**BEFORE**

**THE PUBLIC UTILITIES COMMISSION OF OHIO**

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| In the Matter of the Annual Verification of the Energy Efficiency and Peak Demand Reductions Achieved by the Electric Distribution Utilities Pursuant to Section 4928.66, Revised Code. | ))))) | Case No. 12-665-EL-UNC |

**COMMENTS**

**BY**

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# I. INTRODUCTION

R.C. 4928.66(A) requires electric distribution utilities (“EDUs”) to implement energy efficiency and peak demand reduction programs that achieve quantifiable energy savings. R.C. 4928.66(B) requires the Public Utilities Commission of Ohio (“Commission” or “PUCO”) to “produce and docket at the commission an annual report containing the results of its verification of the annual levels of energy efficiency and of peak demand reductions achieved by each electric distribution utility pursuant to division (A) of this section.”

On February 23, 2012, the Commission chose Evergreen Economics (“Evergreen”) to serve as the statewide Independent Program Evaluator for verification of the EDUs’ energy efficiency and peak demand reduction (“EE/PDR”) programs.[[1]](#footnote-1) Among the tasks to be completed by Evergreen were “(a) evaluating and validating the electric energy savings and peak demand reductions resulting from each approved electric utility program and mercantile customer activity; (b) determining program and portfolio cost-effectiveness; and (c) conducting some program process evaluations of energy efficiency programs.”[[2]](#footnote-2)

On August 29, 2012, the Report of the Ohio Independent Evaluator (“Report”) was docketed in this proceeding. The Report is the first docketed by the statewide Independent Program Evaluator and covers the EDUs’ programs for 2009 and 2010.[[3]](#footnote-3) The Report contains numerous “over-arching” recommendations, as well as several recommendations specific to each EDU’s EE/PDR program.

The Office of the Ohio Consumers’ Counsel (“OCC”) concurs to some extent with the recommendations in Evergreen’s Report. Adopting the recommendations discussed below will assist the Commission in fulfilling the statutory directive of R.C. 4928.66(B). OCC also urges the Commission to complete its task of adopting a Technical Reference Manual (“TRM”) for determining EE/PDR reductions.

# II. COMMENTS ON EVERGREEN’S GENERAL RECOMMENDATIONS

In the Report, Evergreen made four over-arching recommendations:[[4]](#footnote-4)

* Apply an adjustment factor for customers’ installation of compact fluorescent bulbs (“CFLs”) to reflect that not all CFLs will be installed and remain installed.
* Develop a complete list of sources for *ex ante* savings values (i.e., savings from programs that were already in place at the beginning of the evaluation period) to make it easier for Evergreen to determine the reliability of the sources.
* Require a rigorous method to estimate the impact of EDUs’ audit and energy comparison programs on customers’ reduction of energy usage.
* Adopt the process recommendations presented in the utility evaluation reports.

OCC supports these recommendations as discussed below.

## A. There Should Be a Standardized CFL Installation Adjustment Factor Based on Actual Verification of CFL Usage by Customers.

Evergreen noted that heavy reliance on lighting programs to achieve energy savings is not uncommon, particularly with newer programs.[[5]](#footnote-5) Evergreen also stated that it is standard practice to assume that not all CFLs will be installed or will remain installed by customers.[[6]](#footnote-6) Evergreen pointed to Ohio’s draft energy efficiency TRM prepared for the PUCO, which recommends an installation adjustment factor of 86% for CFLs purchased by customers or 81% for CFLs installed at customers’ premises by an EDU.[[7]](#footnote-7)

But the EDUs were inconsistent in calculating energy savings from CFLs.[[8]](#footnote-8) Both Duke and AEP Ohio assumed that 100% of CFLs obtained by customers remained installed for the entire year. FirstEnergy used an adjustment factor of 89% and DP&L adjusted savings by 86%, but neither EDU differentiated between those purchased by customers and those installed by the EDU. Thus, all the EDUs may have overstated the savings derived from CFLs.

In order for the Commission to properly perform its statutory verification function, all EDUs should use the same methodology for calculating savings from customers’ CFL usage. The adjustment factor for CFLs should be standardized. Evergreen recommended that the CFL impacts of all the EDUs be adjusted using either the adjustment factors from the TRM or the results of evaluation research, such as customer surveys and/or on-site verification, from each individual utility.[[9]](#footnote-9)

To calculate the savings from customers’ CFL usage, OCC recommends using the CFL impacts obtained from the evaluation research method. Although the TRM’s adjustment factors will give the Commission a ballpark estimate of the savings for each EDU, R.C. 4928.66(A) contains specific requirements for savings to be achieved by every EDU in Ohio through EE/PDR programs. The Commission cannot be certain if an EDU is attaining the statutorily required savings through the use of ballpark estimates. Customer surveys and/or on-site verification will provide the Commission the most accurate information regarding customers’ CFL usage.

## B. There Should Be a Full List of *Ex Ante* Sources for Savings.

Evergreen stated that its expectation at the start of the project was that the EDU impact estimates would be a combination of *ex ante* values from the original program filings with the Commission, savings values from the Ohio TRM and ex post impact values derived from the prior year’s utility evaluation research.[[10]](#footnote-10) Instead, the EDUs had considerably more sources for *ex ante* savings values than Evergreen had anticipated.

AEP Ohio relied on its implementation contractor for *ex ante* savings for its non-residential programs, and other sources for the *ex ante* impact for its residential efficient products program.[[11]](#footnote-11) DP&L relied on other sources for its *ex ante* values for its residential HVAC rebate and its mercantile customer commitments program.[[12]](#footnote-12) Duke relied on its implementation contractor and other sources for the *ex ante* values for its Save-A-Watt Smart Saver residential and its Save-A-Watt Smart Saver Custom non-residential programs. Duke also used its own TRM as well as the implementation contractor and other sources for the *ex ante* values in the Save-A-Watt Smart Saver Non-residential Prescriptive program.[[13]](#footnote-13) FirstEnergy relied on its implementation contractor for the *ex ante* savings values for its Community Connections low-income residential program and other sources for its Mercantile non-residential program.[[14]](#footnote-14)

Evergreen states that the “multitude of sources has made the savings claim review for each utility more challenging, as there are many more sources that needed to be vetted than originally anticipated.”[[15]](#footnote-15) Evergreen added that because of these additional sources, the origins of the *ex ante* savings for the 2009 and 2010 portfolio evaluations are not clear.[[16]](#footnote-16) Evergreen recommends that a complete list of the sources for *ex ante* savings values be developed for future reference.[[17]](#footnote-17) OCC agrees with Evergreen’s recommendation.

The Commission has a statutory duty to verify the savings achieved through the EDUs’ EE/PDR programs. If the origins of the savings cannot be identified, the Commission is unable to properly perform this statutory function. The Commission should adopt Evergreen’s recommendation.

## C. Estimates of the Savings Achieved Through Home Audit and Energy Comparison Programs Should Be More Realistic.

Of the four EDUs, only Duke and FirstEnergy have home audit programs. Evergreen determined that the impact method used by the EDUs to estimate savings from home audit and energy comparison programs results in savings estimates that are unrealistically high.[[18]](#footnote-18)

Evergreen noted that both Duke and FirstEnergy use billing regression models to estimate impacts of the home audit programs.[[19]](#footnote-19) Duke estimated savings of 856 kWh through the home audit program,[[20]](#footnote-20) while FirstEnergy estimated average annual savings of 416 kWh, with a range of 233 kWh to 1,032 kWh depending on whether the audit was done online or by phone.[[21]](#footnote-21) But the 2010 draft of the Ohio TRM recommended that savings of 240 kWh be attributable to home audits.[[22]](#footnote-22) Thus, Duke’s estimated savings were more than three times that recommended in the 2010 Ohio TRM, while FirstEnergy’s estimated average annual savings were nearly double the savings recommended in the 2010 Ohio TRM.

The problem, according to Evergreen, is that the calculations for the savings are of questionable credibility.[[23]](#footnote-23) Although Duke discusses its analysis methods, it does not provide a clear explanation of how the calculations were performed and does not provide documentation to support some of its assumptions.[[24]](#footnote-24) As for FirstEnergy, Evergreen stated that the results are much higher than for similar audit programs and FirstEnergy did not explain the large difference between the two types of programs.[[25]](#footnote-25)

Evergreen recommended that, if savings from audit programs are to be included, more rigorous impact analysis methods must be used. Evergreen proposed that a billing analysis combined with a survey be conducted that clearly describes the activities the customer took as a result of the home audit or comparison.[[26]](#footnote-26) Savings resulting from installing rebated measures through other programs, including upstream lighting programs using CFLs, must be excluded to avoid double-counting.[[27]](#footnote-27)

OCC agrees with this recommendation. In order to ensure that the required amount of savings is being achieved through EE/PDR programs, the Commission must have adequate and credible information regarding the EDUs’ energy efficiency programs. The information provided by EDUs must be complete and verifiable.

# III. COMMENTS ON EVERGREEN’S UTILITY-SPECIFIC RECOMMENDATIONS.

Evergreen’s fourth over-arching recommendation – adopt the process recommendations presented in the utility evaluation reports – addresses the utility-specific recommendations contained in the report. OCC comments on those recommendations below.

## A. AEP Ohio

For 2009, AEP Ohio reported 89.2 GWh in residential savings and 161.4 GWh in non-residential savings through its program portfolio.[[28]](#footnote-28) On the residential side, 76.8 GWh were achieved through efficient products (i.e., CFLs), 6.3 GWh through the refrigerator and freezer recycling program and 6.1 GWh through energy conservation kits.[[29]](#footnote-29)

Although Evergreen found the evaluation research was of high quality, adhered to industry practice and provided credible results, Evergreen took issue with AEP Ohio’s assessment of the CFL installation rate.[[30]](#footnote-30) As noted in section I.A above, AEP Ohio assumed that 100% of CFLs obtained by customers remained installed for the entire year, even though common practice is to assume a less than 100% installation rate.[[31]](#footnote-31) Evergreen pointed out that the draft Ohio TRM recommends a CFL installation adjustment factor of 81% to 86%.[[32]](#footnote-32)

In 2010, AEP Ohio added four new programs – residential retrofit, weatherization for low-income customers, residential new construction and the home energy report – to the three existing programs from 2009. Among the new programs, however, AEP Ohio reported savings only for the retrofit and the low-income programs. For 2010, AEP Ohio reported a total savings of 158.07 GWh, which included 137.7 GWh for efficient products, 17.8 GWh for appliance recycling, 1.6 GWh for energy conservation kits, 0.9 GWh for the low income program and 0.07 GWh for the retrofit.[[33]](#footnote-33) But because Evergreen could not successfully replicate the savings for the conservation kits, Evergreen disallowed those savings, and thus recognized 156.47 GWh as the residential savings for 2010.[[34]](#footnote-34) Evergreen replicated all 208.73 GWh that AEP Ohio claimed in non-residential savings.[[35]](#footnote-35)

For the residential programs, Evergreen recommended that documentation and data tracking for the low-income program should be improved.[[36]](#footnote-36) OCC agrees that the Commission should have trustworthy information in order to properly assess the effectiveness of EE/PDR programs. The low-income weatherization program is designed to help lower energy costs for those who can least afford high energy bills. The Commission must have the information it needs to verify the effectiveness of this program.

In addition, Evergreen once again recommended use of the CFL installation adjustment factors (i.e., 81% to 86%) from the draft Ohio TRM.[[37]](#footnote-37) Evergreen noted that the AEP Ohio evaluation survey of CFL recipients estimated an installation rate of only 42.9% of CFLs,[[38]](#footnote-38) not the 100% AEP Ohio assumed. Evergreen noted that applying an adjustment factor of 86% would reduce AEP Ohio’s total savings by six percent,[[39]](#footnote-39) which is a sizeable margin. As discussed above, OCC agrees with Evergreen’s recommendation.

## B. Duke Energy Ohio

For 2009, Duke reported 26.7 MWh in residential savings and 59.6 MWh in non-residential savings through it programs.[[40]](#footnote-40) For residential customers, 72% of the sector share came from the Save-A-Watt Smart Saver Residential (mainly CFLs), 25% from Residential Assessments and the remaining 3% from Low Income and Energy Efficiency Education for Schools.[[41]](#footnote-41) But Evergreen challenged Duke’s reported savings.

Evergreen lists a number of instances where Duke appears to have overestimated the energy savings of its programs. For example:

* Duke assumed the install rates for CFLs at 100 percent where the draft Ohio TRM suggests an installation rate of from 81%-86%.[[42]](#footnote-42)
* Regarding Duke’s Energy Efficiency Clothes Washer Pilot, Evergreen stated that the algorithm for calculating gross savings appears reasonable, but Duke did not provide the sources for the various calculation parameters. In addition, although the net savings calculation takes into account self-selection bias and potential free ridership for the program participants, “the rationale for the factors used to make the self-selection correction is not explained and appears to be based solely on the evaluator’s opinion, which is not sufficient justification for making these types of adjustments.”[[43]](#footnote-43)
* Regarding Duke’s Personalized Energy Report Program, Evergreen stated that “[t]he savings estimates for kWh and therms are higher than one would expect….”[[44]](#footnote-44)
* Regarding Duke’s own Home Energy House Call Program, Evergreen determined that it could not assess the credibility of the reported savings because of the lack of documentation and unsubstantiated adjustments for self-selection bias. As a result, Evergreen stated that it does not recommend using these values to estimate savings for future program planning.[[45]](#footnote-45)
* Evergreen found several problems regarding Duke’s NEED Program. For example, the estimated savings value for a single 13 watt CFL included in the kit is more than three times the estimated savings using the draft Ohio TRM value for the same measure.[[46]](#footnote-46) Again, Evergreen stated there is not enough information to assess the credibility of the reported savings.[[47]](#footnote-47)
* Regarding Duke’s Energy Efficiency Website, Evergreen questioned the credibility of the billing regression analysis because the estimates of potential savings (11% to 22%) are too high based on Evergreen’s knowledge of other types of audit and informational programs (usually 0% to 2%).[[48]](#footnote-48)

Where the savings are much higher than expected and there is inadequate documentation or justification, Evergreen recommended that the savings not be used to establish *ex ante* savings values for future program planning.[[49]](#footnote-49) OCC agrees.

In 2010, Duke recorded 217.5 MWh savings in the residential sector, with 88% coming from lighting, and 6% for HVAC and 6% for other.[[50]](#footnote-50) But Evergreen noted that Duke’s 2010 report had the same problems as were found in the 2009 evaluation.[[51]](#footnote-51)

Overall, Evergreen’s recommendations for Duke are summarized as follows:

1. Apply an installation rate adjustment factor for CFLs.
2. Improve Audit and Home Energy Comparison Report impact methods.
3. Do not use 2009/2010 evaluation results to set *ex ante* savings values for future program planning when the evaluation reports do not adequately document savings.
4. Develop a complete list of sources for *ex ante savings* values.
5. Adopt the process evaluation recommendations presented in the Tec Market evaluation reports.
6. Update evaluation research to be more current and Ohio-specific.
7. Full citations needed for secondary research and all adjustment factors.[[52]](#footnote-52)

Given the questions Evergreen raised on the credibility of some of Duke’s savings estimates, Duke should provide details to justify the veracity of its savings estimates. This is critical to ensure that the required amount of savings is being achieved in compliance with Ohio law.

## C. Dayton Power and Light

For 2009, DP&L reported 91.0 MWh of residential savings and 23.3 MWh of non-residential savings.[[53]](#footnote-53) CFLs represented 94% of the residential sector savings, HVAC rebates and Appliance Recycling both comprised 3% respectively. In 2010, three new residential programs were added, an Education Schools Program, Low Income Affordability, and HVAC Diagnostic & Tune-up Program.[[54]](#footnote-54) DP&L reported 127.5 MWh of residential savings and 51.7 MWh of non-residential savings.[[55]](#footnote-55)

Overall, Evergreen found the DP&L evaluations conducted by The Cadmus Group to be “very thorough and adhering to standard evaluation practices for the types of programs covered.”[[56]](#footnote-56) As a result, Evergreen did not have any specific recommendations for changing any of DP&L’s savings estimates.[[57]](#footnote-57)

## D. FirstEnergy

FirstEnergy did not report savings for 2009, due to implementation problems with its CFL program and the late date its program portfolio was approved by the PUCO. [[58]](#footnote-58) For 2010, FirstEnergy reported 17.6 MWh in residential savings and 80.1 MWh in non-residential mercantile savings through its program portfolio.[[59]](#footnote-59) For residential customers, the Home Energy Analyzer program produced 79% of the sector savings while the Low Income Community Connections program produced the remaining 21%.[[60]](#footnote-60)

Concerning the Low Income Community Connections Program, Evergreen indicated that “there is not adequate detail in the evaluation report on how the savings are calculated.”[[61]](#footnote-61) They further indicated that “[d]ue to the lack of detail, it is not possible to assess the credibility of the savings estimates presented in this report. However, the average estimated savings per household of approximately 703 kWh is not unrealistic given the measures installed.”[[62]](#footnote-62) Evergreen also questioned the average 416 kWh annual savings of the Home Energy Analyzer Program, especially its range of from 233 to 1,032 kwh depending on whether it was an online or phone audit.[[63]](#footnote-63) Evergreen preferred the *ex ante* savings estimate of 300 kWh as more reasonable.[[64]](#footnote-64) Finally, Evergreen questioned the various savings adjustments made in FirstEnergy’s Mercantile Program evaluation. There was simply “not enough detail provided on the actual calculations to assess the credibility of the impact analysis.”[[65]](#footnote-65)

Overall, Evergreen’s recommendations for FirstEnergy are summarized as follows:

1. Develop a complete list of sources for *ex ante* savings values.
2. Incorporate customer costs into the total resource cost-effectiveness calculations for the Mercantile Program.
3. Improve audit impact methods.[[66]](#footnote-66)

Given the questions Evergreen raised regarding the credibility of some of FirstEnergy’s savings estimates, FirstEnergy should provide details to justify the veracity of its savings estimates. This is critical to ensure that the required amount of savings is being achieved in compliance with Ohio law.

# IV. THE COMMISSION SHOULD REVIVE THE MONITORING AND VERIFICATION DOCKET (09-512-GE-UNC), AND SHOULD UPDATE AND FINALIZE THE OHIO TECHNICAL REFERENCE MANUAL AND APPROVE A PROCESS FOR UPDATING THE MANUAL.

Over four years have passed since the enactment of Sub. S.B. 221 brought about the energy efficiency and peak demand reduction requirements that are the subject of the Evergreen’s Report. Following the passage of Sub. S.B. 221, an effective process for energy efficiency and peak demand reduction projects regarding compliance with Ohio’s legal requirements would have been the timely completion of an Ohio TRM and use of that TRM by Evergreen and the Commission to evaluate the various Company energy savings estimates. Unfortunately, that has not happened. This unresolved situation is evident in Evergreen’s comments when discussing the EDUs’ impact information sources:

Our expectation at the start of this project was that the electric utility impact estimates would be a combination of *ex ante* values from the original program filings with the PUCO, savings values from the draft Ohio TRM, and *ex post* impact values derived from the utility evaluation research in the prior year. Instead we found a host of additional impact sources, as illustrated in Table 3. This multitude of sources has made the savings claim review for each utility more challenging, as there are many more sources that needed to be vetted than originally anticipated.[[67]](#footnote-67)

The current “wild west” situation in Ohio with regard to program savings impacts is untenable. The importance of finalizing the Ohio TRM cannot be overstated. These measure/program savings estimates are the foundation of determining the EDUs’ compliance with the statutory EE/PDR requirements. Moreover, they form the basis for the EDUs’ collection of lost distribution revenues and shared savings incentives from customers. The latter can total over $200 million for the four Ohio EDUs through their second portfolio phase. Finally, finalizing the TRM would lead to administrative efficiency. An inordinate amount of time and effort in EE-related proceedings before the Commission is spent arguing about values that could be codified in a robust TRM.

In 2009, the Commission began a proceeding designed to provide guidance regarding how it will determine energy savings and/or peak-demand reductions.[[68]](#footnote-68) The Commission intended to establish protocols for the measurement and verification of energy efficiency and peak-demand reduction measures for incorporation into the TRM.[[69]](#footnote-69) The Commission stated that “the TRM would provide predictability and consistency for the benefit of the electric and gas utilities, customers, and the Commission itself.”[[70]](#footnote-70)

Although comments were filed on the proposed TRM, the Commission has yet to issue a final order in the 09-512 docket. The difficulties Evergreen experienced in evaluating the savings from the EDUs’ EE/PDR programs demonstrate the need for the Commission to finalize the TRM and adopt a process for updating it. In order to adequately accomplish the statutory directive of R.C. 4928.66(B), the Commission should act post haste to finalize the TRM.

# V. CONCLUSION

The actions Evergreen recommends will help the Commission to better verify the savings achieved through the EDUs’ EE/PDR programs, and thus will assist the Commission to follow the statutory directive of R.C. 4928.66(B). The Commission should adopt Evergreen’s recommendations. Further, in order to bring much-needed predictability and stability to the verification of the EDUs’ EE/PDR savings, the Commission should finalize the TRM.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that a copy of these Comments was served electronically upon the persons listed below this 2nd day of November 2012.

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1. Entry (February 23, 2012) at 3. The EDUs are Ohio Power Company (“AEP Ohio”), The Dayton Power and Light Company (“DP&L”), Duke Energy Ohio and FirstEnergy (The Cleveland Electric Illuminating Company, Ohio Edison Company and The Toledo Edison Company). See id. at 1. [↑](#footnote-ref-1)
2. Id. at 1-2. [↑](#footnote-ref-2)
3. See Report at i. [↑](#footnote-ref-3)
4. Id. at iv. [↑](#footnote-ref-4)
5. Id. at 21. [↑](#footnote-ref-5)
6. See id. at 12, 21. [↑](#footnote-ref-6)
7. Id. at ii, citing State of Ohio Energy Efficiency Technical Reference Manual (August 6, 2010), prepared for the Public Utilities Commission of Ohio by Vermont Energy Investment Corporation, available at http://amppartners.org/pdf/TRM\_Appendix\_E\_2011.pdf. [↑](#footnote-ref-7)
8. See id. at 6, Table 1. [↑](#footnote-ref-8)
9. Id. at 7. [↑](#footnote-ref-9)
10. See id. at iii. [↑](#footnote-ref-10)
11. Id. at 11, Table 3. [↑](#footnote-ref-11)
12. Id. [↑](#footnote-ref-12)
13. Id. [↑](#footnote-ref-13)
14. Id. [↑](#footnote-ref-14)
15. Id. at iii. [↑](#footnote-ref-15)
16. See id. at iv. [↑](#footnote-ref-16)
17. See id. [↑](#footnote-ref-17)
18. See id. [↑](#footnote-ref-18)
19. Id. at 8. [↑](#footnote-ref-19)
20. Id., Table 2. [↑](#footnote-ref-20)
21. Id. at 53. [↑](#footnote-ref-21)
22. Evergreen noted that the 2010 draft of the TRM included savings attributable to home audits but the 2011 draft removed them altogether. Id. at 7. Separate impact studies of California’s home audit programs estimated savings of between 31 kWh and 276 kWh annually. Id. [↑](#footnote-ref-22)
23. Id. at 36. [↑](#footnote-ref-23)
24. Id. [↑](#footnote-ref-24)
25. Id. at 53. [↑](#footnote-ref-25)
26. See id. at 4. [↑](#footnote-ref-26)
27. See id. [↑](#footnote-ref-27)
28. Id. at 16, Table 4. [↑](#footnote-ref-28)
29. Id. [↑](#footnote-ref-29)
30. Id. at 17. [↑](#footnote-ref-30)
31. Id. [↑](#footnote-ref-31)
32. Id. [↑](#footnote-ref-32)
33. Id. at 19, Table 6. [↑](#footnote-ref-33)
34. Id. [↑](#footnote-ref-34)
35. Id. [↑](#footnote-ref-35)
36. Id. at 22. [↑](#footnote-ref-36)
37. Id. at 23. [↑](#footnote-ref-37)
38. Id. [↑](#footnote-ref-38)
39. Id. [↑](#footnote-ref-39)
40. Id. at 33, Table 13. [↑](#footnote-ref-40)
41. Id. [↑](#footnote-ref-41)
42. Id.at 34. [↑](#footnote-ref-42)
43. Id. at 35. [↑](#footnote-ref-43)
44. Id. [↑](#footnote-ref-44)
45. Id. at 36. [↑](#footnote-ref-45)
46. Id.at 37. [↑](#footnote-ref-46)
47. Id. [↑](#footnote-ref-47)
48. Id. at 38. [↑](#footnote-ref-48)
49. Id. at 35. [↑](#footnote-ref-49)
50. Id. at 43, Table 16. [↑](#footnote-ref-50)
51. Id. [↑](#footnote-ref-51)
52. Id. at 47-48. [↑](#footnote-ref-52)
53. Id. at 26, Table 9. [↑](#footnote-ref-53)
54. Id. at 27. [↑](#footnote-ref-54)
55. Id. at 28, Table 11. [↑](#footnote-ref-55)
56. Id. at 31. [↑](#footnote-ref-56)
57. Id. [↑](#footnote-ref-57)
58. *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 2010 through 2012 and Associated Cost Recovery Mechanisms*, Case Nos. 09-1947-EL-POR et al., Opinion and Order (March, 23, 2011). [↑](#footnote-ref-58)
59. Report at 50, Table 17. [↑](#footnote-ref-59)
60. Id. [↑](#footnote-ref-60)
61. Id. at 52. [↑](#footnote-ref-61)
62. Id. [↑](#footnote-ref-62)
63. Id. at 53. [↑](#footnote-ref-63)
64. Id. at 52. [↑](#footnote-ref-64)
65. Id. at 53. [↑](#footnote-ref-65)
66. Id. at 53-54. [↑](#footnote-ref-66)
67. Id. at 10. [↑](#footnote-ref-67)
68. *In the Matter of Protocols for the Measurement and Verification of Energy and Peak Demand Reduction Measures*, Case No. 09-512-GE-UNC. [↑](#footnote-ref-68)
69. See id., Entry (June 24, 2009) at 3. [↑](#footnote-ref-69)
70. Id. [↑](#footnote-ref-70)