OCC EXHIBIT NO. ______

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the 2014 Review of the Demand Side Management and Energy Efficiency Riders of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company.	))))))	Case No. 13-2173-EL-RDR
In the Matter of the 2015 Review of the Demand Side Management and Energy Efficiency Riders of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company .	))))))	Case No. 14-1947-EL-RDR
In the Matter of the 2016 Review of the Demand Side Management and Energy Efficiency Rider of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company.	))))))	Case No. 15-1843-EL-RDR
In the Matter of the 2017 Review of the Demand Side Management and Energy Efficiency Riders of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company.	))))))	Case No. 16-2167-EL-RDR
In the Matter of the 2018 Review of the Demand Side Management and Energy Efficiency Rider of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company.	))))))	Case No. 17-2277-EL-RDR

DIRECT TESTIMONY
OF
COLLEEN SHUTRUMP

On Behalf of
The Office of the Ohio Consumers' Counsel
65 East State Street, 7th Floor
Columbus, Ohio 43215

June 22, 2020

TABLE OF CONTENTS

PAGE

ATTACHMENTS

I. BACKGROUND

Q1. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A1. My name is Colleen Shutrump. I am employed as the Energy Resource Planning Advisor for the Office of the Ohio Consumers' Counsel ("OCC"). My business address is 65 East State Street, Suite 700, Columbus, Ohio 43215.

Q2. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A2. I have a Bachelor of Science in Business Administration from the Youngstown State University with a major in Management and a Master of Business Administration from Baldwin Wallace College with emphasis in International Business. I have worked over ten years in electric utility regulation with emphasis on customer-funded energy efficiency programs. I started as a Utility Analyst at the Indiana Utility Regulatory Commission in 2009. I was promoted to Senior Utility Analyst in 2015. While there, I attended the Institute of Public Utilities Michigan State University Advanced Regulatory Studies Program and Camp NARUC. I began work as an Energy Resource Planning Advisor with OCC in August 2015. In spring 2016, I completed a graduate-level course on Utility Regulation and Deregulation at the Ohio State University, John Glenn College of Public Affairs.

Q3. WHAT ARE YOUR DUTIES AT THE OHIO CONSUMERS' COUNSEL?

A3. I provide analytical support on energy resource planning issues impacting Ohio consumers' interests. I serve as the Analytical Department's lead analyst and policy advisor for the OCC on cases and issues relating to customer-funded energy efficiency and demand side management programs. This includes, among other things, advocating for (i) consumer options to reduce their energy use and save money on their utility bills and (ii) developing agency policy that addresses consumer-protection issues. I was extensively involved in each of the four 2016 electric energy efficiency portfolio cases before the Public Utilities Commission of Ohio ("PUCO"). My involvement included providing testimony on electric energy efficiency programs in the Dayton Power & Light[1] and Duke Energy Ohio[2] portfolio cases affecting consumers. I also testified on necessary consumer protections for gas programs in the Vectren rate case.[3] I am also extensively involved in proceedings about the electric and gas riders that consumers pay to support energy efficiency programs. I participate in energy efficiency collaborative meetings for utility-led electric and gas programs and the work groups on grid modernization data sharing and distribution system planning (PowerForward workgroups).

---

[1] *See* http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=e5387ca7-b061-4e9a-bc4b-66d71fafa20b.

[2] *See* http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=086ff9ae-a122-4479-9a18-fcaefc81f584.

[3] *See* http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=43f018b1-7394-4e2d-9708-26d64b02aafd, http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=ca349b36-83ee-4ca7-acfd-09a80f3e28f2, http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=0bbabc31-2fc9-4c10-affa-eb256e9a449b.

II. PURPOSE OF TESTIMONY AND SUMMARY OF RECOMMENDATIONS

Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A4. The purpose of my testimony is to provide recommendations and support for protecting customers by crediting them for a portion of the excessive lost revenues that FirstEnergy residential customers over-paid from 2014-2018. In these cases, the PUCO Staff audited FirstEnergy's 2014 to 2018 charges to customers for its energy efficiency programs. Per the PUCO's entry on January 29, 2020, the cases that adjust charges to consumers for each year 2014-2018 are consolidated for purposes of administrative efficiency. There is also a separate docket, Case No. 19-02-EL-UNC, where an outside audit of FirstEnergy's (and other utilities') energy savings from energy efficiency programs was performed. That case was not consolidated with the above-captioned cases.

Q5. WHAT ARE YOUR CONCLUSIONS RECOMMENDATIONS?

A5. Through a rider process that automatically approves charges to consumers for FirstEnergy's energy efficiency programs, from 2014 through 2018, residential FirstEnergy consumers were charged nearly $173 million in so-called lost distribution revenues (also referred to as "lost revenues"). This is more than three times what non-residential customers paid over the same period ($55 million). Even more concerning, however, is that from 2014 to 2018, residential customers were charged more in lost revenues than the entire costs of the energy efficiency programs themselves. This is unjust and unreasonable.

To protect residential consumers from over-paying for lost revenues (and consistent with Staff's recommendation of limiting the number of years FirstEnergy can count kilowatt hour savings programs produce relative to the program install date to a three year maximum), I recommend that the PUCO credit customers for $98 million in lost revenues over-paid for the 2014-2018 period. This would reduce the lost revenue charges customers paid for 2014-2018 to $74,675,391.

Q6. ***WHAT IS A LOST REVENUE ADJUSTMENT MECHANISM?***

A6. A lost revenue adjustment mechanism allows the utility to collect from customers revenues that are *allegedly* lost (uncollected) due to energy savings derived by participating in the energy efficiency programs the utilities provide to customers. Historically, charges for lost revenues were collected from customers in several states in the 1990s to counter the utilities' disincentive to the promote programs that would reduce its generation sales to customers. Since that time, many have been terminated because of the consumer issues I discuss later in my testimony. OCC has frequently voiced its opposition to lost revenues as being unfair to consumers.

Q7. DO OHIO LAWS OR PUCO RULES DEFINE LOST REVENUES OR EXPLAIN HOW A LOST REVENUES CHARGE TO CONSUMERS MUST BE CALCULATED?

A7. Not to my knowledge. Ohio Revised Code 4928.143 mentions "lost revenues" as part of an infrastructure modernization plan that may be authorized under a utility's electric security plan. But the law does not guarantee lost revenues for utilities and says nothing about how lost revenues should be calculated.

Ohio Adm. Code 4901:1-39-07 (as it existed from 2014 to 2018) similarly mentioned lost distribution revenues, stating that a utility "may submit a request" for "appropriate lost distribution revenues." But like the Revised Code, it did not define lost revenues, did not say that a utility is guaranteed to receive them, and did not say anything about how they should be calculated.

I am not aware of any other Ohio law or rule that provides guidance on how lost revenues are to be calculated.

Q8. HAS THE PUCO APPROVED ANY PARTICULAR METHODOLOGY FOR CALCULATING FIRSTENERGY'S 2014-2018 LOST REVENUES PAID BY CONSUMERS?

A8. The PUCO's approval of a lost revenues mechanism for FirstEnergy has provided minimal guidance on how lost revenues are to be calculated.

The PUCO first allowed FirstEnergy to include the collection of lost revenue charges when it approved a settlement in FirstEnergy's 2008 electric security plan ("ESP") case.[4] That settlement, however, said very little about how lost revenues would be calculated. It merely said that lost revenues would be charged to all customers "for a period not to exceed the earlier of the Companies' effective date of the Companies [sic] next base distribution case, or six years from the effective date of this Stipulated ESP" and that such lost revenues would be "for new (not existing)" programs started after January 1, 2009."[5] Beyond that, it did not provide formulas, methodologies, assumptions, sample calculations, or the projected cost of lost revenues.[6]

Over the years, the PUCO continued to authorize lost revenue charges through FirstEnergy's ESP cases.[7] But in none of these cases did the PUCO approve any specific formula for calculating FirstEnergy's lost revenues. This is important because a specific formula could have incorporated consumer protections including a time limit on the number of years FirstEnergy can count kWh savings relative to the year program measures were installed.

[4] Case No. 08-935-EL-SSO.

[5] Case No. 08-935-EL-SSO, Stipulation & Recommendation (Feb. 19, 2009).

[6] *See* Case No. 08-935-EL-SSO, Stipulation & Recommendation (Feb. 19, 2009).

[7] *See* Case Nos. 10-388-EL-SSO, 12-1230-EL-SSO, 14-1297-EL-SSO.

In FirstEnergy's second ESP, the only ruling on lost revenues was that FirstEnergy would be "entitled to receive lost distribution revenue for all energy efficiency and peak demand reduction programs approved by the Commission, except for historic mercantile self-directed programs" and that the approved settlement did not address lost revenues after May 31, 2014."[8]

In FirstEnergy's third ESP, the PUCO made the same ruling but with a May 31, 2016 date tied the end of the third ESP.[9]

And in FirstEnergy's fourth ESP, the PUCO again authorized lost revenue charges but with minimal guidance, ruling only that FirstEnergy could charge customers for lost revenues "up to the time any decoupling mechanism is implemented"[10] and that lost revenues could include savings from FirstEnergy's Customer Action Program.[11]

In my expert opinion, therefore, the appropriate methodology for calculating FirstEnergy's lost revenues is an open question that the PUCO must decide in this case (subject to the very few issues already resolved, as described above).

---

[8] Case No. 10-388-EL-SSO, Opinion & Order (Aug. 25, 2010).

[9] Case No. 12-1230-EL-SSO, Opinion & Order (July 18, 2012).

[10] FirstEnergy did not implement a decoupling mechanism before the end of 2018, so this provision was not triggered during the audit period for these cases.

[11] Case No. 14-1297-EL-SSO, Opinion & Order (Mar. 31, 2016). The Customer Action Program is not really an energy efficiency program. Under this program, FirstEnergy simply surveys customers to find out what energy efficiency actions they are taking on their own and then counts them for purposes of its energy efficiency mandates.

Q9. WHAT IS THE PUCO STAFF'S RECOMMENDATION REGARDING LOST REVENUES IN THESE CASES?

A9. The PUCO Staff recommends limits on the amount that customers pay for lost revenues. According to the Staff, "the number of years used to determine the lost distribution revenue associated with each energy efficiency measure within the calculation seems excessive."[12] To address this problem, the Staff recommends that "the period over which energy savings of any project are recognized for lost distribution calculation purposes should be limited to a maximum of three years."[13] An example helps explain what this means.

If a customer installs an LED light bulb, it might be expected that the bulb will last up to 10 years. When calculating lost revenues, therefore, someone could potentially count the savings from that bulb for 10 years. The PUCO Staff, however, is recommending that the savings from this bulb be counted for a maximum of three years.

As the PUCO Staff also notes, FirstEnergy's energy efficiency program savings are currently the subject of an audit in PUCO Case No. 19-02-EL-UNC. The purpose of this audit case is (among other things) to verify whether FirstEnergy's (and other utilities') calculations of the energy savings from its energy efficiency programs are accurate. Because lost revenues are based on the number of kWh

---

[12] *See, e.g.,* Case No. 17-2277-EL-RDR, Staff Review & Recommendation (Apr. 24, 2020).

[13] *See, e.g.,* Case No. 17-2277-EL-RDR, Staff Review & Recommendation (Apr. 24, 2020).

saved from energy efficiency programs, it is essential that those kWh savings numbers are accurate.

Q10. DO YOU AGREE WITH STAFF'S RECOMMENDATIONS?

A10. Yes, with one minor qualification. I acknowledge that in FirstEnergy's first ESP case, the PUCO allowed FirstEnergy to charge customers for lost revenues for a period of six years from the effective date of that ESP. That ESP became effective June 1, 2009. So lost revenues from FirstEnergy's 2009-2011 energy efficiency programs would continue through June 1, 2015. Other FirstEnergy ESP's did not contain a requirement on the length of lost revenue collection.

Q11. WHY DO YOU AGREE WITH THE PUCO STAFF'S RECOMMENDATION THAT LOST REVENUE CHARGES PAID BY CONSUMERS SHOULD BE LIMITED TO THREE YEARS PER ENERGY EFFICIENCY MEASURE?

A11. I agree because the problem with counting program savings per energy efficiency measure for more than three years is that it results in something called the "pancake effect." The pancake effect occurs when a utility has a lost revenue mechanism in place for multiple years without filing a general rate case, which for FirstEnergy was over a decade ago.[14] Absent a general rate proceeding resetting rates, the utility is capturing the revenue allegedly lost not just from measures in the current year, but also from measures installed in previous years, which for

[14] Case No.07-551-EL-AIR, Opinion and Order (Jan. 21, 200).

FirstEnergy dates back to their 2008 initial electric security plan. Each year, lost revenues "pancake" on top of previous years' lost revenues, causing lost revenues to balloon out of control, with customers left with the bill.

FirstEnergy's lost revenues charges to residential customers clearly show the pancaking effect.

Annual Lost Revenue Charges to Residential Consumers by FirstEnergy	
2014	$19,204,080
2015	$28,420,752
2016	$34,421,749
2017	$44,229,207
2018	$46,405,069
TOTAL	**$172,680,857**

Q12. HAVE YOU CALCULATED HOW MUCH IN LOST REVENUES FIRSTENERGY SHOULD BE ALLOWED TO CHARGE RESIDENTIAL CUSTOMERS IF LOST REVENUES ARE PROPERLY LIMITED TO A MAXIMUM OF THREE YEARS PER ENERGY EFFICIENCY MEASURE?

A12. Yes. My calculations are provided in Attachment CLS-1. As I noted above, the PUCO initially authorized lost revenues for FirstEnergy's 2009 to 2011 programs for a six-year period after the effective date of FirstEnergy's first ESP. FirstEnergy's first ESP was effective June 1, 2009, so six years after that date would be June 1, 2015. Thus, for 2014, I did not make any changes and simply accepted FirstEnergy's lost revenues calculations.

My calculation imposes the recommended limitation 3-year (or shorter) measure life starting in 2016. For 2015, I calculated three years of lost revenues (consistent with Staff's recommendation) but also added 50% of lost revenues from program savings produced in the 2009 to 2011 program portfolio to reflect the fact that the six-year approval period expired about halfway through 2015.

Then, for 2016 through 2018, I included a maximum of three years of lost revenues, consistent with the Staff's recommendation.

Throughout my calculations, whenever the useful life of a program was less than three years per the program evaluation, I used the actual useful life. For example, behavioral programs have a one-year useful life, so I only counted lost revenues for behavioral programs for one year.

Based on my calculations, lost revenues for residential customers should be no more than $76,752,551. This is substantially lower than the charges that FirstEnergy proposes, which are $172,680,857. If my recommendation is adopted, therefore, residential customers would receive bill credits for more than $95 million or about $50 per residential customer.

Q13. IS THERE OTHER EVIDENCE THAT FIRSTENERGY'S LOST REVENUES ARE UNREASONABLE?

A13. Yes. Another important metric is to compare lost revenues to the costs of running the programs. A comparison of lost revenue amounts to program expenditures provides information about whether the lost revenue mechanism is well designed and adequately monitored. Over time, a poorly designed mechanism can result in the potential for excessive lost revenues to the extent that customers are funding more to make the utility whole than they are paying for the programs themselves.

Utility energy efficiency programs are intended to incent the customer to use less electricity and reduce their electricity bill. Customers fund program costs or things like rebates that participating customers use to lower the out-of-pocket cost to purchase an energy efficient appliance. Once installed in the home, the more efficient appliance helps to lower the customer's electricity usage providing the opportunity for a lower electricity bill. Program costs also include outreach and education so that customers learn about how energy efficient appliances can help lower their bill.

Customers also pay lost revenues. Lost revenues do not help customers lower their bill. Lost revenues protect FirstEnergy from alleged lost sales because customers are reducing their usage as a result of being more energy efficient.

Q14. ARE CUSTOMERS PAYING MORE IN LOST REVENUES THAN THEY ARE PAYING FOR PROGRAM COSTS?

A14. Yes. Table 1 shows that from 2014 to 2018, residential customers paid $172 million in lost revenues but only $128 million for the energy efficiency programs themselves. In 2016, most of FirstEnergy's programs were suspended, resulting in program costs of just $9.5 million.[15] Yet customers still paid $34.4 million in lost revenues. This is what happens when lost revenues are allowed to "pancake" on top of each other, year after year.

Table 1

Program Year	Lost Revenues	Program Costs	Lost Reveues as % of Program Costs
2014	$ 19,204,080	$ 30,543,951	62.87%
2015	$ 28,420,752	$ 16,335,216	173.98%
2016	$ 34,421,749	$ 9,496,918	362.45%
2017	$ 44,229,207	$ 37,626,183	117.55%
2018	$ 46,405,069	$ 34,087,246	136.14%
TOTAL	**$ 172,680,857**	**$ 128,089,514**	**134.81%**

[15] Case No. 12-2190-El-POR, Order on Amended Plan (Nov. 20, 2014).

Q15. ***HOW DO THE LOST REVENUES PAID BY FIRESTENERGY'S CUSTOMERS COMPARE TO THOSE PAID BY CUSTOMERS IN OTHER STATES?***

***A15*.** It appears that FirstEnergy's lost revenues charges would be one of the highest, if not the highest, in the country—and by a wide margin. In a 2015 study,[16] the American Council for an Energy Efficient Economy ("ACEEE") collected data for 32 utilities in 17 states covering program costs, annual savings, and eligible lost revenues. Figure 1 summarizes lost revenue dollars as a percent of program costs for the 32 electric utilities. The median recovery of lost revenues was 25% of annual program costs. Just one utility's lost revenues were more than 60% of program costs, and none were above 75%. Yet from 2015 to 2018, FirstEnergy clocked in at 174%, 362%, 117%, and 136%. In 2016, FirstEnergy's lost revenues were *five times higher* than the highest utility in the country based on the ACEEE study.

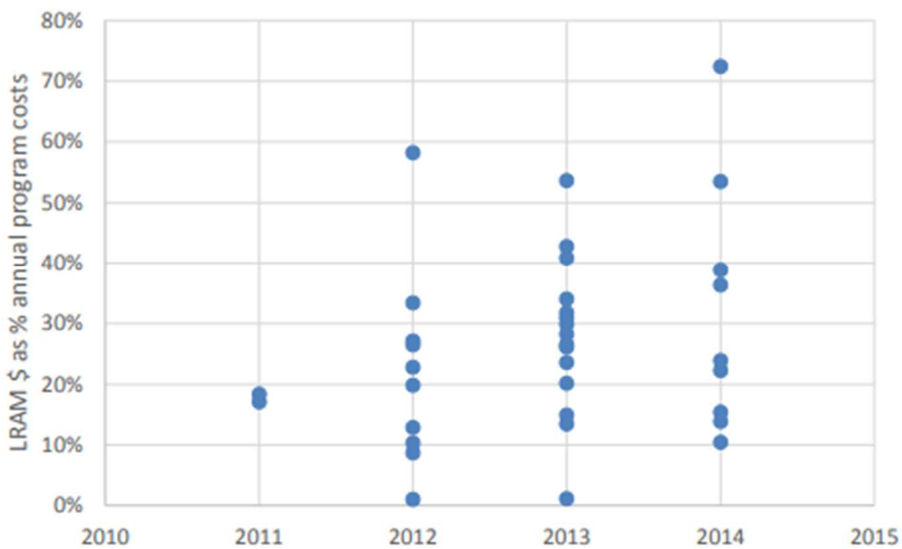
For purposes of comparison, my proposed lost revenues of $76,752,551 would mean that FirstEnergy's lost revenues are 60% of its program costs from 2014 to 2018.[17] Notably, this is still quite generous, as it would be higher than all but one utility from ACEEE's 2015 study, as shown below.

[16] *See* https://www.aceee.org/research-report/u1503.

[17] 76,752,551 / 128,089,514 = 59.92%.

As early as 2011, ACEEE noted that lost revenue mechanisms are meant to be a short-term regulatory solution to the disincentive utilities have in promoting energy efficiency. The unbalancing effect between what utilities collected from customers in lost revenues and what they were spending to deliver direct benefits to customers from programs is one reason why ACEEE, in a 2011 report, concluded that states abandoned lost revenue mechanisms.

Figure 1. ACEEE Lost revenue dollars recovered annually by electric utilities compared to annual program costs (ACEEE 2015).



Q16. WHY WERE LOST REVENUE ADJUSTMENT MECHANISMS TERMINATED IN OTHER STATES?

A16. In their 2011 report[18], ACEEE described it this way based on feedback from interviews with experts:

"The structure of lost revenue adjustment mechanisms in some cases created significant increases in the price of electricity and cost recovery from lost revenue adjustment mechanisms grew so large that it threatened to exceed the costs of efficiency programs. Other problems with lost revenue adjustment mechanisms included cases where utilities were double-recovering authorized costs and earning above the allowed cost of equity on capital."

Q17. DO CUSTOMERS AND THE PUBLIC INTEREST BENEFIT FROM CUSTOMERS PAYING FIRSTENERGY FOR LOST REVENUES THAT ARE HIGHER THAN PROGRAM COSTS?

A17. Not at all. For FirstEnergy, the lost revenue adjustment mechanism has long lacked critical consumer protections, which undermines the balancing principal that utility regulators strive to achieve between consumers and utilities. Because of the "pancake effect," FirstEnergy's lost revenues are unreasonably high and

[18] "Balancing Interests: A Review of Lost Revenue Adjustment Mechanisms for Utility Energy Efficiency Programs", Page 3, (Sept. 2011) Report Number U114, *available at* https://www.aceee.org/research-report/u114.

cause customers to pay significant amounts of money to FirstEnergy that are disproportionate to the costs of the Utility's energy efficiency programs.

These high lost revenue charges reinforce the view that markets, not monopolies, are the best way to deliver direct benefits of electric energy efficiency programs to utility customers. And in fact, the PUCO, on its own motion in striking Duke's request for shared savings in Case No. 20-1013-EL-POR emphasized that energy efficiency programs in Ohio will be best served by reliance upon market-based approaches.[19] After all, in the retail market for energy efficiency products, energy efficiency exists solely for the benefit of customers and not for the benefit of utilities.

Q18. HAS THE PUCO EXPRESSED CONCERNS WITH FIRSTENERGY CUSTOMERS PAYING LOST REVENUES?

A18. Yes. Former PUCO Chairman Todd Snitchler expressed his concern about lost revenues in 2011, stating "I write separately to express my deep concern with the collection of lost distribution revenues by the Companies. I believe that the collection of lost distribution revenues resulting from energy efficiency savings and peak demand reduction mandated by Section 4928.66 Revised Code , beyond the time period of these electric security plans, presents a significant risk of

[19] Case No. 20-1013-EL-POR, Entry (June 17, 2020).

undermining public support for the energy efficiency mandates…"[20] Former Commissioner Cheryl L. Roberto similarly concluded that the "lost revenue recovery mechanism has out-lived its value to customers and should be permitted to expire."[21]

Q19. DOES THIS CONCLUDE YOUR TESTIMONY?

A19. Yes. In my expert opinion, the PUCO should adopt my recommendations to protect consumers from paying unjust and unreasonable rates for so-called lost revenues on FirstEnergy's energy efficiency programs.

[20] See Statement of Concurring Opinion of former Chairman Todd Snitchler, attached to the Opinion& Order (Mar 3, 2011) Case No. 09-1947-EL-POR

[21] See Statement of Dissenting Opinion of Commissioner Cheryl Roberto, attached to the Opinion & Order (July 18, 2012) Case No. 12-1230-EL-SSO

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of Colleen Shutrump on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below on this 22nd day of June 2020.

/s/ Christopher Healey
Assistant Consumers' Counsel

The PUCO's e-filing system will electronically serve notice of the filing of this document on the following parties:

SERVICE LIST

robert.eubanks@ohioattorneygeneral.gov
werner.margard@ohioattorneygeneral.gov
paul@carpenterlipps.com
perko@carpenterlipps.com
bojko@carpenterlipps.com
ghiloni@carpenterlipps.com

Attorney Examiners:

Gregory.price@puco.ohio.gov
Mandy.willey@puco.ohio.gov

rendris@firstenergycorp.com
mkurtz@BKLlawfirm.com
kboehm@BKLlawfirm.com
jkylercohn@BKLlawfirm.com
rdove@keglerbrown.com
drinebolt@opae.org

FirstEnergy Lost Revenues, 2014 to 2018

	2015		2016		2017		2018	
	kWh	LDR	kWh	LDR	kWh	LDR	kWh	LDR
OE	254,840,526	$8,128,903	113,819,121	$3,630,602	179,375,846	$5,721,731	349,926,555	$11,161,957
CEI	192,317,657	$5,675,294	79,262,465	$2,339,035	132,786,137	$3,918,519	256,853,005	$7,579,732
TE	81,409,351	$2,897,766	36,641,479	$1,304,253	50,190,233	$1,786,521	95,635,798	$3,404,156

	OCC	FE
2014	$19,204,080	$19,204,080
2015	$16,701,963	$28,420,752
2016	$7,273,891	$34,421,749
2017	$11,426,771	$44,229,207
2018	$22,145,846	$46,405,069
TOTAL	**$76,752,551**	**$172,680,857**

$/kwh (per Tariff Sheet 10)

OE	$0.031898
CEI	$0.029510
TE	$0.035595

Note: Per my testimony, I am accepting FirstEnergy's 2014 lost revenues calculations.

Annual Residential kWh Savings by Program

	Measure Life (Yrs)	2009			2010		
		OE	CEI	TE	OE	CEI	TE
Direct Load Control	1	667,000	744,000	239,000			
Appliance Turn In	3						
EE Products	3						
Kits	3						
Low-Income	3	404,000	471,000	189,000	551,612	966,540	164,894
Customer Action	3						
Home Energy Analyzer	2, 3*				15,682,000	9,954,000	2,821,000
Res. Energy Audit	3						
Res. New Construction	3						
CFL	3						
Behavioral	1						
School Education	3						

	Measure Life (Yrs)	2011			2012		
		OE	CEI	TE	OE	CEI	TE
Direct Load Control	1				58,225	9,254	13,257
Appliance Turn In	3	8,118,951	5,387,402	1,678,838	6,163,402	3,525,012	605,199
EE Products	3	938,284	587,902	296,960	2,419,554	1,120,715	445,443
Kits	3						
Low-Income	3	856,700	688,537	191,240	1,890,564	3,915,448	410,395
Customer Action	3						
Home Energy Analyzer	2, 3*	2,331,073	1,405,205	702,548	3,304,853	1,374,702	855,721
Res. Energy Audit	3				656,047	554,810	115,677
Res. New Construction	3				1,789,601	657,246	614,506
CFL	3	78,728,859	80,184,474	29,117,730	17,826,720	17,975,188	4,999,051
Behavioral	1						
School Education	3						

	Measure Life (Yrs)	2013			2014		
		OE	CEI	TE	OE	CEI	TE
Direct Load Control	1	55,278	41,419	11,947	5,227	2,969	375
Appliance Turn In	3	9,658,182	6,736,043	2,347,298	9,807,051	6,425,439	2,459,235
EE Products	3	33,439,941	28,156,950	10,388,210	65,838,619	36,193,507	16,753,918
Kits	3	47,449,056	31,573,249	15,531,633	19,961,492	18,532,445	11,053,340
Low-Income	3	2,699,152	1,661,025	582,277	2,673,999	3,636,414	687,666
Customer Action	3						
Home Energy Analyzer	2, 3*	3,438,287	1,959,299	856,421	897,709	1,191,273	31,392
Res. Energy Audit	3	452,438	404,782	148,960	170,436	142,524	52,123
Res. New Construction	3	1,543,728	802,136	276,433	1,686,076	527,277	126,307
CFL	3						
Behavioral	1	3,222,975	8,429,575	1,140,300	2,853,723	2,057,955	887,122
School Education	3						

	Measure Life (Yrs)	2015			2016		
		OE	CEI	TE	OE	CEI	TE
Direct Load Control	1	29,980	18,712	4,028	48,682	27,162	6,564
Appliance Turn In	3	202,539	153,261	33,661			
EE Products	3	7,089,500	6,645,378	2,027,706			
Kits	3	338,433	278,012	177,714			
Low-Income	3	2,486,769	3,038,813	2,047,419	2,439,880	2,372,770	1,180,155
Customer Action	3						
Home Energy Analyzer	2, 3*						
Res. Energy Audit	3	2,963	3,017	4,279			
Res. New Construction	3	174,973	95,173	0			
CFL	3						
Behavioral	1						
School Education	3						

	Measure Life (Yrs)	2017			2018		
		OE	CEI	TE	OE	CEI	TE
Direct Load Control	1						
Appliance Turn In	3	21,247,198	13,907,138	4,835,300	17,861,676	12,476,502	4,467,543
EE Products	3	33,114,301	25,787,141	9,212,932	40,086,434	38,399,546	12,977,911
Kits	3	33,288,445	24,479,376	8,622,726	26,762,411	19,496,459	7,041,327
Low-Income	3	2,685,669	3,343,092	1,248,880	3,404,801	2,158,511	1,677,898
Customer Action	3	58,291,184	41,877,165	16,715,611	69,913,700	50,163,876	20,317,179
Home Energy Analyzer	2, 3*						
Res. Energy Audit	3	1,555,267	1,062,426	448,830	780,251	462,310	618,040
Res. New Construction	3						
CFL	3						
Behavioral	1	10,695,632	5,436,284	1,256,956	30,291,223	14,958,121	3,012,114
School Education	3	5,763,093	4,307,091	2,378,064	2,441,022	1,601,481	881,288

*2 years for 2011-2012, 3 years for 2013-2014

Source 2009	10-227	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=13bb6c21-5b22-47aa-8f58-4f743bd20cb3
Source 2010	11-2958	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=10a62405-6a24-4122-89cb-5de896f9b975
Source 2011	12-1534	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=689e13fe-d5fe-40e1-8cf7-6564082fb0f8
Source 2012	13-1185	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=85c54b5c-7167-4eed-b81a-8e18fcb3587a
Source 2013	14-0859	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=563cd260-91ad-47fe-9852-ad58ad74d02d
Source 2014	15-0900	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=650da3b0-255b-47fa-b611-7857d1f3320d
Source 2015	16-941	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=4e204199-e503-49e0-956e-42082e420bb7
Source 2016	17-1266	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=9b83ba61-db3a-4d11-b10e-5e6a5edf197e
Source 2017	18-841	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=d8252ca4-facb-40cf-aa69-e5f55dc8d4af
Source 2018	19-1020	http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=cf1e3575-4c7d-41e9-b268-109c9162960e

Total kWh for Lost Revenues Calculations, 2015 to 2018

	2015	2016	2017	2018
OE	254,840,526	113,819,121	179,375,846	349,926,555
CEI	192,317,657	79,262,465	132,786,137	256,853,005
TE	81,409,351	36,641,479	50,190,233	95,635,798

FirstEnergy Claimed Residential Lost Revenues vs. Program Costs, 2014 to 2018

	Lost Revenues	Program Costs	LDR as % of PC
2014	$ 19,204,080	$ 30,543,951	62.87%
2015	$ 28,420,752	$ 16,335,216	173.98%
2016	$ 34,421,749	$ 9,496,918	362.45%
2017	$ 44,229,207	$ 37,626,183	117.55%
2018	$ 46,405,069	$ 34,087,246	136.14%
TOTAL	**$ 172,680,857**	**$ 128,089,514**	**134.81%**