately a risk-appropriate single indicated ROE, or a range of risk-appropriate ROEs; either measure can then be combined with other methods' results within both section 206 prongs.

Nature of first prong. Contrary to the PNA, the first prong of the section 206 evaluation—the assessment of whether an existing ROE remains just and reasonable—does not require that the assessment be restricted to methods that generate a range of results. Just as it would be unreasonable to continue a challenged 5.5% allowance for debt cost when the single best estimate of the utility's cost of debt is 5%, it would be unreasonable to continue a challenged 10% allowance for equity cost when the single best estimate of the cost of equity is 9.5%. *See* Part III.G.2, *supra*.

Risk comparability within RP method. It is true that in the versions described in the PNA and used by TO witnesses in the pending New England and MISO paper hearings, the RP method takes no explicit or systematic account of whether the subject utility and the data-set utilities are risk comparable. Rather, this version of the RP method purports³⁶⁸ to gather all transmission ROE allowance orders over a specified historical period. However, this is not an inherent characteristic of the RP method. The current bond yield to which the risk premium is added can be selected to match the utility's specific bond rating. As a clarifying hypothetical,

³⁶⁸ We say “purports” because as applied by TO witnesses, orders allowing relatively low transmission ROEs are commonly excluded based on claims that they involved non-risk-comparable utilities, whereas orders allowing relatively high transmission ROEs are included without undertaking any risk comparison between the utilities at issue therein to the subject utility for which the RP study is being performed.

suppose that the data set cases used to quantify the relationship between bond yields and the cost of equity all concerned utilities with BBB bond ratings, whereas both credit rating agencies maintain an A rating for the subject utility. To obtain an RP-based, risk-comparable indication of the subject utility's cost of equity, a risk premium that represents the difference between BBB utility bonds and BBB utilities' cost of equity could be added to the yield on A-rated utility bonds.³⁶⁹ Alternatively, the data set cases used to quantify the relationship between bond yields and the cost of equity could be screened to be limited to cases involving bond yields or other characteristics comparable to the subject utility. For example, if state-allowed ROEs are used as the data set,³⁷⁰ they can be limited to cases involving ROEs for generation-divested utilities, thus focusing on the lower risk of delivery services.

Output spread of the RP method. The NOI's statement that "the Risk Premium analysis produces a single ROE rather than a zone" should be reconsidered. Although most (though not all) of the TO exhibits referenced in the PNA distilled their risk premium results to a single value per study, that is not an inherent characteristic of the RP method. For example, rather than using only BBB bond yields to identify the data-set-period risk premium and the current bond yield to which it is added, the Commission could use a pair of ratings, each placed one (or two) "notch(es)" above and below that of the subject utility. Alternatively, the RP method could use an annual-average approach,³⁷¹ modified to group each year's allowed ROEs into those falling below and exceeding the annual average, and thereby identify low and high risk premiums each

³⁶⁹ While this approach would use different bond yields to (a) derive and (b) sum with the risk premium, that difference would not be a "mismatch" because it would serve to account for the risk difference between the data set utilities and subject utility.

³⁷⁰ See Part III.E.6, *supra*.

³⁷¹ Whereas RP studies referenced in the *Coakley* Briefing Order generated separate risk premiums for each of the dozens of cases in its 2006-forward data set, the RP study referenced in the MISO Briefing Order averaged case outcomes and bond yields within each calendar year so as to generate one risk premium per year. The suggestion made here is a variant of the latter approach.

year. Either of these approaches would generate a range of RP results rather than a point value. As discussed above, we see no need to generate a results range rather than point value, and we therefore do not affirmatively advocate either of these variants. But if it were deemed necessary to limit the section 206 first prong to methods that produce ranges of results, there is no technical reason why RP could not be one of those methods—and RP would serve better than E/B in that capacity.

CONCLUSION

The PNA referenced in the NOI is contrary to the Federal Power Act and the standards of reasoned decision-making. It should be revised as recommended above. Principally:

- The Commission should continue to rely heavily on the central value indicated by DCF studies of risk-representative proxy groups, using its longstanding DCF model, including its recognition that long-term GDP growth constrains long-term growth of earnings and dividends.
- E/B ratios should play no role in identifying the just and reasonable base ROE, as such estimates do not measure the return that investors require to be induced to invest in market-priced utility equities.
- CAPM studies should use a realistic market risk premium, such as one that recognizes long-term Gross Domestic Product growth as a normalizing constraint on the perpetual continuation of near-term forecasts of earnings growth.
- Any referenced risk premium study should be based on actual bond yields and exclude spurious data points.
- Base ROE determinations should be based on the medians (or for non-average-risk subject utilities, a different, risk-appropriate percentile), not the midpoints, of the utilized proxy groups and methods. There is no *stare decisis* basis for using midpoints in the new way contemplated by the PNA. Nor is that statistically unfounded and error-prone approach consistent with reasoned decision making.

- The three proxy-based methods (DCF, CAPM, and E/B) should not be treated as if they studied three different proxy groups. If those three studies are all to be referenced and given equal weight, then their individual-proxy outputs should be averaged to produce a composite return estimate for each proxy, before forming the composite range.
- With ranges (as distinct from distributions) of proxy results properly removed from playing any decisional role, many of the issues raised in the NOI and perpetually litigated in case-specific proceedings, such as proxy group composition and the tests for excluding high and low results outliers, will have appropriately diminished significance, and can therefore be resolved through bright-line tests.
- Complaints should not be dismissed based on a rebuttable presumption that existing ROEs remain just and reasonable unless they exceed a shield level set above the indicated cost of equity. Under the cost-based ratemaking, and consistent with *Emera Maine*, an existing ROE should be remedied if it exceeds the cost-based just and reasonable level, and not only if it exceeds an even higher level.

Respectfully submitted,

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