

AEP OHIO EX. NO. _____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of)	
Ohio Power Company for Authority to)	Case No. 16-1852-EL-SSO
Establish a Standard Service Offer)	
Pursuant to §4928.143, Ohio Rev. Code,)	
in the Form of an Electric Security Plan.)	

In the Matter of the Application of)	
Ohio Power Company for Approval of)	Case No. 16-1853-EL-AAM
Certain Accounting Authority)	

DIRECT TESTIMONY OF
MATTHEW D. KYLE
IN SUPPORT OF AEP OHIO'S
AMENDED ELECTRIC SECURITY PLAN

Filed: November 23, 2016

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MATTHEW D KYLE

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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO
DIRECT TESTIMONY OF
MATTHEW D. KYLE
ON BEHALF OF
OHIO POWER COMPANY

PERSONAL DATA

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

2 A. My name is Matthew D. Kyle, and my business address is 850 Tech Center Drive,
3 Gahanna, Ohio 43230.

4 **Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?**

5 A. I am employed by the Ohio Power Company (AEP Ohio) as Director of Business
6 Operations Support.

7 **Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL AND**
8 **PROFESSIONAL BACKGROUND?**

9 A. I earned a Bachelor of Science Degree in Accounting from the University of Dayton in
10 1986, and a Master's degree in Business Administration from Capital University in
11 1993. I began my career at AEP in 1990 as a financial analyst in the Corporate
12 Planning and Budgeting group. In 1997 I was promoted to Manager Strategic
13 Planning. I then advanced to the position of Director Commercial Analysis in 2003. I
14 assumed my current role in 2004.

15 **Q. WHAT ARE YOUR RESPONSIBILITIES AS DIRECTOR OF BUSINESS**
16 **OPERATIONS?**

17 A. I am responsible for leading the financial planning and budgeting processes for AEP
18 Ohio. In such capacity, I review the assumptions for short and long-term financial
19 planning models used in the development of operating and capital expenditure

1 forecasts for AEP Ohio and monitor actual performance and review the preparation of
2 forecasted information for use in regulatory proceedings.

3 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY**
4 **REGULATORY PROCEEDINGS?**

5 A. Yes, I previously testified before the Public Utilities Commission of Ohio on behalf of
6 AEP Ohio. I have also testified before the Kentucky Public Service Commission.

PURPOSE OF TESTIMONY

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

8 A. The purpose of my testimony is to present the Company's proforma financial
9 statements for the period January 2017 through May 2024 (the end of the Amended
10 ESP III). I will also describe the forecast methodology and provide an overview of the
11 major assumptions used to develop this forecast. I am also sponsoring testimony on
12 AEP Ohio's expected capital structure and weighted average cost of capital (WACC)
13 for the purposes of determining the carrying costs to be applied to riders which include
14 a capital component. In addition, I am sponsoring the calculation of the levelized
15 capital carrying costs. And I am proposing to adjust the WACC for certain riders.

16 **Q. WHAT EXHIBITS ARE YOU SPONSORING IN THIS PROCEEDING?**

17 A. I am sponsoring the following exhibits:

18 Exhibit MDK-1: Forecast Assumptions

19 Exhibit MDK-2: Proforma Financial Projections

20 Exhibit MDK-3: Cost of Capital

21 Exhibit MDK-4: Embedded Cost of Long-term Debt

22 Exhibit MDK-5: Carrying Charges

FORECAST METHODOLOGY & ASSUMPTIONS

1 **Q. PLEASE BRIEFLY DESCRIBE THE PROCESS USED TO DEVELOP A**
2 **FINANCIAL FORECAST FOR AEP OHIO.**

3 A. The preparation of a financial forecast for AEP Ohio requires input and analytical
4 support from a variety of groups within AEP Service Corporation (AEPSC) and AEP
5 Ohio. Assumptions, such as growth in kilowatt-hour sales, purchased power expense,
6 interest rates, and cost projections based on the Company's work plan, are made in
7 advance of the preparation of the forecast. The assumptions for the proforma financial
8 statements for the period from January 1, 2017 through May 31, 2024 are provided on
9 Exhibit MDK-1. These assumptions are developed by individuals with subject matter
10 expertise from AEP Ohio and within AEPSC to determine the most reasonable set of
11 assumptions to be incorporated into the forecast.

12 The major components of a forecast are as follows: 1) load and demand forecast; 2)
13 retail revenue projections; 3) cost of purchased power; 4) O&M forecast; 5)
14 construction expenditure forecast; and 6) financing plan.

15 **Q. PLEASE DISCUSS EACH OF THESE MAJOR COMPONENTS OF THE**
16 **FORECAST IN MORE DETAIL.**

17 A. The major components of the forecast are as follows:

18 1) Load and Demand Forecast - The internal load projection is developed by
19 the Economic Forecasting Department in conjunction with various groups across the
20 AEP System including input from AEP Ohio and reflects an analysis of the economy
21 and the unique factors that influence individual customers or customer classes. In
22 addition, the load and demand projections are further refined to include an estimate of

1 load choosing an alternative electric provider.

2 2) Retail Revenue Projections - Revenues for most customers are developed by
3 customer class using base realizations under current rates and purchased power rates
4 included in the appropriate filed tariffs or contracts and auctions. Projections of base
5 realizations reflect actual experience adjusted to be consistent with the projected sales
6 and usage levels. Revenues for special contract customers are developed in detail in
7 accordance with the terms of the contract.

8 3) Cost of Purchased Power – For SSO customers, the cost of purchased power
9 is determined by the competitive bidding process auction energy rates which are
10 forecasted by the AEP's Commercial Operations group. These costs are passed
11 through to customers and have no significant effect on the forecast results of the Company.

12 4) O&M Forecast - Operation and maintenance expenses are based upon
13 current work plans for each of the functional groups. These plans include expenditures
14 for scheduled maintenance programs as well as the cost of operations. These plans
15 take into consideration staffing levels, including budgeted increases in salaries as well
16 as material costs necessary to perform each planned program.

17 5) Construction Expenditure Forecast - The various engineering and planning
18 groups within AEP Ohio and AEPSC develop the construction expenditure budget. It
19 reflects expenditures and in-service dates of major projects during the year as well as
20 amounts approved to fund blanket work (smaller projects grouped together) which is
21 essential in estimating both book and tax depreciation as well as the allowance for
22 funds used during construction.

23 6) Financing Plan - The development of the financing program for the forecast

1 is intended to meet the company's working capital requirements. In determining the
2 company's financing program, consideration is given to regulatory restrictions, timing
3 of cash flow requirements, and availability of equity capital, credit metrics, capital
4 structure and short-term debt limitations.

FORECAST RESULTS (2017 – 2024)

5 **Q. PLEASE SUMMARIZE THE RESULTS FOR THE PRO FORMA FINANCIAL**
6 **STATEMENTS.**

7 A. The Income Statement, Cash Flow and Balance Sheet for AEP Ohio for the period
8 from January 1, 2017 through May 31, 2024 are provided on Exhibit MDK-2. The
9 data was prepared consistent with the assumptions presented in Exhibit MDK-1.

10 **Q. DO YOU BELIEVE THAT THE PROJECTED VALUES THAT YOU HAVE**
11 **PROVIDED ARE REASONABLE?**

12 A. Yes, the projections presented in Exhibit MDK-2 represent the expected financial
13 results for AEP Ohio under the Company's Amended ESP III.

CAPITAL STRUCTURE AND WEIGHTED AVERAGE COST OF CAPITAL

14 **Q. PLEASE DESCRIBE THE CALCULATION FOR THE CAPITAL**
15 **STRUCTURE AND COST OF CAPITAL?**

16 A. The Company completed the cost of capital schedules based on the financial
17 information available as of 12/31/2015. The capital structure is 49.5% long-term debt
18 and 50.5% equity for AEP Ohio and there was no short-term debt outstanding at that
19 time. Exhibit MDK-3 shows the updated cost of capital including the 10.41% return on
20 equity provided by Company witness McKenzie. When weighting the debt and equity,
21 the overall weighted cost of capital is 8.23% and the pre-tax weighted cost of capital is

1 11.16%.

2 **Q. ARE THERE ANY CONCERNS REGARDING USING A CONSTANT**
3 **WEIGHTED AVERAGE COST OF CAPITAL (WACC) UNTIL 2024?**

4 A. Yes. It is widely recognized that the cost of equity changes over time just as the cost
5 of debt changes over time. Over the term of the Amended ESP III, the Company's
6 cost of capital will undoubtedly change – both the cost of equity capital and debt
7 capital. Therefore, I am proposing updating the WACC once a year to reflect changes
8 in the Company's cost of capital.

9 **Q. ARE YOU PROPOSING UPDATING BOTH THE EQUITY AND DEBT**
10 **COMPONENTS OF THE WACC?**

11 A. Yes, I am proposing to update Exhibit MDK-3 each year to calculate the current
12 WACC.

13 **Q. HOW WILL THE COST OF EQUITY BE UPDATED?**

14 A. I am proposing a formulaic approach to index the ROE to reflect changes in the cost of
15 equity capital from year to year. This approach utilizes an established index, the
16 Moody's Baa Utility Bond Index (Moody's Index) to track changes in the cost of debt
17 that is representative of the cost of issuing new debt at Ohio Power Company. The
18 change in cost of debt will be utilized as a proxy to reflect the change in the cost of
19 equity.

20 **Q. WHY IS A DEBT INDEX THE APPROPRIATE MEASURE TO UTILIZE FOR**
21 **UPDATING THE ROE?**

22 A. The Company has no publicly traded equity shares, as it is a wholly-owned subsidiary
23 of AEP Inc.; however it does have publicly traded debt securities. Therefore the

1 Moody's Index not only offers transparency into changes in the cost of debt, it also
2 reflects a reasonable proxy for changes in the cost of equity, as the bond market is a
3 strong indicator of the Company's underlying risk profile.

4 **Q. WHAT ARE THE BENEFITS OF THE PROPOSED INDEXED ROE**
5 **APPROACH?**

6 A. In addition to the transparency provided by the Moody's Index, this approach also
7 helps to ensure that the Company's actual cost of capital is reflected in the WACC.
8 Additionally, this approach provides regulatory efficiency in the process of updating
9 the ROE component of the WACC annually, rather than through a costly and time
10 consuming proceeding to update the WACC.

11 **Q. HOW WILL THE PROPOSED ROE INDEX BE ESTABLISHED EACH**
12 **YEAR?**

13 A. The Moody's Index will be utilized to track changes in the cost of debt. The change in
14 the current market cost of debt will be used as a proxy to reflect the change in the cost
15 of equity. The average Moody's Index for December 2015 was 5.03%. To the extent
16 that the Moody's Index changes in future years, the ROE used in the calculation of the
17 WACC would be changed by an equal amount. For example, if the year-end Moody's
18 Index changed from 5.00% to 4.90% from one year to the next, there would be a
19 corresponding reduction of .10% to the ROE. Conversely, if the Moody's Index
20 changed from 5.00% to 5.10% from one year to the next, there would be a
21 corresponding increase of .10% to the ROE. In addition, the ROE index will have a
22 floor of 10.2% and a cap of 12.5%.

1 **Q. HOW WILL THE COST OF DEBT COMPONENT OF WACC BE UPDATED?**

2 A. The cost of debt will be updated annually, to reflect the actual per-books interest cost.

3 This cost will be derived by taking the sum of each bond's actual annualized cost and
4 dividing this amount by the total net proceeds outstanding as of the end of the year, as
5 shown on Exhibit MDK-4. The result will be the actual percentage rate used to
6 determine the debt component of the WACC.

7 **Q. HAS THE COMPANY PREPARED CARRYING CHARGE SCHEDULES?**

8 A. Yes, based on the cost of capital at 12/31/15, carrying charge schedules have been
9 provided; see Exhibit MDK-5.

10 **Q. WHAT RIDERS WILL CONTINUE TO HAVE A CAPITAL CARRYING**
11 **CHARGE APPLIED?**

12 A. The riders listed below with a capital component will have a capital carrying charge
13 applied. The WACC carrying charge component of the Enhanced Service Reliability
14 Rider, gridSMART® Phase II, the Submetering Rider, the Distribution Investment
15 Rider, the Distribution Technology Rider and the Renewable Generation Rider will be
16 updated to reflect the WACC to be approved in this filing. In addition, the WACC
17 carrying charge applied to the Distribution Technology Rider will include an
18 incremental incentive of 75 basis points, or .75%, as described by witness Moore.

19 **Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

20 A. Yes.

Assumptions Used in the Projected Financial Statements for Purposes of this Proceeding

- The components of AEP Ohio's Amended ESP III filing are included in these projections.
- AEP Ohio has no generation assets after corporate separation. The purchased power agreement with OVEC is modeled to have no income effect.
- The load forecast for 2017 through 2024 is provided below:

GWH by Customer Class								
	2017	2018	2019	2020	2021	2022	2023	2024
Residential	14,338	14,255	14,190	14,158	14,123	14,098	14,093	14,102
Commercial	15,195	15,211	15,230	15,257	15,319	15,397	15,488	15,578
Industrial	15,530	15,552	15,621	15,700	15,793	15,862	15,918	15,972
Other Retail	125	126	127	128	129	130	130	131
Total Retail	45,188	45,145	45,168	45,243	45,363	45,487	45,629	45,784

- All customers pay for transmission service via a non-bypassable Basic Transmission Cost Rider.
- The AEP OATT is based upon the FERC formula rate.
- O&M expenses generally reflect the Company's 2015 Long Range Plan.
- Current depreciation rates continue through the forecast period.
- The capital structure of the wires company is maintained between 46%-50% debt and 50%-54% equity throughout the forecast period.
- The Amortization of the theoretical reserve imbalance is completed December 2018, then a similar amount of revenue is included in the DIR.
- Deferred fuel recovery (& carrying charges) for the 2009-11 period is completed December 2018.
- The Distribution Asset Securitization completes in mid-2019.
- The Residential Credit rider continues through the entire forecast period.

Ohio Power
Amended ESP III
Income Statement

	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	5 months Ending 2024
(1) REVENUE								
(2) Sales of Electricity	3,449	3,542	3,491	3,630	3,784	4,082	4,176	1,752
(3) Other Operating Revenue	51	55	56	57	58	59	60	25
(4) Total Revenue	3,499	3,597	3,547	3,687	3,841	4,141	4,236	1,778
(5) COST OF SALES								
(6) Total Cost of Sales	1,406	1,357	1,204	1,246	1,282	1,488	1,510	635
(7) Gross Margin	2,093	2,240	2,343	2,441	2,559	2,652	2,726	1,142
(8) OPERATING EXPENSES								
(9) Operations & Maintenance	893	984	1,045	1,119	1,201	1,278	1,334	572
(10) Taxes Other Than Income	388	397	408	418	429	439	448	190
(11) TOTAL OPERATING EXPENSES	1,281	1,381	1,453	1,537	1,630	1,717	1,782	762
(12) Operating Margin/EBITDA	812	858	889	904	929	936	943	380
(13) Depreciation & Amortization	256	270	324	336	350	358	366	156
(14) Other (Income) / Deductions	(13)	(13)	(7)	(4)	(7)	(3)	(5)	(3)
(15) EBIT	569	602	572	572	586	580	582	227
(16) Total Interest Expense	117	117	126	139	145	140	140	58
(17) Total Income Taxes	156	163	165	164	169	169	172	67
(18) Preferred Stock Dividends	-	-	-	-	-	-	-	-
(19) NET INCOME	297	322	280	269	273	271	270	102
(20) Prior Period Equity Carrying Charges	91	88	11					
(21) Tax Effect	(32)	(31)	(4)					
(22) NET INCOME (excl. Prior Period Equity CCs)	238	265	273	269	273	271	270	102
(20) RETURN ON COMMON	11.90%	12.43%	12.10%	11.45%	11.18%	10.75%	10.45%	N/A

(all figures in millions of dollars)

Ohio Power
Amended ESP III
Balance Sheet

	1/1/2017	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	5/31/2024
(1) Assets									
(2) Gross Plant in Service	7,336	7,844	8,499	9,012	9,486	9,841	10,165	10,490	10,685
(3) Construction Work In Progress	212	254	172	128	100	100	102	105	77
(4) Gross Plant in Service	7,548	8,098	8,670	9,140	9,586	9,941	10,268	10,596	10,762
(5) Accumulated Depreciation	2,563	2,681	2,802	2,992	3,209	3,460	3,719	3,985	4,128
(6) Net Utility Plant	4,985	5,417	5,868	6,148	6,377	6,481	6,549	6,610	6,634
(7) Other Property and Investments	212	166	119	95	95	95	95	95	95
(8) Current and Accrued Assets	318	309	344	269	360	284	344	410	431
(9) Unamortized Debt Expense	9	8	7	6	5	5	4	4	4
(10) Unamortized Loss on Reacquired Deb	10	9	8	7	6	6	5	5	5
(11) Regulatory Assets	832	610	485	490	485	480	476	471	461
(12) Other Net Deferrals	427	454	465	476	484	493	501	511	386
(13) Total Assets	6,793	6,972	7,295	7,491	7,811	7,843	7,973	8,106	8,016
(14) Equity and Liabilities									
(15) Common Stock	1,933	2,055	2,202	2,307	2,399	2,482	2,552	2,623	2,625
(16) Preferred Stock	-	-	-	-	-	-	-	-	-
(17) Other Comprehensive Earnings	3	2	2	1	(0)	(1)	(1)	(1)	(1)
(18) Total Equity	1,937	2,057	2,203	2,308	2,399	2,481	2,551	2,622	2,624
(19) Long-Term Debt	2,070	2,024	2,128	2,112	2,312	2,212	2,212	2,212	2,212
(20) Capital Leases	9	6	3	2	2	2	1	1	1
(21) Other Non-Current Liabilities	70	77	83	88	95	101	107	113	115
(22) Short-Term Debt	-	-	-	16	-	-	-	-	-
(23) Other Current and Accrued Liabilities	977	1,032	1,048	1,073	1,105	1,136	1,177	1,222	1,122
(24) Deferred Credits	1,730	1,776	1,829	1,891	1,899	1,912	1,924	1,936	1,942
(25) Total Liabilities	4,857	4,915	5,091	5,183	5,413	5,362	5,422	5,485	5,392
(26) Total Equity and Liabilities	6,793	6,972	7,295	7,491	7,811	7,843	7,973	8,106	8,016

(all figures in millions of dollars)

Ohio Power Company
Amended ESP III
Statement of Cash Flows

	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023	5 months Ending 2024
(1) Operating Activities								
(2) Balance for Common	297	322	280	269	273	271	270	102
(3) Adjustments to Net Income								
(4) Depreciation and Amortization	242	265	324	336	350	358	366	156
(5) Deferred Income Tax	27	54	62	11	13	13	12	6
(6) Changes in Regulatory Assets	157	57	5	5	5	5	5	10
(7) Changes in Working Capital	56	16	23	34	31	42	44	(100)
(8) Other Adjustments to Net Income	35	34	(45)	(42)	(42)	(44)	(43)	113
(9) Cash From Operations	814	748	650	613	629	644	654	286
(10) Investing Activities								
(11) Construction Expenditures	(602)	(643)	(551)	(530)	(421)	(392)	(393)	(165)
(12) Change in Adv to Affiliates	19	(22)	86	(85)	84	(50)	(59)	(21)
(13) Other/Proceeds from Sale/Special Cash Deposits	(0)	(0)	28	-	-	-	-	-
(14) AFUDC Debt/Capitalized Interest	(6)	(8)	(4)	(3)	(2)	(2)	(2)	(1)
(15) Cash (Used) in Investing	(589)	(673)	(442)	(618)	(339)	(444)	(454)	(186)
(16) Financing Activities								
(17) Issuance of Long-Term Debt	-	500	-	200	400	-	-	-
(18) Retirement of Long-Term Debt	(46)	(397)	(80)	-	(500)	-	-	-
(19) Change in Short-Term Debt	-	(0)	16	(20)	-	(0)	(0)	-
(20) Equity Contributions								
(21) Dividends Paid	(175)	(175)	(175)	(175)	(190)	(200)	(200)	(100)
(22) Other Financing Activity	(3)	(3)	31	(0)	(0)	(0)	(0)	(0)
(23) Cash From Financing Activities	(225)	(75)	(207)	5	(290)	(200)	(200)	(100)
(24) Total Change in Cash	-	-	-	-	-	-	-	-
(25) Beginning Cash and Cash Equivalents	-	-	-	-	-	-	-	-
(26) Ending Cash and Cash Equivalents	-	-	-	-	-	-	-	-

(all figures in millions of dollars)

AEP OHIO
CASE No. 16-1852-EL-SSO AND CASE No. 16-1853-EL-AAM
Cost of Capital
(\$000)

Date of Capital Structure: December 31, 2015

EXHIBIT MDK 3

Line No.	Class of Capital	(\$) Amount	% of Total	(%) Cost	Weighted Cost (%)	Pre-Tax Weighted Cost (%)
1	Long-Term Debt	\$ 1,950,000	49.54%	6.01%	2.98%	2.98%
2	Short-Term Debt	\$ -	0.00%	0.00%	0.00%	0.00%
3	Common Equity	<u>1,986,600</u>	<u>50.46%</u>	<u>10.41%</u>	<u>5.25%</u>	<u>8.19%</u>
4	Total Capital	<u>\$ 3,936,600</u>	<u>100%</u>	<u></u>	<u>8.23%</u>	<u>11.16%</u>

* 2015 Gross Conversion Factor of 1.5581275

AEP Ohio
Embedded Cost of Long-Term Debt
as of December 31, 2015
(\$000)

Line No.	(1) Description	(2) Interest Rate %	(3) Issue Date	(4) Maturity Date	(5) Term in Years	(6) Principal Outstanding \$	(7) Principal Amount Issued \$	(8) Premium or (Discount) at Issuance \$	(9) Issuance Expense ⁽¹⁾ \$	(10) Cost of Reacquired Debt \$	(11) Other Annualized Charges \$	(12) Net Proceeds (7 + 8 + 9 + 10 + 11) \$	(13) Effective Cost Rate %	(14) Annualized Cost (6 X 13) \$
1 OP	Senior Unsecured Notes, Series G	6.600	2/14/2003	2/15/2033	30	250,000,000	250,000,000	(1,165,000)	(2,368,087)	-	-	246,466,913	6.710%	16,774,980
2 OP	Senior Unsecured Notes, Series K	6.000	6/12/2006	6/1/2016	10	350,000,000	350,000,000	(1,235,500)	2,030,869	-	-	350,795,369	5.969%	20,891,803
3 OP	Senior Unsecured Notes, Series M	5.375	9/21/2009	10/1/2021	12	500,000,000	500,000,000	(2,065,000)	13,109,291	-	-	511,044,291	5.126%	25,632,401
4 CSP	Senior Unsecured Notes, Series B	6.600	2/14/2003	3/1/2033	30	250,000,000	250,000,000	(1,180,000)	(2,187,500)	-	-	246,632,500	6.704%	16,760,966
5 CSP	Senior Unsecured Notes, Series F	5.850	10/14/2005	10/1/2035	30	250,000,000	250,000,000	(2,815,000)	(2,187,500)	-	-	244,997,500	5.994%	14,985,930
6 CSP	Senior Unsecured Notes, Series G	6.050	5/12/2008	5/1/2018	10	350,000,000	350,000,000	(791,000)	(2,347,096)	-	-	346,861,904	6.171%	21,599,907
7	Total Senior Unsecured Notes					1,950,000,000	1,950,000,000	(9,251,500)	6,049,977	-	-	1,946,798,477		116,645,987
														Annual Amortization
8	Unrefunded Redeemed PCB													62,379
9	Unrefunded Redeemed FMB													451,867
11	Unrefunded Redeemed Senior Unsecured													96,726
12	Total Unrefunded Redeemed Notes													610,972
13	Total Long Term Debt					<u>1,950,000,000</u>	<u>1,950,000,000</u>	<u>(9,251,500)</u>	<u>6,049,977</u>	<u>-</u>		<u>1,946,798,477</u>		<u>117,256,959</u>
14	Total Annual Cost of Long Term Debt													117,256,959
15	Principal Outstanding													1,950,000,000
16	Weighted Average Cost of Long Term Debt (Line 14 / Line 15)													6.01%

(1) Hedging gains/(losses) are included in Issuance Expense: (\$4,480,441) loss on Series K and (\$16,792,127) loss on Series M

Ohio Power
Annual Investment Carrying Charges
For Economic Analyses
As of 12/31/2015

	Investment Life (Years) ⁽⁵⁾											
	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>33</u>	<u>40</u>	<u>50</u>
Return (1)	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23	8.23
Depreciation (2)	48.94	31.7	23.08	17.93	7.78	4.56	3.05	2.21	1.69	1.47	1.11	0.81
FIT (3) (4)	2.39	1.74	1.86	1.56	1.49	1.8	1.87	1.65	1.51	1.44	1.34	1.24
Property Taxes, General & Admin Expenses	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
	63.69	45.81	37.3	31.84	21.63	18.72	17.28	16.22	15.56	15.27	14.81	14.41

(1) Based on a 100% (as of 12/31/2015) and 0% incremental weighting of capital costs

(2) Sinking Fund annuity with R1 Dispersion of Retirements

(3) Assuming MACRS Tax Depreciation

(4) @ 35% Federal Income Tax Rate

(5) Various investment life years are included in the schedule, however, if a rider should include an investment life not already prepared in the schedule, other term periods could be computed using the same methodology

CERTIFICATE OF SERVICE

In accordance with Rule 4901-1-05, Ohio Administrative Code, the PUCO's e-filing system will electronically serve notice of the filing of this document upon the following parties. In addition, I hereby certify that a service copy of the foregoing *Ohio Power Company's Direct Testimony of Matthew D. Kyle* was sent by, or on behalf of, the undersigned counsel to the following parties of record this 23rd day of November 2016, via electronic transmission.

/s/ Steven T. Nourse

Steven T. Nourse

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Summary: Testimony - Direct Testimony of Matthew D. Kyle in Support of AEP Ohio's Amended Electric Security Plan electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company