NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION

May 20, 2019

M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
Mail Service Center 4325
Raleigh, North Carolina 27699-4300

Re: Docket No. E-7, Sub 1192

Dear Ms. Jarvis:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the following:

1. Testimony of Michael C. Manness, Director, Accounting Division; and

2. Testimony of David Williamson, Staff Engineer, Electric Division.

By copy of this letter, I am serving all parties of record.

Sincerely,

/s/ John Little
Staff Attorney
john.little@psncuc.nc.gov

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1192

In the Matter of		
Application of Duke Energy Carolinas, LLC, for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. § 62-133.9 and Commission Rule R8-69	))))))	TESTIMONY OF MICHAEL C. MANESS PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION

May 20, 2019

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND PRESENT POSITION.

A. My name is Michael C. Maness. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am Director of the Accounting Division of the Public Staff – North Carolina Utilities Commission (Public Staff).

Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.

A. A summary of my qualifications and duties is set forth in Appendix B of this testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present my recommendations regarding the overall Demand-Side Management/Energy Efficiency (DSM/EE) rider (Rider 11) proposed by Duke Energy Carolinas, LLC (DEC or the Company), in its Application filed in this docket on February 26, 2019, pursuant to N.C. Gen. Stat. § 62-133.9 and Commission Rule R8-69.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My testimony begins with a review of the statutory framework for DSM/EE cost recovery by electric utilities and the historical background of DEC's Application in this docket. I then discuss the Company's proposed billing factors and other aspects of its filing.

Following a summary of my investigation, I present my findings, conclusions, and recommendations regarding approval of proposed Rider 11.

THE RATE-SETTING PROCESS FOR DEC'S DSM/EE REVENUE REQUIREMENTS

Q. PLEASE DESCRIBE THE BASIS FOR THE COMPANY'S FILING.

A. N.C. Gen. Stat. § 62-133.9(d) allows a utility to petition the Commission for approval of an annual rider to recover: (1) the reasonable and prudent costs of new DSM and EE measures; and (2) other incentives to the utility for adopting and implementing new DSM and EE measures. However, N.C. Gen. Stat. § 62-133.9(f) allows industrial and certain large commercial customers to opt out of participating in the power supplier's DSM/EE programs or paying the DSM/EE rider, if each such customer notifies its electric power supplier that it has implemented or will implement, at its own expense, alternative DSM and EE measures. Commission Rule R8-69, which was adopted by the Commission pursuant to N.C. Gen. Stat. § 62-133.9(h), sets forth the general parameters and procedures governing approval of the annual rider, including but not limited to: (1) provisions for both (a) a DSM/EE rider to recover the estimated costs and utility incentives applicable to the "rate period" in which that DSM/EE rider will be in effect; and (b) a DSM/EE experience modification factor (EMF) rider to recover the difference between the DSM/EE rider in effect for a given test period (plus a possible extension) and the actual recoverable amounts incurred during that test period; and (2) provisions for interest or return on amounts deferred and on refunds to customers.

The costs and utility incentives proposed to be recovered via Rider 11 are all related to DSM and EE measures actually or expected to be installed or implemented during calendar years 2015-2020 (Vintage Years 2015 through 2020). Therefore, DEC has calculated each proposed Rider 11 billing factor by use of the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved on October 29, 2013, in Docket No. E-7, Sub 1032 (the Sub 1032 Order), as revised in the 2017 DSM/EE rider proceeding, Docket No. E-7, Sub 1130 (Revised Mechanism). In the following paragraphs, I will describe the essential characteristics of the Revised Mechanism; however, the Revised Mechanism includes and is subject to many additional and more detailed criteria than are set forth in this testimony.

Q. PLEASE DESCRIBE THE DEVELOPMENT OF THE REVISED MECHANISM AND ITS MAJOR COMPONENTS.

A. In the Sub 1032 Order, the Commission approved an Agreement and Stipulation of Settlement, filed on August 19, 2013, and amended on

September 23, 2013, by and between DEC, the Public Staff, and certain other intervenors[1] (Sub 1032 Settlement), which incorporated the mechanism at that time. However, as the result of discussions that took place during the Company's 2017 Sub 1130 proceeding, the Company and the Public Staff recommended certain changes to Paragraphs 19, 23, and 69 of the mechanism, and the addition of new Paragraphs 23A through 23D. These revisions were set forth in Public Staff witness Maness Exhibit II filed in Sub 1130, and were approved as set forth therein by the Commission in its *Order Approving DSM/EE Rider, Revising DSM/EE Mechanism, and Requiring Filing of Proposed Customer Notice*, issued August 23, 2017 (Sub 1130 Order).

The overall purpose of the Revised Mechanism is to: (1) allow DEC to recover all reasonable and prudent costs incurred for adopting and implementing new DSM and new EE measures; (2) establish certain requirements, in addition to those of Commission Rule R8-68, for requests by DEC for approval, monitoring, and management of DSM and EE programs; (3) establish the terms and conditions for the recovery of certain utility incentives - net lost revenues (NLR) and a Portfolio Performance Incentive (PPI) to reward DEC for adopting

[1] The parties to the Sub 1032 Settlement were DEC; the North Carolina Sustainable Energy Association; the Environmental Defense Fund; the Southern Alliance for Clean Energy; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the Public Staff.

and implementing new DSM and EE measures and programs; and (4) provide for an additional incentive to further encourage kilowatt-hour (kWh) savings achievements. The Revised Mechanism includes provisions addressing mechanism continuity and review, program modification flexibility, and the treatment of opted-out and opted-in customers, as well as provisions directly affecting the calculation of the DSM/EE and DSM/EE EMF riders. A summary of these provisions is set forth in Appendix A of this testimony.[2] The Revised Mechanism adopted and continued certain requirements from several prior Commission orders.

THE COMPANY'S PROPOSED BILLING FACTORS AND OTHER ASPECTS OF ITS FILING

Q. PLEASE DESCRIBE THE BILLING FACTORS AND VINTAGE YEARS BEING CONSIDERED IN THIS PROCEEDING.

A. In its Application and the supporting testimony and exhibits, DEC requested approval of 14 billing factors [including the North Carolina Regulatory Fee (NCRF)] comprising Rider 11, which is to be charged for service rendered during the rate period January 1, 2020, through December 31, 2020. These proposed billing factors are set forth on Company witness Miller Exhibit 1,

[2] A consolidated version of the entire Revised Mechanism was filed on May 22, 2018 as Maness Exhibit II in DEC's 2018 DSM/EE rider proceeding, Docket No. E-7, Sub 1164.

Pages 1 and 2.

For purposes of the Company's filing, the identified vintage years correspond to the following time periods:

Vintage Year 2015:	The year ended December 31, 2015.
Vintage Year 2016:	The year ended December 31, 2016.
Vintage Year 2017:	The year ended December 31, 2017.
Vintage Year 2018:	The year ended December 31, 2018.
Vintage Year 2019:	The year ended December 31, 2019.
Vintage Year 2020:	The year ended December 31, 2020.

Q. WHAT ARE THE GENERAL CHARACTERISTICS OF DEC'S PROPOSED DSM/EE BILLING FACTORS?

A. DEC's proposed billing factors have the following general characteristics[3]:

1. For Vintage Year 2020, proposed Rider 11 includes billing factors (or components of billing factors) intended to recover estimated program costs and a PPI, as well as estimated calendar year 2020 NLR, applicable to DSM and EE measures projected to be installed or implemented during Vintage Year 2020, all subject to future true-up;

[3] In addition to the Revised Mechanism, particular billing factors may also be subject to Commission rulings in Docket No. E-7, Subs 831, 938, 979, and 1032, as well as DEC's various annual DSM/EE cost and incentive recovery proceedings and individual program approval proceedings.

2. For Vintage Year 2019, the proposed Rider includes billing factors (or components of billing factors) intended to prospectively recover estimated calendar year 2020 NLR associated with Vintage Year 2019 installations, subject to future true-up;

3. For Vintage Year 2018, the proposed Rider includes billing factors (or components of billing factors) intended to: (a) prospectively recover estimated calendar year 2020 NLR associated with Vintage Year 2018 installations, subject to future true-up; and (b) true up 2018 program cost and, to the extent evaluation, measurement, and verification (EM&V) of these results has been completed, Vintage Year 2018 participation and per-participant avoided cost savings and calendar year 2018 NLR;

4. For Vintage Year 2017, the proposed Rider includes billing factors (or components of billing factors) intended to: (a) prospectively recover estimated calendar year 2020 NLR associated with Vintage Year 2017 installations, subject to future true-up; and (b), to the extent EM&V of these results has been completed, true up Vintage Year 2017 participation and per-participant avoided cost savings and calendar years 2017 and/or 2018 NLR;

5. For Vintage Year 2016, the proposed Rider includes billing factors intended to, to the extent EM&V of these results has been completed, true up calendar years 2016, 2017, and/or 2018 NLR; and

6. For Vintage Year 2015, the proposed Rider includes billing factors intended to, to the extent EM&V of these results has been completed, true up calendar years 2015, 2016, 2017, and/or 2018 NLR.

The calculations of the billing factors for each vintage year may also include adjustments to the return on undercollections or overcollections of DSM/EE revenue requirements, as well as to amounts to be collected to compensate DEC for the NCRF.

Q. COULD THERE BE FUTURE TRUE-UPS OF THE DSM/EE REVENUE REQUIREMENTS?

A. Certain components of the revenue requirements related to certain prior, current, and future years will remain subject to prospective update adjustments and/or retrospective true-ups in the future. The various types of other expected or possible adjustments to the revenue requirements for these vintage years include prospective recovery of NLR requirements; true-ups of program cost; and true-ups of the PPI and NLR requirements to reflect the results; and possible adjustments to participation and EM&V analyses.

Q. WHAT IS THE IMPACT OF THE COMPANY'S PROPOSED BILLING FACTORS IN THIS PROCEEDING ON CUSTOMERS' RATES?

A. Based on the pro forma kWh sales used by the Company to calculate the DSM/EE riders in this case, the Company-proposed Residential DSM/EE combined prospective and EMF revenue requirement is approximately $104.2 million, an approximate $10.1 million reduction from the revenue that would be produced by the rates currently in effect. The decrease in the monthly bill of a Residential customer using 1,000 kilowatt-hours of energy resulting from this revenue requirement decrease would be $0.47. For the Non-Residential class, the proposed overall combined revenue requirement is approximately $125.0 million, an approximate $20.8 million reduction. The change in a Non-Residential customer's bill would depend on which particular Vintage Years of DSM and/or EE rates for which the customer is opted out or opted in.

INVESTIGATION AND CONCLUSIONS

Q. PLEASE DESCRIBE YOUR INVESTIGATION OF DEC'S FILING.

A. My investigation of DEC's filing in this proceeding focused on whether the Company's proposed DSM/EE billing factors were: (a) calculated in accordance with the Sub 1032 Settlement, the Sub 1130 Order, and the Revised Mechanism; and (b) otherwise adhered to sound ratemaking concepts and principles. The procedures I and other members of the Public Staff's Accounting Division utilized included a review of the Company's filing, relevant Commission proceedings and orders, and workpapers and source documentation used by the Company to develop the proposed billing factors. Performing the investigation required the review of responses to written and verbal data requests, as well as discussions with Company personnel. As part of its investigation, the Public Staff performed a review of the DSM/EE program costs incurred by DEC during the 12-month period ended December 31, 2018. To accomplish this, the Public Staff selected and reviewed samples of source documentation for test year costs included by the Company for recovery through the DSM/EE riders. Review of this sample, which is still underway as of the filing date of this testimony, is intended to test whether the costs included by the Company in the DSM/EE riders are valid costs of approved DSM and EE programs.

Q. WHAT ARE YOUR FINDINGS AND CONCLUSIONS?

A. With the exception of items specifically described later in this testimony, as well as subject to the outcome of the Public Staff's program cost review described above, I am of the opinion that the Company has calculated the Rider 11 billing factors in a manner consistent with N.C. Gen. Stat. § 62-133.9, Commission Rule R8-69, the Sub 1032 Settlement, the Sub 1130 Order, the Revised Mechanism, and other relevant Commission Orders. However, this conclusion is subject to the caveat that the Public Staff is still in the process of reviewing certain data responses received from the Company, including documentation of costs selected for review in the Public Staff's sample; once this review is complete, the Public Staff will file with the Commission any findings not already set forth in testimony.

I would like to note the following regarding the Public Staff's investigation:

1 <u>Review of Vintage Year 2018 Program Costs</u> – The Public Staff's review of the selected sample items from the population of 2018 DSM/EE program costs resulted in three exceptions. Two of the exceptions, totaling $280 on a system basis, consisted of the use of Company procurement cards for non-DSM/EE purposes. This dollar amount is not material, even if generalized to the population; however, it is the Public Staff's understanding that the Company intends to reflect correction of this item in supplemental testimony and exhibits filed in this proceeding. The third exception consists of an erroneous distribution of program costs related to the My Home Energy Report (MyHER) program between DEC and its

affiliates (most notably Duke Energy Progress, LLC (DEP). The Company's investigation of this item, after the Public Staff's inquiry, identified an overstatement of invoiced program costs totaling approximately $468,000, on a system basis. Although this sample item exception could possibly be considered for some sort of generalization to the population, I am not recommending any generalization in this case, because DEC has informed the Public Staff that it has reviewed all of the 2018 invoicing for the MyHER program and has not identified any errors other than the $468,000.

As with the first two exceptions, it is the Public Staff's understanding that DEC intends to file supplemental testimony and exhibits reflecting correction of this third item. Once this filing is made, the Public Staff will review it and apprise the Commission of the results of that review. It should be noted that these reductions in program costs will also result in an increase in the PPI for the affected programs.

As noted previously, the Public Staff's review of samples of Vintage Year 2018 program costs is not yet completed. If any concerns, issues, or necessary adjustments are found during the completion of this process, the Public Staff will file supplemental information in this proceeding related to such; and

2 Return on Deferred Program Costs and Interest on Overrecoveries – As stated in past proceedings, the Public Staff reserves the right to raise the issue of the appropriate interest rate on overrecoveries of utility incentives.

Q. WHAT IS THE IMPACT OF PUBLIC STAFF WITNESS WILLIAMSON'S TESTIMONY ON YOUR CONCLUSIONS REGARDING THE DSM/EE REVENUE REQUIREMENTS IN THIS PROCEEDING?

A. Public Staff witness Williamson has filed testimony in this proceeding discussing several topics related to the Company's filing. None of the matters discussed by Mr. Williamson necessitate an adjustment in this particular proceeding to the Company's billing factor calculations, although some of them may affect the determination of the factors in future proceedings.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE RIDER 11 BILLING FACTORS.

A. In summary, I have identified three program cost adjustments that should be made to the Rider 11 DSM/EE revenue requirement and flowed through to the DSM/EE billing factors: the adjustment to 2018 DSM/EE program costs to remove the expenses related to the

MYHER program erroneously included by the Company; and the two small adjustments to procurement card expenses. Other than these adjustments, the Public Staff has found no errors or other issues necessitating an adjustment to the Rider 11 billing factors, subject to completion of our program cost sample review.

RECOMMENDATION

Q. WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING?

A. Based on the results of the Public Staff's investigation (subject to completion of its review of 2018 program costs), I recommend that the adjustments I have recommended be incorporated into the DSM/EE billing factors. These factors should be approved subject to any true-ups in future cost recovery proceedings consistent with the Sub 1032 Settlement, the Sub 1130 Order, and the Revised Mechanism, as well as other relevant orders of the Commission, including the Commission's final order in this proceeding. In making this recommendation, the Public Staff notes that reviewing the calculation of the DSM/EE rider is a process that involves reviewing numerous assumptions, inputs, and calculations, and its recommendation with regard to this proposed rider is not intended to indicate that the Public Staff will not raise questions in future proceedings regarding the same or similar assumptions, inputs, and calculations.

Q. DO YOU HAVE ANY OTHER COMMENTS?

A. Yes. As previously stated, it is my understanding that the Company intends to file supplemental testimony and exhibits in this proceeding reflecting the Public Staff's recommended adjustments, along with certain other adjustments proposed by the Company. Once the Public Staff has had the opportunity to complete its review of the supplemental filing, it will present its conclusions and recommendations regarding the filing to the Commission.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

SUMMARY OF CERTAIN PORTIONS OF DEC'S DSM/EE MECHANISM

1. With the exception of Low-Income Programs or certain other societally beneficial non-cost-effective programs approved by the Commission, all programs submitted for approval will have an estimated Total Resource Cost (TRC) and Utility Cost (UC) test result greater than 1.00. For purposes of calculating cost-effectiveness for program approval, the Company shall use projected avoided capacity and energy benefits specifically calculated for the program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates as of the date of the program approval filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 MW reduction.

2. In each annual DSM/EE cost recovery filing, DEC shall perform and file (a) prospective cost-effective test evaluations for each of its approved DSM and EE programs, and (b) prospective aggregated portfolio-level cost-effectiveness test evaluations for its approved DSM/EE programs, using the same methodology for determining avoided capacity and energy benefits as set forth in the Revised Mechanism for program approval, except that the reference Commission-approved avoided cost credits shall be derived from those approved as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. For any program that initially demonstrates a TRC result, determined pursuant to paragraph 23A above, of less than 1.00, the Company shall either terminate the program or undertake a process over the next two years to improve program cost-effectiveness. For programs that demonstrate a prospective TRC result of less than 1.00 in a third DSM/EE rider proceeding after the initial non-cost-effective result, the Company shall terminate the program effective at the end of the year following the DSM/EE rider order, unless otherwise ordered by the Commission.

3. Industrial and large commercial customers have the flexibility to opt out of either or both of the DSM and EE categories of programs for one or more vintage years, as well as the ability to opt back into either or both the categories for a later vintage year. If a customer opts back into the DSM category, it cannot opt out again for three years; however, a customer has the freedom to opt in or out of the EE category for each vintage year. Additionally, if a customer opts out of paying the rider for a vintage year after

one or more years in which the customer was "opted in," DEC may charge the customer subsequent DSM/EE and DSM/EE EMF riders only for those vintage years in which the customer actually participated in a DSM/EE program.

4. DSM/EE and DSM/EE EMF riders will be calculated on a vintage year basis, with separate riders being calculated for the Residential customer class and for those rate schedules within the Non-Residential customer class that have DEC DSM/EE program options in which they can participate.

5. Incurred DSM and EE program costs will be directly recovered as part of the annual riders. Deferral accounting for over- and underrecoveries of costs is allowed, and the balance in the deferral account(s), net of deferred income taxes, may accrue a return at the net-of-tax rate of return approved in DEC's then most recent general rate case.

6. DEC will be allowed to recover NLR as an incentive (with the exception of those amounts related to research and development or the promotion of general awareness and education of EE and DSM activities), but will be limited for each measurement unit installed in a given vintage year to those dollar amounts resulting from kWh sales reductions experienced during the first 36 months after the installation of the measurement unit. NLR related to pilot programs are subject to additional qualifying criteria.

7. The eligibility of kWh sales reductions to generate recoverable NLR during the applicable 36-month period will cease upon the implementation of a Commission-approved alternative recovery mechanism that accounts for NLR, or new rates approved by the Commission in a general rate case or comparable proceeding.

8. NLR will be reduced by net found revenues (as defined in the Revised Mechanism) that occur in the same 36-month period. Net found revenues will continue to be determined according to the "Decision Tree" process approved by the Commission on February 8, 2011, in Docket No. E-7, Sub 831.[4]

9. DEC will be allowed to recover a PPI for its DSM and EE portfolio based on a sharing of actually achieved and verified energy and peak demand savings (excluding those related to general programs and measures and research and development activities). Any PPI related to pilot programs is subject to additional qualifying criteria. Unless the Commission determines otherwise in an annual DSM/EE rider proceeding, the amount of the pre-

[4] Additionally, in its Order issued on August 21, 2015, in Docket No. E-7, Sub 1073, the Commission found that "it is reasonable, for purposes of this proceeding, for DEC to include negative found revenues associated with its current initiative to replace mercury vapor (MV) lighting with light emitting diode (LED) fixtures in the calculation of net found revenues used in the Company's calculation of NLR."

income-tax PPI initially to be recovered for the entire DSM/EE portfolio for a vintage year will be equal to 11.5% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year. Low-income programs with expected UC test results less than 1.00 and other non-cost-effective programs with similar societal benefits as approved by the Commission will not be included in the portfolio for purposes of the PPI calculation. The PPI for each vintage year will ultimately be trued up based on net dollar savings as verified by the EM&V process and approved by the Commission. For Vintage Years 2019 and afterwards, the program-specific per kilowatt (kW) avoided capacity benefits and per kWh avoided energy benefits used for the initial estimate of the PPI and any PPI true-up will be derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 MW reduction.

10. If the Company achieves incremental energy savings of 1% of its prior year's system retail electricity sales in any year during the five-year 2014-2018 period, the Company will receive a bonus incentive of $400,000 for that year.

Appendix B

MICHAEL C. MANESS

I am a graduate of the University of North Carolina at Chapel Hill with a Bachelor of Science degree in Business Administration with Accounting. I am a Certified Public Accountant and a member of both the North Carolina Association of Certified Public Accountants and the American Institute of Certified Public Accountants.

As Director of the Accounting Division of the Public Staff, I am responsible for the performance, supervision, and management of the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties under the jurisdiction of the Commission or involved in Commission proceedings; and (2) the preparation and presentation to the Commission of testimony, exhibits, and other documents in those proceedings. I have been employed by the Public Staff since July 12, 1982.

Since joining the Public Staff, I have filed testimony or affidavits in a number of general, fuel, and demand-side management/energy efficiency rate cases of the utilities currently organized as Duke Energy Carolinas, LLC, Duke Energy Progress, LLC., and Virginia Electric and Power Company (Dominion Energy North Carolina) as well as in several water and sewer general rate cases. I have also filed testimony or affidavits in other proceedings, including applications for certificates of public convenience and necessity for the construction of generating facilities, applications for approval of self-generation deferral rates, applications for approval of cost and incentive recovery mechanisms for electric utility demand-side management and energy efficiency (DSM/EE) efforts, and applications for approval of cost and incentive recovery pursuant to those mechanisms.

I have also been involved in several other matters that have come before this Commission, including the investigation undertaken by the Public Staff into the operations of the Brunswick Nuclear Plant as part of the 1993 Carolina Power & Light Company fuel rate case (Docket No. E-2, Sub 644), the Public Staff's investigation of Duke Power's relationship with its affiliates (Docket No. E-7, Sub 557), and several applications for business combinations involving electric utilities regulated by this Commission. Additionally, I was responsible for performing an examination of Carolina Power & Light Company's accounting for the cost of Harris Unit 1 in conjunction with the prudence audit performed by the Public Staff and its consultants in 1986 and 1987.

I have had supervisory or management responsibility over the Electric Section of the Accounting Division since 1986, and also was assigned management duties over the Water Section of the Accounting Division during the 2009-2012 time frame. I was promoted to Director of the Accounting Division in late December 2016.

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1192

In the Matter of Application of Duke Energy Carolinas, LLC, for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. 62-133.9 and Commission Rule R8-69	)))))	TESTIMONY OF DAVID M. WILLIAMSON PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION

May 20, 2019

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND PRESENT POSITION.

A. My name is David M. Williamson. My business address is 430 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a Utilities Engineer with the Electric Division of the Public Staff, North Carolina Utilities Commission.

Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.

A. My qualifications and duties are included in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present the Public Staff's analysis and recommendations with respect to the following aspects of the February 26, 2019, application of Duke Energy Carolinas, LLC (DEC), for approval of its demand-side management (DSM) and energy efficiency (EE) cost recovery rider for 2020 (Rider 11). This testimony discusses: (1) the portfolio of DSM and EE programs included in the proposed Rider 11, including modifications of those programs made pursuant to the joint motion regarding program modifications approved on July 16, 2012, in Docket No. E-7, Sub 831 (Flexibility Guidelines); (2) the ongoing cost-effectiveness of each DSM and EE program; and (3) the evaluation, measurement, and evaluation (EM&V) studies filed as Exhibits A through L to the testimony of Company witness Robert P. Evans.

Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR INVESTIGATION OF DEC'S PROPOSED RIDER 10?

A. I reviewed the application and supporting testimony and exhibits, as well as DEC's responses to Public Staff data requests. In addition, I reviewed previous Commission orders related to DEC's DSM and EE programs and cost recovery rider proceedings, including the following documents:

1. The Agreement and Joint Stipulation of Settlement (Sub 831 Agreement) approved on February 9, 2010, in Docket No. E-7, Sub 831;
2. The agreement regarding EM&V approved on November 8, 2011, in Docket No. E-7, Sub 979 (EM&V Agreement);
3. The Flexibility Guidelines;
4. The Agreement and Stipulation of Settlement (Sub 1032 Agreement) approved on October 29, 2013, in Docket No. E-7, Sub 1032 (Sub 1032 Order), which approved a new DSM/EE Cost Recovery Mechanism that incorporated the EM&V Agreement and the Flexibility Guidelines (Sub 1032 Mechanism); and
5. The Commission's *Order Approving DSM/EE Rider, Revising DSM/EE* Mechanism*, and Requiring Filing of Proposed Customer Notice* issued August 23, 2017, in Docket No.

E-7, Sub 1130 (Sub 1130 Order) that approved revisions to the Sub 1032 Mechanism (Revised Mechanism).

Q. DO YOU HAVE ANY EXHIBITS?

A. Yes. I have included one exhibit with my testimony. Williamson Exhibit No. 1 shows the changes in the projected cost-effectiveness of the Company's portfolio of programs as calculated by the Company in its 2017, 2018, and current DSM/EE rider proceedings.

DSM and EE Programs in Rider 11

Q. PLEASE IDENTIFY THE DSM AND EE PROGRAMS FOR WHICH DEC IS SEEKING COST RECOVERY THROUGH THE DSM/EE RIDER IN THIS PROCEEDING.

A. In its proposed Rider 11, DEC included the costs and incentives associated with the following programs:

- Energy Assessments;
- EE Education;
- Residential Smart $aver® Energy Efficient Appliances and Devices;
- Residential Smart $aver® EE (formerly the HVAC EE Program);
- Multi-Family EE;
- My Home Energy Report (MyHER);

- Income-Qualified (formerly Low Income) Energy Efficiency and Weatherization Assistance;
- Power Manager;
- Nonresidential Smart $aver® Energy Efficient Products and Assessments Program:
    - Energy Efficiency Food Service Products;
    - Energy Efficiency HVAC Products;
    - Energy Efficiency IT Products;
    - Energy Efficiency Lighting Products;
    - Energy Efficiency Process Equipment Products;
    - Energy Efficiency Pumps and Drives;
    - Custom Incentive and Energy Assessments;
- PowerShare®;
- Power Share® Nonresidential Call Option[1];
- Small Business Energy Saver;
- Smart Energy in Offices[2];
- EnergyWise for Business; and
- Nonresidential Smart $aver® Performance Incentive.

[1] Commission Order in Sub 1130 dated August 23, 2017, approving program cancellation effective January 31, 2018.
[2] Commission Order dated February 7, 2018, approving program cancellation effective June 30, 2018.

Each of these programs has received Commission approval as a new DSM or EE program and is eligible for cost recovery in this proceeding under N.C. Gen. Stat. § 62-133.9, subject to certain program-specific conditions imposed by the Commission.

Since program approval, DEC has modified several of these programs to add or remove measures, consistent with the Flexibility Guidelines, to enhance the programs' cost-effectiveness and address changing market conditions and technologies. In each case, DEC either sought Commission approval or provided notice of those modifications in compliance with those guidelines.

I also note that since the last rider proceeding, DEC has received Commission approval to modify the Multi-Family EE, PowerShare, and Residential $aver® EE programs. These modifications were intended to expand the availability of the programs and/or improve cost-effectiveness.

<u>Program Performance</u>

Q. PLEASE DISCUSS THE PERFORMANCE OF THE PORTFOLIO.

A. While the testimony and exhibits of DEC witness Evans provide information regarding the performance of each program in DEC's portfolio, I want to bring certain information to the Commission's attention regarding the performance of particular programs, as well as the performance of DEC's overall portfolio. While the portfolio of programs seems generally to be performing satisfactorily, the federal rules imposing minimum requirements on the production of lighting-related measures, and the North Carolina market in which these measures are offered, merit further discussion. I also discuss the performance of other programs that are struggling to remain cost-effective.

Q. PLEASE DISCUSS YOUR OBSERVATIONS CONCERNING LIGHTING-RELATED MEASURES.

A. Over the years and in various dockets before the Commission, the Public Staff has highlighted several trends surrounding the adoption of EE lighting measures, i.e., that the EE lighting market for North Carolina is being transformed and that non-specialty light emitting diode (LED) lighting will likely become the baseline standard for general service bulb technologies by January 2020, thereby decreasing savings from any EE program that continues to include general service bulb technologies.

On January 19, 2017, the U.S. Department of Energy (DOE) published final rules adopting a revised definition for the general service lamp (GSL) and general service incandescent lamp (GSIL), among other modifications to other definitions, which are to become effective January 1, 2020[3]. These updates are from a DOE rulemaking to implement the second phase of the 2007 Energy Independence and Security Act (EISA) set to go into effect on January 1, 2020, otherwise known as EISA 2020.

However, on February 11, 2019, the DOE issued a notice of proposed rulemaking and request for comment that potentially could withdraw the currently approved language on GSL and GSIL.[4] As a result of this filing, further rulemaking may occur, but until such time, the current ruling is the assumed path going forward.

Market transformation is difficult to determine because the metrics associated with market transformation are subjective. However, one of the goals of utility-sponsored EE programs is to build customer awareness of, and confidence in, EE technologies, and, as a result, encourage consumers to adopt EE even without incentives. As technologies become even more energy efficient, costs decrease, and consumer acceptance improves, adoption of EE should become more routine, at which point there is "market transformation."

[3] Energy Conservation Program: Conservation Standards for General Service Lamps, 82 Fed. Reg. 7276-7322 (January 19, 2017).

[4] Energy Conservation Program: Conservation Standards for General Service Lamps, 84 Fed. Reg. 3120-3131 (February 2, 2019), https://www.federalregister.gov/documents/2019/02/11/2019-01853/energy-conservation-program-energy-conservation-standards-for-general-service-lamps

Q. DO YOU BELIEVE THAT NORTH CAROLINA'S LIGHTING MARKET HAS TRANSFORMED OR IS ON THE VERGE OF TRANSFORMING?

A. Yes. Since the Company began distributing lighting measures to its customers through DSM/EE programs, the acceptance of more efficient lighting measures has been increasing. When the Company began issuing lighting measures, the efficient bulb offering was the compact fluorescent lamp (CFL) bulb was the primary offering. As LEDs became more accessible economically to both the utilities and the customers who would receive them via discount or free incentives, the market slowly began migrating even further toward the LED market as the "go to" bulb.

For example, in DEC's Retail LED Program (Evans Exhibit C)[5], DEC's third party evaluator, Opinion Dynamics, discusses on page 16 of its report on the original intentions for the program. Opinion Dynamics explains that

> "DEC launched the Retail LED program in March 2016 with the goal of reducing electric energy consumption and peak demand through increased awareness and

[5] This report's investigation period covers bulb sales from March 21, 2016 through March 12, 2017. During this period DEC discounted 1.3 million lighting products.

> adoption of energy efficient lighting technologies. The program addresses two key barriers to the purchase of efficient lighting: (1) the higher prices of LEDs compared to less energy-efficient alternatives, such as incandescent and halogens, and (2) customer awareness and knowledge of the benefits of efficient lighting."

Opinion Dynamics also provides insight into the current state of the program's customer awareness when it discusses Net-to-Gross ratio (NTGR) and how it is calculated. The NTGR is calculated under a triangulation approach that uses sales data modeling, retailer interviews, and manufacturer interviews to determine the appropriate NTGR for use during the time period of the reports investigation. Additionally, this NTGR will be applied to the measures associated with this program until another EM&V report for the program is published, effectively superseding the current report. Focusing only on the sales data modeling of the NTGR determination, which is a reflection of customers who actually purchase bulbs, Opinion Dynamics states on page 53 of the report that:

> "…according to the results of the sales data modeling, customers would have purchased fewer LEDs in the

> absence of program discounts. We found that 73% of all LED program sales would have occurred regardless of the program discounts, i.e., a NTGR of 0.27. The NTGR is the highest for specialty LEDs (0.39) and lowest for standard LEDs and LED fixtures (0.21 and 0.16, respectively)."

A NTGR of 21% for standard LED and 16% for LED fixtures demonstrate that North Carolina's market no longer needs discounted or free non-specialty LED bulbs as part of utility EE program lighting portfolios going forward.

Q. DOES THE COMPANY STILL OFFER NON-SPECIALTY LED BULBS IN ITS PORTFOLIO DURING THIS PROCEEDING?

A. Yes, however, the Company has been working to minimize the impacts of EISA 2020, and as such, has been updating its lighting measure offerings to those focused on specialty LED bulbs. When looking at the list of measure offerings for each program, the number of non-specialty LED bulbs has been greatly reduced since the last rider proceeding. In fact, the majority of the bulbs offered by the Company across all of its residential programs are specialty LED bulbs.

In addition to the notion of market transformation mentioned in the above paragraphs, both specialty and non-specialty bulbs are cost-effective measures that can be offered to customers.

Q. WHAT IS THE PUBLIC STAFF'S ASSESSMENT OF NON-SPECIALTY LED BULBS IN THE COMPANY'S RESIDENTIAL PORTFOLIO FOR THIS PROCEEDING?

A. Regardless of the currently scheduled EISA 2020 standard and taking into consideration the Company's efforts on migrating to primarily specialty LED bulbs, and barring any updates, withdrawals, or new technologies for lighting, it appears that the North Carolina lighting market is adopting EE lighting technologies as a baseline, and because of that, an incentive for non-specialty LED bulbs will no longer be needed after Vintage 2020.

Even though cost effectiveness tests for lighting measures under this program are still showing positive scores, the Public Staff believes that the acceptance of the EE measures, shown through the NTGR, is another primary source when determining the impacts of a program and its need to remain in the portfolio.

Q. ARE THERE OTHER PROGRAMS THAT ARE STRUGGLING TO BE OR REMAIN COST-EFFECTIVE?

A. Yes. As seen in Williamson Exhibit 1, the Residential Smart Saver EE (formerly, the HVAC program), Residential Low-Income, Non-Residential Smart Saver Efficient Food Service Products, and Non-Residential Smart Saver Efficient IT Products programs are not cost-effective under the Total Resource Cost (TRC) test.

The two Non-Residential Smart Saver programs are have lower cost-effectiveness that is attributable to both level of participation and the avoided costs.

The Residential Smart Saver EE program, as mentioned above, was recently granted approval on modifications to increase its cost-effectiveness. This program has greatly increased its cost-effectiveness, even though it still remains not cost-effective. Notwithstanding the Company's efforts to maintain cost-effectiveness of this program, the Public Staff continues to be skeptical that it can be cost-effective. The Public Staff also acknowledges that HVAC programs are a staple EE program, and that the Commission's previous rulings on continuing such programs, despite the cost-effectiveness, could ultimately diminish the role of cost-effectiveness in the evaluation of EE programs.

For the Residential Low-Income program, the Public Staff has inquired about the trends of the Company’s low income program (as seen in Williamson Exhibit 1). The Company has informed the Public Staff that an update in the Company's cost-effectiveness calculation and methodology has been made to better align with the California Standard Practice Manual[6]. This update impacts the way that an incentive is treated on both the cost and benefit side of the cost-effectiveness test. This update impacts all programs that provide an incentive in the form of a discount or freebie to the participant. The Public Staff is still in discussions with the Company on the inner workings of this updated methodology, however, while reserving the right to comment on this topic in a later proceeding, we do not see an immediate issue with the application of the methodology.

Cost Effectiveness

Q. HOW IS THE COST EFFECTIVENESS OF DEC'S DSM AND EE PROGRAMS EVALUATED?

A. The Public Staff reviews the cost-effectiveness of the individual DSM/EE programs when they are proposed for approval and then annually in the rider proceedings. Pursuant to the Revised Mechanism, cost-effectiveness is evaluated at both the program and

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6 https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/CPUC_STANDARD_PRACTICE_MANUAL.pdf

portfolio levels. The Public Staff reviews cost-effectiveness using the Utility Cost (UC), TRC, Participant, and Ratepayer Impact Measure (RIM) tests. Under each of these four tests, a result above 1.0 indicates that a program is cost-effective.

A program may be above 1.0 on one or more tests, and at the same time below 1.0 on other tests. The Public Staff and the Revised Mechanism place greater weight on the UC and TRC tests.

The TRC test represents the combined utility and participant benefits that will result from implementation of the program; a result greater than 1.0 indicates that the benefits outweigh the costs of a program to both the utility and the program's participants. A UC test result greater than 1.0 means that the program is cost beneficial[7] to the utility (the overall system benefits are greater than the utility's costs, including incentives paid to participants). The Participant test is used to evaluate the benefits against the costs specific to those ratepayers who participate in a program. The RIM test is used to understand

[7] "Cost beneficial" in this sense represents the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service, and/or avoiding energy generation from existing or new facilities or purchased power.

how ratepayers who do not participate in a program will be impacted by the program.

Q. HOW IS COST-EFFECTIVENESS EVALUATED IN DSM/EE RIDER PROCEEDINGS?

A. In each DSM/EE rider proceeding, DEC files the expected cost-effectiveness of each program and the portfolio as a whole for the upcoming rate period (Evans Exhibit 7). New DSM/EE programs are approved under Commission Rule R8-68, which evaluates cost-effectiveness over a three to five year period using estimates of participation and measure attributes that can be reasonably expected over that period. The evaluations in DSM/EE rider proceedings look more specifically at the actual performance of a typical measure, providing an indication of what to expect in the next year. Each year's rider filing is updated with the most current EM&V data and other program performance data.

Q. HOW DOES THE PUBLIC STAFF ASSESS COST-EFFECTIVENESS IN EACH RIDER?

A. The Public Staff compares the cost-effectiveness test results in previous DSM/EE proceedings to the current filing, and develops a trend of cost-effectiveness that serves as the basis for the Public Staff's recommendation on whether a program should (1) continue as currently implemented, (2) be placed under watch for signs of decreasing cost-effectiveness combined with modifications to attempt to sustain cost-effectiveness, or (3) be terminated.

Q. HOW DO THE COST-EFFECTIVENESS TEST SCORES FILED IN THIS RIDER COMPARE TO SCORES IDENTIFIED IN PREVIOUS RIDERS?

A. While many programs continue to be cost effective, the TRC scores as filed by the Company for all programs have a natural ebb and flow over the years of DSM/EE rider proceeding, mainly due to the changes in avoided cost rate determinations, as mentioned earlier. These changes are shown in Williamson Exhibit No. 1.

Q. ARE THERE OTHER REASONS FOR THESE DIFFERENCES?

A. The decreasing cost-effectiveness is also partially attributable to a reduction in the unit savings from the original estimates of savings as determined through EM&V of the program. Also, as programs mature, baseline standards increase, or avoided cost rates decrease, it becomes more difficult for a program to produce cost-effective savings. On the other hand, greater than expected participation usually results in greater savings per unit cost, which increases cost-effectiveness.

EM&V

Q. HAVE YOU REVIEWED THE EM&V REPORTS FILED BY DEC?

A. Yes. The Public Staff contracted the services of GDS Associates, Inc. (GDS), to assist with review of EM&V. With GDS's assistance, I have reviewed the EM&V reports filed in this proceeding as Evans Exhibits A through L.

I also reviewed previous Commission orders to determine if DEC complied with provisions regarding EM&V contained in those orders. In the Sub 1164 DSM/EE rider proceeding for DEC, the Commission approved Public Staff's recommendations concerning:

Adjusting the NTGR scoring scale for the Non-Residential Smart Saver Custom program so that it is symmetrical, as opposed to asymmetrical, giving equal weight to survey responses that favor the Company as well as those that do not favor the Company. The Public Staff also recommended refiling this report to verify that the change had been made and updates had been issued. This recommendation has no impact on this proceeding. However, DEC has indicated that it will incorporate this recommendation into future EM&V of this program.

Q. DO YOU HAVE ANY RECOMMENDATIONS CONCERNING THE EM&V REPORTS YOU REVIEWED?

A. I have reviewed the testimony and exhibits of DEC witness Evans concerning the EM&V of DEC's DSM and EE programs. Based upon my review and upon the analysis performed by GDS, I do not have any recommendations for the EM&V reports filed in this proceeding.

Q. WERE THERE ANY EM&V REPORTS THAT WERE CARRIED OVER FROM LAST YEAR'S RIDER PROCEEDING AND LEFT OPEN FOR REVISION?

A. Yes. In the Sub 1164 proceeding in 2018, Public Staff recommended that the EM&V reports for the Non-Residential Smart Saver Custom program (Evans Exhibits B in Sub 1164) be revised before accepting the report as complete, and that the My Home Energy Report program (Evans Exhibits C in Sub 1164) be conditionally accepted until the Public Staff completed its review.

The Non-Residential Smart Saver Custom report from Sub 1164 has been revised and submitted as Evans Exhibit H in this proceeding. The Public Staff's review indicates that the Company appropriately incorporated the Public Staff's previous recommendations into this EM&V report. Therefore, I recommend that Evans Exhibit H be considered complete for purposes of calculating program impacts in this proceeding.

The review of the My Home Energy Report has been completed and the Public Staff, through discussions with the Company, GDS Associates, and the EM&V report's evaluator Nexant, concludes that this report should be considered complete. The Public Staff was able to resolve the inconsistencies that resulted in delaying our review. Due to the significant contribution of the MyHER program to the Company's portfolio, the Public Staff believes that the level of rigor associated with the EM&V review warrants a thorough analysis of the savings. The Public Staff will continue to work with the Company and the EM&V consultants to ensure that the necessary rigor is maintained for future EM&V efforts of the MyHER program.

Q. SHOULD THE EM&V REPORTS FILED IN THIS PROCEEDING BE ACCEPTED AS COMPLETE?

A. Yes. The reports filed in this proceeding, labeled as Evans Exhibits A through L, should be considered complete.

Q. HAVE YOU CONFIRMED THAT THE COMPANY'S CALCULATIONS INCORPORATE THE VERIFIED SAVINGS OF THE VARIOUS EM&V REPORTS?

A. Yes. As in previous cost recovery proceedings, I was able, through sampling, to verify that the changes to program impacts and participation were appropriately incorporated into the rider calculations for each DSM and EE program, as well as the actual participation and impacts calculated with EM&V data. I reviewed: (1) workpapers provided in response to data requests; (2) a sampling of the EE programs; and (3) Evans Exhibit 1, which incorporates data from various EM&V studies. I also met with DEC personnel to review the calculations, EM&V, DSMore, and other data related to the program/measure participation and impacts. Based on my ongoing review of this data, I believe DEC has appropriately incorporated the findings from EM&V studies and annual participation into its rider calculations consistent with Commission orders and the Revised Mechanism. I will continue to review this information and, if necessary, file further information with the Commission should my review reveal any relevant issues that would cause me to alter my recommendations or conclusions.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

APPENDIX A

DAVID M. WILLIAMSON

I am a 2014 graduate of North Carolina State University with a Bachelor of Science Degree in Electrical Engineering. I began my employment with the Public Staff's Electric Division in March of 2015. My current responsibilities within the Electric Division include reviewing applications and making recommendations for certificates of public convenience and necessity of small power producers, master meters, and resale of electric service; reviewing applications and making recommendations on transmission proposals for certificates of environmental compatibility and public convenience and necessity; and also interpreting and applying utility service rules and regulations.

My primary responsibility within the Public Staff is reviewing and making recommendations on DSM/EE filings for initial program approval, program modifications, EM&V evaluations, and on-going program performance of DEC, DEP, and DENC's portfolio of programs. I filed an affidavit in DEP's 2016 DSM/EE rider proceeding in Docket No. E-2, Sub 1108, and I have also filed testimony in various DEC, DEP, and DENC's DSM/EE rider proceedings.

Duke Energy Carolinas, LLC
Comparison of "As-Filed" Cost-Effectiveness Scores to Previous DSM/EE Riders
Docket Number E-7, Sub 1192

D. Williamson Exhibit No. 1
E-7, Sub 1192

	2017 - filing year vintage 2018 Evans Exhibit 7 in Sub 1130				2018 - filing year vintage 2019 Evans Exhibit 7 in Sub 1164				2019 - filing year vintage 2020 Evans Exhibit 7 in Sub 1192				TRC % Change
	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	
Residential Programs:													
Appliance Recycling Program	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy Efficiency Education	1.72	2.32	0.90	-	1.22	1.69	0.53	-	1.32	1.32	0.54	7.68	-22%
Energy Efficient Appliances & Devices	3.19	3.43	0.91	4.36	2.4	2.17	0.42	6.11	3.27	3.54	0.70	7.50	63%
Residential Smart $aver EE (formerly, HVAC EE)	1.60	0.99	0.83	1.39	0.94	0.59	0.45	1.52	1.31	0.95	0.60	1.84	61%
Income-Qualified Energy Efficiency and Weatherization Assistance	0.49	4.51	0.38	-	0.19	0.83	0.16	-	0.21	0.35	0.17	2.80	-58%
Multi-Family Energy Efficiency	4.00	6.09	1.06	-	2.82	4.71	0.59	-	2.97	2.97	0.61	22.81	-37%
My Home Energy Report	1.98	1.98	0.86	-	1.56	1.56	0.57	-	1.89	1.89	0.61	-	21%
Power Manager	5.18	10.33	5.18	-	4.33	8.86	4.33	-	4.22	8.72	4.22	-	-2%
Residential Energy Assessments	2.65	3.05	1.06	-	1.41	1.56	0.54	-	1.36	1.34	0.49	30.23	-14%
Residential Total	2.91	3.65	1.20	6.03	2.22	2.60	0.70	7.69	2.5	3.02	1.04	6.61	16%
Non-Residential Programs:													
Business Energy Report	1.39	1.39	0.71	-	-	-	-	-	-	-	-	-	-
Non Residential Smart Saver Custom Energy Assessments	5.87	1.64	1.56	1.36	2.17	0.89	0.68	1.78	3.07	1.08	0.84	1.99	21%
Non Residential Smart Saver Custom	4.88	1.96	1.43	1.87	2.38	1.07	0.67	2.18	3.42	1.79	0.84	3.38	68%
EnergyWise For Business	1.44	2.70	0.94	-	0.83	1.21	0.68	-	0.72	1.25	0.61		3%
Non Residential Smart Saver Energy Efficient Food Service Products	4.44	2.74	1.21	2.65	2.68	1.95	0.61	3.18	1.40	0.81	0.51	2.02	-58%
Non Residential Smart Saver Energy Efficient HVAC Products	3.41	2.11	1.53	1.29	2.04	1.63	0.88	1.82	1.57	1.24	0.70	2.06	-24%
Non Residential Smart Saver Energy Efficient Lighting Products	4.12	1.96	1.16	1.61	3.48	1.44	0.74	2.17	4.29	2.00	0.80	3.75	39%
Non Residential Smart Saver Energy Efficient Pumps and Drives Products	3.71	3.51	0.85	3.35	2.54	2.45	0.54	3.56	3.68	2.63	0.86	5.38	7%
Non Residential Smart Saver Energy Efficient IT Products	4.14	2.34	0.89	3.16	2.36	1.77	0.59	3.79	0.60	0.46	0.31	2.55	-74%
Non Residential Smart Saver Energy Efficient Process Equipment Products	2.39	2.42	0.85	2.67	2.13	2.23	0.47	4.21	2.14	1.85	0.70	3.86	-17%
Non Residential Smart Saver Performance Incentive	3.53	1.14	1.29	1.08	2.7	0.81	0.69	1.50	3.29	1.06	0.83	1.79	30%
Small Business Energy Saver	3.91	2.50	1.46	2.38	2.59	1.61	0.77	3.00	2.70	1.67	0.80	2.93	4%
Smart Energy in Offices	3.75	5.84	1.69	-	-	-	-	-	-	-	-	-	-
PowerShare Call Option	-	-	-	-	-	-	-	-	-	-	-	-	-
PowerShare	3.24	60.80	2.05	-	2.9	41.14	2.90	-	3.35	112.28	3.35	-	173%
Non-Residential Total	3.94	2.50	1.41	2.04	2.69	1.67	0.85	2.41	3.28	2.13	0.94	3.34	27%
Overall Portfolio total:	3.44	2.88	1.31	2.78	2.46	1.98	0.78	3.48	2.90	2.43	0.98	4.00	23%