BEFORE THE

PUBLIC UTILITIES COMMISSION OF OHIO

THE DAYTON POWER AND LIGHT COMPANY

CASE NOS. 20-1651-EL-AIR
20-1652-EL-AAM
20-1653-EL-ATA

SUPPLEMENTAL DIRECT TESTIMONY IN SUPPORT OF OBJECTIONS TO STAFF REPORT OF ADRIEN M. MCKENZIE, CFA

ON BEHALF OF
THE DAYTON POWER AND LIGHT COMPANY D/B/A AES OHIO

- □ **MANAGEMENT POLICIES, PRACTICES, AND ORGANIZATION**
- □ **OPERATING INCOME**
- □ **RATE BASE**
- □ **ALLOCATIONS**
- ■ **RATE OF RETURN**
- □ **RATES AND TARIFFS**
- □ **OTHER**

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adrien M. McKenzie, and my business address is 3907 Red River, Austin, Texas 78751.

Q. ARE YOU THE SAME ADRIEN M. MCKENZIE WHO PREVIOUSLY SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY IN SUPPORT OF OBJECTIONS TO THE STAFF REPORT?

A. My testimony will support certain objections to the Staff Report raised by The Dayton Power & Light Company d/b/a AES Ohio ("AES Ohio" or "the Company") concerning the fair rate of return on equity (“ROE”) that AES Ohio should be authorized to earn on its investment in providing electric utility service. My testimony supports the objections filed by the Company on August 25, 2021, as shown below:

Objection Number	Description
6	Return on Equity – Failure to Address Company’s Recommendation: AES Ohio objects to the recommendation in the Staff Report to reject the Company’s recommended cost of common equity of 10.50% in favor of a range of 9.28% to 10.29%. Staff Report, pp. 21-22, 177 (Schedule D-1). That recommendation is unreasonable and unlawful because it fails to address evidence supporting the Company’s reasonable recommendation.

7 Return on Equity – Unreasonable Proxy Group: AES Ohio objects to the proxy group used in the Staff Report to calculate the Company's cost of common equity. Staff Report, pp. 21-22. The use of that proxy group is unreasonable and unlawful because it is very constrained, increasing the potential for error and reducing the reliability of Staff's recommended cost of common equity.

8 Return on Equity – CAPM: AES Ohio objects to the application of the Capital Asset Pricing Model ("CAPM") in the Staff Report. Staff Report, pp. 21-22. The application of CAPM in the Staff Report is unreasonable because it uses a market risk premium from an internet source called Fairness Finance, which does not provide a reliable guide to investors' expectations and is incomplete.

9 Return on Equity –Consideration of a Comparable Earnings Approach: AES Ohio objects to the failure of the Staff Report to consider the comparable earnings approach based on earned rates of return. Staff Report, pp. 21-22. The failure to consider this approach is unreasonable and unlawful.

10 Return on Equity –Consideration of a Risk Premium Approach: AES Ohio objects to the failure of the Staff Repot to consider the risk premium approach based on earned rates of return. Staff Report, pp. 21-22. The failure to consider this approach is unreasonable and unlawful.

11 Return on Equity – Consideration of Implications of the Company's Bond Rating: AES Ohio objects to the failure of the Staff Report to consider the implications of the Company's below investment grade bond rating from S&P Global Ratings. Staff Report, pp. 21-22. The

failure to consider those implications is unreasonable and unlawful because the Company's bond rating implies greater risks and a higher cost of equity than reflected in the Staff's proxy group on average.

Q. ARE YOU SPONSORING ANY EXHIBITS?

A. Yes, I sponsor the following exhibits:

- Exhibit AMM-S1 – Staff CAPM – Corrected
- Exhibit AMM-S2 – Projected Earned ROE

Q. WHAT ROE DOES THE STAFF REPORT RECOMMEND FOR AES OHIO?

A. After adjusting for the impact of common equity flotation costs, the Staff Report recommends an ROE range of 9.28% to 10.29% for AES Ohio.[1] The midpoint of this range is 9.79%.

Q. PLEASE SUMMARIZE YOUR RESPONSE TO THE ROE RECOMMENDATIONS OF THE STAFF REPORT.

A. The cost of equity recommended by the Staff Report is too low and does not reflect the risk perceptions and return requirements of real-world investors in the capital markets. My supplemental testimony in support of the Company's objections to the Staff Report demonstrates that:

- The Staff Report does not present any criticisms or otherwise respond to the evidence in my direct testimony, which supports an ROE for AES Ohio of 10.5%.
- The proxy group used as the basis for Staff's recommended ROE is inconsistent with the underlying selection criteria identified in the Staff

[1] Staff Report at 22.

Report and is unreasonably constrained, which undermines the reliability of the resulting cost of equity estimates.

- The application of the CAPM presented in the Staff Report is compromised by reliance on inputs that does not adequately reflect investors' expectations and ignores adjustments for the impact of firm size supported by financial research.
- The Staff Report does not address the empirical CAPM ("ECAPM"), which is designed to correct for published financial research finding that cost of equity estimates based on the traditional CAPM tend to understate the cost of equity for low-risk firms.
- The Staff Report does not consider expected earned rates of return and the risk premium approach, which both provide meaningful benchmarks of investors' forward-looking required returns and are recognized ROE methods.
- The Staff Report does not address the fact that AES Ohio's below-investment grade credit rating from S&P implies greater risks and a higher cost of equity.

Taken as a whole, these objections establish that the 9.28% to 10.29% ROE range—and the resulting midpoint—recommended in the Staff Report falls below a fair and reasonable level for the Company's utility operations.

II. OBJECTION 6 – THE STAFF REPORT DOES NOT ADDRESS THE EVIDENCE THAT SUPPORTS THE REASONABLENESS OF THE COMPANY'S RECOMMENDED ROE

Q. WHAT IS THE BASIS FOR THIS OBJECTION?

A. The conclusions and ROE recommendations presented in my direct testimony are based on the results of multiple accepted cost of equity approaches that are soundly applied. My analyses were developed using a proxy group of twenty-two utilities, which provides greater confidence in the reliability of the study results. In addition, my direct testimony explicitly addresses the implications of AES Ohio's higher investment risk,[2] as well as evaluating expected returns for a group of low-risk, non-utility companies that compete for capital with AES Ohio.[3] This evidence, which is unrebutted by the Staff Report, supports the reasonableness of a 10.5% ROE for AES Ohio.

III. <u>OBJECTION 7 – THE PROXY GROUP USED IN THE STAFF REPORT IS UNREASONABLY CONSTRAINED, WHICH INCREASES THE POTENTIAL FOR ERROR AND UNDERMINES THE RELIABILITY OF THE ROE RECOMMENDATIONS</u>

Q. WHAT CRITERIA WERE APPLIED TO ARRIVE AT THE PROXY GROUP USED IN THE STAFF REPORT?

A. The Staff Report indicates that "[t]o create the comparable companies Staff selected companies with a Standard & Poor's Bond Rating of BBB+ and below as well as a financial strength rating of B+."[4] Application of these criteria to the thirty-six electric utilities covered by Value Line produced a group of six companies. The Staff Report eliminated one addition company (Until) because The Value Line Investment Survey ("Value Line") does not provide growth projections for this firm.[5] Thus, the Staff Report relied on a proxy group of only five companies.

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[2] McKenzie Direct at 8-17.
[3] McKenzie Direct at 75-80.
[4] Staff Report at 21.
[5] *Id.*

Q. WHAT ARE THE DRAWBACKS OF SUCH A SMALL PROXY GROUP?

A. Using a limited group of companies increases the potential for error and skewed results. Conceptually, the issue of proxy group size is directly analogous to the use of sampling in statistical analyses. In statistics, a "true" value is often estimated by reference to sample observations, with the analyst having greater confidence in the applicability of the estimated results as the size of the sample increases. The inherent limitations of the models used to estimate the cost of equity mean that the potential to misjudge investors' required return increases as the size of the proxy group shrinks. Because our estimating tools are imperfect, the results of quantitative methods may deviate from investors' cost of equity. As a result, a constrained proxy group is more likely to increase the potential for error.

Consider the Staff Report's reference to credit ratings, for example. While corporate credit ratings provide one widely accepted, objective risk benchmark, the results of the DCF and CAPM approaches do not always conform to the accepted notion that expected returns are a function of risk. In a perfect world, bond ratings and cost of equity estimates would always be correlated, so that companies with lower ratings would also have higher cost of equity results. However, credit ratings are an imperfect measure of equity risks, and the true cost of equity is unobservable. Because our estimating tools (e.g., applications of the CAPM and DCF models based on observable data) provide imperfect readings, the results of the financial models may deviate from the accepted risk-return tradeoff. A proxy group of five companies is too small to address the potential for such distortions.

Q. IS THIS POTENTIAL FOR DISTORTION EVIDENT IN THE RESULTS PRESENTED IN THE STAFF REPORT?

A. Yes. The Staff Report calculates non-constant growth DCF results of 10.72% and 10.57% for Edison International and FirstEnergy, respectively, with the current credit ratings from Standard & Poor's Global Ratings ("S&P") and Moody's Investors Service ("Moody's") for these utilities being presented in the table below:

TABLE AMM-S1
COMPARISON OF CREDIT RATINGS

Company	(a) S&P	(b) Moody's
Edison International	BBB	Baa3
FirstEnergy Corp.	BB	Ba1

(a) https://www.spglobal.com/ratings/en/ (retrieved Aug. 13, 2021).
(b) https://www.moodys.com/ (retrieved Aug. 13, 2021).

FirstEnergy's credit ratings of BB and Ba1 fall below the minimum threshold for an investment grade ranting.[6] As discussed at length in my direct testimony,[7] there is a precipitous increase in risk associated with moving from investment grade to below investment grade securities. As a result, investors demand a significant premium in their required return to compensate for bearing the much greater risks associated with speculative, or "junk" bond ratings. Meanwhile, the DCF results in the Staff Report suggest just the opposite—that investors would accept a *lower* return to own common stock in a *higher* risk utility. These results are not consistent with accepted financial principles

[6] The bottom rung on the ladder of the investment grade rating scale is BBB- (S&P) and Baa3 (Moody's).
[7] McKenzie Direct at 10-13.

and illustrate the limitations of relying on a constrained proxy group of only five companies, which is simply too small to provide a reliable guide to investors' cost of equity.

Q. WHAT OTHER CONSIDERATIONS REDUCE THE RELIABILITY OF STAFF'S FIVE-COMPANY PROXY GROUP?

A. One of the five firms included in the proxy group referenced in the Staff Report has announced a major sale of assets, while another is in the midst of being acquired. Specifically, CenterPoint Energy announced on April 29, 2021, that it was selling its gas distribution utility operations in Arkansas and Oklahoma for approximately $2.2 billion,[8] which represents approximately 20% of that company's total market capitalization. Meanwhile, PNM Resources announced on October 21, 2020, that it was entering into an agreement under which AVANGRID will acquire all its outstanding common shares.[9] Thus, at the conclusion of the transaction, PNM Resources will cease to exist as a separate entity.

Major asset sales and merger transactions have important implications for investors' forward-looking expectations and can lead to distortions in the results of financial models used to estimate the cost of equity. Consider the DCF model applied in the Staff Report, for example. This application was predicated on stock prices beginning on January 27, 2020, which predate the announcement of both transactions and would not reflect investors' current evaluation of the impact that these major events will have on the

[8] https://investors.centerpointenergy.com/news-releases/news-release-details/centerpoint-announces-sale-arkansas-and-oklahoma-natural-gas-ldc.

[9] https://www.pnmresources.com/~/media/Files/P/PNM-Resources/events-and-presentations/2020/10-21-2020%20PNM%20AGR%20Strategic%20Merger%20Transaction%20Release.pdf.

underlying fundamentals and profitability of either utility. Moreover, there is often a disconnect between more recent stock prices and the underlying securities analysts' growth rates used to apply the DCF model. For example, Value Line specifically notes in the case of CenterPoint Energy that "estimates and projections are based on CenterPoint's current configuration."[10] Meanwhile, Value Line noted that "[d]ue to the takeover agreement, the Timeliness rank of PNM Resources stock remains suspended."[11]

Q. HAVE OTHER REGULATORS RECOGNIZED THAT MAJOR TRANSACTIONS CAN CONSTITUTE A BASIS FOR EXCLUDING A FIRM FROM A PROXY GROUP WHEN ESTIMATING THE COST OF EQUITY FOR A UTILITY?

A. Yes. The Federal Energy Regulatory Commission ("FERC") has noted the potential for such transactions to distort the inputs to the DCF model, stating that "we exclude a company if the M&A activity may cause temporary changes in DCF inputs that are not sustainable or representative of longer-term investor expectations for the company."[12] Excluding both CenterPoint Energy and PNM Resources would result in a proxy group of only three companies, which further reduces the reliability of the proxy group utilized in the Staff Report.

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[10] The Value Line Investment Survey, *CenterPoint En'gy* (Mar. 12, 2021).

[11] The Value Line Investment Survey, *PNM Resources* (Apr. 23, 2021). The Value Line Timeliness Rank measures probable relative price performance of the approximately 1,700 stocks during the next six to 12 months on a scale from 1 (Highest) to 5 (Lowest).

[12] *Assoc. of Bus. Advocating Tariff Equity,* Opinion No. 551, 156 FERC ¶ 61,234 at P 37 (2016).

IV. OBJECTION 8 - APPLICATION OF THE CAPM PRESENTED IN THE STAFF REPORT IS BASED ON DATA INPUTS THAT DO NOT PROVIDE A RELIABLE GUIDE TO INVESTORS' EXPECTATIONS AND IS INCOMPLETE

Q. WHAT FACTORS REDUCE THE RELIABILITY OF THE CAPM STUDY PRESENTED IN THE STAFF REPORT?

A. The CAPM analysis presented in the Staff Report has several critical shortcomings. First, the market risk premium ("MRP") used in the Staff Report was sourced from an obscure internet source and is inconsistent with other mainstream forecasts. Second, the analysis does not address the empirical relationship between beta, company size, and expected returns. Third, the risk-free rate used in Staff's CAPM analysis is inconsistent with the long-term horizon of an investment in common equity. Finally, the Staff Report does not adjust for an observed bias in the results of the traditional CAPM approach.

Q. WHAT WAS THE SOURCE OF THE MRP USED TO APPLY THE CAPM METHOD IN THE STAFF REPORT?

A. The Staff Report relied on an MRP of 6.57% that was obtained from "Fairness Finance."[13]

Q. IS FAIRNESS FINANCE A MAINSTREAM SOURCE THAT INVESTORS WOULD BE LIKELY TO RELY ON?

A. No. Fairness Finance is an obscure internet site that offers free access to certain parameters used in business valuation, including an estimated return on the S&P 500 and MRP. The Fairness Finance website is produced by BM&A Advisory & Support, an audit and consulting firm based in Paris, France.

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[13] Staff Report at 21.

Q. WHAT CONCERNS DO YOU HAVE WITH REFERENCING PROJECTIONS FROM FAIRNESS FINANCE?

A. The CAPM is an *ex-ante,* or forward-looking model based on expectations of the future. As a result, to produce a meaningful estimate of investors' required rate of return, the CAPM must be applied using data that reflect the current expectations of *actual investors* in the market. I expect that Fairness Finance would be virtually unknown to the vast majority of investors. As a result, its projections do not influence investors' expectations.

In contrast to Fairness Finance, for example, Value Line is recognized as being one of the most widely available source of investment information, and there are many citations to textbooks and other sources supporting its usefulness as a guide to investors' expectations. *Cost of Capital – A Practitioners' Guide*, published by the Society of Utility and Regulatory Financial Analysts, noted that:

> [A] number of studies have commented on the relative accuracy of various analysts' forecasts. Brown and Rozeff (1978) found that Value Line was superior to other forecasts. Chatfield, Hein and Moyer (1990, 438) found, further "Value Line to be more accurate than alternative forecasting methods" and that "investors place the greatest weight on the forecasts provided by Value Line."[14]

New Regulatory Finance, which is routinely cited as an authoritative source, concluded that:

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors.[15]

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[14] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Soc'y of Util. & Regulatory Fin. Analysts 143 (2010).
[15] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports, Inc. (2006) at 71.

Similarly, FERC has observed that Value Line is clearly a "widely-followed, independent investor service."[16]

Meanwhile, there is no evidence that the investment community considers Fairness Finance to be a recognized source of analysis and guidance so I expect that it is highly unlikely that estimates and projections from this source would be influential to investors.

Q. IS THERE EVIDENCE THAT THE MRP USED IN THE STAFF REPORT IS INCONSISTENT WITH THE PROJECTIONS OF WIDELY RECOGNIZED SOURCES?

A. Yes. The average dividend yield for the approximately 1,700 firms followed by Value Line is 2.26%, with an expected growth rate in earnings per of 11.82%, which implies an expected market rate of return on 14.08%.[17] Subtracting the 3.39% long-term Treasury bond yield used in the Staff report results in a forward-looking MRP of 10.69%, versus the 6.57% value sourced from Fairness Finance. Similarly, Morningstar, which is a widely recognized source of current investment information, reports a current dividend yield of 1.44% for the S&P 500, with an expected long-term EPS growth rate of 13.75% .[18] This implies an expected rate of return for the S&P 500 of 15.19%, or an MRP of 11.80%. Both of these values suggest that the 6.57% figure from Fairness Finance referenced in the Staff Report is significantly understated.

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[16] *Bangor Hydro-Elec.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 102 (2014). *See also Kern River Gas Transmission Co.*, Opinion No. 486-C, 129 FERC ¶ 61,240 at P 50 (2009) (noting that "Value Line is a publication relied on by many investors.").
[17] www.valueline.com (retrieved Aug. 10, 2021).
[18] Morningstar, *S&P 500 PR,* https://portfolios.morningstar.com/fund/index-summary?t=SPX&region=usa&culture=en-US (retrieved Aug. 10, 2021).

Q. IS THERE OTHER EVIDENCE DEMONSTRATING THE PROJECTIONS FROM FAIRNESS FINANCE RELIED ON IN THE STAFF REPORT ARE INAPPROPRIATE?

A. Yes. The Fairness Finance projections violate the fundamental notion that higher risk assets require higher returns and are inconsistent with the ultimate ROE recommendation adopted in the Staff Report.

Specifically, the theory underlying the CAPM holds that beta is the only relevant measure of investment risk and the market is assumed to have a beta of 1.00. Given that the average beta for the firms in the proxy group referenced in the Staff Report falls slightly below 1.00, this indicates that investors' required return on the market as a whole should <u>exceed</u> the cost of equity for electric utilities. It follows, therefore, that a market rate of return that falls below the ROE for an electric utility is not consistent with the current expectations of investors.

Meanwhile, the expected rate of return for the S&P 500 from Fairness Finance that served as the basis for the MRP utilized in the Staff Report is less than 7.7%.[19] Because this projection for the market falls more than 200 basis points <u>below</u> the 9.79% midpoint of the recommended ROE range for the electric utility proxy group, it is inconsistent with both economic principles and the conclusions of the Staff Report.

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[19] https://www.fairness-finance.com/fairness-finance/finance/sample/sp500/product/equityriskpremium.dhtml (last visited Aug. 13, 2021).

Q. ARE THERE OTHER IMPORTANT FACTORS IN APPLYING THE CAPM THAT THE STAFF DID NOT CONSIDER?

A. Yes. The Staff Report did not reflect the size adjustment in applying the CAPM application.

Q. IS THE SIZE ADJUSTMENT NECESSARY WHEN APPLYING THE CAPM?

A. Yes. A size adjustment is necessary to account for the portion of the return to small stocks that is not accounted for by beta. As discussed in my direct testimony, empirical findings demonstrate that beta does not fully account for the higher returns of smaller companies and specific size adjustments have been quantified to adjust CAPM results to account for this size premium.[20] As Duff & Phelps concluded:

> Examination of market evidence shows that within the context of the CAPM, beta does not fully explain the difference between small company returns and large company returns. In other words, the *actual* (historical) excess return smaller companies earn tends to be greater than the excess return *predicted* by the CAPM for these companies. This 'premium over CAPM' is commonly known as a 'beta-adjusted size premium' or simply "size premium."[21]

A more recent publication available from the National Association of Certified Valuators and Analysts documented the continued relevance of the size adjustment in applying the CAPM:

> [A] beta-adjusted size premium is also an indication of the relative market performance of small-cap versus large-cap stocks, but is typically used for a very specific purpose: as a "size" adjustment within the context of the capital asset pricing model (CAPM) when developing cost of equity capital estimates. A size adjustment is typically applied to the CAPM to make up for the fact that the betas of smaller companies do not fully explain their observed returns. Because the CAPM already includes a beta input in its

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[20] McKenzie Direct at 57-58.

[21] Duff & Phelps, *2016 Valuation Handbook, Guide to Cost of Capital*, John Wiley & Sons (2016) at 8-1.

> textbook specification, the size premium is then "beta adjusted" to remove the portion of realized excess return that is attributable to beta, thereby isolating the size effect's contribution to realized excess return and avoiding double counting the impact of each factor.
>
> * * *
>
> Another way of saying this is that within the context of the CAPM, the betas of small-cap companies do not fully account for (or explain) their actual returns. Because the amount of this difference (what actually happened versus what CAPM predicted) varies with "size" (in this case, as measured by market capitalization) we call it a "size premium". [22]

This article went on to conclude that "valuation professionals typically add a 'size premium' to the base CAPM equation. . ."[23]

Confirming these findings, *New Regulatory Finance* observed that "small market-cap stocks experience higher returns than large market-cap stocks with equivalent betas," and concluded that "the CAPM understates the risk of smaller utilities, and a cost of equity based purely on a CAPM beta will therefore produce too low an estimate. . ."[24] This publication noted that "Ibbotson Associates provides estimates of the size premium required to be added to the basic CAPM cost of equity."[25] These premiums are now published by Duff & Phelps.

Q. IS THIS CONSISTENT WITH HOW FERC APPLIES THE CAPM?

A. Yes. FERC previously concluded that "[t]his type of size adjustment is a generally accepted approach to CAPM analyses."[26] In addition to developing the MRP in a manner

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[22] James P. Harrington and Roger G. Ibbotson, *Using a Non-Beta-Adjusted Size Premium in the Context of the CAPM Will Likely Overstate Risk and Understate Value*, National Association of Certified Valuators and Analysts (Jan. 30, 2019).
[23] *Id.*
[24] Morin, *New Regulatory Finance* at 187.
[25] *Id.*
[26] *Coakley v. Bangor-Hydro-Elec. Co.*, Opinion No. 531-B, 150 FERC ¶ 61,165 at P 117 (2015).

that is identical to the approach applied in my direct testimony, FERC includes the size adjustment in the CAPM under its ROE methodology for electric utilities and natural gas and oil pipelines.[27]

Q. DO THE YIELDS ON 10-YEAR TREASURY NOTES REFERENCED IN THE STAFF REPORT PROVIDE AN APPROPRIATE BASIS TO ESTIMATE THE COST OF EQUITY USING THE CAPM?

A. No. Unlike debt instruments, common equity is a perpetuity. 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.

In applying the CAPM, *Morningstar* recognized that the cost of equity is a long-term cost of capital and the appropriate interest rate to use is a long-term bond yield:

> The horizon of the chosen Treasury security should match the horizon of whatever is being valued. … Note that the horizon is a function of the investment, not the investor. If an investor plans to hold a stock in a company for only five years, the yield on a five-year Treasury note would not be

[27] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.,* Opinion No. 569-A, 171 FERC ¶ 61,154 (2020); *Policy Statement on Determining Return on Equity for Natural Gas and Oil Pipelines*, 171 FERC ¶ 61,155 (2020).

> appropriate since the company will continue to exist beyond those five years.[28]

Because long-term bonds have an investment horizon similar to that of common stock, proper application of the CAPM should focus on long-term U.S. Treasury bonds. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.

Q. WHAT ARE THE RESULTS OF CORRECTING STAFF'S CAPM ANALYSIS?

A. As shown on page 1 of Exhibit AMM-S1, when adjusted to reflect the appropriate risk-free rate and include the size adjustment supported by financial research, the CAPM methodology used in the Staff Report yields a cost of equity estimate of 10.17%. This CAPM result is 75 basis points higher than the 9.42% used to arrive at the ROE recommendation presented in the Staff Report.

As shown on page 2 of Exhibit AMM-S1, making a further adjustment to average the 6.57% MRP used in the Staff Report with the 10.69% estimate supported by Value Line's projections results in an adjusted CAPM cost of equity of 12.16%. Both of these corrected results illustrate that the 9.42% value presented in the Staff Report is significantly understated.

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[28] Morningstar, *Ibbotson SBBI, 2012 Valuation Yearbook* at 44. Similarly, Duff & Phelps notes that "the valuation analyst should match the term of the risk-free rate used in the CAPM . . . with the duration of the expected net cash flows of the business, asset, or project being evaluated." Duff & Phelps, *2018 Cost of Capital: Annual U.S. Guidance and Examples*, Cost of Capital Navigator at 3-2.

Q. DO YOU HAVE ADDITIONAL CONCERNS WITH THE CAPM ANALYSIS PRESENTED IN THE STAFF REPORT?

A. As explained in my direct testimony,[29] empirical tests of the CAPM have shown that low-beta securities earn returns somewhat greater than predicted by the traditional CAPM, and high-beta securities earn less than predicted. Because the betas of utility stocks are generally less than 1.0,[30] this implies that cost of equity estimates based on the traditional CAPM applied in the Staff Report will understate the cost of equity. The ECAPM corrects for the understated returns that would otherwise be produced for low beta stocks, consistent with financial research. The Staff Report does not consider this method, which has been recognized by other regulators, which contributes to the lower ROE recommendation presented in the Staff Report.

V. <u>OBJECTION 9 - THE STAFF REPORT DOES NOT CONSIDER THE COMPARABLE EARNINGS APPROACH BASED ON EARNED RATES OF RETURN</u>

Q. DO EARNED RETURNS ON COMMON EQUITY PROVIDE A MEANINGFUL BENCHMARK IN EVALUATING A FAIR ROE FOR AES OHIO?

A. Yes. As discussed in my direct testimony,[31] an evaluation of earned rates of return on equity is consistent with the comparable earnings and capital attraction standards established by the *Hope* and *Bluefield* decisions, as well as the opportunity cost principle underlying the determination of a fair ROE.

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[29] McKenzie Direct at 59-63.
[30] This is the case for all five firms included in the proxy group used in the Staff Report.
[31] McKenzie Direct at 67-69.

Q. IS THERE PRECEDENT FOR USING EARNED RATES OF RETURN IN EVALUATING A FAIR ROE?

A. Yes. In evaluating an ROE for Ohio Power Company, the Staff Report in Case No. 20-585-EL-AIR considered the earned rates of return on common equity during 2019 for the constituent firms in the SPDR Select Sector Fund-Utility ("XLU"), which resulted in a cost of equity estimate of 10.35%.[32]

Q. WHAT CONCERNS DO YOU HAVE REGARDING THE EARNED RETURNS REFERENCED IN THE STAFF REPORT IN CASE NO. 20-585-EL-AIR?

A. Investors' required rate of return is a forward-looking concept that is premised on future expectations, not on historical data. Because the analysis of earned returns included in the Staff Report in Case No. 20-585-EL-AIR focused exclusively on actual book returns for 2019, it ignored this critical distinction. In addition, actual realized rates of return in any single year may be impacted by a host of factors that may not be representative of ongoing operational results.[33]

Q. WHAT ROE IS INDICATED FOR THE PROXY GROUP USED IN THE STAFF REPORT BASED ON EXPECTED EARNED RATES OF RETURN ON EQUITY?

A. As shown on page 1 of Exhibit AMM-S2, Value Line's projections for its 2024-2026 forecast horizon imply an arithmetic average ROE of 12.0%, or 11.0% after eliminating the highest value.[34]

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[32] Case No. 20-585-EL-AIR, Staff Report (Nov. 18, 2020) at 26.

[33] In addition, the analysis of earned rates of return presented in the Staff Report in Case No. 20-585-EL-AIR relied on a weighted average of the earned rates of return for the firms in the XLU, rather than a simple average of the performance of each individual company. There is no reason to assign greater weight to larger firms in evaluating investors' expectations regarding earned returns for electric utilities.

[34] The weighted average returns were 11.2% and 10.3%, respectively.

Q. WHAT ROE IS INDICATED FOR THE XLU COMPANIES BASED ON EXPECTED EARNED RATES OF RETURN ON EQUITY?

A. As shown on page 2 of Exhibit AMM-S2, the year-end returns on common equity based on Value Line's projections for its 2024-2026 forecast horizon imply an arithmetic average ROE of 13.6% for the XLU, or 12.3% after eliminating the highest value.[35]

VI. <u>OBJECTION 10 - THE STAFF REPORT DOES NOT CONSIDER THE RISK PREMIUM APPROACH, WHICH IS A RECOGNIZED ROE METHOD</u>

Q. WHY DO YOU BELIEVE THE RISK PREMIUM APPROACH SHOULD BE CONSIDERED WHEN EVALUATING A FAIR ROE FOR THE COMPANY?

A. As I discuss in my direct testimony,[36] it is customary to consider the results of multiple approaches when evaluating a just and reasonable ROE. It is widely recognized that no single method can be regarded as failsafe; all approaches have advantages and shortcomings. Consideration of the results of the risk premium method reduces the potential for error and helps mitigate the impact of any temporary market anomalies that may be present in the market data of one company at a particular time. There is also a higher likelihood that random errors from multiple estimates will be offsetting and result in smaller cumulative error than random error from a single estimate.

VII. <u>OBJECTION 11 - THE ROE RECOMMENDATION DEVELOPED IN THE STAFF REPORT DOES NOT ADDRESS THE IMPLICATIONS OF AES OHIO'S BELOW</u>

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[35] The weighted average returns were 11.7% and 11.5%, respectively.
[36] McKenzie Direct at 39-41.

<u>INVESTMENT GRADE BOND RATING FROM S&P, WHICH IMPLIES GREATER RISKS AND A HIGHER COST OF EQUITY THAN FOR STAFF'S PROXY GROUP ON AVERAGE</u>

Q. WHAT IS THE DISTINCTION BETWEEN AES OHIO'S RISK PROFILE AND THAT OF OTHER FIRMS IN THE ELECTRIC UTILITY INDUSTRY?

A. The BB+ credit rating currently assigned to AES Ohio by S&P falls below investment grade.[37] As noted earlier and discussed at length in my direct testimony,[38] a speculative or "junk" bond rating is indicative of significantly greater risks relative to the vast majority of other electric utilities. As a result, investors require a significant premium to assume the much greater uncertainties associated with credit ratings that fall below investment grade.

In addition, as discussed in my direct testimony,[39] investors would also consider the implications of potential uncertainties attributable to the propensity for legal challenges to the Commission's decisions, which undermine regulatory certainty for the state's utilities, including AES Ohio.

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[37] While S&P upgraded AES Ohio's credit rating by one notch from BB to BB+ on November 3, 2020, it remains below the minimum investment grade threshold of BBB-. Standard & Poor's Global Ratings, *DPL Inc. And Subsidiary Dayton Power & Light Co. Rating Raised On Upgrade Of Parent; Outlooks Remain Developing* (Nov. 3, 2020).

[38] McKenzie Direct at 9-13.

[39] McKenzie Direct at 17.

Q. DO YIELD SPREADS CONTINUE TO SUPPORT THIS DISTINCTION IN REQUIRED RETURNS FOR COMPANIES WITH SPECULATIVE GRADE CREDIT RATINGS?

A. Yes. As explained in my direct testimony,[40] the yields on long-term bonds provide direct evidence of the additional return that investors require to compensate for the risks associated with speculative grade credit ratings. While average yields for double-B utility bonds are not published, the yields on high-yield corporate bond indices are reported by the Federal Reserve Bank of St. Louis and summarized in the table below:

TABLE AMM-S2
SPECULATIVE GRADE YIELD SPREADS

	BBB	**BB**
Feb.	2.21%	3.30%
Mar.	2.49%	3.60%
Apr.	2.44%	3.40%
May	2.40%	3.45%
Jun.	2.32%	3.29%
Jul. 2021	2.21%	3.16%
6-Mo. Average	2.35%	3.37%
Spread Over BBB	--	102

Source: ICE Benchmark Administration Limited (IBA), ICE BofAML US Corporate Effective Yield; https://fred.stlouisfed.org.

As shown above, the additional premium required by fixed-income investors to compensate for the risks associated with a speculative grade, BB corporate debt rating is approximately 100 basis points.

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[40] *Id.* at 11-12.

Q. DOES THE STAFF REPORT DIRECTLY ADDRESS THE IMPACT OF AES OHIO'S GREATER RISK IN ARRIVING AT A RECOMMENDED ROE?

A. No. The Staff Report does not make any explicit adjustment to the results of its analysis to recognize AES Ohio's greater risk or otherwise address the implications of the Company's BB+ credit rating from S&P. While one of the firms included in the proxy group used in the Staff Report is also rated below investment grade (FirstEnergy), the remaining four firms have S&P credit ratings higher than AES Ohio and within the investment grade scale. Moreover, the importance of considering direct evidence of investors' speculative grade risk premiums, such as the yield spreads presented above, is heightened due to the imprecision associated with the financial models used to estimate the cost of equity.[41]

Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY IN SUPPORT OF OBJECTIONS TO THE STAFF REPORT?

A. Yes.

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[41] As noted earlier, even though FirstEnergy's credit ratings fall below the other members of the proxy group used in the Staff Report, the resulting DCF cost of equity estimate was not the highest. This violates the accepted relationship between risk and return that is fundamental to finance.

CORRECTED Rf | SIZE ADJUSTMENT

		(a)	(a)	(a)		(b)	(c)	
	Company	**30-Yr. Risk-Free Rate**	**Risk Premium**	**Beta**	**Unadjusted K_e**	**Market Cap**	**Size Adjustment**	**CAPM Result**
1	CenterPoint Energy	3.39%	6.57%	1.15	10.95%	$15,000	0.49%	11.44%
2	Edison International	3.39%	6.57%	0.95	9.64%	$22,000	0.49%	10.13%
3	Exelon Corp.	3.39%	6.57%	0.95	9.64%	$44,000	-0.22%	9.42%
4	FirstEnergy Corp.	3.39%	6.57%	0.85	8.98%	$21,000	0.49%	9.47%
5	PNM Resources	3.39%	6.57%	0.95	9.64%	$4,200	0.75%	10.39%
	Average							**10.17%**

(a) Staff Report at 124.
(b) The Value Line Investment Survey (May 14, Jun. 11 and Jul. 23, 2021).
(c) Duff & Phelps, 2020 CRSP Deciles Size Study -- Supplementary Data Exhibits, Cost of Capital Navigator.

ADJUSTED RISK PREM | CORRECTED Rf | SIZE ADJUSTMENT

		(a)	(b)	(a)		(b)	(c)	
	Company	**30-Yr. Risk-Free Rate**	**Risk Premium**	**Beta**	**Unadjusted K_e**	**Market Cap**	**Size Adjustment**	**CAPM Result**
1	CenterPoint Energy	3.39%	8.63%	1.15	13.32%	$15,000	0.49%	13.81%
2	Edison International	3.39%	8.63%	0.95	11.59%	$22,000	0.49%	12.08%
3	Exelon Corp.	3.39%	8.63%	0.95	11.59%	$44,000	-0.22%	11.37%
4	FirstEnergy Corp.	3.39%	8.63%	0.85	10.73%	$21,000	0.49%	11.22%
5	PNM Resources	3.39%	8.63%	0.95	11.59%	$4,200	0.75%	12.34%
	Average							**12.16%**

(a) Staff Report at 124.
(b) Average of 6.57% market risk premium from Staff Report at 124 and 10.69% market risk premium based on Value Line projections for dividend-paying stocks (14.08% - 3.39% = 10.69%).
(c) The Value Line Investment Survey (May 14, Jun. 11 and Jul. 23, 2021).
(d) Duff & Phelps, 2020 CRSP Deciles Size Study -- Supplementary Data Exhibits, Cost of Capital Navigator.

PROJECTED EARNED ROE

STAFF PROXY GROUP

			(a)	(a)		(a)	
			Common Equity			Net Income	ROE
	Company	**Ticker**	**12/31/2024**	**12/31/2025**	**Average**	**2025**	**2025**
1	CenterPoint Energy	CNP	$10,192	$10,923	$10,557	$1,265	12.0%
2	Edison International	EIX	$17,271	$18,036	$17,653	$2,235	12.7%
3	Exelon Corp.	EXC	$38,318	$39,916	$39,117	$3,430	8.8%
4	FirstEnergy Corp.	FE	$11,672	$12,950	$12,311	$1,965	16.0%
5	PNM Resources	PNM	$2,573	$2,708	$2,640	$280	10.6%

Unadjusted Average	
Simple	12.0%
Weighted	11.2%
Adjusted Average (b)	
Simple	11.0%
Weighted	10.3%

(a) The Value Line Investment Survey as of Jul. 23, 2021 ($ mil).

(b) Adjusted to remove highlighted value.

PROJECTED EARNED ROE

XLU COMPANIES

			(a)	(a)		(a)	
			Common Equity			Net Income	ROE
	Company	Ticker	12/31/2024	12/31/2025	Average	2025	2025
1	AES Corp.	AES	$3,773	$3,860	$3,817	$1,160	30.4%
2	Alliant Energy	LNT	$6,317	$6,670	$6,494	$865	13.3%
3	Ameren Corp.	AEE	$12,420	$13,328	$12,874	$1,390	10.8%
4	American Elec Pwr	AEP	$28,527	$30,200	$29,363	$3,300	11.2%
5	Amer. Wtr Wrks Co., Inc.	AWK	$7,662	$7,800	$7,731	$1,045	13.5%
6	Atmos Energy	ATO	$12,288	$13,620	$12,954	$1,000	7.7%
7	CenterPoint Energy	CNP	$10,192	$10,923	$10,557	$1,265	12.0%
8	CMS Energy Corp.	CMS	$7,875	$8,448	$8,161	$1,145	14.0%
9	Consolidated Edison	ED	$22,949	$23,863	$23,406	$1,985	8.5%
10	Dominion Energy	D	$32,261	$34,235	$33,248	$4,140	12.5%
11	DTE Energy Co.	DTE	$16,190	$16,960	$16,575	$1,900	11.5%
12	Duke Energy Corp.	DUK	$51,150	$52,592	$51,871	$5,100	9.8%
13	Edison International	EIX	$17,271	$18,036	$17,653	$2,235	12.7%
14	Entergy Corp.	ETR	$13,880	$14,606	$14,243	$1,615	11.3%
15	Evergy Inc.	EVRG	$10,157	$10,476	$10,316	$980	9.5%
16	Eversource Energy	ES	$17,063	$17,889	$17,476	$1,725	9.9%
17	Exelon Corp.	EXC	$38,318	$39,916	$39,117	$3,430	8.8%
18	FirstEnergy Corp.	FE	$11,672	$12,950	$12,311	$1,965	16.0%
19	NextEra Energy, Inc.	NEE	$49,657	$53,439	$51,548	$6,555	12.7%
20	NiSource, Inc.	NI	$7,107	$7,332	$7,220	$850	11.8%
21	NRG Energy, Inc.	NRG	$1,930	$2,005	$1,968	$980	49.8%
22	Pinnacle West Capital	PNW	$7,048	$7,370	$7,209	$775	10.8%
23	PPL Corp.	PPL	$16,330	$17,098	$16,714	$2,155	12.9%
24	Pub Sv Enterprise Grp.	PEG	$19,253	$20,139	$19,696	$2,120	10.8%
25	Sempra Energy	SRE	$30,014	$31,620	$30,817	$3,690	12.0%
26	Southern Company	SO	$34,096	$35,373	$34,734	$4,650	13.4%
27	WEC Energy Group	WEC	$12,222	$12,737	$12,480	$1,675	13.4%
28	Xcel Energy Inc.	XEL	$18,054	$18,984	$18,519	$2,080	11.2%

Unadjusted Average	
Simple	13.6%
Weighted	11.7%
Adjusted Average (b)	
Simple	12.3%
Weighted	11.5%

(a) The Value Line Investment Survey as of Jul. 23, 2021 ($ mil).

(b) Adjusted to remove highlighted value.

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing supplemental testimony has been served via electronic mail upon the following counsel of record, this 25th day of August, 2021:

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