

**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) Case No. 16-0743-EL-POR
For Approval of Their Energy Efficiency and)
Peak Demand Reduction Program Portfolio)
Plans for 2017 through 2019)

AMENDED DIRECT TESTIMONY OF

DENISE J. MULLINS

ON BEHALF OF

OHIO EDISON COMPANY
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
THE TOLEDO EDISON COMPANY

1 **Q: PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.**

2 **A:** My name is Denise J. Mullins and my business address is FirstEnergy Service
3 Company (“FirstEnergy”), 76 South Main Street, Akron, Ohio 44308. I am an
4 Analyst IV in the Retail Tariff Analysis & Forecasting Department at FirstEnergy.

5 **Q: ON WHOSE BEHALF ARE YOU TESTIFYING TODAY?**

6 **A:** I am testifying on behalf of Ohio Edison Company, The Cleveland Electric
7 Illuminating Company, and The Toledo Edison Company (the “Companies”).
8 Unless otherwise stated, my testimony applies equally to all three Companies.

9 **Q: DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS CASE?**

10 **A:** Yes, I submitted Direct Testimony that was filed in this case on April 15, 2016.
11 This Amended Direct Testimony is intended to incorporate (to the extent set forth
12 below) and replace my original Direct Testimony.

13 **Q: ARE YOU INCORPORATING BY REFERENCE ANY OF YOUR**
14 **ORIGINAL DIRECT TESTIMONY DATED APRIL 15, 2016? IF SO,**
15 **WHICH PORTIONS?**

16 **A:** Yes, I am incorporating by reference the following portions of my original Direct
17 Testimony: Page 2, Line 10 through Page 16, Line 5, as well as Exhibits DJM-1,
18 DJM-2, and DJM-3 referenced therein and attached thereto. For ease of reference,
19 my original Direct Testimony is attached hereto as Exhibit DJM-A1.

20 **Q. WOULD YOU LIKE TO MAKE ANY CHANGES TO THE PORTIONS OF**
21 **YOUR ORIGINAL DIRECT TESTIMONY THAT YOU INCORPORATE**
22 **BY REFERENCE HEREIN?**

1 A. Yes. The energy efficiency benchmarks set forth in Exhibit DJM-1 have been
2 revised slightly due to the inclusion of certain energy efficiency achievements in
3 historical 2015 numbers. Those energy efficiency achievements are captured
4 within the actual retail sales; therefore, I removed the 2015 energy efficiency
5 values where the duplication occurred. The updated energy efficiency
6 benchmarks are presented in Table 2 and Table 3 in the Companies' Revised
7 Energy Efficiency and Peak Demand Reduction Plans attached as Exhibit B to the
8 Stipulation and Recommendation filed with the Commission on December 8,
9 2016. In addition, I am attaching an amended version of that Exhibit identified as
10 DJM-A2.

11 **Q. DOES THIS CONCLUDE YOUR AMENDED DIRECT TESTIMONY?**

12 A. Yes, it does. However, I reserve the right to supplement my testimony.

EXHIBIT DJM-A1

Company Exhibit ____

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3 Company (“FirstEnergy”), 76 South Main Street, Akron, Ohio 44308. I am an
4 Analyst IV in the Retail Tariff Analysis & Forecasting Department at FirstEnergy.

5 **Q: ON WHOSE BEHALF ARE YOU TESTIFYING TODAY?**

6 **A:** I am testifying on behalf of Ohio Edison Company (“Ohio Edison”), The Cleveland
7 Electric Illuminating Company (“CEI”), and The Toledo Edison Company
8 (“Toledo Edison”) (the “Companies”). Unless otherwise stated, my testimony
9 applies equally to all three Companies.

10 **Q: WHAT IS YOUR PROFESSIONAL AND EDUCATIONAL**
11 **BACKGROUND?**

12 **A:** I graduated from West Liberty University with a Bachelor of Science Degree in
13 Business Administration, with a specialization in Accounting. I joined Allegheny
14 Energy in May 2005 in the Internal Auditing Department. For the first five years
15 of my career, I audited various business processes in the Distribution,
16 Transmission, Generation, and Competitive business areas. In June 2010, I
17 transferred to Allegheny Energy’s unregulated affiliate, Allegheny Energy Supply
18 Company. I became an Account Manager, Inside Sales, responsible for structuring
19 retail quotes for large commercial and industrial customers. After Allegheny
20 Energy’s merger with FirstEnergy Corp. in 2011, I moved to FirstEnergy Solution
21 Corp.’s Commercial and Industrial Sales department, where I focused on sales
22 activity reporting. In August 2014, I assumed my current position as an Analyst in
23 the Retail Tariff Analysis & Forecasting Department of FirstEnergy.

1 **Q: PLEASE DESCRIBE YOUR RESPONSIBILITIES AS AN ANALYST IN**
2 **THE RETAIL TARIFF ANALYSIS & FORECASTING DEPARTMENT.**

3 **A:** My group is responsible for all retail load and revenue forecasting for the
4 Companies. This entails, among other things, preparing the Companies’
5 distribution and generation load forecasts in both the short and long term. We are
6 responsible for the long-term forecast report required by the Public Utilities
7 Commission of Ohio (“Commission”) and for projecting the revenues associated
8 with those forecasts for internal planning and reporting purposes. In addition, we
9 are responsible for load research, data management, and cost allocation factors.

10 **Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
11 **PROCEEDING?**

12 **A:** The purpose of my testimony is to describe the Companies’ methodology for
13 calculating their respective baselines and associated benchmarks for the energy
14 efficiency requirements set forth in Section 4928.66(A)(1)(a), Revised Code
15 (“Energy Efficiency Baseline”), and for the peak demand reduction benchmarks set
16 forth in Section 4928.66(A)(1)(b), Revised Code (“Peak Reduction Baseline”). I
17 will also describe the methodology for allocating the forecasted usage into plan
18 sectors for the purpose of preparing the three year energy efficiency and peak
19 demand reduction (“EE&PDR”) plans that are the subject of this filing (“Proposed
20 Plans”).

21 **Q: ARE YOU SUPPORTING ANY EXHIBITS?**

22 **A:** Yes, Exhibit DJM-1, which details the calculation of the Energy Efficiency
23 Baseline and Benchmarks for each Company; Exhibit DJM-2, which is an example

1 of the steps taken to weather adjust certain information; and Exhibit DJM-3, which
2 details the calculation of Peak Reduction Baselines and Benchmarks for each
3 Company.

4 **Q: WERE THESE EXHIBITS PREPARED BY YOU OR UNDER YOUR**
5 **DIRECT SUPERVISION?**

6 **A:** Yes.

7 **ENERGY EFFICIENCY BASELINE**

8 **Q: WHAT GUIDELINES DID THE COMPANIES USE IN CALCULATING**
9 **THE ENERGY EFFICIENCY BASELINE?**

10 **A:** The Companies followed the guidelines set forth in the Ohio Revised Code and the
11 Ohio Administrative Code. Specifically, Section 4928.66(A)(2)(a), Revised Code
12 indicates that the baseline for energy savings “shall be the average of the total
13 kilowatt hours the electric distribution utility sold in the preceding three calendar
14 years. . .” Additional guidance is provided in Rule 4901:1-39-01(J), Ohio
15 Administrative Code, which states that the Energy Efficiency Baseline means “the
16 average total kilowatt-hours [“kWh”] of distribution service sold to retail customers
17 [of the Companies’] in the preceding three calendar years as reported in the
18 [Companies’] most recent long-term forecast report [“LTFR”] The total
19 kilowatt-hours sold shall equal the total kilowatt-hours delivered by the
20 [Companies].”

21 Section 4928.66(A)(2), Revised Code specifically allows the Energy Efficiency
22 Baseline to be adjusted or normalized for several reasons, including new economic
23 growth, numbers of customers, sales, weather, peak demand, customer opt-outs

1 permitted by Section 4928.6611, Revised Code or Section 8 of Substitute Senate
2 Bill Number 310 (“S.B. 310”), and other appropriate factors. Rule 4901:1-39-
3 05(B), Ohio Administrative Code also allows an electric utility to file an application
4 to adjust its baseline for a variety of factors that are outside its control. This Rule
5 further provides that to the extent any adjustments are approved by the
6 Commission, any “normalizations for weather, changes in numbers of customers,
7 sales, and peak demand shall be consistently applied from year to year.”

8 **Q: PLEASE DESCRIBE HOW THE COMPANIES’ ENERGY EFFICIENCY**
9 **BASELINES WERE CALCULATED.**

10 **A:** Each Company calculated an Energy Efficiency Baseline as shown in detail in
11 attached Exhibit DJM-1. In pertinent part, the past “distribution service sold” by
12 each Company matches the usage reported by each Company in its 2016 LTFR
13 (LTFR PUCO FORM FE-D1), columns (1) through (5a) by individual utility.¹
14 These amounts do not include line losses and Company use, which is consistent
15 with Rule 4901:1-39-01(J), Ohio Administrative Code. Under Section
16 4928.66(A)(2)(ii) and (iii), Revised Code, the Companies may reduce the values
17 for the “distribution service sold” by the usage for customers opting-out of the
18 utility’s portfolio plan under Section 8 of S.B. 310, consistent with Section
19 4928.66(A)(2)(iii), Revised Code. However, for purposes of calculating the
20 baselines for the Proposed Plans the Companies did not do this. While the
21 Companies have customers who opted-out of the Companies’ 2015-2016 EE&PDR
22 portfolio plans, those opt-outs will be invalid as of January 1, 2017 pursuant to

¹ See Appendix D Distribution Forecast Form, Case No. 16-582-EL-FOR, pages 36-39.

1 Section 8 of S.B. 310. According to Section 4928.6611, Revised Code in order to
2 opt-out of the Proposed Plans, a customer will need to opt-out again. The
3 Companies do not have a forecast of customers who will opt-out as of or after
4 January 1, 2017; therefore, the Companies did not adjust the energy efficiency
5 baselines at this time for customer opt-out usage.

6 **Q: DID THE COMPANIES MAKE ANY ADJUSTMENTS FOR**
7 **“DISTRIBUTION SERVICE SOLD?”**

8 **A:** Yes. The Companies adjusted “distribution service sold” to reflect usage
9 attributable to reasonable arrangement rider customers and automaker credit rider
10 customers, consistent with Section 4928.66(A)(2), Revised Code. After adjusting
11 “distribution service sold” by these factors, sales were normalized for weather
12 consistent with both Section 4928.66(A)(2)(c), Revised Code and Rule 4901:1-39-
13 05(B), Ohio Administrative Code.

14 **Q: WERE ANY OTHER ADJUSTMENTS MADE TO THE ENERGY**
15 **EFFICIENCY BASELINES?**

16 **A:** The only other adjustment the Companies made to the Energy Efficiency Baselines
17 is to add back the savings in the baseline years associated with mercantile customer
18 self-directed projects that have been filed with the Commission prior to December
19 31, 2015 for approval by the Commission for commitment to the Companies,
20 consistent with Section 4928.66(A)(2)(c), Revised Code. The Companies’
21 methodology for making this adjustment is identical to that used to make similar
22 adjustments to previous EE&PDR baselines.

1 **Q. DO THE COMPANIES' ENERGY EFFICIENCY BASELINES FOR THE**
2 **YEARS 2017-2019 INCLUDE FORECASTED USAGE?**

3 **A:** Yes. As actual usage for 2016-2018 has not yet been determined, calculation of the
4 Energy Efficiency Baseline for 2017-2019 includes forecasted usage, as reported
5 on the Companies' 2016 LTFR PUCO FORM FE-D1.

6 **Q: SINCE THE COMPANIES' ENERGY EFFICIENCY BASELINES**
7 **INCLUDE FORECASTED USAGE, COULD THERE BE CHANGES**
8 **BETWEEN THE BASELINE PROVIDED FOR PLANNING PURPOSES**
9 **(“ENERGY EFFICIENCY PLANNING BASELINE”) AND THE**
10 **BASELINE USED FOR COMPLIANCE PURPOSES (“ENERGY**
11 **EFFICIENCY COMPLIANCE BASELINE”)?**

12 **A:** Yes. This result is unavoidable for several reasons. First, because the Energy
13 Efficiency Compliance Baseline will be based on actual usage data from the
14 preceding three years rather than on forecasted usage the Energy Efficiency
15 Compliance Baseline will be more or less than the Energy Efficiency Planning
16 Baseline, and the associated benchmarks will be adjusted accordingly. Second, and
17 as explained above, since the Companies do not have an estimate of the customers
18 who will elect to opt-out during the plan period the Energy Efficiency Planning
19 Baseline beginning in 2017 assumes no customers opt-out. If customers choose to
20 opt-out of the Companies' Proposed Plans (once approved), the Energy Efficiency
21 Planning Baseline will need to be adjusted accordingly in the Companies'
22 compliance filings pursuant to Section 4928.66(A)(2)(a)(ii), Revised Code. In
23 addition, actual realized savings from mercantile self-directed programs could vary

1 from the forecast. Actual realized mercantile self-directed program savings will be
2 added back once the actual realized savings are determined, and will be documented
3 in the Companies' compliance filings.

4 To accommodate the anticipated differences between actual and forecasted
5 usage, as part of future filings of the Companies' Portfolio Status Report required
6 by Rule 4901:1-39-05, Ohio Administrative Code, the Companies' Energy
7 Efficiency Planning Baselines will be updated on an annual basis to reflect the
8 actual usage which occurred in the baseline years, and for new forecasts of the
9 baseline years. Also as part of this same report, the Companies anticipate making
10 a compliance demonstration pursuant to Rule 4901:1-39-05(C), Ohio
11 Administrative Code. Absent a significant unforeseen event, the Energy Efficiency
12 Compliance Baseline will include the actual distribution service sold by each
13 Company, with adjustments made pursuant to Section 4928.66(A)(2), Revised
14 Code, that include, but are not limited to, weather normalizations, adjustments for
15 opt-out customers as described above, and the effects of actual realized savings
16 associated with mercantile customer self-directed projects.

17 **Q: HOW WAS ACTUAL USAGE ADJUSTED TO NORMALIZE FOR**
18 **WEATHER?**

19 **A:** Actual kWh usage for residential and some small commercial customers is driven
20 by the heating and cooling degree days ("HDD/CDD") associated with the day-to-
21 day weather. To eliminate the effect of weather on the kWh usage in the actual
22 baseline years, the Companies calculate the change in the kWh usage compared to
23 the difference between normal HDD/CDD, and actual HDD/CDD through a

1 regression analysis. To determine HDD/CDD, the Companies rely on monthly
2 rolling 20-year averages. Exhibit DJM-2 illustrates the steps for weather adjusting
3 actual sales. The resulting kWh adjustments can be positive or negative depending
4 on whether the actual weather was warmer or colder than normal. In this example,
5 the actual CDDs were above the normal CDDs, so the adjustment is subtracted from
6 actual sales to arrive at weather adjusted sales to reflect the fact that actual sales
7 would have been lower had the CDDs been normal. The forecast models assume
8 normal weather; therefore, no additional adjustment for weather is made to the
9 forecasted baseline years.

10 **Q: DO THE COMPANIES ANTICIPATE FOLLOWING THIS SAME**
11 **METHODOLOGY IN FUTURE YEARS?**

12 **A:** Yes. Unless otherwise directed by the Commission, and absent a significant
13 unforeseen event, the Companies intend to follow this same methodology for the
14 Planning and Compliance Energy Efficiency Baselines in future years.

15 **Q: ARE YOU PERSONALLY FAMILIAR WITH THE ADJUSTED**
16 **AVERAGE “DISTRIBUTION SERVICE SOLD” BY THE COMPANIES**
17 **FOR THE CALENDAR YEARS 2014-2019, AS DEFINED IN SECTION**
18 **4928.66(A)(2), REVISED CODE AND OHIO ADMINISTRATIVE CODE?**

19 **A:** Yes. The Companies’ adjusted average “distribution service sold” values for
20 calendar years 2014-2019 are reflected in the attached Exhibit DJM-1.

PEAK REDUCTION BASELINE

Q: WHAT GUIDELINES DID THE COMPANIES USE IN CALCULATING THE PEAK REDUCTION BASELINES?

A: As with the Energy Efficiency Baselines, the Companies followed the guidelines set forth in the Ohio Revised Code and the Ohio Administrative Code when determining their Peak Reduction Baselines. Specifically, Section 4928.66(A)(2)(a), Revised Code, indicates that the Peak Reduction Baseline shall be “the average peak demand on the utility in the preceding three calendar years....” Rule 4901:1-39:01(S), Ohio Administrative Code provides further guidance, and states that the peak demand baseline is “the average peak demand on the electric utility’s system in the preceding three calendar years as reported in the electric utility’s most recent long term forecast report.”

Section 4928.66(A)(2), Revised Code specifically allows the Peak Reduction Baseline to be adjusted or normalized for several reasons, including new economic growth, numbers of customers, sales, weather, peak demand, customer opt-outs permitted by Section 4928.6611, Revised Code or Section 8 of S.B. 310, and other appropriate factors. Rule 4901:1-39-05(B), Ohio Administrative Code also allows an electric utility to file an application to adjust its baseline for a variety of factors that are outside its control. This Rule further provides that to the extent any adjustments are approved by the Commission, any “normalizations for weather, changes in numbers of customers, sales, and peak demand shall be consistently applied from year to year.”

1 **Q: PLEASE DESCRIBE HOW THE COMPANIES' PEAK REDUCTION**
2 **BASELINES WERE CALCULATED.**

3 **A:** Each Company calculated a Peak Reduction Baselines as shown in detail in
4 attached Exhibit DJM-3. In pertinent part, the Retail Peaks from DJM-3 matches
5 what the Companies reported in the 2016 LTFR PUCO FORM FE-D3. The
6 Companies have calculated the Peak Reduction Baselines as a retail system peak
7 that includes both distribution and transmission losses. This is the methodology
8 used to calculate peak demand on the utility's system that currently is reported on
9 the 2016 LTFR PUCO FORM FE-D3. Under Section 4928.66(A)(2)(ii) and (iii),
10 Revised Code, the Companies may reduce the values for the retail peaks by the
11 associated demands for customers opting-out of the utility's portfolio plan under
12 Section 8 of S.B. 310, consistent with Section 4928.66(A)(2)(iii), Revised Code.
13 However, for purposes of calculating the baselines for the Proposed Plans the
14 Companies did not do this. While the Companies have customers who opted-out
15 of the Companies' 2015-2016 EE&PDR portfolio plans, those opt-outs will be
16 invalid as of January 1, 2017 pursuant to Section 8 of S.B. 310. According to
17 Section 4928.6611, in order to opt-out of the Proposed Plans, a customer will need
18 to opt- out again. The Companies do not have a forecast of customers who will
19 opt-out as of or after January 1, 2017; therefore, the Companies did not adjust the
20 peak reduction baselines at this time for customer opt-out demands.

1 **Q: DID THE COMPANIES MAKE ANY ADJUSTMENTS TO PEAK**
2 **DEMANDS?**

3 **A:** The Peak Reduction Baselines adjusted for the peak demands of the reasonable
4 arrangement customers. The Peak Reduction Baselines have also been adjusted for
5 peak demand reductions associated with mercantile self-directed projects that have
6 been filed for approval with the Commission before December 31, 2015. The peak
7 demand reduction capability which is available to the Companies for compliance
8 purposes is imbedded in the peak demand reported in the LTFR, therefore no
9 adjustment is needed.

10 **Q: WERE THE FORECASTED PEAK DEMANDS NORMALIZED FOR**
11 **WEATHER?**

12 **A:** No. The forecasted peak demands will reflect the normal weather that is imbedded
13 in the forecasted usage described above. The peaks in the actual baseline years
14 were not weather adjusted at this time because sufficient data is not available.
15 Weather adjusting the peaks in the actual baseline years would require at least
16 twenty years of daily peak and at least twenty years of the daily temperature
17 humidity indices. However, daily peaks are only available since 2002, and any
18 calculation using only ten years of history would not be reliable.

1 **Q: DO THE COMPANIES' PEAK REDUCTION BASELINES FACE THE**
2 **SAME ISSUES RELATING TO FORECASTING, ANTICIPATED**
3 **DEMAND REDUCTIONS IN THE MERCANTILE SELF-DIRECTED**
4 **PROGRAM AND REDUCTION DUE TO CUSTOMER OPT-OUTS AS THE**
5 **COMPANIES' ENERGY EFFICIENCY BASELINES?**

6 **A:** Yes. The Companies' Peak Reduction Baselines will have to be adjusted in the
7 same manner to account for differences between forecasted peaks and actual peaks,
8 anticipated versus actual demand reductions in the mercantile self-directed
9 program, and reductions due to customer opt-outs.

10 **Q: DO THE COMPANIES ANTICIPATE FOLLOWING THIS SAME**
11 **METHODOLOGY IN FUTURE YEARS?**

12 **A:** Yes. Unless otherwise directed by the Commission, and absent a significant
13 unforeseen event, the Companies intend to follow this same methodology for the
14 Peak Reduction Baselines in future years.

15 **Q: ARE YOU PERSONALLY FAMILIAR WITH THE AVERAGE PEAK**
16 **DEMAND FOR THE CALENDAR YEARS 2014-2015, AS DEFINED IN**
17 **SECTION 4928.66(A)(1)(b) REVISED CODE AND OHIO**
18 **ADMINISTRATIVE CODE?**

19 **A:** Yes. The Companies' average peak demand for the calendar years 2014-2015 is
20 reflected in the attached Exhibit DJM-3.

1 **Q: ARE YOU PERSONALLY FAMILIAR WITH THE FORECASTED**
2 **AVERAGE PEAK DEMAND FOR THE COMPANIES FOR THE**
3 **CALENDAR YEARS 2016-2019 AS DEFINED IN SECTION**
4 **4928.66(A)(1)(b), REVISED CODE AND OHIO ADMINISTRATIVE**
5 **CODE?**

6 **A:** Yes. The Companies' forecasted average peak demand for the calendar years 2016-
7 2019 is reflected in the attached Exhibit DJM-3.

8 **Q. IN YOUR OPINION WERE THE CALCULATIONS SET FORTH IN**
9 **EXHIBITS DJM-1 AND DJM-3 TO THIS TESTIMONY DONE IN**
10 **ACCORDANCE WITH SECTION 4928.66, REVISED CODE AND OHIO**
11 **ADMINISTRATIVE CODE?**

12 **A.** In my opinion, yes they were.

13 **ENERGY EFFICIENCY AND PEAK DEMAND REDUCTION BENCHMARKS**

14 **Q: DID YOU CALCULATE THE APPLICABLE EE&PDR BENCHMARKS**
15 **USING THE BASELINES DESCRIBED ABOVE?**

16 **A:** Yes.

17 **Q: WHAT GUIDELINE DID YOU USE TO CALCULATE THE**
18 **BENCHMARKS?**

19 **A:** Sections 4928.66(A)(1)(a) and (A)(1)(b), Revised Code set forth the standards for
20 calculating energy efficiency and peak demand reduction benchmarks,
21 respectively.

1 **Q: WHAT ARE THE ESTIMATED BENCHMARKS FOR 2017, 2018 AND**
2 **2019?**

3 **A:** The estimated benchmarks, using actual data to the extent currently available, are
4 reflected in the attached Exhibits DJM-1 and DJM-3 and are also discussed in the
5 Companies' Proposed Plans in Section 1.1.

6 **CUSTOMER SECTOR ALLOCATIONS**

7 **Q: ARE YOU RESPONSIBLE FOR ANY OTHER INPUTS INTO THE**
8 **PROPOSED PLANS?**

9 **A:** Yes. I provided the 2016 LTFR forecasted usage to the FirstEnergy Energy
10 Efficiency Team, for the purpose of creating five of the seven plan sectors included
11 in the Proposed Plans. This forecasted usage has been assigned to the following
12 sectors: (i) Residential Low Income; (ii) Residential Other; (iii) Small Enterprise;
13 (iv) Mercantile-Utility; and (v) Governmental. Residential Customers taking
14 service under the RS tariff were split between "low income" and "other". Because
15 the Companies currently have no way to determine which of its 1.9 million
16 residential customers fit within the formal definition of "low income", customers
17 who were enrolled in the Percentage of Income Payment Plan program ("PIPP") as
18 of March 2016 were used as a proxy for the low income category for planning
19 purposes. The Small Enterprise group consists of small commercial and industrial
20 ("C&I") customers who are taking service on the General Service Secondary Rate
21 schedule ("GS"). The Mercantile-Utility group consists of large C&I customers
22 taking service on the General Service Primary ("GP"), General Service
23 Subtransmission ("GSU"), and General Service Transmission ("GT") rate

1 schedules. The Governmental group consists of customers on the Street Lighting
2 (“STL”) and Traffic Lighting (“TRF”) Rate Schedules. Customers were assigned
3 to these categories based on available information in the billing systems. Company
4 Witness Miller further explains in his testimony why customers were characterized
5 this way.

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

7 A. Yes, it does. However, I reserve the right to supplement my testimony.

Energy Efficiency Baselines and Benchmarks

Usage in GWh = kWh times 1 million

Company	Year	Retail Sales	SB 310 Opt-Outs	Weather and Special Contract Adjustments	Customer and Weather-Adjusted Retail Sales	Mercantile Savings Addbacks	Additional EE Beyond Mercantile	Fully Adjusted Retail Sales	Baseline	Cumulative Benchmark %	Benchmarks
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CEI											
	2014*	18,734	-	(169)	18,564	527		19,091			
	2015*	18,502	-	(222)	18,280	529	(269)	18,539			
	2016	18,371			18,371	529	(263)	18,636			
	2017	18,465			18,465	529	(446)	18,548	18,755	5.2%	975
	2018	18,519			18,519	529	(623)	18,426	18,574	6.2%	1,152
	2019	18,552			18,552	529	(806)	18,275	18,537	7.2%	1,335
OE											
	2014*	24,927	-	(367)	24,561	350		24,910			
	2015*	24,292	-	(512)	23,780	351	(678)	23,453			
	2016	23,646			23,646	351	(667)	23,330			
	2017	23,818			23,818	351	(892)	23,276	23,898	5.2%	1,243
	2018	24,071			24,071	351	(1,097)	23,326	23,353	6.2%	1,448
	2019	24,254			24,254	351	(1,328)	23,278	23,311	7.2%	1,678
TE											
	2014*	10,544	-	(235)	10,309	230		10,539			
	2015*	10,455	-	(158)	10,297	231	(211)	10,317			
	2016	10,576			10,576	231	(210)	10,597			
	2017	10,626			10,626	231	(311)	10,545	10,485	5.2%	545
	2018	10,674			10,674	231	(415)	10,490	10,487	6.2%	650
	2019	10,768			10,768	231	(529)	10,470	10,544	7.2%	759
Total Ohio											
	2014*	54,205	-	(771)	53,434	1,106		54,540			
	2015*	53,248	-	(892)	52,356	1,110	(1,158)	52,308			
	2016	52,592			52,592	1,110	(1,140)	52,563			
	2017	52,908			52,908	1,111	(1,650)	52,369	53,137	5.2%	2,763
	2018	53,265			53,265	1,112	(2,135)	52,243	52,413	6.2%	3,250
	2019	53,575			53,575	1,112	(2,663)	52,024	52,392	7.2%	3,772

Notes - (1) The sum of Columns (1) - (5a) in the FE - D1 schedules of FirstEnergy's 2016 Long-Term Forecast Report (pages 36-39)
 (2) Senate Bill 310 Opt-Out Customer Usage
 (3) Customer Adjustments (Reasonable Arrangement Rider and automotive credits) and Weather Adjustment based on normal heating and cooling degree days
 (4) = (1) - (2) + (3)
 (5) Baseline years were adjusted for mercantile self-directed program savings as filed with the PUCO by December 31, 2015
 (6) Energy Efficiency achieved
 (7) Sum of (4) + (5) + (6)
 (8) = Average of 3 previous years
 (9) R.C. § 4928.66 Energy Efficiency Benchmarks
 (10) = (8) * (9)
 * 2014 & 2015 are actual data

Example: Weather-Normalization Process of Historical Sales: June 2015 for OE

Step 1); Regression of CDDs* and daily system load for 22 days resulted in a MWh/CDD slope of 1357 MWh/CDD

Step 2): Actual CDD = 179 for the month, the 20-year normal CDD for June = 95 for a difference of 84 CDD above normal

Step 3): $84 \text{ additional CDD} \times 1357 \text{ MWh/CDD}$ estimates that 113,988 MWh of sales in June were due to higher than normal CDD

Step 4): The adjustments are negative because the actual CDD were above the normal CDDs so the negative adjustments were added to the actual sales for the month which reduced the baseline

* CDD: Cooling Degree Days

Same regression analysis is performed for months where heating degree days (HDD) are relevant.

Peak Reduction Baselines and Benchmarks
(MW)

Company	Year	Retail Peaks	SB 310 Opt-Outs	Weather and Special Contract Adjustments	Customer and Weather-Adjusted Retail Peaks	Mercantile Savings Addbacks	Additional EE Beyond Mercantile	Fully Adjusted Retail Peaks	Baseline	Cumulative Benchmark %	Benchmarks
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>CEI</u>											
	2014*	3,838	-	(23)	3,815	57		3,873			
	2015*	3,801	-	(2)	3,799	57		3,856			
	2016	3,946		-	3,946	57	(140)	3,863			
	2017	3,954		-	3,954	57	(155)	3,857	3,864	5.50%	213
	2018	3,962		-	3,962	57	(184)	3,836	3,859	6.25%	241
	2019	4,000		-	4,000	57	(212)	3,846	3,852	7.00%	270
<u>OE</u>											
	2014*	4,884	-	(49)	4,835	43		4,878			
	2015*	5,025	-	(38)	4,987	44		5,030			
	2016	5,273		-	5,273	44	(176)	5,141			
	2017	5,233		-	5,233	44	(232)	5,045	5,016	5.50%	276
	2018	5,203		-	5,203	44	(273)	4,974	5,072	6.25%	317
	2019	5,293		-	5,293	44	(310)	5,026	5,053	7.00%	354
<u>TE</u>											
	2014*	2,080		-	2,080	42		2,122			
	2015*	2,059		-	2,059	42		2,101			
	2016	2,094		-	2,094	42	(59)	2,077			
	2017	2,103		-	2,103	42	(73)	2,071	2,100	5.50%	116
	2018	2,114		-	2,114	42	(88)	2,068	2,083	6.25%	130
	2019	2,159		-	2,159	42	(103)	2,098	2,072	7.00%	145
<u>Total Ohio</u>											
	2014*	10,803	-	(72)	10,730	143		10,873			
	2015*	10,885	-	(40)	10,844	143		10,987			
	2016	11,313		-	11,313	143	(376)	11,080			
	2017	11,290		-	11,290	143	(461)	10,972	10,980	5.50%	604
	2018	11,279		-	11,279	143	(545)	10,877	11,013	6.25%	688
	2019	11,452		-	11,452	143	(625)	10,970	10,977	7.00%	768

Notes - (1) FE - D3 schedules of FirstEnergy's 2016 Long-term Forecast Report (pages 41-43).
 (2) Senate Bill 310 Opt-Out Customer Peaks
 (3) Customer Adjustments (Reasonable Arrangement Rider and automotive credits)
 (4) = (1) - (2) + (3)
 (5) Baseline years were adjusted for mercantile self-directed program savings as filed with the PUCO by December 31, 2015.
 (6) Peak reduction achieved
 (7) Sum of (4) + (5) + (6)
 (8) = average of 3 previous years (7)
 (9) R.C. § 4928.66 Peak Reduction Benchmarks
 (10) = (8) * (9)
 * 2014 & 2015 are actual data

EXHIBIT DJM-A2

Energy Efficiency Baselines and Benchmarks

Usage in GWh = kWh times 1 million

Company	Year	Retail Sales	SB 310 Opt-Outs	Weather and Special Contract Adjustments	Customer and Weather-Adjusted Retail Sales	Mercantile Savings Addbacks	Additional EE Beyond Mercantile	Fully Adjusted Retail Sales	Baseline	Cumulative Benchmark %	Benchmarks
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<u>CEI</u>											
	2014*	18,734	-	(169)	18,564	527		19,091			
	2015*	18,502	-	(222)	18,280	529		18,808			
	2016	18,371			18,371	529	(263)	18,636			
	2017	18,465			18,465	529	(446)	18,548	18,845	5.2%	980
	2018	18,519			18,519	529	(623)	18,426	18,664	6.2%	1,157
	2019	18,552			18,552	529	(806)	18,275	18,537	7.2%	1,335
<u>OE</u>											
	2014*	24,927	-	(367)	24,561	350		24,910			
	2015*	24,292	-	(512)	23,780	351		24,130			
	2016	23,646			23,646	351	(667)	23,330			
	2017	23,818			23,818	351	(892)	23,276	24,123	5.2%	1,254
	2018	24,071			24,071	351	(1,097)	23,326	23,579	6.2%	1,462
	2019	24,254			24,254	351	(1,328)	23,278	23,311	7.2%	1,678
<u>TE</u>											
	2014*	10,544	-	(235)	10,309	230		10,539			
	2015*	10,455	-	(158)	10,297	231		10,528			
	2016	10,576			10,576	231	(210)	10,597			
	2017	10,626			10,626	231	(311)	10,545	10,555	5.2%	549
	2018	10,674			10,674	231	(415)	10,490	10,557	6.2%	655
	2019	10,768			10,768	231	(529)	10,470	10,544	7.2%	759
<u>Total Ohio</u>											
	2014*	54,205	-	(771)	53,434	1,106		54,540			
	2015*	53,248	-	(892)	52,356	1,110		53,466			
	2016	52,592			52,592	1,110	(1,140)	52,563			
	2017	52,908			52,908	1,111	(1,650)	52,369	53,523	5.2%	2,783
	2018	53,265			53,265	1,112	(2,135)	52,243	52,799	6.2%	3,274
	2019	53,575			53,575	1,112	(2,663)	52,024	52,392	7.2%	3,772

Notes -

(1) The sum of Columns (1) - (5a) in the FE - D1 schedules of FirstEnergy's 2016 Long-Term Forecast Report (pages 36-39)

(2) Senate Bill 310 Opt-Out Customer Usage

(3) Customer Adjustments (Reasonable Arrangement Rider and automotive credits) and Weather Adjustment based on normal heating and cooling degree days

(4) = (1) - (2) + (3)

(5) Baseline years were adjusted for mercantile self-directed program savings as filed with the PUCO by December 31, 2015.

(6) Energy Efficiency achieved

(7) Sum of (4) + (5) + (6)

(8) = Average of 3 previous years

(9) R.C. § 4928.66 Energy Efficiency Benchmarks

(10) = (8) * (9)

* 2014 & 2015 are actual data

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Summary: Testimony - Amended Direct Testimony of Denise J. Mullins electronically filed by Ms. Erika Ostrowski on behalf of The Cleveland Electric Illuminating Company and Ohio Edison Company and The Toledo Edison Company