

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

DIRECT TESTIMONY OF

TRISHA A. HAEMMERLE

ON BEHALF OF

DUKE ENERGY OHIO, INC.

June 15, 2016

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Attachment:

TAH-1 Evaluation, Measurement, & Verification Schedule

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. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL**
10 **QUALIFICATIONS.**

11 A. I graduated from Ohio University with a Bachelor's Degree in Marketing. I
12 started my career with Cinergy in 1997. I worked for Cinergy and Duke Energy
13 from 1997 to 2010 developing, managing, and analyzing survey activities, as well
14 as market research projects. Starting in 2009, I also managed the coordination of
15 verification for the energy efficiency and demand response programs. I assumed
16 my current position in 2010.

17 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC**
18 **UTILITIES COMMISSION OF OHIO?**

19 A. Yes, I submitted testimony in support of Duke Energy Ohio's application for
20 recovery of program costs, lost distribution revenue and performance incentives
21 related to its Energy Efficiency (EE) and Demand Response (DR) programs, Case
22 Nos. 14-457-EL-RDR, 15-534-EL-RDR and 16-0664-EL-RDR.

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

3 A. The purpose of my testimony is to discuss Duke Energy Ohio's proposed new
4 portfolio of energy efficiency and peak demand reduction programs. My
5 testimony will also provide an overview of Evaluation, Measurement and
6 Verification (EM&V) that will be conducted for the portfolio's programs;
7 introduce our current independent third party evaluators and explain how they
8 were selected; provide a list of our evaluations in process and evaluator program
9 assignments; and provide the cost-effectiveness results for Duke Energy Ohio's
10 proposed 2017 - 2019 DSM portfolio.

II. OVERVIEW OF THE PROPOSED PORTFOLIO PLAN

11 **Q. WHAT ARE THE ELEMENTS OF DUKE ENERGY OHIO'S**
12 **PORTFOLIO PLAN FILING**

13 A. There are two main components of Duke Energy Ohio's portfolio plan
14 application. First, in this application, Duke Energy Ohio is requesting the
15 approval of a its proposed energy efficiency and peak demand reduction programs
16 that are described in detail in the testimony of Company witness Kevin A. Bright.
17 The second element of the Company's Portfolio Plan is the Company's request
18 for the continued approval of its Rider EE-PDR. Rider EE-PDR, which was
19 approved in Case No. 11-4393-EL-RDR and again in Case No. 13-0431-EL-POR,
20 allows the Company to recover the costs, as well as a shared savings performance
21 incentive associated with its portfolio of approved energy efficiency and peak
22 demand reduction programs and lost distribution margins from certain non-

1 residential customers. In the case that a change in rate design or elimination of
2 the Company's revenue decoupling rider should occur, Duke Energy Ohio
3 requests the ability to adjust the rider to ensure that it continues to be made whole
4 for the negative financial impact energy efficiency and demand response will
5 have on the company's ability to fully recover its costs and earn its allowed
6 return.

7 **Q. WHY IS IT IMPORTANT FOR THE COMPANY TO CONTINUE TO**
8 **OFFER ENERGY EFFICIENCY AND PEAK DEMAND REDUCTION**
9 **PROGRAMS AND RECEIVE APPROVAL OF ITS PROPOSED**
10 **PORTFOLIO OF PROGRAMS?**

11 A. Electric distribution utilities are uniquely qualified and in the best position to
12 systematically capture productivity gains in the use of electricity and maximize
13 those gains for the benefit of all customers. For this reason, Duke Energy Ohio
14 has a long history of delivering cost effective energy efficiency and demand
15 response programs to its customers. Since 1992 Duke Energy Ohio has been its
16 customers' best source for energy efficiency. Moreover, because of this
17 established relationship with its customers, Duke Energy Ohio understands
18 changes in customer preferences and energy efficiency advancements that will
19 allow the Company to continue to accommodate new technologies and design
20 new and innovative program offerings. The value that an electric distribution
21 utility can deliver to customers was formally recognized with the passage of
22 Amended Substitute Senate Bill 221 in 2008, which required Duke Energy Ohio,
23 as an electric distribution utility, to meet specified energy efficiency and peak

1 demand reduction targets. In 2014, Ohio Senate Bill 310 maintains the obligation
2 of utilities to continue to offer cost effective energy efficiency measures to their
3 respective customers while making some modifications of the energy efficiency
4 requirement.

5 **Q. AT A SUMMARY LEVEL, PLEASE DESCRIBE THE PORTFOLIO OF**
6 **PROGRAMS THAT THE COMPANY IS PROPOSING IN THIS**
7 **APPLICATION?**

8 A. In its application, Duke Energy Ohio is proposing a new portfolio of programs to
9 be offered to its customers from 2017-2019 that is mostly consistent with the
10 portfolio of programs that it is currently offering to its customer, as well as those
11 included and approved along with its recovery and incentive mechanism on
12 December 4, 2013, in Case No. 13-0431-EL-POR. While the Company is seeking
13 approval of this attractive portfolio of programs shown in Table 1 below, the
14 Company intends to amend it to include additional programs based on the Market
15 Assessment and Action Plan that is in the process of being completed by Nexant
16 to address any potential gaps in the program offerings. Due to the length of time
17 associated with having this robust assessment performed, Duke Energy Ohio
18 requested a waiver¹ for Rule 4901:1-39-04(A) and requested an October 15, 2016
19 due date. The Public Utilities Commission of Ohio (Commission) granted an
20 extension to June 15, 2016, however this earlier date did not allow enough time to
21 have a thorough assessment of potential study completed. Duke Energy Ohio
22 again requested an extension² to file the assessment of potential study to October

¹ Case No. 16-0576-EL-POR

² Case No. 16-1017-EL-WVR

1 15, 2016 along with the opportunity to adjust the portfolio with the results from
2 the study, including the historical performance versus the baselines. On June 13,
3 2016 the Commission ordered the assessment of potential study to be filed on
4 August 15, 2016. Duke Energy Ohio will file the study on or before August 15,
5 and will integrate the findings into its programs and amend its filing as necessary
6 by October 15, 2016 as discussed with the Duke Energy Community Partnership
7 (Collaborative).

Table 1
Residential Programs
Smart \$aver® Residential Residential Energy Assessments My Home Energy Report (MyHER) Energy Efficiency Education for Schools Low Income Neighborhood Power Manager® Low Income Weatherization - Pay for Performance New Program: Power Manager® for Apartments
Non-Residential Programs
Smart \$aver® Prescriptive Smart \$aver® Custom Small Business Energy Saver PowerShare® New Program: Power Manager® for Business

8 **Q. DOES DUKE ENERGY OHIO PLAN TO UPDATE THE PORTFOLIO**
9 **BASED ON RECOMMENDATIONS FROM INFORMATION**
10 **CONTAINED IN THE ASSESSMENT OF POTENTIAL STUDY?**

11 A. Yes, the Company intends to review the Assessment of Potential Study and
12 update the portfolio to account for any programmatic gaps identified.

1 **Q. DOES THE COMPANY INTEND TO SOLICIT INPUT FROM**
2 **STAKEHOLDERS REGARDING POTENTIAL PORTFOLIO**
3 **MODIFICATIONS?**

4 A. Duke Energy Ohio regularly solicits feedback and program suggestions from
5 stakeholders as part of its Community Partnership Meetings (EE Collaborative),
6 which has helped to inform the portfolio included in this application.
7 Additionally, the Company intends to share the results of the Assessment of
8 Potential with this group and any modifications that it will be proposing for input
9 and suggestions.

10 **Q. WHEN WILL THE COMPANY FILE THE UPDATES TO THE**
11 **PORTFOLIO BASED ON INFORMATION FROM THE ASSESSMENT**
12 **OF POTENTIAL STUDY?**

13 A. Duke Energy Ohio will file the Assessment of Potential Study by August 15, 2016
14 and incorporate any necessary changes to the portfolio of programs by October
15 15, 2016.

16 **Q. DOES THE COMPANY HAVE ANY PILOT PROGRAMS THAT WERE**
17 **ADDED TO ITS EXISTING PORTFOLIO THAT WOULD CONTINUE**
18 **UNDER ITS NEW PORTFOLIO?**

19 A. Yes. On March 15, 2013, Duke Energy Ohio filed an application in Case No. 13-
20 662-EL-UNC, to establish a new energy efficiency program targeted at low
21 income customers. After being approved by the Commission on May 15, 2013,
22 this energy efficiency pilot program permitted Duke Energy Ohio to purchase the
23 energy efficiency produced from low income weatherization work performed by

1 People Working Cooperatively (PWC) using leveraged funds (Non-Duke Energy
2 Funds). The pilot was designed to expand funding for PWC's valuable whole
3 home services and also provide Duke Energy Ohio with energy efficiency impacts
4 from the low income segment of Duke Energy Ohio's customers at a lower cost
5 than has traditionally been possible thereby making it a cost effective program.
6 The EM&V associated with the pilot was received in November, 2015 and
7 concluded that the program was a cost-effective way to reach low income
8 customers with energy efficiency. Therefore, Duke Energy Ohio has included it
9 in its portfolio of programs to be offered for 2017 – 2019. Moving forward, the
10 program will be available to any qualified low income agency wanting to
11 participate and is now called Low Income Weatherization - Pay for Performance.

12 **Q. DOES THE PROPOSED PORTFOLIO INCLUDE ANY PROGRAMS**
13 **ASSOCIATED WITH SMART GRID OR TRANSMISSION AND**
14 **DISTRIBUTION?**

15 A. The portfolio does not reflect such programs at this time; however, consistent
16 with the provisions of SB 310, the Company intends to reflect impacts associated
17 with Smart Grid and Transmission and Distribution in future compliance filings.

18 **Q. PLEASE DISCUSS THE ROLE OF THE DUKE ENERGY OHIO**
19 **COMMUNITY PARTNERSHIP COLLABORATIVE AS IT RELATES TO**
20 **THE OPERATION OF THE COMPANY'S PROPOSED PORTFOLIO OF**
21 **PROGRAMS.**

22 A. The Duke Energy Ohio Community Partnership Collaborative (Collaborative) is
23 comprised of interested parties and stakeholders. Regular participants include the

Office of the Ohio Consumers' Counsel, Ohio Partners for Affordable Energy, the Environmental Law and Policy Center, Working in Neighborhoods, People Working Cooperatively, Greater Cincinnati Energy Alliance, Natural Resource Defense Council, and the Commission's Staff. The Collaborative has a long and successful history with energy efficiency in Ohio. Duke Energy Ohio currently engages the Collaborative to review program changes, as well as to preview potential program additions to its portfolio. This allows the Company to offer new program measures expeditiously and to respond to market conditions and technology developments, and innovations in efficiency measures. Duke Energy Ohio expects to continue to work with this Collaborative to create a transparent energy efficiency process and to realize the benefits of input from the diverse perspectives of the group.

Q. PLEASE DESCRIBE THE RECOVERY MECHANISM AND INCENTIVE THAT THE COMPANY IS PROPOSING TO CONTINUE FOR THE THREE-YEAR PORTFOLIO OF PROGRAMS PROPOSED IN THIS APPLICATION?

A. Duke Energy Ohio is proposing a cost recovery mechanism that permits the following:

1. The recovery of the actual costs incurred by Duke Energy Ohio to deliver the approved portfolio of energy efficiency and demand response programs, including the EM&V costs.

1 2. The recovery of lost distribution margins from those customers not included
2 in the Company's distribution revenue decoupling pilot approved in Case No.
3 11-5905-EL-RDR.

4 3. The ability to earn a shared savings incentive in any year in which it meets or
5 exceeds its energy efficiency benchmark targets that are required of all
6 electric distribution utilities by Ohio law.

7 The Company incentive is calculated as a percentage of the net system benefits
8 (avoided costs less the program costs) generated by the Company's portfolio of
9 energy efficiency and demand response programs in a particular year. The net
10 system benefits will be calculated in a manner consistent with the calculation of
11 the Utility Cost Test. The level of incentive, the Company is requesting a 10%
12 after-tax incentive amount.

13 **Q. PLEASE EXPLAIN DUKE ENERGY OHIO'S PROPOSED SHARED**
14 **SAVINGS INCENTIVE IN GREATER DETAIL FOR 2017 - 2019.**

15 A. The incentive that the Company would be eligible to earn is calculated based
16 upon the net system benefits that are delivered by Duke Energy Ohio's approved
17 portfolio of programs. For example, if the Company meets or exceeds its energy
18 efficiency savings mandate in a given year and the impacts actually achieved in
19 that specific year delivers avoided cost benefits with a net present value of \$50
20 million dollars to customers associated with \$35 million dollars of energy
21 efficiency expenditures, the Company's incentive would be \$1.5 million after-tax
22 dollars as the result of the following calculation shown in Table 2 below.

Table 2	
	<u>Millions</u>
Avoided Cost Benefit	\$50.0
Utility Energy Efficiency Costs	35.0
Net System Benefit	\$15.0
Incentive Level	10%
Utility Incentive Earned	\$1.5

1 **Q. IS THE SHARED SAVINGS INCENTIVE MECHANISM EFFECTIVE IN**
2 **INCENTIVIZING DUKE ENERGY OHIO TO OVER COMPLY WITH**
3 **ITS ENERGY EFFICIENCY BENCHMARKS IN 2017 - 2019?**

4 A. Yes. The fact that the shared savings mechanism only allows the Company to
5 earn a shared savings incentive in a year that it meets or exceeds its energy
6 efficiency benchmark will help to ensure that the Company will continue to strive
7 to achieve as much energy efficiency as possible and even more importantly, it
8 motivates the Company to maximize cost effectiveness. This mechanism
9 incentivizes the Company at 10% allowing customers to receive 90% of the
10 system benefits realized through the Company's portfolio of programs.

11 **Q. PLEASE DISCUSS HOW THE SELF DIRECT MERCANTILE**
12 **PROGRAM WILL BE FACTORED INTO THE DETERMINATION OF**
13 **THE COMPANY'S ANNUAL EE RIDER.**

14 A. The Company is proposing that the self direct mercantile program will impact the
15 Company's EE Rider in two ways. First, the cost of running the mercantile
16 customer program, including the incentives paid to these customers will be
17 included in the calculation of the EE Rider. Second, the impacts that are achieved
18 by the self-direct mercantile customer will be included in the Company's annual

1 efficiency achievement for the purpose of compliance with its annual mandated
2 energy efficiency targets and hence its ability to earn incentive. But the impacts
3 will not be included in the shared savings net benefit pool used in the calculation
4 of the Company's incentive.

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

7 A. Yes. As part of my responsibilities with regard to energy efficiency compliance
8 in Ohio, it is necessary to have an understanding of the Commission's rules. One
9 of the Commission's energy efficiency and peak demand reduction rules states
10 that an electric utility may request recovery of an approved rate adjustment
11 mechanism reflecting peak demand response and energy efficiency program costs,
12 lost distribution revenues and shared savings. This rule further states that any
13 such recovery shall be subject to an annual reconciliation after issuance of the
14 Commission's verification report. Duke Energy Ohio's proposed continuation of
15 Rider EE-PDR is consistent with this rule and the Company further proposes that
16 this recovery mechanism would be reconciled each year after issuance of the
17 Commission's verification report.

18 **Q. WHAT ADDITIONAL INFORMATION SUPPORTS DUKE ENERGY**
19 **OHIO'S REQUEST FOR APPROVAL OF ITS ENERGY EFFICIENCY**
20 **AND DEMAND RESPONSE PORTFOLIO PLAN?**

21 A. As mentioned previously, Duke Energy Ohio witness Kevin A. Bright, will
22 provide a description of the mass market (residential) and non-residential
23 customer programs that are presently approved and included in the Company's

1 portfolio. Additionally, Mr. Bright will discuss several new and innovative
2 measures that the Company believes will be successful in the market place.
3 Finally, Duke Energy Ohio witness James E. Ziolkowski will discuss the
4 integration of the new portfolio costs into the Rider EE-PDR rate recovery
5 mechanism, including the timing of true-up filings.

III. PJM AUCTIONS

6 **Q. PLEASE DISCUSS DUKE ENERGY OHIO'S PLANS TO BID ANY EE**
7 **RESOURCES INTO THE PJM CAPACITY AUCTIONS FOR FUTURE**
8 **PLANNING YEARS?**

9 A. Duke Energy Ohio plans to offer current planning year EE resources that qualify
10 for the auction. Only resources that appear to be cost effective relative to the
11 required incremental costs of EM&V and auction administration will be offered.
12 The auction proceeds will be reflected in the net benefit realized by customers in
13 the form of a credit or reduction in program costs.

IV. EVALUATION, MEASUREMENT, AND VERIFICATION

14 **Q. PLEASE PROVIDE AN EXPLANATION OF EM&V.**

15 A. EM&V of energy efficiency programs involves documenting program benefits, or
16 impacts, and program effectiveness. Measurement and verification encompasses
17 data collection, monitoring, and analysis associated with the calculation of gross
18 energy and demand savings from individual sites or projects, and can be a subset
19 of program evaluation.

1 **Q. WHY IS EM&V AN IMPORTANT COMPONENT OF ENERGY**
2 **EFFICIENCY PROGRAMMING?**

3 A. Aside from complying with Commission Rules and Orders, Duke Energy Ohio
4 believes that successful, reliable and cost-effective energy efficiency programs
5 require EM&V activities for several reasons. First and foremost, reliably
6 measuring savings achieved from energy efficiency provides certainty for
7 resource planning and provides accountability to customers and shareholders.
8 Second, properly executed evaluation activities support program improvements.
9 Accurately understanding savings estimates and program efficacy enables Duke
10 Energy Ohio to drive increased energy savings through improved design,
11 including insights on the targeting and marketing of specific programs to improve
12 overall participation and how to most cost-effectively generate kW and kWh yield
13 from our energy efficiency investments.

14 **Q. WHAT ARE THE COMPANY'S PROJECTIONS OF COST FOR**
15 **EVALUATION, MEASUREMENT, AND VERIFICATION?**

16 A. Duke Energy Ohio proposes to spend about \$5.2 million on EM&V during the
17 2017 to 2019 time period. This would be approximately 5% of program cost.

18 **Q. WHO ARE THE EVALUATORS FOR DUKE ENERGY OHIO?**

19 A. Duke Energy Ohio contracts with three evaluators for its Energy Efficiency and
20 Demand Side Management process and impact evaluations. They are Navigant,
21 Opinion Dynamics Corp. and Nexant.

22 **Q. HOW DID DUKE ENERGY OHIO CHOOSE THESE EVALUATORS?**

1 A. In 2014, Duke Energy issued a request for proposals (RFP) to provide EM&V
2 services for its Energy Efficiency and Demand Side Management programs. The
3 bidders were scored on project management skills, submitted quality plans,
4 experience, and consistency with industry standards and best practices, among
5 other criteria. The top scoring candidates, Navigant, Opinion Dynamics Corp and
6 Nexant were then invited to provide proposals, including cost projections, for
7 each DSM program to be evaluated. The evaluator for each program was
8 selected based on the thoroughness and quality of the proposal, cost, and
9 experience in evaluating similar programs. This comprehensive approach to
10 selection has ensured competitive bidding, quality control, and well-
11 managed EM&V.

12 **Q. WHICH PROGRAMS DO THE EVALUATORS REVIEW?**

13 A. Please see Attachment TAH-1 for a table that matches each Energy Efficiency or
14 Demand Side Management program with its respective evaluator, as well as a
15 tentative date for when final reports are due.

16 **Q. WILL EVALUATIONS COMPLY WITH OHIO STATUTE 4928.62?**

17 A. Yes. Duke Energy Ohio will ensure that evaluators follow methodologies
18 established by Ohio Code 4928.62, where applicable.

V. COST EFFECTIVENESS

19 **Q. IS DUKE ENERGY OHIO'S PROPOSED ENERGY EFFICIENCY**
20 **PORTFOLIO COST EFFECTIVE?**

- 1 A. Yes. Duke Energy Ohio's energy efficiency portfolio is cost effective. Table 3
2 below provides cost effectiveness scores for each program and the overall
3 portfolio:

Table 3

Program/Portfolio Cost Effectiveness - 2017-2019				
Program	UCT	TRC	RIM	PCT
Residential Programs - EE				
Energy Efficiency Education Program for Schools	3.22	4.51	2.03	
Home Energy Comparison Report	1.73	1.73	1.06	
Low Income Neighborhood Program	0.64	1.34	0.58	
Power Manager®	7.46	15.10	7.46	
Power Manager® for Apartments	2.08	3.14	2.08	
Residential Energy Assessments	1.15	1.26	0.94	
Smart \$aver Residential	1.75	1.69	1.26	4.55
Low Income Weatherization - Pay for Performance	4.99	4.99	2.67	
Total	3.24	3.76	2.39	7.53
Non-Residential Programs				
Mercantile Self-Direct	3.69	0.73	2.59	1.24
Power Manager® for Business	3.07	4.84	3.02	
PowerShare®	2.71	10.52	2.71	
Small Business Energy Saver	3.05	1.82	2.45	2.53
Smart \$aver Non Residential Custom	2.81	0.80	2.10	1.47
Smart \$aver Non Residential Prescriptive	1.94	1.13	1.62	1.96
Total	2.63	1.40	2.18	1.92
Overall Portfolio Total	2.94	2.17	2.30	2.85

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

VI. CONCLUSION

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

2 **A. Yes.**

Number	Evaluator	Program Name	Evaluation Start Date	Due Date of Final Report
1	Nexant	Residential Smart Saver HVAC (Tiered referral program)	2015	6/1/2016
2	Navigant	Small business Energy Saver	2016	3/1/2017
3	Nexant	PowerManager	2016	4/1/2017
4	Opinion Dynamics	Neighborhood Energy Saver (Low Income Neighborhood)	2016	6/1/2017
5	Nexant	Non Residential Smart Saver Custom	2017	6/1/2018
6	Navigant	PowerShare	2018	3/1/2019
7	Opinion Dynamics	Non Residential Smart Saver Prescriptive	2016-2017	11/30/2018
8	TBD	Residential Smart Saver Single Family Water Measures	TBD	TBD
9	TBD	Residential Smart Saver Specialty Bulb Lighting (Online Store)	TBD	TBD
10	TBD	PJM Capacity Auction (Lighting)	TBD	TBD
11	TBD	Residential Smart Saver HVAC (Tune and Seal)	TBD	TBD
12	TBD	Residential Assessments (Home Energy House Call)	TBD	TBD
13	TBD	Residential Smart Saver Multi Family	TBD	TBD
14	TBD	Residential Smart Saver Heat Pump Water Heaters	TBD	TBD
15	TBD	PowerManager for Apartments	TBD	TBD
16	TBD	PowerManager for Business	TBD	TBD
17	TBD	Pay for KWH Low Income Program (Formerly the PWC Pilot)	TBD	TBD
18	Nexant	Energy Efficiency Education for Schools (K12)		7/1/2018
19	TBD	Residential Smart Saver Pool Pumps	TBD	TBD
20	Opinion Dynamics	Residential Smart Saver Lighting	TBD	TBD

Evaluation Methodology				
Deemed Savings Review	Participation Verification	Process Report Surveys and Interviews	Impacts - Logger Study	Likely Impact Methodology - Engineering Analysis, Billing Analysis or Both
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Both
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Engineering Analysis
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Engineering Analysis
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Both
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Both
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Engineering Analysis
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Engineering Analysis
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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Both
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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Engineering Analysis
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Both
<input checked="" type="checkbox"/>				
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Engineering Analysis

Opinion Dy	ARP	DEO	suspended work	2015	H - c Final Report	6/1/2016
TMW	Education	DEO	2014 Report		Final Evaluation Report	11/1/2015
Nexant	Education	DEO	H - c Final Report		H - c Final Report	7/1/2018
Navigant	HOM	DEO	2016 Report	2016	H - Final Report	6/1/2016
Navigant	HOM	DEO	2017 Report	2017	H - Final Report	3/15/2017
Navigant	HOM	DEO	2018 Report	2018	H - Final Report	6/1/2018
Navigant	HOM	DEO	2019 Report	2019	H - Final Report	3/1/2019
Opinion Dy	LI Neigh	DEO		2016	H - c Final Report	6/1/2017
Opinion Dy	LI Refrig	DEO		2015	H - Final Report	3/1/2016
Navigant	Multi Fam	DEO	MF CFL+Water Measures	2015	H - Final Report	6/30/2015
Nexant	MyHER	DEO		2015	H - Final Report	9/30/2015
Nexant	NR Custom	DEO	Custom	2017	Final Report	6/1/2018
Opinion Dy	NR Presc	DEO	Presc - all	2016-2017	H - Final Report	11/30/2018
Nexant	PowerManager	DEO		2016	H - c Final Report	4/1/2017
Nexant	PowerManager	DEO		2017	H - c Final Report	4/1/2018
Nexant	PowerManager	DEO		2018	H - c Final Report	4/1/2019
Nexant	PowerManager	DEO		2019	H - c Final Report	4/1/2020
Navigant	PowerShr	DEO		2016	H - Final Report	3/1/2017
Navigant	PowerShr	DEO		2017	H - Final Report	3/1/2018
Navigant	PowerShr	DEO		2018	H - Final Report	3/1/2019
Navigant	PowerShr	DEO		2019	H - Final Report	3/1/2020
Opinion Dy	Res Assess	DEO		2015	H - Final Report	11/30/2015
Nexant	Res HVAC	DEO		2015	H - Final Report	6/1/2016
Opinion Dy	Res Lighting	DEO		2015	H - Final Report	10/21/2015
Navigant	SBES	DEO		2016	H - Final Report	3/1/2017
Opinion Dy	SEIO	DEO		2016	H - Final Report	6/1/2017
Opinion Dy	NES	DEO		2016	H - Final Report	6/1/2017

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

Summary: Testimony Direct Testimony of Trisha A. Haemmerle on behalf of Duke Energy Ohio, Inc. electronically filed by Ms. E Minna Rolfes on behalf of Amy B. Spiller and Elizabeth H. Watts and Duke Energy Ohio, Inc.