

**BEFORE**

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke       )  
Energy Ohio, Inc. to Adjust Rider DR-IM       )     Case No. 18-838-EL-RDR  
for 2017 SmartGrid Costs.                        )

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**DIRECT TESTIMONY OF**

**DOUGLAS J. HEITKAMP**

**ON BEHALF OF**

**DUKE ENERGY OHIO, INC.**

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June 29, 2018

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Attachment:

- DJH-1 Rider DR-IM Revenue Requirement Calculation
- DJH-2 2017 Distribution System Efficiency Metrics (IVVC)

## **I. INTRODUCTION**

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

2   A.   My name is Douglas J. Heitkamp. My business address is 139 East Fourth Street,  
3       Cincinnati, Ohio 45202.

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

5   A.   I am employed by Duke Energy Business Services LLC, an affiliate of Duke  
6       Energy Ohio, Inc., (Duke Energy Ohio or Company) as Senior Analyst, Rates and  
7       Regulatory Strategy.

8   **Q.   PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**  
9       **QUALIFICATIONS.**

10  A.   I earned a Bachelor of Science in Business Administration degree with a  
11       concentration in accounting from Saint Louis University and subsequently a  
12       Master of Science in Accountancy from the University of Notre Dame. I am a  
13       Certified Public Accountant licensed in Missouri. I began my career with Deloitte  
14       & Touche LLP as an audit associate in 2008. In 2009, I joined Ameren  
15       Corporation, an electric and gas investor-owned utility in St. Louis, Missouri, in  
16       the Internal Audit department. In 2013, I left Ameren for Macy's, Inc., a national  
17       department store, where I worked in Internal Audit initially and then in Selling  
18       Support, as Manager, Investment Strategies. I started working at Duke Energy in  
19       May 2017 in my current position as a Senior Analyst, Rates and Regulatory  
20       Strategy.

21  **Q.   HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC**  
22  **UTILITIES COMMISSION OF OHIO (COMMISSION)?**

1 A. No.

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

4 A. My testimony addresses the electric Rider DR-IM (Distribution Reliability –  
5 Infrastructure Modernization). I provide an overview of the revenue requirement  
6 calculation for the rider and then describe each schedule supporting the revenue  
7 requirement calculation. I will be sponsoring Attachments DJH-1, DJH-2 and  
8 DJH-3, to support the proposed charges for Rider DR-IM.

## **II. REVENUE REQUIREMENT CALCULATIONS**

9 **Q. PLEASE DESCRIBE THE COMPONENTS OF THE REVENUE**  
10 **REQUIREMENTS INCLUDED IN RIDER DR-IM.**

11 A. The revenue requirement includes the following components:

- 12       ▪ a return on the rate base;
- 13       ▪ depreciation and property taxes; and
- 14       ▪ incremental expenses.

15 **Q. HOW IS RATE BASE CALCULATED?**

16 A. Rate base is calculated in a manner consistent with the traditional rate base  
17 calculation for general retail rate cases. One component is net plant, or gross plant  
18 minus accumulated depreciation. Another common component is accumulated  
19 deferred income taxes (ADITs) associated with accelerated tax depreciation. The  
20 stipulations approved by the Commission in its Opinion and Order in Case No.  
21 08-920-EL-SSO, *et al.*, and its Opinion and Order in Case No. 09-543-GE-RDR,  
22 allow an additional component of rate base in the form of post-in-service carrying

1 costs (PISCC). Because there are deferred income taxes associated with this item,  
2 an additional adjustment is made to offset rate base for accumulated deferred  
3 income taxes on this item. As a result of the Tax Cuts & Jobs Act (TCJA),  
4 another component of rate base included in this year's filing is excess  
5 accumulated deferred income taxes (EDITs).

6 **Q. ARE THERE COSTS THAT ARE SHARED BETWEEN THE ELECTRIC**  
7 **AND GAS DISTRIBUTION BUSINESSES?**

8 A. Yes. The fact that Duke Energy Ohio is a combination electric and gas utility  
9 allows the Company to maximize the potential benefits of the SmartGrid project  
10 for both electric and gas customers. For much of the SmartGrid equipment, it is a  
11 simple exercise to assign costs directly to electric or to gas. The cost of some  
12 equipment and some expenses, however, is incurred for both electric and gas  
13 services.

14 The costs for "common" equipment are allocated between gas and electric  
15 service based on appropriate allocation factors. The development of these  
16 allocation factors is based on the Company's determination of the extent to which  
17 each type of plant (*e.g.*, communication boxes, information technology costs (IT),  
18 etc.) contributes to the gas or electric SmartGrid function.

19 **Q. DESCRIBE THE COMPUTATION FOR DEPRECIATION AND**  
20 **PROPERTY TAX EXPENSES INCLUDED IN THE RIDER DR-IM**  
21 **REVENUE REQUIREMENT.**

22 A. Depreciation expense is annualized by using currently approved accrual rates and  
23 the depreciable gross plant for each plant type as of December 31, 2017.

1 Similarly, property tax expense is annualized by applying the latest average  
2 property tax rates to the calculated property tax valuation as of December 31,  
3 2017.

4 **Q. WHAT INCREMENTAL EXPENSES ARE INCLUDED IN THE**  
5 **REVENUE REQUIREMENT CALCULATIONS?**

6 A. The only incremental expenses included in the Rider DR-IM revenue requirement  
7 calculations are specifically identifiable costs associated with the implementation  
8 of the SmartGrid project. Such costs include Information Technology costs,  
9 system support, data transfer fees, and any other costs that can be directly  
10 attributed to the SmartGrid program.

11 **Q. DO THE REVENUE REQUIREMENT CALCULATIONS REFLECT THE**  
12 **SAVINGS THAT DISTRIBUTION AUTOMATION AND SMARTGRID**  
13 **PROJECTS WILL GENERATE?**

14 A. Yes. In the Order in Case No. 10-2326-GE-RDR, the Commission approved a  
15 stipulation that included an agreement by Duke Energy Ohio to establish an  
16 amount of savings to be included in Rider DR-IM.

**III. CHANGES FROM PRIOR FILING**

17 **Q. HAVE YOU MADE ANY CHANGES IN THE REVENUE**  
18 **REQUIREMENT CALCULATIONS SINCE THE COMPANY'S LAST**  
19 **SMARTGRID COST RECOVERY FILING?**

20 A. Yes. As a result of the TCJA, the Company was required to establish EDIT  
21 balances associated with the decrease in the federal tax rate from 35% to 21% as  
22 of December 31, 2017. As such, a provision for EDITs has been included as an

1 offset to rate base as of December 31, 2017. This does not change the overall rate  
2 base calculation as it is simply a transfer from the ADIT balances, but is  
3 necessary to preserve the rate base calculation.

#### IV. SCHEDULES

4 **Q. PLEASE PROVIDE A GENERAL OVERVIEW OF THE SCHEDULES**  
5 **FOR RIDER DR-IM.**

6 A. The schedules provide extensive detail of the revenue requirement calculations for  
7 Rider DR-IM, starting with support for the rate base component and the pre-tax rate  
8 of return, followed by details for the expenses to be included. Finally, the schedules  
9 show the calculation of the proposed monthly rates for Rider DR-IM applicable to  
10 the rate classes.

11 **Q. PLEASE EXPLAIN SCHEDULE 1.**

12 A. Schedule 1 summarizes the annualized revenue requirement for Duke Energy Ohio's  
13 Rider DR-IM rates. The underlying rate base reflects the net balance of the  
14 Company's investment in SmartGrid including distribution automation equipment as  
15 of December 31, 2017. The information on this schedule is supported in Schedules 2  
16 through 11.

**Q. PLEASE EXPLAIN SCHEDULE 2.**

17 A. Schedule 2 provides the adjusted balance of plant additions at December 31, 2017,  
18 The balance as of December 31, 2016, agrees with the amounts approved in the prior  
19 Rider DR-IM filing in Case No. 17-1403-EL-RDR. There were no new additions in  
20 calendar year 2017.

1   **Q.   PLEASE EXPLAIN SCHEDULE 3.**

2   A.   Schedule 3 provides the adjusted balance of accumulated provision for  
3       depreciation at December 31, 2016, and actual provision for depreciation by  
4       month from January 1, 2017, through December 31, 2017, to arrive at the balance as  
5       of December 31, 2017.

6   **Q.   PLEASE EXPLAIN SCHEDULE 4.**

7   A.   Schedule 4 provides the adjusted balance of the PISCC regulatory asset at  
8       December 31, 2016, and the PISCC activity by month from January 1, 2017,  
9       through December 31, 2017, to arrive at the balance as of December 31, 2017. This  
10      schedule also provides the balance of PISCC amortization at December 31, 2016,  
11      and actual PISCC amortization by month from January 1, 2017, through December  
12      31, 2017, to calculate the estimated balance at December 31, 2017. The net  
13      electric PISCC Regulatory Asset for the periods is also provided.

14  **Q.   PLEASE EXPLAIN SCHEDULE 5.**

15  A.   Schedule 5 provides the net deferred tax balance and excess deferred tax balance  
16      of electric PISCC and electric O&M at December 31, 2016, and December 31,  
17      2017.

18  **Q.   PLEASE EXPLAIN SCHEDULE 6.**

19  A.   Schedule 6 provides the calculation of the deferred taxes on liberalized  
20      depreciation for plant placed in service during vintage years 2008 through 2015.  
21      These deferred taxes are calculated on the electric-related SmartGrid plant in  
22      service since the program's inception. Schedule 6 also includes the calculation  
23      for excess deferred taxes.



1   **Q.     PLEASE EXPLAIN SCHEDULE 7.**

2   A.     Schedule 7 provides the calculation of the pre-tax weighted average cost of capital  
3           for the return component of the Rider DR-IM revenue requirement calculation.  
4           The capital structure and the capital cost rates are based on the most recently  
5           approved electric distribution rate case, Case No. 12-1682-EL-AIR. Upon the  
6           TCJA becoming law the Rate of Return was adjusted to reflect a reduction of the  
7           Corporate tax Rate from 35% to 21%. This adjustment was reflected in the  
8           amended Rider DR-IM filing in Case No. 17-1403-EL-RDR and subsequently  
9           approved by the Commission on March 21, 2018.

10  **Q.     PLEASE EXPLAIN SCHEDULE 8.**

11  A.     Schedule 8 provides the calculation of the annualized depreciation expense  
12           associated with additions, based on actual SmartGrid plant additions from the  
13           beginning of the program through December 31, 2017, using currently approved  
14           depreciation accrual rates. Fully depreciated plant has been removed from the  
15           calculation.

16  **Q.     PLEASE EXPLAIN SCHEDULE 9.**

17  A.     Schedule 9 provides a calculation of the annualized amortization of the electric  
18           PISCC accrued from the beginning of the program through December 31, 2017.  
19           The electric-related PISCC Regulatory Assets by account are in agreement with  
20           those provided on Schedule 4 and the amortization calculations use the currently  
21           approved average service lives.

1   **Q.     PLEASE EXPLAIN SCHEDULE 10.**

2   A.     Schedule 10 is a schedule providing the calculation of the regulatory asset  
3           associated with the deferral of O&M and depreciation costs pursuant to the  
4           stipulation approved in the ESP Case.

5   **Q.     PLEASE EXPLAIN SCHEDULE 11.**

6   A.     Schedule 11 provides the calculation of the annualized property tax expense based  
7           on actual additions to electric-related SmartGrid plant in service from the  
8           beginning of the program through December 31, 2017. This calculation follows  
9           the process used in Duke Energy Ohio's Annual Report to the Ohio Department  
10          of Taxation to determine the Net Property Valuation and uses the latest known  
11          average electric property tax rate per \$1,000 of valuation.

12  **Q.     PLEASE EXPLAIN SCHEDULE 12.**

13  A.     Schedule 12 provides a calculation of the new Rider DR-IM monthly charge by  
14          rate class. Pursuant to the Stipulation approved in Case No. 08-920-EL-SSO, *et*  
15          *al.*, 85% of the revenue requirement is allocable to residential customers and the  
16          remaining 15% is allocable to non-residential customers. The allocated revenue  
17          requirement is then divided by the number of bills (*i.e.*, customers x 12) for the  
18          residential and non-residential rate classes. The result is a per bill charge of \$3.99  
19          for all residential customers and a per bill charge of \$5.98 for all non-residential  
20          customers. The Company excluded all lighting customers from Rider DR-IM.

21  **Q.     PLEASE DESCRIBE THE ATTACHMENTS TO YOUR TESTIMONY.**

22  A.     Attachment DJH-1 is the revenue requirement consisting of the various schedules  
23          described above. I am also providing Attachment DJH-2 pursuant to the

1 Company's agreement to do so. Attachment DJH-2 is the 2017 Distribution  
2 System Efficiency Metrics for (IVVC), which is a report of Duke Energy Ohio's  
3 megawatthour (MWH) reduction under Integrated Volt/Var Control (IVVC)  
4 based on the number of circuits under IVVC control for 2017.

5 **Q. ARE THERE ANY PROVISIONS OF THE STIPULATION REACHED IN**  
6 **CASE NO. 13-1141-GE-RDR THAT ARE RELEVANT TO THE RIDER**  
7 **DR-IM RATE CALCULATION?**

8 A. Yes. The parties in this proceeding agreed to impose caps on the Rider DR-IM  
9 charge for residential customers for filings made in calendar year 2015. The cap  
10 represents the maximum monthly per meter rate that can be charged to residential  
11 customers for a given year. The agreed-to cap for residential Rider DR-IM  
12 charges is \$7.00 for the filing made for calendar year 2017. Per Schedule 12 of  
13 this filing the Company's calculated rate for residential customers is under the  
14 \$7.00 cap for this year.

15 **Q. HOW IS THIS FILING IMPACTED BY PENDING CASE NO.17-032-EL-**  
16 **AIR?**

17 A. If the Company receives an order in Case No. 17-032-EL-AIR, which includes  
18 recovery for these same smart grid costs, the Company will withdraw its  
19 application in this case as of the effective date of the new rates implemented in  
20 the 17-032-EL-AIR case. If new base rates are not approved before April 1, 2019,  
21 the Rider DR-IM rates proposed here would take effect on that day. The  
22 Company will continue to make Rider DR-IM filings, updating the rates, until the  
23 Commission approves new base rates that include the SmartGrid investment.

1   **Q.   DO YOU HAVE AN OPINION REGARDING WHETHER DUKE**  
2       **ENERGY OHIO'S REQUEST FOR NEW RIDER DR-IM RATES IS**  
3       **REASONABLE?**

4   A.   Yes.

5   **Q.   PLEASE STATE YOUR OPINION.**

6   A.   Duke Energy Ohio's rate request is fair and reasonable. I believe that the costs of  
7       service are properly allocated to customer classes and the rate design was properly  
8       performed in accordance with the terms and conditions of the Stipulation  
9       approved in Case No. 08-920-EL-SSO, *et al.* The proposed Rider DR-IM rates are  
10      within the rate caps established in the Stipulation in Case No. 13-1141-GE-RDR.

11

## **V.   CONCLUSION**

12   **Q.   WERE ATTACHMENTS DJH-1 AND DJH-2 PREPARED BY YOU OR**  
13       **UNDER YOUR SUPERVISION?**

14   A.   DJH-1 was prepared under my direct supervision. DJH-2 was provided to me by  
15       Donald Schneider.

16   **Q.   IS THE INFORMATION CONTAINED IN ATTACHMENTS DJH-1 AND**  
17       **DJH-2 TRUE AND ACCURATE TO THE BEST OF YOUR KNOWLEDGE**  
18       **AND BELIEF?**

19   A.   Yes.

20   **Q.   DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

21   A.   Yes.

**Duke Energy Ohio  
Calculation of Rider DR-IM  
Case No. 18-838-EL-RDR  
Attachment DJH-1  
Index of Schedules**

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<b>Schedule No.</b>	<b>Description</b>
1	Revenue Requirement Summary
2	Plant Additions by Month
3	Depreciation Expense Accrued
4	Post In Service Carrying Costs on Plant Additions Accrued as Regulatory Asset
5	Deferred Income Taxes on Post In Service Carrying Costs and Deferred O&M
6	Deferred Taxes on Liberalized Depreciation Associated with Plant Additions
7	Summary of Weighted-Average Cost of Capital from Most Recent Retail Rate Case
8	Annualized Depreciation Expense on Plant in Service at Year End
9	Annualized Amortization of Post In Service Carrying Charges
10	Regulatory Asset for Deferred O&M and Associated Carrying Costs
11	Annualized Property Taxes on Plant in Service at Year End
12	Calculation of Rider DR-IM Charges

Schedule 1  
Electric  
Summary

Duke Energy Ohio  
Calculation of Rider DR-IM

Revenue Requirement

Line No.		Balance 12/31/16	Adjustment	Adjusted Balance 12/31/16	Activity 2017	Cumulative thru 12/31/17	Reference
	<b><u>Return on Investment</u></b>						
	Plant In-Service						
1	Additions	\$293,628,888	\$0	\$293,628,888	\$0	\$293,628,888	Schedule 2
2	Total Plant In-Service	293,628,888	0	293,628,888	0	293,628,888	
	Less: Accumulation Provision for Depreciation						
3	Depreciation Expense	82,517,504	0	82,517,504	17,297,706	99,815,210	Schedule 3
4	Total Accumulated Provision for Depreciation	82,517,504	0	82,517,504	17,297,706	99,815,210	
5	Net Regulatory Asset--Post In-Service Carrying Cost	32,504,248	0	32,504,248	(1,506,050)	30,998,198	Schedule 4
6	Net Deferred Tax Balance--PISCC, Deferred Depreciation & CC and Deferred O&M & CC (ADIT & EDIT)	(15,379,364)	0	(15,379,364)	732,425	(14,646,939)	Schedule 5
7	Deferred Taxes on Liberalized Depreciation (ADIT & EDIT)	(61,042,638)	0	(61,042,638)	2,877,474	(58,165,164)	Schedule 6
8	Net Rate Base	167,193,630	0	167,193,630	(15,193,857)	151,999,773	
9	Approved Pre-tax Rate of Return (at 21% Federal Income Tax Rate)				9.23%	9.23%	Schedule 7
10	Annualized Return on Rate Base				(1,402,393)	14,029,579	
	<b><u>Operating Expenses</u></b>						
11	Annualized Provision for Depreciation For Additions				17,297,712	17,297,712	Schedule 8
12	Annualized Amortization of PISCC				2,304,782	2,304,782	Schedule 9
13	Deferred O&M Expense and Carrying Costs				4,304,322	4,304,322	Schedule 10
14	Annualized Property Tax Expense				10,663,854	10,663,854	Schedule 11
15	Reduction in Operation & Maintenance Expense				(12,933,000)	(12,933,000)	Per Stipulation in Case No. 10-2326-GE-RDR
16	<b>Annualized Revenue Requirement - Subtotal</b>				20,235,277	35,667,249	
17	<b><u>Commerical Activity Tax Gross Up</u></b>	0.26068%			52,749	92,977	
18	<b>Annualized Revenue Requirement</b>				\$20,288,026	\$35,760,226	



Duke Energy Ohio  
Calculation of Rider DR-IM

Accumulated Provision for Depreciation

Line No.	Plant Account	Balance at 12/31/2016	Adjustment	Adjusted Balance at 12/31/2016	1/31/2017	2/29/2017	3/31/2017	4/30/2017	5/31/2017	6/30/2017	7/31/2017	8/31/2017	9/30/2017	10/31/2017	11/30/2017	12/31/2017
Cumulative																
1	Station Equipment	36200		\$3,484,565	\$3,535,167	\$3,585,769	\$3,636,371	\$3,686,973	\$3,737,575	\$3,788,177	\$3,838,779	\$3,889,381	\$3,939,982	\$3,990,584	\$4,041,186	\$4,091,787
2	Major Equipment	36202		397,401	397,401	408,941	414,712	420,482	426,252	432,023	437,793	443,563	449,334	455,104	460,874	466,645
3	Poles, Towers and Fixtures	36400		335,118	335,118	349,444	356,608	363,771	370,934	378,096	385,259	392,422	399,586	406,749	413,912	421,076
4	Distribution OH Conduct & Devises	36500		3,673,899	\$3,741,019	3,808,139	3,875,260	3,942,380	4,009,500	4,076,621	4,143,741	4,210,861	4,277,982	4,345,102	4,412,222	4,479,344
5	Leased Meters	37002		21,605,406	\$21,969,184	22,332,962	22,696,739	23,060,517	23,424,295	23,788,072	24,151,850	24,515,628	24,879,405	25,243,183	25,606,961	25,970,738
6	Electronic Data Processing Equip	39101		1,534,501	\$1,545,420	1,556,339	1,567,258	1,578,177	1,589,096	1,600,015	1,610,934	1,621,853	1,632,772	1,643,691	1,654,610	1,665,529
7	Communication Equipment Electric	39700		31,766,593	\$32,333,745	32,900,897	33,468,049	34,035,201	34,602,353	35,169,505	35,736,657	36,303,809	36,870,961	37,438,113	38,005,265	38,572,417
8	Intangible Electric	30300		7,065,144	\$7,185,864	7,306,584	7,427,304	7,548,024	7,668,744	7,789,464	7,910,184	8,030,904	8,151,624	8,272,344	8,393,064	8,513,785
9	Leased AMI Meters	17001		2,558,060	\$2,619,960	2,681,860	2,743,760	2,805,660	2,867,560	2,929,460	2,991,360	3,053,260	3,115,160	3,177,060	3,238,960	3,300,860
10	Communication Equipment Common	19700		10,030,845	\$10,217,196	10,403,547	10,589,898	10,776,249	10,962,600	11,148,951	11,335,302	11,521,653	11,708,004	11,894,355	12,080,706	12,267,057
11	Electronic Data Processing Common	19101		65,972	\$65,972	65,972	65,972	65,972	65,972	65,972	65,972	65,972	65,972	65,972	65,972	65,972
12	Total			\$82,517,504	\$83,958,979	\$85,400,454	\$86,841,931	\$88,283,406	\$89,724,881	\$91,166,356	\$92,607,831	\$94,049,306	\$95,490,782	\$96,932,257	\$98,373,732	\$99,815,210

																Total Activity
13	Station Equipment	36200			50,602	50,602	50,602	50,602	50,602	50,602	50,602	50,602	50,602	50,601	50,602	\$607,222
14	Major Equipment	36202			5,770	5,770	5,771	5,770	5,770	5,771	5,770	5,771	5,770	5,770	5,771	\$69,244
15	Poles, Towers and Fixtures	36400			7,163	7,163	7,164	7,163	7,163	7,162	7,163	7,163	7,164	7,163	7,164	\$85,958
16	Distribution OH Conduct & Devises	36500			67,120	67,120	67,121	67,120	67,120	67,121	67,120	67,121	67,120	67,120	67,122	\$805,445
17	Leased Meters	37002			363,778	363,778	363,777	363,778	363,778	363,777	363,778	363,777	363,778	363,778	363,777	\$4,365,332
18	Electronic Data Processing Equip	39101			10,919	10,919	10,919	10,919	10,919	10,919	10,919	10,919	10,919	10,919	10,919	\$131,028
19	Communication Equipment Electric	39700			567,152	567,152	567,152	567,152	567,152	567,152	567,152	567,152	567,152	567,152	567,152	\$6,805,824
20	Intangible Electric	30300			120,720	120,720	120,720	120,720	120,720	120,720	120,720	120,720	120,720	120,720	120,721	\$1,448,641
21	Leased AMI Meters	17001			61,900	61,900	61,900	61,900	61,900	61,900	61,900	61,900	61,900	61,900	61,900	\$742,800
22	Communication Equipment Common	19700			186,351	186,351	186,351	186,351	186,351	186,351	186,351	186,351	186,351	186,351	186,351	\$2,236,212
23	Electronic Data Processing Common	19101	(1)		-	-	-	-	-	-	-	-	-	-	-	\$0
24	Total				\$1,441,475	\$1,441,475	\$1,441,477	\$1,441,475	\$1,441,475	\$1,441,475	\$1,441,475	\$1,441,475	\$1,441,476	\$1,441,475	\$1,441,475	\$17,297,706

Depreciation Percent  
JAN - DEC

Incremental			
25	Station Equipment	36200	1.92%
26	Major Equipment	36202	1.92%
27	Poles, Towers and Fixtures	36400	2.40%
28	Distribution OH Conduct & Devises	36500	2.80%
29	Leased Meters	37002	6.67%
30	Electronic Data Processing Equip	39101	20.00%
31	Communication Equipment Electric	39700	6.67%
32	Intangible Electric	30300	20.00%
33	Leased AMI Meters	17001	6.67%
34	Communication Equipment Common	19700	6.67%
35	Electronic Data Processing Common	19101	20.00%

Notes

(1) Fully depreciated





Schedule 4  
Electric

Regulatory Asset--Net																
27	18236x	Station Equipment	\$4,038,263	\$4,038,263	\$16,349	\$16,442	\$16,535	(\$5,218)	(\$5,218)	(\$5,218)	(\$5,218)	(\$5,218)	(\$5,218)	(\$5,218)	(\$5,218)	\$4,040,627
28	18236x	Major Equipment	\$450,724	\$450,724	\$1,395	\$1,404	\$1,413	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	\$449,599
29	18236x	Distribution Station Equipment	(\$17,636)	(\$17,636)	(\$4,518)	(\$4,536)	(\$4,553)	(\$311)	(\$311)	(\$311)	(\$311)	(\$311)	(\$311)	(\$311)	(\$311)	(\$34,042)
30	18236x	Poles, Towers and Fixtures	\$396,573	\$396,573	\$1,313	\$1,320	\$1,328	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	(\$593)	\$395,197
31	18236x	Distribution OH Conduct & Devises	\$3,423,569	\$3,423,569	\$12,125	\$12,197	\$12,270	(\$4,884)	(\$4,884)	(\$4,884)	(\$4,884)	(\$4,884)	(\$4,884)	(\$4,884)	(\$4,884)	\$3,416,205
32	18236x	Leased Meters	\$7,722,434	\$7,722,434	(\$249)	(\$75)	\$101	(\$46,011)	(\$46,011)	(\$46,011)	(\$46,011)	(\$46,011)	(\$46,011)	(\$46,011)	(\$46,011)	\$7,308,112
33	18236x	Electronic Data Processing Equip	\$141,292	\$141,292	(\$1,814)	(\$1,809)	(\$1,805)	(\$3,443)	(\$3,443)	(\$3,443)	(\$3,443)	(\$3,443)	(\$3,443)	(\$3,443)	(\$3,443)	\$104,877
34	18236x	Communication Equipment   Electric	\$10,748,853	\$10,748,853	(\$2,537)	(\$2,304)	(\$2,070)	(\$62,650)	(\$62,650)	(\$62,650)	(\$62,650)	(\$62,650)	(\$62,650)	(\$62,650)	(\$62,650)	\$10,178,092
35	18236x	Intangible Electric	\$945,534	\$945,534	(\$9,550)	(\$9,522)	(\$9,493)	(\$21,456)	(\$21,456)	(\$21,456)	(\$21,456)	(\$21,456)	(\$21,456)	(\$21,456)	(\$21,456)	\$723,865
36	18236x	Leased AMI Meters	\$1,099,146	\$1,099,146	\$204	\$225	\$247	(\$5,876)	(\$5,876)	(\$5,876)	(\$5,876)	(\$5,876)	(\$5,876)	(\$5,876)	(\$5,876)	\$1,046,938
37	18236x	Communication Equipment   Common	\$3,550,127	\$3,550,127	(\$564)	(\$488)	(\$412)	(\$20,429)	(\$20,429)	(\$20,429)	(\$20,429)	(\$20,429)	(\$20,429)	(\$20,429)	(\$20,429)	\$3,364,802
38	18236x	Electronic Data Processing Common	\$5,369	\$5,369	(\$67)	(\$67)	(\$67)	(\$138)	(\$138)	(\$138)	(\$138)	(\$138)	(\$138)	(\$138)	(\$138)	\$3,926
39		Total	\$32,504,248	\$0	\$32,504,248	\$12,087	\$12,787	\$13,494	(\$171,602)	(\$171,602)	(\$171,602)	(\$171,602)	(\$171,602)	(\$171,602)	(\$171,602)	\$30,998,198

Jan - Dec

PISCC Rate used in 2017

5.32%

Dollars Approved in Previous Filings (cumulative)			<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
40	18236x	Station Equipment		\$2,399,623	\$8,753,332	\$16,715,952	\$21,107,609	\$30,923,113	\$30,869,275	\$31,626,169
41	18236x	Major Equipment		\$956,938	\$1,771,237	\$2,082,440	\$2,873,492	\$3,624,290	\$3,620,114	\$3,606,452
42	18236x	Distribution Station Equipment		\$640,421	\$1,327,263	\$2,388,256	\$4,551,045	\$942,658	\$940,646	\$0
43	18236x	Poles, Towers and Fixtures			\$71,298	\$921,383	\$929,538	\$3,357,656	\$3,565,604	\$3,581,655
44	18236x	Distribution OH Conduct & Devises		\$1,669,379	\$6,632,181	\$10,982,561	\$19,030,143	\$27,618,658	\$28,460,140	\$28,765,884
45	18236x	Leased Meters	\$6,575,444	\$8,859,836	\$20,638,950	\$37,323,032	\$54,516,600	\$65,535,997	\$65,147,603	\$65,447,240
46	18236x	Electronic Data Processing Equip			\$670,020	\$1,035,769	\$1,189,379	\$1,459,802	\$1,868,070	\$1,899,274
47	18236x	Communication Equipment   Electric	\$12,016,987	\$11,946,495	\$16,645,029	\$35,053,373	\$65,478,280	\$89,980,023	\$102,036,328	\$102,036,328
48	18236x	Intangible Electric			\$4,496,850	\$5,824,324	\$6,594,841	\$5,887,901	\$11,910,778	\$11,941,524
49	18236x	Leased AMI Meters				\$1,230,621	\$10,026,620	\$11,140,571	\$11,140,571	\$11,136,417
50	18236x	Communication Equipment   Common	\$1,036,040	\$2,202,634	\$4,582,456	\$12,785,265	\$20,192,709	\$28,918,100	\$33,530,757	\$33,526,501
51	18236x	Electronic Data Processing Common	\$19,522	\$19,522	\$19,522	\$61,445	\$61,445	\$61,445	\$61,445	\$61,445
Total			\$19,647,993	\$28,694,848	\$65,608,138	\$125,173,801	\$197,755,702	\$268,336,263	\$293,151,331	\$293,628,889

Schedule 5  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM

Net Deferred Tax Balance -- PISCC, Deferred Deprec and Deferred O&M

Line No.		Balance at 12/31/2016	12/31/2017
<b>Net Deferred Tax Balance - PISCC</b>			
1	Ending Balance Per Sch 4	\$32,504,248	\$30,998,198
2	Tax Rate (35% in 2016, 21% in 2017)	35.00%	21.00%
3	Cumulative ADIT	(\$11,376,487)	(\$6,509,622)
4	Cumulative EDIT		(\$4,339,748)
<b>Net Deferred Tax Balance - Deferred Depreciation and Carrying Costs</b>			
5	Ending Balance Per Sch 10	\$1,070,019	\$669,900
6	Tax Rate (35% in 2016, 21% in 2017)	35.00%	21.00%
7	Cumulative ADIT	(\$374,507)	(\$140,679)
8	Cumulative EDIT		(\$93,786)
<b>Net Deferred Tax Balance - Deferred O&amp;M and Carrying Costs</b>			
9	Ending Balance Per Sch 10	\$10,366,771	\$10,180,297
10	Tax Rate (35% in 2016, 21% in 2017)	35.00%	21.00%
11	Cumulative ADIT	(\$3,628,370)	(\$2,137,862)
12	Cumulative EDIT		(\$1,425,242)
	Total	(\$15,379,364)	Total (\$14,646,939)

Duke Energy Ohio  
Calculation of Rider DR-IM

Deferred Taxes on Liberalized Depreciation

Line No.	Tax Years 2008- 2015 (By tax year total)								
	Total Tax Year 2008	Total Tax Year 2009	Total Tax Year 2010	Total Tax Year 2011	Total Tax Year 2012	Total Tax Year 2013	Total Tax Year 2014	Total Tax Year 2015	
1	Total Plant In-Service	\$19,647,993	\$28,694,847	\$65,608,139	\$125,173,802	\$197,755,704	\$268,336,265	\$293,151,333	\$293,628,891
2	Book to Tax Basis Adjustments:	0	0	0	0	0	0	0	0
	Tax Base In-Service subject to:								
3	Bonus Depreciation - 50%	19,647,993	28,694,847	54,087,031	56,746,496	129,328,398	200,362,261	225,177,329	225,654,887
4	Bonus Depreciation - 100%	0	0	11,521,108	68,427,305	68,427,305	67,974,005	67,974,005	67,974,005
5	MACRS	0	0	0	0	0	0	0	0
6	Total Tax Depreciation Base	19,647,993	28,694,847	65,608,139	125,173,801	197,755,703	268,336,266	293,151,334	293,628,892
7	Tax Depreciation - MACRS	1,179,950	2,432,339	4,158,340	4,798,205	7,546,322	13,837,590	17,024,811	14,881,568
8	Tax Depreciation - Bonus - 50%	9,823,997	4,523,427	13,022,840	1,329,733	36,290,951	36,494,245	12,407,534	238,779
9	Tax Depreciation - Bonus - 100%	0	0	11,521,108	56,906,197	0	0	0	0
10	Total Tax Depreciation	11,003,947	6,955,766	28,702,288	63,034,135	43,837,273	50,331,835	29,432,345	15,120,347
	Book Depreciation								
11	Total Book Depreciation	225,398	1,239,916	2,580,160	5,305,586	8,880,980	13,158,265	17,533,867	18,518,717
12	Less: Book Depr on AFUDC Equity	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0
14	Net Book Depreciation	225,398	1,239,916	2,580,160	5,305,586	8,880,980	13,158,265	17,533,867	18,518,717
15	Tax Depreciation in Excess of Book Depreciation	10,778,549	5,715,850	26,122,128	57,728,549	34,956,293	37,173,570	11,898,478	(3,398,370)
16	Federal Deferred Taxes @ 35.00%	(\$3,772,492)	(\$2,000,548)	(\$9,142,745)	(\$20,204,992)	(\$12,234,703)	(\$13,010,750)	(\$4,164,467)	\$1,189,430
17	Federal Deferral Rate	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%
	Deferred Taxes Tax Years 2008-2017 (35%-21%=14%)	-\$1,508,997	-\$800,219	-\$3,657,098	-\$8,081,997	-\$4,893,881	-\$5,204,300	-\$1,665,787	\$475,772

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Electric  
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Duke Energy Ohio  
Calculation of Rider DR-IM

Deferred Taxes on Liberalized Depreciation

Line No.		Tax Year 2016		Tax Year 2016			Tax Year 2016		Total Tax Year 2016
		Vintage 2008	Vintage 2009	Vintage 2010	Vintage 2011	Vintage 2012	Vinatge 2013	Vintage 2014	
		Total	Total	Total	Total	Total	Total	Total	
		<u>Vintage 2008</u>	<u>Vintage 2009</u>	<u>Vintage 2010</u>	<u>Vintage 2011</u>	<u>Vintage 2012</u>	<u>Vintage 2013</u>	<u>Vintage 2014</u>	
1	Total Plant In-Service	\$19,647,993	\$10,736,164	\$32,816,053	\$59,565,663	\$72,581,902	\$72,988,490	\$24,815,068	\$293,628,891
2	Book to Tax Basis Adjustments:	0	0	0	0	0	0	0	0
	Tax Base In-Service subject to:								
3	Bonus Depreciation - 50%	19,647,993	10,736,164	21,294,945	3,112,767	72,581,902	72,988,490	24,815,068	225,654,887
4	Bonus Depreciation - 100%	0	0	11,521,108	56,452,897	0	0	0	67,974,005
5	MACRS	0	0	0	0	0	0	0	0
6	Total Tax Depreciation Base	19,647,993	10,736,164	32,816,053	59,565,664	72,581,902	72,988,490	477,558	293,628,892
7	Tax Depreciation - MACRS	288,200	444,320	816,512	61,778	3,196,753	4,001,765	2,039,017	10,915,021
8	Tax Depreciation - Bonus - 50%	0	0	0	0	0	0	0	0
9	Tax Depreciation - Bonus - 100%			0	0	0	0	0	0
10	Total Tax Depreciation	288,200	444,320	816,512	61,778	3,196,753	4,001,765	2,039,017	10,915,021
	Book Depreciation								
11	Total Book Depreciation	1,309,219	426,325	1,512,805	3,231,042	4,154,201	4,367,178	2,473,778	17,482,538
12	Less: Book Depr on AFUDC Equity	0	0	0	0	0	0	0	0
13		0	0					0	0
14	Net Book Depreciation	1,309,219	426,325	1,512,805	3,231,042	4,154,201	4,367,178	2,473,778	17,482,538
15	Tax Depreciation in Excess of Book Depreciation	(1,021,019)	17,995	(696,293)	(3,169,264)	(957,448)	(365,413)	(434,761)	(6,567,518)
16	Federal Deferred Taxes @ 35.00%	\$357,357	(\$6,299)	\$243,703	\$1,109,242	\$335,106	\$127,895	\$152,165	\$2,298,629
17	Federal Deferral Rate	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35.00%	35%
	Deferred Taxes Tax Years 2008-2017 (35%-21%=14%)	\$142,943	-\$2,519	\$97,481	\$443,697	\$134,043	\$51,158	\$60,867	\$919,452

## Deferred Taxes on Liberalized Depreciation

Deferred Taxes Tax Years 2008-2017  
(35%-21%=14%)

## Deferred Taxes on Liberalized Depreciation

Deferred Taxes Tax Years 2008-2017  
(35%-21%=14%)

## Deferred Taxes on Liberalized Depreciation

Deferred Taxes Tax Years 2008-2017  
(35%-21%=14%)



### Deferred Taxes on Liberalized Depreciation

Line No.		Tax Year 2017 (part 4 of 4)						Total Tax Year 2017	
		3-Year MACRS	5-Year MACRS	5-Year SG Meter MACRS	7-Year MACRS	10-Year MACRS	20-Year MACRS		Total Vintage 2015
1	Total Plant In-Service	\$30,746	\$31,204	\$295,483	(\$4,256)	\$108,330	\$16,051	\$477,558	\$293,628,891
2	Book to Tax Basis Adjustments:	0	0	0	0	0		0	0
	Tax Base In-Service subject to:								
3	Bonus Depreciation - 50%	30,746	31,204	295,483	(4,256)	108,330	16,051	477,558	225,654,887
4	Bonus Depreciation - 100%	0	0	0	0	0	0	0	67,974,005
5	MACRS	0	0	0	0	0	0	0	0
6	Total Tax Depreciation Base	30,746	31,204	295,483	(4,256)	108,330	16,051	477,558	293,628,892
7	Tax Depreciation - MACRS	2,278	2,996	28,366	(372)	6,388	536	40,192	9,076,344
8	Tax Depreciation - Bonus - 50%	0	0	0	0	0	0	0	0
9	Tax Depreciation - Bonus - 100%	0	0	0	0	0	0	0	0
10	Total Tax Depreciation	2,278	2,996	28,366	(372)	6,388	536	40,192	9,076,344
	Book Depreciation								
11	Total Book Depreciation	6,148	6,241	19,709	(284)	(24,205)	383	7,992	17,297,706
12	Less: Book Depr on AFUDC Equity	0	0	0	0	0	0	0	0
13									0
14	Net Book Depreciation	6,148	6,241	19,709	(284)	(24,205)	383	7,992	17,297,706
15	Tax Depreciation in Excess of Book Depreciation	(3,870)	(3,245)	8,657	(88)	30,593	153	32,200	(8,221,362)
16	Federal Deferred Taxes @ 35.00%	\$1,355	\$1,136	(\$3,030)	\$31	(\$10,708)	(\$54)	(\$11,270)	\$2,877,474
17	Federal Deferral Rate							35.00%	
	Deferred Taxes Tax Years 2008-2017 (35%-21%=14%)								(\$58,165,164)
						Excess Deferred Taxes for Tax Year 2008 - 2017 (35%-21%=14%)			\$ (23,266,069)
								Total at 21% EDIT	(\$34,899,095)

Schedule 7  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM

Approved Rate of Return <sup>(a)</sup>

Line No.		Balance at 3/31/2012	Percent of Total <sup>(a)</sup>	Rate	Weighted Cost	Tax Gross Up Factor <sup>(b)</sup>	Pre-Tax Rate of Return
1	Long-term debt	\$2,532,502,631	46.70%	5.32%	2.48%	1.0000000	2.48%
2	Common equity	2,890,859,857	53.30%	9.84%	5.25%	1.2842616	6.74%
3	Total Capitalization	<u>\$5,423,362,488</u>	<u>100.00%</u>		<u>7.73%</u>		<u>9.23%</u>
4	Operating Revenues			100.000%			
5	Less: Uncollectible Accounts		0.5425%				
6	City of Cincinnati Franchise Tax		<u>0.1100%</u>	<u>0.6525%</u>			
7	Income before Income Tax			99.348%	<u>1.0065679</u>	Debt Gross Up	
8	State and Municipal Income Tax			<u>0.783%</u>			
9	Income before Federal Income Tax			98.565%			
10	Federal Income Tax (21% x 98.565%)			<u>20.699%</u>			
11	Operating Income Percentage			<u>77.866%</u>			
12	Gross Revenue Conversion Factor (100%/77.866%)			<u>1.2842616</u>			

Notes: <sup>(a)</sup> Approved Rate of Return set per Stipulation approved in Case No. 12-1682-EL-AIR.  
Upon the *Tax Cut and Jobs Act of 2017* becoming law the Rate of Return has been adjusted to reflect a reduction of the Corporate tax rate from 35% to 21%.

Schedule 8  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM

Annualized Depreciation Expense of Plant in Service at Year End

Line No.		Plant Account	Balance at 12/31/2017	Fully Depreciated Plant (1)	Depreciable Balance 12/31/2017	Depreciation Rates	Annualized Depreciation
	Depreciable Plant Basis						
1	Intangible Electric	30300	\$11,941,524	(\$4,698,338)	\$7,243,186	20.00%	\$1,448,637
2	Station Equipment	36200	\$31,626,169		\$31,626,169	1.92%	\$607,222
3	Major Equipment	36202	3,606,452		\$3,606,452	1.92%	\$69,244
4	Distribution OH Conduct & Devises	36500	28,765,883		\$28,765,883	2.80%	\$805,445
5	Poles, Towers and Fixtures	36400	3,581,655		\$3,581,655	2.40%	\$85,960
6	Leased Meters	37002	65,447,240		\$65,447,240	6.67%	\$4,365,331
7	Electronic Data Processing Equip	39101	1,899,274	(1,244,109)	\$655,165	20.00%	\$131,033
8	Communication Equipment Electric	39700	102,036,328		\$102,036,328	6.67%	\$6,805,823
9	Leased AMI Meters	17001	11,136,417		\$11,136,417	6.67%	\$742,799
10	Electronic Data Processing Common	19101	61,445	(61,445)	\$0	20.00%	\$0
11	Communication Equipment Common	19700	33,526,501		\$33,526,501	6.67%	\$2,236,218
12	Total		\$293,628,888	(\$6,003,892)	\$287,624,996		\$17,297,712

(1) Adjusted balance as of December 2011 for property with 5 year life  
In 2013 , \$2,407,929 in software was retired and removed from filing

Schedule 9  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM

Annualized Amortization of PISCC

Line No.		Balance at 12/31/2017	Amortization Rate	Annualized Amortization
	<u>Regulatory Asset Deferrals</u>			
1	Station Equipment	\$4,259,856	1.64%	\$69,862
2	Major Equipment	\$477,353	1.64%	\$7,829
3	Distribution Station Equipment	\$19,179	5.00%	\$959
4	Poles, Towers and Fixtures	\$412,341	1.92%	\$7,917
5	Distribution OH Conduct & Devises	\$3,602,430	1.81%	\$65,204
6	Leased Meters	\$9,142,949	6.67%	\$609,835
7	Electronic Data Processing Equip	\$235,488	20.00%	\$47,098
8	Communication Equipment Electric	\$12,594,772	6.67%	\$840,071
9	Intangible Electric	\$1,504,408	20.00%	\$300,882
10	Leased AMI Meters	\$1,180,760	6.67%	\$78,757
11	Communication Equipment Common	\$4,116,074	6.67%	\$274,542
12	Electronic Data Processing Common	\$9,132	20.00%	\$1,826
13	Total	<u>\$37,554,742</u>		<u>\$2,304,782</u>

Duke Energy Ohio  
Calculation of Rider DR-IM

Regulatory Asset -- Deferred O&M Expenses, Carrying Cost and Amortization

Line No.	Account	Description	Balance at 12/31/2016	Adjustment	Adjusted Balance 12/31/2016	1/31/2017	2/29/2017	3/31/2017	4/30/2017	5/31/2017	6/30/2017	7/31/2017	8/31/2017	9/30/2017	10/31/2017	11/30/2017	12/31/2017	Balance at 12/31/2017
Regulatory Asset--Deferred O&M Expenses																		
1	182362	Misc. Expenses	\$43,379,229	\$0	\$43,379,229	\$243,208	\$420,374	\$437,200	\$253,371	\$429,466	\$285,040	\$444,325	\$257,806	\$235,215	\$254,380	\$442,609	\$216,653	\$47,298,876
2	18236X	Book Depreciation- Current Year Additions	8,662,525	0	8,662,525	0	0	0	0	0	0	0	0	0	0	0	0	8,662,525
3		Total	52,041,754	0	52,041,754	243,208	420,374	437,200	253,371	429,466	285,040	444,325	257,806	235,215	254,380	442,609	216,653	55,961,401
Cumulative--Regulatory Asset--Deferrals			\$52,041,754		\$52,041,754													55,961,401
Regulatory Asset--Amortization																		
4	407XXX	Misc. Material, Labor & Expenses	\$37,044,450	\$0	\$37,044,450	\$506,489	\$506,489	\$506,489	\$330,106	\$330,106	\$330,106	\$330,106	\$330,106	\$330,106	\$330,106	\$330,106	\$330,106	\$41,534,871
5	407XXX	Book Depreciation	8,358,290	0	8,358,290	126,430	126,430	126,430	2,356	2,356	2,356	2,356	2,356	2,356	2,356	2,356	2,356	8,758,784
6		Total	45,402,740	0	45,402,740	632,919	632,919	632,919	332,462	332,462	332,462	332,462	332,462	332,462	332,462	332,462	332,462	50,293,655
Cumulative--Regulatory Asset--Amortization			\$45,402,740		\$45,402,740													50,293,655
Regulatory Asset--Deferred O&M Expenses Carrying Cost																		
7	182362	Misc. Material, Labor & Expenses	\$4,031,992	\$0	\$4,031,992	\$35,457	\$35,850	\$35,887	\$24,917	\$26,430	\$28,014	\$29,631	\$31,187	\$32,280	\$33,365	\$34,910	\$36,372	\$4,416,292
8	18236X	Book Depreciation	765,784	0	765,784	125	125	125	0	0	0	0	0	0	0	0	0	766,159
9		Total	4,797,776	0	4,797,776	35,582	35,975	36,012	24,917	26,430	28,014	29,631	31,187	32,280	33,365	34,910	36,372	5,182,451
Cumulative--Regulatory Asset--Deferrals			\$4,797,776		\$4,797,776	\$4,833,358	\$4,869,333	\$4,905,345	\$4,930,262	\$4,956,692	\$4,984,706	\$5,014,337	\$5,045,524	\$5,077,804	\$5,111,169	\$5,146,079	\$5,182,451	
Regulatory Asset--Total																		
10	182362	Misc. Expenses	\$10,366,771	\$0	\$10,366,771	(\$227,824)	(\$50,265)	(\$33,402)	(\$51,818)	\$125,790	(\$17,052)	\$143,850	(\$41,113)	(\$62,611)	(\$42,361)	\$147,413	(\$77,081)	\$10,180,297
11	18236X	Book Depreciation- Current Year Additions	1,070,019	0	1,070,019	(126,305)	(126,305)	(126,305)	(2,356)	(2,356)	(2,356)	(2,356)	(2,356)	(2,356)	(2,356)	(2,356)	(2,356)	669,900
12		Total	11,436,790	0	11,436,790	(354,129)	(176,570)	(159,707)	(54,174)	123,434	(19,408)	141,494	(43,469)	(64,967)	(44,717)	145,057	(79,437)	10,850,197
13		Cumulative--Regulatory Asset--Total	\$11,436,790		\$11,436,790	\$11,082,661	\$10,906,091	\$10,746,384	\$10,692,210	\$10,815,644	\$10,796,236	\$10,937,730	\$10,894,261	\$10,829,294	\$10,784,577	\$10,929,634	\$10,850,197	

Carrying Cost Rate for 2016      JAN - DEC      5.32%      \$4,304,322

182362	Misc. Material, Labor & Expenses	O&M		18236X - Book Depreciation	BY YEAR		Severance Costs By Year		(1) - Severance accrued in previous yrs but not included in 2012 filing.	
		BY YEAR	Carrying Costs							
		2008	\$50,977		1,350	2008	\$226,938	2013		\$343,321
		2009	\$1,877,658		47,972	2009	\$1,238,376	2014		\$291,787
		2010	\$6,157,972		173,473	2010	\$985,758	2015		\$41,717
		2011	\$6,280,681		619,680	2011	\$1,348,927	2016		\$0
		2012	\$9,437,253		889,595	2012	\$1,506,202			
		2013	\$6,248,413		804,336	2013	\$1,810,935			
		2014	\$5,449,967		627,906	2014	\$1,517,162			
		2015	\$3,483,467		477,800	2015	\$28,277			
		2016	\$3,733,896		390,236	2016	\$0			
			\$42,720,284		4,032,348		8,662,575	676,825		(2) - Included in O&M costs BUT excluded from Carrying Costs calculations

Schedule 11  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM  
  
Annualized Property Taxes

Line No.	OHIO PROPERTY TAX	YEAR 2008		YEAR 2009		YEAR 2010	
		15-Year General Plant	25-Year Distribution Plant	15-Year General Plant	25-Year Distribution Plant	15-Year General Plant	25-Year Distribution Plant
	Property Tax Expense (Amounts Exclude Post In-Service Carrying Costs)						
1	Current Year Investment	\$13,072,549	\$6,575,444	\$1,159,563	\$9,576,601	\$9,773,836	\$23,042,217
2	Less: AFUDC In-Service	241	28,105	-	-	-	-
3	Net Cost of Taxable Property	13,072,308	6,547,339	1,159,563	9,576,601	9,773,836	23,042,217
4	Percent Good <sup>(a)</sup>	36.7%	62.0%	43.3%	66.0%	50.0%	70.0%
5	True Value of Taxable Property	4,797,537	4,059,350	502,091	6,320,557	4,886,918	16,129,552
6	Valuation Percent	24%	85%	24%	85%	24%	85%
7	Total Taxable Value	1,151,409	3,450,448	120,502	5,372,473	1,172,860	13,710,119
8	Retired Net Taxable Plant End of Year (@ 15%)	0	0	0	0	0	0
9	Net Property Tax Valuation	1,151,409	3,450,448	120,502	5,372,473	1,172,860	13,710,119
10	Ohio Property Tax	\$112,647	\$337,572	\$11,789	\$525,612	\$114,746	\$1,341,319
11	Ohio Property Tax Calculation:						
12	Average Property Tax Rate per \$1,000 of Valuation	\$97.8342		\$97.8342		\$97.8342	
13	<sup>(a)</sup> From Electric Company Annual Report -						
14	Schedule C - 15 Year Class Life (General Plant)						
15	Schedule C - 25 Year Class Life (Distribution Plant)						

Schedule 11  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM  
  
Annualized Property Taxes

Line No.	OHIO PROPERTY TAX	YEAR 2011		YEAR 2012		YEAR 2013	
		15-Year General Plant	25-Year Distribution Plant	15-Year General Plant	25-Year Distribution Plant	15-Year General Plant	25-Year Distribution Plant
	Property Tax Expense (Amounts Exclude Post In-Service Carrying Costs)						
1	Current Year Investment	\$28,912,456	\$30,653,207	\$39,420,943	\$33,160,959	\$43,994,545	\$28,993,945
2	Less: AFUDC In-Service	-	-	-	-	-	-
3	Net Cost of Taxable Property	28,912,456	30,653,207	39,420,943	33,160,959	43,994,545	28,993,945
4	Percent Good <sup>(a)</sup>	56.7%	74.0%	63.3%	78.0%	70.0%	82.0%
5	True Value of Taxable Property	16,393,363	22,683,373	24,953,457	25,865,548	30,796,182	23,775,035
6	Valuation Percent	24%	85%	24%	85%	24%	85%
7	Total Taxable Value	3,934,407	19,280,867	5,988,830	21,985,716	7,391,084	20,208,780
8	Retired Net Taxable Plant End of Year (@ 15%)	0	0	0	0	0	0
9	Net Property Tax Valuation	3,934,407	19,280,867	5,988,830	21,985,716	7,391,084	20,208,780
10	Ohio Property Tax	\$384,920	\$1,886,328	\$585,912	\$2,150,955	\$723,101	\$1,977,110
11	Ohio Property Tax Calculation:						
12	Average Property Tax Rate per \$1,000 of Valuation	\$97.8342		\$97.8342		\$97.8342	
13	<sup>(a)</sup> From Electric Company Annual Report -						
14	Schedule C - 15 Year Class Life (General Plant)						
15	Schedule C - 25 Year Class Life (Distribution Plant)						

Schedule 11  
Electric

Line No.	OHIO PROPERTY TAX	YEAR 2014		YEAR 2015		Total
		15-Year General Plant	25-Year Distribution Plant	15-Year General Plant	25-Year Distribution Plant	
	Property Tax Expense (Amounts Exclude Post In-Service Carrying Costs)					
1	Current Year Investment	\$24,214,058	\$601,010	\$53,540	\$424,018	\$293,628,891
2	Less: AFUDC In-Service	-	-	-	-	
3	Net Cost of Taxable Property	24,214,058	601,010	53,540	424,018	
4	Percent Good <sup>(a)</sup>	76.7%	86.0%	83.3%	90.0%	
5	True Value of Taxable Property	18,572,182	516,869	44,599	381,616	
6	Valuation Percent	24%	85%	24%	85%	
7	Total Taxable Value	4,457,324	439,339	10,704	324,374	
8	Retired Net Taxable Plant End of Year (@ 15%)	0	0	0	0	
9	Net Property Tax Valuation	4,457,324	439,339	10,704	324,374	
10	Ohio Property Tax	\$436,079	\$42,982	\$1,047	\$31,735	\$10,663,854
11	Ohio Property Tax Calculation:					
12	Average Property Tax Rate per \$1,000 of Valuation	\$97.8342		\$97.8342		
13	<sup>(a)</sup> From Electric Company Annual Report -					
14	Schedule C - 15 Year Class Life (General Plant)					
15	Schedule C - 25 Year Class Life (Distribution Plant)					



Schedule 12  
Electric

Duke Energy Ohio  
Calculation of Rider DR-IM  
Charge Per Bill

Line No.		Total	Residential <sup>(a)</sup>	Non-Residential	Source
1	2017 Rider DR-IM Revenue Requirement	\$35,760,226	\$30,396,192	\$5,364,034	Schedule 1
2	Customer Bills <sup>(b)</sup>		7,614,276	897,408	Internal Company Data
3	Rider DR-IM Charge - Per Bill		\$3.99	\$5.98	Line 1 ÷ Line 2
4	Rider DR-IM Charge - Subject to CAP (c )		\$3.99	N/A	Line 1 (adjusted for deferred savings and 2012 severance costs) ÷ Line 2
5	Cap per Stipulation - 2018		\$7.00	N/A	Stipulation in Case No. 13-1141-GE-RDR

Note: <sup>(a)</sup> Per Stipulation in Case No. 08-920-EL-SSO, residential customer class is allocated 85% of Rider DR-IM revenue requirement.

<sup>(b)</sup> Excludes all lighting customers.

<sup>(c)</sup> Excludes deferred savings and 2012 severance costs

## **Duke Energy Ohio Distribution System Efficiency Metrics – IVVC** **2017 Report**

The attached report is being filed annually along with Duke Energy Ohio's Smart Grid Cost Recovery filing as agreed to by parties on February 6, 2013 when parties met to discuss reporting of distribution system efficiencies from Integrated Volt/Var Control (IVVC) implementation. As discussed in that meeting, the IVVC development and testing began in the 4<sup>th</sup> quarter of 2012 with the first report beginning in 2012.

The following report reflects the number of circuits that were operating under IVVC control by year-end 2017. This report utilizes 2012 as the baseline year for the System Average Voltage from which the MWh Reduction under IVVC is calculated.

The MWh Reduction with IVVC is calculated with an assumed CVR Factor of .5 and .79.

Avg System Voltage Baseline(2012)	123.2					
	Avg System Voltage(2017)	Avg Circuit Voltage Reduction% with IVVC	MWh under IVVC Control	MWh Reduction with IVVC	CVR Factor	Circuits under IVVC Control
IVVC Operation as of 12/31/17	121.39	1.47%	47,805,442	351,370	0.5	511
IVVC Operation as of 12/31/17	121.39	1.47%	47,805,442	555,165	0.79	511

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

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**Case No(s). 18-0838-EL-RDR**

Summary: Testimony Direct Testimony of Douglas J. Heitkamp on Behalf of Duke Energy Ohio, Inc. electronically filed by Carys Cochern on behalf of Watts, Elizabeth H. Ms.