

**BEFORE**

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Duke )  
Energy Ohio, Inc. to for Approval of its ) Case No. 16-576-EL-POR  
2017-2019 Energy Efficiency Portfolio )  
Plan and to Establish the Associated Cost )  
Recovery and Incentive Mechanism to be  
Recovered through its Energy Efficiency  
Rider

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**SUPPLEMENTAL TESTIMONY OF**

**TRISHA A. HAEMMERLE**

**ON BEHALF OF**

**DUKE ENERGY OHIO, INC.**

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October 14, 2016

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ATTACHMENT JEZ-1

**I.        INTRODUCTION AND PURPOSE OF TESTIMONY**

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

2     A.     My name is Trisha A. Haemmerle. My business address is 139 East Fourth  
3           Street, 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 (DEBS), as Senior  
6           Manager, Strategy and Collaboration. DEBS provides various administrative and  
7           other services to Duke Energy Ohio, Inc., (Duke Energy Ohio or the Company)  
8           and other affiliated companies of Duke Energy Corporation (Duke Energy).

9     **Q.     ARE YOU THE SAME TRISHA A. HAEMMERLE WHO FILED DIRECT**  
10       **TESTIMONY IN THIS PROCEEDING ON JUNE 15, 2016?**

11    A.     Yes.

12    **Q.     WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT**  
13       **TESTIMONY IN THIS PROCEEDING?**

14    A.     The purpose of my supplemental testimony is to discuss modifications to Duke  
15           Energy Ohio's proposed new portfolio of energy efficiency and peak demand  
16           reduction programs.

**II.    BACKGROUND**

17    **Q.     DID DUKE ENERGY OHIO COMPLETE AN ASSESSMENT OF**  
18       **POTENTIAL STUDY?**

19    A.     Yes. Due to the length of time associated with having this assessment performed,  
20           Duke Energy Ohio requested a waiver in these proceedings for Rule 4901:1-39-  
21           04(A) and requested an October 15, 2016 due date. The Public Utilities  
22           Commission of Ohio (Commission) granted an extension to June 15, 2016,

1        however this earlier date did not allow enough time to have a thorough  
2        assessment of potential study completed. Duke Energy Ohio requested an  
3        extension to file the assessment of potential study to October 15, 2016 along with  
4        the opportunity to adjust the portfolio with the results from the study, including  
5        the historical performance versus the baselines. On June 13, 2016 the  
6        Commission ordered the assessment of potential study to be filed on August 15,  
7        2016.<sup>1</sup> The Market Assessment and Action Plan (Plan) was filed on August 15,  
8        2016.

### **III.        OVERVIEW OF THE PROPOSED PORTFOLIO PLAN**

9        **Q.        IS DUKE ENERGY OHIO AMENDING THE PORTFOLIO BASED ON**  
10        **RECOMMENDATIONS FROM INFORMATION CONTAINED IN THE**  
11        **ASSESSMENT OF POTENTIAL STUDY?**

12        A.        Yes, the purpose of this supplemental testimony is to describe changes that the  
13        Company wishes to propose to account for any programmatic gaps identified in  
14        the Plan.

15        **Q.        WHAT ARE THE CHANGES TO THE PORTFOLIO THAT ARE**  
16        **REQUIRED DUE TO RECOMMENDATIONS IN THE PLAN.**

17        A.        In this amended application, Duke Energy Ohio is requesting the approval of  
18        proposed changes to its programs and measures that are described in greater detail  
19        in the testimony of Company witness Kevin A. Bright. The Company is also  
20        submitting a supplemental version of JEZ-1 to account for the changes.

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<sup>1</sup> *In the Matter of the Application of Duke Energy Ohio, Inc., for a Waiver*, Case No. 16-1017-EL-WVR, Entry (June 13, 2016).

1   **Q.    AT A SUMMARY LEVEL, PLEASE DESCRIBE THE PORTFOLIO OF**  
2       **PROGRAMS THAT THE COMPANY IS PROPOSING IN THIS**  
3       **APPLICATION?**

4   A.   Duke Energy Ohio's residential and non-residential energy efficiency portfolio  
5       consists of all the programs described in its original application. The Company  
6       recommends inclusion of additional measures and a new Non-Residential  
7       program: Smart Saver<sup>®</sup> Non-Residential Performance Incentive Program.

8   **Q.    DID THE COMPANY SOLICIT INPUT FROM STAKEHOLDERS**  
9       **REGARDING POTENTIAL PORTFOLIO MODIFICATIONS?**

10  A.   Duke Energy Ohio regularly solicits feedback and program suggestions from  
11       stakeholders as part of its Community Partnership Meetings (EE Collaborative),  
12       which has helped to inform the portfolio included in this application.  
13       Additionally, the Company shared the results of the Assessment of Potential with  
14       this group and any modifications that it will be proposing for input and  
15       suggestions during the third quarter collaborative meeting held on September 8,  
16       2016. Many but not all of the intervenors in this proceeding are also members of  
17       the Duke Energy Ohio Community Partnership.

18  **Q.    IS THE COMPANY PROPOSING ANY MODIFICATIONS TO THE**  
19       **RECOVERY MECHANISM AND INCENTIVE THAT THE COMPANY**  
20       **PROPOSED IN ITS ORIGINAL APPLICATION FILED WITH THE**  
21       **COMMISSION IN JUNE 2016?**

22  A.   No. Duke Energy Ohio is proposing the same cost recovery mechanism that  
23       would permit it to collect the following:

- 1                   1.     The recovery of the actual costs incurred by Duke Energy Ohio to  
2                             deliver the approved portfolio of energy efficiency and demand  
3                             response programs, including the EM&V costs.
- 4                   2.     The recovery of lost distribution margins from those customers not  
5                             included in the Company's distribution revenue decoupling pilot  
6                             approved in Case No. 11-5905-EL-RDR.
- 7                   3.     The ability to earn a shared savings incentive in any year in which  
8                             it meets or exceeds its energy efficiency benchmark targets that are  
9                             required of all electric distribution utilities by Ohio law.
- 10           The Company's shared savings incentive is calculated as a percentage of the net  
11           system benefits (avoided costs less the program costs) generated by the  
12           Company's portfolio of energy efficiency and demand response programs in a  
13           particular year. The net system benefits will be calculated in a manner consistent  
14           with the calculation of the Utility Cost Test. The level of incentive, the Company  
15           is requesting is 10% of the net system benefits on an after-tax incentive amount.
- 16   **Q.    IS THE SHARED SAVINGS INCENTIVE MECHANISM EFFECTIVE IN**  
17   **INCENTIVIZING DUKE ENERGY OHIO TO OVER COMPLY WITH**  
18   **ITS ENERGY EFFICIENCY BENCHMARKS IN 2017 - 2019?**
- 19   A.    Yes. The fact that the shared savings mechanism only allows the Company to  
20           earn a shared savings incentive in a year that it meets or exceeds its energy  
21           efficiency benchmark will help to ensure that the Company will continue to strive  
22           to achieve as much energy efficiency as possible and even more importantly, it  
23           motivates the Company to maximize cost effectiveness. This mechanism

1           incentivizes the Company by allowing it to retain 10% of the net system benefits,  
2           while allowing customers to retain 90% of the benefits realized through the  
3           Company's portfolio of programs.

4   **Q.   DOES THE COMPANY BELIEVE THAT THE ITS SHARED SAVING**  
5   **INCENTIVE SHOULD BE CAPPED?**

6   A.   No. The Company does not believe that putting a cap on an incentive mechanism  
7       designed to motivate the utility to maximize the net benefit realized through its  
8       portfolio of programs is logical or wise. Setting an arbitrary cap, or point at  
9       which the utility should no longer share a small percentage of the net benefit  
10      realized through energy efficiency programs, has no basis and could actually  
11      serve as a disincentive to continue to attempt to maximize the net benefits. While  
12      it believes a cap is illogical, if the Commission believes that an incentive cap is  
13      necessary, the Company believes that an after-tax shared savings cap should be  
14      set at \$10 million. This cap amount would be logical as it is 50% of the currently  
15      approved shared savings cap for AEP Ohio, which is approximately twice the size  
16      of Duke Energy Ohio.

17   **Q.   ARE THE TERMS OF THIS PROPOSAL CONSISTENT WITH THE**  
18   **COMMISSION'S ENERGY EFFICIENCY RULES?**

19   A.   Yes. As part of my responsibilities with regard to energy efficiency compliance  
20       in Ohio, it is necessary to have an understanding of the Commission's rules. One  
21       of the Commission's energy efficiency and peak demand reduction rules states  
22       that an electric utility may request recovery of an approved rate adjustment  
23       mechanism reflecting peak demand response and energy efficiency program costs,

1 lost distribution revenues and shared savings. Duke Energy Ohio proposes that  
2 this recovery mechanism would be reconciled each year.

#### **IV. COST EFFECTIVENESS**

3 **Q. IS DUKE ENERGY OHIO'S AMENDED ENERGY EFFICIENCY**  
4 **PORTFOLIO COST EFFECTIVE?**

5 **A.** Yes. Duke Energy Ohio's energy efficiency portfolio is cost effective. Table 1  
6 below provides cost effectiveness scores for each program and the overall  
7 portfolio:



**Table 1**

<b>Program/Portfolio Cost Effectiveness - 2017-2019</b>				
<b>Program</b>	<b>UCT</b>	<b>TRC</b>	<b>RIM</b>	<b>PCT</b>
<b>Residential Programs - EE</b>				
Energy Efficiency Education Program for Schools	3.22	4.51	1.56	
Home Energy Comparison Report	1.73	1.73	1.06	
Low Income Neighborhood Program	0.64	1.34	0.54	
Power Manager®	7.46	15.10	7.46	
Power Manager® for Apartments	2.08	3.14	2.08	
Residential Energy Assessments	1.44	1.58	0.90	
Smart Saver Residential	2.19	2.11	1.10	5.35
Low Income Weatherization - Pay for Performance	5.71	5.71	1.85	
<b>Total</b>	<b>3.45</b>	<b>4.01</b>	<b>2.07</b>	<b>8.48</b>
<b>Non-Residential Programs</b>				
Mercantile Self-Direct	3.69	0.73	1.66	1.24
Power Manager® for Business	3.07	4.84	2.92	
PowerShare®	2.71	10.52	2.71	
Small Business Energy Saver	3.05	1.82	1.81	2.53
Smart Saver Non Residential Custom	2.81	0.80	1.46	1.47
Smart Saver Non Residential Performance Incentive Program	3.34	1.19	1.60	2.16
Smart Saver Non Residential Prescriptive	2.32	1.47	1.38	2.47
<b>Total</b>	<b>2.77</b>	<b>1.49</b>	<b>1.70</b>	<b>2.13</b>
<b>Overall Portfolio Total</b>	<b>3.12</b>	<b>2.30</b>	<b>1.89</b>	<b>3.17</b>

- 1    **Q.     HOW DID THE COMPANY DETERMINE COST EFFECTIVENESS?**
- 2    A.     The company utilized the DSMore model to determine the value of the Avoided
- 3         Costs of each measure and compared these benefits with the expected program
- 4         costs, including EM&V and any PJM credits, to determine cost-effectiveness. The
- 5         Commission and Duke Energy's stakeholders are familiar with DSMore, as Duke
- 6         Energy Ohio has relied on DSMore to evaluate its Energy Efficiency and Demand
- 7         Side Management programs for over a decade.

1   **Q.    WILL A DELAY IN APPROVAL IMPACT DUKE ENERGY OHIO'S**  
2       **ABILITY TO OFFER DEMAND SIDE MANAGEMENT PROGRAMS TO**  
3       **ITS CUSTOMERS?**

4   **A.**    Yes. Duke Energy Ohio's current portfolio expires on December 31, 2016. If a  
5       new portfolio is not approved by January 1, 2017, Duke Energy Ohio customers  
6       will not be able to participate in the energy efficiency programs which will impact  
7       the Company's ability to meet its annual energy efficiency benchmarks and likely  
8       result in a high degree of customer dissatisfaction.

**V.    CONCLUSION**

9   **Q.    DOES THIS CONCLUDE YOUR TESTIMONY?**

10  **A.**    Yes.

**OHIO REVENUE REQUIREMENT (excluding Lost Revenues) WORKPAPER**  
In \$

Discount Rate	7.75%
Shared Savings (Pre-tax)	15.65%
Shared Savings (After tax)	10.00%
Tax	36.10%

Summary Revenue Requirement		1	2	3	Total
Res from Portfolio		\$22,726,474	\$22,579,645	\$21,621,046	\$66,927,165
NonRes from Portfolio		\$25,031,970	\$24,107,801	\$24,620,466	\$73,760,237
Total		\$47,758,444	\$46,687,446	\$46,241,512	\$140,687,401

  

Total Portfolio		1	2	3	Total
Total Avoided Costs		\$93,214,666	\$89,252,884	\$89,232,972	\$271,700,523
- Program Costs & Overhead		\$36,401,147	\$35,481,500	\$35,684,703	\$107,567,349
- M&V Costs		\$1,634,393	\$2,012,188	\$1,259,692	\$4,926,273
Shared Savings		\$55,159,126	\$51,759,197	\$52,288,578	\$159,206,901
x Utility Sharing Rate	15.6%	15.6%	15.6%	15.6%	15.6%
Utility Share		\$8,632,371	\$8,100,284	\$8,183,132	\$24,915,788
+ Program Cost & Overhead Recovery		\$37,469,679	\$36,572,974	\$36,796,688	\$110,839,341
+ M&V Cost Recovery		\$1,636,393	\$2,014,188	\$1,261,692	\$4,932,273
Total Revenue Requirement		\$47,758,444	\$46,687,446	\$46,241,512	\$140,687,401

  

Res EE		1	2	3	Total
Avoided Costs: T&D		\$9,100,203	\$8,859,369	\$8,460,688	\$26,420,260
Avoided Costs: Energy		\$16,579,204	\$16,140,697	\$15,583,727	\$48,303,629
Avoided Costs: Capacity		\$7,995,423	\$7,627,152	\$7,209,016	\$22,831,592
PJM Credits		\$632,494	\$629,038	\$0	\$1,261,532
Total Avoided Costs		\$34,307,325	\$33,256,257	\$31,253,431	\$98,817,013
- Program Costs & Overhead		\$15,515,026	\$15,481,127	\$14,869,808	\$45,865,961
- M&V Costs		\$894,742	\$972,343	\$502,866	\$2,369,951
Shared Savings		\$17,897,557	\$16,802,788	\$15,880,757	\$50,581,102
x Utility Sharing Rate	15.6%	15.6%	15.6%	15.6%	15.6%
Utility Share		\$2,800,957	\$2,629,627	\$2,485,329	\$7,915,913
+ Program Cost & Overhead Recovery		\$15,515,026	\$15,481,127	\$14,869,808	\$45,865,961
+ M&V Cost Recovery		\$894,742	\$972,343	\$502,866	\$2,369,951
Total Revenue Requirement		\$19,210,725	\$19,088,098	\$17,854,003	\$56,151,826

  

NonRes EE		1	2	3	Total
Avoided Costs: T&D		\$9,486,484	\$8,994,218	\$8,867,878	\$27,348,581
Avoided Costs: Energy		\$20,996,154	\$20,334,979	\$21,387,772	\$62,719,905
Avoided Costs: Capacity		\$9,765,842	\$9,302,083	\$9,267,118	\$28,335,043
PJM Credits		\$516,084	\$513,264	\$0	\$1,029,348
Total Avoided Costs		\$40,764,565	\$39,144,544	\$39,522,768	\$119,431,877
- Program Costs & Overhead		\$15,285,116	\$15,078,685	\$15,550,498	\$45,914,299
- M&V Costs		\$430,507	\$676,686	\$314,388	\$1,421,581
Shared Savings		\$25,048,942	\$23,389,173	\$23,657,881	\$72,095,996
x Utility Sharing Rate	15.6%	15.6%	15.6%	15.6%	15.6%
Utility Share		\$3,920,145	\$3,660,392	\$3,702,445	\$11,282,982
+ Program Cost & Overhead Recovery		\$15,353,648	\$16,170,159	\$16,662,484	\$48,186,291
+ M&V Cost Recovery		\$432,507	\$678,686	\$316,388	\$1,427,581
Total Revenue Requirement		\$20,706,300	\$20,509,237	\$20,681,317	\$61,896,854

  

Res DR		1	2	3	Total
Avoided Costs: T&D		\$4,521,551	\$4,881,461	\$5,213,019	\$14,616,032
Avoided Costs: Capacity		\$4,767,685	\$5,062,505	\$5,361,133	\$15,191,323
Total Avoided Costs		\$9,289,236	\$9,943,966	\$10,574,152	\$29,807,354
Program Costs & Overhead		\$2,174,561	\$2,125,323	\$2,224,339	\$6,524,223
- M&V Costs		\$270,000	\$175,000	\$275,000	\$720,000
Shared Savings		\$6,844,676	\$7,643,643	\$8,074,812	\$22,563,131
x Utility Sharing Rate	15.6%	15.6%	15.6%	15.6%	15.6%
Utility Share		\$1,071,188	\$1,196,226	\$1,263,703	\$3,531,117
+ Program Cost & Overhead Recovery		\$2,174,561	\$2,125,323	\$2,224,339	\$6,524,223
+ M&V Cost Recovery		\$270,000	\$175,000	\$275,000	\$720,000
Total Revenue Requirement		\$8,515,748	\$8,496,549	\$8,763,043	\$25,775,340

  

NonRes DR		1	2	3	Total
Avoided Costs: T&D		\$4,302,029	\$3,371,252	\$3,848,800	\$11,522,081
Avoided Costs: Capacity		\$4,551,511	\$3,536,865	\$4,033,822	\$12,122,198
Total Avoided Costs		\$8,853,540	\$6,908,117	\$7,882,621	\$23,644,279
Program Costs & Overhead		\$3,426,444	\$2,796,365	\$3,040,057	\$9,262,866
- M&V Cost		\$59,144	\$188,160	\$167,437	\$414,741
Shared Savings		\$5,367,952	\$3,923,593	\$4,675,127	\$13,966,672
x Utility Sharing Rate	15.6%	15.6%	15.6%	15.6%	15.6%
Utility Share		\$840,081	\$614,040	\$731,655	\$2,185,776
+ Program Cost & Overhead Recovery		\$3,426,444	\$2,796,365	\$3,040,057	\$9,262,866
+ M&V Cost Recovery		\$59,144	\$188,160	\$167,437	\$414,741
Total Revenue Requirement		\$4,925,670	\$3,598,564	\$3,939,149	\$12,463,383

**OHIO REVENUE REQUIREMENT (excluding Lost Revenues) WORKPAPER**  
In \$

Discount Rate	7.73%
Shared Savings (Pre-tax)	0.00%
Shared Savings (After tax)	0.00%
Tax	36.10%

		1	2	3	Total
Summary Revenue Requirement	Res from Portfolio	\$18,854,329	\$18,753,793	\$17,872,013	\$55,480,135
	NonRes from Portfolio	\$20,271,743	\$19,833,369	\$20,186,367	\$60,291,479
	<b>Total</b>	<b>\$39,126,072</b>	<b>\$38,587,161</b>	<b>\$38,058,380</b>	<b>\$115,771,613</b>
		1	2	3	Total
Total Portfolio	Total Avoided Costs	\$93,214,666	\$89,252,884	\$89,232,972	\$271,700,523
	- Program Costs & Overhead	\$36,401,147	\$35,481,500	\$35,684,703	\$107,567,349
	- M&V Costs	\$1,654,393	\$2,012,188	\$1,259,692	\$4,926,273
	Shared Savings	\$55,159,126	\$51,758,197	\$52,288,578	\$159,206,901
	x Utility Sharing Rate	0.0%	0.0%	0.0%	0.0%
	Utility Share	\$0	\$0	\$0	\$0
	+ Program Cost & Overhead Recovery	\$37,469,679	\$36,572,974	\$36,796,688	\$110,839,341
	+ M&V Cost Recovery	\$1,656,393	\$2,014,188	\$1,261,692	\$4,932,273
	<b>Total Revenue Requirement</b>	<b>\$39,126,072</b>	<b>\$38,587,161</b>	<b>\$38,058,380</b>	<b>\$115,771,613</b>
		1	2	3	Total
Res EE	Avoided Costs: T&D	\$9,100,203	\$8,859,369	\$8,460,688	\$26,420,260
	Avoided Costs: Energy	\$16,579,204	\$16,140,697	\$15,583,727	\$48,303,629
	Avoided Costs: Capacity	\$7,995,423	\$7,627,152	\$7,209,016	\$22,831,592
	PJM Credits	\$632,494	\$629,038	\$0	\$1,261,532
	Total Avoided Costs	\$34,307,325	\$33,256,257	\$31,253,431	\$98,817,013
	- Program Costs & Overhead	\$15,515,026	\$15,481,127	\$14,869,808	\$45,865,961
	- M&V Costs	\$894,742	\$972,343	\$502,866	\$2,369,951
	Shared Savings	\$17,897,557	\$16,802,788	\$15,880,757	\$50,581,102
	x Utility Sharing Rate	0.0%	0.0%	0.0%	0.0%
	Utility Share	\$0	\$0	\$0	\$0
	+ Program Cost & Overhead Recovery	\$15,515,026	\$15,481,127	\$14,869,808	\$45,865,961
	+ M&V Cost Recovery	\$894,742	\$972,343	\$502,866	\$2,369,951
	<b>Total Revenue Requirement</b>	<b>\$16,409,768</b>	<b>\$16,453,469</b>	<b>\$15,372,674</b>	<b>\$48,235,911</b>
		1	2	3	Total
NonRes EE	Avoided Costs: T&D	\$9,486,484	\$8,994,218	\$8,867,878	\$27,348,581
	Avoided Costs: Energy	\$20,996,154	\$20,334,979	\$21,387,772	\$62,718,905
	Avoided Costs: Capacity	\$9,765,842	\$9,302,083	\$9,267,118	\$28,335,043
	PJM Credits	\$516,084	\$513,264	\$0	\$1,029,348
	Total Avoided Costs	\$40,764,565	\$39,144,544	\$39,522,768	\$119,431,877
	- Program Costs & Overhead	\$15,285,116	\$15,078,685	\$15,550,498	\$45,914,299
	- M&V Costs	\$430,507	\$676,686	\$314,388	\$1,421,581
	Shared Savings	\$25,048,942	\$23,389,173	\$23,657,881	\$72,095,996
	x Utility Sharing Rate	0.0%	0.0%	0.0%	0.0%
	Utility Share	\$0	\$0	\$0	\$0
	+ Program Cost & Overhead Recovery	\$16,353,648	\$16,170,159	\$16,662,484	\$49,186,291
	+ M&V Cost Recovery	\$432,507	\$678,686	\$316,388	\$1,427,581
	<b>Total Revenue Requirement</b>	<b>\$16,786,155</b>	<b>\$16,848,844</b>	<b>\$16,978,872</b>	<b>\$50,613,872</b>
		1	2	3	Total
Res DR	Avoided Costs: T&D	\$4,521,551	\$4,881,461	\$5,213,019	\$14,616,032
	Avoided Costs: Capacity	\$4,767,685	\$5,062,505	\$5,361,133	\$15,191,323
	Total Avoided Costs	\$9,289,236	\$9,943,966	\$10,574,152	\$29,807,354
	- Program Costs & Overhead	\$2,174,561	\$2,125,323	\$2,224,339	\$6,524,223
	- M&V Costs	\$270,000	\$175,000	\$275,000	\$720,000
	Shared Savings	\$6,844,676	\$7,643,643	\$8,074,812	\$22,563,131
	x Utility Sharing Rate	0.0%	0.0%	0.0%	0.0%
	Utility Share	\$0	\$0	\$0	\$0
	+ Program Cost & Overhead Recovery	\$2,174,561	\$2,125,323	\$2,224,339	\$6,524,223
	+ M&V Cost Recovery	\$270,000	\$175,000	\$275,000	\$720,000
	<b>Total Revenue Requirement</b>	<b>\$2,444,561</b>	<b>\$2,300,323</b>	<b>\$2,499,339</b>	<b>\$7,244,223</b>
		1	2	3	Total
NonRes DR	Avoided Costs: T&D	\$4,302,029	\$3,371,252	\$3,848,800	\$11,522,081
	Avoided Costs: Capacity	\$4,551,511	\$3,536,865	\$4,033,822	\$12,122,198
	Total Avoided Costs	\$8,853,540	\$6,908,117	\$7,882,622	\$23,644,279
	- Program Costs & Overhead	\$3,426,444	\$2,796,365	\$3,040,057	\$9,262,866
	- M&V Cost	\$59,144	\$188,160	\$167,437	\$414,741
	Shared Savings	\$5,367,952	\$3,923,593	\$4,675,127	\$13,966,672
	x Utility Sharing Rate	0.0%	0.0%	0.0%	0.0%
	Utility Share	\$0	\$0	\$0	\$0
	+ Program Cost & Overhead Recovery	\$3,426,444	\$2,796,365	\$3,040,057	\$9,262,866
	+ M&V Cost Recovery	\$59,144	\$188,160	\$167,437	\$414,741
	<b>Total Revenue Requirement</b>	<b>\$3,485,588</b>	<b>\$2,984,524</b>	<b>\$3,207,494</b>	<b>\$9,677,607</b>

[illegible]

# OHIO LOST REVENUE ESTIMATE WORKPAPER

In \$

Line Losses 7.2%

SUMMARY	Res	1	2	3	4	5	6	Total
Half-Year Convention	NonRes	409,199	1,222,799	2,068,312	2,100,203	1,286,556	441,066	7,528,136
	Total	409,199	1,222,799	2,068,312	2,100,203	1,286,556	441,066	7,528,136

SUMMARY	Res	1	2	3	4	5	Total
Jan. 1 Start	NonRes	818,399	1,622,199	2,509,426	1,690,980	882,132	7,528,136
	Total	818,399	1,622,199	2,509,426	1,690,980	882,132	7,528,136

Res EE	Vintage	1	2	3	4	5	Total
1	Lost Revenues	0	0	0	0	0	0
2	Lost Revenues	0	0	0	0	0	0
3	Lost Revenues	0	0	0	0	0	0
	Lost Revenues	0	0	0	0	0	0

Vintage	1	2	3	4	5	Total
1 KWH at Meter, Net FR	128,753,177	17,477,606	37,477,606	0	0	203,708,388
2 KWH at Meter, Net FR	0	128,584,928	36,735,019	36,735,019	0	202,054,967
3 KWH at Meter, Net FR	0	0	177,391,680	35,451,699	35,451,699	392,235,078
	128,753,177	166,062,534	261,604,305	72,186,718	35,451,699	604,058,433

Vintage	1	2	3	4	5	Total
1 Calculated \$/KWH	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000
2 Calculated \$/KWH	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000
3 Calculated \$/KWH	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000
	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000	\$0.000000

NonRes EE	Vintage	1	2	3	4	5	Total
1	Lost Revenues	818,399	818,399	816,029	0	0	2,452,827
2	Lost Revenues	0	808,800	808,800	806,383	0	2,423,983
3	Lost Revenues	0	0	884,597	884,597	882,132	2,651,326
	Lost Revenues	818,399	1,627,199	2,509,426	1,690,980	882,132	7,528,136

Vintage	1	2	3	4	5	Total
1 KWH at Meter, Net FR	65,130,760	65,130,760	64,942,378	0	0	195,203,728
2 KWH at Meter, Net FR	0	64,464,469	64,464,469	64,174,545	0	193,903,282
3 KWH at Meter, Net FR	0	0	70,399,036	70,399,036	70,202,866	211,000,938
	65,130,760	129,595,229	199,708,112	134,573,581	70,202,866	599,112,548

Vintage	1	2	3	4	5	Total
1 Calculated \$/KWH	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565
2 Calculated \$/KWH	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565
3 Calculated \$/KWH	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565
	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565	\$0.012565

## Worksheet Notes:

Lost Revenues have been shown for 36 months.

The Lost Revenue and KWH shown assume a Jan 1 start date for all participants. In practice, participation for lost margins would be tracked on a monthly basis.

# OHIO LOST REVENUE ESTIMATE WORKPAPER

In \$

Line Losses	7.2%
Res LR\$/KWH	-
Non-Res LR\$/KWH	0.012565

SUMMARY	1	2	3	4	5	6	Total
Half-Year Convention	NonRes EE Lost Revenues	\$409,199	\$1,222,799	\$2,068,912	\$2,100,203	\$1,286,556	\$441,086

SUMMARY	1	2	3	4	5	Total	
Jan 1 start	NonRes EE Lost Revenues	\$818,399	\$1,627,199	\$2,509,426	\$1,690,980	\$882,132	\$7,528,136

NonRes EE	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$818,399	\$818,399	\$816,029	\$0	\$0	\$2,452,827
2	Lost Revenues	\$0	\$808,800	\$808,800	\$806,383	\$0	\$2,423,983
3	Lost Revenues	\$0	\$0	\$884,597	\$884,597	\$882,132	\$2,651,326
	Lost Revenues	\$818,399	\$1,627,199	\$2,509,426	\$1,690,980	\$882,132	\$7,528,136
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	55,130,760	55,130,760	64,942,208	0	0	195,203,728
2	KWH at Meter, Net FR	0	64,366,869	64,366,869	64,174,545	0	192,908,282
3	KWH at Meter, Net FR	0	0	70,399,035	70,399,036	70,202,866	211,000,938
	KWH at Meter, Net FR	55,130,760	129,497,629	199,708,112	134,573,581	70,202,866	599,112,948

NonRes EE	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$277,004	\$277,004	\$277,004	\$0	\$0	\$831,011
2	Lost Revenues	\$0	\$267,760	\$267,760	\$267,760	\$0	\$803,279
3	Lost Revenues	\$0	\$0	\$236,437	\$236,437	\$236,437	\$709,311
	Lost Revenues	\$277,004	\$544,763	\$781,200	\$504,197	\$236,437	\$2,343,601
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	22,044,826	22,044,826	22,044,826	0	0	66,134,479
2	KWH at Meter, Net FR	0	21,309,172	21,309,172	21,309,172	0	63,927,516
3	KWH at Meter, Net FR	0	0	18,816,404	18,816,404	18,816,404	56,449,213
	KWH at Meter, Net FR	22,044,826	43,353,998	62,170,403	40,125,577	18,816,404	186,511,209

Smart Saver Non Residential Custom	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$237,468	\$237,468	\$237,468	\$0	\$0	\$712,405
2	Lost Revenues	\$0	\$197,099	\$197,099	\$197,099	\$0	\$591,296
3	Lost Revenues	\$0	\$0	\$203,012	\$203,012	\$203,012	\$609,035
	Lost Revenues	\$237,468	\$434,567	\$637,579	\$400,110	\$203,012	\$1,912,737
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	18,898,487	18,898,487	18,898,487	0	0	56,695,462
2	KWH at Meter, Net FR	0	15,685,744	15,685,744	15,685,744	0	47,057,233
3	KWH at Meter, Net FR	0	0	16,156,317	16,156,317	16,156,317	48,468,950
	KWH at Meter, Net FR	18,898,487	34,584,232	50,740,549	31,842,061	16,156,317	152,221,646

Smart Saver Non Residential Prescriptive	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$296,829	\$296,829	\$294,480	\$0	\$0	\$888,118
2	Lost Revenues	\$0	\$303,614	\$303,614	\$301,197	\$0	\$908,425
3	Lost Revenues	\$0	\$0	\$310,711	\$310,711	\$308,246	\$929,668
	Lost Revenues	\$296,829	\$600,443	\$908,785	\$611,908	\$308,246	\$2,726,211
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	13,622,603	23,622,603	23,434,050	0	0	70,679,255
2	KWH at Meter, Net FR	0	24,162,547	24,162,547	23,970,224	0	72,295,318
3	KWH at Meter, Net FR	0	0	24,727,374	24,727,374	24,531,704	73,985,953
	KWH at Meter, Net FR	23,622,603	47,785,150	72,323,972	48,697,598	24,531,704	216,960,528

Power Manager® for Business - EE	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$734	\$734	\$734	\$0	\$0	\$2,202
2	Lost Revenues	\$0	\$7,933	\$7,933	\$7,933	\$0	\$23,799
3	Lost Revenues	\$0	\$0	\$11,319	\$11,319	\$11,319	\$33,956
	Lost Revenues	\$734	\$8,667	\$19,986	\$19,252	\$11,319	\$59,957
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	58,424	58,424	58,424	0	0	175,272
2	KWH at Meter, Net FR	0	631,328	631,328	631,328	0	1,893,984
3	KWH at Meter, Net FR	0	0	900,776	900,776	900,776	2,702,328
	KWH at Meter, Net FR	58,424	689,752	1,590,528	1,532,104	900,776	4,771,584

Smart Saver Non Residential Performance Incentive Program	Vintage	1	2	3	4	5	Total
1	Lost Revenues	\$6,363	\$6,363	\$6,363	\$0	\$0	\$19,090
2	Lost Revenues	\$0	\$32,395	\$32,395	\$32,395	\$0	\$97,184
3	Lost Revenues	\$0	\$0	\$123,119	\$123,119	\$123,119	\$369,356
	Lost Revenues	\$6,363	\$38,758	\$161,877	\$155,513	\$123,119	\$485,630
	Vintage	1	2	3	4	5	Total
1	KWH at Meter, Net FR	506,420	506,420	506,420	0	0	1,519,260
2	KWH at Meter, Net FR	0	2,576,077	2,576,077	2,576,077	0	7,734,231
3	KWH at Meter, Net FR	0	0	9,798,164	9,798,164	9,798,164	29,394,493
	KWH at Meter, Net FR	506,420	3,082,497	12,882,661	12,376,241	9,798,164	38,647,983

## Workpaper Notes:

Lost Revenues have been shown for 36 months.

The Lost Revenue and KWH shown assume a Jan 1 start date for all participants. In practice, participation for lost margins would be tracked on a monthly basis.

Program/Portfolio Cost Effectiveness - 2017-2019

Program	UCT	TRC	RIM	PCT
<b>Residential Programs - EE</b>				
Energy Efficiency Education Program for Schools	3.22	4.51	1.56	
Home Energy Comparison Report	1.73	1.73	1.06	
Low Income Neighborhood Program	0.64	1.34	0.54	
Power Manager®	7.46	15.10	7.46	
Power Manager® for Apartments	2.08	3.14	2.08	
Residential Energy Assessments	1.44	1.58	0.90	
Smart Saver Residential	2.19	2.11	1.10	5.35
Low Income Weatherization - Pay for Performance	5.71	5.71	1.85	
<b>Total</b>	<b>3.45</b>	<b>4.01</b>	<b>2.07</b>	<b>8.48</b>
<b>Non-Residential Programs</b>				
Mercantile Self-Direct	3.69	0.73	1.66	1.24
Power Manager® for Business	3.07	4.84	2.92	
PowerShare®	2.71	10.52	2.71	
Small Business Energy Saver	3.05	1.82	1.81	2.53
Smart Saver Non Residential Custom	2.81	0.80	1.46	1.47
Smart Saver Non Residential Performance Incentive Program	3.34	1.19	1.60	2.16
Smart Saver Non Residential Prescriptive	2.32	1.47	1.38	2.47
<b>Total</b>	<b>2.77</b>	<b>1.49</b>	<b>1.70</b>	<b>2.13</b>
<b>Overall Portfolio Total</b>	<b>3.12</b>	<b>2.30</b>	<b>1.89</b>	<b>3.17</b>



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

**Commission of Ohio Docketing Information System on**

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**Case No(s). 16-0576-EL-POR**

Summary: Testimony Supplemental Testimony of Trisha A. Haemmerle electronically filed by Dianne Kuhnell on behalf of Duke Energy Ohio, Inc. and Spiller, Amy B. and Watts, Elizabeth H.