

OCC EXHIBIT NO. _____

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Ohio)	
Edison Company, The Cleveland Electric)	
Illuminating Company, and The Toledo)	
Edison Company For Approval of Their)	Case No. 16-0743-EL-POR
Energy Efficiency and Peak Demand)	
Reduction Program Portfolio Plans for)	
2017 through 2019.)	

**SUPPLEMENTAL DIRECT TESTIMONY
OF
RICHARD F. SPELLMAN**

**On Behalf of the
The Office of the Ohio Consumers' Counsel**
*10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485*

JANUARY 10, 2017

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EXHIBITS

- Exhibit RFS-1: Resume of Richard F. Spellman
- Exhibit RFS-2: Shareholder Incentive Mechanisms in the 50 U.S. States
- Exhibit RFS-3: Recommended Shareholder Incentive Caps by Utility by Sector
- Exhibit RFS-4: Cost Caps in Other States
- Exhibit RFS-5: FirstEnergy's Response to OCC Interrogatory Set 6 No. 145

1 **I. INTRODUCTION**

2

3 ***Q1. PLEASE STATE YOUR NAME, ADDRESS AND POSITION.***

4 ***A1.*** My name is Richard F. Spellman and my address is 1850 Parkway Place, Suite
5 800, Marietta, Georgia, 30067. I am the President of GDS Associates, Inc., an
6 engineering and management consulting firm.

7

8 ***Q2. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.***

9 ***A2.*** I have a BA degree in Math/Economics with distinction from Dartmouth College
10 and a Master's Degree in Business Science from the Thomas College Graduate
11 School of Business. I am also a graduate of the University of Michigan Graduate
12 School of Business Administration Management II Program and the Electric
13 Council of New England Skills of Utility Management Program. I completed the
14 Association of Energy Engineers (AEE) Certified Measurement and Verification
15 Professional (CMVP) training in October 2012 and received this certificate in
16 December 2012.

17

18 ***Q3. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.***

19 ***A3.*** I began my career in the energy industry in 1977 when I joined Central Maine
20 Power Company (CMP) as a Staff Economist. During my sixteen years at CMP, I
21 held a number of management positions, including Director of Market Research
22 and Forecasting and Manager of Marketing and Product Development. I served
23 as chairman of the New England Power Pool Demand-Side Management (DSM)

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1 Planning Committee in 1991 and 1992. For several years I was responsible for
2 the management of the implementation of CMP's portfolio of DSM programs.
3 Since joining GDS Associates in 1993, I have completed numerous consulting
4 projects relating to energy efficiency and peak demand reduction ("EE/PDR")
5 program design, implementation and evaluation. I have completed over sixty
6 energy efficiency potential studies for GDS clients. I have served as the overall
7 Project Manager of the Pennsylvania Statewide Evaluator (SWE) team since
8 2009. I was a Board member of the Association of Energy Services Professionals
9 from 2005 to 2010. I have served on the Technical Advisory Group (TAG) for
10 the U.S. Department of Energy Uniform Methods Project since 2012. I hold the
11 Certified Measurement and Verification Professional (CMVP) designation from
12 the Association of Energy Engineers. More detailed information on my
13 education, work experience and published EE/PDR papers is provided in my
14 resume, Exhibit RFS-1.

15
16 ***Q4. IN WHICH STATES HAVE YOU TESTIFIED PREVIOUSLY ON EE/PDR***
17 ***ISSUES?***

18 ***A4.*** I have testified on EE/PDR issues before state regulatory commissions in
19 Arkansas, Connecticut, Florida, Georgia, Indiana, Maine, New Mexico, New
20 Hampshire, New York, North Carolina, Texas, and Vermont. A list of my prior
21 testimony in these states is provided in my resume, Exhibit RFS-1. I also
22 prepared testimony in this case addressing Ohio Edison Company's, The

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1 Cleveland Electric Illuminating Company's, and The Toledo Edison Company's
2 EE/PDR application. This testimony was filed on September 13, 2016.

3

4 ***Q5. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?***

5 ***A5.*** I am testifying on behalf of the Ohio Consumers' Counsel.

6

7 ***Q6. WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION OF***
8 ***YOUR TESTIMONY?***

9 ***A6.*** I have reviewed the FirstEnergy "Energy Efficiency and Peak Demand Reduction
10 Portfolio Plans" for 2017 to 2019 (the "Portfolio Plans") and supporting
11 testimonies of Eren Demiray, Edward Miller, Denise Mullins, and George
12 Fitzpatrick, the discovery responses and Errata filed by FirstEnergy¹ and the
13 objections filed by other parties to this docket. I have reviewed the Stipulation
14 and Recommendation (the "Settlement") filed in this case on December 9, 2016. I
15 have reviewed the amended direct testimony of Eren Demiray, Edward Miller,
16 Denise Mullins, and George Fitzpatrick, also filed on December 9, 2016. And I
17 have reviewed the testimony of PUCO Staff witness Patrick Donlon, which was
18 filed on December 5, 2016.

¹ The Portfolio Plans were filed on behalf of The Cleveland Electric Illuminating Company ("CEI"), The Toledo Edison Company ("TE"), and Ohio Edison Company ("OE"), which collectively shall be referred to as "FirstEnergy," the "Utilities," or the "Companies," and individually as the "Company."

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1 I have reviewed several documents from FirstEnergy's "ESP IV Case," PUCO
2 Case No. 14-1297-EL-SSO, including the settlements filed in that case, the March
3 31, 2016 order, and the October 12, 2016 Fifth Entry on Rehearing.

4
5 I have also reviewed several energy efficiency studies and databases published by
6 the U.S. EPA National Action Plan for Energy Efficiency (NAPEE), the
7 American Council for an Energy Efficient Economy (ACEEE), the Lawrence
8 Berkeley National Laboratory (LBNL), the International Energy Program
9 Evaluation Conference (IEPEC), and the U.S. Energy Information Administration
10 (EIA). Although I am not an attorney, I have reviewed various Ohio statutes and
11 regulations related to EE/PDR, and have reviewed various Public Utilities
12 Commission of Ohio ("PUCO") orders.

13
14 ***Q7. WHAT IS THE PURPOSE OF YOUR TESTIMONY?***

15 ***A7.*** The purpose of my testimony is to address the PUCO's three-prong test for
16 evaluating settlements.

17
18 ***Q8. WHAT IS THE PUCO'S THREE-PRONG TEST FOR EVALUATING***
19 ***SETTLEMENTS?***

20 ***A8.*** The PUCO uses the following three-prong test for evaluating the reasonableness
21 of a proposed settlement:²

² *Consumers' Counsel v. PUCO*, 64 Ohio St. 3d 123, 125 (1992).

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- 1 1. Is the settlement a product of serious bargaining among capable,
- 2 knowledgeable parties?
- 3 2. Does the settlement, as a package, benefit customers and the public
- 4 interest?
- 5 3. Does the settlement package violate any important regulatory
- 6 principle or practice?
- 7

8 In addition to these three criteria, the PUCO sometimes considers whether the

9 signatory parties to the settlement represent a diversity of interests.³

10

11 **II. SUMMARY OF RECOMMENDATIONS**

12

13 ***Q9. SHOULD THE PUCO APPROVE THE SETTLEMENT?***

14 ***A9.*** No. Based on my analysis of the Settlement, I conclude that it fails the PUCO's

15 three-prong test for settlements. The Settlement does not benefit customers or the

16 public interest. It also lacks a diversity of interests among the signatory parties.

³ See, e.g., *In re Application of Columbus S. Power Co. & Ohio Power Co.*, Case No. 11-351-EL-AIR, Opinion & Order at 9 (Dec. 14, 2011); *In re Application of the Dayton Power & Light Co.*, Case No. 14-563-EL-RDR (Sept. 9, 2015); *In re Application of the Columbus S. Power Co. & Ohio Power Co.*, Case No. 05-376-EL-UNC (Feb. 11, 2015).

**Q10. WHAT CHANGES SHOULD BE MADE TO THE SETTLEMENT TO
PROTECT CUSTOMERS?**

A10. The following changes should be made so that the Settlement, as a package,
benefits customers and the public interest:

- i. The Settlement should include a "cost cap" for the amount of
energy efficiency costs to be collected from customers, similar to
the cap proposed by PUCO Staff witness Patrick Donlon. For each
of the Companies, the cap should be 3% of the Companies' most
recently-available annual operating revenues, as described by Mr.
Donlon. This will protect customers from paying too much for
energy efficiency while still giving FirstEnergy ample opportunity
to achieve its statutory benchmark energy savings.
- ii. The shared savings mechanism should only be approved (if at all)
if the PUCO approves the modifications described in my
supplemental testimony. These modifications are designed to
minimize customers paying for Utility profits associated with
energy efficiency while still providing the Utilities sufficient
incentives to achieve savings for customers.
- iii. Customers should not be required to pay shared savings (profit) to
FirstEnergy simply because FirstEnergy exceeds the annual
statutory minimum for energy savings. Under the Settlement,
FirstEnergy is targeting energy savings of nearly 600,000 MWh

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1 per year,⁴ which is significantly above the statutory minimum.

2 FirstEnergy's portfolio includes programs that are designed to
3 reach this 600,000 MWh per year target, and customers will pay
4 increased program costs (over \$286 million over three years for all
5 customers, and over \$124 million over three years for residential
6 customers) to target this high level of energy savings. If customers
7 must pay for programs that aim to achieve 600,000 MWh in
8 savings per year, they should not pay profits to FirstEnergy for
9 merely reaching the statutory minimum of about 530,000 MWh per
10 year.

11 iv. The shared savings mechanism should be revised to provide that
12 each customer class (e.g., residential customers) only pays shared
13 savings to the Company if the Company exceeds the targeted
14 savings for that class. FirstEnergy's programs should also focus
15 not just on total energy savings but on the number of customers
16 who participate in programs and therefore save energy and money.

17 v. To balance the interests of FirstEnergy and consumers, FirstEnergy
18 should pay a penalty to customers if it achieves less than 85% of
19 projected savings or less than 85% of customer class participation
20 targets.

⁴ See Settlement Ex. A (showing projected energy savings of 1,781,833 MWh over three years, or 593,944 MWh per year, on average).

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- 1 vi. Non-cost-effective programs other than low-income programs
2 should be removed from the Portfolio Plan entirely because they
3 cause customers to lose money.
- 4 vii. If non-cost-effective programs are not removed from the Portfolio,
5 then the net losses that result from these programs should be
6 included in the calculation of FirstEnergy's shared savings (profit).
7 This approach would protect customers from paying extra profit to
8 FirstEnergy for programs that cost more than they save.
- 9 viii. The Total Resource Cost ("TRC") test should be used to calculate
10 the benefits to customers for purposes of determining how much
11 profit (shared savings) customers will pay to FirstEnergy. The
12 TRC should be used because it is the test used by the PUCO in its
13 rules and because, unlike the Utility Cost Test ("UCT") that
14 FirstEnergy uses, the TRC includes participant costs (*i.e.* costs that
15 customers pay out of pocket) and therefore measures the actual
16 benefits that customers receive.
- 17 ix. FirstEnergy should not be allowed to charge customers for profit
18 (shared savings) on the Energy Special Improvement District
19 ("ESID") program and Mercantile Customer Program because
20 customers—not FirstEnergy—achieved the electricity savings in
21 these programs.
- 22 x. The LED Street Lighting Tariff, Mercantile Customer Program,
23 Transmission and Distribution ("T&D") Upgrades Program, and

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1 Smart Grid Modernization Initiative Program, should not be
2 counted for purposes of shared savings (profit) that customers will
3 pay to FirstEnergy because these programs are being addressed in
4 other proceedings.

5 xi. Behavioral programs should not be counted for purposes of the
6 shared savings (profit) that customers will pay to FirstEnergy
7 because these programs do not result in persistent savings. The
8 programs do not have lives of much more than one year and the
9 electricity savings are more difficult to quantify.

10 xii. There should not be a single cap (limit) on the shared savings for
11 all three Companies because a single cap could result in customers
12 of one Company paying higher profits based on the performance of
13 one of the other Company's programs. Instead, there should be a
14 separate shared savings cap on what customers would pay for each
15 customer class for each Company.

16 xiii. The aggregate shared savings cap that limits how much profit
17 customers would pay to FirstEnergy should be \$10 million, not
18 \$25 million, because a \$10 million cap lowers the cost to
19 customers and at the same time provides sufficient incentive for
20 FirstEnergy to achieve energy savings.

21 xiv. The PUCO should require transparency in FirstEnergy's energy
22 efficiency programs. All shared savings (profit) paid by customers
23 should be specified in pre-tax dollars, not as after-tax values. The

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1 Settlement states that customers will pay up to \$10 million per year
2 in shared savings until such time as the Companies are no longer
3 receiving revenue under Rider DMR.⁵ But this figure understates
4 the profit that customers would pay to FirstEnergy. Customers
5 will actually pay up to \$15.6 million⁶ in profit to FirstEnergy
6 because FirstEnergy proposes that customers pay its taxes on the
7 profit. The Settlement should state the cap in terms of the amount
8 that customers actually pay. Otherwise it is misleading.

9 xv. FirstEnergy's low income programs should be implemented as
10 planned for 2017. Throughout 2017, the FirstEnergy energy
11 efficiency collaborative group should work together to revamp the
12 programs to substantially increase the participation rates (the
13 number of customers benefiting) in the low-income programs
14 under the current budget.

⁵ See Settlement § V.T.

⁶ Assuming a 36% corporate tax rate.

1 **III. BACKGROUND**

2

3 ***Q11. PLEASE DESCRIBE THE HISTORICAL BACKGROUND REGARDING***
4 ***FIRSTENERGY'S ENERGY EFFICIENCY AND PEAK DEMAND***
5 ***REDUCTION PROGRAMS.***

6 ***A11.*** FirstEnergy filed its first EE/PDR portfolio plan in Ohio in 2009 in Case No. 09-
7 1947-EL-POR. The first plan included programs for the years 2010 through
8 2012.⁷ In 2010, the first year of its programs, FirstEnergy failed to achieve the
9 amount of energy savings required by statute.⁸

10

11 The Ohio General Assembly passed Senate Bill 310 ("SB 310") in 2014,
12 "freezing" the annual statutory benchmarks (minimum amounts that the General
13 Assembly requires) for 2015 and 2016. Shortly after SB 310 became effective in
14 2014, FirstEnergy cancelled nearly all of its EE/PDR programs for 2015 and
15 2016,⁹ while all other Ohio electric distribution utilities continued their programs
16 for the benefit of customers.

17

18 In 2014, FirstEnergy also filed the "ESP IV Case" requesting approval of a power
19 purchase agreement ("PPA"). In March 2016, the PUCO approved the ESP IV

⁷ See Case No. 09-1947-EL-POR, Opinion and Order (Mar. 23, 2011).

⁸ See Energy Efficiency & Peak Demand Reduction Program Portfolio Status Report for the Period January 1, 2010 through December 31, 2010 at 5, Case No. 11-2956-EL-EEC (May 23, 2011) (identifying a statutory benchmark of 197,959 MWh for OE but actual energy savings of 164,365 MWh).

⁹ See Case No. 12-2190-EL-POR, Finding and Order (Nov. 20, 2014).

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1 Stipulation in which FirstEnergy agreed to file an application to revive all the
2 EE/PDR programs that it had cancelled and to substantially increase the scope of
3 its EE/PDR programs to achieve 800,000 MWh of energy savings per year. In
4 exchange, the other parties signing the agreement agreed not to oppose
5 FirstEnergy's PPA and agreed that FirstEnergy would request in its EE/PDR
6 application a 150% increase in shared savings (profits paid by customers, not the
7 parties to the stipulation) from \$10 million a year to \$25 million a year (after
8 taxes). OCC did not sign the stipulation in the ESP IV Case and opposed it.
9 FirstEnergy then filed the current 2017-2019 Portfolio Plans, which targeted
10 savings of approximately 800,000 MWh per year and included a \$39 million (pre-
11 tax) shared savings cap.

12
13 Subsequently in the ESP IV Case, the PUCO modified its March 2016 order.¹⁰ In
14 its October 12, 2016 Fifth Entry on Rehearing, the PUCO made three rulings that
15 apply to FirstEnergy's energy efficiency portfolio. First, the PUCO found that
16 FirstEnergy may not receive shared savings for energy savings from the Customer
17 Action Program.¹¹ Second, the PUCO found that FirstEnergy is required to
18 "budget for the annual statutory energy efficiency mandate" rather than the
19 800,000 MWh goal found in the ESP IV settlement.¹² Third, the PUCO found
20 that FirstEnergy's shared savings cap would not increase from \$10 million to \$25

¹⁰ See ESP IV Case, Fifth Entry on Rehearing (Oct. 12, 2016).

¹¹ See ESP IV Case, Fifth Entry on Rehearing ¶ 324.

¹² *Id.* ¶ 325.

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1 million (after tax) "until such time as the Companies are no longer receiving
2 revenue under Rider DMR."¹³ The Settlement appears to reflect changes
3 consistent with the Fifth Entry on Rehearing.

4
5 I understand, however, that FirstEnergy and other parties filed applications for
6 rehearing with respect to the October 12, 2016 Fifth Entry on Rehearing in the
7 ESP IV Case. FirstEnergy's application for rehearing challenges the PUCO's
8 conclusions regarding the 800,000 MWh energy savings target as well as the
9 increase in the shared savings cap. I understand that the PUCO granted these
10 applications for further consideration.¹⁴ I also understand that the ESP IV case is
11 currently under appeal to the Ohio Supreme Court.¹⁵

¹³ *Id.* ¶ 326.

¹⁴ *See* Sixth Entry on Rehearing, Case No. 14-1297-EL-SSO (Dec. 7, 2016).

¹⁵ *See* Notice of Appeal by the Office of the Ohio Consumers' Counsel and Northwest Ohio Aggregation Coalition (and its Individual Communities), PUCO Case No. 14-1297-EL-SSO, Ohio Supreme Court Case No. 16-1325 (Sept. 6, 2016).

**IV. THE SETTLEMENT IS NOT IN THE PUBLIC INTEREST OR IN THE
BEST INTERESTS OF CUSTOMERS.**

**A. TO PROTECT CUSTOMERS FROM INCREASING COSTS FOR
ENERGY EFFICIENCY, THE SETTLEMENT SHOULD INCLUDE
A COST CAP THAT IS GENERALLY CONSISTENT WITH THE
PROPOSAL IN PUCO STAFF WITNESS DONLON'S DECEMBER
5, 2016 TESTIMONY.**

***Q12. HAVE YOU REVIEWED THE COST CAP TESTIMONY FILED IN THIS
CASE BY PATRICK DONLON OF THE PUBLIC UTILITIES COMMISSION
OF OHIO?***

A12. Yes.

***Q13. DO YOU AGREE THAT AN OVERALL COST CAP SHOULD BE
IMPLEMENTED TO LIMIT PROGRAM COSTS AND SHARED SAVINGS
THAT CUSTOMERS PAY FOR FIRSTENERGY'S ENERGY EFFICIENCY
PROGRAMS?***

A13. Yes. I agree with Mr. Donlon's recommendation that a cost cap equivalent to 3%
of each Company's annual operating revenues FERC Form 1 should be
implemented. The only modification I would make is that for each portfolio plan
year, the cost cap should be based on each Company's filed FERC Form 1 for the
year prior. This modification will allow the cap to automatically adjust to on-

1 going annual increases (or decreases) in the Company's annual electric operating
2 revenues. The main problem with using a fixed base year (such as 2015) for the
3 calculation of the annual cost cap is that the cap will be out-of-date in just a few
4 years.

5

6 ***Q14. PLEASE SUMMARIZE WHY YOU SUPPORT SUCH A COST CAP***
7 ***MECHANISM IN THIS CASE.***

8 ***A14.*** I support a cost cap for many reasons, including the following:

- 9 • I support the PUCO Staff's proposed cost cap because it will
10 encourage FirstEnergy to spend customer funds as wisely as
11 possible while still achieving the statutory savings goals.
- 12 • The cost cap will allow substantial financial support for energy
13 efficiency measures and programs. At the same time, a cost cap
14 would provide an upper limit to rate impacts on customers of
15 utility-administered energy efficiency programs, providing some
16 stability in rates. Since the early 1960's, rate stability has been a
17 key principle for rate design over the long-term.¹⁶
- 18 • The PUCO Staff's proposal provides for a reasonable relief valve
19 for the FirstEnergy Companies if they project that they would not
20 be able to meet the statutory savings requirements within the
21 annual cost cap for a particular year. That is, the PUCO Staff

¹⁶ Bonbright, James C., "Principles of Public Utility Rates," Columbia University Press, New Work, 1961, page 291.

1 recommends that utilities be allowed to file a request with the
2 PUCO to amend the applicable savings target if the utility
3 determines that it would be unable to meet the portfolio year
4 statutory savings target within the annual cost cap.

- 5 • The testimony of PUCO Staff Witness Donlon provides concise
6 and clear direction on how the cost cap can be audited, items that
7 would offset the cost cap, how demand response revenues from
8 PJM should be treated, and which programs count towards the
9 Companies' shared savings calculations.
- 10 • Several other states have implemented cost caps to address the
11 short and long-term rate impacts of energy efficiency programs
12 and to provide rate stability for customers over the long term.

13
14 ***Q15. CAN FIRSTENERGY ACHIEVE ITS STATUTORY MINIMUM ENERGY***
15 ***SAVINGS UNDER THE COST CAP?***

16 ***A15.*** Yes, a 3% cost cap would likely give FirstEnergy ample opportunity to achieve its
17 statutory minimum energy savings. Based on FirstEnergy's 2015 actual electric
18 operating revenues, a 3% cap would permit FirstEnergy to spend up to about
19 \$80.1 million on energy efficiency programs in 2017. Exhibit DJM-1 provides
20 the baselines for each of the Companies and for FirstEnergy in the aggregate for
21 2017, 2018, and 2019. The following are the baselines for FirstEnergy MWh

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1 sales for 2017 to 2019 from Exhibit DJM-1 and the 1.0% annual energy savings
2 benchmarks:

Year	Baseline (MWh)	1.0% Energy Savings Benchmark (MWh)	Projected Cost Per First Year kWh Saved
2017	53,137,000	531,370	\$0.151
2018	52,413,000	524,130	\$0.153
2019	52,392,000	523,920	\$0.153

3
4 With program spending of \$80.1 million and a 531,370 MWh energy savings
5 benchmark in 2017, FirstEnergy would need to implement programs in 2017 that
6 save energy at a cost of about 15 cents per first-year kWh saved. In my
7 experience, this is a very reasonable expectation for well-designed utility-
8 administered energy efficiency programs.

9
10 Furthermore, the baselines identified above do not account for nonresidential
11 customer opt-outs. Once nonresidential customers opt out, the baselines will be
12 lower, as will the 1.0% energy savings benchmarks. This will further increase the
13 likelihood that FirstEnergy can achieve its statutory minimum within the \$80.1
14 million cost cap.

15

16 ***Q16. IF FIRSTENERGY CANNOT ACHIEVE ITS STATUTORY MINIMUM***
17 ***SAVINGS UNDER THE COST CAP, WILL CUSTOMERS THEN HAVE TO***
18 ***PAY MORE FOR PROGRAMS?***

19 ***A16.*** No. Under the PUCO Staff's proposal, FirstEnergy could not increase the amount
20 of program spending. Instead, if FirstEnergy is unable to meet its statutory

1 benchmark for energy savings under the cost cap, it can file a request with the
2 PUCO to reduce its energy savings target for a given year. I believe that this is a
3 reasonable proposal to balance the interests of controlling costs customers are
4 charged for energy efficiency, without penalizing the utility.

5

6 ***Q17. WHICH OTHER STATES HAVE IMPLEMENTED COST CAPS FOR***
7 ***ENERGY EFFICIENCY PROGRAMS THROUGH LEGISLATION?***

8 ***A17.*** Exhibit RFS-4 provides detailed information on the states that have implemented
9 cost caps for energy efficiency programs. Listed are examples of states that have
10 implemented cost caps through legislation:

11 • **Pennsylvania:** In 2008, Pennsylvania Act 129 established the
12 annual cost cap at a maximum of 2% of 2006 utility annual
13 operating revenues. The Pennsylvania Act 129 programs were
14 able to achieve incremental annual kWh savings of approximately
15 one percent of actual 2010 kWh sales per year during the four
16 years of the Act 129 program (2009 to 2013) while spending less
17 than 2 percent of 2006 annual electric operating revenues on
18 approved Act 129 energy efficiency programs.¹⁷ This shows that
19 other utilities have been able to achieve savings of one percent of
20 utility annual kWh sales while spending less than the 3% cap
21 proposed by the PUCO Staff and me.

¹⁷ See "Statewide Evaluator Final Annual Report, Phase I, June 1, 2009 to May 31, 2013," prepared for the Pennsylvania Public Utilities Commission, March 4, 2014, Table II and VII.

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- 1 • **Texas:** Texas S.B. 1125 requires that cost-effective energy
2 efficiency be subject to cost ceilings (maximum amount)
3 established by the commission for the utility's residential and
4 commercial customers. The cost ceiling is set by the Texas Public
5 Utilities Commission. During calendar year 2015, the ten investor-
6 owned utilities in Texas regulated by the Texas Public Utility
7 Commission saved a total of 564,689,053 kWh on an incremental
8 annual basis.¹⁸ The reported cost per first-year kWh saved for
9 calendar year 2015 was \$0.114 per first-year kWh saved, and
10 \$0.011 per lifetime kWh saved.¹⁹ The weighted average measure
11 life for all programs offered by these ten utilities in 2015 was 10.3
12 years.²⁰ The Texas experience provides another example where
13 significant kWh savings were achieved at a cost less than \$0.15 per
14 first-year kWh saved.
- 15 • **Illinois:** The amount spent by electric utilities on energy
16 efficiency programs is limited by legislation (Public Act 099-

¹⁸ The reported incremental annual kWh savings for the ten investor-owned utilities in Texas for calendar year 2015 was obtained by GDS from a report titled "Annual Statewide Portfolio Report for Program Year 2015 – Volume 1," prepared for the Texas Public Utility Commission by Tetrattech, August 15, 2016.

¹⁹ The utility cost per first year kWh saved was calculated by GDS by multiplying the overall lifetime cost per kWh saved of \$0.011 by the weighted average measure life of 10.34 years. The overall lifetime cost per kWh saved for 2015 was obtained by GDS from a report titled "Annual Statewide Portfolio Report for Program Year 2015 – Volume 1," prepared for the Texas Public Utility Commission by Tetrattech, August 15, 2016.

²⁰ The weighted average measure life of 10.34 years for the programs of these ten utilities was calculated by GDS based on the 2015 incremental annual kWh savings and lifetime kWh savings reported by each of these ten Texas utilities in their 2015 EIA Form 861 filing with the U.S. Department of Energy, Energy Information Administration.

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0906). The annual rate impact of energy efficiency programs cannot exceed the greater of 2.015% of the retail electric rate paid by customers for the calendar year 2007 or the incremental amount per kilowatt-hour saved for energy efficiency measures actually incurred in 2011. Ameren Illinois, one of the major electric utilities in Illinois, saved 385,286 MWh (on a gross savings basis) during the latest fiscal year where data is readily available (12 months ending May 31, 2015).²¹ These annual savings are 1.1% of the Company's calendar year 2015 actual kWh sales.²² Ameren Illinois actual expenditures in 2015 for all programs were \$64,107,000.²³ This means that planned costs per first-year kWh saved were \$0.166 per first year kWh saved.

- **Wisconsin:** Wisconsin legislative Act 141 states that the 1.2% of electric utility annual operating revenues is to cover a utility's share of the cost of the statewide "Focus on Energy" programs plus the cost of any efficiency program for large customers that the utility requests to administer and any ordered program the utility administers. In effect, the cost of utility-administered and customer programs is credited against a utility's required

²¹ See Ameren Illinois Company Electric and Gas Residential and Commercial and Industrial Energy Efficiency Portfolios – PY7 Summary Evaluation Report – Final, October 26, 2016, page 7, Table 2.

²² Ameren Illinois 2015 calendar year sales were 36,062,671 MWh and were obtained from the U.S. DOE EIA Form 861 database for 2015, available at www.eia.gov.

²³ Ameren Illinois 2015 calendar year actual energy efficiency program expenditures of \$64.1 million were obtained from the U.S. DOE EIA Form 861 database for 2015, available at www.eia.gov.

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1 expenditure for statewide programs. The Wisconsin Public
2 Service Commission may specify a higher funding level, subject to
3 review by the Legislature's Joint Committee on Finance. The act
4 requires that the commission base a proposal for higher funding
5 level on a list of criteria. During Calendar Year 2015, Wisconsin
6 Focus on Energy programs saved 558,238,428 kWh (net savings)
7 on an incremental annual basis and statewide electricity sales were
8 69,494,755 MWh in that year. Thus the Focus on Energy
9 programs were able to save 0.8% of 2015 Wisconsin statewide
10 electricity sales at a cost less than 1.2% of electric utility annual
11 operating revenues.

- 12 • **Maine:** Maine's 2010 Efficiency Maine Trust act states: "The
13 commission shall ensure that transmission and distribution utilities
14 on behalf of their ratepayers procure all electric energy efficiency
15 resources found by the commission to be cost-effective, reliable
16 and achievable pursuant to section 10104, subsection 4, except that
17 the commission may not require the inclusion in rates under this
18 subsection of a total amount that exceeds 4% of total retail
19 electricity and transmission and distribution sales in the State as
20 determined by the commission by rule." Maine's cost cap is four
21 percent of annual electric operating revenues.²⁴ During FY 2015,

²⁴ <http://www.mainelegislature.org/legis/statutes/35-A/title35-Asec10110.html>

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1 the Efficiency Maine Trust's electric energy efficiency programs
2 saved 224,341,112 kWh on an incremental annual basis.²⁵ Maine's
3 retail electricity sales in 2014 were 11,838,518 MWh.²⁶ Maine's
4 revenue from retail sales in 2014 were \$863.5 million. Thus,
5 Efficiency Maine's programs saved 1.9% of annual retail electric
6 sales in FY 2015. Maine's electric utilities paid a total of \$15.2
7 million to the Efficiency Maine Trust in FY 2015 via a system
8 benefits charge.²⁷ Maine's utilities only paid 1.8% of statewide
9 annual utility revenues to achieve these savings.
10

11 ***Q18. ARE THERE STATES THAT HAVE IMPLEMENTED COST CAPS***
12 ***THROUGH REGULATORY COMMISSION REGULATIONS OR RULES?***

13 ***A18.*** Yes. In states where cost caps are not established by legislation, state regulatory
14 commissions can set annual kWh and KW savings targets and annual energy
15 efficiency budgets through regulatory proceedings. These regulatory proceedings
16 allow utilities and stakeholders to present testimony, and the regulatory
17 commission issues an order that establishes kWh and KW savings targets and
18 budgets. Examples of states where energy efficiency savings targets are set by
19 utility commissions are Florida and New York.

²⁵ See Efficiency Maine Trust Annual Report for Fiscal Year 2015, Table 3.

²⁶ Annual State of Maine electricity sales in 2014 were obtained from www.eia.gov, State Electricity Profile for Maine for 2014.

²⁷ See Efficiency Maine Trust Annual Report for Fiscal Year 2015, Table 26.

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- 1 • Florida: The Florida Energy Efficiency Conservation Act
2 (FEECA) states "that the Florida Public Service Commission is the
3 appropriate agency to adopt goals and approve plans related to the
4 conservation of electric energy and natural gas usage. The
5 Legislature directs the commission to develop and adopt overall goals
6 and authorizes the commission to require each utility to develop plans
7 and implement programs for increasing energy efficiency and
8 conservation within its service area, subject to the approval of the
9 commission."
10 • New York: In February 2015, the New York Public Service
11 Commission issued an order establishing explicit energy efficiency
12 budgets and targets for 2016 and set forth an annual process
13 whereby utilities will propose post-2016 energy efficiency budgets
14 and targets for approval. As part of that process, the order directed
15 the filing of Energy Efficiency Transition Implementation Plans
16 (ETIPs), to address the energy efficiency efforts specifically
17 associated with proposed budgets and targets.

18
19 Each utility must develop ETIPs, filed annually to inform and obtain Commission
20 approval of the utilities' Budget and Metrics Plans.

1 **B. FIRSTENERGY'S PROPOSAL FOR CUSTOMERS TO PAY**
2 **PROFITS (SHARED SAVINGS) SHOULD BE MODIFIED**
3 **BECAUSE IT IS FLAWED AND WILL CAUSE**
4 **CUSTOMERS TO PAY RATES THAT ARE**
5 **UNREASONABLE.**

6
7 ***Q19. WHAT IS A SHARED SAVINGS INCENTIVE MECHANISM AND HOW***
8 ***DOES IT AFFECT CUSTOMERS?***

9 ***A19.*** A shared savings incentive mechanism is a tool used by regulators to reward
10 exemplary utility performance in delivering energy efficiency and peak demand
11 reduction programs to its customers.²⁸ A properly designed shared savings
12 mechanism gives the utility the incentive to design and administer programs that
13 achieve greater energy savings and increase customer benefits. In return for
14 program performance, customers make "shared savings" (profit) payments to the
15 utility. The amount of the shared savings that customers pay to the utility is often
16 a percentage of the net benefits created by the utility EE/PDR programs. The net
17 benefits are typically the avoided energy and capacity dollar savings minus the
18 utility and individual customer costs of the programs.

²⁸ The National Action Plan for Energy Efficiency Guide titled "Aligning Utility Incentives with Investment in Energy Efficiency, A Resource of the National Action Plan for Energy Efficiency" (November 2007) states on page ES-4: "Shared savings mechanisms provide utilities the opportunity to share with ratepayers the net benefits resulting from successful implementation of energy efficiency programs."

1 ***Q20. DO SHARED SAVINGS THAT CUSTOMERS PAY TO THE UTILITY FOR***
2 ***ENERGY EFFICIENCY IMPACT UTILITY PROFITS?***

3 ***A20.*** Yes. Shared savings that customers pay to the utility are a form of utility
4 shareholder profit.²⁹ Shared savings are not a reimbursement to the utility for any
5 costs that the utility has incurred. Every dollar of shared savings that customers
6 pay to the utility is a dollar of profit for the utility's shareholders.

7
8 ***Q21. DOES FIRSTENERGY'S APPLICATION, AS MODIFIED BY THE***
9 ***SETTLEMENT, CONTAIN A COMPLETE DESCRIPTION OF THE***
10 ***SHARED SAVINGS THAT IT IS ASKING CUSTOMERS TO FUND?***

11 ***A21.*** No. FirstEnergy's Application states that it "is the same as approved by the
12 Commission in the Companies' Previous EE/PDR Portfolio Plans except for the
13 changes approved by the Commission in the Companies' Stipulated ESP IV."³⁰
14 The "Previous EE/PDR Portfolio Plans" are the plans that the Companies filed in
15 Case Nos. 12-2190-EL-POR, 12-2191-EL-POR, and 12-2192-EL-POR.³¹ The
16 "Stipulated ESP IV" is the Companies' Stipulated Fourth Electric Security Plan
17 approved in Case No. 14-1297-EL-SSO.³² The Application then identifies certain
18 "key" features of the Shared Savings Mechanism, without identifying the

²⁹ *Id.* The NAEPE Guide states on page 2-8: "Providing financial incentives to a utility if it performs well in delivering energy efficiency potentially can change the existing utility business model by making efficiency profitable rather than merely a break-even activity."

³⁰ See Portfolio Plan § 7.1.

³¹ See Application ¶ 6.

³² See Application ¶ 3.

1 remaining features of the Shared Savings Mechanism that FirstEnergy considers
2 to be non-key. The Application does not identify what the "changes approved by
3 the Commission in the Companies' Stipulated ESP IV" are. The Settlement does
4 not provide any additional details. Thus, FirstEnergy has not provided a complete
5 description of all features of the Shared Savings Mechanism.

6

7 ***Q22. WHAT IS YOUR RECOMMENDATION TO REMEDY FIRSTENERGY'S***
8 ***INCOMPLETE FILING?***

9 ***A22.*** FirstEnergy should be required to file in the docket in this case a complete copy
10 of the Shared Savings Mechanism that (i) includes all inputs, assumptions,
11 methodologies, calculations, energy and demand savings targets and other
12 relevant information, (ii) includes a sample calculation demonstrating how shared
13 savings will be calculated under the Settlement, and (iii) does not rely on vague
14 citations to information that is not in the record in this case. Although
15 FirstEnergy is entitled to propose a shared savings mechanism, the PUCO must
16 evaluate the proposal by looking at whether the mechanism is well-defined and
17 provides the appropriate incentive for the utility while ensuring that customers are
18 getting the best value for their program dollars. If FirstEnergy does not provide
19 the PUCO with the necessary information to make an informed decision, then I
20 recommend that the PUCO find that FirstEnergy is not entitled to any shared
21 savings.

1 ***Q23. DO YOU HAVE RECOMMENDATIONS FOR THE PUCO REGARDING***
2 ***THE SHARED SAVINGS MECHANISM, BASED ON YOUR REVIEW OF***
3 ***THE AVAILABLE INFORMATION?***

4 ***A23.*** Yes. I have reviewed the Application and Settlement, the docket entries from the
5 Previous EE/PDR Portfolio Plans that I believe to be relevant, the stipulation and
6 orders from FirstEnergy's most recent ESP case, and other documents received
7 through discovery. My testimony is based on my understanding of various
8 aspects of the Shared Savings Mechanism, and my recommendations follow.

9

10 ***Q24. IS THE DESIGN OF THE SHARED SAVINGS INCENTIVE PROPOSED BY***
11 ***FIRST ENERGY FLAWED?***

12 ***A24.*** Yes. The phrase "shared savings" suggests that as the utility increases the savings
13 for customers, the utility and the customer share the additional savings, and both
14 the utility and the customer are better off. It is possible to design a utility
15 incentive mechanism that properly incents the utility to reduce energy usage and
16 save customers money. FirstEnergy's proposed Shared Savings Mechanism,
17 however, is flawed. FirstEnergy has designed the Shared Savings Mechanism in a
18 manner that increases the amount of profits that customers pay to the Companies,
19 but without ensuring increased net benefits for customers.

1 ***Q25. IS FIRSTENERGY'S PROPOSED SHARED SAVINGS MECHANISM***
2 ***DESIGNED TO BENEFIT THE COMPANY'S CUSTOMERS?***

3 ***A25.*** No. The Shared Savings Mechanism is designed to benefit FirstEnergy through
4 increased profits paid for by customers. The calculation of utility profits under
5 the Shared Savings Mechanism includes four primary inputs: (i) the incentive
6 tiers and savings target, (ii) the net benefits calculation, (iii) the energy savings
7 calculation, and (iv) the shared savings (profit) cap. These inputs are designed in
8 a way that benefits the Companies by increasing the shared savings that customers
9 pay (thereby increasing utility profits) without necessarily increasing, and in some
10 instances decreasing, the benefit that customers derive from the EE/PDR
11 programs.

12
13 ***Q26. CAN YOU PROVIDE A SUMMARY OF THE FLAWS IN THE DESIGN OF***
14 ***FIRSTENERGY'S SHARED SAVINGS MECHANISM?***

15 ***A26.*** First, the Companies' incentive schedule,³³ which provides for increased profits as
16 the Companies achieve additional annual energy savings, violates the core
17 principle of customer class equity found in section 4901:1-39-03 of the Ohio
18 Administrative Code. This is because the shareholder incentive tiers are
19 calculated only on a Company-by-Company basis, and not a class-by-class basis.
20 This class equity principal is further violated due to the absence of specifying a
21 minimum number of participants within each customer class through which

³³ See Application § 7.1.

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1 targeted savings will be achieved. This means that all residential customers could
2 pay higher profits to the Companies based on large savings achieved through a
3 relatively small number of customers participating in the Portfolio's commercial
4 and industrial programs.

5
6 Second, the Companies tilt the net benefits calculation against customers by
7 excluding non-cost-effective programs from the calculation. They count the net
8 benefits from cost effective programs and use those benefits to increase profits,
9 but they do not count the net costs of non-cost-effective programs, which would
10 decrease the amount of profit that customers pay to FirstEnergy. The Companies
11 also improperly include the benefits of the Energy Special Improvement District
12 program and Mercantile Self-Direct program, even though the Companies play no
13 part whatsoever in achieving those benefits. The Companies should not receive
14 customer-funded profits for energy savings they played no part in.

15
16 Third, although the Companies propose not to count the non-cost effective
17 programs in the net benefits calculation, they propose to include them in the
18 energy savings calculation, which significantly boosts their opportunity to earn a
19 shareholder incentive, funded by customers. This gives the Companies the
20 incentive to include non-cost-effective programs in the Portfolio Plans,
21 compounding the harm to consumers. The Companies should not be permitted to
22 have it both ways. They should not be permitted to include non-cost effective
23 programs in the energy savings calculation, and they should be removed from the

1 Portfolio Plans. However, if they want credit for the reduced energy achieved
2 through non-cost-effective programs, then the net cost of these programs must
3 also be recognized when calculating the total net benefits of the Portfolio Plans.
4

5 Fourth, a single cap for all three Companies may cause customers of one
6 Company to pay higher profits based on the performance of one of the other
7 Company's programs.
8

9 Each of these material defects in the Shared Savings Mechanism must be
10 corrected to avoid customers paying excessive shared savings to the Companies,
11 as I discuss in more detail below.
12

13 **C. TO PROTECT CUSTOMERS AND PROMOTE REASONABLE**
14 **RATES, THE PUCO SHOULD ESTABLISH APPROPRIATE**
15 **BENCHMARKS AND INCENTIVE TIERS.**
16

17 ***Q27. WHAT IS THE STATUTORY MINIMUM ENERGY SAVINGS THAT***
18 ***FIRSTENERGY MUST ACHIEVE?***

19 ***A27.*** Under Ohio Revised Code ("R.C.") 4928.66(A), Ohio electric utilities are
20 required to achieve energy savings of 1% of their energy "baseline," which is the
21 average kWh sold by the utility in the previous three years. In Exhibit DJM-1 to

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1 the amended direct testimony of Denise J. Mullins, FirstEnergy identifies the
2 following baselines (in GWh):

	OE	CEI	TE
2017	23,898	18,755	10,485
2018	23,353	18,574	10,487
2019	23,311	18,537	10,544

3

4 The annual 1% statutory benchmarks are therefore (in MWh):

	OE	CEI	TE	Total
2017	238,980	187,550	104,850	531,380
2018	233,530	185,740	104,870	524,140
2019	233,110	185,370	105,440	523,920

5

6 As this chart demonstrates, the aggregate statutory minimum savings for the three
7 Companies combined is just over 520,000 MWh per year.

8

9 ***Q28. SHOULD CUSTOMERS PAY SHARED SAVINGS TO FIRSTENERGY***
10 ***BASED ON FIRSTENERGY EXCEEDING THE STATUTORY MINIMUM***
11 ***SAVINGS AMOUNT?***

12 **A28.** No. FirstEnergy states that its shared savings mechanism is intended to
13 "encourage the Companies, through financial incentives, to exceed their
14 statutorily mandated EE/PDR goals."³⁴ In the past, the PUCO has approved tiered
15 shared savings mechanisms that give the utility an increased percentage of the net
16 benefits from EE/PDR programs if the programs achieve savings above the

³⁴ See Portfolio Plan § 7.1.

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1 statutory minimums.³⁵ FirstEnergy proposes a similar tiered mechanism in this
2 case.³⁶ The logic behind this structure is that without a chance for additional
3 profits through an incentive mechanism, the utility has an incentive to reach the
4 statutory minimum (to avoid a penalty³⁷), but not to go above and beyond. In this
5 case, however, that logic does not apply. In the Settlement, FirstEnergy agreed to
6 target energy savings of nearly 600,000 MWh per year, which is substantially
7 higher than the statutory minimum.

8

9 ***Q29. PLEASE EXPLAIN HOW THE 600,000 MWH SAVINGS TARGET AGREED***
10 ***TO IN THE SETTLEMENT AFFECTS THE DESIGN OF THE SHARED***
11 ***SAVINGS THAT CUSTOMERS ARE ASKED TO PAY.***

12 ***A29.*** The 600,000 MWh savings target agreed to in the Settlement is a critical input to
13 the mechanism. FirstEnergy should not be allowed to earn shareholder incentives
14 for exceeding the statutory minimum savings amount, which is substantially
15 lower than the 600,000 MWh per year committed to in the Settlement. That is, if
16 the lower statutory target were used as the threshold for earning a shareholder
17 incentive, FirstEnergy would be allowed to collect additional profits from
18 customers in the form of shared savings for energy savings that it has already

³⁵ See, e.g., Case No. 12-2190-EL-POR, Opinion and Order, (Mar. 23, 2013); Case No. 11-5569-EL-POR, Opinion and Order (Mar. 21, 2012).

³⁶ See Portfolio Plan § 7.1; Settlement § V.R.

³⁷ See Ohio Administrative Code ("OAC") 4901:1-39-06(B) ("If staff finds that an electric utility has not demonstrated compliance with the approved program portfolio plan or annual sales or peak-demand reductions required by division (A) of section 4926.66 of the Revised Code, staff may recommend remedial action and/or the assessment of a forfeiture.").

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1 agreed to target in the Settlement. The Companies would collect additional
2 profits for not reaching the goals set forth in the Settlement. Allowing this would
3 provide a windfall to FirstEnergy, paid by customers. Customers are already
4 paying higher program costs to target energy savings of 600,000 MWh per year
5 instead of the statutory benchmark of about 520,000-530,000 MWh. Customers
6 should not pay additional profits to FirstEnergy in the form of shared savings
7 based on FirstEnergy exceeding the statutory minimum energy savings. Rather,
8 shared savings should be based on energy savings exceeding the projected annual
9 600,000 MWh savings, on a per customer class basis, as I discuss below.

10
11 ***Q30. HOW DOES THE 600,000 MWH TARGET AFFECT THE PROGRAM***
12 ***BUDGET THAT CUSTOMERS ARE BEING ASKED TO FUND?***

13 ***A30*** Generally, a program administrator will need to spend more on programs to
14 achieve higher energy savings. All else equal, a portfolio that targets 600,000
15 MWh per year will have higher program costs than a portfolio that targets under
16 530,000 MWh per year. For example, FirstEnergy's Settlement targets annual
17 savings of about 600,000 MWh per year and will cost customers over \$286
18 million in program costs³⁸ (plus shared savings). FirstEnergy could remove a
19 portion of the proposed programs, thereby reducing the cost to customers, while
20 still targeting savings that would exceed its statutory minimum.

³⁸ See Settlement, Ex. A. See also Exhibit RFS-5 (FirstEnergy's response to OCC Interrogatory Set 6 No. 145).

**Q31. SHOULD THE FACT THAT FIRSTENERGY'S SETTLEMENT HAS A
BUDGET DESIGNED TO REACH 600,000 MWH AFFECT THE SHARED
SAVINGS THAT CUSTOMERS ARE BEING ASKED TO PAY?**

A31. Yes. When a program administrator (here, the utility) designs a portfolio, it includes projected energy savings and projected costs. In the Settlement, FirstEnergy budgeted for programs that are designed to achieve 600,000 MWh in energy savings, and customers will pay increased program costs for those programs.

As described in my testimony above, however, FirstEnergy proposes that customers pay shared savings when its programs achieve annual savings for reaching the following targets:

- 531,380 MWh in 2017
- 524,140 MWh in 2018
- 523,920 MWh in 2019.

In other words, FirstEnergy has budgeted for programs to reach nearly 600,000 MWh, and customers will pay the increased program costs associated with that budget. But FirstEnergy will be rewarded with shared savings if it reaches savings substantially below its targets. 531,380 MWh is less than 90% of the 600,000 MWh budget. A fundamental principle of shared savings is that it serves to reward only exemplary performance. Allowing FirstEnergy the ability to earn shared savings incentives on any such decreased target savings would result in

1 rewarding FirstEnergy for less than exemplary performance. There is no
2 justification for rewarding FirstEnergy's shareholders for implementing programs
3 that achieve anything less than 100% of their budgeted savings targets.

4
5 ***Q32. ARE THERE ANY FLAWS IN THE INCENTIVE TIERS IN THE***
6 ***PROPOSED SHARED SAVINGS MECHANISM?***

7 ***A32.*** Yes. The proposed tiered Shared Savings Mechanism unfairly shifts the costs and
8 benefits of programs between different classes of customers. This violates the
9 PUCO rule that a utility must consider equity among customer classes when
10 developing its EE/PDR portfolio.³⁹ As proposed, the tiered incentive mechanism
11 gives each Company additional profits as it achieves higher energy savings
12 compared to the 1% annual statutory benchmark.⁴⁰ Each class of customers pays
13 higher profits, even if the additional energy savings are not attributable to that
14 class's programs, and even if the additional energy savings do not result in
15 additional net benefits to that customer class. For example, for 2018, FirstEnergy
16 identifies a baseline usage of 23,353,000 MWh for Ohio Edison (OE).⁴¹ The
17 annual statutory benchmark of 1% for OE is therefore 233,530 MWh. Thus, as
18 long as OE achieves 233,530 MWh in energy savings, the shared savings
19 mechanism will trigger. As OE achieves greater savings, its profits increase. At a

³⁹ See OAC 4901:1-39-03(B)(6) ("When developing programs for inclusion in its program portfolio plan, an electric utility shall consider the following criteria: (6) Equity among customer classes.").

⁴⁰ See Portfolio Plan § 7.1.

⁴¹ See Amended Direct Testimony of Denise J. Mullins, Exhibit DJM-1, (Dec. 9, 2016).

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1 maximum, OE receives a 13.0% incentive if it achieves greater than 115% of the
2 annual benchmark (*i.e.*, if it achieves greater than 268,559 MWh of savings).

3
4 The problem with this structure, however, is that the Shared Savings Mechanism
5 is triggered by, and the incentive tiers are based on, total energy savings,
6 regardless of which class of customers' programs are responsible for those
7 savings. That means that if the utility's residential programs underperform (and
8 therefore contribute a lower percentage of savings than expected), but the utility's
9 commercial and industrial programs over-perform so that the aggregate savings
10 from all programs is above the statutory benchmark, then residential customers
11 will still be required to pay higher profits using the higher incentive percentage.
12 The PUCO should not permit this type of cross-subsidization between classes of
13 customers. One class of customers should not be required to pay higher profits
14 based on the performance of another class's programs.

15

16 ***Q33. DO YOU HAVE A RECOMMENDATION ON HOW THE SHARED***
17 ***SAVINGS MECHANISM SHOULD BE CHANGED TO ELIMINATE***
18 ***SUBSIDIES BETWEEN CUSTOMER CLASSES AND ADDRESS THE***
19 ***600,000 MWH TARGET IN THE SETTLEMENT?***

20 ***A33.*** Yes. The Shared Savings Mechanism should be modified so that the incentive
21 tiers are not tied to aggregate compliance percentages but instead are tied to
22 energy savings by class as compared to that individual class's projected savings in
23 the Settlement. For example, FirstEnergy projects that OE's non-low-income

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residential programs will achieve 87,767,834 kWh of energy savings in 2017.⁴²

This number should form the baseline for the shared savings tiers. If OE does not achieve at least 70,796,937 kWh savings through its non-low-income residential programs (excluding CAP and behavioral), then non-low-income customers should not pay shared savings profits. The compliance percentages in the Shared Savings Mechanism should be percentages of the projected energy savings, not percentages of the annual statutory benchmark for the entire Company. The same would apply for all of OE's, TE's and CEI's customer classes. The following chart identifies the savings target (in MWh) for each class of customers for each Company for 2017, 2018, and 2019⁴³ that should be used as the baseline for determining the "compliance percentage" in the Shared Savings Mechanism:

	OE			CEI			TE		
Class	2017	2018	2019	2017	2018	2019	2017	2018	2019
Residential Non-Low Income	70,797	74,467	78,258	53,677	57,881	60,139	21,880	23,603	23,194
Residential Low Income	2,510	2,510	2,510	2,664	2,664	2,664	1,050	1,050	1,050
Nonresidential	147,001	159,663	165,206	88,947	104,121	107,108	52,383	61,230	63,505

This revision to the mechanism protects customers in each class and more appropriately incents FirstEnergy to achieve savings in all sectors. In addition, to ensure customer class equity, FirstEnergy should be required, for each company,

⁴² See Settlement, OE Appendix B-2. This excludes the Customer Action Program because FirstEnergy has agreed not to include savings from the Customer Action Program for purposes of shared savings.

⁴³ These numbers represent the projected savings for each class of customers for each Company as found in amended Appendix B-2 to the Settlement, excluding projected savings from the CAP, Mercantile Customer Program, Transmission & Distribution Upgrades, Smart Grid Modernization, ESID, and Behavioral programs, because those programs should be excluded from shared savings.

1 to specify a minimum number of participants within each customer class through
2 which targeted savings will be achieved. Failure to obtain energy savings through
3 projects completed by at least this minimum number of participants should result
4 in a prorated percentage reduction in shared savings incentive that each
5 FirstEnergy company can earn. For example, if Ohio Edison achieves 100% of its
6 Residential Non-Low-Income savings target in 2017 through projects completed
7 by 80% of the required number of participants, the company should receive only
8 80% of the shared savings incentive allotted for that company's customer sector.

9

10 ***Q34. SHOULD CUSTOMERS BE REQUIRED TO PAY ADDITIONAL PROFITS***
11 ***TO THE COMPANIES SIMPLY BECAUSE THE COMPANIES ACHIEVE***
12 ***SAVINGS THAT ARE marginally higher than the statutory***
13 ***minimum?***

14 ***A34.*** No. Shared savings profits should reward only exemplary performance. The
15 Companies' proposed Shared Savings Mechanism rewards them by requiring
16 customers to pay millions of dollars in extra profits as soon as the Companies
17 achieve any savings over the statutory minimum. In the lowest tier, customers
18 pay profits to the Companies in the amount of 5% of the Total Discounted Net
19 Lifetime Benefits if the Companies achieve between 100% and 105% of the
20 annual statutory minimum savings. Customers should not be required to pay
21 millions of dollars in profits to the Companies when the programs achieve savings
22 that just barely exceed the minimum targets.

Q35. WHAT IS YOUR RECOMMENDATION ON HOW THE INCENTIVE TIERS SHOULD BE MODIFIED TO GIVE THE UTILITY THE PROPER INCENTIVES, WHILE AT THE SAME TIME, PROTECTING CUSTOMERS FROM PAYING UNREASONABLE RATES?

A35. The Shared Savings Mechanism should include only two tiers, as follows:

Incentive Tier	Compliance Percentage	Incentive Percentage
1	100% to <= 115%	4.0%
2	> 115%	8.0%

A 13% incentive percentage is too high. The incentive percentages proposed by the Companies should be reduced given FirstEnergy's current arrangement for collecting its lost distribution revenues from customers.⁴⁴ The top tier under the Shared Savings Mechanism should be reduced to 8%, as reflected in my proposal, to more adequately balance the interests of customers in paying reasonable rates and the interests of the Companies in increasing their profits. The 8% incentive percentage is within the range being offered to other utilities nationwide that have shared savings mechanisms.⁴⁵ Below I discuss the shareholder incentive mechanisms in place in other states.

⁴⁴ See Case No. 12-1230-EL-SSO, Opinion and Order (July 18, 2012) (approving stipulation that provides that FirstEnergy "shall be entitled to receive lost distribution revenues for all energy efficiency and peak demand reduction programs approved by the Commission, except for historic mercantile self-directed projects").

⁴⁵ See, e.g., Georgia Public Service Commission, Commission Final Order in Docket Nos. 36498 and 36499, approved on July 11, 2013. In this Final Order, the Georgia Public Service Commission approved a shareholder incentive equal to 8.5 percent of net benefits based upon the Utility Cost Test. See pages 24 and 35.

1 ***Q36. HAVE YOU REVIEWED CURRENT INFORMATION ON THE***
2 ***PERCENTAGE OF NET BENEFITS USED IN OTHER STATES THAT***
3 ***HAVE SHARED SAVINGS MECHANISMS SIMILAR TO THE PERCENT***
4 ***OF NET BENEFITS SHARED SAVINGS MECHANISM APPROACH THAT***
5 ***FIRSTENERGY HAS PROPOSED IN THIS DOCKET?***

6 ***A36.*** Yes. I have collected up-to-date information on the design of shared savings
7 mechanisms in other states. The design of shareholder incentive mechanisms
8 varies considerably from state to state. At least sixteen states do not offer any
9 shared savings mechanism or payment at all. Several states have designed their
10 shared savings mechanisms to be a payment based on a percent of the annual
11 EE/PDR budget if certain targets are met (these can include both energy savings
12 and other non-energy, market-related targets).
13
14 Several states include penalties in their incentive mechanism design if targets are
15 not met. Pennsylvania has a penalty for not achieving savings targets, but no
16 incentive payment if the savings target is met or exceeded.
17
18 For the states where the shared savings incentive design is based on a percent of
19 net savings, the shared savings percentage (of net savings) typically ranges in the
20 8 to 10 percent range. Exhibit RFS-2 summarizes the shareholder incentive
21 mechanism data that I have collected for U.S. states.

1 ***Q37. DOES THE CUSTOMER-FUNDED INCENTIVE MECHANISM***
2 ***PROPOSED BY FIRST ENERGY HAVE ANY PENALTIES FOR FAILING***
3 ***TO ACHIEVE THE SAVINGS TARGETS PRESENTED IN THE***
4 ***PORTFOLIO PLAN?***

5 ***A37.*** No. FirstEnergy's incentive proposal does not include any penalties if the
6 Companies do not meet their annual savings targets.

7
8 ***Q38. DO YOU HAVE ANY RECOMMENDATIONS REGARDING SUCH***
9 ***PENALTIES?***

10 ***A38.*** If the Companies receive an incentive for exemplary performance, then they
11 should also be subject to a penalty for poor performance. This creates some
12 symmetry and fairness in the process. To make the incentive mechanism
13 balanced, there should be a penalty if the Companies do not achieve their savings
14 target. If a Company does not achieve at least 85% of the annual savings target
15 proposed in the amended Exhibits B-2 attached to the Settlement, the Company
16 should pay a penalty of 8% of the Total Discounted Net Lifetime Benefits under
17 the TRC test to customers. Also, if a Company achieves 100% or more of its
18 savings target, but through projects completed in less than the minimum targeted
19 number of participating customers, the Company's shared savings incentive
20 should be reduced by an equal percentage.

1 **D. FIRSTENERGY SHOULD NOT BE ABLE TO COUNT NET**
2 **BENEFITS AND ENERGY SAVINGS OF NON-COST-EFFECTIVE**
3 **PROGRAMS FOR PURPOSES OF SHARED SAVINGS FUNDED**
4 **BY CUSTOMERS.**

5

6 ***Q39. IS FIRSTENERGY PROPOSING THAT CUSTOMERS PAY FOR***
7 ***PROGRAMS THAT ARE NOT COST-EFFECTIVE?***

8 ***A39.*** Yes. Based on the results of FirstEnergy's Market Potential Study, there are eight
9 residential programs in the Portfolio that are not cost-effective, including the low-
10 income programs. There are also four non-residential programs that are not cost-
11 effective.⁴⁶ As I discuss later in my testimony, I recommend that these non-cost
12 effective programs (other than the low-income programs) be eliminated from the
13 Portfolio Plans. If they are not eliminated, the PUCO should order FirstEnergy to
14 account for these programs costs when calculating shared savings.

15

16 ***Q40. WHAT DOES IT MEAN FOR A PROGRAM TO NOT BE COST-***
17 ***EFFECTIVE UNDER THE TOTAL RESOURCE COST TEST AND WHAT***
18 ***DOES THIS MEAN TO CUSTOMERS WHO ARE CHARGED FOR SUCH***
19 ***PROGRAMS?***

20 ***A40.*** Under the Total Resource Cost (TRC) test, cost effective programs (having TRC
21 ratios of 1.0 or higher) have cumulative net benefits that equal or exceed the

⁴⁶ See Market Potential Study Tables 8-19, 8-20, 8-21.

combined program-related and participating customer costs. Benefits typically include avoided energy, capacity, transmission, and distribution costs plus any avoided customer operations and maintenance costs. According to the Ohio Administrative Code, costs in the TRC Test include utility costs and program participant costs. To be non-cost effective (TRC ratio of less than 1.0) a program's cumulative net benefits are less than the combined utility and participating customer costs. For example, Ohio Edison's HVAC program has a TRC ratio of 0.37.⁴⁷ This means that customers are paying nearly three dollars for every one dollar of cumulative lifetime energy savings benefit obtained. It is not reasonable to ask customers to spend their hard-earned money this way (except for programs for low income customers).

Q41. HOW DOES FIRSTENERGY'S PROPOSED SHARED SAVINGS MECHANISM ACCOUNT FOR PROGRAMS THAT ARE NOT COST-EFFECTIVE?

A41. The Shared Savings Mechanism contains two provisions that are relevant to the analysis of programs that are not cost-effective. First, "[t]he savings of ***all programs*** [including non-cost effective programs] will contribute to the calculations of whether the Companies have exceeded their benchmarks for any particular year, and in doing so have triggered the Shared Savings Mechanism."⁴⁸ This means that the energy savings from non-cost-effective programs may be

⁴⁷ See Ohio Edison PUCO Table 7A-B, TRC Benefits Table – Residential.

⁴⁸ Application § 7.1 (emphasis added).

1 ***included*** when determining how much energy savings FirstEnergy has achieved
2 and which "incentive tier" will be used under the Shared Savings Mechanism.
3 Second, "[t]he Total Discounted Net Lifetime Benefits of all ***cost-effective*** energy
4 efficiency programs (as determined by the UCT) are eligible for shared
5 savings."⁴⁹ This means that for non-cost-effective programs, the programs' net
6 costs are ***excluded*** from the calculation of Total Discounted Net Lifetime
7 Benefits.⁵⁰ This unfairly contributes to increased funding from customers for the
8 energy efficiency programs.

9
10 ***Q42. HOW DO THESE TWO PROVISIONS AFFECT THE SHARED SAVINGS***
11 ***THAT CUSTOMERS ARE BEING ASKED TO PAY?***

12 ***A42.*** FirstEnergy's non-cost effective programs do not decrease its profits (and indeed
13 increase them under the proposed Shared Savings Mechanism), and thus, it has
14 little incentive to ensure that programs and measures are cost effective, or to find
15 innovative ways (using best practices from other programs) to improve the cost
16 effectiveness of its entire portfolio of programs.

17
18 FirstEnergy takes the net benefits of all cost-effective programs, which are
19 positive, and uses them to calculate its shared savings profits, which are paid by
20 customers. At the same time, FirstEnergy excludes the net costs of all non-cost-

⁴⁹ *Id.* (emphasis added).

⁵⁰ Total Discounted Net Lifetime Benefits, as that term is used in the Application, is the total benefits of all programs, minus the program costs under the Portfolio Plan. Programs that are not cost-effective have negative Total Discounted Net Lifetime Benefits because the costs are greater than the benefits.

1 effective programs from the calculation. Excluding non-cost-effective programs
2 from the shared savings calculation benefits FirstEnergy because the Total
3 Discounted Net Lifetime Benefits of non-cost-effective programs are, by
4 definition, negative. If the Total Discounted Net Lifetime Benefits of non-cost-
5 effective programs were included in the shared savings calculation, the total net
6 benefits would be lower. FirstEnergy's profits would then decrease, meaning
7 customers would pay less.

8

9 ***Q43. SHOULD NON-COST-EFFECTIVE PROGRAMS BE INCLUDED IN THE***
10 ***CALCULATION OF TOTAL DISCOUNTED NET LIFETIME BENEFITS?***

11 ***A43.*** Yes, but only if First Energy is allowed to keep non-cost-effective programs in its
12 EE/PDR portfolio (which it should not be). The proposed Shared Savings
13 Mechanism provides that the Companies receive a higher "incentive percentage"
14 (and therefore higher profits) if they achieve greater energy savings. The
15 incentive percentage is multiplied by the "Total Discounted Net Lifetime
16 Benefits" achieved under the plan, and the resulting product is the amount of
17 profit that customers pay. But there is often no correlation between increasing the
18 energy savings and increasing the net benefits to customers because of
19 FirstEnergy's calculation of net lifetime benefits using the Utility Cost Test,
20 because it does not include costs incurred by customers. Thus, FirstEnergy can
21 increase energy savings, thereby pushing it into a higher incentive percentage
22 under the Company's proposed Shared Savings Mechanism (and increasing
23 profits), even though that increase does not benefit—and in many instances,

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1 actually harms—customers. This means that not only are customers not "sharing"
2 in the additional savings, they are paying the utility additional profits when the
3 utility reduces the benefits to customers.

4
5 The PUCO should not permit the Companies to increase their profits, paid by
6 consumers, based on this proposed accounting methodology. The Shared Savings
7 Mechanism should be modified to provide that the Total Discounted Net Lifetime
8 Benefits of all programs, not just cost-effective programs, is used to calculate
9 shared savings profits.⁵¹ In my experience, excluding non-cost-effective
10 programs from the calculation of net benefits in a shared savings mechanism is
11 inequitable and highly unusual, if not unprecedented, and it should not be
12 permitted. I have conducted a brief survey of five other states with shared savings
13 mechanisms (Arkansas, Georgia, Michigan, North Carolina, South Carolina) and
14 all five of these states include non-cost-effective programs in the calculation of
15 the shared savings incentive. Moreover, none of the other Ohio electric utilities
16 excludes non-cost-effective programs from its shared savings mechanism.

⁵¹ As I discuss further in my testimony below, non-cost-effective programs other than low-income programs should be removed from the Portfolio entirely.

1 **E. THE APPROPRIATE COST-BENEFIT TEST FOR THE SHARED**
2 **SAVINGS THAT CUSTOMERS WILL PAY FOR IS THE TOTAL**
3 **RESOURCE COST TEST.**

4
5 ***Q44. PLEASE DESCRIBE THE TOTAL RESOURCE COST TEST.***

6 ***A44.*** The Ohio Administrative Code defines the TRC test as follows: "'Total resource
7 cost test' means an analysis to determine if, for an investment in energy efficiency
8 or peak-demand reduction measure or program, on a life-cycle basis, the present
9 value of the avoided supply costs for the periods of load reduction, valued at
10 marginal cost, are greater than the present value of the monetary costs of the
11 demand-side measure or program borne by both the electric utility and the
12 participants, plus the increase in supply costs for any periods of increased load
13 resulting directly from the measure or program adoption. Supply costs are those
14 costs of supplying energy and/or capacity that are avoided by the investment,
15 including generation, transmission, and distribution to customers. Demand-side
16 measure or program costs include, but are not limited to, the costs for equipment,
17 installation, operation and maintenance, removal of replaced equipment, and
18 program administration, net of any residual benefits and avoided expenses such as
19 the comparable costs for devices that would otherwise have been installed, the
20 salvage value of removed equipment, and any tax credits."

21
22 The National Action Plan for Energy Efficiency Guide titled "Understanding
23 Cost-Effectiveness of Energy Efficiency Programs" defines the TRC test as

1 follows: The TRC measures the net benefits of the energy efficiency program for
2 the region as a whole. Costs included in the TRC are costs to purchase and install
3 the energy efficiency measure and overhead costs of running the energy
4 efficiency program. The benefits included are the avoided costs of energy (as
5 with the PACT and the RIM). Table 6-4 in this Guide outlines the benefits and
6 costs in the TRC.⁵² The TRC test, unlike the Utility Cost Test (described below)
7 includes costs for energy efficiency measures paid directly by participants.
8

9 ***Q45. PLEASE DESCRIBE THE UTILITY COST TEST.***

10 ***A45.*** The Utility Cost Test (UCT), also known as the Program Administrator Cost Test
11 (PACT), examines the costs and benefits of the energy efficiency program from
12 the perspective of the entity implementing the program (here, FirstEnergy). The
13 costs included in the UCT include the utility's overhead and incentive costs.
14 Overhead costs are administration, marketing, research and development,
15 evaluation, and measurement and verification. Incentive costs are payments made
16 to the customers to offset purchase or installations costs. The benefits from the
17 utility perspective are the savings derived from not delivering the energy to
18 customers. Depending on the jurisdiction and type of utility, the "avoided costs"
19 can include reduced wholesale electricity or natural gas purchases, generation

⁵² National Action Plan for Energy Efficiency Guide titled "Understanding Cost-Effectiveness of Energy Efficiency Programs," page 6-5.

1 costs, power plant construction, transmission and distribution facilities, ancillary
2 service and system operating costs, and other components.⁵³

3

4 ***Q46. WHICH COST EFFECTIVENESS TEST HAS FIRSTENERGY PROPOSED***
5 ***TO USE FOR COST EFFECTIVENESS CALCULATIONS AND FOR***
6 ***CALCULATING THE TOTAL DISCOUNTED NET LIFETIME BENEFITS***
7 ***FOR THE SHARED SAVINGS MECHANISM?***

8 ***A46.*** FirstEnergy proposes that for purposes of satisfying OAC 4901:1-39-04, the TRC
9 test be used for cost effectiveness calculations, but when calculating utility profits
10 for the shared savings mechanism, the UCT should be used. From the customers'
11 perspective, the main downfall of the UCT is that it fails to take into account
12 participant costs and therefore cannot be used to determine the actual net benefits
13 that customers receive from the Companies' programs. Under the UCT, not all
14 energy efficiency costs are included, which increases the utility profits that
15 customers must pay to the utility. Thus, a program that is not cost-effective using
16 the TRC could nonetheless increase utility profits using the UCT. One test should
17 be used to evaluate the program's cost effectiveness and shared savings profits.

⁵³ *Id.* Page 6-2.

1 ***Q47. WHICH TEST IS USED FOR PURPOSES OF CALCULATING NET***
2 ***PROGRAM BENEFITS UNDER THE OHIO ADMINISTRATIVE CODE?***

3 ***A47.*** The PUCO rules require the TRC to be used to calculate net program benefits.
4 *See* OAC 4901:1-39-01(F) ("Cost effective' means the measure, program, or
5 portfolio being evaluated that satisfies the total resource cost test.").

6

7 ***Q48. IN YOUR VIEW, IS THERE A GOOD REASON TO USE DIFFERENT COST***
8 ***EFFECTIVENESS TESTS FOR STATUTORY COMPLIANCE AND THE***
9 ***SHARED SAVINGS MECHANISM?***

10 ***A48.*** No, there is no reason to use two different tests. The net benefits calculation for
11 purposes of shared savings should be consistent with the PUCO rules and should
12 utilize the TRC test.

13

14 ***Q49. WHICH TEST DO YOU RECOMMEND SHOULD BE USED TO***
15 ***CALCULATE THE TOTAL DISCOUNTED NET LIFETIME BENEFITS***
16 ***INSTEAD OF THE UTILITY COST TEST?***

17 ***A49.*** The TRC test should be used to calculate the total discounted net lifetime benefits
18 because it is the test used under the PUCO rules and this test more appropriately
19 balances the interests of both customers and the utility. The PUCO rules require
20 an electric utility to demonstrate that its EE/PDR portfolio is cost-effective on a
21 portfolio basis and that each program is cost-effective (unless the program

1 provides "substantial non-energy benefits").⁵⁴ The PUCO has determined that the
2 appropriate test for cost-effectiveness is the TRC test.⁵⁵ The TRC test calculates
3 the net benefits of a program by subtracting both the program costs and the costs
4 borne by customers from the total program benefits. In contrast, the UCT
5 subtracts the utility or program administrator program costs but not the costs that
6 the customer incurs directly. The TRC test is the only cost effectiveness test that
7 accounts for all the costs and benefits of the Companies' EE/PDR programs.
8 Therefore, the Companies' shared savings incentives should come from the total
9 net benefits that the programs provide, not the net benefits provided only to the
10 utility.

11
12 **F. FIRSTENERGY SHOULD NOT BE ABLE TO COUNT**
13 **PROGRAMS THAT ARE NOT ADMINISTERED BY**
14 **FIRSTENERGY AS PART OF THE SHARED SAVINGS THAT**
15 **CUSTOMERS ARE BEING ASKED TO FUND.**
16

17 ***Q50. CAN YOU DESCRIBE THE ENERGY SPECIAL IMPROVEMENT***
18 ***DISTRICT AND MERCANTILE CUSTOMER PROGRAMS?***

19 ***A50.*** The ESID program captures savings that townships and municipalities achieve by
20 creating Energy Special Improvement Districts under Ohio Revised Code

⁵⁴ See OAC 4901:1-39-04(B).

⁵⁵ See OAC 4901:1-39-01(F).

1 1710.061.⁵⁶ FirstEnergy proposes to count the savings achieved by ESIDs toward
2 its statutory benchmark and toward its shared savings profit calculations.

3
4 Like the ESID program, the Mercantile Customer Program captures savings from
5 projects that the mercantile customer (not the Companies) initiated and directed.

6
7 ***Q51. DOES FIRSTENERGY CONTRIBUTE TO THE ACHIEVEMENT OF***
8 ***ENERGY SAVINGS FROM THE ESID AND MERCANTILE SELF-DIRECT***
9 ***PROGRAMS?***

10 ***A51.*** No. FirstEnergy does not administer the ESID programs, does not encourage
11 townships and municipalities to create ESIDs, and does not otherwise contribute
12 to any of the savings achieved by these programs. FirstEnergy does not
13 administer the Mercantile Customer Program and does not contribute to any of the
14 savings. In each of these programs, the customer achieves savings outside of
15 FirstEnergy's programs, and FirstEnergy merely counts those savings towards its
16 benchmark and to increase its profits.

17
18 ***Q52. ARE CUSTOMERS HARMED BY INCLUDING THESE PROGRAMS IN***
19 ***THE SHARED SAVINGS MECHANISM?***

20 ***A52.*** Yes. Customers should not be forced to pay a shared savings incentive for
21 EE/PDR activities where First Energy has had no effect on customers' decisions

⁵⁶ See Portfolio Plan § 3.6 (page 77).

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1 to adopt energy efficiency. This takes money from customers for the Companies
2 doing nothing. Furthermore, the harm to customers is exacerbated by the use of
3 the UCT to calculate shared savings. The UCT includes only costs incurred by
4 the utility (*i.e.*, the program costs) and not costs incurred directly by the
5 consumer. In the case of the ESID and Mercantile Customer Programs, customers
6 bear all the costs. Thus, when calculating the net benefits of these programs,
7 FirstEnergy counts all the savings achieved by the consumer but none of the costs.
8 FirstEnergy's profits (funded by customers), therefore, are even higher than they
9 would be if FirstEnergy had run programs to achieve those same savings.
10 Customers should not pay profits to FirstEnergy for the ESID and Mercantile
11 Customer Programs, and customers especially should not pay more profit for
12 these programs than they do for programs that FirstEnergy designs and
13 administers.

14
15 ***Q53. WHAT IS YOUR RECOMMENDATION WITH RESPECT TO THE ESID***
16 ***AND MERCANTILE CUSTOMER PROGRAMS?***

17 ***A53.*** These programs should not be included as part of the shared savings mechanism
18 because FirstEnergy does not contribute in any way to the savings produced by
19 these programs. In this respect, the ESID and Mercantile Customer programs are
20 similar to FirstEnergy's Customer Action Program. In the Fifth Entry on
21 Rehearing in the ESP IV Case, the PUCO found that FirstEnergy could not
22 receive shared savings for the Customer Action Program. It stated: "The
23 Commission has never allowed shared savings for programs like the historic

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1 mercantile customer program which involves no action by the Companies to
2 achieve the energy savings."⁵⁷

3
4 I agree that a utility should only receive shared savings profits for programs that it
5 develops and administers for the benefit of customers. A properly designed
6 shared savings mechanism encourages a utility to run efficient programs that
7 reduce usage and peak demand and increase the overall benefits for consumers.
8 FirstEnergy's Shared Savings Mechanism violates these core principles by
9 including savings from the ESID program and Mercantile Customer Program in
10 its profit calculations. Savings from these programs should not count for
11 purposes of determining which "incentive tier" is used in the Shared Savings
12 Mechanism, and benefits from these programs should be excluded from the
13 calculation of Total Discounted Net Lifetime Benefits for purposes of the Shared
14 Savings Mechanism. To find otherwise is unfair to customers and represents a
15 handout for FirstEnergy at customers' expense.

⁵⁷ See ESP IV Case, Fifth Entry on Rehearing ¶ 324.

**G. FIRSTENERGY SHOULD NOT BE ABLE TO COUNT
BEHAVIORAL PROGRAMS AS PART OF SHARED SAVINGS
THAT CUSTOMERS MUST FUND.**

***Q54. SHOULD BEHAVIORAL PROGRAMS BE EXCLUDED FROM THE
SHARED SAVINGS THAT CUSTOMERS ARE BEING ASKED TO PAY?***

A54. Yes. Behavioral programs should be excluded from the shared savings mechanism because they do not result in persistent savings (*i.e.*, measure lives from such programs cannot be counted on for more than one or a maximum of two years). Additionally, the measurement of savings from such programs is more difficult to quantify than other programs that include installation of specific energy efficient equipment. Behavior-based programs focus on energy savings resulting from changes in individual customers or organizational behavior and decision-making, compared to savings from deployment of hardware such as appliances, HVAC equipment and home insulation. By their nature, behavioral program savings are short-lived. FirstEnergy provides that the measure life for their residential behavior program is only one year.⁵⁸ In contrast, programs that involve hardware (like a high efficiency HVAC system) have a measure life of anywhere from three to 18 years, according to FirstEnergy.⁵⁹ These non-behavioral programs provide savings that benefit customers year after year. I agree with the PUCO Staff's recommendation in FirstEnergy's earlier portfolio

⁵⁸ See Application, Appendix C-1: Measure Assumptions.

⁵⁹ See *id.*

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1 case that "[p]rograms that rely strictly on behavioral changes of customers must
2 demonstrate the persistence of such savings each year."⁶⁰ FirstEnergy admits that
3 its residential behavioral program has a measure life of just a single year and
4 therefore does not demonstrate persistence of savings each year.

5

6 ***Q55. ARE THERE OTHER REASONS WHY BEHAVIORAL PROGRAMS***
7 ***SHOULD BE EXCLUDED FROM THE SHARED SAVINGS THAT***
8 ***CUSTOMERS ARE BEING ASKED TO PAY?***

9 ***A55.*** Yes. Behavioral programs do not rely on hardware or other similar measures, but
10 instead rely on general customer decision-making. So the actual savings from
11 behavioral programs are harder to measure, and it is harder to determine whether
12 the utility, a government agency, or other economic or social drivers are
13 responsible for the energy savings. Again, this presents the potential issue of
14 customers paying the utility for efforts it had little or nothing to do with. It is
15 relatively simple to calculate the energy savings that result from using an efficient
16 appliance or lightbulb compared to an inefficient one. But there is no easy way to
17 reliably determine that a customer made a behavioral change directly from
18 receiving a report from a utility about electricity usage. I agree with the PUCO
19 Staff's recommendation that "[e]nergy efficiency savings must be clearly and

⁶⁰ See Proposal for Incentivizing Utility Energy Efficiency Performance Submitted on Behalf of the Staff of the Public Utilities Commission of Ohio at 2, Case No. 09-1947-EL-POR (Oct. 24, 2011).

1 easily measurable,"⁶¹ and FirstEnergy's behavioral programs do not meet this
2 standard. I recommend that savings from behavioral programs be excluded from
3 the shared savings mechanism.

4
5 **H. PROGRAMS ADDRESSED IN OTHER DOCKETS SHOULD BE**
6 **EXCLUDED FROM CONSIDERATION IN THIS DOCKET.**

7
8 ***Q56. ARE THERE OTHER FIRSTENERGY PROGRAMS THAT SHOULD BE***
9 ***EXCLUDED FROM THE SHARED SAVINGS THAT CUSTOMERS ARE***
10 ***BEING ASKED TO PAY?***

11 ***A56.*** Yes. Programs addressed in other dockets should not be counted for purposes of
12 shared savings that customers pay. FirstEnergy identifies several programs that
13 are addressed in other dockets, including the LED Street Lighting Tariff,
14 Mercantile Customer Program, Transmission and Distribution ("T&D") Upgrades
15 Program, and Smart Grid Modernization Initiative Program. As FirstEnergy
16 contends, these programs are not being addressed in this case and "no further
17 approval is necessary in this docket."⁶² Accordingly, FirstEnergy should not be
18 entitled to charge customers for these programs in its shared savings calculation.

⁶¹ See Proposal for Incentivizing Utility Energy Efficiency Performance Submitted on Behalf of the Staff of the Public Utilities Commission of Ohio at 2, Case No. 09-1947-EL-POR (Oct. 24, 2011) ("Energy efficiency savings must be clearly and easily measureable.").

⁶² See Application ¶ 23.

1 Furthermore, to the extent that the T&D Upgrades Program, Smart Grid
2 Modernization Initiative Project, or any other programs include capital
3 investments, the Companies receive a return on those investments, so allowing
4 shared savings would result in customers paying for profits twice, through two
5 different rate mechanisms. That is unreasonable.
6

7 **I. THERE SHOULD BE REASONABLE LIMITS ON THE AMOUNT**
8 **OF PROFITS (SHARED SAVINGS) THAT CUSTOMERS FUND.**
9

10 ***Q57. DO YOU AGREE THAT FIRSTENERGY SHOULD BE ALLOWED TO***
11 ***INCREASE THE SHARED SAVINGS THAT CUSTOMERS PAY FROM \$10***
12 ***MILLION A YEAR (AFTER TAXES) TO \$25 MILLION A YEAR (AFTER***
13 ***TAXES)?***

14 ***A57.*** No. In its Application, FirstEnergy requests a 150% increase in profits to be paid
15 by customers from \$10 million per year to \$25 million (after taxes) per year. In
16 this case, FirstEnergy provides no information on how it arrived at this number,
17 why it is appropriate, why customers should be asked to pay it, or why it is 150%
18 higher than the previous cap. There is no justification for such a substantial
19 increase in profits that customers would pay. As the PUCO concluded in the Fifth
20 Entry for Rehearing in the ESP IV Case, the cap should remain at \$10 million per
21 year (at most), which represents over 10% of the total annual proposed program
22 costs in the Settlement.

1 ***Q58. DO YOU FIND THAT PRESENTATION OF SHARED SAVINGS VALUES***
2 ***THAT CUSTOMERS ARE BEING ASKED TO PAY IN "AFTER-TAX"***
3 ***DOLLARS IS APPROPRIATE?***

4 ***A58.*** No. Presenting FirstEnergy's shared savings mechanism cap as "post-tax" values
5 is deceptive because it does not represent the amount of money that customers
6 actually will be asked to pay. There should be transparency about what customers
7 will pay. Using and communicating a \$10 million or \$25 million value is
8 deceptive because such values are not the amounts that customers will actually be
9 paying. Instead, the Company should present its shared savings values as "pre-
10 tax." Presentation of shared savings incentives in pre-tax dollars is quite common
11 in other jurisdictions and should be the approach used for the Companies going
12 forward.

13
14 ***Q59. DO YOU SEE ANY ISSUES WITH HAVING A SINGLE SHARED SAVINGS***
15 ***CAP SPREAD ACROSS ALL CUSTOMERS SERVED BY THE THREE***
16 ***COMPANIES?***

17 ***A59.*** Yes. Having a single shared savings cap across all three Companies is unfair to
18 customers and should not be approved. The Application states that the Shared
19 Savings Mechanism will include a "cap of \$25 million after-tax per year in total
20 across the Companies."⁶³ The Application, however, does not provide any details
21 on how the \$25 million yearly shared savings cap will be spread across the three

⁶³ See Portfolio Plan § 7.1.

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1 operating Companies. It does not provide any details on how much of the \$25
2 million yearly cap will be paid by OE's customers, how much by CEI's customers,
3 and how much by TE's customers. Nor does the Settlement provide any details on
4 how the shared savings cap (whether it be \$10 million or \$25 million after tax)
5 will be spread across the three operating Companies.

6
7 If the PUCO approves a single cap spread across all three Companies, then the
8 amount of profits paid by one Company's customers may be higher or lower
9 depending not just on the success of those customers' own operating Company's
10 programs, but on the success or failure of the other two operating Companies'
11 programs. It is unreasonable to have the different utilities' customers, all who pay
12 service area specific rates, pay for energy efficiency measures on a consolidated
13 basis.

14

15 ***Q60. CAN YOU PROVIDE AN EXAMPLE THAT DEMONSTRATES HOW A***
16 ***SINGLE SHARED SAVINGS CAP SPREAD ACROSS ALL CUSTOMERS***
17 ***OF THE THREE COMPANIES HARMS CUSTOMERS?***

18 ***A60.*** Yes. A single shareholder incentive cap applied across all three Companies is not
19 equitable to customers.

20

21 If a single shareholder incentive cap is approved for all three FirstEnergy
22 Companies, then the amount of profits paid by one Company's customers may be
23 higher or lower depending not just on the success of those customers' own

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1 operating Company's programs, but on the success or failure of the other two
2 operating Companies' programs. The following scenarios demonstrate the
3 inequity that can result from a single cap across all three Companies.

4
5 Scenario 1. Suppose, under the proposed Portfolio, that in 2017, OE, CEI, and TE
6 all meet their annual and cumulative benchmarks and are all eligible for shared
7 savings. Suppose that, under the Shared Savings Mechanism, each of OE, CEI,
8 and TE would receive \$10 million in shared savings, for a total of \$30 million.
9 Because of the shared savings cap, however, the total would be reduced to \$10
10 million.⁶⁴ Thus, none of the Companies would collect \$20 million, but instead,
11 each would collect closer to \$3.3 million from its customers.⁶⁵

12
13 Scenario 2. Now suppose that OE meets its annual and cumulative benchmarks in
14 2017, but CEI and TE do not. Suppose that OE's performance is the same as in
15 Scenario 1 such that it would receive \$10 million in shared savings under the
16 Shared Savings Mechanism. Because CEI and TE did not meet their benchmarks,
17 they would not be entitled to any shared savings. But because the total shared
18 savings across all three Companies is less than the \$10 million cap, OE's
19 customers would pay the entire \$10 million to OE. In other words, OE's

⁶⁴ For purposes of simplicity, this example ignores the fact that shared savings is paid on an after-tax basis. The underlying principle of this argument does not rely on tax issues.

⁶⁵ The Settlement does not state how the \$10 million will be allocated across the three Companies if the cap is reached. For purposes of argument, this example assumes that the savings would be split proportionally across the three Companies.

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1 customers would pay \$10 million in utility profits instead of just over \$3.3
2 million, even though OE's portfolio performance was identical in both scenarios.
3 OE's customers should not be punished for CEI's and TE's failure to meet their
4 annual savings benchmarks.

5

6 ***Q61. DO YOU HAVE A RECOMMENDATION ON HOW THE CAP FOR THE***
7 ***SHARED SAVINGS MECHANISM SHOULD BE STRUCTURED TO***
8 ***PROTECT CUSTOMERS?***

9 ***A61.*** Yes. Rather than a single cap spread across all three operating Companies, there
10 should be a separate cap for each customer class (low-income residential, non-
11 low-income residential, nonresidential) for each Company. As discussed above,
12 FirstEnergy has not justified a 150% increase in its shared savings cap from \$10
13 million per year to \$25 million per year. Therefore, the \$10 million total cap
14 under the 2013-2015 Portfolio should remain in place, and this cap should be
15 specified as a "before-tax" cap. The individual caps should be based on the
16 percentage of total three-year cumulative energy savings attributable to each
17 customer class for each Company, as follows:⁶⁶

	OE	CEI	TE
Residential Non-Low Income	\$1,561,200	\$1,199,226	\$479,678
Residential Low Income	\$52,594	\$55,821	\$22,001
Nonresidential	\$3,295,798	\$2,096,593	\$1,237,089

18

⁶⁶ If the PUCO finds that the total cap should be some number other than \$10 million, then the individual Company caps be adjusted proportionately.

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1 I have attached as Exhibit RFS-3 a summary of the calculations used to derive
2 these proposed caps.

3
4 The PUCO should approve a separate shared savings cap for each class of
5 customers for each Company, as opposed to a single cap for all three Companies,
6 to protect customers within one of the Company's customer classes from unfairly
7 paying an excessive amount of profits to the Companies.

8

9 **J. PROGRAMS THAT ARE NOT COST-EFFECTIVE AND DO NOT**
10 **PROVIDE SUBSTANTIAL NON-ENERGY BENEFITS SHOULD**
11 **NOT BE FUNDED BY CUSTOMERS.**

12

13 ***Q62. ARE EE/PDR PROGRAMS REQUIRED TO BE COST-EFFECTIVE?***

14 ***A62.*** Yes. In Ohio, the portfolio must be cost-effective, and each individual program
15 must be cost-effective.⁶⁷

⁶⁷ See OAC 4901:1-39-04(B) ("Each electric utility shall demonstrate that its program portfolio plan is cost-effective on a portfolio basis. In general, each program proposed within a program portfolio plan must also be cost-effective, although each measure within a program need not be cost-effective.").

1 **Q63. ARE THERE ANY CIRCUMSTANCES IN WHICH A PORTFOLIO CAN**
2 **CONTAIN A PROGRAM THAT IS NOT COST-EFFECTIVE?**

3 **A63.** Yes. A utility can include a program that is not cost effective only if the program
4 "provides substantial nonenergy benefits."⁶⁸
5

6 **Q64. WHAT ARE NONENERGY BENEFITS?**

7 **A64.** "Nonenergy benefits" are "societal benefits that do not affect the calculation of
8 program cost-effectiveness pursuant to the total resource cost test including but
9 not limited to benefits of low-income customer participation in utility programs;
10 reductions in greenhouse gas emissions, regulated air emissions, water
11 consumption, natural resource depletion to the extent the benefit of such
12 reductions are not fully reflected in cost savings; enhanced system reliability; or
13 advancement of any other state policy enumerated in section 4928.02 of the
14 Revised Code."⁶⁹
15

16 **Q65. WHAT TEST IS USED TO DETERMINE WHETHER PROGRAMS ARE**
17 **COST-EFFECTIVE?**

18 **A65.** The Ohio Administrative Code requires the TRC test to be used to determine cost-
19 effectiveness of programs.⁷⁰

⁶⁸ OAC 4901:1-39-04(B).

⁶⁹ OAC 4901:1-39-01(Q).

⁷⁰ OAC 4901:1-39-01(F).

1 ***Q66. WHAT ARE THE BENEFITS OF USING THE TRC TO MEASURE COST-***
2 ***EFFECTIVENESS?***

3 ***A66.*** The California Standard Practice Manual states that "The primary strength of the
4 Total Resource Cost (TRC) test is its scope. The test includes total costs
5 (participant plus program administrator costs) and also has the potential for
6 capturing total benefits (avoided supply costs plus, in the case of the societal test
7 variation, externalities). To the extent supply-side project evaluations also
8 include total costs of generation and/or transmission, the TRC test provides a
9 useful basis for comparing demand- and supply-side options. Since this test treats
10 incentives paid to participants and revenue shifts as transfer payments (from all
11 ratepayers to participants through increased revenue requirements), the test results
12 are unaffected by the uncertainties of projected average rates, thus reducing the
13 uncertainty of the test results."⁷¹

14

15 ***Q67. DOES FIRSTENERGY'S PORTFOLIO CONTAIN PROGRAMS THAT ARE***
16 ***NOT COST-EFFECTIVE AND YET WOULD BE PART OF RATES THAT***
17 ***CUSTOMERS ARE BEING ASKED TO PAY?***

18 ***A67.*** Yes, very likely. The Application included the following residential programs
19 that were not cost effective under the TRC test: Direct Load Control,

⁷¹ See 2002 California Standard Practice Manual, pages 20-21, published by the California Public Utilities Commission. Available at http://www.calmac.org/events/spm_9_20_02.pdf.

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1 Behavioral,⁷² Audits & Education, School Education, HVAC, Smart Thermostat,
2 Low Income – New Homes, and Community Connections.⁷³ Each of these
3 programs remains in the portfolio under the Settlement. And nothing in the
4 Settlement suggests that these programs are now cost-effective.

5

6 ***Q68. CAN YOU EXPLAIN IF THESE NON-COST-EFFECTIVE RESIDENTIAL***
7 ***PROGRAMS PROVIDE SUBSTANTIAL NON-ENERGY BENEFITS?***

8 ***A68.*** In my opinion, the Direct Load Control, Behavioral, Audits & Education, HVAC,
9 and Smart Thermostat programs do not provide substantial non-energy benefits to
10 low income customers, significantly reduce greenhouse emissions, regulated air
11 emissions, water consumption, or natural resource depletion, or substantially
12 enhance system reliability. These are standard EE/PDR programs that serve
13 primarily to reduce energy usage and demand. There is no evidence that these
14 programs provide any non-energy benefits, let alone "substantial" non-energy
15 benefits, as required by the Ohio Administrative Code.

16

17 The Low Income – New Homes and Community Connections programs are for
18 the exclusive benefit of low-income customers. Therefore, these two programs
19 may provide substantial non-energy benefits.

⁷² Behavioral has a TRC score of 1.00 for OE. See MPS Table 8-19. It is not cost effective for CEI and TE. *Id.* Table 8-20, Table 8-21. It may be just barely cost effective, or it may not be cost-effective if the 1.00 score is the result of rounding up.

⁷³ See MPS Tables 8-19, 8-20, & 8-21 (pages 107-09).

**Q69. DO THESE NON-COST-EFFECTIVE PROGRAMS MAKE UP A
SUBSTANTIAL PORTION OF THE PORTFOLIO THAT CUSTOMERS ARE
BEING ASKED TO PAY FOR?**

A69. Yes. The following Table 2 compares the costs of non-cost-effective residential
EE/PDR programs under the Application and the Settlement.

Table 2			
Program	Application	Settlement	Change
Direct Load Control	\$1,757,388	\$1,794,905	2.13%
Behavioral	\$13,639,312	\$6,862,132	-49.69%
Audits & Education	\$7,530,887	\$10,012,916	32.96%
HVAC	\$8,665,309	\$11,874,052	37.03%
Smart Thermostat	\$4,078,666	\$4,133,633	1.35%

As this table shows, the Settlement not only continues to include these non-cost-effective programs—it increases the amount that customers will pay for all of them other than Behavioral.

Q70. SHOULD CUSTOMERS PAY FOR PROGRAMS THAT ARE NOT COST-EFFECTIVE?

A70. No. Ohio consumers pay for all energy efficiency programs. It is the responsibility of the program administrator to design programs that provide positive net benefits for the state and its citizens. This means that utilities should design programs that return more in quantifiable benefits for customers for each dollar that customers spend. Direct Load Control, Behavioral, Audits & Education, HVAC, and Smart Thermostats are not cost-effective and do not

1 provide substantial non-energy benefits. They should be removed from the 2017-
2 2019 Portfolio. Customers should not be required to pay for these programs.

3

4 **K. FIRSTENERGY'S LOW INCOME PROGRAMS SHOULD BE**
5 **REEVALUATED AND IMPROVED SO AS TO REACH MORE**
6 **LOW INCOME CUSTOMERS.**

7

8 ***Q71. ARE FIRSTENERGY'S PROPOSED LOW- INCOME PROGRAMS***
9 ***PROJECTED TO REACH A ROBUST SHARE OF THE POPULATION OF***
10 ***LOW INCOME HOUSEHOLDS?***

11 ***A71.*** No. The 2017-2019 Portfolio includes two low-income programs: Community
12 Connections and Low-Income New Homes. Community Connections is not a
13 standalone program that FirstEnergy administers. Rather, Community
14 Connections is a program administered by the Ohio Partners for Affordable
15 Energy ("OPAE"). OPAE "uses the funds from this program to leverage other
16 state funded programs through various agencies within the State of Ohio." The
17 Low-Income New Homes program "provides incentives for the construction of
18 new energy efficiency housing or major rehabilitation of existing housing for low-
19 income customers."

20

21 FirstEnergy projects that 3,341 low-income customers will participate in the
22 Community Connections program and that 48 will participate in the Low-Income
23 New Homes programs per year. This is just over 2% of the low-income

1 customers identified by FirstEnergy, and even less when taking into account low-
2 income customers above 150% of the poverty line.

3

4 ***Q72. SHOULD FIRSTENERGY'S LOW INCOME PROGRAMS BE***
5 ***COMPETITIVELY BID?***

6 ***A72.*** Yes. I agree with the PUCO Staff's testimony in FirstEnergy's recent ESP case
7 that the programs "be competitively bid out as a way to achieve the maximum of
8 savings per dollar spent by the Companies to acquire the benefits of reducing low
9 income customers' bills."⁷⁴ Competitive bidding is the best way to achieve
10 maximum savings for customers at the lowest cost.

11

12 ***Q73. WHAT STRUCTURE DO YOU PROPOSE FOR THE COMPETITIVE***
13 ***BIDDING?***

14 ***A73.*** Bidders should submit bids using a budget that is equal to FirstEnergy's current
15 proposed budget for the low-income programs. Before soliciting bids,
16 FirstEnergy should provide the PUCO Staff with its proposed bid structure, and
17 the bidding process should be subject to PUCO approval. Any request for
18 proposal should include clear objectives for low income programs, which shall
19 include, among other things, achieving energy savings and increasing
20 participation rates for FirstEnergy's low-income program. Each bidder shall be
21 required to identify, among other things, the total amount of energy that it will

⁷⁴ See Prefiled Testimony of Gregory C. Scheck at 3-4, Case No. 14-1297-EL-SSO (Sept. 18, 2015).

1 save, the projected number of participants under that budget, and the cost per
2 lifetime kWh saved and program TRC benefit/cost ratio associated with the
3 bidder's proposed program.

4
5 ***Q74. WHAT IS YOUR RECOMMENDATION WITH RESPECT TO LOW-***
6 ***INCOME PROGRAMS?***

7 ***A74.*** FirstEnergy must substantially improve its effort to develop and design low-
8 income programs that reach more low-income customers. For the time being, I
9 recommend that the proposed low-income programs be implemented for 2017.
10 Throughout 2017, the PUCO should require FirstEnergy to work with the
11 collaborative group to develop a low-income program or programs that are
12 designed to reach substantially more low-income customers. This new low-
13 income program or programs should be competitively bid as I describe above.

14

15 **V. THE SETTLEMENT LACKS A DIVERSITY OF INTERESTS AMONG**
16 **THE SIGNATORY PARTIES**

17

18 ***Q75. IS THE SETTLEMENT SUPPORTED BY PARTIES WITH DIVERSE***
19 ***INTERESTS?***

20 ***A75.*** No. The Settlement is signed by the Companies, several environmental parties,
21 Energy Management Solutions, Inc., EnerNOC, Ohio Partners for Affordable
22 Energy, and IGS Energy. The Kroger Co. and the Ohio Manufacturers'
23 Association are not signatory parties but are non-opposing parties.

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1 The PUCO Staff and Ohio Consumers' Counsel oppose the Settlement. Industrial
2 Energy Users-Ohio did not sign the Settlement. Nor did the Ohio Hospital
3 Association.

4
5 ***Q76. ARE CONSUMERS SIGNATORY PARTIES TO THE SETTLEMENT?***

6 ***A76.*** The consumer representatives in this case are OCC, IEU-Ohio, OMA, the Kroger
7 Co., and OHA. These parties' constituents pay the program costs and utility
8 profits (shared savings). None of these parties are signatory parties to the
9 Settlement. And among these, only OMA and Kroger agreed not to oppose the
10 Settlement. Additionally, the PUCO Staff opposes the Settlement.

11
12 ***Q77. DO THE SIGNATORY PARTIES REPRESENT A NARROW RANGE OF***
13 ***INTERESTS?***

14 ***A77.*** Yes. Three of the eleven signatory parties are the three FirstEnergy Companies.
15 Four of the eleven signatory parties are environmental parties with virtually
16 identical interests, and these parties do not pay the costs of the programs being
17 considered here. EnerNOC represents its own interests as a provider of demand
18 response software. IGS represents its own interests as a competitive retail electric
19 service provider. Energy Management Solutions performs audits of industrial
20 facilities—and FirstEnergy opposes its intervention in this case.⁷⁵ OPAE

⁷⁵ See Memorandum Contra Energy Management Solution, Inc.'s Motion to Intervene (June 8, 2016).

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1 represents its own interests as the provider of the Community Connections
2 program.

3

4 ***Q78. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?***

5 ***A78.*** Yes, it does. However, I reserve the right to update and revise my testimony as
6 discovery responses and new information become available.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Supplemental Direct Testimony of Richard F. Spellman, on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission this 10th day of January 2017 upon the parties below.

/s/ Christopher Healey

Christopher Healey
Assistant Consumers' Counsel

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EDUCATION

Association of Energy Engineers, Certified Measurement and Verification Professional, 2012

Management II Program, University of Michigan, Graduate School of Business, 1987

M.S. in Business Science, Thomas College, 1980

Amos Tuck Graduate School of Business, 1974-75

B.A., Math/Economics, Dartmouth College, 1974 (graduated with distinction)

PROFESSIONAL MEMBERSHIPS

Member of Technical Advisory Group for U.S. DOE Uniform Methods Project Protocols – 2011 to present

Association of Energy Service Professionals, Board of Directors of AESP – 2005 to 2010

Chair of AESP Policy Committee – 1997 & 1998, Vice Chair AESP Policy Committee – 1995 & 1996

Association of Energy Engineers - Member

EXPERIENCE

Mr. Spellman is the President of GDS Associates and the Chair of the GDS Board of Directors. He has over 40 years of energy industry experience. He has managed electric and natural gas energy efficiency, demand response and renewable energy consulting projects in such states as Alabama, Arkansas, California, Connecticut, Florida, Georgia, Hawaii, Indiana, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, and Wisconsin for GDS clients as well as in Canadian provinces. He obtained AEE's Certified Measurement and Verification Professional (CMVP) designation in 2012.

Mr. Spellman has completed impact, process and market effects evaluations for utilities, public benefits organizations and government clients. He has served since 2009 as the Project Manager for the Statewide Evaluator team for the Commonwealth of Pennsylvania for the Pennsylvania Public Utilities Commission PUC. He has also served in project management positions for energy efficiency and demand response implementation projects for electric utility clients, Wisconsin Focus on Energy and Efficiency Maine. From 1999 to December 2002, Mr. Spellman served as the Program Manager for the Wisconsin Focus on Energy Commercial and Industrial pilot energy efficiency programs (Systems Benefit Charge funded) implemented in a 23-county area in Northeast Wisconsin, and he served as the Deputy Project Director for the \$60 million Wisconsin Focus on Energy Business Program from March of 2001 until June of 2003. He also served as the Deputy Program Manager for the Efficiency Maine Small Business Program from 2003 through 2007. He served as the Chair of the Policy Topic Committee of the Association of Energy Services Professionals (AESP) and he served as a member of the Board of Directors of AESP from 2005 to 2010.

Prior to joining GDS in 1993, he was employed at Central Maine Power Company (CMP) for sixteen years. He managed CMP's \$26 million portfolio of energy efficiency programs. He also worked on CMP's market transformation program efforts with appliance and building standards, energy efficient lighting and motors, new construction and renewable energy programs. He worked on national market transformation programs such as the Super Efficient Refrigerator Program and the EPA's Green Lights and Energy Star Programs. Finally, he has a solid track record testifying for clients before Commissions and legislative committees on energy issues. He was also the chairperson of the New England Power

Pool DSM Planning Committee for several years, and worked on a wide range of regional DSM and renewable energy projects in New England during his sixteen years at CMP.

His education includes a BA degree with distinction in Math/Economics from Dartmouth College (graduated cum laude) and a Masters in Business Science from the Thomas College Graduate School of Business. He is a graduate of the University of Michigan Graduate School of Business Administration Management II Program (1987) and the Electric Council of New England Skills of Utility Management Program (1986). In 1974 Mr. Spellman was awarded a research grant by the Richard King Mellon Foundation to study how colleges and universities in the Northeast were responding to the 1973-1974 U.S. energy crisis.

Specific Experience Includes:

GDS Associates, Inc., President, 1993 to Present

At GDS Associates, Mr. Spellman has directed and completed numerous management consulting, IRP, renewable energy, DSM planning and implementation, market research, load research and market planning assignments for the firm's clients, which include electric and natural gas utilities, municipal utilities, electric cooperatives, government agencies, and large commercial and industrial organizations.

Listed below are examples (not an exhaustive list) of specific evaluation, measurement and verification (EM&V) projects completed by Mr. Spellman at GDS (1993 to present). Further descriptions of these projects are provided in the qualifications and experience section of this proposal.

1. Program Manager, Pennsylvania Statewide Evaluation (SWE) Team for the Pennsylvania Public Utilities Commission, 2009 to 2017.
2. Energy Efficiency Subject Matter Expert for British Columbia Hydro, 2016
3. DSM program EM&V and benchmarking to the National Rural Electric Cooperative Association (2016)
4. Evaluation support for the Arkansas Office of the Attorney General (2014 to 2015)
5. Impact evaluation of Multi-Family Energy Efficiency Program for Austin Energy (Texas), 2013
6. Evaluation of Austin Energy Weatherization Assistance Program, 2013
7. Evaluation of Austin Energy Home Performance with Energy Star Program, 2013
8. Technical and regulatory support for evaluation, measurement and verification, setting energy efficiency savings goals – support for the Florida Public Service Commission, 2008 to 2009
9. Evaluation technical support to the Staff of the North Carolina Utilities Commission, 2008 to present
10. Evaluation technical support to the Staff of the Georgia Public Service Commission, 2007 to present
11. Impact Evaluation of Efficiency Maine Residential Lighting Program, 2007
12. Evaluation of Bonneville Power Administration's Non Wires Solution Program, 2007
13. Impact evaluation of Massachusetts Energy Star Homes Program, 2005
14. Impact Analysis of KeySpan Energy Delivery Residential Energy Efficiency Program, 2003
15. Impact Analysis of KeySpan Energy Delivery Residential Low Income Energy Efficiency Program, 2004
16. Program evaluation support for the New York State Energy Research and Development Authority, 2001 to 2003

Listed below are examples of consulting projects completed by Mr. Spellman relating to energy efficiency technical, economic and achievable potential studies:

1. **Pennsylvania Public Utility Commission, Technical utility Services Bureau** –GDS was retained by the Pennsylvania PUC to prepare a detailed report with findings on the technical, economic, achievable and program potential for electric energy efficiency measures and programs in the State of Pennsylvania. The Commission also retained GDS to complete a demand response potential study too. The final reports for the electric energy efficiency and demand response

potential studies were completed on February 25, 2015.

2. **Pennsylvania Public Utility Commission, Bureau of Conservation, Economics and Energy Planning** – In September 2011 GDS was retained by the Pennsylvania PUC to prepare a detailed report with findings on the technical, economic, achievable and program potential for electric energy efficiency measures and programs in the State of Pennsylvania. The final report was completed on May 10, 2012. The final report presented the technical, economic, and achievable potentials of Energy Efficiency measures for the Commonwealth of Pennsylvania for the period 2013-2022.
3. **Vermont Department of Public Service** – GDS was retained by the Vermont Department of Public Service to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and conservation resources in the State of Vermont. GDS collected and analyzed extensive information on over 100 energy efficiency and conservation measures, developed supply curves to show the achievable potential and completed a final report in May 2011. The GDS Team also examined the amount of energy efficiency savings that could be achieved given different budget scenarios for Efficiency Vermont. The GDS Team also conducted an analysis of the electric rate and electric bill impacts from these various budget scenarios.
4. **PowerSouth** – GDS was retained by PowerSouth to conduct an assessment of the cost effective achievable potential for several electric energy efficiency and demand response measures in the PowerSouth service area. GDS collected and analyzed extensive information on selected energy efficiency measures and demand response measures, developed supply curves to show the achievable potential and completed a report by July 1, 2011.
5. **Maryland Natural Gas Potential Study** – In the spring of 2011, the Maryland Energy Administration (MEA) identified the need to determine the potential for natural gas energy efficiency savings in Maryland, and to identify the types of natural gas energy efficiency programs and measures that could save the most natural gas and be the most cost effective for the State of Maryland. The need for this analysis was initially created by the Maryland Energy Efficiency Act of 2008, which requires a study of the feasibility of setting energy savings targets in 2015 and 2020 for natural gas companies. MEA contracted with GDS in June of 2011 to conduct this natural gas energy efficiency potential study for the State of Maryland. As part of the project, GDS conducted analysis and prepared a technical-economic-achievable-program potential study documenting a base estimate of natural gas energy efficiency potential to determine the feasibility of setting energy savings targets in 2015 and 2020 for natural gas companies in Maryland. GDS presented alternative scenarios in low and high cases in terms of market potential and determined what likely can be achieved for market penetration in 2015 and 2020. This included information regarding required programs or market approaches addressing technologies, threshold incentive levels (by market or segment) pricing strategies, trade ally involvement and communications efforts. An implementation plan was also developed that recommended programs for 2015 and provided detailed recommendations on “best practice” strategies, program designs, requisite budgets, incentives and expected market penetration. GDS completed this study in November 2011.
6. **Consolidated Edison of New York** – Consolidated Edison Company of New York retained GDS to prepare an assessment of the natural gas energy efficiency potential in its service area and to develop a portfolio of natural gas energy efficiency programs. GDS developed this Gas Efficiency Plan for Con Ed, and the Plan was filed with the New York Public Service Commission in March 2009. The program plans included detailed benefit/cost calculations using the Total Resource Cost test. The plan also included a detailed plan for evaluation of each individual program, including details on the scope and method of measurement and verification activities pursuant to the Commission’s rules and regulations.
7. **District of Columbia Energy Office** – In September 2007, GDS Associates and Ed Meyers Consulting completed a detailed assessment of energy use in the District of Columbia, and

developed findings and recommendations for cost effective electric and natural gas energy efficiency programs for the District. The report included detailed information on residential energy measures recommend for consideration in the upcoming Comprehensive Energy Plan IV for DC (CEP-IV) as well as energy efficiency programs and measures for DC Government facilities. The report found that the effectiveness of the District's programs can be increased working with the Metropolitan Washington Council of Governments (MWCOG) to leverage resources with federal agencies and coordinate policies and programs throughout the region to produce mutually targeted results. Such regional cooperation also reduces administrative costs per program unit delivered, as costs are amortized over more clients served. One particularly promising opportunity may involve regional government purchasing of energy efficiency products, where each governmental unit would gain from regional quantity discounts. The report determined the successful energy conservation programs can yield about 6,000 new jobs in the District of Columbia over a fifteen-year period. DC's job creation totals in energy efficiency can be boosted for DC residents through First Source Employment Agreements and LSDBE requirements, when businesses receive tangible benefits from the DC government (for example, low-interest loans or down payment assistance).

8. **New Hampshire Public Utilities Commission** - In 2008, GDS in partnership with RLW Analytics, Research Into Action and RKM Research and Communications was retained by the New Hampshire Public Utilities Commission to conduct a thorough assessment of the potential for electric and natural gas energy efficiency in the state of New Hampshire. To support the energy efficient potential analysis, the GDS Team conducted residential and small commercial telephone surveys and large C&I site visits. The data collected will help determine key study inputs such as equipment saturations and baseline efficiency levels. The GDS Team has identified hundreds of electric and natural gas energy efficiency measures which are being analyzed to identify cost-effective measures. Estimates of the technical, economic and achievable electric and natural gas savings potential over the next ten years and the cost necessary to achieve these savings will then be developed.
9. **Hoosier Energy** - GDS was retained by Hoosier Energy to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and demand response measures in service area of Hoosier Energy in southern Indiana. GDS collected and analyzed extensive information on over 200 energy efficiency measures and 25 demand response measures, developed supply curves to show the achievable potential and completed a report by December 2008.
10. **Brazos Electric Cooperative** - GDS was retained by Brazos Electric Cooperative to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and demand response measures in the service area of this large electric cooperative in Eastern Texas. GDS collected and analyzed extensive information on over 200 energy efficiency measures and 25 demand response measures, developed supply curves to show the achievable potential and completed a draft report by September 2008.
11. **Arkansas Electric Cooperative Corporation** - GDS was retained by Arkansas Electric Cooperative Corporation to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and demand response measures in the service area of this large electric cooperative in Arkansas. GDS collected and analyzed extensive information on over 200 energy efficiency measures and 25 demand response measures, developed supply curves to show the achievable potential and completed a draft report by September 2008.
12. **Central Maine Power Company (CMP)** - As a subcontractor to La Capra Associates, GDS was retained by CMP to conduct an assessment of the potential for cost-effective electric energy efficiency and demand response as an alternative to transmission system expansion in 5 sub-areas of the CMP service area. GDS collected and analyzed extensive information on over 100 energy efficiency and conservation measures, developed supply curves to show the achievable

potential and is in the process of developing a draft findings report.

13. **Bonneville Power Administration (BPA)** - GDS was retained by BPA to conduct an assessment of their Non-Wires Solutions initiative development process and the current state of the initiative. The BPA Non Wires Solutions Program assesses the feasibility of energy efficiency and demand response programs as an alternative to building new electric transmission lines in the BPA service area. GDS reviewed program materials and reports, designed an interview guide and conducted in-depth, interviews with key BPA staff. Our analysis identified program strengths, weaknesses and potential improvements in key program areas including design, implementation, planning, cost impact & allocation and resources. A final report was delivered on June 8, 2007.
14. **Reading Municipal Light Department (Reading, Massachusetts)** - GDS was retained by the RMLD to assess the technical, economic, and market potential for reducing (avoiding) electricity use and peak demand, and reducing fossil-fueled electricity use and peak demand, in RMLD's service territory by implementing a wide range of end-use efficiency measures and renewable energy resource technologies. GDS collected and analyzed extensive information on over 100 energy efficiency, conservation and demand-response measures and renewable energy technologies, developed supply curves to show the achievable potential and is in the process of developing a draft report.
15. **Concord Municipal Light Department, Concord, Massachusetts** – GDS completed a detailed study for the potential for energy efficiency and renewable energy technologies for the Concord Municipal Light Department (CMLD). GDS's specific responsibilities for this project include identification and analysis of demand-side alternatives, including distributed generation and other demand response technologies (i.e., direct load control).
16. **North Carolina Electric Membership Corporation (NCEMC)** - GDS was retained by the NCEMC to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and conservation resources in service area of the North Carolina Electric Membership Corporation (NCEMC). GDS collected and analyzed extensive information on over 200 energy efficiency and conservation measures, developed supply curves to show the achievable potential and completed a final report in 2007.
17. **Central Electric Power Cooperative Inc. (CEPCI)** - GDS was retained by the CEPCI to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency, conservation and demand response resources in the service area of CEPCI. GDS collected and analyzed extensive information on over 200 energy efficiency and conservation measures, developed supply curves to show the achievable potential and completed a final report in August 2007.
18. **Maine** – GDS completed a technical potential study for high efficiency residential lighting equipment for the Efficiency Maine Residential Lighting Program. GDS conducted this study for the Maine Public Utilities Commission in 2007.
19. **North Carolina Public Utilities Commission** -GDS was retained by the North Carolina PUC to conduct an assessment of the cost effective achievable potential for electric energy efficiency and conservation resources in the State of North Carolina. GDS collected and analyzed extensive information on over 100 energy efficiency and conservation measures, developed supply curves to show the achievable potential and completed a final report in December 2006.
20. **Vermont Department of Public Service** - GDS was retained by the Vermont Department of Public Service to conduct a thorough assessment of the cost effective achievable potential for electric energy efficiency and conservation resources in the State of Vermont. GDS collected and analyzed extensive information on over 100 energy efficiency and conservation measures, developed supply curves to show the achievable potential and completed a final report in January 2007. GDS also conducted market research with energy services providers in Vermont to collect information on baseline levels of energy efficiency in the State.

21. **Big Rivers Electric Corporation – 2005 Energy Efficiency Technical Potential Study - Kentucky** - During 2005, GDS completed a study of the technical and maximum achievable cost effective economic potential of energy efficiency measures and programs for the service area of the Big Rivers Electric Corporation, a large Generation and Transmission electric utility in Ohio. This technical and economic potential study was completed as part of the comprehensive analysis of supply-side and demand-side options for the latest BREC Integrated Resource Plan filing with the Kentucky Public Service Commission.
22. **Public Service of New Mexico** – GDS completed this natural gas DSM technical and achievable potential study in May 2005. This study presents estimates of the maximum achievable cost-effective potential for natural gas Demand-Side Management (DSM) opportunities in the service area of Public Service of New Mexico. The main output of this study is a concise, fully documented report on the opportunities for achievable, cost effective natural gas energy efficiency programs in New Mexico.
23. **Utah Energy Office and Questar Gas Company** – GDS completed this natural gas DSM technical and achievable potential study in June 2004. This study presents estimates of the maximum achievable cost-effective potential for natural gas Demand-Side Management (DSM) opportunities in the State of Utah. The main output of this study is a concise, fully documented report on the opportunities for achievable, cost effective natural gas energy efficiency programs in Utah. This study assessed the impacts that gas DSM measures and programs can have on natural gas use, assesses the economic costs and benefits of DSM programs, and assesses the revenue impacts to Questar Gas Company. The final report also includes an assessment of the environmental impacts of the achievable DSM options identified in this study.
24. **Energy Efficiency Potential in Georgia – Study for the Alliance to Save Energy** – GDS completed this study for the Alliance to Save Energy in July 2004. This study provides estimates of the maximum achievable cost effective potential in the State of Georgia for several “top-ranked” energy efficiency programs. In addition, GDS presented expert witness testimony on behalf of the ASE before the Georgia Public Service Commission that covered the following issues:
 - The potential net present value dollar savings to ratepayers in Georgia due to the implementation of cost effective energy efficiency programs.
 - The cost effectiveness of these energy efficiency programs.
 - Energy efficiency tariffs that could be implemented in Georgia to save energy.
 - Up-to-date information on energy efficiency and DSM success stories and energy savings in other regions of North America and the technical potential for DSM in Georgia.
 - Improvements that could be made in the DSM measure screening process in Georgia.
 - Recommendations for DSM cost recovery and shareholder incentive mechanisms.
25. **Energy Efficiency Potential in Florida – Study for the Alliance to Save Energy and the Southern Alliance for Clean Energy** – GDS completed this study for the Alliance to Save Energy in July 2004. This study provides estimates of the maximum achievable cost effective potential in the State of Florida for several “top-ranked” energy efficiency programs
26. **Connecticut Energy Conservation Management Board** – In March 2003, GDS was retained by the Connecticut Energy Conservation Management Board to conduct a thorough assessment of the cost effective maximum achievable technical potential for energy efficiency and conservation resources in the State of Connecticut and two sub-regions of the State. GDS collected and analyzed extensive information on over 250 energy efficiency and conservation, and developed supply curves to show the maximum achievable potential. GDS completed the final report in June 2004.
27. **Alliant Energy Corporate Services** - As an update to an assessment of potential customer-sited/distributed generation technology applications in all categories (residential, small/large commercial, industrial, and agricultural) conducted by GDS in 2001, Alliant requested that

modeling assumptions be reviewed and revised, as necessary. In addition, the Distributed/Onsite Generation Screening (DOGS) tool was reviewed by MN Department of Commerce as part of a filing in 2001 and they requested expansion of applicable technologies and fuels, including: bio-diesel and methane from landfills and digesters to fuel reciprocating engines; methanol, ethanol, gasoline, and methane for electricity production from fuel cells. The revised model results will be used to estimate the market potential for distributed/onsite generation within Alliant's Minnesota service territories.

28. **Massachusetts GasNetworks** – In January of 2004, GDS was hired by GasNetworks (a network of several natural gas utilities in Massachusetts) to develop benefit/cost analyses and energy savings potential estimates for GasNetworks' regional market transformation and demand-side management programs. Benefit/cost ratios and energy savings potential estimates were developed for several regional gas energy efficiency programs using a spreadsheet model, and similar data were developed for each program for each service area for each natural gas utility participating in this study.
29. **Northern Utilities (Gas Company)** – In 2002 GDS was hired by Northern Utilities to prepare benefit/cost analyses and energy savings potential estimates of a portfolio of energy efficiency programs proposed for implementation in their New Hampshire service area. This project was completed during September 2002 and a final report was filed with the New Hampshire PUC. A workshop was conducted at the NH Public Utilities Commission early in 2003 to review cost-effectiveness methodologies and key model input/output requirements.
30. **KeySpan Energy Delivery (Gas Company)** – In 2002 GDS was hired by KeySpan Energy Delivery – New Hampshire to prepare benefit/cost analyses and energy savings potential estimates of ten energy natural gas energy efficiency programs proposed for implementation in the KeySpan New Hampshire service area. This project was completed during September 2002 and a final report was filed with the New Hampshire PUC that month.
31. **Big Rivers Electric Corporation – 2002 Energy Efficiency Technical Potential Study - Kentucky** - During 2002, GDS completed a study of the technical and economic potential of energy efficiency and load management measures and programs for the service area of the Big Rivers Electric Corporation, a large Generation and Transmission electric utility in Ohio. This technical and economic potential study was completed as part of the comprehensive analysis of supply-side and demand-side options for the latest BREC Integrated Resource Plan filing with the Kentucky Public Service Commission.
32. **City of Grand Island, Nebraska – Municipal Utility – Energy Efficiency Technical Potential Study** - GDS completed a study of the technical and economic potential for energy efficiency and load management measures and programs for the service area of this large municipal electric utility in Nebraska. This technical and economic potential study was completed as part of the comprehensive analysis of supply-side and demand-side options for an Integrated Resource Plan for this utility.
33. **City of Lafayette, Louisiana – Municipal Utility – Energy Efficiency Technical Potential Study** - GDS completed a study of the technical and economic potential for energy efficiency and load management measures and programs for the service area of this large municipal electric utility in Louisiana. This technical and economic potential study was completed as part of the comprehensive analysis of supply-side and demand-side options for an Integrated Resource Plan for this utility.
34. **New York State Energy Research and Development Authority (NYSERDA) - Energy \$martSM Program Evaluation Services:** In the fall of 1999, GDS was retained by NYSERDA to be the prime evaluation contractor for the New York Energy \$martSM program. During the years 2000, 2001, 2002, and 2003, GDS has been responsible for providing energy efficiency program and measure data collection, analysis, and report writing services to NYSERDA in support of their overall evaluation and market assessment efforts, and to determine actual savings of the programs. To

date, GDS team evaluation activities have included development of a Gap Analysis for the purpose of setting priorities and allocating evaluation resources to the various New York Energy \$martSM project areas; and numerous evaluation activities leading to development of a draft and final Program Evaluation Status report which provided the New York Public Service Commission with sufficient information to determine the future of SBC-funded public benefits programs beyond its initial three-year transition period which ended July, 2001.

35. **Distributed Generation Technical Potential Assessment for Minnesota and Iowa:** During the fall of 2001, GDS assessed the technical potential of customer-sited distributed generation technology applications for Alliant, a major investor owned utility located in the MidWest. The analysis covered the residential, small/large commercial, industrial, and agricultural sectors. GDS developed a Distributed/Onsite Generation Screening spreadsheet model to determine the cost-effectiveness of various distributed generation options; used the model to assess the potential for various customer groups and then scaled results using customer profiles. Model results were also used to estimate the technical potential for distributed/onsite generation within Alliant's Minnesota and Iowa service territories.
36. **Renewable Electric Energy and Peak Demand Savings Methodology Reviews - Wind Power and Photovoltaics Programs:** GDS performed detailed reviews of NYSERDA's methodologies for estimating electric energy savings and peak demand reduction benefits associated with NYSERDA's Wind Power Research & Development Program and two Photovoltaic (PV) programs. These Savings Methodology reviews entailed three-components: 1) a review of the current method used by NYSERDA for estimating savings (including algorithms and inherent assumptions), 2) a review of the methods and assumptions used by other utilities and program administrators for estimating savings from similar programs being implemented elsewhere in the country, and 3) a presentation of key findings and recommendations.
37. **Evaluation Services for Commercial/Industrial Program Areas and Technical Assistance Reviewing Engineering Analyses- Efficiency Vermont:** GDS Associates is the lead contractor in a team that has been hired to assist the VT DPS in evaluating a statewide portfolio of energy efficiency programs targeted to the Commercial and Industrial market sectors. The GDS team is also providing technical engineering and review assistance, on an "on-call" basis, to the administrator of Vermont's energy efficiency programs.
38. **Development and Implementation of Five-Year Energy Efficiency Plan – Boston Edison:** GDS Associates was retained by Boston Edison to assist BECo staff with the development of program designs, evaluation plans, technical potential estimates and budgets for the Company's Five Year Energy Efficiency Plan. For this project GDS performed energy efficiency technology screenings to identify potentially viable measures for utility funding/support, and developed the program designs for a number of new initiatives, including over a dozen new market transformation programs. GDS also conducted cost effectiveness screening for all of the new DSM initiatives included in the plan.
39. **Energy Efficiency Technical and Market Potential Analysis:** This report presented the results of a technical and market potential study for energy efficiency options for the East Texas Electric Cooperative, Inc. (ETEC). The purpose of this report was to review energy efficiency options that comply with the Public Utility Commission of Texas (PUCT) orders issued in Northeast Texas Electric Cooperative (NTEC), Sam Rayburn Electric Cooperative (SRG&T) and Tex-La Electric Cooperative of Texas (Tex-La) rate cases. This study presented cost effectiveness findings and recommendations on energy efficiency options and programs for ETEC and its member generation and transmission electric cooperatives (NTEC, SRG&T, and Tex-La). In this study, GDS evaluated the cost effectiveness of over 90 energy efficiency options and found many of them to be cost effective according to the Total Resource Cost Test.
40. **Technical and Market Potential Analysis for Load Management and Energy Efficiency Options:** GDS was retained to update energy efficiency and load management technical and market

potential analyses completed in the mid 1990's time period, and to develop recommendations relating to cost effective DSM programs for electric cooperatives in East Texas. This study identified energy efficiency and load management (DSM) options that were viable based on economic tests presented in the California Standard Practice Manual for Economic Analysis of Demand-Side Management Programs. DSM options that had a Total Resource Cost test benefit/cost ratio greater than 1.3 and a positive net present value for the participant were ones that were recommended by GDS for further program development.

Central Maine Power Company - Manager of Marketing Services/Marketing and Product Development, August 1990 to May 1993

From 8/90 to 8/92 - Responsible for managing the design and implementation of CMP's residential, commercial, and industrial demand-side management programs. Also responsible for corporate market research, five-year DSM implementation plans, testifying on DSM topics before regulatory agencies, and for participating in integrated resource planning activities. Accountable for managing a \$26 million DSM budget and a staff of 50 persons. Served on three person lead team from 1989 to 1992 to develop CMP's first integrated resource plan. During 1991 traveled to Czechoslovakia and Poland to provide consulting to foreign utilities on DSM issues.

From 8/92 to 5/93, responsible for identifying and developing marketing strategies for products and services which would improve the competitiveness of CMP's customers, increase the efficiency of energy use, increase CMP's profitability, and which would reduce the rate of growth of electricity prices for all customers. Directly responsible for the design of renewable energy and demand-side management programs, integrated resource planning, research on new technologies, and managing marketing and product development staff. Also provided consulting services to utilities in New Zealand, Australia, and Bulgaria relating to DSM program design and implementation.

Central Maine Power Company - Director of Market Research and Forecasting, June 1986 to August 1990

Responsible for managing twenty-five professional employees. Duties included supervising DSM program impact and process evaluation activities, short and long range load forecast development, local area energy and peak load forecasts, market and load research, economic forecasting, and developing and updating DSM assumptions for use in the Company's long range planning models. Also participated in the development of the first Power Partners RFP, and in the evaluation and selection of proposals submitted in response to this RFP.

Central Maine Power Company - Corporate Economist, May 1985 to May 1986

Responsible for monitoring and forecasting energy and economic trends in the CMP service area and in the New England Region. Duties included development of corporate short-term kWh sales and revenue forecasts, market research studies, and CMP's energy management strategy. Instrumental in promoting the use of state-of-the art PC-based computer models for integrated resource planning (UPLAN). Authored a second report on CMP's DSM strategy in April 1986. Also responsible for supervising several analysts.

Central Maine Power Company - Staff Economist, May 1977 to May 1985

(5/77 to 5/78) Joined CMP in May 1977 and worked in the Customer Services Department. Responsibilities included short-term forecasting, annual appliance saturation surveys, preparation of the 1977 and 1978 long-range energy and peak load forecasts, and impact evaluation of demand response programs (including Kilowatt-Savings Time demand response program).

(5/78 to 12/80) In May of 1978, selected to join a new group, the Corporate Financial Model Staff, to develop a new corporate financial model for CMP. Had major responsibility for development of a revenue forecasting model, and assisted with development of models to produce income statement, balance sheet, and sources and uses of funds forecasts. In addition to corporate model development, responsibilities included short-term forecasting and market research.

(12/80 to 5/85) In December of 1980, moved to CMP's Research Department for five years. Responsible for all corporate market research, short-term kWh sales and revenue forecasts, economic analyses and forecasts, and forecasts of key corporate planning assumptions. Prepared and published CMP's first DSM strategy study in March 1985.

OTHER SELECTED PROFESSIONAL ACTIVITIES

- ① Member of Technical Advisory Group (TAG) for the U.S. Department of Energy Uniform Methods Project (UMP), 2011 to present.
- ① Board of Directors, Association of Energy Services Professionals (AESP), 2005 to 2010
- ① Member of the Association of Energy Service Professionals (1993 to Present), Vice Chairman of the Policy Committee (1995-1996), Chair of Policy Committee (1997 and 1998)
- ① Panel Leader, 1992 American Council for an Energy Efficient Economy (ACEEE) Summer Study on Building Energy Efficiency.
- ① Chairman of the NEPOOL Demand-Side Management Planning Committee, September 1989 to September 1990, August 1991-July 1992.
- ① Vice Chairman of the NEPOOL Demand-Side Management Committee - January to August 1989, July 1990 - July 1991.
- ① Member of the NEPOOL Demand-Side Management Task Force (1986-1988).
- ① Member of the Load Research Committee of the Association of Edison Illuminating Companies (1988-1991).
- ① Alternate to the NEPOOL Governor's Liaison Committee (1986-1988).
- ① State Forecast Analyst for the NEPOOL Load Forecasting Model (1979-1986).
- ① Maine Model Manager of the New England Economic Project economic forecasting model, 1983-1986.
- ① Member of the Statistical Research Committee of the Electric Council of New England (Chairperson 1982-1983, member 1977-1986).
- ① Member of the Edison Electric Institute Economics Committee (1986-1991).
- ① Past member of the International Association of Energy Economists.

PUBLICATIONS:

1. Spellman, Richard F., *Modeling of Energy Management Strategies with the Utility Systems Analysis Model*, paper presented at the International Load Management Conference, November 1984, Chicago, Illinois
2. Spellman, Richard F., *Use of Computer Models and Load Research Data for Developing Energy Management Strategies*, paper presented at the Fifth Annual Northeast Load Research Conference, September 10-12, 1986, Farmington, Connecticut
3. Spellman, Richard F., *Potential Market Penetration of DSM Programs at Central Maine Power*, paper presented at Third National Conference on Utility DSM Programs, June 16-18, 1987, Houston, Texas

4. Spellman, Richard F., *Demand-Side Management Market Penetration: Modeling and Resource Planning Perspectives from Central Maine Power Company*, paper presented at the Fourth National Conference on Utility DSM Programs, May 2-4, 1989, Cincinnati, Ohio
5. Spellman, Richard F., *Using Program Evaluation Data for Long-Range Resource Planning at Central Maine Power Company*, paper presented at the Canadian Electrical Association's Conference on Enhancing Electricity's Value to Society, October 22-24, 1990, Toronto, Canada
6. Spellman, Richard F., *Demand-Side Management from a North American Perspective*, Keynote Address to the International Energy Agency Conference on Advanced Technologies for Electric Demand-Side Management, written for Joe C. Collier, Jr., President and Chief Executive Officer of Central Maine Power Company, paper presented in Sorrento, Italy on April 3, 1991
7. Leamon, Ann K., and Spellman, Richard F., *From the Bottom Up: T&D and DSM*, paper presented at the 5th National Demand-Side Management conference, July 30 - August 1, 1991, Boston, Massachusetts
8. Haeri, M. Hossein, and Spellman, Richard F., *Integration of Evaluation Results into the Resource Planning Process*, paper presented at the 5th National Demand-Side Management Conference, July 30 - August 1, 1991, Boston, Massachusetts
9. Spellman, Richard F., *Does Fuel Switching Make Sense for an Electric Utility?*, paper presented at the 1992 International Energy Efficiency and DSM Conference, October 22, 1992, Toronto, Ontario
10. Spellman, Richard F., and Brunette, Marguerite, *Market Research for the Design, Implementation, and Evaluation of a Compact Fluorescent Lighting Program*, paper presented at the EPRI/EUMRC Market Research Symposium, November 17-20, 1992, Dallas, Texas
11. Spellman, Richard F., Forum For Applied Research and Public Policy/Fall 1992, *Energy Management: A View from Maine* (Journal Article)
12. Spellman, Richard F., *DSM Incentives Plus Electric Rate Adjustment Mechanisms Equal Bottom Line Impact*, paper presented at the 6th National Demand-Side Management Conference, March 24-26, 1993, Miami Beach, Florida
13. Spellman, Richard F., Van Wie, David A., Peaco, Daniel E., Lawrence, and Dennis R., *Optimizing Demand-Side and Supply Resources Using Linear Programming*
14. Spellman, Richard F., Utility Experience With Load Management in Texas, EPRI/Houston Lighting and Power Co. Load Management Conference, May 3, 1994, Houston, Texas.
15. Spellman, Richard, F., The Role of DSM in the Privatized Electricity Sector in England and Wales, and New Zealand, Paper Presented at the Association of Demand-Side Management Professionals Annual Meeting, Orlando, Florida, December 1994.
15. Spellman, Richard, F., Energy Services in A Global Environment, Paper Presented at the Association of Energy Services Professionals Annual Meeting, Phoenix, Arizona, December 1995.
16. Spellman, Richard, F., Value Added Services as Profit Centers in Texas, Paper Presented at the Association of Energy Services Professionals Annual Meeting, Beverly Hills, California, December 1996.
17. Spellman, Richard, F., "Preparing for Competition by Updating Corporate Marketing Strategies", Paper Presented at the Association of Energy Services Professionals Annual Meeting, Boca Raton, Florida, December 1997.
18. Megdal, Lori, Spellman, Richard, F., Johnson, Bruce "Methods and Measurement Issues for a DSM Evaluation versus a Market Transformation Market Assessment and Baseline Study", Paper Presented at the 1999 Energy Program Evaluation Conference, Denver, Colorado, August 1999.

19. Spellman, Richard F., Shel Feldman, Bruce Johnson, Lori Megdal, "Measuring Market Transformation Progress & the Binomial Test: Recent Experience at Boston Gas Company", Paper presented at the ACEEE Summer Study on Building Energy Efficiency, August 2000.
20. Spellman, Richard F., Giffin, Thomas M., Sheil, Jolene A., Nicol, John, "Experience and Lessons from the Wisconsin Industrial Focus on Energy Program: Transformation in Industrial Energy Efficiency Markets", presented at American Council for and Energy Efficient Economy Summer Study on Energy Efficiency in Buildings, Tarrytown, New York. July 25-27, 2001
21. Spellman, Richard F., Shel Feldman, Bruce Johnson, Lori Megdal, "Transition Strategies for Market Transformation Programs: Recent Experience at KeySpan Energy Delivery", Paper presented at the December 2001 12th National Energy Services Conference.
22. Rooney, Thomas; Spellman, Richard; Rufo, Michael; Schlegel, Jeff; "Estimating the Potential for Cost Effective Electric Energy and Peak Demand Savings in Connecticut", Paper presented at the 2004 American Council for an Energy Efficient Economy Summer Study in Pacific Grove, California, August 2004.
23. Spellman, Richard F., Goldfarb, Lynn K., Barnes, Harley, "Using Market Research to Improve Program Design and Delivery of Residential Lighting Programs in the US Northeast Region", Paper presented at the 15th National Energy Services Conference, December 7, 2004, Clearwater Beach, Florida.
24. Spellman, Richard F.; Goldfarb, Lynn K.; Huber, Jeffrey; "IS THERE A POTENTIAL NATIONAL MARKET FOR TRADING ENVIRONMENTAL CREDITS BASED ON THE ENVIRONMENTAL SAVINGS ACHIEVED THROUGH ENERGY EFFICIENCY SAVINGS?", Paper presented at the 16th National Energy Services Conference, December 2005.
25. Spellman, Richard F.; Rooney, Thomas; Burks, Jeffrey; Bean, Stephen; "Potential for Natural Gas Savings in the Southwest", Paper presented at the 2006 ACEEE Summer Study on Building Energy Efficiency, held at Pacific Grove, California.

Direct Testimony of Richard F. Spellman:

1. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket Nos. 85-48, 85-82, 85-83, filed July 7, 1986. Subject Matter: Economics of Commercial and Industrial Conservation Programs in the CMP Service Area
2. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket Nos. 88-111 and 87-261, filed November 6, 1987. Subject Matter: DSM Assumptions for Central Maine Power Company in Long Term Avoided Cost Filing.
3. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket Nos. 88-111 and 87-261, filed June 22, 1988. Subject Matter: DSM Potential and Cost Effectiveness in the CMP Service Area.
4. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket No. 89-68, filed May 19, 1989. Subject Matter: Review and explain the basis for the updated short-term kWh sales forecast on which CMP's revised Attrition Study is based.
5. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket No. 89-68, filed October 24, 1989. Subject Matter: Review and explain the basis for the short-term kWh sales forecast on which CMP's Attrition Study is based.
6. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket No. 91-213, filed November 15, 1991. Subject Matter: Present CMP's conclusions regarding the advisability of inaugurating a residential space heat conversion program in the Company's service territory.
7. On Behalf of Central Maine Power Company, Before the State of Maine Public Utilities Commission, Docket No. 91-213, filed July 31, 1992. Subject Matter: Present updated information

- regarding the advisability of inaugurating a residential space heat conversion program in the Company's service territory.
8. On Behalf of Tex-La Electric Cooperative of Texas, Inc. Before the Public Utilities Commission of Texas, Docket No. 12289, filed July 1993. Subject Matter: Tex-La's DSM activities and updating of TEX-LA Energy Efficiency Plan.
 9. On Behalf of Tex-La Electric Cooperative of Texas, Inc. Before the Public Utilities Commission of Texas, Docket No. 12289, filed July 1993. Subject Matter: Rebuttal testimony relating to TEX-LA's DSM activities.
 10. On Behalf of H.E. Butt Grocery Company, Before the Public Utilities Commission of Texas, Docket No. 12820, Filed October 17, 1994. Subject Matter: Proposed modifications to Central Power and Light DSM Programs.
 11. On Behalf of The Coalition of Cities and The City of Houston, Before the Public Utilities Commission of Texas, Docket No. 12065, filed November 15, 1994. Subject Matter: Proposed changes to Houston Lighting and Power Company's DSM programs.
 12. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket NO. 5602-U, filed May 8, 1995. Subject Matter: Proposed modifications to DSM programs proposed by Georgia Power Company in Integrated Resource Plan filed by the Company in January 1995.
 13. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket NO. 5601-U, filed May 8, 1995. Subject Matter: Proposed modifications to DSM programs proposed by Savannah Electric and Power Company in Integrated Resource Plan filed by the Company in January 1995.
 14. On Behalf of the Sam Rayburn G&T Electric Cooperative, Inc., Before the Public Utilities Commission of Texas, Docket No. 14893, filed September 1995. Subject Matter: Description of SRG&T Compliance with prior Commission orders relating to SRG&Ts DSM activities.
 15. On Behalf of the Sam Rayburn G&T Electric Cooperative, Inc., Before the Public Utilities Commission of Texas, Docket No. 14893, filed January 1996. Subject Matter: Rebuttal testimony relating to SRG&Ts DSM activities.
 16. On Behalf of the Sam Rayburn G&T Electric Cooperative, Inc., Before the Public Utilities Commission of Texas, Docket No. 14893, filed March 1996. Subject Matter: Surrebuttal testimony relating to SRG&Ts DSM activities.
 16. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket Nos. 6315-U and 6325-U, filed April 5, 1996. Subject Matter: Evaluation of Benefits and Costs of Residential Load Management Program Proposed by Georgia Power Company.
 17. On Behalf of Green Mountain Power Company, Before the Vermont Public Service Board, Docket No. 5983, filed December 8, 1997. Subject Matter: Rebuttal Testimony relating to the effectiveness of the Company's historical DSM activities.
 18. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket NO. 8708-U, filed May 29, 1998. Subject Matter: DSM programs proposed by Georgia Power Company in Integrated Resource Plan filed by the Company in 1998.
 19. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket NO. 8709-U, filed May 29, 1998. Subject Matter: Proposed modifications to DSM programs proposed by Savannah Electric and Power Company in Integrated Resource Plan filed by the Company in January 1995.
 20. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia

- Public Service Commission, Docket No. 8709-U, filed May 29, 1998. Subject Matter: Proposed modifications to DSM programs proposed by Savannah Electric and Power Company in Integrated Resource Plan filed by the Company in January 1998.
21. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket No. 13305-U, filed May 11, 2001. Subject Matter: DSM programs proposed by Georgia Power Company in Integrated Resource Plan filed by the Company in January 2001.
 22. On Behalf of the Georgia Public Service Commission Staff IRP Adversary Team, Before the Georgia Public Service Commission, Docket No. 13306-U, filed May 11, 2001. Subject Matter: Proposed modifications to DSM programs proposed by Savannah Electric and Power Company in Integrated Resource Plan filed by the Company in January 2001.
 23. On Behalf of the Alliance to Save Energy, Before the Georgia Public Service Commission, Docket Nos. 17687 & 17688-U, filed May 14, 2004. Subject Matter: Proposal for new energy efficiency programs to be paid for and implemented by Savannah Electric and Power Company and Georgia Power Company (this was intervenor testimony filed in the Integrated Resource Plan dockets heard before the Georgia Commission during 2004).
 24. On Behalf of the Southern Alliance for Clean Energy, Before the Georgia Public Service Commission, Docket Nos. 4822-U & 19279-U, filed November 12, 2004. Subject Matter: Provided comments on the rules of the Georgia Commission relating to the methodology for the calculation of electric energy and capacity avoided costs that would apply to renewable energy producers in the State of Georgia.
 25. On behalf of the Public Staff of the North Carolina Utilities Commission, Before the North Carolina Public Service Commission, Docket No. E-7, Sub 831, June 26, 2008, Subject Matter: The purposes of this testimony were the following: (1) to determine whether the SAVE-A-WATT (SAW) approach was in the public interest of the ratepayers of Duke Energy Carolinas, LLC (Duke or the Company); (2) to determine whether the SAW program administrator costs per lifetime kWh saved were reasonable and whether projected utility margins for energy efficiency and demand response resources under the proposed SAVE-A-WATT approach were reasonably based; (3) to determine whether the SAW approach would achieve the maximum achievable cost-effective potential for kilowatt-hour (kWh) and kilowatt (kW) savings in the Company's service area in North Carolina.; (4) to determine whether any additional cost-effective energy efficiency and demand response programs should be included in the Company's Energy Efficiency Plan; (5) to determine whether an alternative to SAW exists that provides superior electricity and dollar savings to the Company's ratepayers at a much lower cost to them.
 26. On behalf of Communities Against Regional Interconnect, Before the State of New York Public Service Commission, Case No. 06-T-0650, Filed January 9, 2009, Subject Matter: The purpose of this testimony were the following: to present the achievable, cost effective non-route alternatives to construction of the New York Regional Interconnect (NYRI) project and to demonstrate that with the implementation of the proposed non-route alternatives there is no real need for the NYRI project.
 27. On behalf of Connecticut Natural Gas Corporation, Before the State of Connecticut Department of Public Utility Control, Docket No. 08-12-06, Filed January 16, 2009, Subject Matter: The purposes of this testimony were the following: (1) describe how the new Connecticut Natural Gas (CNG) energy efficiency programs will strengthen the partnership with customers through expanded communication and outreach, consistent with the state's policy encouraging energy efficiency; (2) present an overview of existing CNG energy efficiency programs; (3) present information on best practice natural gas energy efficiency programs in other States; (4) describe CNG's proposal to expand energy efficiency program offerings; (5) provide a summary of proposed budgets, energy

- savings and cost effectiveness of proposed program offerings; (6) describe staffing needs to support the proposed programs; (7) present information on the impact of proposed programs on natural gas use per customer; (8) describe the regulatory mechanism for recovery of program costs.
28. On behalf of the Southern Connecticut Gas Company, Before the State of Connecticut Department of Public Utility Control, Docket No. 08-08-17, Filed January 20, 2009, Subject Matter: The purposes of this testimony were the following: (1) describe how the new Southern Connecticut Gas Company (SCG) energy efficiency programs will strengthen the partnership with customers through expanded communication and outreach, consistent with the state's policy encouraging energy efficiency; (2) present an overview of existing SCG energy efficiency programs; (3) present information on best practice natural gas energy efficiency programs in other States; (4) describe SCG's proposal to expand energy efficiency program offerings; (5) provide a summary of proposed budgets, energy savings and cost effectiveness of proposed program offerings; (6) describe staffing needs to support the proposed programs; (7) present information on the impact of proposed programs on natural gas use per customer; (8) describe the regulatory mechanism for recovery of program costs.
 29. On Behalf of the Public Interest Advocacy Staff of the Georgia Public Service Commission, Docket Nos. 31081 & 31082, filed May 2010. Subject Matter: Reviewed energy efficiency and demand response programs included in the 2010 Georgia Power Company Integrated Resource Plan and made recommendations for an enhanced portfolio of such programs. Also made recommendations relating to DSM cost recovery and financial incentives for the Company's shareholders.
 30. On Behalf of the Public Interest Advocacy Staff of the Georgia Public Service Commission, Docket Nos. 36498 & 36499, filed May 2013. Subject Matter: Reviewed energy efficiency and demand response programs included in the 2013 Georgia Power Company Integrated Resource Plan and made recommendations relating to the Company's proposed portfolio of DSM programs. Also made recommendations relating to DSM cost recovery and financial incentives for the Company's shareholders.
 31. On Behalf of Steel Dynamics, Inc., Before the Indiana Utility Regulatory Commission, Docket No 44310, filed June 2013. Subject Matter: The purpose of this testimony was to address why the Commission should approve a structured self-direct demand side management program for large customers served by jurisdictional electric utilities and such a program should be structured.
 32. On Behalf of the Arkansas Attorney General, Before the Arkansas Public Service Commission, Docket Nos. 07-075-TF, 07-076-TF, 07-077-TF, 07-078-TF, 07-081-TF, 07-0082-TF, 07-085-TF. Subject Matter: IN THE MATTER OF THE REQUEST FOR APPROVAL OF ITS QUICK START ENERGY EFFICIENCY PROGRAMS AND THE TARIFF RELATED TO THE PROGRAMS OF UTILITIES IN ARKANSAS, filed on May 2, 2014. The purpose of this testimony was to provide detailed recommendations on how seven electric and natural gas utilities in Arkansas could address flaws in the evaluation, measurement and verification procedures used to determine accurate program kWh and kW savings, the need for these utilities to follow-up and implement detailed recommendations made in program evaluations and to discuss necessary steps to address non cost effective programs. t.
 33. On Behalf of the Arkansas Attorney General, Before the Arkansas Public Service Commission, Docket Nos. 07-075-TF, 07-076-TF, 07-077-TF, 07-078-TF, 07-081-TF, 07-0082-TF, 07-085-TF. Subject Matter: IN THE MATTER OF THE REQUEST FOR APPROVAL OF ITS QUICK START ENERGY EFFICIENCY PROGRAMS AND THE TARIFF RELATED TO THE PROGRAMS OF UTILITIES IN ARKANSAS, filed on May 8, 2015. The purpose of this testimony was to provide detailed recommendations on how seven electric and natural gas utilities in Arkansas could improve the efficiency and cost effectiveness of proposed DSM programs based on EM&V results achieved to date and based on

recommendations made by the independent third party evaluations and the Independent Evaluation Monitor (IEM).

34. On Behalf of the Public Interest Advocacy Staff of the Georgia Public Service Commission, Docket No. 40161, filed May 6, 2016. Subject Matter: Reviewed the Company's IRP testimony and exhibits, IRP plan and data responses filed in this IRP proceeding. The developed, submitted and presented testimony with recommendations relating to the Company's treatment of DSM resources in the IRP process, the proposed portfolio of DSM programs included in the IRP and presented the Commission's current policy on treating DSM resources as a priority resource in the IRP process of a utility.
35. On Behalf of the Public Interest Advocacy Staff of the Georgia Public Service Commission, Docket No. 40162, filed May 6, 2016. Subject Matter: Reviewed the Company's testimony, DSM plan and data responses filed in this DSM proceeding. Then filed and presented testimony with recommendations relating to DSM cost recovery and financial incentives for the Company's shareholders for successful implementation of energy efficiency programs.
36. On Behalf of the Ohio Consumers' Counsel, filed Direct Testimony with the Public Utilities Commissions of Ohio In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company For Approval of Their Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2017 through 2019, Case No. 16-0743-EL-POR 36, September 13, 2016.

Exhibit RFS-2: GDS Associates, Inc. Survey of DSM Shareholder Incentive Mechanisms by State (June 2016)

State	Penalties	Description of DSM Shareholder Incentive Mechanism	ACEEE Ranking	Data Sources	Source Website
Massachusetts	If the utility company or aggregator does not meet its burden, the department may levy a fine of not more than the product of \$0.05 per kilowatt-hours saved, which shall be paid to the Massachusetts clean energy technology center within 60 days after the end of the year in which the department levies the fine. The fine shall not impact ratepayers. Note: This is a programmatic penalty not an energy saved penalty.	Incentive is based on electricity savings and value. Performance metrics were removed for the 2016-2018 plans. Incentive Pool is \$100M total for elec utilities (Minimum threshold for % of savings target is 75%; maximum is 125%) Note: This is based on a 3 year plan structure. Payout rate = \$0.0105518 per dollar benefit & \$0.0109515 per dollar of net benefit.	1	MA Public Utilities Commission	http://www.mass.gov/eea/pr-2016-massachusetts-3-year-energy-efficiency-plan-approved.html See page 70 of Order http://www.mass.gov/eea/docs/dpu/electric/2016-2018-3-yr-plan-order.pdf
California	Penalties have been removed for the ESPI program currently in place If a EE program reaches 75% of goal, maximum incentive is 75% of total	Complicated four part program including Lifecycle savings performance award (weighted 2/3 kWh savings and 1/3 demand savings)(Capped at 9% total resource program spending), Ex ante review and compliance (capped at 3% less admin expenses), Non-resource management fee (capped at 3% on-resource spending less admin), Codes and standards management fee (capped at 12% of budget).	2	California Public Utilities Commission	http://www.cpuc.ca.gov/NR/rdonlyres/7F928E5C-D20C-46C3-BC3B-792EBBE1ADFD/0/2013ESPIPPerformanceStatementReport_DISTRIBUTUTE.docx CA Decision 10-12-049 and ACEEE state policy database
New York*	None	For 2012 through 2015, there is a two tier incentive level. Utilities will be eligible for incentives for achievement of their targets and statewide goals. The incentive pool is \$36 million for electric utilities with \$24 million available to be earned through individual company performance and \$12 million earned for statewide achievement. For 2016 REV case 14-M0101 the Commission did not vote to require ESM (earning sharing mechanisms) in REV proceedings.	9	ACEEE (American Council for an Energy Efficient Economy) & Institute for Electric Innovation (The Edison Foundation)	http://www.edisonfoundation.net/iei/Documents/iei_stateEpolycupdate_1214.pdf NY State Energy Board: Case 07-M-0548
Oregon	None (The Energy Trust of Oregon, rather than a private utility company, implements Energy Efficiency programs in Oregon. The lost revenue recovery and shareholder incentives are not necessary.)	None	4	Oregon Public Utility Jason Eisdorfer-Utility Director	http://energytrust.org/
Vermont	None	Efficiency Vermont works on a three year performance period. Efficiency Vermont works with the Vermont Public Service Department to develop Quantitative Performance Indicators (QPIs) to measure the programs' success. These metrics must be met in order to earn the maximum performance award at the end of a three-year period. Allowed to earn 3.4% to 4.3% of program costs as compensation. 2015-2017 compensation increased to 4.1% to 6% or \$4,442,682 with a 50-50 split between operations fee and performance incentives.	3	Order of Appointment for Vermont Energy Investment Corporation	http://psb.vermont.gov/sites/psb/files/projects/EEU/dnp2013/EEU-2013-01%20Order%20re%20QPIs%20EVT%20%26%20BEP.pdf http://psb.vermont.gov/docketsandprojects/eeu/7466/orders_
Washington	Utilities are penalized \$50/megawatt for each megawatt the company falls below the target for utilities serving more than 25,000 customers.	No reward is in place or proposed by regulated electric utilities.	8	WA Utilities and Transportation Commission/ State Legislature, ACEEE	http://apps.leg.wa.gov/RW/default.aspx?cite=19.285&full=true#19.285.040 http://www.wnenergy.org/category/issues/937/
Rhode Island	None	Shareholder incentive mechanism: 1.25% of spending budget for achieving 75% of savings target in a sector and increase linearly to 5% for achieving 100%, 6.25% for achieving 125% of the savings target. 30% of current incentives are set aside for achievement of summer annual MW demand saving goals. Overall target equal to 3.5% of eligible annual budget and 1.5% of annual spending.	4	RI Public Utilities Commission	http://www.ripuc.org/eventsactions/docket/3635-NECOrd18152(2.17.05).pdf http://www.ripuc.org/eventsactions/docket/4527-NGrid-2015-EPPP(10-31-14).pdf
Connecticut	None	The incentive, referred to as a "management fee," can be from 1-8% of the program costs before taxes. The threshold for earning the minimum incentive (1%) is 70% of the goal. At 100% of the goal, the incentive would be 5%. At 130% of goals, it would be 8%.	6	ACEEE Institute for Electric Innovation (The Edison Foundation)	http://www.energizect.com/sites/default/files/120201-080812%20final%20decision.pdf
Minnesota	None	Electric utilities receive an incentive starting at least when they achieve energy savings equal to 0.4 percent of their retail sales. When utilities achieve energy savings of 1.5% of retail sales, the incentive averages \$0.07 per kWh. Electric utilities' incentives have two caps: 20% of net benefits and \$0.0875 per kWh, whichever occurs first (Xcel Energy, Interstate P&L, Otter Tail Power). Minnesota Power can receive up to 30% of net benefits. Incentives are based on gross savings	10	MN Public Utilities Commission Docket E.G-999/CT-08-133	https://www.edockets.state.mn.us/EFiling(edockets/searchDocuments.do?method=showPcp&documentId=%7b7B916D08-09C1-4084-8C13-852C2F8CC8E9%7d&documentTitle=201212-82007-01
Maine	None	Maine's efficiency programs are implemented by a government agency, no shared savings mechanism. There are statutory provisions allowing decoupling and incentives, they are currently being implemented.	14	ACEEE	35-A MRSA section 3195, subsection 3195 http://www.mainelegislature.org/legis/statutes/35-A/title35-Asec10103.html
Hawaii	None	Under the Public Benefits Administrator (PBFA) Contract, the PBFA has the ability to earn \$700,000 by achieving 100% of performance indicator targets or a portion based on the percentage met. If PBFA exceeds its target, up to an additional \$133,000 could be awarded.	19	Hawaii Public Utilities Commission (Annual Report 2012)	https://hawaiienergy.com/images/resources/AnnualPlans_ProgramYear2015.pdf
Arizona	None	Varies depending on the utility. TEP and APS use performance incentives capped at \$0.0125/kWh time first-year annual kWh saved.	17	AZ Corporation Commission	http://database.aceee.org/state/utility-business-model
New Hampshire	None	Performance incentive of up to 7.5% of total program budgets for meeting cost-effectiveness and savings goals. (Superior performance could get up to 10% of budget). Must achieve 55% of predicted lifetime savings for 7.5%, under 55% receives 6%. No one component of the incentive can represent more than half of the maximum incentive (to encourage a diverse portfolio).	20	NH Public Utilities Commission	http://www.puc.nh.gov/Regulatory/Docketbk/2012/12-262/ORDERS/12-262%202013-09-06%20ORDER%20NO.%2025.569.PDF http://www.puc.nh.gov/Electric/NH%20EnergyEfficiencyPrograms/14-216/14-216%202014-12-11%20PSNH%20Att.-It%20Settlement%20Agreement.pdf
Nevada	None	Upon the request of the electric utility or intervening party or upon a motion of the Commission, the Commission may authorize an electric utility to include in the amount recovered (pursuant to subsection 1 of NRS 704.785) for an individual program for energy efficiency or conservation financial incentives to support the promotion of the participation of the customers of the electric utility in the program for energy efficiency or conservation	31	NV Revised Statutes	https://www.leg.state.nv.us/register/2015Register/R046-15A.pdf

State	Penalties	Description of DSM Shareholder Incentive Mechanism	ACEEE Ranking	Data Sources	Source Website
Ohio	If utilities fail to comply, the commission can assess: -An amount per day under/non-compliance relative to period of report equal to that prescribed, OR -An amount equal to the existing market value of one renewable energy credit per MWh	Shared Savings incentives are based on the adjust net benefits using the UCT and lifetime savings, ranging from 0% to 13% (greater than 115% of goal) beyond the performance benchmark. Caps are \$10M for First Energy, \$20M for AEP, \$13.5M for Duke. From 2013 AEP Stipulation there will be an 87% savings mechanism to AEP Ohio Customers and 13% to AEP Ohio. For First Energy , The Incentive Mechanism will apply separately to each of the Companies and will trigger only if a Company exceeds both its annual and cumulative energy savings targets as set forth in Section 4928.66 (A)(1)(a), Revised Code, in any given year as determined by Ohio law and the Ohio Administrative Code. Based on these criteria, if a Company did not achieve its cumulative benchmark in a previous year, the Incentive Mechanism would not trigger in the current year unless the total cumulative energy efficiency savings were enough to cover both the annual target and the amount of the prior year's cumulative deficit. Duke Program ONLY: The EE-PDR Program Incentive (PI) amount shall be computed by multiplying the net resource savings expected from the approved programs which are to be installed during the upcoming twelve-month period times the allowed shared savings percentage. The allowed shared savings percentages are as follows: 0% for 100% or less, 7.5% for 100% - 110%, 10% for 110% - 115%, 15% for greater than 115%. Net resource savings are defined as program benefits less the cost of the program based on present value of Company's avoided costs over the expected life of the program. Other utilities recover through the DSM rider.	27	Ohio Laws and Rules, ACEEE	http://codes.ohio.gov/orc/4928.66
Pennsylvania	If an EDC fails to meet the energy and peak load savings targets specified in Act 129, then the EDC shall be subject to a civil penalty not less than \$1 million and not to exceed \$20 million for failure to achieve the required reductions in consumption.	None	17	Pennsylvania Public Utility Commission	www.puc.state.pa.us/pucdocs/1182750.pdf
North Carolina	None	The amount of the pre-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for a vintage year shall be equal to 11.5% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year, calculated by DSM/EE program using the UCT (and excluding Low Income Programs and other specified societal programs).	24	North Carolina Utilities Commission	http://starw1.ncuc.net/NCUC/portal/ncuc/PSC/DocketDetails.aspx?DocketId=959f5b94-5900-4d73-aa1f-55519d8d3386
Indiana	If Southern Indiana Gas and Electric Company does not achieve its performance targets, they are met with 1% penalty	For Southern Indiana Gas and Electric Company, the incentive level is capped at 12% of program costs for achieving 100-120% of goal. A negative incentive level of -4% is applied for achieving 49% or less of goal. (Min threshold is 65-70% savings) For Duke Energy - Tiered structure. No cap on total earned. Nothing earned until achieving 75% of goal, with a graduated plan increasing from 6% to 12.13% over 110% of goal achieved. Vectren - 10% cap on incentive ; I&M - 15% cap on incentive.	38	Indiana Utility Commission	Indiana Utility Regulatory Commission Order No. 43472 pg 35 Duke Program - http://www.in.gov/iurc/files/43955_1order_043014.pdf I&M Program - http://www.in.gov/iurc/files/ord_44486621.pdf
Texas	None, must achieve 100% of goal to qualify for a bonus	Beginning with the 2012 program year, a utility that exceeds 100% of its demand and energy reduction goals shall receive a bonus equal to 1% of the net benefits for every 2% that the demand reduction goal has been exceeded, with a maximum of 10% of the utility's total net benefits. Capped at 20% of total program costs for each utility. Net benefits are based on avoided cost which was 4.6 cents in 2014 (10.4 in 2013)	26	Texas Administrative Code	http://www.puc.texas.gov/agency/rules/laws/subrules/electric/25.181/25.181.pdf
Montana	None	Commission can add up to 2% added to the rate of return on common equity permitted on the utility's other investments.	31	MT Public Service Commission	MCA § 69-3-712
Georgia	None	Still under discussion June 2016 but most likely will remain the same as follows: Georgia Power will receive an Additional Sum of 8.5% of the NPV of the actual net benefits of verified net kWh savings as determined by the Program Administrator test from the certified DSM programs, with no cap, provided that following the annual determination of verified net kWh savings. If the annual incremental kWh savings is less than 50% of that initially projected, the Additional Sum shall be 0.5% for demand response measures and 3% for energy efficiency measures. If the Additional Sum exceeds program costs, the portion of Additional Sum that exceeds the program cost shall be calculated based on 4% of actual net benefits of verified net kWh savings as determined by the Program Administrator test from certified DSM programs.	37	GA Public Service Commission	Docket #36499
South Carolina	None	Varies depending on the utility. Progress Energy Carolinas incentive is 8% of net program savings for DSM and 13% net program savings for energy efficiency using the utility cost test. South Carolina Electric and Gas incentive is 6% of net program benefits. Duke Energy Carolinas is allowed to recover all program costs, recovery of net lost revenues incurred for up to thirty-six, and receive 11.5% of net savings achieved through its portfolio of EE/DSM.	40	SC Public Service Commission Edison Foundation	https://dms.psc.sc.gov/Attachments/Order/abcd4412-155d-141f-23688f9c8d4e0420 Philip Riley-Energy Advisor at SC PSC (Docket # 2010-299-E/2010-161-E/2009-261-E) https://etariff.psc.sc.gov/uploads/revisionChangesFile/8534555C-A1C5-1347-514D4CAC32D8F218.PDF
Kansas	None	None	45	KS Corporation Commission	Director: Michael Wegner http://database.aceee.org/state/kansas
Wisconsin	None	Utilities get cost recovery for funding Focus on Energy. For utility proposed programs, utilities can earn a rate of return equivalent to new capital investments or propose other shared savings mechanisms, such as decoupling and lost revenue recovery. This has not been pursued by utilities at this time.	22	ACEEE / MEEA	http://www.aceee.org/sites/default/files/publications/researchreports/U111.pdf and http://www.mwalliance.org/policy/WI/utility#ratestructure
Michigan	None	Consumers: If they exceed 100.1% to 115% of lifetime savings goal for the year, they can receive between 53%-80% of financial incentive cap. Five other additional incentives exist for increasing the number of participants year-over-year for specific programs and exceeding the low income program goal. Descriptions can be seen on page 16 of the linked pdf.	14	Consumers Energy filing to the MI Public Service Commission	http://efile.mpsc.state.mi.us/efile/docs/17771/0031.pdf
	None	DTE Energy: They earn an incentive equal to 8% of financial incentive cap based on exceeding the lifetime energy savings goal by any amount greater than 100.1% with a USCRT of 1.25 or greater, not including low income programs. They earn an increasing incentive of up to 12% of financial incentive cap by commensurately saving up to 115% of the required lifetime savings goal. There are additional incentives for achieving specific program related goals.		DTE filing to the MI Public Service Commission	www.dleg.state.mi.us/mpsc/orders/notices/2015/17762.pdf
Iowa	None	None (just cost recovery)	12	MEEA (Midwest Energy Efficiency Alliance)	http://mwalliance.org/policy/IA/utility and http://database.aceee.org/state/iowa
Illinois	Either \$665,000 or \$335,000 penalty depending on utility size for missing target in 2nd year, in 3rd year same fine and implementation moves to IPA	None	10	Illinois General Assembly	http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=022000050K8-103
Tennessee*	None	None	31	ACEEE	http://database.aceee.org/state/tennessee
Alabama	None	Alabama Power is able to recover a "reasonable rate of return" on efficiency program spending through a rate rider. Docket 31045	41	AL Public Service Commission/ACEEE	http://database.aceee.org/state/alabama
Mississippi	None	Allowed and amount is determined on a case-by-case basis. Commission allows for performance returns through shared savings (2010-AD-2 Rule 29) "In addition, if the utility seeks Commission approval to earn a return on energy efficiency investments and the utility seeks to recover these costs through the EECR, then the utility all in corporate these costs into its filing. Any return on investment calculation shall be based on thereporting year. The EECR shall be adjusted to reflect reconciliation of any over- or under-recovery for the prior year and the approved budget for the current Program Year."	47	MS Public Service Commission	http://www.psc.state.ms.us/InsideConnect/InSiteView.aspx?model=INSITE_CONNECT_8&queue=CTS_ARCHIVED&docid=310904

State	Penalties	Description of DSM Shareholder Incentive Mechanism	ACEEE Ranking	Data Sources	Source Website
Louisiana*	None	Performance incentive is still to be determined during the Quick Start program. The filing from 2014 stated parties had 12 months to determine a mechanism but that has passed without a follow up filing. Entergy in New Orleans has a rate rider incentive based on equity value that engages at 75% of goal up to 125% of goal.	48	ACEEE	http://database.aceee.org/state/louisiana
Arkansas	None	Incentives are available if the company achieves 80-120% of energy savings goals where the Company receives 10% of the total portfolio net benefits. For savings above 100% of target, the 10% of net benefits is capped at sliding scale of 4-8% of program spending.	31	ACEEE	http://www.apscservices.info/ee.aspx (see SARP Notebook for full calculations) http://www.apscservices.info/pdf/08/08-137-u_135_1.pdf
Florida	None	The commission is authorized to allow an investor-owned electric utility an additional return on equity of up to 50 basis points for exceeding 20 percent of their annual load-growth through energy efficiency and conservation measures. §366.82(9) of FECCA. No rewards or penalties have been granted at this time.	27	Florida Energy Efficiency and Conservation Act (FECCA)	http://www.floridapsc.com/publications/pdf/electricgas/FECCA2014.pdf
Oklahoma	None	Beginning in 2015, utilities will only be allowed to collect an incentive if the portfolio achieves 80% of the individual utility's goal and the portfolio has a TRC score higher than 1.0. Utilities will still be able to earn an incentive on programs with a TRC result of less than 1.0, but only if the portfolio as a whole passes the test. If savings beyond 100% of the utility savings goal are achieved, 15% of net benefits will be paid. The rule is not explicit in a maximum threshold for the total incentive, only the minimum.	38	OK Corporation Commission	http://www.occeweb.com/pu/DSM%20Reports/2013_OGE_Demand%20Programs_Annual_Report.pdf http://www.occeweb.com/pu/pureelectric.htm
Virginia	None	The legislation states that an electric utility may recover projected and actual costs of energy efficiency programs, including a margin recoverable on operating expenses, which is equal to the general rate of return on common equity. The SCC can only approve such recovery if it finds that the program is in the public interest.	31	Virginia Code	§56-585.1 A.5 c
West Virginia*	None	Request for recovery of lost revenues was denied in 2013 and 2014	45	ACEEE	http://www.psc.state.wv.us/scripts/WebDocket/ViewDocument.cfm?CaseActivityID=493663&NotType=%27WebDocket%27
Kentucky*	None	Based on shared savings mechanism. AEP can earn an incentive of up to 10% of net savings after program costs while Duke and LGE can earn up to 15% of net resource savings. No cap. Determined on a case-by-case basis.	29	ACEEE	https://ge-ku.com/sites/default/files/documents/ge_ku_dsm_ee_app_011714.pdf https://www.duke-energy.com/pdfs/Sheet_No_75_RIDERDSM(1).pdf
Missouri	None	Incentives are done on a case by case basis for approval per planning period, only rule is that it must be based on a % (typically 7-15) of net benefits. The calculation is quite complicated with several steps involved, individual for each filing, utilities may propose alternatives.	44	MO Public Service Commission	https://www.efs.psc.mo.gov/mpsc/commoncomponents/viewdocument.asp?DocId=935836333
New Jersey*	None	None	16	ACEEE	http://database.aceee.org/state/new-jersey
Maryland*	None	Senate bill 205 was introduced to allow for incentive funding mechanism, no incentives to date.	7	ACEEE	http://database.aceee.org/state/maryland
Delaware	None	Shared savings agreements exist through SEU with program participants, but utility incentive sharing is voluntary.	24	Delaware Sustainable Energy Utility	http://database.aceee.org/state/delaware
District of Columbia*	Penalties applied to Sustainable Energy Utility (SEU) if it fails to meet required performance benchmarks.	SEU implements energy efficiency programs in DC under the Clean and Affordable Energy Act. Financial incentives are given to SEU if it surpass performance benchmarks set in the contract.	14	ACEEE	http://aceee.org/energy-efficiency-sector/state-policy/district%20of%20columbia/182/all/191
Nebraska	None	None (There are 16 publicly-owned and four investor-owned natural gas utilities in Nebraska. Nebraska's natural gas utilities do not offer energy efficiency programs at this time.)	42	Nebraska Energy Office	Public Info Officer (402) 471-3064 http://database.aceee.org/state/nebraska
North Dakota	None	None (While the PSC does not require utilities to implement energy efficiency programs, regulated utilities are required to meet their power needs through least-cost planning, which includes the consideration of Demand Side Management (DSM) programs)	51	North Dakota Public Service Commission	Mike Diller, Director of Economic Regulation http://database.aceee.org/state/north-dakota
South Dakota*	None	MidAmerican = Capped at 30% of approved annual spending, must achieve 100% of goal with a max return at 150% of goal.	48	ACEEE	https://psc.sd.gov/commission/dockets/electric/2007/e07-015/022509e1.pdf
Wyoming*	None	None	50	ACEEE	http://database.aceee.org/state/wyoming
Colorado*	None	If Public Service meets or exceeds 100% of goals, it receives a pre-tax bonus of \$5 million; \$3.2 million for reaching 80-99% of goal. Additionally, 5% net benefits for reaching 100% of savings goals. 1% more for each 5% to max 15% at 150%. \$30 million cap.	12	ACEEE	Proceeding Number 13A-0686EG, Decision Number C14-07331 http://www.energy.org/Data/Sites/1/media/documents/news/news/file/PUC%20Order%207-1-14.pdf http://www.energy.org/Data/Sites/1/media/documents/news/news/file/SPS_2014-15_PSM_Plan_Stipulation_13-00286-UTJ.pdf http://www.energy.org/Data/Sites/1/media/documents/news/news/file/13-00176%20Corrected%20Certification%20of%20Stipulation.pdf http://www.energy.org/Data/Sites/1/media/documents/news/news/file/Direct%20testimony%20and%20Exhibit%20of%20Steven%20Bean.pdf
Idaho*	None	None	29	ACEEE	http://database.aceee.org/state/idaho
Utah*	None	None (In March 2009, the Utah Legislature passed HJR 9, a Joint Resolution on Cost-effective Energy Efficiency and Utility Demand-Side Management. This resolution recognizes the multifaceted benefits of utility energy efficiency and sets non-binding energy savings goals of at least 1 percent per year for Utah's electric corporations and at least 0.5 percent per year for Utah's natural gas utility corporations.)	23	ACEEE	http://database.aceee.org/state/utah
Alaska*	None	None (In 2010, House Bill 306 established Alaska's state energy policy, which included an aggressive renewable electricity goal, as well as a goal to reduce per capita electricity use in the state by 15% by 2020. This goal has not yet been translated into specific requirements for utilities to achieve specific savings levels, and therefore is not yet considered an energy efficiency resource standard (EERS).)	42	ACEEE	http://database.aceee.org/state/alaska

*GDS was not able to reach Commission Staff for verification in these 15 states

Exhibit RFS-3: Allocation of Shaved Savings Caps to Distribution Utilities and Sectors (Updated for Revised Plan)

	Projection of Cumulative Annual MWH Savings for 2017 to 2019			
	Ohio Edison (OE) - Three Year MWH Savings	Cleveland Electric Illuminating (CEI) - Three Year MWH Savings	Toledo Edison (TE) - Three Year MWH Savings	Total Three Year MWH Savings
Total Residential	231,052	179,689	71,827	482,568
Residential Low Income	7,530	7,992	3,150	18,672
Residential Non-Low Income	223,522	171,697	68,677	463,896
Nonresidential	471,870	300,176	177,118	949,164
Total - All Sectors	702,922	479,865	248,945	1,431,732

	Percent of Total Cumulative Annual MWH Savings for 2017 to 2019 Represented for Each Sector for Each EDC			
	Ohio Edison (OE) - Three Year MWH Savings for OE Divided by Total MWH Savings for all three utilities for all sectors (%)	Cleveland Electric Illuminating (CEI) - Three Year MWH Savings for CEI Divided by Total MWH Savings for all three utilities for all sectors (%)	Toledo Edison (TE) - Three Year MWH Savings for TE Divided by Total MWH Savings for all three utilities for all sectors (%)	Total Three Year MWH Savings by Sector Divided by Total MWH Savings for all three utilities for all sectors (%)
Residential Low Income	0.5%	0.6%	0.2%	1.3%
Residential Non-Low Income	15.6%	12.0%	4.8%	32.4%
Nonresidential	33.0%	21.0%	12.4%	66.3%

	Proposed Shared Savings Incentive Cap for 2017 to 2019 for Each Sector for Each EDC Based on a Total Incentive Cap of \$10 Million			
	Ohio Edison (OE) - Shared Savings Incentive Cap	Cleveland Electric Illuminating (CEI) - Shared Savings Incentive Cap	Toledo Edison (TE) - Shared Savings Incentive Cap	Total - Shared Savings Incentive Cap
Residential Low Income	\$52,594	\$55,821	\$22,001	\$130,415
Residential Non-Low Income	\$1,561,200	\$1,199,226	\$479,678	\$3,240,104
Nonresidential	\$3,295,798	\$2,096,593	\$1,237,089	\$6,629,481

Note: This numbers in this Exhibit have not been adjusted to remove projected MWH savings for programs that are not projected to be cost effective.

Exhibit RFS-4
Cost Caps in Other States (PA, Michigan, Texas, Wisconsin and Illinois)
December 20, 2016

Pennsylvania

Cost Cap Requirement

Pennsylvania Act 129 allows an Electric Distribution Company or (EDC) to recover all prudent and reasonable costs relating to the provision or management of its EE&C Plan, but limits such costs to an amount not to exceed two percent of the EDC's total annual revenue as of December 31, 2006, excluding Low-Income Usage reduction programs.

http://www.puc.pa.gov/electric/pdf/Act129/HB2200-Act129_Bill.pdf

Act 129 has other provisions related to smart meters, technical resource manual, and a statewide evaluator. Details found here.

http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information.aspx

Implementing Cost Cap

Act 129 expanded the commission's authority and oversight on energy efficiency. The commission implemented Act 129 in phases.

In Phases I and II, the commission established the level of costs that an EDC is permitted to recover in implementing its energy efficiency program keeping in mind that the total level of those costs must not exceed the two percent limitation. The commission also outlined what types of costs would be recovered and approval of such costs would be subject to after-the-fact scrutiny.

Phase 1 was four years, and Phase II was three years. The two percent cost cap limitation of the Act was interpreted such that the "total cost of any plan" is an annual amount, as opposed to the full multi-year period of each Phase of the Act 129 programs.

It was established in the Phase III order that funds in excess of the cap should be returned directly to customers, who are paying the cost of these programs.

http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information/energy_efficiency_and_conservation_ee_c_program.aspx

Texas (SB 1125)

Cost Cap Requirement

S.B. 1125 requires that cost-effective energy efficiency be subject to cost ceilings (maximum amount) established by the commission for the utility's residential and commercial customers.

<https://legiscan.com/TX/text/SB1125/2011>

Cost Cap Implementation

Commission rules (Sec. 25.181) provide guidance on cost recovery for energy efficiency programs. Utilities must establish an energy efficiency cost recovery factor or EECRF to recover reasonable costs of providing a portfolio of cost-effective energy efficiency programs. The commission prescribes how this mechanism will work for all utilities.

The commission may establish for a utility a lower goal, a higher administrative spending cap or an EECRF greater than the cap if the utility demonstrates that compliance with that goals, administrative spending cap or EECRF cost cap is not reasonably possible and that good cause supports the lower goals, higher administrative spending cap, or higher EECRF cost cap.

<https://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.181/25.181.pdf>

Illinois

Cost Cap Requirement

Sec. 220 ILCS5/8-103 requires utilities to reduce the amount of EE and DR measures implemented over a three-year period by an amount necessary to limit the estimated average annual increase in the amounts paid by customers in connection with electric service due to the cost of those measures over time. The amount is tied to how expensive the next kWh and kW is to achieve. In 2008, this amount was no more than .5% of the amount paid per kwh by customers during the year ending May 31, 2007. In 2009, the greater of an additional .5% of the amount paid per kwh by customers during the year ending May 31, 2008. Today the amount of EE and DR measures implemented for any single year must be reduced by an amount necessary to limit the estimated average net increase due to the cost of these measures included in the amounts paid by eligible retail customers in connection with electric service to no more than the greater of 2.015% of the amount paid for these measures in 2011.

<http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=022000050K8-103>

Can't locate rule that implements law.

Michigan

Cost Cap Requirement

This section describes cost caps in effect in Michigan before new legislation was enacted during late 2016, Chapter 25, Sec. 21; Act 295 of 2008 allowed a provider whose rates are regulated by the Michigan Public Service Commission to recover the actual costs of implementing its approved Energy Optimization Plan. Costs exceeding the overall funding levels specified in the plan were not recoverable unless those costs are reasonable and prudent and meet the utility system resource cost test.

Under the old legislation, the cost recovery for residential programs was not to exceed 2.2% of total retail sales revenue for those customer classes.

Section 71 of Public Act 295 required utilities to specify necessary funding levels for the programs being proposed. Commission-regulated utility providers recovered their program expenditures through a customer surcharge approved by the Commission. These surcharges were assessed on either an energy usage basis or on a per meter basis. Residential customers paid based on their energy usage. According to a 2016 report, the average residential customer paid about \$1 to \$2 per month.

[http://www.legislature.mi.gov/\(S\(shux1ilpjb21axk3wanwzggo\)\)/mileg.aspx?page=getObject&objectName=mcl-460-1089](http://www.legislature.mi.gov/(S(shux1ilpjb21axk3wanwzggo))/mileg.aspx?page=getObject&objectName=mcl-460-1089)

http://www.michigan.gov/documents/mpsc/2016_Energy_Optimization_Report_to_the_Legislature_with_Appendix_Nov_30_543919_7.pdf

Wisconsin

Wisconsin has two laws that discuss the cap so this has evolved overtime.

Under Act 9, two public benefits fees were established. One for energy efficiency/renewable and one for low income assistance. Act 9 required two mandatory utility “contributions” one each to fund EE/RE and low income programs. Act 9 capped the amount that a customer was required to pay in any month for the combined public benefits fees at the lesser of 3% of all charges on the customer’s bill or \$750; the amount the customer paid for the utility’s recovery of the contribution portion of programs funding was not capped.

Under 2005 Wisconsin Act 141 (Act 141), oversight of Wisconsin’s energy efficiency program (called Focus) transferred to the Public Service Commission. Under Act 141, investor-owned electric and natural gas utilities to contribute 1.2 percent of their annual gross operating revenues to fund Focus on Energy. The act states that the 1.2% of annual operating revenues is to cover a utility’s share of the cost of the statewide programs plus the cost of any efficiency program for large customers that the utility requests to administer and any ordered program the utility administers. In effect, the cost of utility –administered and customer programs is credited against a utility’s required expenditure for statewide programs.

The commission may specify a higher funding level, subject to review by the Legislature’s Joint Committee on Finance. The act requires that the commission base a proposal for higher funding level on a list of criteria.

http://legis.wisconsin.gov/lc/publications/im/im_2006_01.pdf

OCC Set 6

Witness: Edward C. Miller

Case No. 16-0743-EL-POR

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric
Illuminating Company, and The Toledo Edison Company For Approval
of Their Energy Efficiency and Peak Demand Reduction Program Portfolio
Plans for 2017 through 2019

RESPONSES TO DATA REQUESTS

OCC Set 6 – Section V.H.5 of the December 1, 2015 Third Supplemental Stipulation and
INT-145 Recommendation in Case No. 14-1297-EL-SSO provides that the Companies will fund
the Community Connections program at \$6,000,000 per year from 2016 through 2023. Is
this \$6.0 million per year cost included in Exhibit A to the Stipulation?

Response: No.

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in

Case No(s). 16-0743-EL-POR

Summary: Testimony Supplemental Direct Testimony of Richard F. Spellman on Behalf of The Office of the Ohio Consumers' Counsel electronically filed by Ms. Jamie Williams on behalf of Healey, Christopher Mr.