

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of)	
Duke Energy Ohio, Inc., for an Increase)	Case No. 21-887-EL-AIR
in Electric Distribution Rates.)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc., for Tariff)	Case No. 21-888-EL-ATA
Approval.)	
In the Matter of the Application of)	
Duke Energy Ohio, Inc., for Approval)	Case No. 21-889-EL-AAM
to Change Accounting Methods.)	

SUPPLEMENTAL DIRECT TESTIMONY OF

DYLAN W. D'ASCENDIS

ON BEHALF OF

DUKE ENERGY OHIO, INC.

_____	Management policies, practices, and organization
_____	Operating income
_____	Rate base
_____	Allocations
<u> X </u>	Rate of return
_____	Rates and tariffs
_____	Other:

August 18, 2022

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- Attachment DWD-Supp-2 Updated Company Analysis using Data as of May 31, 2022
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- Attachment DWD-Supp-5 Correction to Staff Application of the Capital Asset Pricing Model
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I. INTRODUCTION AND PURPOSE

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Dylan W. D'Ascendis. My business address is 3000 Atrium Way,
3 Suite 200, Mount Laurel, New Jersey 08054.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am a Partner at ScottMadden, Inc.

6 **Q. ARE YOU THE SAME DYLAN W. D'ASCENDIS THAT SUBMITTED**
7 **DIRECT TESTIMONY IN THESE PROCEEDINGS?**

8 A. Yes.

9 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT**
10 **TESTIMONY?**

11 A. My supplemental direct testimony describes and supports Duke Energy Ohio, Inc.'s
12 (Duke Energy Ohio or the Company) objections to certain findings and
13 recommendations contained in the Report by the Staff of the Public Utilities
14 Commission of Ohio (Staff) issued in these proceedings on May 19, 2022 (Staff
15 Report). The Company filed its Objections to the Staff Report of Investigation and
16 Summary of Major Issues on June 17, 2022.

17 **Q. HAVE YOU PREPARED ATTACHMENTS IN SUPPORT OF YOUR**
18 **SUPPLEMENTAL DIRECT TESTIMONY?**

19 A. Yes. I have prepared Attachments DWD-Supp-1 through DWD-Supp-7, which
20 were prepared by me or under my direction.

II. OBJECTIONS SPONSORED BY WITNESS

Objection No. 18(a): Duke Energy Ohio Objects to the Market Data used by Staff in the Staff Report

1 **Q. PLEASE EXPLAIN THE COMPANY’S OBJECTION NUMBER 18(a).**

2 A. As noted above, the Staff Report was issued in this proceeding on May 19, 2022.

3 In the return on common equity (ROE) portion of the Staff Report, the Staff used

4 market data as of the following dates:

Table 1: Spot Data for Staff Report Filed May 19, 2022¹

Data Used	Date Certain
Prices in Discounted Cash Flow (DCF) Model	Year ended December 31, 2021
Growth Rates in DCF Model	Most recent data as of January 21, 2022
Gross National Product (GNP) Growth Rate	Average GNP growth rate for the period 1929-2020
<i>Value Line Investment Survey (Value Line)</i> betas	Most recent as of January 21, 2022
Market Risk Premium (MRP)	1926 – 2020 historical MRP from Duff & Phelps 2021 SBBI® Yearbook – Stocks, Bonds, Bills, and Inflation
Projected Risk-Free Rate	Projected 30-year Treasury bond from June 1, 2021 and September 1, 2021 <i>Blue Chip Financial Forecasts (Blue Chip)</i>

5 As shown on Table 1, above, Staff’s calculations of the Company’s ROE
6 were made using with stale market data compared with Staff Report’s filing date of
7 May 19, 2022. As such, the Staff’s calculation of the Company’s ROE does not
8 reflect current market conditions and it will be shown that if Staff used current
9 market data, their conclusions would have been materially different.

¹ Source of Information: Staff workpapers.

1 **Q. DO ECONOMIC CONDITIONS INFLUENCE THE REQUIRED COST OF**
2 **CAPITAL AND REQUIRED RETURN ON COMMON EQUITY?**

3 A. Yes. The models used to estimate the cost of equity are meant to reflect, and
4 therefore are influenced by, current and expected capital market conditions.
5 Therefore, it is important to assess the reasonableness of any financial model's
6 results in the context of observable market data. Because the cost of equity is a
7 forward-looking concept, using the most recently observable market data provides
8 the most accurate estimate of investor required returns moving forward, compared
9 to market data from several months prior.

10 From an analytical perspective, it is important that the inputs and
11 assumptions used to arrive at an ROE recommendation, including assessments of
12 capital market conditions, are consistent with the recommendation itself. Although
13 all analyses require an element of judgment, the application of that judgment must
14 be made in the context of the quantitative and qualitative information available to
15 the analyst and the capital market environment in which the analyses were
16 undertaken.

17 **Q. PLEASE SUMMARIZE THE CURRENT CAPITAL MARKET**
18 **ENVIRONMENT.**

19 A. The economy is currently in an inflationary environment, as evidenced by increased
20 levels of the Consumer Price Index (CPI) as compared to the Federal Reserve's
21 (Fed) traditional inflation target of 2.00%. Inflation can be characterized as an
22 imbalance of supply and demand in the economy, specifically, when demand is in

1 excess of supply. When demand is in excess of supply, the cost of goods and
2 services increase.

3 Part of the Fed's Congressional mandate is to mitigate inflation and they have
4 two main tools to achieve their mandate: (1) raising the Fed Funds Rate;² or
5 decreasing the size of their balance sheet. In Fed Chairman Jerome H. Powell's
6 Press Conference on May 4, 2022, he indicated that the Fed has the resolve to use
7 both tools to restore price stability on behalf of American families and businesses.³

8 Overall, the current market environment can be summarized as one with
9 increasing inflation, and expectations that the Fed will implement both of its tools
10 in an attempt to limit inflation.

11 **Q. HAS CPI RISEN RECENTLY?**

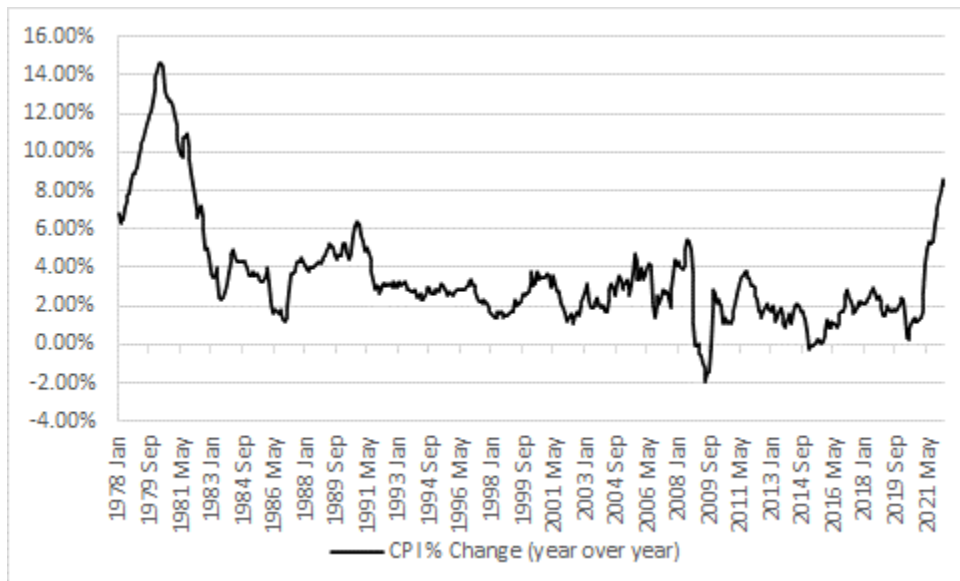
12 A. Yes, it has. As shown on Chart 1, CPI has increased exponentially since the
13 beginning of the COVID-19 pandemic in early 2020 and more recently has
14 experienced year-over-year increases not seen since the early 1980s.⁴

² The Fed Funds Rate is the rate in which the Fed suggests commercial banks borrow and lend their excess reserves to each other overnight.

³ Transcript of Chair Powell's Press Conference, May 4, 2022.

⁴ Source: Bureau of Labor Statistics, Series Title: All items in U.S. city average, all urban consumers, seasonally adjusted, Series ID: CUSR0000SA0 (https://data.bls.gov/timeseries/CUSR0000SA0?output_view=pct_1mth).

Chart 1: Consumer Price Index Change, 1978-Current⁵



1 Given the rise in CPI as shown in Chart 1, even if inflation were to moderate
2 to a degree, it would still remain significantly elevated compared to the last several
3 years and the Fed’s inflation target of 2.00%.

4 **Q. IS INFLATION EXPECTED TO BE ELEVATED FROM HISTORICAL**
5 **LEVELS MOVING FORWARD?**

6 A. Yes, it is. The 10- and 30-year breakeven inflation rates⁶ have steadily increased
7 since August 27, 2020, when Mr. Powell released a statement noting that the
8 Federal Open Market Committee (FOMC) will adopt an approach towards inflation
9 that, “could be viewed as a flexible form of average inflation targeting,” meaning
10 that following periods in which inflation has run below 2.00%, “appropriate

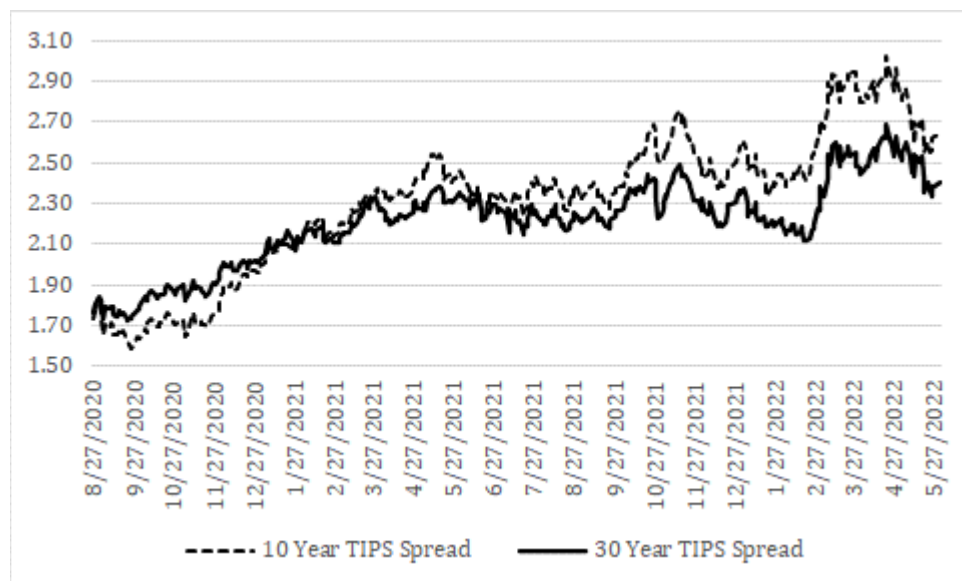
⁵ Source: Bureau of Labor Statistics, Series Title: All items in U.S. city average, all urban consumers, seasonally adjusted, Series ID: CUSR0000SA0 (https://data.bls.gov/timeseries/CUSR0000SA0?output_view=pct_1mth).

⁶ The breakeven inflation rate is the market’s determination of the level of inflation during the period it measures. For example, the 10-year breakeven inflation rate is the market’s expectation of inflation over the next 10 years.

monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.”⁷ More recently, Mr. Powell has noted that, “the risk is rising that an extended period of high inflation could push longer-term expectations uncomfortably higher, which underscores the need for the Committee to move expeditiously as I have described.”⁸

In response to market conditions and Fed action, the breakeven inflation rate, represented as the 10-year and 30-year Treasury Inflation-Protected Securities spreads, has increased from 1.73% and 1.76% on August 27, 2020, respectively, to 2.64% and 2.40% respectively, as of May 31, 2022. Further, as shown in Chart 2 below, breakeven inflation has trended upward since the Fed’s policy change at a relatively consistent pace.

Chart 2: Breakeven Inflation Since August 27, 2020⁹



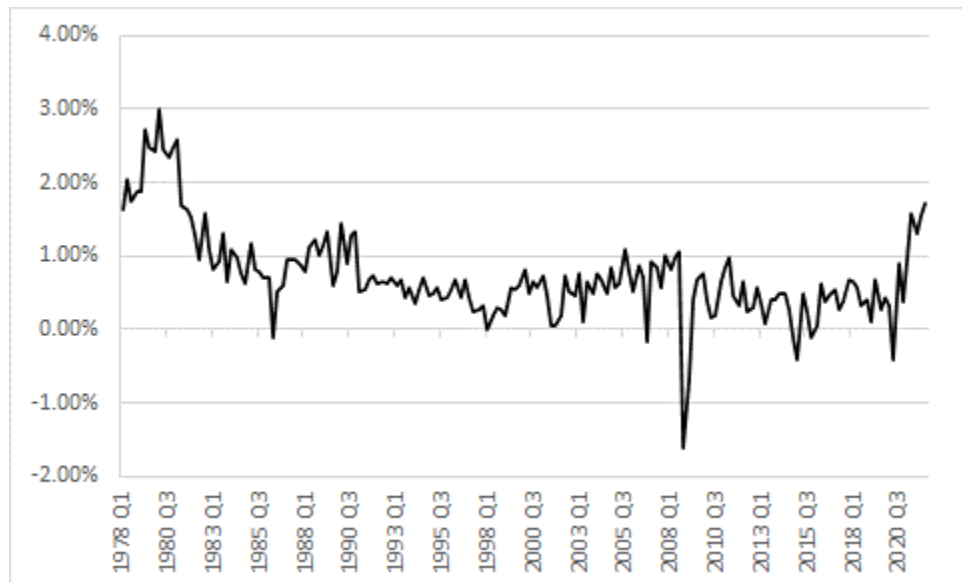
⁷ New Economic Challenges and the Fed’s Monetary Policy Review, Remarks by Jerome H. Powell, Chair Board of Governors of the Federal Reserve System, August 27, 2020.

⁸ Restoring Price Stability, Chair Pro Tempore Jerome H. Powell, At “Policy Options for Sustainable and Inclusive Growth” 38th Annual Economic Policy Conference National Association for Business Economics, Washington, D.C., March 21, 2022.

⁹ Source: Federal Reserve (<https://www.federalreserve.gov/datadownload/>); downloaded on March 18, 2022.

1 Further, looking to other measures of inflation such as the Personal
2 Consumption Expenditures Index, both with and without food and energy costs,
3 recent quarterly increases are the highest they have been since the 1980s.¹⁰

Chart 3: Personal Consumption Expenditures Index Change, 1978-Current



4 **Q. HAS MR. POWELL MADE ADDITIONAL COMMENTS CONCERNING**
5 **INFLATION?**

6 **A.** Yes, he did. In his speech at the 38th Annual Economic Policy Conference before
7 the National Association for Business Economics, Mr. Powell stated:

8 At the Federal Reserve, our monetary policy is guided by the dual
9 mandate to promote maximum employment and stable prices. From
10 that standpoint, the current picture is plain to see: The labor market
11 is very strong, and inflation is much too high. My colleagues and I
12 are acutely aware that high inflation imposes significant hardship,
13 especially on those least able to meet the higher costs of essentials
14 like food, housing, and transportation. There is an obvious need to
15 move expeditiously to return the stance of monetary policy to a more
16 neutral level, and then to move to more restrictive levels if that is

¹⁰ Bureau of Economic Analysis. Table 2.3.4. Price Indexes for Personal Consumption Expenditures by Major Type of Product
(<https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>)

1 what is required to restore price stability. We are committed to
2 restoring price stability while preserving a strong labor market.

3 At our meeting that concluded last week, we took several steps in
4 pursuit of these goals: We raised our policy interest rate for the first
5 time since the start of the pandemic and said that we anticipate that
6 ongoing rate increases will be appropriate to reach our objectives.
7 We also said that we expect to begin reducing the size of our balance
8 sheet at a coming meeting. In my press conference, I noted that
9 action could come as soon as our next meeting in May, though that
10 is not a decision that we have made. These actions, along with the
11 adjustments we have made since last fall, represent a substantial
12 firming in the stance of policy with the intention of restoring price
13 stability. In my comments today, I will first discuss the economic
14 conditions that warrant these actions and then address the path ahead
15 for monetary policy.

16 ***

17 The rise in inflation has been much greater and more persistent than
18 forecasters generally expected. For example, at the time of our June
19 2021 meeting, every Federal Open Market Committee (FOMC)
20 participant and all but one of 35 submissions in the Survey of
21 Professional Forecasters predicted that 2021 inflation would be
22 below 4 percent. Inflation came in at 5.5 percent.²[Footnote Omitted]

23 ***

24 The ultimate responsibility for price stability rests with the Federal
25 Reserve. Price stability is essential if we are going to have another
26 sustained period of strong labor market conditions. I believe that the
27 policy approach that I have laid out is well suited to achieving this
28 outcome. We will take the necessary steps to ensure a return to price
29 stability. In particular, if we conclude that it is appropriate to move
30 more aggressively by raising the federal funds rate by more than 25
31 basis points at a meeting or meetings, we will do so. And if we
32 determine that we need to tighten beyond common measures of
33 neutral and into a more restrictive stance, we will do that as well.¹¹

¹¹ Restoring Price Stability, Chair Pro Tempore Jerome H. Powell, At “Policy Options for Sustainable and Inclusive Growth” 38th Annual Economic Policy Conference National Association for Business Economics, Washington, D.C., March 21, 2022.

1 In Mr. Powell's press conference after the FOMC's May 4, 2022 meeting
2 where they raised the Fed Funds Rate to 0.75% – 1.00% from 0.25% – 0.50%,¹² he
3 echoed much of his statement as cited above, but increased his expectations of
4 larger than normal Fed Funds Rate increases and detailed a plan to shrink their
5 balance sheet:

6 Assuming that economic and financial conditions evolve in line with
7 expectations, there is a broad sense on the Committee that additional
8 50 basis point increases should be on the table at the next couple of
9 meetings.

10 ***

11 With regard to our balance sheet, we also issued our specific plans
12 for reducing our securities holdings. Consistent with the principles
13 we issued in January, we intend to significantly reduce the size of
14 our balance sheet over time in a predictable manner by allowing the
15 principal payments from our securities holdings to roll off the
16 balance sheet, up to monthly cap amounts.¹³

17 As can be gleaned from Mr. Powell's statements, he expects inflation to
18 continue well into next year and that the Fed will continue to use the tools at their
19 disposal to support the economy and the labor market, including accelerating the
20 pace of rate increases of the Fed Funds Rate and the roll off of assets from its
21 balance sheet.

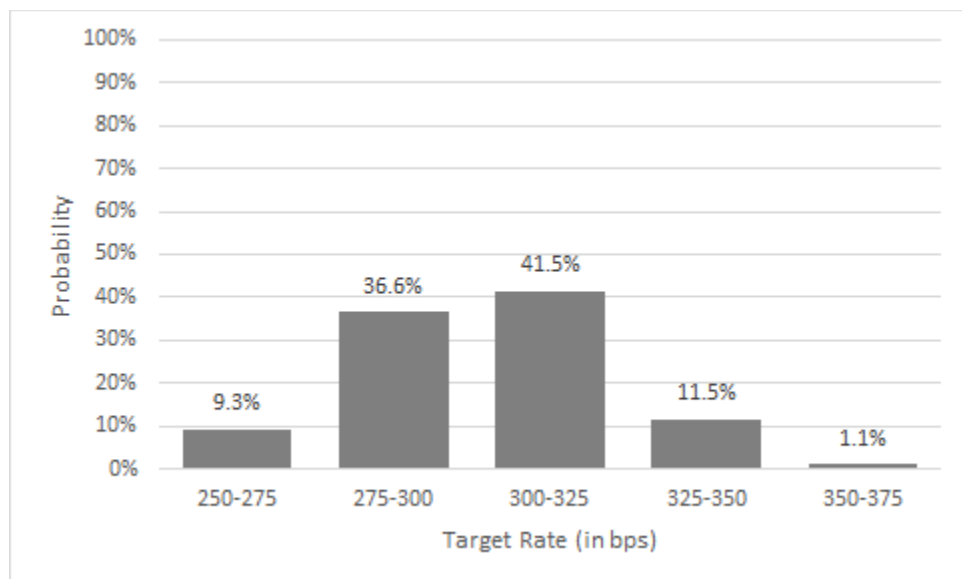
¹² The 50-basis point increase in the Fed Funds Rate on May 4, 2022 is the largest increase in the Fed Funds Rate since 2000.

¹³ Transcript of Chair Powell's Press Conference, May 4, 2022.

1 **Q. IS THE MARKET CURRENTLY PRICING IN EXPECTATIONS OF**
2 **SIGNIFICANT FUTURE FED FUNDS RATE INCREASES IN LINE WITH**
3 **MR. POWELL’S STATEMENTS?**

4 A. Yes. The CME FedWatch Tool, as presented in Chart 4 below, indicates that a
5 majority of investors are pricing in at least a Fed Funds Rate of 3.00% by the Fed’s
6 February 1, 2023 meeting, as compared to the current level of the Fed Funds Rate
7 of between 0.75% and 1.00%.

Chart 4: CME FedWatch Tool – February 1, 2023 FOMC Meeting¹⁴



8 **Q. PLEASE SUMMARIZE YOUR OBSERVATIONS OF THE CURRENT**
9 **MARKET ENVIRONMENT.**

10 A. In response to the current inflationary environment, the Fed recently raised the Fed
11 Funds Rate and anticipates additional increases over the next year in addition to

¹⁴ Source: <https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>, accessed June 2, 2022.

1 rolling off assets from their balance sheet. Investors have already priced in these
2 actions and prospective actions into market prices.

3 Regardless of current and future actions of the Fed, however, they have
4 acknowledged that inflation is higher than its target average level of 2.00% and will
5 continue to run higher than that target well into 2022 and possibly beyond.

6 Increasing inflation drives all costs higher (*e.g.*, prices for materials, labor,
7 capital). This is an economic reality that affects companies across the board and
8 Duke Energy Ohio is not immune to such increases. As a result, higher inflation
9 increases risk for Duke Energy Ohio and in turn, its debt and equity investors.

10 **Q. HAVE YOU UPDATED STAFF'S ANALYSES TO REFLECT MORE**
11 **CURRENT DATA?**

12 A. Yes, I have. Given the Staff Report filing date of May 19, 2022, I assumed that
13 Staff would have been able to use data as of April 29, 2022 in its analysis. The
14 dates of the market data used in Staff's update are as follows:

Table 2: Spot data for Updated Staff Analysis¹⁵

Data Used	Date Certain
Prices in Discounted Cash Flow (DCF) Model	Year ended April 29, 2022
Growth Rates in DCF Model	<i>Value Line</i> , Zacks, and Yahoo! Finance as of April 29, 2022, SeekingAlpha and CNBC growth rates as of June 3, 2022
Gross National Product (GNP) Growth Rate	Average GNP growth rate for the period 1929-2021
<i>Value Line Investment Survey (Value Line)</i> betas	Most recent as of April 29, 2022
Market Risk Premium (MRP)	1926 – 2021 historical MRP from Kroll 2022 SBBI® Yearbook – Stocks, Bonds, Bills, and Inflation
Projected Risk-Free Rate	Projected 30-year Treasury bond from December 1, 2021 and April 29, 2022 <i>Blue Chip Financial Forecasts (Blue Chip)</i>

1 Using current data and applying the models as directed at pages 18 through
2 20 of the Staff Report results in indicated ROEs of 9.72% (capital asset pricing
3 model (CAPM)) and 9.54% for the discounted cash flow model (DCF) as presented
4 on Attachment DWD-1S. The average of those two results is 9.63%.

Table 3: Indicated Model Results for Staff Report Using Data as of April 29, 2022¹⁶

Model	Indicated ROE
CAPM	9.72%
DCF Model	<u>9.54%</u>
Average	9.63%

5 Taking the combined average ROE and applying a 100-basis-point range of
6 uncertainty, which is Staff's practice, results in a range between 9.13% and 10.13%.
7 After the determination of the indicated range of ROEs, applying Staff's adjustment

¹⁵ See, Attachment DWD-Supp-1.

¹⁶ See, Attachment DWD-Supp-1.

1 factor to account for issuance and other costs of 1.01329 results in a baseline cost
2 of common equity recommendation between 9.25% and 10.27%.¹⁷ This represents
3 a 40-basis-point increase from Staff's position simply by using data available to
4 them at the time of the study.

5 **Q. LIKEWISE, HAVE YOU UPDATED YOUR COST OF COMMON EQUITY**
6 **ANALYSES FOR YOUR SUPPLEMENTAL DIRECT TESTIMONY?**

7 A. Yes, I have. Due to the passage of time since my Direct Testimony analysis (data
8 as of August 31, 2021), I have updated my analysis using data as of May 31, 2022.

9 **Q. HAVE YOU UPDATED YOUR UTILITY PROXY GROUP FOR YOUR**
10 **UPDATED ANALYSES?**

11 A. Yes, I have. In my updated analysis, I have applied my selection criteria as stated
12 at pages 11 through 12 of my Direct Testimony, but used fiscal year 2021 data.
13 This resulted in the addition of American Electric Power Company and the
14 elimination of Otter Tail Power Company and Pinnacle West Capital Corp.

¹⁷ 9.25% = 9.13% * 1.01329, 10.27% = 10.13% * 1.01329.

Table 4: Updated Utility Proxy Group Companies

Company Name	Ticker Symbol
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power	AEP
Duke Energy Corporation	DUK
Edison International	EIX
Entergy Corporation	ETR
Eversource Energy	ES
IDACORP, Inc.	IDA
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Portland General Electric Co.	POR
Xcel Energy, Inc.	XEL

1 **Q. HAVE YOU APPLIED YOUR ROE MODELS IN THE SAME MANNER IN**
2 **YOUR UPDATED ANALYSES?**

3 A. Yes, I have.

4 **Q. WHAT ARE THE RESULTS OF YOUR UPDATED ANALYSES?**

5 A. Using data available as of May 31, 2022, my updated results are presented in page
6 1 of Attachment DWD-Supp-2 and in Table 5, below:

Table 5: Summary of Common Equity Cost Rates

Discounted Cash Flow Model	8.89%
Risk Premium Model	11.46%
Capital Asset Pricing Model	11.04%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	<u>12.41%</u>
Indicated Range of Common Equity Cost Rates Before Adjustments	9.65% - 11.65%
Size Adjustment	0.15%
Flotation Cost Adjustment	<u>0.11%</u>
Indicated Range of Common Equity Cost Rates After Adjustment	<u>9.91% – 11.91%</u>
Recommended Cost of Common Equity	<u>10.30%</u>

1 In view of the unadjusted and adjusted ranges of ROE, I maintain my
2 original ROE recommendation of 10.30%. My recommended ROE of 10.30% is
3 below the midpoint of my adjusted range of ROEs, making it a conservative
4 measure of the Company's ROE at this time.

**Objection No. 18(b): Duke Energy Ohio Objects to the Inconsistency of ROE Models
used in its Staff Reports and Lack of a Comparable Earnings (CE) Review**

5 **Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NUMBER 18(b).**

6 A. The models employed by Staff in this proceeding are not consistent with the ROE
7 models used in the concurrent Aqua Ohio, Inc. (Aqua Ohio) Case (Case Nos. 21-
8 595-WW-AIR and 21-596-ST-AIR), specifically, Staff's exclusion of its CE
9 Review in this Case.

10 In Case Nos. 21-595-WW-AIR and 21-596-ST-AIR, Staff selected two
11 additional comparable risk groups and used their earned returns as another tool to

1 determine Aqua Ohio's ROE, which is consistent with the *Hope* and *Bluefield*
2 Supreme Court cases cited in my Direct Testimony.¹⁸

3 Companies in the first comparable risk group were selected by requiring the
4 following: (1) the company having the same Safety Rank¹⁹ as Aqua Ohio's parent
5 company, Essential Utilities, Inc.; (2) the company having the same Financial
6 Strength Rating²⁰ as Essential Utilities, Inc.; and (3) the company having a Beta
7 coefficient (beta) between 0.65 and 1.35.²¹ The second comparable group was
8 selected by requiring the company to be classified as a utility (electric, gas, water,
9 or telecom).²² After determining their comparable risk groups, Staff obtained each
10 groups' earned ROE for 2020 from *Value Line* and then averaged them together to
11 determine an indicated ROE using the CE Review. The result of the CE Review
12 was then averaged with the CAPM and DCF model to determine Staff's
13 recommended range.²³

¹⁸ D'Ascendis Direct Testimony, at 35-37.

¹⁹ *Value Line* also ranks stocks for Safety by analyzing the total risk of a stock compared to the approximately 1,700 stocks in the *Value Line* universe. Each of the stocks tracked in the *Value Line Investment Survey* is ranked in relationship to each other, from 1 (the highest rank) to 5 (the lowest rank). Safety is a quality rank, not a performance rank, and stocks ranked 1 and 2 are most suitable for conservative investors; those ranked 4 and 5 will be more volatile. Volatility means prices can move dramatically and often unpredictably, either down or up. The major influences on a stock's Safety rank are the company's financial strength, as measured by balance sheet and financial ratios, and the stability of its price over the past five years.

²⁰ Defined as a measure of a company's balance sheet health and financial condition.

²¹ A Report by the Staff of the Public Utilities Commission of Ohio, In the Matter of the Application of Aqua Ohio, Inc., for Authority to increase its rates and charges for its wastewater service, Case Number 21-595-WW-AIR, February 11, 2022, at 8.

²² A Report by the Staff of the Public Utilities Commission of Ohio, In the Matter of the Application of Aqua Ohio, Inc., for Authority to increase its rates and charges for its wastewater service, Case Number 21-595-WW-AIR, February 11, 2022, at 8.

²³ A Report by the Staff of the Public Utilities Commission of Ohio, In the Matter of the Application of Aqua Ohio, Inc., for Authority to increase its rates and charges for its wastewater service, Case Number 21-595-WW-AIR, February 11, 2022, at 8.

1 **Q. DID STAFF GIVE ANY REASON WHY THEY DID NOT PERFORM**
2 **THEIR CE REVIEW IN THIS CASE?**

3 A. No, they did not.

4 **Q. HAVE YOU PERFORMED STAFF'S CE REVIEW AS PRESCRIBED IN**
5 **THEIR REPORT FOR AQUA OHIO?**

6 A. Yes, I have. The selection criteria for both groups are shown on Attachment DWD-
7 Supp-3. For the first comparable risk group, I required that the companies passed
8 the following screens: (1) that they had an equivalent Safety Ranking to Duke
9 Energy Ohio's parent company, Duke Energy Corporation; (2) that they had an
10 equivalent Financial Strength rating to Duke Energy Corporation; and (3) that they
11 had a beta between 0.65 and 1.35. These screens produced a comparable risk group
12 of 100 companies.

13 The second comparable risk group required that the company be a regulated
14 utility (*Value Line* industry groups including Electric Utility (East, Central, West),
15 Natural Gas Utility, Water Utility, and Telecom Utility). These screens resulted in
16 a comparable risk group of 68 companies.

17 Following Staff's CE Review process,²⁴ I then averaged the 2021 earned
18 ROE for both groups. As shown on Attachment DWD-Supp-3, the average earned
19 ROE for the first comparable group is 17.58% and 10.20% for the second
20 comparable group, averaging 13.89%. Eliminating values above or below two
21 standard deviations of the mean earned ROE for each group resulted in indicated

²⁴ A Report by the Staff of the Public Utilities Commission of Ohio, In the Matter of the Application of Aqua Ohio, Inc., for Authority to increase its rates and charges for its wastewater service, Case Number 21-595-WW-AIR, February 11, 2022, at 8.

ROEs of 15.16% and 9.48%, respectively, averaging 12.32%. Going forward, any reference to CE Review results will refer to the conservative average CE Review (12.32%) results.

Table 6: Indicated Model Results for Staff CE Review²⁵

Group	Average	Conservative Average
First Comparable Group	17.58%	15.16%
Second Comparable Group	<u>10.20%</u>	<u>9.48%</u>
Average	<u>13.89%</u>	<u>12.32%</u>

Q. HOW WOULD THE INCLUSION OF STAFF'S CE REVIEW AFFECT THEIR RECOMMENDATION?

A. It would increase it. Including the Staff CE Review as applied in the Aqua Ohio case to the Staff Report without any changes would result in a baseline recommended ROE range between 9.89% and 10.90%.

Table 7: Indicated Model Results for Staff Report Including CE Review (Conservative Average)

Model	Indicated ROE
CAPM (Staff Report)	8.92%
DCF Model (Staff Report)	9.53%
CE Review (Att. DWD-Supp-3)	<u>12.32%</u>
Average	10.26%
100-basis point range of uncertainty	9.76% - 10.76%
Issuance cost adjustment	<u>1.01329</u>
Baseline ROE Range	<u>9.89% - 10.90%</u>

In conjunction with Objection No. 18(b), using current market data as of April 29, 2022 (no changes to Staff's methodology or inputs other than updating

²⁵ See, Attachment DWD-Supp-3.

data), an indicated baseline recommended range of ROE between 10.16% and 11.17% results.

Table 8: Indicated Model Results for Staff Report Including CE Review (Conservative Average) Using Market Data as of April 29, 2022

Model	Indicated ROE
CAPM (Att. DWD-Supp-1)	9.72%
DCF Model (Att. DWD-Supp-1)	9.54%
CE Review (Att. DWD-Supp-3)	<u>12.32%</u>
Average	10.53%
100-basis point range of uncertainty	10.03% - 11.03%
Issuance cost adjustment	<u>1.01329</u>
Baseline ROE Range	<u>10.16% - 11.17%</u>

In view of the above results, it is clear that the 8.84% to 9.85% recommended ROE range in the Staff Report is inadequate, as evidenced by using Staff's own models with updated data and including models that Staff used in other cases currently before the Commission.

Objection No. 18(c): Duke Energy Ohio Objects to Staff's use of only one MRP in its Calculation of its Indicated ROE using the CAPM

Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NUMBER 18(c).

A. While I agree that the Staff's selection of the historical MRP provided by Duff & Phelps 2021 SBBI ® Yearbook is an acceptable measure of the MRP for the CAPM, the use of only one MRP in an analysis is inconsistent with Staff's analysis, in which they use multiple sources for earnings growth in their DCF model analysis,²⁶ and generally use multiple models to arrive at their ROE recommendation (the CAPM, DCF, and CE Review). The use of only one measure

²⁶ Staff Report, at 19-20

1 of MRP is also inconsistent with financial theory, specifically, the Efficient Market
2 Hypothesis (EMH).

3 **Q. WHAT IS THE EMH?**

4 A. According to Eugene F. Fama,²⁷ a market in which prices always “fully reflect”
5 available information is called “efficient.” There are three forms of the EMH,
6 namely:

- 7 • The “weak” form asserts that all past market prices and data are fully
8 reflected in securities prices. In other words, technical analysis cannot
9 enable an investor to “outperform the market.”
- 10 • The “semi-strong” form asserts that all publicly available information is
11 fully reflected in securities prices. In other words, fundamental analysis
12 cannot enable an investor to “outperform the market.”
- 13 • The “strong” form asserts that all information, both public and private, is
14 fully reflected in securities prices. In other words, even insider information
15 cannot enable an investor to “outperform the market.”

16 The “semi-strong” form is generally considered the most realistic
17 because the illegal use of insider information can enable an investor to “beat
18 the market” and earn excessive returns, thereby disproving the “strong” form.
19 The semi-strong form of the EMH assumes that all publicly available
20 information (including multiple measures of MRPs) are available to the
21 investor, which means alternate means of calculating the MRP would be

²⁷ Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, The Journal of Finance, Vol. 25, No. 2. (May 1970), at 383-417.

1 considered by investors when making investment decisions and, therefore,
2 should be included in Staff's CAPM analysis.

3 **Q. DOES THE STAFF REPORT SUPPORT ANY ADDITIONAL MEASURES**
4 **OF THE MRP?**

5 A. Yes, it does. The Staff Report relies heavily on *Value Line* data, including
6 screening criteria of their proxy group, betas in their CAPM, and growth rates in
7 their DCF model.²⁸

8 As shown on Attachment DWD-Supp-4, using data from *Value Line*, I
9 calculated two *ex-ante* market return estimates as of the date of Staff's CAPM
10 analysis and as of April 29, 2022. The first is derived from an average of the three-
11 to five-year median market price appreciation potential by *Value Line* for the 52
12 weeks prior to the study date, plus an average of the median estimated dividend
13 yield for the common stocks of the 1,700 firms covered in *Value Line* (Standard
14 Edition). These calculations resulted in estimated returns on the market of 8.99%
15 (December 31, 2021) and 10.26% (April 29, 2022).

16 The second MRP calculation is an *ex-ante* Market DCF calculated using
17 *Value Line* data for the expected dividend yields (expected income return) and long-
18 term growth estimates (expected capital appreciation), which results in expected
19 market returns of 16.33% (December 31, 2021) and 15.48% (April 29, 2022).

20 Subtracting the projected associated risk-free rates of 2.74% (December 31,
21 2021) and 3.35% (April 29, 2022), from the indicated expected market returns, I
22 derived MRPs of 6.25% and 6.91% (*Value Line* Summary & Index for December

²⁸ Staff Report, at 18-20.

31, 2021 and April 29, 2022, respectively) and 13.59% and 12.13%, (*Value Line* S&P 500 data for December 31, 2021 and April 29, 2022, respectively) as shown on Attachment DWD-Supp-4. When the MRPs derived above are averaged with the 1926-2020 and 1926-2021 historical estimates from the 2021 and 2022 SBBI® Yearbooks, they produce MRPs of 9.00% (December 31, 2021) and 8.80% (April 29, 2022), as shown on page 2 of Attachment DWD-4S.

Table 9: Calculation of MRP Including *Value Line* Data²⁹

Measure	December 31, 2021	April 29, 2022
Historical MRP	7.15%	7.35%
<i>Value Line</i> Summary & Index	6.25%	6.91%
<i>Value Line</i> S&P 500 Data	<u>13.59%</u>	<u>12.13%</u>
Average MRP	<u>9.00%</u>	<u>8.80%</u>

As discussed above, the use of multiple measures of the MRP produces a more robust estimate of investor's market expectations and is more appropriate than reliance upon only one measure.

Objection No. 18(d): Duke Energy Ohio Objects to Staff's Exclusion of the Empirical CAPM (ECAPM) in its Analysis

Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NUMBER 18(d).

A. Staff does not consider the ECAPM in its CAPM analysis, despite the fact that numerous tests of the CAPM have confirmed the ECAPM's validity by showing that the empirical Security Market Line (SML) described by the traditional CAPM is not as steeply sloped as the predicted SML. While the results of these tests support the notion that betas are related to security returns, the empirical SML

²⁹ See, Attachment DWD-Supp-4.

described by the CAPM formula is not as steeply sloped as the predicted SML, as discussed on pages 31 through 33 of my Direct Testimony.

Q. HOW WOULD USING A MORE ROBUST MRP VALUE (OBJECTION NO. 18(c)) AND INCLUDING THE ECAPM AFFECT THE STAFF RECOMMENDATION?

A. As shown on Attachment DWD-Supp-5, including a more robust MRP value, and including the ECAPM with no changes to the individual company betas or the risk-free rate, would increase the CAPM-indicated result from 8.92% to 10.71%, and would increase the Staff's baseline ROE recommended range from between 8.84% and 9.85% to between 9.75% and 10.76%.³⁰

In conjunction with Objection No. 18(a), using data as of April 29, 2022, including the ECAPM in the CAPM analysis would result in an indicated ROE of 11.12%, and would change the Staff's baseline ROE recommended range to between 9.96% and 10.98%.³¹

³⁰ Average of 10.71% CAPM/ECAPM result and 9.53% DCF model result averages 10.12%. Application of the Staff 100-basis point range of uncertainty and issuance adjustment factor of 1.01329 equals a range between 9.75% and 10.76%.

³¹ Average of 11.12% CAPM/ECAPM result and 9.56% DCF model result averages 10.34%. Application of the Staff 100-basis point range of uncertainty and issuance adjustment factor of 1.01329 equals a range between 9.97% and 10.98%.

Objection No. 18(e): Duke Energy Ohio Objects to Staff's Omission of a Size Adjustment for Duke Energy Ohio's Smaller Relative Size Compared to their Utility Proxy Group

1 **Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NUMBER 18(e).**

2 A. As discussed in my Direct Testimony,³² size has a material bearing on risk. Smaller
3 companies are less able to cope with significant events, such as those affecting
4 revenues or expenses, and the adverse impacts of those events. As such, Staff
5 should have considered the smaller relative size of Duke Energy Ohio as compared
6 to their proxy group.

7 **Q. PLEASE COMPARE DUKE ENERGY OHIO'S SIZE WITH THAT OF**
8 **STAFF'S PROXY GROUP.**

9 A. As shown in Attachment DWD-Supp-6 and Table 10 below, Duke Energy Ohio is
10 smaller than the utilities in Staff's proxy group, as measured by market
11 capitalization.

³² D'Ascendis Direct Testimony, at 41-43.

Table 10: Size as Measured by Market Capitalization for Duke Energy Ohio and the Utility Proxy Group

	<u>Market Capitalization*</u> (\$ Millions)	<u>Times Greater than the Company</u>
Duke Energy Ohio	\$4,511	
Staff Proxy Group	\$42,876	9.5x
*From page 1 of Attachment DWD-Supp-6.		

Duke Energy Ohio's estimated market capitalization was \$4.5 billion as of April 29, 2022,³³ compared with the market capitalization of the median company in Staff's Proxy Group of \$42.9 billion as of April 29, 2022. The median company in the Utility Proxy Group has a market capitalization 9.5 times the size of Duke Energy Ohio's estimated market capitalization.

As a result, it is necessary to upwardly adjust the range of indicated common equity cost rates to reflect Duke Energy Ohio's greater risk due to their smaller relative size. The determination is based on the size adjustments for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2021 period. The average size adjustment for the Utility Proxy Group with a market capitalization of \$42.9 billion falls in the 1st decile, while the Company's estimated market capitalization of \$4.5 billion places it in the 5th decile. The size adjustment spread between the 1st decile and the 5th decile is 1.11%. In view of an indicated 1.11% upward size adjustment, my recommended size adjustment of 0.15% should be considered conservative.

³³ \$1,768.291M (company-provided book equity as of the 4th Quarter 2020) * 255% (market-to-book ratio of Staff's proxy group) as demonstrated on Attachment DWD-Supp-6.

Objection No. 18(f): Duke Energy Ohio Objects to Staff's Omission of a Credit Risk Adjustment for Duke Energy Ohio's Riskier Bond Rating Compared to their Utility Proxy Group

1 **Q. PLEASE EXPLAIN THE COMPANY'S OBJECTION NUMBER 18(f).**

2 A. As discussed in my Direct Testimony,³⁴ similar bond ratings reflect similar total
3 risk (with the exception of size). As shown on page 1 of Attachment DWD-Supp-
4 7, the average Moody's and S&P long-term rating for Staff's proxy group is A3
5 and A-, respectively, compared to Duke Energy Ohio's Moody's and S&P long-
6 term ratings of Baa1 and BBB+, respectively. Because the ratings between the
7 Company and Staff's proxy group are materially different, there needs to be an
8 adjustment to the Staff's recommended range of ROEs to reflect Duke Energy
9 Ohio's higher risk as compared to Staff's proxy group. As shown on page 2 of
10 Attachment DWD-Supp-7, 12-month spreads between A2 and Baa2-rated public
11 utility bonds are 0.26% (calendar 2021) and 0.25% (ending April 2022). Taking
12 one-third of those historical spreads (i.e., a one rating notch move from A3 to Baa1)
13 results in indicated credit risk adjustments of 0.08% and 0.09%.

III. CONCLUSION

14 **Q. WHAT ARE THE EFFECTS OF YOUR OBJECTIONS TO THE STAFF**
15 **REPORT?**

16 A. To summarize, my objections and proposed corrections to the Staff Report are the
17 following:

³⁴ D'Ascendis Direct Testimony, at 10-11.

- 1 • Objection No. 18(a): The Staff Report uses data that does not reflect current
2 market conditions. Proposed solution: Update Staff analysis as of April 29,
3 2022;
- 4 • Objection No. 18(b): The Staff Report omits a CE Review, which was used
5 in their report in Aqua Ohio dated February 11, 2022 and is currently before
6 the Commission. Proposed solution: Include CE Review as proposed by
7 Staff in Aqua Ohio and applied to Duke Energy Ohio;
- 8 • Objection No. 18(c): The Staff Report only includes one measure of the
9 MRP in its CAPM analysis. Proposed solution: Include *Value Line* MRP
10 values, as Staff relies on *Value Line* data in several of their analyses;
- 11 • Objection No. 18(d): The Staff Report does not include an ECAPM
12 analysis. Proposed solution: Include the ECAPM in Staff's CAPM
13 analysis;
- 14 • Objection No. 18(e): The Staff Report did not include a size adjustment in
15 their determination of their recommended range. Proposed solution:
16 Include a size adjustment to reflect the increased risk of Duke Energy Ohio
17 compared to Staff's proxy group; and
- 18 • Objection No. 18(f): The Staff Report did not include a credit risk
19 adjustment to reflect Duke Energy Ohio's riskier credit rating as compared
20 to their proxy group. Proposed solution: Include a credit risk adjustment.

21 Applying all of the proposed solutions as described in the Objections above to the
22 Staff Report would result in the following Staff recommended ROE range:

Table 11: Indicated Model Results for Staff Report Including all Proposed Objections

Model	Indicated ROE
CAPM Incl. ECAPM and <i>Value Line</i> MRP as of 4/29/2022 (Att. DWD-Supp-5)	11.12%
DCF Model as of 4/29/2022 (Att. DWD-Supp-1)	9.54%
CE Review (Conservative Avg.) (Att. DWD-Supp-3)	<u>12.32%</u>
Average	10.99%
100-basis-point range of uncertainty	10.49% - 11.49%
Issuance cost adjustment	<u>1.01329</u>
Baseline ROE Range	10.63% - 11.65%
Size Risk Adjustment (Att. DWD-Supp-6)	0.15%
Credit Risk Adjustment (Att. DWD-Supp-7)	<u>0.08%</u>
Staff Corrected ROE Range	<u>10.87% - 11.88%</u>

1 In view of these objections, I believe that the 8.84% - 9.85% ROE range
2 recommended by Staff in its Staff Report is too low to permit Duke Energy Ohio
3 to earn a reasonable return under the circumstances, and therefore unjust and
4 unreasonable.

5 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT**
6 **TESTIMONY?**

7 A. Yes, it does.

Duke Energy Ohio, Inc.
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Supporting Attachments Accompanying the Supplemental Direct Testimony
of Dylan W. D'Ascendis, CRRA, CVA

	<u>Attachment</u>
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Updated Company Analysis using Data as of May 31, 2022	DWD-Supp-2
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DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
SUMMARY OF ROE
June 30, 2021
UPDATED AS OF 4/29/2022

(1) CAPM Indicated Result (page 2)	9.72%
(2) DCF Model Indicated Result (page 6)	<u>9.54%</u>
(3) Average Model Result	<u><u>9.63%</u></u>
(4) Low End Equity Cost	9.13%
(5) High End Equity Cost	10.13%
(6) Generic Issuance Cost, f	3.50%
(7) External Equity Ratio	0.36643
(8) Net Adjustment Factor, $(w/(1 - f)) + (1 - w)$	1.01329
(9) Low End Equity Cost [Line (4) * Line (8)]	<u><u>9.25%</u></u>
(10) High End Equity Cost [Line (5) * Line (8)]	<u><u>10.27%</u></u>

Source of Information:

Duke Energy Ohio, Inc.'s Schedule D-1.1

DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
COMPARABLE PEER GROUP
UPDATED AS OF 4/29/2022

Comparable Peer Group	Value Line Beta*
AEP	0.75
CMS	0.80
D	0.85
DTE	0.95
DUK	0.85
EXC	0.95
LNT	0.85
PEG	0.90
SO	0.95
SRE	0.95
WEC	0.80
XEL	0.80
Average Betas:	0.87

$$\begin{aligned}
 \text{ERP}^1 &= 7.35\% \\
 R_f^2 &= 3.35\% \\
 \beta &= 0.87 \\
 \text{CAPM} &= \underline{\underline{9.72\%}}
 \end{aligned}$$

Notes:

¹ Equity risk premium calculated using data from SBBI 2022 Yearbook (12.37% historical total market return less Long-term income return on U.S. Government securities of 5.02%)

² Forecasted risk-free rate based on the average of the Blue Chip consensus forecast of the expected yields on 30-year U.S. Treasury Bonds for the six quarters ending with the third calendar quarter of 2023 and years 2023-2027 and 2028-2032 as shown below.

Second Quarter 2022	2.90 %
Third Quarter 2022	3.10
Fourth Quarter 2022	3.20
First Quarter 2023	3.40
Second Quarter 2023	3.50
Third Quarter 2023	3.50
2023-2027	3.40
2028-2032	3.80
	<u>3.35 %</u>

* Data as available at April 29, 2022.

DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
DCF PRICE, DIVIDEND, AND GROWTH RATE
UPDATED AS OF 4/29/2022

Stock Prices ¹ (\$): Date	AEP	CMS	D	DTE	DUK	EXC	LNT	PEG	SO	SRE	WEC	XEL
5/3/2021	88.68	65.03	80.37	119.49	100.71	32.01	56.17	63.65	66.05	138.06	98.00	71.62
5/4/2021	88.38	65.20	79.41	119.65	100.78	31.93	56.54	63.19	66.42	137.98	97.86	71.84
5/5/2021	87.47	64.20	77.95	118.17	99.36	31.04	55.61	61.31	65.45	135.48	96.56	70.75
5/6/2021	88.12	64.43	78.48	120.23	100.54	31.72	56.57	62.57	66.05	136.61	97.95	71.55
5/7/2021	87.19	63.99	78.45	120.56	100.86	31.86	56.74	63.15	66.26	137.82	97.64	71.32
5/10/2021	87.56	64.91	79.46	122.65	103.74	31.75	57.95	63.28	66.31	139.02	99.26	72.59
5/11/2021	86.41	63.53	78.63	121.02	103.63	31.69	56.97	62.25	65.80	138.54	96.44	71.03
5/12/2021	84.98	62.46	77.14	117.93	101.22	30.74	55.81	60.70	64.36	135.21	95.02	70.17
5/13/2021	86.52	63.53	78.38	119.34	103.00	31.67	56.88	62.15	65.73	137.73	95.84	71.12
5/14/2021	86.76	63.50	78.07	120.07	103.06	32.15	56.76	62.52	65.11	138.11	96.20	71.72
5/17/2021	85.45	62.98	77.67	119.77	102.45	32.15	56.48	62.29	64.44	137.54	95.76	70.80
5/18/2021	85.75	63.30	77.16	117.28	102.49	32.55	57.60	62.11	64.16	137.35	95.40	70.81
5/19/2021	85.92	63.22	76.98	118.10	101.16	32.47	57.70	61.98	63.98	135.95	94.87	70.57
5/20/2021	86.26	63.74	77.24	119.43	102.27	32.62	57.76	62.58	64.06	135.74	95.52	71.58
5/21/2021	86.65	64.15	78.23	119.69	102.86	32.69	58.11	63.02	64.38	136.97	96.22	72.04
5/24/2021	86.57	63.77	77.09	120.97	102.31	32.82	58.06	63.46	64.42	137.76	95.36	71.67
5/25/2021	85.93	63.25	76.01	118.07	101.31	32.02	57.60	62.19	64.08	135.45	94.21	71.24
5/26/2021	85.75	62.95	75.95	117.27	101.11	32.21	57.51	62.30	63.72	137.03	93.99	71.00
5/27/2021	85.55	62.30	75.49	117.37	100.01	31.80	56.75	62.03	63.66	135.30	93.35	70.27
5/28/2021	86.00	62.74	76.14	117.41	100.22	32.17	57.15	62.12	63.92	135.49	93.91	70.88
6/1/2021	85.10	62.31	75.55	117.48	100.08	32.19	56.99	62.03	63.43	135.93	92.97	70.00
6/2/2021	85.65	62.42	76.39	116.94	100.68	32.23	57.60	61.67	63.90	135.84	93.18	70.24
6/3/2021	85.96	62.67	76.71	117.13	101.67	32.64	58.13	61.71	64.46	137.01	93.83	70.48
6/4/2021	86.03	62.62	76.52	116.86	101.48	32.52	58.11	61.27	64.35	136.42	93.59	70.08
6/7/2021	85.67	62.80	76.41	117.29	101.86	32.70	58.10	60.87	64.67	136.10	93.56	70.12
6/8/2021	82.97	60.33	75.81	116.97	100.59	32.62	57.59	61.01	63.44	135.44	91.93	68.80
6/9/2021	84.45	59.93	76.50	118.26	101.39	33.06	58.30	61.13	63.63	139.44	92.91	69.35
6/10/2021	84.73	60.24	77.45	117.55	101.71	33.31	58.54	61.63	63.88	139.69	93.13	69.63
6/11/2021	84.76	60.67	77.32	117.95	101.93	33.45	58.58	61.80	63.85	142.24	92.90	69.54
6/14/2021	85.13	60.30	78.27	117.74	102.53	33.59	58.57	61.84	63.79	143.25	92.69	69.08
6/15/2021	85.24	60.50	78.12	117.10	103.22	33.59	58.75	62.35	64.32	144.06	93.10	69.19
6/16/2021	84.40	59.67	76.50	115.35	101.81	32.94	57.57	61.23	62.98	141.16	91.93	67.76
6/17/2021	84.39	59.51	76.78	114.45	102.42	32.80	58.12	61.20	63.35	140.58	92.38	68.35
6/18/2021	82.35	58.12	74.82	112.18	99.61	31.77	56.33	59.34	61.45	137.77	89.43	66.60
6/21/2021	83.19	58.53	75.90	113.09	101.31	31.88	57.33	60.06	62.50	138.46	90.67	67.14
6/22/2021	83.26	58.61	75.65	112.10	100.40	31.61	57.23	59.62	62.08	136.95	90.17	66.75
6/23/2021	82.65	58.54	74.55	111.09	99.23	31.48	56.75	59.19	61.47	135.56	88.97	66.23
6/24/2021	82.85	59.10	74.61	110.81	99.07	31.55	56.42	59.37	60.98	135.55	89.08	66.26
6/25/2021	84.77	60.13	75.11	111.69	99.72	31.82	57.13	59.86	61.53	137.47	90.10	67.10
6/28/2021	84.90	60.01	75.24	111.46	100.01	32.00	57.11	60.24	61.49	137.28	90.96	67.06
6/29/2021	83.93	58.85	73.51	110.18	98.12	31.77	55.74	59.49	60.46	133.72	89.02	65.71
6/30/2021	84.59	59.08	73.57	110.27	98.72	31.60	55.76	59.74	60.51	132.48	88.95	65.88
7/1/2021	85.26	60.07	74.11	111.88	99.55	32.07	56.27	60.24	61.48	134.09	90.19	67.03
7/2/2021	85.20	59.91	74.21	111.74	99.51	32.18	56.42	60.10	61.53	134.79	90.02	66.82
7/6/2021	85.24	59.81	75.39	112.30	99.83	32.00	56.39	60.30	61.64	133.37	90.70	67.07
7/7/2021	85.62	60.15	75.64	113.96	100.37	32.18	56.83	60.85	61.69	133.45	91.79	67.69
7/8/2021	85.31	60.27	75.95	114.23	100.56	32.04	56.84	60.54	61.55	131.93	92.21	67.50
7/9/2021	85.39	60.31	75.55	115.60	100.66	32.02	56.76	60.49	61.47	132.86	91.84	67.67
7/12/2021	85.41	60.36	75.55	116.00	101.53	32.29	56.94	60.70	61.80	133.44	92.37	67.84
7/13/2021	85.24	60.00	74.50	114.90	101.53	31.94	56.53	59.83	61.34	132.12	91.89	67.58
7/14/2021	86.18	60.48	75.24	114.90	102.70	32.19	57.23	60.39	61.89	132.17	93.15	68.09
7/15/2021	87.18	61.51	76.14	115.79	103.94	32.61	57.81	61.19	62.67	132.56	94.75	68.72
7/16/2021	87.49	62.01	77.16	117.05	104.76	32.79	58.55	61.74	63.11	134.20	95.44	69.13
7/19/2021	85.77	61.45	75.86	113.90	103.89	32.32	58.05	60.19	62.79	129.82	94.23	68.27
7/20/2021	85.74	61.94	75.67	116.12	103.74	32.84	58.31	60.67	62.95	131.92	93.82	68.16
7/21/2021	84.72	61.04	74.72	115.04	103.16	32.69	57.42	60.05	62.82	130.30	92.10	67.06
7/22/2021	84.88	61.23	74.39	114.88	102.92	32.81	57.56	60.21	62.98	129.12	92.47	67.24
7/23/2021	85.98	62.08	75.32	116.36	104.47	33.17	58.61	61.22	63.86	130.72	94.03	68.27
7/26/2021	87.68	61.98	75.09	115.88	104.58	33.09	58.60	61.55	63.73	130.70	94.16	68.31
7/27/2021	89.39	63.22	76.83	118.70	106.36	33.69	59.73	62.85	64.54	132.63	96.50	69.46
7/28/2021	88.99	62.26	75.74	117.69	105.65	33.50	59.37	62.50	63.99	132.78	94.44	68.70
7/29/2021	89.14	62.35	75.51	118.13	105.68	33.74	58.90	63.07	64.46	132.43	94.58	68.79
7/30/2021	88.12	61.79	74.87	117.32	105.11	33.37	58.53	62.23	63.87	130.65	94.14	68.25
8/2/2021	88.34	62.66	75.35	117.60	106.19	33.54	59.15	62.86	64.08	131.25	94.70	68.56
8/3/2021	89.09	63.24	75.50	118.13	106.61	33.79	59.98	63.51	64.13	131.98	95.61	68.70
8/4/2021	88.83	63.26	75.47	117.79	106.73	33.35	59.93	63.27	64.03	130.86	95.83	68.95
8/5/2021	89.66	63.21	76.08	119.33	107.93	33.99	60.47	63.90	64.78	132.94	96.48	69.24
8/6/2021	89.34	63.27	76.00	119.58	106.96	33.94	60.80	63.86	64.70	132.33	96.31	69.08
8/9/2021	88.76	63.26	76.00	119.90	106.15	33.82	60.69	63.83	64.85	131.26	96.33	69.12
8/10/2021	88.75	62.94	76.44	120.00	106.90	33.92	60.51	62.90	65.21	131.75	96.10	68.71
8/11/2021	89.17	63.19	76.93	120.18	107.14	34.37	60.83	63.53	65.63	132.00	96.41	69.07
8/12/2021	88.95	63.00	77.36	119.95	105.69	34.25	60.66	63.85	65.72	132.42	95.60	68.79
8/13/2021	89.69	63.46	77.71	120.30	106.00	34.48	61.07	64.72	65.53	133.77	96.21	69.04
8/16/2021	90.30	63.87	78.46	120.00	107.81	34.64	61.64	64.82	66.38	133.57	97.18	69.77
8/17/2021	90.54	64.27	78.62	120.31	107.71	34.48	61.74	64.73	66.45	133.89	97.36	69.95

DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
DCF PRICE, DIVIDEND, AND GROWTH RATE
UPDATED AS OF 4/29/2022

Stock Prices ¹ (\$): Date	AEP	CMS	D	DTE	DUK	EXC	LNT	PEG	SO	SRE	WEC	XEL
8/18/2021	89.75	63.82	77.98	120.14	107.05	34.38	61.42	64.00	66.01	132.59	96.46	69.33
8/19/2021	90.40	64.01	79.06	120.17	106.88	34.79	61.48	64.26	66.38	131.97	96.97	70.12
8/20/2021	91.08	64.81	80.05	121.48	107.21	35.20	62.18	64.95	67.32	133.36	97.59	70.61
8/23/2021	90.12	64.07	78.98	121.15	105.83	34.98	60.97	64.34	66.67	131.89	95.79	68.99
8/24/2021	89.23	63.54	78.54	120.49	105.15	34.88	60.66	63.81	65.73	130.97	94.45	68.29
8/25/2021	89.33	63.64	78.56	120.78	105.38	34.86	60.56	64.11	65.87	131.59	94.66	68.31
8/26/2021	89.25	63.84	78.45	120.49	104.85	34.78	60.59	63.79	66.14	131.79	94.38	68.30
8/27/2021	89.29	64.16	78.19	120.65	104.67	35.00	60.84	64.17	65.99	131.86	94.41	68.70
8/30/2021	89.62	64.48	78.30	120.40	104.79	35.12	60.89	64.24	65.75	131.81	95.02	69.03
8/31/2021	89.57	64.13	77.84	120.34	104.66	34.95	60.79	63.94	65.73	132.36	94.48	68.75
9/1/2021	90.50	65.05	78.98	121.37	106.12	35.37	61.64	64.72	66.48	133.60	95.90	69.75
9/2/2021	90.93	65.61	78.89	122.13	106.65	35.72	62.05	64.68	66.85	134.65	96.80	70.32
9/3/2021	90.41	64.96	78.38	120.75	105.68	35.53	61.47	64.14	66.27	133.41	96.08	69.80
9/7/2021	88.91	63.52	76.52	119.28	103.20	35.30	59.75	62.98	66.19	132.21	94.06	67.90
9/8/2021	90.68	64.72	77.84	121.33	105.33	35.91	61.08	64.10	67.31	134.00	96.42	69.31
9/9/2021	90.40	64.44	78.46	120.57	104.62	35.82	60.70	63.32	67.18	133.81	95.99	69.27
9/10/2021	88.83	63.61	77.30	118.77	103.20	35.59	59.77	62.14	66.21	132.49	94.89	67.76
9/13/2021	88.32	63.00	76.54	118.05	102.73	36.05	59.43	62.32	66.33	134.00	93.68	67.08
9/14/2021	87.83	63.18	76.15	117.42	101.61	35.92	59.28	62.57	65.97	133.83	93.42	66.11
9/15/2021	87.33	62.80	75.55	116.88	102.03	36.26	59.27	62.80	66.01	136.76	92.02	65.45
9/16/2021	85.98	62.48	74.93	117.56	101.41	35.78	58.65	62.61	65.38	135.12	91.58	65.00
9/17/2021	84.10	61.66	74.12	114.00	99.67	35.55	57.83	61.91	64.14	133.38	90.75	64.00
9/20/2021	83.30	61.83	74.60	113.93	99.64	35.45	57.90	62.07	63.96	131.03	90.99	63.44
9/21/2021	82.99	61.66	74.51	113.38	98.92	34.95	57.52	61.70	63.81	130.47	91.38	63.29
9/22/2021	82.72	61.49	74.84	113.95	98.54	35.21	57.44	61.02	63.61	130.84	91.23	63.19
9/23/2021	82.31	60.66	74.26	113.75	98.40	35.40	57.25	60.69	63.40	129.03	90.28	62.90
9/24/2021	82.05	60.76	74.58	113.71	98.46	35.11	57.11	60.70	63.16	129.77	90.00	63.32
9/27/2021	81.36	59.46	73.81	112.60	97.63	34.86	56.20	61.21	62.44	128.87	88.33	62.25
9/28/2021	81.28	58.86	73.14	111.43	97.05	34.37	55.81	60.36	61.94	123.62	87.77	61.42
9/29/2021	82.17	59.85	74.35	113.13	98.34	34.68	56.75	61.26	62.64	127.46	89.01	62.67
9/30/2021	81.18	59.73	73.02	111.71	97.59	34.47	55.98	60.90	61.97	126.50	88.20	62.50
10/1/2021	81.38	59.73	72.29	111.67	98.46	34.08	55.78	60.46	61.75	125.58	87.62	62.49
10/4/2021	83.04	60.87	73.35	113.01	100.76	34.48	56.82	61.15	62.43	126.52	89.37	63.90
10/5/2021	83.02	60.37	72.78	113.79	100.17	34.47	56.41	60.85	62.06	126.64	88.89	63.30
10/6/2021	84.56	61.22	74.17	115.28	101.85	35.02	57.08	60.95	62.73	127.77	90.58	64.33
10/7/2021	84.14	60.57	73.85	115.06	100.96	34.73	56.66	60.46	62.67	125.59	89.72	63.97
10/8/2021	83.58	60.15	72.70	114.13	100.53	34.48	55.96	59.89	62.56	124.62	88.81	63.20
10/11/2021	82.51	59.35	72.12	112.15	99.71	33.92	54.66	59.28	61.92	123.13	87.33	62.44
10/12/2021	82.55	59.74	72.52	112.80	99.82	34.43	54.99	59.42	62.10	124.41	87.82	63.00
10/13/2021	83.46	60.63	73.37	113.97	100.70	35.00	55.46	60.17	62.51	126.85	88.98	64.39
10/14/2021	84.05	60.94	73.65	115.06	101.65	35.75	56.14	61.41	63.26	128.06	89.90	65.43
10/15/2021	83.49	60.30	73.10	115.04	100.35	35.52	55.77	62.11	63.13	128.41	90.07	65.93
10/18/2021	82.99	59.55	71.96	113.71	99.86	35.57	55.33	61.73	62.45	127.42	88.84	64.68
10/19/2021	83.80	60.24	75.22	114.47	101.13	35.88	55.67	62.45	62.97	129.44	89.86	64.93
10/20/2021	84.90	60.79	76.59	115.47	102.23	36.52	56.45	63.40	63.71	131.28	91.06	65.57
10/21/2021	85.20	60.80	77.29	115.40	103.00	36.42	56.75	63.09	64.16	130.26	91.21	65.61
10/22/2021	85.58	61.06	77.29	116.00	103.78	36.59	57.38	63.84	62.95	131.17	91.66	65.55
10/25/2021	84.67	60.25	76.50	115.65	102.84	36.79	56.50	63.93	62.81	130.36	90.38	64.66
10/26/2021	84.42	60.60	76.59	116.37	103.29	37.09	56.81	64.61	63.28	131.44	90.75	64.48
10/27/2021	84.30	60.35	75.99	113.82	102.76	37.07	56.51	63.98	62.64	129.87	89.97	63.39
10/28/2021	84.71	60.72	76.34	114.41	102.49	37.61	56.84	64.33	62.74	129.72	90.51	64.33
10/29/2021	84.71	60.35	75.93	113.35	102.01	37.93	56.57	63.80	62.32	127.63	90.06	64.59
11/1/2021	85.13	60.29	75.41	112.97	102.31	38.43	56.85	64.36	62.48	128.89	90.34	64.50
11/2/2021	85.30	60.44	75.49	113.08	102.45	38.32	57.08	63.98	62.49	128.03	90.89	64.71
11/3/2021	84.93	60.15	75.48	113.26	102.54	38.54	56.43	63.37	62.55	128.18	89.87	63.50
11/4/2021	83.89	60.02	75.44	113.40	101.02	38.58	55.65	63.68	62.50	127.35	89.72	63.07
11/5/2021	85.04	60.52	76.53	114.13	101.68	38.61	56.42	64.19	63.10	127.35	90.87	63.80
11/8/2021	83.90	59.57	74.58	112.33	101.42	37.88	55.28	62.17	62.62	125.58	88.95	62.74
11/9/2021	83.04	60.07	74.58	112.50	101.96	38.57	55.43	62.16	63.35	125.06	89.79	63.60
11/10/2021	84.18	60.89	75.68	113.17	101.62	38.83	56.08	62.72	63.86	124.61	90.64	64.39
11/11/2021	82.61	60.08	75.07	112.49	100.25	39.00	55.31	62.19	63.05	121.60	89.04	63.50
11/12/2021	82.02	60.00	74.74	111.96	99.88	38.79	55.29	62.17	61.89	122.10	88.75	63.13
11/15/2021	82.88	61.17	75.88	113.20	100.60	39.05	56.24	63.34	62.20	124.56	90.55	64.31
11/16/2021	82.56	60.53	75.41	112.79	99.08	38.68	55.99	62.72	62.00	126.00	90.16	64.11
11/17/2021	83.24	60.94	75.35	112.75	98.99	38.21	56.11	62.46	62.17	124.24	90.80	64.97
11/18/2021	82.82	60.45	75.19	111.38	98.37	38.18	55.25	62.40	61.63	122.74	90.13	64.33
11/19/2021	83.38	60.90	74.19	111.18	98.42	38.23	56.79	63.07	62.67	122.76	90.52	65.10
11/22/2021	84.30	61.64	74.04	112.94	100.25	38.48	57.87	63.44	63.12	124.95	91.52	66.31
11/23/2021	84.31	61.31	74.82	112.25	100.74	38.78	57.86	64.20	63.01	125.32	91.00	65.84
11/24/2021	83.82	61.04	74.90	112.18	100.18	38.87	57.62	64.59	63.10	125.53	90.69	65.55
11/26/2021	82.55	60.13	73.67	110.66	99.28	38.10	56.74	63.64	62.04	121.68	89.17	64.76
11/29/2021	83.31	61.13	74.42	111.49	100.22	38.63	57.28	64.25	62.82	124.20	90.49	65.59
11/30/2021	81.05	58.85	71.20	108.34	97.01	37.60	54.79	62.49	61.10	119.87	86.93	63.73
12/1/2021	80.28	59.00	70.85	109.15	96.62	37.29	55.36	62.44	61.14	119.66	87.68	64.21
12/2/2021	81.31	59.56	71.84	110.00	97.65	37.74	55.93	63.17	62.01	122.39	88.87	64.65

DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
DCF PRICE, DIVIDEND, AND GROWTH RATE
UPDATED AS OF 4/29/2022

Stock Prices ¹ (\$): Date	AEP	CMS	D	DTE	DUK	EXC	LNT	PEG	SO	SRE	WEC	XEL
12/3/2021	82.34	60.76	73.04	111.89	99.88	37.61	56.94	63.45	62.83	123.75	91.17	65.17
12/6/2021	83.49	61.57	74.29	114.19	101.21	38.17	57.93	63.71	64.66	125.46	92.26	65.18
12/7/2021	83.91	62.03	75.46	115.01	101.17	38.45	58.33	64.62	64.47	126.91	92.34	66.04
12/8/2021	84.02	61.88	75.13	114.52	100.85	38.10	58.33	63.91	64.75	126.12	92.56	67.11
12/9/2021	83.52	62.15	76.19	115.23	100.28	37.89	58.14	63.74	64.57	126.20	92.80	66.80
12/10/2021	83.99	62.53	75.96	116.22	101.51	38.44	58.89	63.80	65.08	126.79	93.48	66.51
12/13/2021	84.98	63.74	76.75	117.17	103.04	38.61	59.65	65.19	66.18	126.29	95.11	67.46
12/14/2021	85.13	63.47	76.60	117.46	102.77	38.40	59.54	64.53	65.97	126.15	94.76	67.39
12/15/2021	87.23	64.88	78.20	119.60	103.82	39.00	60.49	65.55	66.75	127.69	96.98	68.82
12/16/2021	88.00	65.41	78.57	120.33	104.54	38.76	60.98	65.61	67.55	128.59	98.36	68.95
12/17/2021	86.54	64.18	76.63	116.60	103.04	38.16	59.77	64.09	66.84	126.87	96.29	67.00
12/20/2021	87.23	64.52	77.96	117.13	103.67	38.08	59.93	64.09	67.12	127.55	96.27	67.12
12/21/2021	86.75	63.73	77.14	116.48	103.02	38.46	59.40	64.31	66.39	128.51	94.73	66.34
12/22/2021	86.62	63.71	77.15	116.70	103.16	38.77	59.58	64.60	66.65	129.16	94.77	66.73
12/23/2021	86.52	63.52	77.34	116.82	102.97	38.86	59.55	64.58	66.54	129.41	94.65	66.61
12/27/2021	87.08	63.91	77.43	117.85	103.29	39.08	59.99	65.06	66.96	130.16	95.28	66.82
12/28/2021	88.21	64.54	77.91	118.73	104.57	39.65	60.68	65.58	67.73	130.79	96.50	67.62
12/29/2021	88.58	65.19	78.42	119.38	104.76	40.40	61.11	65.97	68.07	131.45	96.92	67.96
12/30/2021	88.69	65.10	78.47	119.32	104.79	40.89	61.45	66.32	68.36	131.77	97.12	68.23
12/31/2021	88.97	65.05	78.56	119.54	104.90	41.19	61.47	66.73	68.58	132.28	97.07	67.70
1/3/2022	88.61	64.71	78.35	119.18	103.49	40.69	60.85	66.16	68.17	131.99	96.09	67.94
1/4/2022	88.65	64.60	78.10	119.38	103.41	40.65	60.72	65.99	68.17	134.37	95.85	68.37
1/5/2022	89.47	65.40	79.21	119.25	103.64	40.62	61.26	65.83	68.25	135.19	96.96	69.04
1/6/2022	89.18	64.66	79.06	119.57	103.47	40.45	61.01	65.89	68.17	136.16	96.35	68.50
1/7/2022	90.80	65.08	80.21	119.69	104.50	40.39	60.99	67.00	68.64	138.21	97.21	69.10
1/10/2022	90.50	64.78	79.83	120.15	104.56	40.52	60.63	66.26	68.53	137.70	96.90	69.86
1/11/2022	89.77	63.87	79.13	118.78	103.23	39.66	59.80	65.85	67.65	135.84	95.32	68.60
1/12/2022	90.29	64.12	79.32	119.21	103.62	39.92	60.13	66.04	67.78	136.22	95.70	68.59
1/13/2022	90.86	64.37	79.75	119.83	104.15	40.28	60.64	66.30	68.35	136.88	97.28	69.02
1/14/2022	90.98	63.75	79.17	119.38	104.04	40.10	60.07	65.25	68.66	137.96	96.25	68.97
1/18/2022	90.32	63.18	78.46	118.38	101.87	39.96	59.67	65.22	68.01	135.72	95.77	68.39
1/19/2022	90.30	63.44	79.03	118.67	102.17	40.28	59.42	65.55	68.33	135.87	96.03	68.12
1/20/2022	89.92	63.53	79.09	118.36	102.31	40.63	59.73	65.59	67.88	134.88	96.67	68.18
1/21/2022	89.97	63.74	79.31	118.46	102.98	40.48	59.76	65.44	67.81	134.90	96.99	68.22
1/24/2022	89.12	62.60	78.48	116.88	102.58	40.00	58.75	64.35	67.37	131.65	95.13	67.43
1/25/2022	88.96	62.57	77.98	117.63	102.32	39.55	58.31	64.72	67.25	133.92	94.75	67.88
1/26/2022	88.83	62.35	77.46	118.18	101.95	39.72	58.10	64.69	67.02	134.64	94.11	67.62
1/27/2022	89.40	63.19	78.21	119.81	103.25	40.02	58.91	65.40	68.03	135.96	95.11	68.94
1/28/2022	90.13	63.84	79.46	120.24	104.73	40.88	59.31	66.03	69.00	136.86	96.57	69.84
1/31/2022	90.40	64.38	80.66	120.43	105.06	41.32	59.86	66.53	69.49	138.16	97.04	69.66
2/1/2022	88.35	63.33	80.03	118.48	103.45	41.24	58.66	66.26	67.99	136.12	95.16	68.49
2/2/2022	89.88	63.97	81.32	120.23	105.00	42.86	59.86	67.28	68.81	138.20	96.12	69.59
2/3/2022	90.19	64.65	81.01	120.06	105.43	43.79	59.86	67.09	69.25	137.02	95.69	69.47
2/4/2022	89.17	64.68	80.18	120.00	104.25	43.52	59.13	66.64	68.69	136.27	94.64	68.78
2/7/2022	89.81	64.92	80.17	119.60	104.34	43.64	59.10	66.79	67.65	137.00	94.72	68.75
2/8/2022	90.20	64.94	80.33	119.93	104.41	43.02	59.47	67.25	67.89	137.91	94.47	68.84
2/9/2022	89.38	64.82	80.32	120.52	104.71	42.60	59.12	67.43	68.08	137.75	94.32	69.19
2/10/2022	87.39	62.48	78.25	115.88	99.79	42.04	57.23	65.85	65.95	135.56	92.00	67.08
2/11/2022	87.65	63.10	79.08	116.16	99.75	42.13	57.45	65.95	66.79	135.98	91.21	66.96
2/14/2022	86.18	62.39	78.75	116.05	99.95	42.20	56.87	64.77	65.85	135.13	89.63	66.40
2/15/2022	85.44	61.85	78.17	116.31	99.30	41.74	56.35	64.43	65.02	134.60	88.90	66.12
2/16/2022	85.41	61.92	78.67	116.49	99.51	42.00	56.33	64.79	64.87	135.23	89.12	65.94
2/17/2022	85.49	62.40	79.14	118.55	98.73	41.75	56.62	64.73	64.79	135.39	89.39	66.10
2/18/2022	85.71	62.51	79.15	119.35	99.81	41.63	57.10	64.68	63.77	135.51	90.00	66.00
2/22/2022	85.99	62.69	79.37	118.33	99.45	41.65	56.70	64.68	64.29	135.51	89.79	65.94
2/23/2022	84.64	62.01	77.64	117.26	97.67	40.97	55.96	63.57	62.84	133.64	88.34	64.93
2/24/2022	86.56	61.97	77.16	117.74	97.04	41.30	55.93	62.32	62.88	134.23	88.68	64.83
2/25/2022	89.46	64.14	79.69	121.95	100.22	42.60	57.87	64.87	65.04	141.44	90.85	67.23
2/28/2022	90.65	64.01	79.53	121.59	100.41	42.56	58.40	64.83	64.77	144.22	90.88	67.33
3/1/2022	90.21	63.63	79.29	120.00	99.83	42.23	57.27	64.46	64.10	145.17	89.31	66.51
3/2/2022	91.24	64.48	80.16	122.37	100.79	42.76	57.64	65.38	64.57	148.37	90.59	67.56
3/3/2022	93.98	65.28	80.72	125.21	102.64	43.13	59.07	66.29	66.40	149.61	92.45	69.13
3/4/2022	96.33	67.00	82.70	127.88	105.26	44.28	60.59	67.60	67.58	151.92	94.61	71.26
3/7/2022	97.26	66.98	83.35	127.11	106.70	43.83	60.76	67.71	69.23	152.84	95.45	71.55
3/8/2022	95.25	65.92	81.56	126.17	105.47	43.49	60.49	66.68	67.82	153.39	94.00	70.19
3/9/2022	95.01	65.22	81.00	125.03	105.33	43.55	59.75	65.82	67.12	152.30	92.60	69.84
3/10/2022	95.99	66.05	82.21	127.30	106.19	43.60	60.14	65.40	68.61	155.28	93.56	70.16
3/11/2022	95.54	65.96	82.26	126.97	106.14	43.63	60.23	65.72	68.69	154.21	93.86	70.37
3/14/2022	94.74	66.17	81.32	126.52	106.30	43.58	60.33	66.53	68.66	153.97	93.78	69.51
3/15/2022	96.11	67.25	81.02	127.76	106.69	43.76	61.28	67.53	68.66	155.01	94.59	70.23
3/16/2022	95.07	66.47	80.76	127.79	105.97	43.44	60.86	67.71	68.52	154.37	94.60	69.25
3/17/2022	94.94	66.82	82.69	127.78	106.50	43.45	60.98	67.75	68.41	155.83	95.79	69.70
3/18/2022	94.07	66.20	81.27	126.07	105.05	43.25	60.31	66.80	68.03	156.29	94.68	68.79
3/21/2022	94.69	66.99	81.83	127.10	106.16	43.66	60.94	67.45	68.89	159.25	95.70	69.32
3/22/2022	95.25	67.01	81.66	125.71	106.19	43.63	59.91	67.10	68.82	158.13	95.37	69.21

DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
DCF PRICE, DIVIDEND, AND GROWTH RATE
UPDATED AS OF 4/29/2022

Stock Prices ¹ (\$): Date	AEP	CMS	D	DTE	DUK	EXC	LNT	PEG	SO	SRE	WEC	XEL
3/23/2022	96.01	67.64	81.63	126.96	106.83	43.70	60.41	66.80	68.79	159.42	95.48	69.30
3/24/2022	96.44	68.05	82.30	127.79	107.47	44.47	60.56	67.54	69.30	158.86	96.61	69.88
3/25/2022	96.84	68.92	83.97	129.85	109.13	45.51	61.83	68.31	70.93	162.46	98.07	70.70
3/28/2022	97.61	69.12	84.24	129.70	110.04	46.02	62.00	68.52	71.00	163.12	98.55	71.24
3/29/2022	98.69	69.41	84.89	130.59	110.97	46.99	62.20	69.10	72.06	164.94	99.18	71.83
3/30/2022	99.42	69.99	85.43	132.56	111.48	47.23	62.88	69.94	72.50	167.62	100.29	72.32
3/31/2022	99.77	69.94	84.97	132.21	111.66	47.63	62.48	70.00	72.51	168.12	99.81	72.17
4/1/2022	101.51	71.10	86.33	134.94	112.82	47.66	63.29	71.06	74.12	170.34	101.13	72.75
4/4/2022	100.65	70.59	85.35	133.63	111.79	47.34	62.69	70.29	73.12	166.76	100.49	72.70
4/5/2022	101.31	71.11	86.09	134.29	112.52	47.80	63.28	70.56	74.35	165.03	101.73	73.07
4/6/2022	104.49	73.56	87.84	137.61	115.15	49.71	65.16	72.08	76.51	168.33	103.97	74.99
4/7/2022	103.37	72.36	87.66	136.33	114.86	50.02	64.33	71.61	75.76	168.05	103.81	74.57
4/8/2022	102.99	72.51	88.38	137.35	115.35	50.13	64.82	72.09	76.49	169.79	104.49	74.82
4/11/2022	101.40	72.24	87.52	136.86	114.23	48.24	64.35	71.73	74.48	168.25	103.66	74.36
4/12/2022	102.31	72.83	87.39	137.85	115.42	48.05	64.63	71.92	75.54	169.63	104.41	74.73
4/13/2022	102.25	71.90	87.19	136.63	115.11	48.64	63.59	71.55	75.36	170.42	103.20	74.37
4/14/2022	102.04	71.55	87.40	137.17	114.85	49.03	63.39	72.80	75.99	171.25	103.19	74.34
4/18/2022	101.66	71.44	86.83	137.17	114.24	49.23	62.71	72.43	75.83	171.12	102.84	74.20
4/19/2022	102.43	72.31	86.97	137.77	114.47	49.50	63.88	73.08	76.27	170.27	104.52	74.84
4/20/2022	102.83	73.04	86.99	139.12	115.43	50.25	65.11	74.73	76.50	172.67	105.40	75.35
4/21/2022	102.12	72.84	86.55	138.28	115.28	49.74	64.45	74.67	76.46	170.43	105.76	75.30
4/22/2022	100.25	71.76	84.89	136.81	114.28	48.65	63.12	73.88	75.91	168.24	103.98	74.30
4/25/2022	100.50	70.59	84.56	135.70	113.77	48.77	62.07	72.64	74.97	165.38	102.91	73.70
4/26/2022	99.24	70.38	83.57	134.52	113.50	48.42	61.63	71.26	73.74	164.44	102.63	73.38
4/27/2022	99.53	70.21	83.38	134.37	113.09	47.79	60.82	70.45	73.48	163.69	102.09	72.97
4/28/2022	102.43	70.87	83.87	135.52	113.80	48.34	61.23	71.15	75.58	165.50	102.78	74.88
4/29/2022	99.11	68.69	81.64	131.04	110.16	46.78	58.81	69.66	73.39	161.36	100.05	73.26
AVERAGE STOCK PRICE (\$)	88.38	63.39	77.86	119.12	103.51	37.89	58.76	64.19	65.81	137.31	94.07	68.12
QUARTERLY DIV. ² (\$)	0.7400	0.4350	0.6300	0.9225	0.9650	0.3825	0.4025	0.5100	0.6400	1.1000	0.6775	0.4575
	0.7400	0.4350	0.6300	0.9225	0.9850	0.3825	0.4025	0.5100	0.6600	1.1000	0.6775	0.4575
	0.7800	0.4350	0.6300	0.8250	0.9850	0.3825	0.4025	0.5100	0.6600	1.1000	0.7275	0.4575
	0.7800	0.4600	0.6675	0.8850	0.9850	0.3825	0.4275	0.5100	0.6600	1.1450	0.7275	0.4875
ANNUAL DIVIDEND (\$)	3.0400	1.7650	2.5575	3.5550	3.9200	1.5300	1.6350	2.0400	2.6200	4.4450	2.8100	1.8600
YIELD	3.44%	2.78%	3.28%	2.98%	3.79%	4.04%	2.78%	3.18%	3.98%	3.24%	2.99%	2.73%
ANALYST GROWTH RATES												
Seeking Alpha ³	6.33%	8.34%	6.52%	3.27%	5.59%	7.43%	0.0593	0.0495	0.0577	0.0514	0.0649	0.0624
Zacks ⁴	5.80%	9.20%	6.10%	6.00%	6.20%	6.20%	6.00%	4.20%	4.00%	5.60%	6.10%	6.40%
CNBC ⁵	6.60%	7.20%	3.40%	7.10%	0.40%	5.10%	8.30%	3.50%	4.00%	3.20%	7.00%	5.70%
YAHOO ¹	6.06%	8.62%	6.37%	6.00%	6.34%	8.50%	6.00%	2.50%	6.40%	6.83%	6.06%	7.08%
DCF GROWTH FACTOR	6.20%	8.34%	5.60%	5.59%	4.63%	6.81%	6.56%	3.79%	5.04%	5.19%	6.41%	6.36%
VALUE LINE ²												
23 EARNINGS (EPS)	5.35	3.05	4.35	6.30	5.80	2.40	2.90	3.80	3.80	8.90	4.65	3.35
25-27 EARNINGS (EPS)	6.50	3.75	5.25	7.50	7.00	3.00	3.25	4.50	4.50	10.75	5.50	4.00
	4.87%	5.17%	4.70%	4.36%	4.70%	5.58%	2.85%	4.23%	4.23%	4.72%	4.20%	4.43%
VALUE LINE "BOXED" (Earnings)	6.50%	6.50%	11.50%	4.50%	7.00% NMF	4.50%	4.00%	5.50%	11.50%	6.00%	6.00%	
VALUE LINE GROWTH ESTIMATE	5.68%	5.83%	8.10%	4.43%	5.85%	5.58%	3.67%	4.11%	4.86%	8.11%	5.10%	5.22%
DCF GROWTH ESTIMATE	5.94%	7.09%	6.85%	5.01%	5.24%	6.19%	5.12%	3.95%	4.95%	6.65%	5.76%	5.79%
DCF COST OF EQUITY ESTIMATE	9.80%	9.50%	9.98%	9.02%	9.88%	10.53%	8.86%	8.87%	9.95%	9.85%	9.27%	9.02%
DCF AVERAGE	9.54%											

Sources:

¹ finance.yahoo.com as of 4/29/2022² ValueLine.com as of 4/29/2022³ SeekingAlpha.com as of 6/3/2022⁴ Zacks.com as of 4/29/2022⁵ CNBC.com as of 6/3/2022

Duke Energy Ohio, Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes

<u>Type Of Capital</u>	<u>Ratios (1)</u>	<u>Cost Rate</u>	<u>Weighted Cost Rate</u>
Long-Term Debt	49.50%	4.16% (1)	2.06%
Common Equity	<u>50.50%</u>	10.30% (2)	<u>5.20%</u>
Total	<u><u>100.00%</u></u>		<u><u>7.26%</u></u>

Notes:

(1) Company-provided.

(2) From page 2 of this Attachment.

Duke Energy Ohio, Inc.
Brief Summary of Common Equity Cost Rate

<u>Line No.</u>	<u>Principal Methods</u>	<u>Proxy Group of Thirteen Electric Companies</u>
1.	Discounted Cash Flow Model (DCF) (1)	8.89%
2.	Risk Premium Model (RPM) (2)	11.46%
3.	Capital Asset Pricing Model (CAPM) (3)	11.04%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	<u>12.41%</u>
5.	Indicated Range of Common Equity Cost Rates before Adjustment for Company-Specific Risk	<u><u>9.65% - 11.65%</u></u>
6.	Size Risk Adjustment (5)	0.15%
7.	Flotation Cost Adjustment (6)	<u>0.11%</u>
8.	Indicated Range of Common Equity Cost Rates after Adjustment	<u><u>9.91% - 11.91%</u></u>
9.	Recommended Common Equity Cost Rate	<u><u>10.30%</u></u>

- Notes:
- (1) From page 3 of this Attachment.
 - (2) From page 17 of this Attachment.
 - (3) From page 30 of this Attachment.
 - (4) From page 35 of this Attachment.
 - (5) Adjustment to reflect the Company's greater business risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. D'Ascendis' direct testimony.
 - (6) From page 43 of this Attachment.

Duke Energy Ohio, Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Thirteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	
Proxy Group of Thirteen Electric Companies	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (3)	Adjusted Dividend Yield (4)	Indicated Common Equity Cost Rate (5)	
Alliant Energy Corporation	2.79	%	5.70	%	5.40	%	8.06	%
Ameren Corporation	2.54	6.50	7.20	6.46	6.72	2.63	9.35	
American Electric Power Company, Inc.	3.14	6.50	6.20	6.21	6.30	3.24	9.54	
Duke Energy Corporation	3.56	6.00	6.10	5.94	6.01	3.67	9.68	
Edison International	4.08	NMF	3.90	4.50	4.20	4.17	8.37	
Entergy Corporation	3.44	3.00	6.10	6.02	5.04	3.53	8.57	
Energy, Inc.	3.37	7.50	6.10	4.95	6.18	3.47	9.65	
Eversource Energy	2.87	6.00	6.20	6.58	6.26	2.96	9.22	
IDACORP, Inc.	2.71	4.00	2.80	2.80	3.20	2.75	NMF (6)	
NorthWestern Corporation	4.21	3.00	2.70	4.50	3.40	4.28	7.68	
OGE Energy Corporation	4.09	6.50	3.50	1.90	3.97	4.17	8.14	
Portland General Electric Company	3.49	7.50	4.40	3.30	5.07	3.58	8.65	
Xcel Energy Inc.	2.67	6.00	6.40	7.08	6.49	2.76	9.25	
						Average	8.85	%
						Median	8.93	%
						Average of Mean and Median	8.89	%

NA= Not Available
NMF= Not Meaningful Figure

Notes:

- (1) Indicated dividend at 05/31/2022 divided by the average closing price of the last 60 trading days ending 05/31/2022 for each company.
- (2) From pages 4 through 16 of this Attachment.
- (3) Average of columns 2 through 4 excluding negative growth rates.
- (4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Alliant Energy Corporation, $2.79\% \times (1 + (1/2 \times 5.20\%)) = 2.86\%$.
- (5) Column 5 + column 6.
- (6) Excluded for being 2 standard deviations away from the average result.

Source of Information:

Value Line Investment Survey
www.zacks.com Downloaded on 05/31/2022
www.yahoo.com Downloaded on 05/31/2022

ALLIANT ENERGY NDQ-LNT				RECENT PRICE	58.40	P/E RATIO	21.9 (Trailing: 22.3 Median: 20.0)	RELATIVE P/E RATIO	1.22	DIV'D YLD	3.0%	VALUE LINE							
TIMELINESS	3	Raised 10/29/21	High: 22.2	23.8	27.1	34.9	35.4	41.0	45.6	46.6	55.4	60.3	62.3	61.9	Target Price Range 2025 2026 2027				
SAFETY	2	Raised 9/28/07	Low: 17.0	20.9	21.9	25.0	27.1	30.4	36.6	36.8	40.8	37.7	46.0	54.8					
TECHNICAL	3	Lowered 3/11/22	LEGENDS 0.70 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 5/16 Options: Yes Shaded area indicates recession																
BETA	.85	(1.00 = Market)	2-for-1																
18-Month Target Price Range			2-for-1												80 60 50 40 30 25 20 15 10 7.5				
Low-High			2-for-1																
Midpoint (% to Mid)			2-for-1																
\$50-\$78 \$64 (10%)			2-for-1																
2025-27 PROJECTIONS			2-for-1												% TOT. RETURN 2/22 THIS STOCK VL ARITH.* 1 yr. 31.4 15.1 3 yr. 39.1 61.1 5 yr. 72.1 84.2				
Price	Gain	Ann'l Total	2-for-1																
High	65	50	2-for-1																
Low	50	15	2-for-1																
Institutional Decisions			2-for-1																
202021 3Q2021 4Q2021			2-for-1																
to Buy 236 237 290			2-for-1																
to Sell 237 232 244			2-for-1																
Hld's(000) 191641 194869 195770			2-for-1																
Percent shares traded			2-for-1																
24 16 8			2-for-1																
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023			2-for-1																
14.46	15.57	16.67	15.51	15.40	16.51	13.94	14.77	15.10	14.34	14.58	14.62	14.97	14.89	13.67	14.65	15.55	16.10	Revenues per sh	17.75
2.16	2.56	2.28	2.10	2.60	2.75	2.95	3.34	3.49	3.45	3.43	3.97	4.32	4.59	4.92	5.25	5.55	5.90	"Cash Flow" per sh	7.00
1.03	1.35	1.27	.95	1.38	1.38	1.53	1.65	1.74	1.69	1.65	1.99	2.19	2.33	2.47	2.63	2.75	2.90	Earnings per sh ^A	3.25
.58	.64	.70	.75	.79	.85	.90	.94	1.02	1.10	1.18	1.26	1.34	1.42	1.52	1.61	1.71	1.81	Div'd Decl'd per sh ^B = †	2.15
1.71	2.46	3.98	5.43	3.91	3.03	5.22	3.32	3.78	4.25	5.26	6.34	6.92	6.69	5.47	4.67	5.90	5.90	Cap'l Spending per sh	6.25
11.42	12.15	12.78	12.54	13.05	13.57	14.12	14.79	15.54	16.41	16.96	18.08	19.43	21.24	22.76	23.91	25.00	26.15	Book Value per sh ^C	29.75
232.25	220.72	220.90	221.31	221.79	222.04	221.97	221.89	221.87	226.92	227.67	231.35	236.06	245.02	249.87	250.47	251.00	251.50	Common Shs Outst'g ^D	253.00
16.8	15.1	13.4	13.9	12.5	14.5	14.5	15.3	16.6	18.1	22.3	20.6	19.1	21.2	21.2	21.2	21.2	21.2	Avg Ann'l P/E Ratio	18.0
.91	.80	.81	.93	.80	.91	.92	.86	.87	.91	1.17	1.04	1.03	1.13	1.09	1.13	1.09	1.13	Relative P/E Ratio	1.00
3.3%	3.1%	4.1%	5.7%	4.6%	4.3%	4.1%	3.7%	3.5%	3.6%	3.2%	3.1%	3.2%	2.9%	2.9%	2.9%	2.9%	2.9%	Avg Ann'l Div'd Yield	3.7%
CAPITAL STRUCTURE as of 12/31/21				2-for-1															
Total Debt \$7883 mill.				2-for-1															
Due in 5 Yrs \$2665 mill.				2-for-1															
LT Debt \$6735 mill.				2-for-1															
LT Interest \$256 mill.				2-for-1															
(LT interest earned: 3.2x)				2-for-1															
3094.5 3276.8 3350.3 3253.6 3320.0 3382.2 3534.5 3647.7 3416.0 3669.0 3900 4050				2-for-1															
337.8 382.1 395.7 390.9 384.0 466.1 522.3 567.4 624.0 674.0 695 730				2-for-1															
21.5% 12.4% 10.1% 15.3% 13.4% 12.5% 8.4% 10.8% 10.8% NMF 4.0% 4.0%				2-for-1															
6.5% 8.1% 8.8% 9.4% 16.3% 10.7% 14.5% 16.3% 8.8% 3.7% 4.0% 5.0%				2-for-1															
48.4% 46.1% 49.7% 47.3% 51.5% 47.8% 52.3% 50.6% 53.5% 52.9% 55.0% 55.0%				2-for-1															
48.4% 50.8% 47.5% 50.0% 46.1% 49.8% 45.7% 47.6% 44.9% 47.1% 45.0% 45.0%				2-for-1															
6476.6 6461.0 7257.2 7446.3 8377.6 8392.8 10032 10938 12657 12725 14000 14550				2-for-1															
7838.0 7147.3 6442.0 8970.2 9809.9 10798 12462 13527 14336 14987 16000 17000				2-for-1															
6.3% 7.0% 6.5% 6.3% 5.6% 6.7% 6.3% 5.9% 6.3% 6.0% 6.0%				2-for-1															
10.1% 11.0% 10.8% 10.0% 9.5% 10.6% 10.9% 10.5% 10.6% 11.3% 11.0% 11.0%				2-for-1															
10.3% 11.3% 11.2% 10.2% 9.7% 10.9% 11.2% 10.7% 10.8% 11.0% 11.0% 11.0%				2-for-1															
3.9% 4.9% 4.6% 3.6% 2.8% 4.0% 4.4% 4.2% 4.2% 4.3% 4.0% 4.0%				2-for-1															
64% 57% 60% 66% 72% 64% 62% 61% 62% 62% 62% 62%				2-for-1															
BUSINESS: Alliant Energy Corporation (formerly Interstate Energy) is a holding company formed through the merger of WPL Holdings, IES Industries, and Interstate Power. Supplies electricity to 984,000 customers and gas to 423,000 customers in Wisconsin, Iowa, and Minnesota. Electric revenue by state: WI, 43%; IA, 56%. MN, 1%. Electric revenue: residential, 36%; commercial, 25%; industrial, 29%; wholesale, 8%; other, 2%. Generating sources: coal, 32%; gas, 32%; wind, 16%; other, 1%; purchased, 19%. Fuel costs: 25% of revs. '21 reported deprec. rates: 2.9%-6.1%. Has 3,300 employees. Chairman, President & CEO: John O. Larsen, Inc.: Wisconsin. Address: 4902 N. Biltmore Lane, Madison, Wisconsin 53718-2148. Tel.: 608-458-3311. Internet: www.alliantenergy.com.				2-for-1															
Alliant Energy's utility subsidiary in Wisconsin received electric and gas rate increases at the start of 2022. Wisconsin Power and Light was granted hikes of \$114 million for electricity and \$15 million for gas. (The electric increase was above the initial settlement agreement of \$70 million due to anticipated increases in fuel costs this year.) The allowed return on equity remained at 10% and the common-equity ratio was boosted from 52.5% to 53.8%. Note that WPL is operating under a mechanism that will share a portion of its earnings if its earned ROE is greater than 10.25%. Rate relief is a key factor in the earnings growth we expect this year. Our estimate is within Alliant Energy's targeted range of \$2.67-\$2.81 a share, up slightly from management's previous guidance of \$2.65-\$2.79 thanks to increased capital spending on solar power, which will be recovered through a rider (sur-charge) on customers' bills.				2-for-1															
Alliant Energy's utilities are seeking approval from the regulators in Wisconsin and Iowa to add renewable-energy projects. In the first half of 2022, WPL expects a ruling on its request for a certificate of need to add up to 414 megawatts of solar capacity. The utility also plans to ask the Wisconsin commission to approve up to an additional 300 mw of renewable capacity. In Iowa, the company expects a decision in the second half of 2022 on its proposed addition of up to 400 mw of solar capacity and 75 mw of battery storage.				2-for-1															
The board of directors raised the dividend in the first quarter. The company had signaled that the increase would be \$0.10 a share (6.2%) annually, and this is what occurred.				2-for-1															
Alliant Energy stock is expensively priced. The dividend yield is below the utility average. The stock does not stand out for the next 18 months, and with the recent quotation well within our 2025-2027 Target Price Range, total return potential over that time frame is unspectacular.				2-for-1															
Paul E. Debbas, CFA				2-for-1															
March 11, 2022				2-for-1															

AMEREN NYSE-AEE				RECENT PRICE	85.95	P/E RATIO	21.1 (Trailing: 22.4 Median: 19.0)	RELATIVE P/E RATIO	1.18	DIV'D YLD	2.8%	VALUE LINE	Target Price Range																		
TIMELINESS	4	Lowered 12/10/21	High: 34.1 35.3 37.3 48.1 46.8 54.1 64.9 70.9 80.9	Low: 25.5 28.4 30.6 35.2 37.3 41.5 51.4 51.9 63.1	87.7 90.8 89.5 58.7 69.8 81.8	Target Price Range			2025	2026	2027																				
SAFETY	1	Raised 9/10/21	LEGENDS			0.64 x Dividends p sh divided by Interest Rate			Relative Price Strength			Options: Yes			Shaded area indicates recession																
TECHNICAL	2	Lowered 3/11/22	18-Month Target Price Range			Low-High Midpoint (% to Mid)			\$75-\$107 \$91 (5%)			2025-27 PROJECTIONS			High Low Price 100 80 Gain (+15% (-5%) 7% 2%																
BETA	.80	(1.00 = Market)	Institutional Decisions			202021 3Q2021 4Q2021			to Buy 273 248 308 to Sell 226 246 227 Hld's(000) 194886 199566 198495			Percent shares traded 30 20 10			% TOT. RETURN 2/22																
				2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	© VALUE LINE PUB. LLC 25-27									
				33.30	36.23	36.92	29.87	31.77	31.04	28.14	24.06	24.95	25.13	25.04	25.46	25.73	24.00	22.87	24.81	25.35	25.85	Revenues per sh	27.75								
				6.02	6.76	6.44	6.06	6.33	5.87	5.87	5.25	5.77	6.08	6.59	6.80	7.64	7.83	8.08	8.89	9.35	9.90	"Cash Flow" per sh	11.75								
				2.66	2.98	2.88	2.78	2.77	2.47	2.41	2.10	2.40	2.38	2.68	2.77	3.32	3.35	3.50	3.84	4.10	4.35	Earnings per sh ^A	5.25								
				2.54	2.54	2.54	1.54	1.54	1.56	1.60	1.60	1.61	1.66	1.72	1.78	1.85	1.92	2.00	2.20	2.36	2.52	Div'd Decl'd per sh ^B	3.10								
				4.99	6.96	9.75	7.51	4.66	4.50	5.49	5.87	7.66	8.12	8.78	9.05	9.56	9.92	13.02	13.67	12.90	12.55	Cap'l Spending per sh	13.00								
				31.86	32.41	32.80	33.08	32.15	32.64	27.27	26.97	27.67	28.63	29.27	29.61	31.21	32.73	35.29	37.64	40.25	42.90	Book Value per sh ^C	51.50								
				206.60	208.30	212.30	237.40	240.40	242.60	242.63	242.63	242.63	242.63	242.63	244.50	246.20	253.30	257.70	262.50	267.00		Common Shs Outst'g ^D	280.00								
				19.4	17.4	14.2	9.3	9.7	11.9	13.4	16.5	16.7	17.5	18.3	20.6	18.3	22.1	22.2	21.4	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	17.5								
				1.05	.92	.85	.62	.62	.75	.85	.93	.88	.88	.96	1.04	.99	1.18	1.14	1.14			Relative P/E Ratio	.95								
				4.9%	4.9%	6.2%	6.0%	5.8%	5.3%	5.0%	4.6%	4.0%	4.0%	3.5%	3.1%	3.0%	2.6%	2.6%	2.7%			Avg Ann'l Div'd Yield	3.4%								
				CAPITAL STRUCTURE as of 12/31/21				6828.0	5838.0	6053.0	6098.0	6076.0	6177.0	6291.0	5910.0	5794.0	6394.0	6650	6900	Revenues (\$mill)	7800										
				Total Debt \$13612 mill. Due in 5 Yrs \$2890 mill.				589.0	518.0	593.0	585.0	659.0	683.0	821.0	834.0	877.0	995.0	1080	1165	Net Profit (\$mill)	1500										
				LT Debt \$12562 mill. LT Interest \$436 mill.				36.9%	37.5%	38.9%	38.3%	36.7%	38.2%	22.4%	17.9%	15.0%	13.6%	12.0%	12.0%	Income Tax Rate	12.0%										
				(LT interest earned: 3.8x)				6.1%	7.1%	5.7%	5.1%	4.1%	5.6%	6.9%	5.8%	5.5%	6.0%	5.0%	5.0%	AFUDC % to Net Profit	4.0%										
				Pension Assets-12/21 \$5745 mill.				49.5%	45.2%	47.2%	49.3%	47.7%	49.2%	50.3%	52.1%	55.0%	56.1%	55.5%	53.5%	Long-Term Debt Ratio	51.0%										
				Oblig \$5457 mill.				49.4%	53.7%	51.7%	49.7%	51.3%	49.8%	48.8%	47.1%	44.3%	43.3%	44.0%	46.0%	Common Equity Ratio	48.5%										
				Pfd Stock \$129 mill. Pfd Div'd \$5 mill.				13384	12190	12975	13968	13840	14420	15632	17116	20158	22391	23900	24950	Total Capital (\$mill)	29600										
				807,595 sh. \$3.50 to \$5.50 cum. (no par), \$100 stated val., redeem. \$102.176-\$110/sh.; 487,508 sh. 4.00% to 5.16%, \$100 par, redeem. \$100-\$104.30/sh.				16096	16205	17424	18799	20113	21466	22810	24376	26807	29261	31250	33125	Net Plant (\$mill)	38800										
				Common Stock 257,724,783 shs. as of 1/31/22				6.0%	5.6%	5.8%	5.3%	6.0%	6.0%	6.4%	6.0%	5.3%	5.3%	5.5%	5.5%	Return on Total Cap'l	6.0%										
				MARKET CAP: \$22 billion (Large Cap)				8.7%	7.7%	8.7%	8.3%	9.1%	9.3%	10.6%	10.2%	9.7%	10.1%	10.0%	10.0%	Return on Shr. Equity	10.5%										
				ELECTRIC OPERATING STATISTICS				8.8%	7.8%	8.7%	8.3%	9.2%	9.4%	10.7%	10.3%	9.7%	10.2%	10.0%	10.0%	Return on Com Equity ^E	10.5%										
				2019 2020 2021				3.0%	1.9%	2.9%	2.5%	3.3%	3.4%	4.8%	4.4%	4.2%	4.4%	4.5%	4.5%	Retained to Com Eq	4.5%										
				% Change Retail Sales (KWH)				66%	76%	67%	70%	64%	64%	56%	57%					All Div'ds to Net Prof	58%										
				Avg. Indust. Use (MWH)				BUSINESS: Ameren Corporation is a holding company formed through the merger of Union Electric and CIPSCO. Has 1.2 million electric and 127,000 gas customers in Missouri; 1.2 million electric and 813,000 gas customers in Illinois. Discontinued nonregulated power-generation operation in '13. Electric revenue breakdown: residential, 49%; commercial, 34%; industrial, 8%; other, 9%. Generating sources: coal, 73%; nuclear, 11%; hydro & other, 9%; purchased, 7%. Fuel costs: 25% of revenues. '21 reported deprec. rates: 3%-4%. Has 9,100 employees. Chairman: Warner L. Baxter. President & CEO: Martin J. Lyons, Jr. Inc.: Missouri. Address: One Ameren Plaza, 1901 Chouteau Ave., P.O. Box 66149, St. Louis, MO 63166-6149. Tel.: 314-621-3222. Internet: www.ameren.com.				ny's goal for yearly profit growth is 6%-8%, and our estimate would produce an increase within this range.				There is a risk to the company's earning power. The Federal Energy Regulatory Commission (FERC) is considering the removal of a half percentage point incentive "adder" on the allowed ROE for electric transmission. This would cut Ameren's annual earning power by \$0.05 a share. The timing of FERC's decision is unknown. Our estimates and projections are based on the utility maintaining its allowed ROE for transmission of 10.52%.				The board of directors raised the dividend in the first quarter. The hike was \$0.04 a share (7.3%) quarterly. Dividend growth will likely be in line with profit growth. Ameren's target for the payout ratio is 55%-70%, and this figure is near the lower end of this range.				The dividend yield of this untimely but high-quality stock is below the utility mean. The equity's prospects for the next 18 months and the 3- to 5-year period are subpar. The recent quotation is within our 2025-2027 Target Price Range. Paul E. Debbas, CFA March 11, 2022							
				Avg. Indust. Revs. per KWH (¢)				Fixed Charge Cov. (%)				ANNUAL RATES				Cal-endar				QUARTERLY REVENUES (\$mill.)				Full Year							
				Capacity at Peak (MW)				of change (per sh)				Revenues				Mar.31 Jun.30 Sep.30 Dec.31				2019 1556 1379 1659 1316 5910.0				2020 1440 1398 1628 1328 5794.0							
				Peak Load, Summer (MW)				Past 10 Yrs. -2.5%				Past 5 Yrs. -1.0%				to '25-'27 2.5%				2021 1566 1472 1811 1545 6394.0				2022 1700 1500 1850 1600 6650				2023 1750 1550 1950 1650 6900			
				Annual Load Factor (%)				"Cash Flow"				Earnings				EARNINGS PER SHARE ^A				Cal-endar				Full Year							
				% Change Customers (yr-end)				Book Value				1.0%				4.5%				Mar.31 Jun.30 Sep.30 Dec.31				2019 .78 .72 1.47 .38 3.35				2020 .59 .98 1.47 .46 3.50			
				QUARTERLY DIVIDENDS PAID ^B				2021 .91 .80 1.65 .48 3.84				2022 .90 .85 1.85 .50 4.10				2023 .95 .90 1.95 .55 4.35				2018 .4575 .4575 .4575 .475 1.85				2019 .475 .475 .475 .495 1.92							
				2020 .495 .495 .495 .515 2.00				2021 .55 .55 .55 .55 2.20				2022 .59				2023				2018				2019							

(A) Diluted EPS. Excl. nonrec. gain (losses): '10, (\$2.19); '11, (\$2.6); '12, (\$6.42); '17, (63¢); gain (loss) from discontinued ops.: '13, (92¢); '15, 21¢. Next earnings report due early May.

(B) Div'ds paid late Mar., June, Sept., & Dec. Div'd reinvest. plan avail. (C) Incl. intang. In '21: \$6.60/sh. (D) In mill. (E) Rate base: Orig. cost depr. Rate allowed on com. eq. in MO in

'22: elec. & gas, none specified; in IL: electric, varies; in '21: gas, 9.67%; earned on avg. com. eq., '21: 10.6%. Regulatory Climate: MO, Average; IL, Below Average.

Company's Financial Strength A
Stock's Price Stability 100
Price Growth Persistence 75
Earnings Predictability 95

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<p>(A) Diluted EPS. Excl. nonrec. gains (losses): '06, 20c; '07, 20c; '08, 40c; '10, (7c); '11, 89c; '12, (38c); '13, (14c); '16, (\$2.99); '17, 26c; '19, 20c; gains (loss) from disc. ops.</p>	<p>'06, 2c; '08, 3c; '15, 58c; '16, (1c). Next earnings report due late April. (B) Divs paid early Mar., June, Sept., & Dec. * Div'd reinvestment plan avail. (C) Incl. intang. In '21: \$17.04/sh.</p>	<p>(D) In mill. (E) Rate base: various. Rates allowed on com. eq.: 9.3%-10.9%; earned on avg. com. eq.: '21: 11.6%. Regulatory Climate: Average.</p>	<p>Company's Financial Strength A+ Stock's Price Stability 100 Price Growth Persistence 60 Earnings Predictability 95</p>
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<p>To subscribe call 1-800-VALUELINE</p>			

DUKE ENERGY

NYSE-DUK

RECENT PRICE

108.70

P/E RATIO

20.9

(Trailing: 22.0)

RELATIVE P/E RATIO

1.26

DIV YLD

3.7%

VALUE LINE

TIMELINESS

4

Raised 3/25/22

SAFETY

2

New 6/1/07

TECHNICAL

3

Raised 4/29/22

BETA

.85

(1.00 = Market)

18-month Target Price Range

Low-High

Midpoint (% to Mid)

\$94-\$134

\$114 (5%)

2025-27 PROJECTIONS

Price

130

Gain

Ann'l Total

Return

8%

1%

Institutional Decisions

202021

3Q2021

4Q2021

to Buy

823

803

934

to Sell

623

615

627

Hld's(000)

483062

481215

484677

Percent shares traded

15

10

5

LEGENDS

0.54 x Dividends p.sh. divided by Interest Rate

Relative Price Strength

1-for-3 Rev split 7/12

Options: Yes

Shaded area indicates recession

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

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25-27

25.32

30.24

31.15

29.18

32.22

32.63

27.88

34.84

33.84

34.10

32.49

33.66

33.73

34.21

31.04

32.64

33.75

34.75

Revenues per sh

38.00

7.86

8.11

7.34

7.58

8.49

8.68

6.80

8.56

9.11

9.40

9.20

10.01

10.49

12.13

10.89

12.30

13.00

13.95

"Cash Flow" per sh

16.00

2.76

3.60

3.03

3.39

4.02

4.14

3.71

3.98

4.13

4.10

3.71

4.22

4.13

5.07

3.92

4.93

5.20

5.75

Earnings per sh ^A

6.50

--

2.58

2.70

2.82

2.91

2.97

3.03

3.09

3.15

3.24

3.36

3.49

3.64

3.75

3.82

3.90

3.98

4.06

Div'd Decl'd per sh ^B

4.35

8.07

7.43

10.35

9.85

10.84

9.80

7.81

7.83

7.62

9.83

11.29

11.50

12.91

15.17

12.88

12.63

16.05

16.85

Cap'l Spending per sh

16.75

62.30

50.40

49.51

49.85

50.84

51.14

58.04

58.54

57.81

57.74

58.62

59.63

60.27

61.20

59.82

61.55

62.70

64.35

Book Value per sh ^C

70.00

418.96

420.62

423.96

436.29

442.96

445.29

704.00

706.00

707.00

688.00

700.00

700.00

727.00

733.00

769.00

769.00

770.00

770.00

Common Shs Outst'g ^D

770.00

--

16.1

17.3

13.3

12.7

13.8

17.5

17.4

17.9

18.2

21.3

19.9

19.4

17.7

22.4

20.1

20.1

1.09

Bold figures are Value Line estimates

Avg Ann'l P/E Ratio

17.0

--

.85

1.04

.89

.81

.87

1.11

.98

.94

.92

1.12

1.00

1.05

.94

1.15

1.09

1.09

1.09

Avg Ann'l P/E Ratio

.95

--

4.4%

5.2%

6.2%

5.7%

5.2%

4.7%

4.4%

4.3%

4.3%

4.3%

4.2%

4.5%

4.2%

4.4%

3.9%

3.9%

3.9%

Avg Ann'l Div'd Yield

3.9%

CAPITAL STRUCTURE as of 12/31/21

Total Debt \$67139 mill. Due in 5 Yrs \$19536 mill.

LT Debt \$60448 mill. LT Interest \$2206 mill.

Incl. \$915 mill. finance leases.

(LT interest earned: 2.6x)

Leases, Uncapitalized Annual rentals \$225 mill.

Pension Assets-12/21 \$9235 mill.

Oblig \$8207 mill.

Pfd Stock \$1962 mill. Pfd Div'd \$107 mill.

40 mill. shs. 5.75%, cum., \$25 liq. value, redeemable at \$25.50 prior to 6/15/24; 1 mill. shs. 4.875%, cum., \$100 liq. value.

Common Stock 769,358,344 shs. as of 1/31/22

MARKET CAP: \$84 billion (Large Cap)

19624

24598

23925

23459

22743

23565

24521

25079

23868

25097

26000

26750

Revenues (\$mill)

29200

2136.0

2813.0

2934.0

2854.0

2560.0

2963.0

2928.0

3755.0

2996.0

3901.0

4100

4525

Net Profit (\$mill)

5040

30.2%

32.6%

30.6%

32.2%

31.0%

30.4%

14.2%

12.7%

4.9%

5.1%

10.0%

9.0%

Income Tax Rate

9.0%

22.3%

8.8%

7.2%

9.2%

11.7%

12.3%

13.0%

7.9%

8.9%

6.2%

8.0%

7.0%

AFUDC % to Net Profit

7.0%

47.0%

48.0%

47.7%

48.6%

52.6%

54.0%

53.8%

54.0%

53.7%

55.1%

56.5%

58.5%

Long-Term Debt Ratio

61.0%

52.9%

52.0%

52.3%

51.4%

47.4%

46.0%

46.2%

44.1%

44.4%

43.1%

42.0%

40.0%

Common Equity Ratio

37.5%

77307

79482

77088

77222

86609

90774

94940

101807

103589

109744

115150

124525

Total Capital (\$mill)

144100

68558

69490

70046

75709

82520

86391

91694

102127

106782

111408

117725

124375

Net Plant (\$mill)

141100

3.6%

4.6%

4.8%

4.8%

4.0%

4.3%

4.2%

4.8%

3.9%

4.6%

4.5%

4.5%

Return on Total Cap'l

4.5%

5.2%

6.8%

7.2%

7.2%

6.2%

7.1%

6.7%

8.0%

6.2%

7.9%

8.0%

9.0%

Return on Shr. Equity

9.0%

5.2%

6.8%

7.2%

7.2%

6.2%

7.1%

6.7%

8.3%

6.3%

8.0%

8.5%

9.0%

Return on Com Equity ^E

9.0%

.9%

1.5%

1.7%

1.5%

.6%

1.2%

1.0%

2.4%

.4%

1.4%

2.0%

2.5%

Retained to Com Eq

3.0%

82%

78%

76%

79%

91%

83%

84%

71%

94%

83%

77%

71%

All Div'ds to Net Prof

69%

BUSINESS:

Duke Energy Corporation is a holding company for utilities with 7.6 mill. elec. customers in NC, FL, IN, SC, OH, & KY, and 1.6 mill. gas customers in OH, KY, NC, SC, and TN. Owns independent power plants & has 25% stake in National Methanol in Saudi Arabia. Acq'd Progress Energy 7/12; Piedmont Natural Gas 10/16; discontinued most int'l ops. in '16. Elec. rev. breakdown: residential, 45%; commercial, 28%; industrial, 13%; other, 14%. Generating sources: gas, 32%; nuclear, 30%; coal, 18%; other, 1%; purchased, 19%. Fuel costs: 28% of revs. '21 reported deprec. rate: 2.9%. Has 27,600 employees. Chairman, President & CEO: Lynn J. Good. Inc.: DE. Address: 550 South Tryon St., Charlotte, NC 28202-1803. Tel.: 704-382-3853. Internet: www.duke-energy.com.

An unfavorable ruling from the Indiana Supreme Court has prompted us to cut our 2022 earnings estimate for Duke Energy by \$0.25 a share. The court overturned an order from the state commission that had allowed the utility to recover certain coal-ash closure costs. Duke took a pretax charge estimated at \$222 million-\$245 million against first-quarter results, which were reported shortly after this report went to press. We are including this in our earnings presentation because these expenses are operational in nature. (We included a similar charge that Duke took for coal-ash costs in North Carolina in the fourth quarter of 2020.) Our revised estimate of \$5.20 a share is below management's targeted range of \$5.30-\$5.60 because Duke excludes the charge from its guidance. Earnings will probably advance moderately, despite this charge. Duke also took an unusual charge in 2021, \$0.18 a share for a workforce realignment in the June quarter. Some of Duke's utilities are receiving revenues through general rate increases or riders (surcharges) on customers' bills. The company should benefit from

growth in kilowatt-hour sales. We expect a substantial profit increase in 2023. We assume no coal-ash charges. Duke's utilities should benefit from rate relief and volume growth. A \$49 million rate hike will take effect in Florida at the start of next year. In Ohio, the company requested an increase of \$55 million (3.3%), based on a 10.3% return on equity. An order is expected this summer. An asset sale is expected to close by January. Duke sold a minority interest in its Indiana utility. The buyer already owns an 11.05% stake, and the remainder will boost its interest to 19.9%. The company is using the \$2.05 billion raised in the two sales to offset its equity needs. The dividend yield of this untimely stock is only slightly above the utility average. Dividend growth prospects through 2025-2027 are subpar due to the high payout ratio. Total return potential is low for the next 18 months and for the 3- to 5-year period. There is some speculative interest once a standstill agreement with Elliott Investment Management expires after November 13th. Paul E. Debbas, CFA May 13, 2022

(A) Dil. EPS. Excl. nonrec. losses: '12, 70c; '13, 24c; '14, 67c; '17, 15c; '18, 41c; '20, \$2.21; losses on disc. ops.: '14, 18c; '16, 60c. '20 EPS don't sum due to rounding. Next eps. due early Aug. (B) Div'd paid mid-Mar., June, Sept., & Dec. (C) Div'd reinv. plan avail. (C) Incl. Int'l. In: '21: \$41.34/sh. (D) In mill., adj. for rev. split. (E) Rate base: Net org. cost. Rate all'd on com. eq. in '21 in NC: 9.6%; in '19 in SC: 9.5%; in '20 in FL: 9.5%-11.5%; in '20 in IN: 9.7%; earned on avg. com. eq., '21: 8.1%. Reg. Clim.: NC, SC Avg.; OH, IN Above Avg.

Company's Financial Strength

Stock's Price Stability

Price Growth Persistence

Earnings Predictability

A

95

35

85

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<p>(A) Dil. EPS. Excl. nonrec. gains (losses): '09, (64c); '10, 54c; '11, (\$3.33); '13, (\$1.12); '15, (\$1.18); '17, (\$1.37); '18, (15c); '19, (21c); '20, 25c; gains (loss) from disc. ops.: '12, (\$5.11); '13, 11c; '14, 57c; '15, 11c; '18, 10c. '19 EPS don't sum due to change in shs. Next earnings report due early May. (B) Div'd paid late Jan., Apr., July, & Oct. ■ Div'd reinv. plan avail.</p>	<p>(C) Incl. def'd chgs. In '21: \$20.14/sh. (D) In mill. (E) Rate base: net org. cost. Rate all'd on com. eq. in '20: 10.3%; earned on avg. com. eq., '21: 5.4%. Regulatory Climate: Average.</p>	<table><tr><td>Company's Financial Strength</td><td>B++</td></tr><tr><td>Stock's Price Stability</td><td>75</td></tr><tr><td>Price Growth Persistence</td><td>35</td></tr><tr><td>Earnings Predictability</td><td>10</td></tr></table>	Company's Financial Strength	B++	Stock's Price Stability	75	Price Growth Persistence	35	Earnings Predictability	10
Company's Financial Strength	B++									
Stock's Price Stability	75									
Price Growth Persistence	35									
Earnings Predictability	10									
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<p>To subscribe call 1-800-VALUELINE</p>										

ENTERGY CORP. NYSE-ETR										RECENT PRICE		105.21		P/E RATIO		15.4 (Trailing: 15.3 Median: 14.0)		RELATIVE P/E RATIO		0.86		DIV'D YLD		3.9%		VALUE LINE												
TIMELINESS		4	Lowered 12/10/21		High: 74.5		74.5		72.6		92.0		90.3		82.1		87.9		90.8		122.1		135.5		115.0		113.1		Target Price Range									
SAFETY		2	Raised 12/13/19		Low: 57.6		61.6		60.2		60.4		61.3		65.4		69.6		71.9		83.2		75.2		85.8		100.2		2025 2026 2027									
TECHNICAL		2	Raised 3/4/22		LEGENDS 0.54 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																						200											
BETA		.95	(1.00 = Market)																								160											
18-Month Target Price Range		Low-High		Midpoint (% to Mid)																							20											
\$88-\$132		\$110 (5%)																								100												
2025-27 PROJECTIONS																										80												
Price		Ann'l Total																								60												
High		160		14%																						50												
Low		115		6%																						40												
Gain		(+50%)																								30												
Relative		(+10%)																								20												
Institutional Decisions																										10												
202021		302021		402021																						Percent												
to Buy		306		352																						shares												
to Sell		273		244																						traded												
Hld's(000)		174484		182168																						10												
183072																																						
2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		© VALUE LINE PUB. LLC 25-27		
53.94		59.47		69.15		56.82		64.27		63.67		57.94		63.86		69.71		64.54		60.55		61.35		58.23		54.63		50.51		57.95		54.85		55.00		Revenues per sh		
10.69		11.73		12.89		13.29		16.54		17.53		15.98		16.25		17.68		17.71		18.72		16.70		16.50		17.19		18.21		17.90		17.75		18.50		"Cash Flow" per sh		
5.36		5.60		6.20		6.30		6.66		7.55		6.02		4.96		5.77		5.81		6.88		5.19		5.88		6.30		6.90		6.87		6.30		6.70		Earnings per sh A		
2.16		2.58		3.00		3.00		3.24		3.32		3.32		3.32		3.32		3.34		3.42		3.50		3.58		3.66		3.74		3.86		4.09		4.30		Div'd Decl'd per sh B = ↑		
9.44		10.29		13.92		12.99		13.33		15.21		18.18		15.73		14.82		16.79		17.28		22.07		22.45		21.72		24.52		30.86		18.15		19.00		Cap'l Spending per sh		
40.45		40.71		42.07		45.54		47.53		50.81		51.73		54.00		55.83		51.89		45.12		44.28		46.78		51.34		54.56		57.42		60.20		63.45		Book Value per sh C		
202.67		193.12		189.36		189.12		178.75		176.36		177.81		178.37		179.24		178.39		179.13		180.52		189.06		199.15		200.24		202.65		206.00		209.00		Common Shs Outst'g D		
14.3		19.3		16.6		12.0		11.6		9.1		11.2		13.2		12.9		12.5		10.9		15.0		13.8		16.5		15.3		15.0		16.0		16.5		Avg Ann'l P/E Ratio		
.77		1.02		1.00		.80		.74		.57		.71		.74		.68		.63		.57		.75		.75		.88		.79		.80		.80		.80		Relative P/E Ratio		
2.8%		2.4%		2.9%		4.0%		4.2%		4.9%		4.9%		5.1%		4.5%		4.6%		4.6%		4.5%		4.4%		3.5%		3.6%		3.7%		3.7%		Avg Ann'l Div'd Yield				
CAPITAL STRUCTURE as of 12/31/21																																				Revenues per sh		
Total Debt \$27082 mill.																																				"Cash Flow" per sh		
LT Debt \$24842 mill.																																				Earnings per sh A		
LT Interest \$780.0 mill.																																				Div'd Decl'd per sh B = ↑		
Incl. \$83.6 mill. of securitization bonds.																																				Cap'l Spending per sh		
(LT interest earned: 3.0x)																																				Book Value per sh C		
Leases, Uncapitalized Annual rentals \$65.3 mill.																																				Common Shs Outst'g D		
Pension Assets-12/21 \$6993.1 mill.																																				Avg Ann'l P/E Ratio		
Oblig \$8409.6 mill.																																				Relative P/E Ratio		
Pfd Stock \$254.4 mill.																																				Avg Ann'l Div'd Yield		
Pfd Div'd \$18.3 mill.																																				Revenues (Smill)		
200,000 shs. 6.25%-7.5%, \$100 par; 250,000 shs.																																				Net Profit (Smill)		
8.75%, 1.4 mill. shs. 5.375%; all cum., without sinking fund.																																				Income Tax Rate		
Common Stock 203,027,662 shs. as of 1/31/22																																				AFUDC % to Net Profit		
MARKET CAP: \$21 billion (Large Cap)																																				Long-Term Debt Ratio		
ELECTRIC OPERATING STATISTICS																																				Common Equity Ratio		
2019		2020		2021																																Total Capital (Smill)		
% Change Retail Sales (KWH)		-1.4		-4.1		+3.2																														Net Plant (Smill)		
Avg. Indust. Use (MWH)		1070		1017		1015																														Return on Total Cap'l		
Avg. Indust. Revs. per KWH(c)		5.24		4.95		5.91																														Return on Shr. Equity		
Capacity at Peak (MW)		23887		25665		NA																														Return on Com Equity E		
Peak Load, Summer (Mw)		21598		21340		NA																														Retained to Com Eq		
Annual Load Factor (%)		64		62		NA																														All Div'ds to Net Prof		
% Change Customers (yr-end)		+8		+1.0		+1.0																																
Fixed Charge Cov. (%)		165		202		243																																
ANNUAL RATES		Past		Past		Est'd '19-'21																																
of change (per sh)		10 Yrs.		5 Yrs.		to '25-'27																																
Revenues		-1.0%		-3.5%		1.5%																																
"Cash Flow"		1.0%		- .5%		3.0%																																
Earnings		- .5%		1.5%		3.0%																																
Dividends		1.5%		2.0%		5.0%																																
Book Value		1.5%		1.5%		5.0%																																
Cal-endar		QUARTERLY REVENUES (\$ mill.)		Full Year																																		
2019		2610		2666		3141		2462		10879																												
2020		2427		2413		2904		2370		10114																												
2021		2845		2822		3353		2723		11743																												
2022		2700		2700		3200		2700		11300																												
2023		2750		2750		3250		2750		11500																												
Cal-endar		EARNINGS PER SHARE A		Full Year																																		
2019		1.32		1.22		1.82		1.94		6.30																												
2020		.59		1.79		2.59		1.93		6.90																												
2021		1.66		1.30		2.63		1.28		6.87																												
2022		1.25		1.60		2.70		.75		6.30																												
2023		1.35		1.70		2.85		.80		6.70																												
Cal-endar		QUARTERLY DIVIDENDS PAID B = ↑		Full Year																																		
2018		.89		.89		.89		.91		3.58																												
2019		.91		.91		.91		.93		3.66																												
2020		.93		.93		.93		.95		3.74																												
2021		.95		.95		.95		1.01		3.86																												
2022		1.01																																				
2023																																						
2024																						</																

EVERGY, INC. NYSE-EVRG				RECENT PRICE	62.41	P/E RATIO	17.9	(Trailing: 16.3 Median: NMF)	RELATIVE P/E RATIO	1.00	DIV'D YLD	3.8%	VALUE LINE
TIMELINESS	5	Lowered 12/31/21											
SAFETY	2	New 9/14/18											
TECHNICAL	2	Lowered 3/11/22											
BETA	.95	(1.00 = Market)											
18-Month Target Price Range													
Low-High Midpoint (% to Mid)													
\$50-\$73 \$62 (0%)													
2025-27 PROJECTIONS													
Price Gain Ann'l Total													
High 95 (+50%) 14%													
Low 70 (+10%) 7%													
Institutional Decisions													
2Q2021 3Q2021 4Q2021													
to Buy 291 262 308													
to Sell 220 240 237													
Hld's(000) 198932 204443 206094													
Percent 36													
shares 24													
traded 12													
Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Great Plains Energy holders received .5981 of a share of Evergy for each of their shares, and Westar Energy holders received one share of Evergy for each of their shares. The merger was completed on June 4, 2018. Shares of Evergy began trading on the New York Stock Exchange one day later.													
CAPITAL STRUCTURE as of 12/31/21													
Total Debt \$11166 mill. Due in 5 Yrs \$4100.3 mill.													
LT Debt \$9297.9 mill. LT Interest \$332.8 mill.													
Incl. \$40.9 mill. finance leases.													
(LT interest earned: 3.8x)													
Leases, Uncapitalized Annual rentals \$18.8 mill.													
Pension Assets-12/21 \$1714.7 mill.													
Pfd Stock None													
Common Stock 229,311,689 shs.													
as of 2/18/22													
MARKET CAP: \$14 billion (Large Cap)													
ELECTRIC OPERATING STATISTICS													
2019 2020 2021													
% Change Retail Sales (KWH)													
Avg. Indust. Use (MWH)													
Avg. Indust. Revs. per KWH (¢)													
Capacity at Peak (Mw)													
Peak Load, Summer (Mw)													
Annual Load Factor (%)													
Change Customers (yr-end)													
Fixed Charge Cov. (%)													
ANNUAL RATES													
Past 10 Yrs. Past 5 Yrs. Est'd '19-'21													
of change (per sh)													
Revenues													
"Cash Flow"													
Earnings													
Dividends													
Book Value													
Cal-endar													
QUARTERLY REVENUES (\$ mill.)													
Mar.31 Jun.30 Sep.30 Dec.31													
2019													
2020													
2021													
2022													
2023													
Cal-endar													
EARNINGS PER SHARE A													
Mar.31 Jun.30 Sep.30 Dec.31													
2019													
2020													
2021													
2022													
2023													
Cal-endar													
QUARTERLY DIVIDENDS PAID B													
Mar.31 Jun.30 Sep.30 Dec.31													
2018													
2019													
2020													
2021													
2022													
2023													
BUSINESS: Evergy, Inc. was formed through the merger of Great Plains Energy and Westar Energy in June of 2018. Through its subsidiaries (now doing business under the Evergy name), provides electric service to 1.6 million customers in Kansas and Missouri, including the greater Kansas City area. Electric revenue breakdown: residential, 34%; commercial, 30%; industrial, 11%; wholesale, 13%; other, 12%. Generating sources: coal, 54%; nuclear, 17%; purchased, 29%. Fuel costs: 28% of revenues. '21 reported deprec. rate: 3%. Has 4,900 employees. Chairman: Mark A. Ruelle. President & CEO: David A. Campbell. COO: Kevin E. Bryant. Inc.: Missouri. Address: 1200 Main Street, Kansas City, Missouri 64105. Tel.: 816-556-2200. Internet: www.evergy.com.													
Evergy's utilities in Missouri have filed general rate cases. The company's Missouri Metro utility requested an increase of \$43.9 million (5.2%), based on a return on equity of 10% and a common-equity ratio of 51.2%. Its Missouri West utility filed for a hike of \$27.7 million (3.8%), based on a 10% ROE and a 51.8% common-equity ratio. These are the first rate cases Evergy has filed since the company was formed through a merger in June of 2018. Capital additions and updated depreciation rates are driving the petitions, partly offset by reductions in operating and maintenance expenses. New tariffs are expected to take effect on December 6th, 11 months after the filing date. This will be too late to have a significant effect on earnings in 2022. Note that the company plans to file rate applications in Kansas in 2023.													
The earnings decline that is probable for 2022 should not be troubling for investors. Last year, a cold spell in the Gulf Coast region in February was a boon for Evergy's energy-marketing subsidiary. This boosted pretax income by \$86.6 million in the first quarter. We expect no re-													
peat of these auspicious conditions this year. A return to normal weather patterns would also be negative for the year-to-year comparison, as favorable weather boosted share net by \$0.08 in 2021. Still, there should be some positive factors, including increased income from the company's transmission system. We are sticking with our 2022 earnings estimate of \$3.55 a share, which is within Evergy's targeted range of \$3.43-\$3.63.													
We expect earnings to improve in 2023. Rate relief in Missouri should be a key factor. Modest growth in kilowatt-hour sales should help, as well. Our estimate of \$3.80 a share would produce an increase of 7%. This is within Evergy's annual goal of 6%-8%.													
This untimely stock has a dividend yield that is about average for a utility. Total return potential is subpar for the next 18 months and somewhat below average for the 3- to 5-year period. A standstill agreement with two investors expires after the 2022 annual meeting (normally held in the first week of May), so there is some speculative appeal.													
Paul E. Debbas, CFA													
March 11, 2022													
(A) Diluted earnings. '19 EPS don't sum to full-year total due to rounding. Next earnings report due early May. (B) Dividends paid in mid-March, June, September, and December. (C) Dividend reinvestment plan available. (D) Incl. intangibles. In '21: \$4327.7 mill., \$18.87/sh. (E) In millions. (F) Rate base: Original cost depreciated. Rate allowed on common equity in Missouri in '18: none specified; in Kansas in '18: 9.3%. Earned on average common equity, '21: 9.8%. Regulatory Climate: Average.													
Company's Financial Strength													
Stock's Price Stability													
Price Growth Persistence													
Earnings Predictability													
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(A) Diluted earnings. '19 EPS don't sum to full-year total due to rounding. Next earnings report due early May. (B) Dividends paid in mid-March, June, September, and December. (C) Dividend reinvestment plan available. (D) Incl. intangibles. In '21: \$4327.7 mill., \$18.87/sh. (E) In millions. (F) Rate base: Original cost depreciated. Rate allowed on common equity in Missouri in '18: none specified; in Kansas in '18: 9.3%. Earned on average common equity, '21: 9.8%. Regulatory Climate: Average.

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Company's Financial Strength B++
 Stock's Price Stability 80
 Price Growth Persistence NMF
 Earnings Predictability NMF

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(A) Diluted EPS, Excl. nonrecurring gain (losses): '08, (19c); '10, 9c; '19, (64c). Next earnings report due early Aug. (B) Div'ds historically paid late Mar., June, Sept., & Dec. ■ Div'd reinvestment plan avail. (C) Incl. deferred charges. In '21: \$9064 mill., \$26.3c/sh. (D) In mill. (E) Rate allowed on com. eq. in MA: (elec.) '18, 10.0%; (gas) '20, 9.7%-9.9%; in CT: (elec.) '18, 9.25%; (gas) '18, 9.3%; in NH: '21, 9.3%; earned on avg. com. eq., '21: 8.5%. Regulatory Climate: CT, Below Average; NH, Average; MA, Above Average.

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(A) Diluted EPS, Excl. nonrecurring gain: '06, 17c. '19 earnings don't sum due to rounding. Next earnings report due late April. (B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Dividend reinvestment plan available. † Shareholder investment plan available. (C) Incl. intangibles. In '21: \$1,462.4 mill., \$28.95/sh. (D) In millions. (E) Rate base: Net original cost. Rate allowed on common equity in '12: 10% (imputed); earned on avg. com. eq., '21: 9.4%. Regulatory Climate: Abovever. Average.

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NORTHWESTERN				NDQ-NWE		RECENT PRICE	60.10		P/E RATIO	18.7 (Trailing: 16.7 Median: 17.0)		RELATIVE P/E RATIO	1.05	DIV'D YLD	4.2%	VALUE LINE			
TIMELINESS	5	Lowered 2/25/22	High: 36.6 38.0 47.2 58.7 59.7 63.8 64.5 65.7 76.7 80.5 70.8 62.6	Low: 27.4 33.0 35.1 42.6 48.4 52.2 55.7 50.0 57.3 45.1 53.2 55.6													Target Price Range 2025 2026 2027		
SAFETY	2	Raised 7/27/18	LEGENDS 0.61 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																
TECHNICAL	4	Raised 4/8/22																	
BETA	.95	(1.00 = Market)																	
18-Month Target Price Range																			
Low-High Midpoint (% to Mid)																			
\$49-\$74 \$62 (0%)																			
2025-27 PROJECTIONS																			
High	Price	Gain	Ann'l Total																
Low	80	(+35%)	11%																
	55	(-10%)	2%																
Institutional Decisions																			
202021 3Q2021 4Q2021																			
to Buy 118 121 170																			
to Sell 125 112 105																			
Hld's(000) 47852 49375 56973																			
Percent shares traded																			

<p>(A) Diluted EPS. Excl. nonrecurring gains (losses): '15, (33c); '17, \$1.18; '19, (8c); '20, (\$2.95); '21, \$1.32; gain on discount. ops.: '06, 20c. '19 & '21 EPS don't sum due to rounding.</p>	<p>Next earnings report due early May. (B) Div/ds historically paid in late Jan., Apr., July, & Oct. ■ Div/d reinvestment plan avail. (C) Incl. deferred charges. In '21: \$6.15/sh. (D) In mill., adj. for</p>	<p>split. (E) Rate base: Net original cost. Rate allowed on com. eq. in OK in '19: 9.5%; in AR in '18: 9.5%; earned on avg. com. eq., '21: 12.7%. Regulatory Climate: Average.</p>	<p>Company's Financial Strength Stock's Price Stability Price Growth Persistence Earnings Predictability</p>	<p>A 85 25 90</p>
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<p>(A) Diluted earnings. Excludes nonrecurring losses: '13, 42¢; '17, 19¢. Net earnings report due April 28. (B) Dividends paid mid-Jan., Apr., July, and Oct. (C) Dividend reinvestment plan</p>	<p>available. † Shareholder investment plan available. (C) Incl. deferred charges. In '21: \$533 mill., \$5.96/sh. (D) In mill. (E) Rate base: Net original cost. Rate allowed on common equity</p>	<p>in '19: 9.5%; earned on avg. com. eq., '21: 9.2%. Regulatory Climate: Average.</p>	<p>Company's Financial Strength B++ Stock's Price Stability 90 Price Growth Persistence 55 Earnings Predictability 80</p>
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<p>(A) Diluted EPS. Excl. nonrecurring gain (losses): '10, 5c; '15, (16c); '17, (5c); gains (loss) on discontinued ops: '06, 1c; '09, (1c); '10, 1c. '20 EPS don't sum due to rounding.</p>	<p>Next earnings report due April 28. (B) Div's historically paid mid-Jan., Apr., July, and Oct. ■ Div'd reinvestment plan available. † Shareholder investment plan available. (C) Incl. in</p>	<p>tangibles. In '21: \$273.8 mill. \$4.42/sh. (D) In mill. (E) Rate base: Varies. Rate allowed on com. eq. (blended): 9.6%; earned on avg. com. eq., '21: 10.6%. Regulatory Climate: Average.</p>	<p>Company's Financial Strength Stock's Price Stability Price Growth Persistence Earnings Predictability</p>	<p>A+ 95 65 100</p>
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Duke Energy Ohio, Inc.
Summary of Risk Premium Models for the
Proxy Group of Thirteen Electric Companies

	<u>Proxy Group of Thirteen Electric Companies</u>
Predictive Risk Premium Model (PRPM) (1)	11.93 %
Risk Premium Using an Adjusted Total Market Approach (2)	<u>10.98</u>
Average	<u><u>11.46 %</u></u>

Notes:

- (1) From page 18 of this Attachment.
- (2) From page 19 of this Attachment.

Duke Energy Ohio, Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Proxy Group of Thirteen Electric Companies	L.T Average Predicted Variance	Spot Predicted Variance	Recommended Variance (2)	GARCH Coefficient	Predicted Risk Premium (3)	Risk-Free Rate (4)	Indicated ROE (5)
Alliant Energy Corporation	0.27%	0.33%	0.30%	2.72	10.33%	3.51%	13.84%
Ameren Corporation	0.23%	0.29%	0.26%	2.07	6.66%	3.51%	10.17%
American Electric Power Company, Inc.	0.29%	0.30%	0.29%	2.40	8.73%	3.51%	12.24%
Duke Energy Corporation	0.31%	0.33%	0.32%	1.89	7.52%	3.51%	11.03%
Edison International	0.43%	0.48%	0.46%	1.51	8.57%	3.51%	12.08%
Entergy Corporation	0.40%	0.46%	0.43%	2.25	12.31%	3.51%	NMF
Evergy, Inc.	0.39%	0.25%	0.32%	1.53	5.99%	3.51%	9.50%
Eversource Energy	0.31%	0.39%	0.35%	1.68	7.22%	3.51%	10.73%
IDACORP, Inc.	0.29%	0.41%	0.35%	2.21	9.70%	3.51%	13.21%
NorthWestern Corporation	0.33%	0.33%	0.33%	2.27	9.38%	3.51%	12.89%
OGE Energy Corporation	0.31%	0.32%	0.31%	2.23	8.68%	3.51%	12.19%
Portland General Electric Company	0.29%	0.72%	0.29%	1.85	6.73%	3.51%	10.24%
Xcel Energy Inc.	0.27%	0.23%	0.25%	2.85	8.98%	3.51%	12.49%
						Average	11.72%
						Median	12.14%
					Average of Mean and Median		11.93%

Notes:

- (1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.
- (2) Average of Column [1] and Column [2].
- (3) $(1 + (\text{Column [3]} * \text{Column [4]})^{12}) - 1$.
- (4) From note 2 on page 31 of this Attachment.
- (5) Column [5] + Column [6].

Duke Energy Ohio, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Thirteen Electric Companies</u>
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	4.73 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	<u>0.57</u> (2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	5.30 %
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	<u>0.21</u> (3)
5.	Adjusted Prospective Bond Yield	5.51 %
6.	Equity Risk Premium (4)	<u>5.47</u>
7.	Risk Premium Derived Common Equity Cost Rate	<u><u>10.98</u></u> %

- Notes:
- (1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 26-27 of this Attachment).
 - (2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.57% from page 20 of this Attachment.
 - (3) Adjustment to reflect the Baa1 Moody's LT issuer rating of the Utility Proxy Group as shown on page 21 of this Attachment. The 0.21% upward adjustment is derived by taking 2/3 of the spread between A2 and Baa2 Public Utility Bonds ($2/3 * 0.31\% = 0.21\%$) as derived from page 20 of this Attachment.
 - (4) From page 23 of this Attachment.

Duke Energy Ohio, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]	[3]
	<u>Aaa Rated Corporate Bond</u>	<u>A2 Rated Public Utility Bond</u>	<u>Baa2 Rated Public Utility Bond</u>
May-2022	4.13 %	4.75 %	5.07 %
Apr-2022	3.75	4.30	4.60
Mar-2022	<u>3.43</u>	<u>3.98</u>	<u>4.28</u>
Average	<u>3.77 %</u>	<u>4.34 %</u>	<u>4.65 %</u>

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:
0.57 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:
0.31 % (2)

Notes:

(1) Column [2] - Column [1].

(2) Column [3] - Column [2].

Source of Information:

Bloomberg Professional Service

Duke Energy Ohio, Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Thirteen Electric Companies

Proxy Group of Thirteen Electric Companies	Moody's		Standard & Poor's	
	Long-Term Issuer Rating		Long-Term Issuer Rating	
	May 2022		May 2022	
	Long- Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
Alliant Energy Corporation	A3/Baa1	7.5	A/A-	6.5
Ameren Corporation	A3	7.5	BBB+	8.0
American Electric Power Company, Inc.	Baa1	8.0	A-	7.0
Duke Energy Corporation	A3	7.0	BBB+	8.0
Edison International	Baa2	9.0	BBB	9.0
Entergy Corporation	Baa1	8.0	BBB+	8.0
Evergy, Inc.	Baa1	8.0	A-	7.0
Eversource Energy	A3	7.0	A-	7.0
IDACORP, Inc.	A3	7.0	BBB	9.0
NorthWestern Corporation	Baa2	9.0	BBB	9.0
OGE Energy Corporation	A3	7.0	A-	7.0
Portland General Electric Company	A3	7.0	BBB+	8.0
Xcel Energy Inc.	A3	7.0	A-	7.0
Average	Baa1	7.6	BBB+	7.7

Notes:

- (1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 22 of this Attachment.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

<u>Moody's Bond Rating</u>	<u>Numerical Bond Weighting</u>	<u>Standard & Poor's Bond Rating</u>
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Duke Energy Ohio, Inc.
Judgment of Equity Risk Premium for
Proxy Group of Thirteen Electric Companies

<u>Line No.</u>		<u>Proxy Group of Thirteen Electric Companies</u>
1.	Calculated equity risk premium based on the total market using the beta approach (1)	6.30 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.05
3.	Predicted Equity Risk Premium Based on Regression Analysis of 1,193 Fully-Litigated Electric Utility Rate Cases (3)	<u>5.07</u>
4.	Average equity risk premium	<u><u>5.47 %</u></u>

Notes: (1) From page 24 of this Attachment.
(2) From page 28 of this Attachment.
(3) From page 29 of this Attachment.

Duke Energy Ohio, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Thirteen Electric Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Thirteen Electric Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	6.13 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.67
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.79
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	9.37
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>7.62</u>
7.	Conclusion of Equity Risk Premium	8.52 %
8.	Adjusted Beta (7)	<u>0.74</u>
9.	Forecasted Equity Risk Premium	<u><u>6.30 %</u></u>

Notes provided on page 25 of this Attachment.

Duke Energy Ohio, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Thirteen Electric Companies

Notes:

- (1) Based on the arithmetic mean historical monthly returns on large company common stocks from Kroll 2022 SBBI® Yearbook minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1926-2021.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2021 referenced in note 1 above.
- (3) The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through May 2022.
- (4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 4.73% (from page 19 of this Attachment) from the projected 3-5 year total annual market return of 14.10% (described fully in note 1 on page 31 of this Attachment).
- (5) Using data from Value Line for the S&P 500, an expected total return of 16.29% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.73% results in an expected equity risk premium of 11.56%.
- (6) Using data from Bloomberg Professional Service for the S&P 500, an expected total return of 12.35% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 4.73% results in an expected equity risk premium of 7.62%.
- (7) Average of mean and median beta from page 30 of this Attachment.

Sources of Information:

Kroll 2022 SBBI® Yearbook
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2022
Bloomberg Professional Service

2 ■ BLUE CHIP FINANCIAL FORECASTS ■ JUNE 1, 2022

Consensus Forecasts of U.S. Interest Rates and Key Assumptions

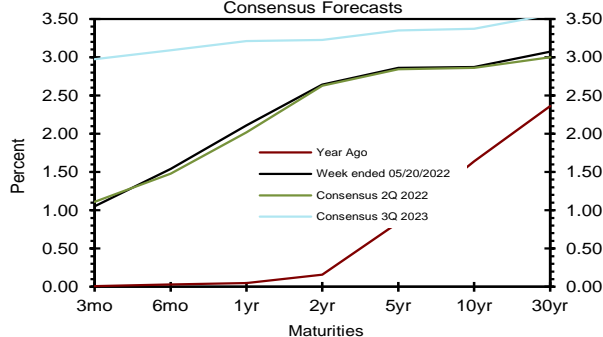
Interest Rates	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month				Latest Qtr					
	May 20	May 13	May 6	Apr 29	Apr	Mar	Feb	1Q 2022	2Q 2022	3Q 2022	4Q 2022	1Q 2023	2Q 2023	3Q 2023
Federal Funds Rate	0.83	0.83	0.33	0.33	0.33	0.20	0.08	0.12	1.0	1.9	2.4	2.8	3.0	3.1
Prime Rate	4.00	4.00	3.50	3.50	3.50	3.37	3.25	3.29	4.0	5.0	5.5	5.9	6.1	6.2
SOFR	0.79	0.78	0.49	0.28	0.29	0.16	0.05	0.09	0.9	1.8	2.3	2.7	2.9	3.0
Commercial Paper, 1-mo.	0.83	0.82	0.71	0.55	0.44	0.32	0.16	0.18	0.9	1.8	2.4	2.8	3.0	3.0
Treasury bill, 3-mo.	1.05	0.94	0.88	0.85	0.76	0.45	0.31	0.30	1.1	1.9	2.4	2.7	2.9	3.0
Treasury bill, 6-mo.	1.54	1.44	1.43	1.40	1.26	0.86	0.64	0.61	1.5	2.2	2.6	2.9	3.1	3.1
Treasury bill, 1 yr.	2.11	2.00	2.10	2.03	1.89	1.34	1.00	0.96	2.0	2.6	2.9	3.1	3.2	3.2
Treasury note, 2 yr.	2.64	2.61	2.72	2.62	2.54	1.91	1.44	1.44	2.6	2.9	3.1	3.2	3.3	3.2
Treasury note, 5 yr.	2.86	2.89	3.00	2.84	2.78	2.11	1.81	1.82	2.8	3.1	3.2	3.3	3.4	3.4
Treasury note, 10 yr.	2.87	2.94	3.01	2.83	2.75	2.13	1.93	1.94	2.9	3.1	3.2	3.3	3.4	3.4
Treasury note, 30 yr.	3.07	3.09	3.10	2.91	2.81	2.41	2.25	2.25	3.0	3.3	3.4	3.5	3.6	3.6
Corporate Aaa bond	4.43	4.42	4.40	4.19	4.01	3.63	3.36	3.35	4.1	4.5	4.7	4.8	4.9	4.9
Corporate Baa bond	5.13	5.10	5.06	4.84	4.63	4.23	3.92	3.90	5.0	5.4	5.6	5.7	5.8	5.8
State & Local bonds	4.09	4.03	3.93	3.84	3.70	3.30	3.01	3.02	3.5	3.8	4.0	4.1	4.2	4.2
Home mortgage rate	5.25	5.30	5.27	5.10	4.98	4.17	3.76	3.79	5.1	5.3	5.5	5.6	5.6	5.5

Key Assumptions	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022	2022	2023	2023	2023
Fed's AFE \$ Index	112.4	107.2	105.1	103.4	102.9	105.0	107.0	108.4	112.7	113.9	114.1	114.0	113.6	112.9
Real GDP	-31.2	33.8	4.5	6.3	6.7	2.3	6.9	-1.5	2.9	2.5	2.2	1.8	1.6	1.6
GDP Price Index	-1.5	3.6	2.2	4.3	6.1	6.0	7.1	8.1	5.9	4.6	3.5	3.1	2.8	2.7
Consumer Price Index	-3.4	4.8	2.2	4.1	8.2	6.7	7.9	9.2	7.6	4.8	3.4	3.0	2.6	2.6
PCE Price Index	-1.6	3.7	1.5	3.8	6.5	5.3	6.4	7.0	5.8	4.3	3.2	2.8	2.6	2.5

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).

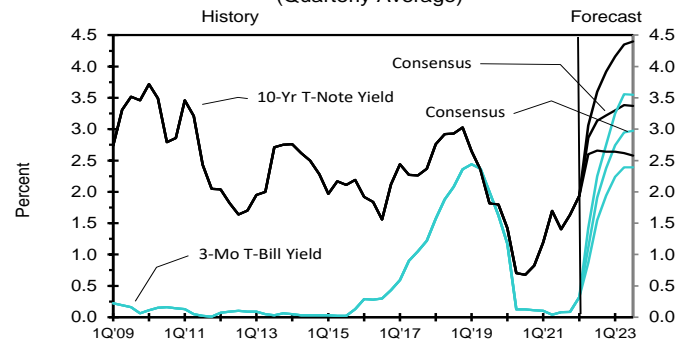
U.S. Treasury Yield Curve

Week ended May 20, 2022 & Year Ago vs.
2Q 2022 & 3Q 2023
Consensus Forecasts



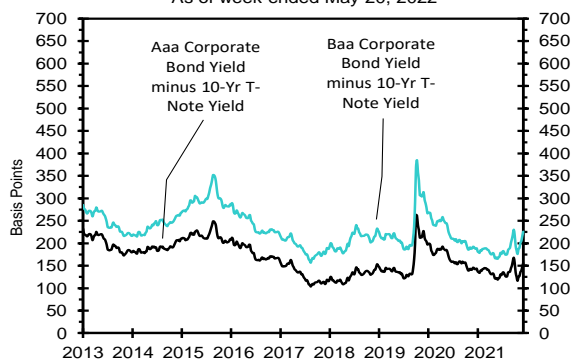
US 3-Mo T-Bills & 10-Yr T-Note Yield

(Quarterly Average)



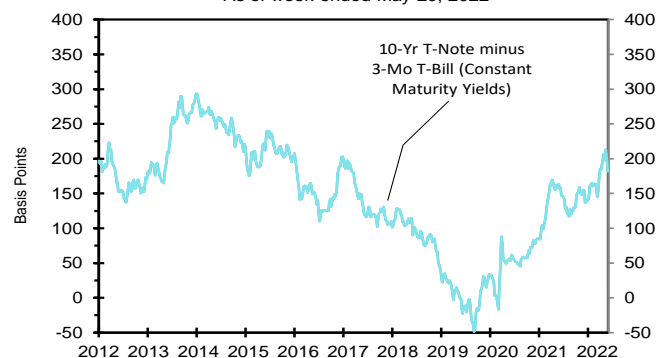
Corporate Bond Spreads

As of week ended May 20, 2022



U.S. Treasury Yield Curve

As of week ended May 20, 2022



Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2023 through 2028 and averages for the five-year periods 2024-2028 and 2029-2033. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

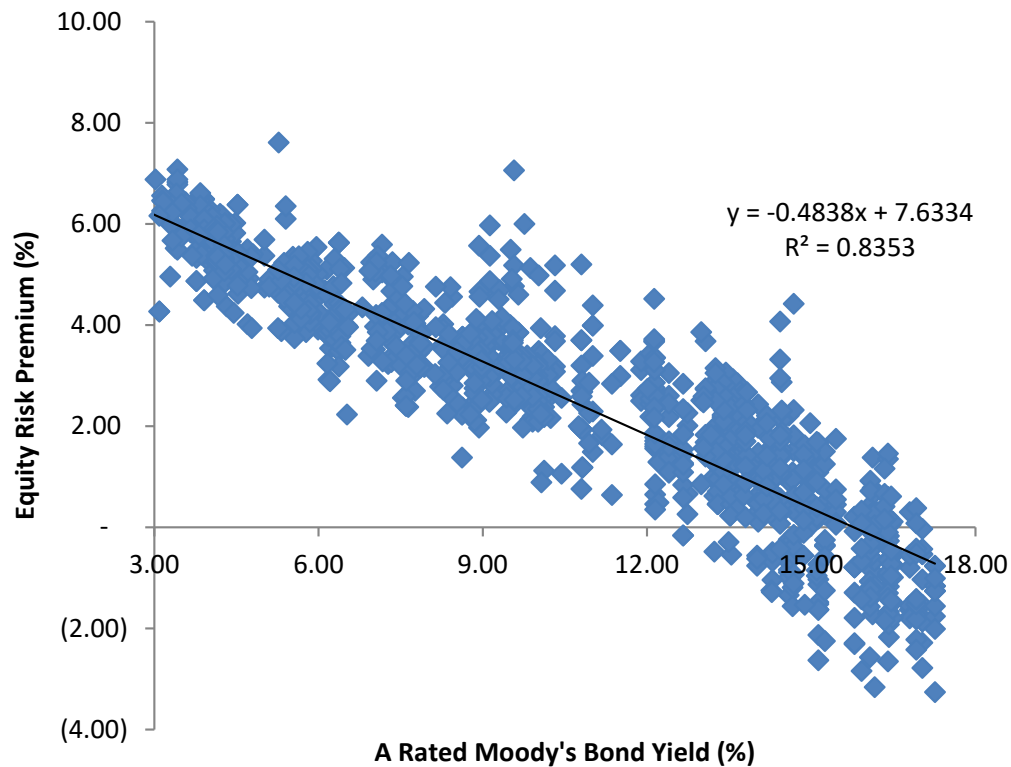
		----- Average For The Year -----						Five-Year Averages	
		2023	2024	2025	2026	2027	2028	2024-2028	2029-2033
1. Federal Funds Rate	CONSENSUS	3.0	2.7	2.5	2.5	2.5	2.5	2.6	2.5
	Top 10 Average	3.5	3.3	3.0	2.8	2.8	2.8	3.0	2.8
	Bottom 10 Average	2.6	2.1	2.0	2.2	2.2	2.2	2.2	2.1
2. Prime Rate	CONSENSUS	6.1	5.9	5.7	5.6	5.6	5.6	5.7	5.6
	Top 10 Average	6.6	6.4	6.1	6.0	6.0	6.0	6.1	5.9
	Bottom 10 Average	5.6	5.3	5.2	5.3	5.3	5.3	5.3	5.2
3. SOFR	CONSENSUS	3.0	2.8	2.5	2.5	2.5	2.5	2.6	2.5
	Top 10 Average	3.4	3.3	3.0	2.9	2.8	2.8	3.0	2.8
	Bottom 10 Average	2.7	2.2	2.0	2.2	2.2	2.2	2.2	2.1
4. Commercial Paper, 1-Mo	CONSENSUS	3.2	2.9	2.6	2.6	2.6	2.6	2.7	2.6
	Top 10 Average	3.5	3.4	3.1	2.9	2.9	2.9	3.0	2.9
	Bottom 10 Average	2.8	2.5	2.3	2.4	2.4	2.3	2.3	2.3
5. Treasury Bill Yield, 3-Mo	CONSENSUS	3.0	2.8	2.6	2.6	2.6	2.5	2.6	2.5
	Top 10 Average	3.6	3.4	3.1	3.1	3.0	2.9	3.1	2.9
	Bottom 10 Average	2.5	2.2	2.0	2.1	2.2	2.2	2.1	2.2
6. Treasury Bill Yield, 6-Mo	CONSENSUS	3.2	2.9	2.7	2.7	2.7	2.6	2.7	2.6
	Top 10 Average	3.8	3.6	3.2	3.2	3.1	3.0	3.2	3.0
	Bottom 10 Average	2.6	2.2	2.1	2.2	2.3	2.3	2.2	2.3
7. Treasury Bill Yield, 1-Yr	CONSENSUS	3.2	3.0	2.9	2.9	2.8	2.8	2.9	2.8
	Top 10 Average	3.9	3.8	3.5	3.4	3.3	3.2	3.4	3.2
	Bottom 10 Average	2.6	2.4	2.2	2.4	2.4	2.4	2.3	2.4
8. Treasury Note Yield, 2-Yr	CONSENSUS	3.4	3.2	3.1	3.1	3.0	3.0	3.1	3.0
	Top 10 Average	4.3	4.1	3.8	3.6	3.5	3.5	3.7	3.5
	Bottom 10 Average	2.7	2.4	2.3	2.5	2.6	2.5	2.4	2.5
9. Treasury Note Yield, 5-Yr	CONSENSUS	3.5	3.4	3.3	3.3	3.3	3.2	3.3	3.3
	Top 10 Average	4.3	4.2	4.1	3.9	3.8	3.8	3.9	3.8
	Bottom 10 Average	2.8	2.6	2.5	2.7	2.7	2.7	2.6	2.8
10. Treasury Note Yield, 10-Yr	CONSENSUS	3.5	3.5	3.4	3.5	3.5	3.4	3.5	3.5
	Top 10 Average	4.4	4.4	4.2	4.2	4.1	4.1	4.2	4.1
	Bottom 10 Average	2.8	2.5	2.6	2.9	2.9	2.8	2.7	2.8
11. Treasury Bond Yield, 30-Yr	CONSENSUS	3.8	3.8	3.8	3.9	3.8	3.8	3.8	3.9
	Top 10 Average	4.6	4.7	4.5	4.5	4.4	4.5	4.5	4.5
	Bottom 10 Average	3.0	2.9	3.0	3.3	3.2	3.2	3.1	3.2
12. Corporate Aaa Bond Yield	CONSENSUS	5.0	5.0	4.9	5.0	5.0	4.9	4.9	5.0
	Top 10 Average	5.7	5.7	5.6	5.5	5.5	5.5	5.5	5.6
	Bottom 10 Average	4.4	4.2	4.3	4.4	4.4	4.4	4.3	4.4
13. Corporate Baa Bond Yield	CONSENSUS	6.0	5.9	5.8	5.9	5.9	5.9	5.9	5.9
	Top 10 Average	6.6	6.6	6.4	6.3	6.3	6.3	6.4	6.4
	Bottom 10 Average	5.4	5.3	5.2	5.4	5.4	5.4	5.3	5.4
14. State & Local Bonds Yield	CONSENSUS	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.3
	Top 10 Average	5.0	5.0	4.8	4.8	4.7	4.7	4.8	4.8
	Bottom 10 Average	3.7	3.7	3.7	3.9	3.9	3.9	3.8	3.9
15. Home Mortgage Rate	CONSENSUS	5.7	5.5	5.4	5.4	5.4	5.4	5.4	5.4
	Top 10 Average	6.4	6.4	6.1	6.0	6.0	6.0	6.1	6.0
	Bottom 10 Average	4.9	4.7	4.6	4.8	4.8	4.8	4.7	4.8
A. Fed's AFE Nominal \$ Index	CONSENSUS	113.8	112.8	111.9	111.0	110.6	110.4	111.3	109.8
	Top 10 Average	115.6	114.7	114.0	113.4	113.1	112.8	113.6	112.7
	Bottom 10 Average	112.2	111.0	109.9	108.8	108.2	107.9	109.2	107.4
		----- Year-Over-Year, % Change -----						Five-Year Averages	
		2023	2024	2025	2026	2027	2028	2024-2028	2029-2033
B. Real GDP	CONSENSUS	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0
	Top 10 Average	2.6	2.4	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	1.5	1.5	1.8	1.8	1.8	1.8	1.7	1.8
C. GDP Chained Price Index	CONSENSUS	3.0	2.4	2.3	2.3	2.2	2.2	2.3	2.2
	Top 10 Average	3.7	2.8	2.7	2.6	2.6	2.6	2.7	2.6
	Bottom 10 Average	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	CONSENSUS	3.2	2.4	2.4	2.4	2.3	2.3	2.4	2.3
	Top 10 Average	4.1	3.0	2.9	2.8	2.7	2.7	2.8	2.7
	Bottom 10 Average	2.3	1.8	2.0	2.0	1.9	1.9	1.9	1.9
E. PCE Price Index	CONSENSUS	3.0	2.3	2.3	2.3	2.3	2.2	2.3	2.3
	Top 10 Average	3.8	2.8	2.8	2.7	2.7	2.6	2.7	2.7
	Bottom 10 Average	2.2	1.8	1.9	1.9	1.9	1.8	1.9	1.9

Duke Energy Ohio, Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

<u>Line No.</u>		<u>Implied Equity Risk Premium</u>
	<u>Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):</u>	
1.	Historical Equity Risk Premium	4.28 %
2.	Regression of Historical Equity Risk Premium (2)	5.28
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.85
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	5.28
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	<u>4.58</u>
6.	Average Equity Risk Premium (6)	<u><u>5.05 %</u></u>

- Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2021. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
- (2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2021 referenced in note 1 above.
- (3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - May 2022.
- (4) Using data from Value Line for the S&P Utilities Index, an expected total return of 10.58% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the expected A2 rated public utility bond yield of 5.30% results in an expected equity risk premium of 5.28%. (10.58% - 5.30 = 5.28%)
- (5) Using data from the Bloomberg Professional Service for the S&P Utilities Index, an expected total return of 9.88% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the expected A2 rated public utility bond yield of 5.30% results in an expected equity risk premium of 4.58%. (9.88% - 5.30 = 4.58%)
- (6) Average of lines 1 through 5.

Duke Energy Ohio, Inc.
Prediction of Equity Risk Premiums Relative to
Moody's A2 Rated Utility Bond Yields



Constant	Slope	Prospective A2 Rated Utility Bond (1)	Prospective Equity Risk Premium
7.6334 %	-0.4838	5.30 %	5.07 %

Notes:

(1) From line 3 of page 19 of this Attachment.

Source of Information: Regulatory Research Associates

Duke Energy Ohio, Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

Proxy Group of Thirteen Electric Companies	[1] Value Line Adjusted Beta	[2] Bloomberg Adjusted Beta	[3] Average Beta	[4] Market Risk Premium (1)	[5] Risk-Free Rate (2)	[6] Traditional CAPM Cost Rate	[7] ECAPM Cost Rate	[8] Indicated Common Equity Cost Rate (3)
Alliant Energy Corporation	0.85	0.66	0.76	9.76 %	3.51 %	10.93 %	11.51 %	11.22 %
Ameren Corporation	0.80	0.62	0.71	9.76	3.51	10.44	11.15	10.79
American Electric Power Company, Inc.	0.75	0.56	0.65	9.76	3.51	9.85	10.71	10.28
Duke Energy Corporation	0.85	0.48	0.66	9.76	3.51	9.95	10.78	10.37
Edison International	0.95	0.72	0.84	9.76	3.51	11.71	12.10	11.90
Energy Corporation	0.95	0.72	0.84	9.76	3.51	11.71	12.10	11.90
Eversource Energy	0.80	0.63	0.72	9.76	3.51	11.02	11.59	11.30
IDACORP, Inc.	0.80	0.64	0.72	9.76	3.51	10.54	11.22	10.88
NorthWestern Corporation	0.95	0.67	0.81	9.76	3.51	11.41	11.88	11.65
OGE Energy Corporation	1.05	0.76	NMF (4)	9.76	3.51	NA (4)	NA (4)	NMF (4)
Portland General Electric Company	0.85	0.64	0.75	9.76	3.51	10.83	11.44	11.13
Xcel Energy Inc.	0.80	0.55	0.68	9.76	3.51	10.15	10.93	10.54
Mean			<u>0.74</u>			<u>10.76 %</u>	<u>11.38 %</u>	<u>11.07 %</u>
Median			<u>0.74</u>			<u>10.68 %</u>	<u>11.33 %</u>	<u>11.01 %</u>
Average of Mean and Median			<u>0.74</u>			<u>10.72 %</u>	<u>11.36 %</u>	<u>11.04 %</u>

Notes on page 31 of this Attachment.

Duke Energy Ohio, Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

- (1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2021)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2021:	12.37 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.02
MRP based on Ibbotson Historical Data:	<u>7.35 %</u>

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2021)

9.15 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - May 2022)

9.84 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending June 03, 2022)

Total projected return on the market 3-5 years hence*:	14.10 %
Projected Risk-Free Rate (see note 2):	3.51
MRP based on Value Line Summary & Index:	<u>10.59 %</u>
*Forecasted 3-5 year capital appreciation plus expected dividend yield	

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	16.29 %
Projected Risk-Free Rate (see note 2):	3.51
MRP based on Value Line data	<u>12.78 %</u>

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	12.35 %
Projected Risk-Free Rate (see note 2):	3.51
MRP based on Bloomberg data	<u>8.84 %</u>
Average of Value Line, Ibbotson, and Bloomberg MRP:	<u>9.76 %</u>

- (2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 26-27 of this Attachment.) The projection of the risk-free rate is illustrated below:

Second Quarter 2022	3.00 %
Third Quarter 2022	3.30
Fourth Quarter 2022	3.40
First Quarter 2023	3.50
Second Quarter 2023	3.60
Third Quarter 2023	3.60
2024-2028	3.80
2029-2033	3.90
	<u>3.51 %</u>

- (3) Average of Column 6 and Column 7.

- (4) Excluded result for being 2 standard deviations away from the mean result.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2022
Kroll 2022 SBI® Yearbook
Bloomberg Professional Services

Duke Energy Ohio, Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the proxy group of fifty non-price regulated companies was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group were then selected based on the unadjusted beta range of 0.64 – 0.92 and residual standard error of the regression range of 2.5330 – 3.0210 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Utility Proxy Group's residual standard error of the regression is 0.1220. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1220 = \frac{2.7770}{\sqrt{518}} = \frac{2.7770}{22.7596}$$

Source of Information: Value Line, Inc., March 2022
Value Line Investment Survey (Standard Edition)

Duke Energy Ohio, Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

	[1]	[2]	[3]	[4]
Proxy Group of Thirteen Electric Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Alliant Energy Corporation	0.85	0.71	2.6953	0.0667
Ameren Corporation	0.80	0.69	2.5235	0.0624
American Electric Power Company, Inc.	0.75	0.58	2.6108	0.0646
Duke Energy Corporation	0.85	0.75	2.6859	0.0664
Edison International	0.95	0.91	3.2986	0.0816
Entergy Corporation	0.95	0.86	2.7525	0.0681
Eversource Energy	0.95	0.85	3.0574	0.0778
IDACORP, Inc.	0.90	0.82	3.0252	0.0748
NorthWestern Corporation	0.80	0.67	2.5897	0.0641
OGE Energy Corporation	0.95	0.89	2.7299	0.0675
Portland General Electric Company	1.05	1.03	2.6847	0.0664
Xcel Energy Inc.	0.85	0.77	2.7744	0.0686
	0.80	0.65	2.6727	0.0661
Average	0.88	0.78	2.7770	0.0689
Beta Range (+/- 2 std. Devs. of Beta)	0.64	0.92		
2 std. Devs. of Beta	0.14			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.5330	3.0210		
Std. dev. of the Res. Std. Err.	0.1220			
2 std. devs. of the Res. Std. Err.	0.2440			

Source of Information: Valueline Proprietary Database, March 2022

Duke Energy Ohio, Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Thirteen Electric Companies

	[1]	[2]	[3]	[4]
Proxy Group of Forty-Seven Non-Price Regulated Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Agilent Technologies	0.90	0.78	2.7005	0.0668
Abbott Labs.	0.90	0.82	2.8039	0.0694
Analog Devices	0.95	0.88	2.8212	0.0698
Assurant Inc.	0.90	0.84	2.7387	0.0677
Smith (A.O.)	0.85	0.77	2.8592	0.0707
Air Products & Chem.	0.90	0.79	2.6168	0.0647
Brown-Forman 'B'	0.90	0.80	2.7317	0.0676
Ball Corp.	0.95	0.91	2.8617	0.0708
Bristol-Myers Squibb	0.85	0.75	2.9154	0.0721
Broadridge Fin'l	0.85	0.73	2.7513	0.0681
Brady Corp.	1.00	0.92	2.7776	0.0687
CACI Int'l	0.90	0.84	2.8642	0.0709
Cerner Corp.	0.90	0.80	2.6984	0.0667
Chemed Corp.	0.85	0.70	2.8432	0.0703
CSW Industrials	0.90	0.80	2.8686	0.0710
Dolby Labs.	0.95	0.88	2.6074	0.0645
Exponent, Inc.	0.90	0.79	3.0005	0.0742
FactSet Research	0.95	0.92	2.7561	0.0682
GATX Corp.	0.95	0.88	2.9561	0.0731
Gentex Corp.	0.95	0.89	2.7619	0.0683
Alphabet Inc.	0.90	0.79	2.5405	0.0628
Ingredion Inc.	0.95	0.85	2.7688	0.0685
Hunt (J.B.)	0.95	0.91	2.8935	0.0716
J&J Snack Foods	0.95	0.86	3.0009	0.0742
Henry (Jack) & Assoc	0.85	0.70	2.9159	0.0721
McCormick & Co.	0.80	0.65	2.8247	0.0699
Monster Beverage	0.85	0.75	2.9659	0.0734
Motorola Solutions	0.90	0.79	2.6488	0.0655
Mettler-Toledo Int'l	0.95	0.91	2.8032	0.0693
Northrop Grumman	0.85	0.75	2.9830	0.0738
Old Dominion Freight	0.95	0.86	2.9874	0.0739
Pfizer, Inc.	0.80	0.65	2.6589	0.0658
Packaging Corp.	0.95	0.89	2.8411	0.0703
Post Holdings	0.95	0.87	2.8860	0.0714
RLI Corp.	0.80	0.65	2.8568	0.0707
Service Corp. Int'l	0.95	0.88	2.7221	0.0673
Sherwin-Williams	0.90	0.84	2.5345	0.0627
Selective Ins. Group	0.90	0.81	2.9172	0.0722
Sirius XM Holdings	0.95	0.85	2.9761	0.0736
Sensient Techn.	0.90	0.82	2.6687	0.0660
Thermo Fisher Sci.	0.85	0.70	2.6150	0.0647
Texas Instruments	0.85	0.76	2.6869	0.0665
AMERCO	0.95	0.90	2.7432	0.0679
UniFirst Corp.	0.95	0.90	2.7175	0.0672
VeriSign Inc.	0.90	0.79	2.6081	0.0645
Waters Corp.	0.95	0.88	2.8517	0.0705
Watsco, Inc.	0.85	0.74	2.6836	0.0664
Average	0.90	0.81	2.7922	0.0691
Proxy Group of Thirteen Electric Companies	0.88	0.78	2.7770	0.0689

Source of Information:

Valueline Proprietary Database, March 2022

Duke Energy Ohio, Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Forty-Seven Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Thirteen Electric Companies

<u>Principal Methods</u>	<u>Proxy Group of Forty-Seven Non- Price Regulated Companies</u>
Discounted Cash Flow Model (DCF) (1)	12.05 %
Risk Premium Model (RPM) (2)	13.07
Capital Asset Pricing Model (CAPM) (3)	<u>12.33</u>
Mean	<u><u>12.48</u></u> %
Median	<u><u>12.33</u></u> %
Average of Mean and Median	<u><u>12.41</u></u> %

Notes:

- (1) From page 36 of this Attachment.
- (2) From page 37 of this Attachment.
- (3) From page 40 of this Attachment.

Duke Energy Ohio, Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Thirteen Electric Companies

	[1]	[2]	[3]	[5]	[6]	[7]	[8]
Proxy Group of Forty- Seven Non-Price Regulated Companies	Average Dividend Yield	Value Line Projected Five Year Growth in EPS	Zack's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth Rate in EPS	Adjusted Dividend Yield	Indicated Common Equity Cost Rate (1)
Agilent Technologies	0.66 %	11.50 %	10.00 %	13.98 %	11.83 %	0.70 %	12.53 %
Abbott Labs.	1.61	8.00	7.80	11.53	9.11	1.68	10.79
Analog Devices	1.91	14.00	12.30	18.71	15.00	2.05	17.05
Assurant Inc.	1.50	15.50	17.20	17.20	16.63	1.62	18.25
Smith (A.O.)	1.77	11.50	9.00	8.00	9.50	1.85	11.35
Air Products & Chem.	2.71	12.00	13.10	12.13	12.41	2.88	15.29
Brown-Forman 'B'	1.14	12.00	NA	7.01	9.51	1.19	10.70
Ball Corp.	0.96	21.00	5.00	14.33	13.44	1.02	14.46
Bristol-Myers Squibb	2.90	NMF	6.20	4.43	5.32	2.98	8.30
Broadridge Fin'l	1.73	9.00	NA	11.80	10.40	1.82	12.22
Brady Corp.	1.98	9.00	7.00	7.00	7.67	2.06	9.73
CACI Int'l	-	7.00	4.10	2.40	4.50	-	NA
Cerner Corp.	1.15	9.50	12.80	13.30	11.87	1.22	13.09
Chemed Corp.	0.29	7.00	8.50	7.00	7.50	0.30	7.80
CSW Industrials	0.61	12.00	NA	12.00	12.00	0.65	12.65
Dolby Labs.	1.32	9.50	16.00	16.00	13.83	1.41	15.24
Exponent, Inc.	0.98	9.50	NA	15.00	12.25	1.04	13.29
FactSet Research	0.87	10.50	10.00	15.10	11.87	0.92	12.79
GATX Corp.	1.82	5.50	NA	12.00	8.75	1.90	10.65
Gentex Corp.	1.65	10.00	11.50	15.80	12.43	1.75	14.18
Alphabet Inc.	-	18.50	19.00	17.06	18.19	-	NA
Ingredion Inc.	2.94	8.00	NA	7.72	7.86	3.06	10.92
Hunt (J.B.)	0.88	11.50	15.00	22.97	16.49	0.95	17.44
J&J Snack Foods	1.75	8.50	NA	6.00	7.25	1.81	9.06
Henry (Jack) & Assoc	1.03	9.00	9.00	14.00	10.67	1.08	11.75
McCormick & Co.	1.50	6.00	6.10	6.95	6.35	1.55	7.90
Monster Beverage	-	11.50	15.70	14.58	13.93	-	NA
Motorola Solutions	1.41	8.00	9.00	14.27	10.42	1.48	11.90
Mettler-Toledo Int'l	-	12.50	19.10	17.80	16.47	-	NA
Northrop Grumman	1.53	7.50	6.10	6.10	6.57	1.58	8.15
Old Dominion Freight	0.43	10.50	17.30	25.56	17.79	0.47	18.26
Pfizer, Inc.	3.12	6.50	12.50	(0.80)	9.50	3.27	12.77
Packaging Corp.	3.20	9.00	5.00	9.71	7.90	3.33	11.23
Post Holdings	-	4.00	NA	(0.40)	4.00	-	NA
RLI Corp.	0.92	12.00	NA	9.80	10.90	0.97	11.87
Service Corp. Int'l	1.50	1.00	8.70	7.94	5.88	1.54	7.42
Sherwin-Williams	0.93	11.50	13.20	14.86	13.19	0.99	14.18
Selective Ins. Group	1.34	11.00	3.00	13.40	9.13	1.40	10.53
Sirius XM Holdings	1.39	32.50	9.70	9.75	17.32	1.51	NMF
Sensient Techn.	1.98	2.50	NA	3.80	3.15	2.01	NMF
Thermo Fisher Sci.	0.21	10.00	13.00	8.70	10.57	0.22	10.79
Texas Instruments	2.64	8.50	9.30	10.00	9.27	2.76	12.03
AMERCO	-	11.50	NA	15.00	13.25	-	NA
UniFirst Corp.	0.70	5.50	NA	10.00	7.75	0.73	8.48
VeriSign Inc.	-	11.00	NA	8.00	9.50	-	NA
Waters Corp.	-	6.00	9.00	11.30	8.77	-	NA
Watsco, Inc.	3.14	11.00	NA	15.00	13.00	3.34	16.34
Mean							12.20 %
Median							11.90 %
Average of Mean and Median							12.05 %

NA= Not Available
NMF= Not Meaningful Figure

- (1) The application of the DCF model to the domestic, non-price regulated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of May 31, 2022. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information: Value Line Investment Survey
www.zacks.com Downloaded on 05/31/2022
www.yahoo.com Downloaded on 05/31/2022

Duke Energy Ohio, Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

<u>Line No.</u>		<u>Proxy Group of Forty- Seven Non-Price Regulated Companies</u>
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	5.64 %
2.	Adjustment to Reflect Bond rating Difference of Non-Price Regulated Companies (2)	<u>(0.15)</u>
3.	Adjusted Prospective Bond Yield	5.49
4.	Equity Risk Premium (3)	<u>7.58</u>
5.	Risk Premium Derived Common Equity Cost Rate	<u><u>13.07 %</u></u>

Notes: (1) Average forecast of Baa corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated June 1, 2022 (see pages 26-27 of this Attachment). The estimates are detailed below.

Second Quarter 2022	5.00 %
Third Quarter 2022	5.40
Fourth Quarter 2022	5.60
First Quarter 2023	5.70
Second Quarter 2023	5.80
Third Quarter 2023	5.80
2024-2028	5.90
2029-2033	<u>5.90</u>
Average	<u><u>5.64 %</u></u>

(2) The average yield spread of Baa2 rated corporate bonds over A2 corporate bonds for the three months ending May 2022 . To reflect the Baa1 average rating of the non-utility proxy group, the prospective yield on Baa2 corporate bonds must be adjusted by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield		Spread
May-22	4.65 %	5.12	%	0.47 %
Apr-22	4.21	4.64		0.43
Mar-22	3.88	4.29		<u>0.41</u>
	Average yield spread			<u>0.44</u>
	1/3 of spread			<u><u>0.15</u></u>

(3) From page 39 of this Attachment.

Duke Energy Ohio, Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Forty-Seven Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Thirteen Electric Companies

	Moody's Long-Term Issuer Rating May 2022		Standard & Poor's Long-Term Issuer Rating May 2022	
Proxy Group of Forty-Seven Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Agilent Technologies	Baa2	9.0	BBB+	8.0
Abbott Labs.	A1	5.0	AA-	4.0
Analog Devices	A3	7.0	A-	7.0
Assurant Inc.	Baa3	10.0	BBB	9.0
Smith (A.O.)	NA	--	NA	--
Air Products & Chem.	A2	6.0	A	6.0
Brown-Forman 'B'	A1	5.0	A-	7.0
Ball Corp.	Ba1	11.0	BB+	11.0
Bristol-Myers Squibb	A2	6.0	A+	5.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp.	NA	--	NA	--
CACI Int'l	NA	--	BB+	11.0
Cerner Corp.	NA	--	NA	--
Chemed Corp.	WR	--	NR	--
CSW Industrials	NA	--	NA	--
Dolby Labs.	NA	--	NA	--
Exponent, Inc.	NA	--	NA	--
FactSet Research	Baa3	10.0	NA	--
GATX Corp.	Baa2	9.0	BBB	9.0
Gentex Corp.	NA	--	NA	--
Alphabet Inc.	Aa2	3.0	AA+	2.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
Henry (Jack) & Assoc	NA	--	NA	--
McCormick & Co.	Baa2	9.0	BBB	9.0
Monster Beverage	NA	--	NA	--
Motorola Solutions	Baa3	10.0	BBB-	10.0
Mettler-Toledo Int'l	WR	--	NR	--
Northrop Grumman	Baa1	8.0	BBB+	8.0
Old Dominion Freight	NA	--	NA	--
Pfizer, Inc.	A2	6.0	A+	5.0
Packaging Corp.	Baa2	9.0	BBB	9.0
Post Holdings	B2	15.0	B+	14.0
RLI Corp.	Baa2	9.0	BBB	9.0
Service Corp. Int'l	Ba3	13.0	BB+	11.0
Sherwin-Williams	Baa2	9.0	BBB	9.0
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NA	--	BB	12.0
Sensient Techn.	WR	--	NR	--
Thermo Fisher Sci.	A3	7.0	BBB+	8.0
Texas Instruments	Aa3	4.0	A+	5.0
AMERCO	WR	--	NR	--
UniFirst Corp.	NA	--	NA	--
VeriSign Inc.	Baa3	10.0	BBB	9.0
Waters Corp.	NA	--	NA	--
Watsco, Inc.	NA	--	NA	--
Average	Baa1	8.3	BBB+	8.3

Notes:

(1) From page 22 of this Attachment.

Source of Information:

Bloomberg Professional Services

Duke Energy Ohio, Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Forty-Seven Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Thirteen Electric Companies

<u>Line No.</u>	<u>Equity Risk Premium Measure</u>	<u>Proxy Group of Forty-Seven Non- Price Regulated Companies</u>
<u>Ibbotson-Based Equity Risk Premiums:</u>		
1.	Ibbotson Equity Risk Premium (1)	6.13 %
2.	Regression on Ibbotson Risk Premium Data (2)	7.67
3.	Ibbotson Equity Risk Premium based on PRPM (3)	8.79
4.	Equity Risk Premium Based on <u>Value Line</u> Summary and Index (4)	9.37
5	Equity Risk Premium Based on <u>Value Line</u> S&P 500 Companies (5)	11.56
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	<u>7.62</u>
7.	Conclusion of Equity Risk Premium	8.52 %
8.	Adjusted Beta (7)	<u>0.89</u>
9.	Forecasted Equity Risk Premium	<u><u>7.58 %</u></u>

Notes:

- (1) From note 1 of page 25 of this Attachment.
- (2) From note 2 of page 25 of this Attachment.
- (3) From note 3 of page 25 of this Attachment.
- (4) From note 4 of page 25 of this Attachment.
- (5) From note 5 of page 25 of this Attachment.
- (6) From note 5 of page 25 of this Attachment.
- (7) Average of mean and median beta from page 41 of this Attachment.

Sources of Information:

Kroll 2022 SBBI® Yearbook
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2022
Bloomberg Professional Services

Duke Energy Ohio, Inc.

Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Thirteen Electric Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty- Seven Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Agilent Technologies	0.90	0.99	0.95	9.76 %	3.51 %	12.78 %	12.90 %	12.84 %
Abbott Labs.	0.90	0.76	0.83	9.76	3.51	11.61	12.02	11.82
Analog Devices	0.95	1.03	0.99	9.76	3.51	13.17	13.20	13.18
Assurant Inc.	0.90	0.73	0.82	9.76	3.51	11.51	11.95	11.73
Smith (A.O.)	0.85	1.00	0.93	9.76	3.51	12.59	12.76	12.67
Air Products & Chem.	0.90	0.84	0.87	9.76	3.51	12.00	12.32	12.16
Brown-Forman 'B'	0.90	0.87	0.89	9.76	3.51	12.20	12.46	12.33
Ball Corp.	0.95	0.94	0.94	9.76	3.51	12.68	12.83	12.76
Bristol-Myers Squibb	0.85	0.61	NMF (4)	9.76	3.51	NA (4)	NA (4)	NMF (4)
Broadridge Fin'l	0.85	0.87	0.86	9.76	3.51	11.90	12.24	12.07
Brady Corp.	1.00	1.10	NMF	9.76	3.51	NA	NA	NMF
CACI Int'l	0.90	0.73	0.82	9.76	3.51	11.51	11.95	11.73
Cerner Corp.	0.90	0.62	0.76	9.76	3.51	10.93	11.51	11.22
Chemed Corp.	0.85	0.82	0.83	9.76	3.51	11.61	12.02	11.82
CSW Industrials	0.90	0.90	0.90	9.76	3.51	12.29	12.54	12.41
Dolby Labs.	0.95	0.75	0.85	9.76	3.51	11.80	12.17	11.99
Exponent, Inc.	0.90	1.07	0.98	9.76	3.51	13.07	13.12	13.10
FactSet Research	0.95	0.87	0.91	9.76	3.51	12.39	12.61	12.50
GATX Corp.	0.95	0.93	0.94	9.76	3.51	12.68	12.83	12.76
Gentex Corp.	0.95	0.97	0.96	9.76	3.51	12.88	12.98	12.93
Alphabet Inc.	0.90	1.12	1.01	9.76	3.51	13.37	13.34	13.35
Ingredion Inc.	0.95	0.71	0.83	9.76	3.51	11.61	12.02	11.82
Hunt (J.B.)	0.95	0.94	0.95	9.76	3.51	12.78	12.90	12.84
J&J Snack Foods	0.95	0.71	0.83	9.76	3.51	11.61	12.02	11.82
Henry (Jack) & Assoc	0.85	0.74	0.79	9.76	3.51	11.22	11.73	11.48
McCormick & Co.	0.80	0.65	0.73	9.76	3.51	10.63	11.29	10.96
Monster Beverage	0.85	0.92	0.89	9.76	3.51	12.20	12.46	12.33
Motorola Solutions	0.90	0.95	0.93	9.76	3.51	12.59	12.76	12.67
Mettler-Toledo Int'l	0.95	1.15	NMF (4)	9.76	3.51	NA (4)	NA (4)	NMF (4)
Northrop Grumman	0.85	0.67	0.76	9.76	3.51	10.93	11.51	11.22
Old Dominion Freight	0.95	1.10	1.03	9.76	3.51	13.56	13.49	13.52
Pfizer, Inc.	0.80	0.67	NMF (4)	9.76	3.51	NA (4)	NA (4)	NMF (4)
Packaging Corp.	0.95	0.78	0.86	9.76	3.51	11.90	12.24	12.07
Post Holdings	0.95	0.84	0.89	9.76	3.51	12.20	12.46	12.33
RLI Corp.	0.80	0.85	0.83	9.76	3.51	11.61	12.02	11.82
Service Corp. Int'l	0.95	0.87	0.91	9.76	3.51	12.39	12.61	12.50
Sherwin-Williams	0.90	0.86	0.88	9.76	3.51	12.10	12.39	12.24
Selective Ins. Group	0.90	0.98	0.94	9.76	3.51	12.68	12.83	12.76
Sirius XM Holdings	0.95	0.80	0.87	9.76	3.51	12.00	12.32	12.16
Sensient Techn.	0.90	0.95	0.92	9.76	3.51	12.49	12.68	12.59
Thermo Fisher Sci.	0.85	0.86	0.86	9.76	3.51	11.90	12.24	12.07
Texas Instruments	0.85	0.93	0.89	9.76	3.51	12.20	12.46	12.33
AMERCO	0.95	0.92	0.94	9.76	3.51	12.68	12.83	12.76
UniFirst Corp.	0.95	0.88	0.91	9.76	3.51	12.39	12.61	12.50
VeriSign Inc.	0.90	0.91	0.90	9.76	3.51	12.29	12.54	12.41
Waters Corp.	0.95	0.93	0.94	9.76	3.51	12.68	12.83	12.76
Watsco, Inc.	0.85	0.91	0.88	9.76	3.51	12.10	12.39	12.24
Mean			0.89			12.18 %	12.45 %	12.32 %
Median			0.89			12.20 %	12.46 %	12.33 %
Average of Mean and Median			0.89			12.19 %	12.46 %	12.33 %

Notes:

- (1) From note 1 of page 31 of this Attachment.
- (2) From note 2 of page 31 of this Attachment.
- (3) Average of CAPM and ECAPM cost rates.
- (4) Excluded result for being 2 standard deviations away from the mean result.

Duke Energy Ohio, Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

	[1]	[2]	[3]	[4]
Line No.	Market Capitalization on May 31, 2022 (1) (millions)	Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)
1.	Duke Energy Ohio, Inc.	5	0.89%	
2.	Proxy Group of Thirteen Electric Companies	2	0.43%	0.46%
		[A]	[C]	[D]

Notes:

- (1) From page 42 of this Attachment.
- (2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].
- (3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.
- (4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0.46% in Column [4], Line No. 2 is derived as follows 0.46% = 0.89% - 0.43%.

Duke Energy Ohio, Inc.
Market Capitalization of Duke Energy Ohio, Inc. and the
Proxy Group of Thirteen Electric Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2021 (millions)	[2] Book Value per Share at Fiscal Year End 2021 (1)	[3] Total Common Equity at Fiscal Year End 2021 (millions)	[4] Closing Stock Market Price on May 31, 2022	[5] Market-to- Book Ratio on May 31, 2022 (2)	[6] Market Capitalization on May 31, 2022 (3) (millions)
Duke Energy Ohio, Inc.		NA	NA	1,768,291 (4)	NA		
Based upon Proxy Group of Thirteen Electric Companies						205.3 (5)	\$ 3,630,302 (6)
Proxy Group of Thirteen Electric Companies							
Alliant Energy Corporation	NASDAQ	250,475	\$ 23.915	\$ 5,990,000	\$ 63.820	266.9 %	\$ 15,985,284
Ameren Corporation	NYSE	257,700	37.641	9,700,000	95.190	252.9	24,530,463
American Electric Power Company, Inc.	NASDAQ	504,212	44.492	22,433,200	102.030	229.3	51,444,752
Duke Energy Corporation	NYSE	769,000	61.553	47,334,000	112.520	182.8	86,527,880
Edison International	NYSE	380,378	36.572	13,911,000	69.910	191.2	26,592,236
Entergy Corporation	NYSE	202,653	57.425	11,637,284	120.320	209.5	24,383,231
Evergy, Inc.	NYSE	229,300	40.316	9,244,400	69.940	173.5	16,037,235
IDACORP, Inc.	NYSE	50,516	52.823	2,668,436	109.020	206.4	5,507,307
NorthWestern Corporation	NASDAQ	57,606	40.616	2,339,713	61.270	150.9	3,529,535
OGE Energy Corporation	NYSE	200,500	20.231	4,056,300	41.300	204.1	8,280,650
Portland General Electric Company	NYSE	89,411	30.276	2,707,000	49.250	162.7	4,403,473
Xcel Energy Inc.	NASDAQ	544,025	28.697	15,612,000	75.340	262.5	40,986,864
Median		239,887	\$ 38.979	\$ 9,472,200	\$ 72.640	205.3 %	\$ 20,210,233

NA= Not Available

- Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Company provided.
(5) The market-to-book ratio of Duke Energy Ohio, Inc. on May 31, 2022 is assumed to be equal to the market-to-book ratio of Proxy Group of Thirteen Electric Companies on May 31, 2022 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2021 Annual Forms 10K
yahoo.finance.com
Bloomberg Professional

Duke Energy Ohio, Inc.
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances since 2010

	[Column 1]	[Column 2]	[Column 3]	[Column 4]	[Column 5]	[Column 6]	[Column 7]	[Column 8]	[Column 9]	[Column 10]
Date of Offering	Transaction (1)	Shares Issued	Market Price per Share	Average Offering Price per Share	Market Pressure (2)	Total Offering Expense per Share	Net Proceeds per Share (3)	Gross Equity Issue before Costs (4)	Total Flotation Costs (6)	Flotation Cost Percentage (7)
11/18/19	Equity Offering	28,750,000	\$ 88.65	\$ 85.99	\$ 2.66	\$ 0.021	\$ 85.9694	\$ 2,548,687,500	\$ 77,067,000	3.02%
03/06/18	Equity Offering	21,275,000	\$ 75.86	\$ 74.07	\$ 1.79	\$ 0.021	\$ 74.0508	\$ 1,613,921,500	\$ 38,489,700	2.38%
03/01/16	Equity Offering	10,637,500	\$ 73.35	\$ 69.84	\$ 3.51	\$ 0.038	\$ 69.8024	\$ 780,260,625	\$ 37,737,625	4.84%
								<u>\$ 4,942,869,625</u>	<u>\$ 153,294,325</u>	<u>3.10%</u>

Flotation Cost Adjustment

	Average Dividend Yield	Average Projected EPS Growth Rate	Adjusted Dividend Yield	Average DCF Cost Rate Unadjusted for Flotation (8)	DCF Cost Rate Adjusted for Flotation (9)	Flotation Cost Adjustment (10)
Proxy Group of Fourteen Electric Companies	<u>3.30 %</u>	<u>5.23 %</u>	<u>3.39 %</u>	<u>8.62 %</u>	<u>8.73 %</u>	<u>0.11 %</u>

See page 44 of this Attachment for notes.

Source of Information: Company SEC filings

Duke Energy Ohio, Inc.
Notes to Accompany the
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

- (1) Company SEC Filings.
- (2) Column 2 – Column 3.
- (3) Column 1 * Column 2.
- (4) Column1 * Column 4.
- (5) Column 1 * Column 3.
- (6) Column 5 – Column 6
- (7) (Column 5 – Column 6) divided by Column 5.
- (8) Using the average growth rate from page 3 of this Attachment.
- (9) Adjustment for flotation costs based on adjusting the average DCF constant growth cost rate in accordance with the following:

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

where g is the growth factor and F is the percentage of flotation costs.

- (10) Flotation cost adjustment of 0.11% equals the difference between the flotation adjusted average DCF cost rate of 8.73% and the unadjusted average DCF cost rate of 8.62% of the Utility Proxy Group.

Source of Information:

Company SEC Filings.

Duke Energy Ohio, Inc.
Summary of Staff CE Review

<u>Proxy Group</u>	<u>Average Result</u>	<u>Conservative Average Result</u>
Non-Utility Specific Group (1)	17.58 %	15.16 %
Utility Group (2)	<u>10.20</u>	<u>9.48</u>
Average	<u>13.89 %</u>	<u>12.32 %</u>

Notes:

(1) From page 3 of this Attachment.

(2) From page 5 of this Attachment.

Duke Energy Ohio, Inc.
Staff CE Review - Recreated

Non-Utility Specific Group - Generated by Value Line based on the approximately 1,700+ stocks covered in the Value Line Investment Survey screened by Safety Rank, Financial Strength Rating and a Beta range of 0.65 to 1.35

Company Name	Ticker	Safety™ Ranking	Financial Strength Rating	Beta	% Return On Shareholders Equity
Agilent Technologies	A	2	A	0.90	24.7
AmerisourceBergen Corp	ABC	2	A	0.90	nmf
AFLAC Inc	AFL	2	A	1.25	12.1
Assurant Inc	AIZ	2	A	0.90	11.2
Akamai Technologies Inc	AKAM	2	A	0.65	14.4
Allele Inc	ALE	2	A	0.90	7.0
AMETEK Inc.	AME	2	A	1.15	14.4
American Tower Corporation	AMT	2	A	0.80	50.5
Ali. Couche-Tard	ATD.TO	2	A	0.75	22.2
Avnet Inc	AVT	2	A	1.10	6.6
American States Water Co	AWR	2	A	0.65	13.8
Bio Rad Laboratories Inc	BIO	2	A	0.80	3.5
Bank of New York Mellon Corporation	BK	2	A	1.10	8.8
Black Hills Corp	BKH	2	A	0.95	8.5
Cboe Global Markets	CBOE	2	A	0.85	14.6
Community Bank System Inc	CBU	2	A	0.95	9.0
Crown Castle International Corporation	CCI	2	A	0.80	14.0
City Holding Co	CHCO	2	A	0.85	12.9
Chemed Corporation	CHE	2	A	0.80	49.5
CH Robinson Worldwide Inc	CHRW	2	A	0.70	41.8
Cooper Companies Inc	COO	2	A	1.00	9.5
Canadian Pacific Railway Inc	CP	2	A	0.95	8.4
Chesapeake Utilities	CPK	2	A	0.75	10.8
Copart Inc	CPRT	2	A	1.05	25.2
CorVel Corp	CRVL	2	A	0.75	21.0
Carlisle Companies Inc	CSL	2	A	1.10	14.8
Cintas Corp	CTAS	2	A	1.15	29.4
CVB Financial Corp	CVBF	2	A	0.90	10.2
Donaldson Co	DCI	2	A	1.10	25.2
Walt Disney Co	DIS	2	A	1.00	2.3
Dolby Laboratories Inc	DLB	2	A	0.95	11.9
Descartes Systems Group Inc	DSGX	2	A	0.90	8.6
DTE Energy Company	DTE	2	A	0.95	9.1
Duke Energy Corp New	DUK	2	A	0.85	7.9
Estee Lauder Companies Inc	EL	2	A	1.05	39.4
Erie Indemnity Company	ERIE	2	A	0.65	24.7
Elbit Systems Ltd	ESLT	2	A	0.80	14.4
FTI Consulting Inc	FCN	2	A	0.70	15.1
Franklin Electric Co Inc	FELE	2	A	0.90	16.3
First Financial Bankshares Inc	FFIN	2	A	0.95	12.9
F5 Inc.	FFIV	2	A	0.95	14.0
FUJIFILM Holdings Corporation	FUJII	2	A	0.75	8.2
Glacier Bancorp Inc	GBCI	2	A	1.05	9.0
Graco Inc	GGG	2	A	1.05	25.7
Corning Inc	GLW	2	A	1.15	15.5
Hawaiian Electric Industries Inc	HE	2	A	0.80	10.2
Hartford Financial Services Group Inc	HIG	2	A	1.15	12.3
Houlihan Lokey	HLI	2	A	0.70	22.6
Heartland Express Inc	HTLD	2	A	0.70	11.0
Hubbell Inc.	HUBB	2	A	1.20	20.5
ICON plc	ICLR	2	A	0.95	18.8
Jacobs Engineering Group Inc	J	2	A	1.10	13.8
Jazz Pharmac. plc	JAZZ	2	A	0.90	19.2
Johnson Contrls. Int'l plc	JCI	2	A	1.10	10.9

Duke Energy Ohio, Inc.
Staff CE Review - Recreated

Non-Utility Specific Group - Generated by Value Line based on the approximately 1,700+ stocks covered in the Value Line Investment Survey screened by Safety Rank, Financial Strength Rating and a Beta range of 0.65 to 1.35

Company Name	Ticker	Safety™ Ranking	Financial Strength Rating	Beta	% Return On Shareholders Equity
Juniper Networks Inc	JNPR	2	A	1.00	13.3
Keysight Technologies	KEYS	2	A	0.85	30.8
Lancaster Colony Corporation	LANC	2	A	0.65	16.9
Lincoln Electric Holdings Inc	LECO	2	A	1.05	30.5
Laboratory Corp	LH	2	A	1.05	25.1
Linde plc	LIN	2	A	0.95	12.7
Alliant Energy Corp	LNT	2	A	0.80	11.3
Landstar System Inc	LSTR	2	A	0.80	44.3
Mid-America Apt.	MAA	2	A	1.00	8.9
Markel Corp	MKL	2	A	1.15	6.4
MSA Safety	MSA	2	A	1.00	22.1
National Bank of Canada	NA.TO	2	A	1.05	16.9
NICE Ltd. ADR	NICE	2	A	0.75	15.5
Realty Income Corporation	O	2	A	1.05	1.4
OGE Energy Corp	OGE	2	A	1.00	11.6
Otter Tail Corp	OTTR	2	A	0.85	17.8
Paychex Inc	PAYX	2	A	1.10	37.2
Prosperity Bancshares Inc	PB	2	A	1.05	8.1
PACCAR Inc	PCAR	2	A	1.10	27.7
Packaging Corp	PKG	2	A	0.95	24.8
Pinnacle West Capital Corp	PNW	2	A	0.90	10.5
Pool Corporation	POOL	2	A	0.85	60.7
Everest Re Group Ltd	RE	2	A	1.00	13.6
RLI Corp	RLI	2	A	0.80	10.4
Rockwell Automation Inc	ROK	2	A	1.10	46.3
Rollins Inc	ROL	2	A	0.80	32.4
SAP AE	SAP	2	A	0.95	13.5
SEI Investments Company	SEIC	2	A	1.20	29.4
ServisFirst Bancshares Inc	SFBS	2	A	1.00	18.0
Siemens AG	SIEGY	2	A	1.05	11.5
Southern Co	SO	2	A	0.90	13.0
Sonoco Products	SON	2	A	0.95	19.4
Sempra Energy	SRE	2	A	0.95	5.1
STERIS plc	STE	2	A	1.05	13.7
Bio-Techne Corp.	TECH	2	A	0.90	9.0
TE Connectivity Ltd	TEL	2	A	1.15	20.4
Target Corp	TGT	2	A	0.70	52.1
Hanover Insurance Group Inc	THG	2	A	0.95	11.1
Toromont Inds.	TIH.TO	2	A	0.75	17.0
UniFirst Corp	UNF	2	A	0.95	8.1
US Bancorp	USB	2	A	1.20	9.3
Valmont Industries	VMI	2	A	1.05	16.9
Westamerica Bancorporation	WABC	2	A	0.85	10.5
WR Berkley Corp	WRB	2	A	1.05	7.1
West Pharmaceutical Services Inc	WST	2	A	0.85	28.3
Alleghany Corp	Y	2	A	1.15	1.2

Average 17.58

Average - within 2 Standard Deviations 15.16

Duke Energy Ohio, Inc.
Staff CE Review - Recreated

Utility Group - Value Line Screener based on Industry Groups consisting of: Electric Utility (East, Central, West), Natural Gas Utility, Water Utility, and Telecom. Utility

Company Name	Ticker	Industry	% Return On Shareholders Equity
Adams Resources and Energy Inc	AE	Natural Gas Utility	7.4
Ameren Corp	AEE	Electric Util. (Central)	10.1
American Electric Power Company Inc	AEP	Electric Util. (Central)	11.1
AVANGRID Inc.	AGR	Electric Utility (East)	3.7
Allete Inc	ALE	Electric Util. (Central)	7.0
Artesian Resources Corporation	ARTNA	Water Utility	9.5
Atmos Energy Corp	ATO	Natural Gas Utility	8.4
Avista Corp	AVA	Electric Utility (West)	6.8
American Water Works	AWK	Water Utility	17.3
American States Water Co	AWR	Water Utility	13.8
BCE Inc	BCE	Telecom. Utility	13.7
Black Hills Corp	BKH	Electric Utility (West)	8.5
CMS Energy Corp	CMS	Electric Util. (Central)	11.3
Corning Natural Gas Holding Corporation	CNIG	Natural Gas Utility	3.8
CenterPoint Energy Inc	CNP	Electric Util. (Central)	7.1
Consolidated Communications Holdings Inc	CNSL	Telecom. Utility	9.7
Chesapeake Utilities	CPK	Natural Gas Utility	10.8
Consolidated Water	CWCO	Water Utility	5.4
California Water Service Group	CWT	Water Utility	8.6
Dominion Energy	D	Electric Utility (East)	9.4
DTE Energy Company	DTE	Electric Util. (Central)	9.1
Deutsche Telekom AG	DTEGY	Telecom. Utility	9.8
Duke Energy Corp New	DUK	Electric Utility (East)	7.9
Consolidated Edison Inc	ED	Electric Utility (East)	8.3
Edison International	EIX	Electric Utility (West)	5.2
Eversource Energy	ES	Electric Utility (East)	8.3
Entergy Corp	ETR	Electric Util. (Central)	11.6
Evergy Inc.	EVERG	Electric Util. (Central)	9.5
Exelon Corp	EXC	Electric Utility (East)	5.0
FirstEnergy Corp	FE	Electric Utility (East)	16.9
Fortis Inc	FTS.TO	Electric Util. (Central)	6.7
Global Water Resources Inc	GWRS	Water Utility	12.0
Hawaiian Electric Industries Inc	HE	Electric Utility (West)	10.2
IDACORP Inc	IDA	Electric Utility (West)	9.2
Alliant Energy Corp	LNT	Electric Util. (Central)	11.3
Lumen Technologies	LUMN	Telecom. Utility	17.2
MGE Energy Inc	MGEE	Electric Util. (Central)	10.3
Middlesex Water Co	MSEX	Water Utility	9.9
NextEra Energy Inc	NEE	Electric Utility (East)	9.6
Nisource Inc	NI	Natural Gas Utility	9.0
New Jersey Resources Corp	NJR	Natural Gas Utility	12.7
Nuvera Communications Inc.	NUVR	Telecom. Utility	11.2
NorthWestern Corporation	NWE	Electric Utility (West)	8.0

Duke Energy Ohio, Inc.
Staff CE Review - Recreated

Utility Group - Value Line Screener based on Industry Groups consisting of: Electric Utility (East, Central, West), Natural Gas Utility, Water Utility, and Telecom. Utility

Company Name	Ticker	Industry	% Return On Shareholders Equity
Northwest Natural	NWN	Natural Gas Utility	8.4
OGE Energy Corp	OGE	Electric Util. (Central)	11.6
ONE Gas Inc.	OGS	Natural Gas Utility	8.8
Otter Tail Corp	OTTR	Electric Util. (Central)	17.8
Public Service Enterprise Group Inc	PEG	Electric Utility (East)	8.9
PNM Resources Inc	PNM	Electric Utility (West)	9.0
Pinnacle West Capital Corp	PNW	Electric Utility (West)	10.5
Portland General Electric Company	POR	Electric Utility (West)	9.0
PPL Corporation	PPL	Electric Utility (East)	2.9
RGC Resources Inc	RGCO	Natural Gas Utility	10.1
Star Group L.P.	SGU	Natural Gas Utility	31.5
South Jersey Industries Inc	SJI	Natural Gas Utility	9.0
SJW Group	SJW	Water Utility	5.8
Southern Co	SO	Electric Utility (East)	13.0
Spire Inc.	SR	Natural Gas Utility	10.2
Sempra Energy	SRE	Electric Utility (West)	5.1
Southwest Gas	SWX	Natural Gas Utility	6.8
Telefonica SA	TEF	Telecom. Utility	36.6
UGI Corp	UGI	Natural Gas Utility	11.4
Unitil Corp	UTL	Electric Utility (East)	8.0
Vidler Water Resources Inc	VWTR	Water Utility	5.6
WEC Energy Group	WEC	Electric Util. (Central)	11.9
Essential Utilities	WTRG	Water Utility	8.3
Xcel Energy Inc	XEL	Electric Utility (West)	10.2
York Water Company	YORW	Water Utility	11.1

Average: 10.20

Average - within 2 Standard Deviations 9.48

Duke Energy Ohio, Inc.
Notes to Accompany the Application of the CAPM and ECAPM for Staff's Analysis

Notes:

- (1) The market risk premium (MRP) is derived by using three different measures from two sources: Ibbotson and Value Line as illustrated below:

	Data as of 12/31/2021	Data as of 4/29/2022
<u>Historical Data MRP Estimates:</u>		
Measure 1: Ibbotson Arithmetic Mean MRP		
Arithmetic Mean Monthly Returns for Large Stocks 1926-2020 (12/31/2021) and 1926-2021 (4/29/2022):	12.20 %	12.37 %
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	5.02
MRP based on Ibbotson Historical Data:	<u>7.15 %</u>	<u>7.35 %</u>
<u>Value Line MRP Estimates:</u>		
Measure 2: Value Line Projected MRP (Fifty-two weeks ending 12/31/ 2021 and 4/29/2022)		
Total projected return on the market 3-5 years hence*:	8.99 %	10.26
Projected Risk-Free Rate (see note 2):	2.74	3.35
MRP based on Value Line Summary & Index:	<u>6.25 %</u>	<u>6.91 %</u>
*Forecasted 3-5 year capital appreciation plus expected dividend yield		
Measure 3: Value Line Projected Return on the Market based on the S&P 500		
Total return on the Market based on the S&P 500:	16.33 %	15.48 %
Projected Risk-Free Rate (see note 2):	2.74	3.35
MRP based on Value Line data	<u>13.59 %</u>	<u>12.13 %</u>
Average of Value Line and Ibbotson MRP:		
	<u>9.00 %</u>	<u>8.80 %</u>

- (2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 2-4 of this Attachment.) The projection of the risk-free rate is illustrated below:

As of 12/31/2021:		As of 4/29/2022:	
First Quarter 2022	2.10 %	Second Quarter 2022	2.90 %
Second Quarter 2022	2.20	Third Quarter 2022	3.10
Third Quarter 2022	2.40	Fourth Quarter 2022	3.20
Fourth Quarter 2022	2.50	First Quarter 2023	3.40
First Quarter 2023	2.70	Second Quarter 2023	3.50
Second Quarter 2023	2.80	Third Quarter 2023	3.50
2023-2027	3.40	2023-2027	3.40
2028-2032	3.80	2028-2032	3.80
	<u>2.74 %</u>		<u>3.35 %</u>

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2021, January 1, 2022, and May 1, 2022.
Stocks, Bonds, Bills, and Inflation - 2021 SBBi Yearbook, John Wiley & Sons, Inc.
Kroll 2022 SBBi® Yearbook

**DUKE ENERGY OHIO, INC.
CASE NO. 21-887-EL-AIR
COMPARABLE PEER GROUP
CORRECTED**

	As of 12/31/2021	As of 4/29/2022
Comparable Peer Group	Value Line Beta	Value Line Beta
AEP	0.75	0.75
CMS	0.80	0.80
D	0.85	0.85
DTE	0.95	0.95
DUK	0.85	0.85
EXC	0.95	0.95
LNT	0.85	0.85
PEG	0.90	0.90
SO	0.95	0.95
SRE	1.00	0.95
WEC	0.80	0.80
XEL	0.80	0.80
Average Betas:	0.87	0.87

[1]	ERP ¹ =	9.00%	8.80%
[2]	R _f ² =	2.74%	3.35%
[3]	β =	0.87	0.87
	CAPM³ =	10.57%	10.97%
	ECAPM⁴ =	10.86%	11.27%
	AVERAGE	10.71%	11.12%

Notes:

¹ See Attachment DWD-Supp-4, note 1

² See Attachment DWD-Supp-4, note 2

³ CAPM = [2] + ([3] * [1])

⁴ ECAPM = [2] + (0.25 * [1]) + (0.75 * ([3] * [1]))

Duke Energy Ohio, Inc.
Comparison of Market Capitalization between
the Company and the Staff Proxy Group

Duke Energy Ohio, Inc. Book Equity (1)	\$ 1,768
Staff Proxy Group Market-to-Book Ratio	2.55
Duke Energy Ohio Assumed Market Capitalization	\$ 4,511 Decile 5

<u>Staff Proxy Group Companies</u>	Market-to-Book Ratio (4/29/2022)	Market Capitalization (4/29/2022)
American Electric Power Company	2.13	\$ 50,897
CMS Energy Corporation	3.01	19,929
Dominion Energy	2.57	66,183
DTE Energy Company	2.86	25,388
Duke Energy Corporation	1.79	84,812
Exelon Corporation	1.95	45,851
Alliant Energy Corporation	2.43	14,750
Public Service Enterprise Group	2.57	34,975
Southern Company	2.02	50,953
Sempra Energy	2.76	78,030
WEC Energy Group	2.81	31,559
Xcel Energy, Inc.	2.54	39,901
Median	2.55	\$ 42,876 Decile 1

Indicated Risk Premium (2) 1.11%
Times Greater than the Company 9.5

	Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*
Largest	1	\$ 36,160.584	\$ 2,324,390.219	-0.22%
	2	16,759.390	36,099.221	0.43%
	3	8,216.356	16,738.364	0.55%
	4	5,019.883	8,212.638	0.54%
	5	3,281.009	5,003.747	0.89%
	6	2,170.315	3,276.553	1.18%
	7	1,306.402	2,164.524	1.34%
	8	629.118	1,306.038	1.21%
	9	290.002	627.803	2.10%
Smallest	10	10.588	289.007	4.80%

*From 2022 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From Attachment DWD-7, page 2.

(2) Decile 5 risk premium less Decile 1 risk premium. 1.11% = 0.89% - (0.22%).

Sources of Information:

2022 Duff & Phelps Cost of Capital Navigator

Bloomberg Professional Services

Duke Energy Ohio, Inc.
Comparison of Long-Term Issuer Ratings for
Staff's Proxy Group of Twelve Electric Companies

	Moody's		Standard & Poor's	
	Long-Term Issuer Rating		Long-Term Issuer Rating	
	May 2022		May 2022	
Staff's Proxy Group of Twelve Electric Companies	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
American Electric Power Company	Baa1	8.0	A-	7.0
CMS Energy Corporation	Baa1	8.0	A-	7.0
Dominion Energy	A3	7.0	BBB+	8.0
DTE Energy Company	A2/A3	6.5	A-	7.0
Duke Energy Corporation	A3	7.0	BBB+	8.0
Exelon Corporation	A3	7.0	A-	7.0
Alliant Energy Corporation	A3/Baa1	6.5	A/A-	- -
Public Service Enterprise Group	A3	7.0	A-	7.0
Southern Company	A3	7.0	BBB+	8.0
Sempra Energy	A2	6.0	A-	7.0
WEC Energy Group	A2	6.0	A-	7.0
Xcel Energy, Inc.	A3	7.0	A-	7.0
Average	A3	6.9	A-	7.3

Notes:

(1) Ratings are that of the average of each company's utility operating subsidiaries.

(2) From page 22 of Attachment DWD-Supp-2.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Duke Energy Ohio, Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields

	[1]	[2]
	<u>A2 Rated Public Utility Bond</u>	<u>Baa2 Rated Public Utility Bond</u>
Apr-2022	4.30 %	4.60 %
Mar-2022	3.98	4.28
Feb-2022	3.68	3.95
Jan-2022	3.33	3.57
Dec-2021	3.04	3.28
Nov-2021	3.02	3.25
Oct-2021	3.09	3.32
Sep-2021	2.96	3.19
Aug-2021	2.95	3.19
Jul-2021	2.95	3.20
Jun-2021	3.16	3.41
May-2021	3.33	3.58
Apr-2021	3.30	3.57
Mar-2021	3.44	3.72
Feb-2021	3.09	3.37
Jan-2021	<u>2.91</u>	<u>3.18</u>
Average 2021	<u><u>3.10 %</u></u>	<u><u>3.36 %</u></u>
Avg. May 2021 - April 2022	<u><u>3.32 %</u></u>	<u><u>3.57 %</u></u>

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility
Bonds - Calendar 2021:

0.26 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility
Bonds - May 2021 - April 2022:

0.25 % (1)

Notes:

(1) Column [2] - Column [1].

Source of Information:

Bloomberg Professional Service

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Case No(s). 21-0887-EL-AIR, 21-0888-EL-ATA, 21-0889-EL-AAM

Summary: Testimony Supplemental Direct Testimony of Dylan W. D'Ascendis on Behalf of Duke Energy Ohio, Inc. electronically filed by Mrs. Tammy M. Meyer on behalf of Duke Energy Ohio Inc. and D'Ascenzo, Rocco and Kingery, Jeanne and Akhbari, Elyse Hanson and Vaysman, Larisa and Brama, Elizabeth