PLACE: Dobbs Building, Raleigh, North Carolina

DATE: Tuesday, June 2, 2015

TIME: 9:40 a.m. - 9:52 a.m.

DOCKET NO: E-7, Sub 1073

BEFORE: Commissioner ToNola D. Brown-Bland, Presiding
Chairman Edward S. Finley, Jr.
Commissioner Bryan E. Beatty
Commissioner Don M. Bailey
Commissioner Jerry C. Dockham
Commissioner James G. Patterson

IN THE MATTER OF:

Application of Duke Energy Carolinas, LLC, for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69.

A P P E A R A N C E S:

FOR DUKE ENERGY CAROLINAS, LLC:

Robert W. Kaylor, Esq.
Law Office of Robert W. Kaylor, P.A.
353 E. Six Forks Road, Suite 260
Raleigh, North Carolina 27609

FOR CAROLINA UTILITY CUSTOMERS ASSOCIATION, INC:

Robert F. Page, Esq.
Crisp, Page & Currin, LLP
4010 Barrett Drive, Suite 205
Raleigh, North Carolina 27609

FOR NORTH CAROLINA SUSTAINABLE ENERGY ASSOCIATION:

Peter Ledford, Esq.
Regulatory Counsel
4800 Six Forks Road, Suite 300
Raleigh, North Carolina 27609

A P P E A R A N C E S Cont'd.:

FOR CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY RATES, III:

Adam Olls, Esq.
Bailey & Dixon
434 Fayetteville Street, Suite 2500
Raleigh, North Carolina 27601

FOR SOUTHERN ALLIANCE FOR CLEAN ENERGY:

Gudrun Thompson, Esq.
601 W. Rosemary Street, Suite 220
Chapel Hill, North Carolina 27516

FOR THE USING AND CONSUMING PUBLIC:

Lucy E. Edmondson, Esq.
North Carolina Utilities Commission
4326 Mail Service Center
Raleigh, North Carolina 27699-4326

T A B L E O F C O N T E N T S:

E X H I B I T S

	Identified / Admitted
Duke Energy Carolinas, LLC, Application and Amended Application	/11
Barnes Direct Exhibits 1 - 11	11/11
Barnes Supplemental Exhibits 1 - 4	11/11
Miller Exhibits 1 - 7	39/39
Miller Supplemental Exhibits 1 - 7	66/66
Ham Exhibits 1 - 2	73/73
Ham Exhibits A - I	73/73
Allred Exhibits 1 - 2	88/88
Maness Exhibit 1	126/126
NCSEA Exhibits 1 - 2	151/151

P R O C E E D I N G S

COMMISSIONER BROWN-BLAND: All right. Let's come back to order and proceed with Docket E-7, Sub 1073. I am Commissioner ToNola D. Brown-Bland and I'm the presiding Commissioner for this hearing, and with me this morning are Chairman Edward S. Finley, Jr., and Commissioners Bryan E. Beatty, Don M. Bailey, Jerry C. Dockham and James G. Patterson.

I now call for hearing Docket Number E-7, Sub 1073, In the Matter of Application by Duke Energy Carolinas, LLC, hereafter DEC, for Approval of Demand-side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69.

On March 4, 2015, DEC filed its annual Application for approval of DSM/EE Cost Recovery Rider pursuant to G.S. 62-133.9 and Rule R8-69 to recover all reasonable and prudent costs incurred for the adoption and implementation of new DSM and EE measures and appropriate incentives. Filed with the Application were the direct testimony and exhibits of witnesses Conitsha Barnes, Roshena M. Ham, and Carolyn T. Miller.

On March 16, 2015, the Applicant filed an

Amended Application along with the corrected testimony and exhibits of Carolyn T. Miller.

On March 18, 2015, the Commission issued an Order Scheduling Hearing, Requiring Filing of Testimony, Establishing Discovery Guidelines and Requiring Public Notice. The Order set the hearing in this docket for today, Tuesday, June 2, 2015 following the hearing in Docket E-7, Sub 1072.

Petitions to Intervene were filed by North Carolina Sustainable Energy Asociation; Carolina Utility Customers Association, Inc.; Carolina Industrial Group for Fair Utility Rates III; and Southern Alliance for Clean Energy, also referred to as SACE. The Petitions were granted by Orders of the Commission.

The Public Staff's participation as a party is recognized pursuant to North Carolina General Statute 62-15(d) and Commission Rule R1-19(e).

DEC filed the required Affidavits of Publication on May 12, 2015.

On May 15, 2015, DEC filed the supplemental direct testimony and exhibits of Carolyn T. Miller and the supplemental exhibits of Conitsha B. Barnes. DEC also filed a Motion for Additional Public Hearing and

Public Notice of Revised Proposed Rates.

On May 18, 2015, the Commission issued an Order granting the Public Staff's Motion for Extension of Time to file intervenor testimony and exhibits.

On May 20, 2015, SACE filed testimony and exhibits of Taylor Allred, and the Public Staff filed Affidavits of Jack L. Floyd and Michael C. Maness.

On May 22, 2015, DEC, SACE and the Public Staff filed a Joint Motion to Excuse Witnesses from Appearance at the Evidentiary Hearing.

On May 28, 2015, the Commission issued an Order Scheduling Additional Public Hearing and Requiring Customer Notice. The Order scheduled the additional public hearing for Tuesday, July 7, 2015, at 10:00 a.m. in this Commission hearing room. Also, on May 28, 2015, the Commission issued an Order granting the Motion to Excuse the parties' witnesses from attending today's hearing.

In compliance with the requirements of Chapter 138A of the State Government Ethics Act, I remind the members of the Commission of our responsibility to avoid conflicts of interest, and inquire whether any member has a conflict of interest with respect to the matter before us this morning?

(No response.)

Let the record reflect that no conflicts were identified.

I now call for appearances of counsel beginning with DEC.

MR. KAYLOR: Thank you, Madam Chair. Members of the Commission, Robert Kaylor appearing on behalf of Duke Energy Carolinas.

MR. PAGE: Robert Page appearing on behalf of Carolina Utility Customers Association, one of the Intervenors.

MS. THOMPSON: Good morning. Gudrun Thompson appearing on behalf of Southern Alliance for Clean Energy, also an Intervenor.

MR. LEDFORD: Peter Ledford appearing on behalf of the North Carolina Sustainable Energy Association.

MR. OLLS: Good morning. Adam Olls, Bailey and Dixon, on behalf of Carolina Industrial Group for Fair Utility Rates III.

MS. EDMONDSON: Good morning. Lucy Edmondson with the Public Staff appearing on behalf of the Using and Consuming Public.

COMMISSIONER BROWN-BLAND: And good morning

to all of you. Are there any preliminary matters to come before the Commission before we move into the hearing?

MR. KAYLOR: Madam Chair, as indicated from the chronology that you have just presented to us, the parties have agreed to waive cross examination and ask that the prefiled testimony of all the parties, as well as the affidavits, be entered into the record as if the witnesses were on the stand and testified, and that their exhibits, which have been premarked, also be entered into evidence.

And, once again, I'd like to thank all the parties for working with the Company to arrive at this stage of the proceeding. I will note, and I believe you've indicated, that Duke did file its original Application and testimony on March 4th, and it did file the amended Application with some changes to the testimony of Carolyn Miller on March 16th. And we would ask that all of that be introduced in the record as previously requested.

COMMISSIONER BROWN-BLAND: All right. There being no objection, the motion will be allowed and the prefiled direct testimony, supplemental testimony of all the parties will be received into evidence and

accepted as if given orally from the witness stand. The exhibits attached to all of that testimony will be received into evidence and identified as premarked. Also, the Application and the Amended Application will be received into evidence in accordance with the motion made by Mr. Kaylor. Did I catch everything?

MR. KAYLOR: I believe so.

Duke Energy Carolinas, LLC, Application and Amended Application

(Admitted)

Barnes Exhibits 1 - 11

(Identified and Admitted)

Barnes Supplemental Exhibits 1 - 4

(Identified and Admitted)

(WHEREUPON, the prefiled direct testimony of CONITSHA BARNES is copied into the record as if given orally from the stand.)

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Conitsha B. Barnes. My business address is 550 South Tryon Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Carolinas, LLC ("Duke Energy Carolinas," "DEC," or the "Company") as a Strategy and Collaboration Manager – Carolinas in the Company's Market Solutions Regulatory Strategy and Evaluation group.

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from North Carolina State University with a Bachelor of Arts in Political Science. I started my career with Duke Energy Carolinas in 1998. From 1998 to 2008, I worked in the call center organization in a variety of roles including customer service specialist, alternate shift supervisor and business analyst. In 2008, I joined the Marketing Department, where I managed the portfolio of energy efficiency income-qualified low income programs offered in North Carolina, South Carolina, Ohio, Kentucky and Indiana. I joined the Market Solutions Regulatory Strategy and Evaluation group in 2010 as a Strategy and Collaboration Manager - Carolinas.

Q. PLEASE DESCRIBE YOUR DUTIES AS STRATEGY AND COLLABORATION MANAGER.

A. I am responsible for the analysis and support of DEC's Energy Efficiency ("EE") and Demand-Side Management ("DSM") programs.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No, I have not testified before this Commission.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports DEC's Application for approval of its DSM/EE Cost Recovery Rider, Rider EE, for 2016 ("Rider 7"), which encompasses components relating to both the Company's save-a-watt pilot approved in Docket No. E-7, Sub 831, as well as the new cost recovery mechanism and portfolio of programs approved in the Commission's *Order Approving DSM/EE Programs and Stipulation of Settlement* issued October 29, 2013 in Docket No. E-7, Sub 1032 ("Sub 1032 Order"). My testimony provides (1) an overview of the Commission's Rule R8-69 filing requirements; (2) a synopsis of the EE and DSM programs included in this filing; (3) discussion of our results to date; (4) an explanation of how these results have affected the Rider 7 calculations; (5) an overview of cost recovery under the new mechanism; and (6) any updates the Company has made since the Commission's Sub 1032 Order, as well as its October 29, 2014 Order approving DEC's Rider EE for 2015 in Docket No. E-7, Sub 1050.

Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. Barnes Exhibit 1 supplies, for each program, load impacts and avoided cost revenue requirements by vintage. Barnes Exhibit 2 contains a summary of net lost revenues for the period June 1, 2009 to December 31, 2016. Barnes Exhibit 3 contains the actual program costs for North Carolina for June 1, 2009 through December 31, 2014 and estimated costs for the DEC system for the twelve months ending December 31, 2016. Barnes Exhibit 4 contains the found revenues used in the net lost revenues calculations. Barnes Exhibit 5 supplies evaluations of event-based programs. Barnes Exhibit 6 contains a discussion of the findings and results of DEC's programs and a comparison of impact estimates from the previous year. Barnes Exhibit 7 contains the modified projected program and portfolio cost-effectiveness results for the portfolio of programs approved in the Sub 1032 Order. Barnes Exhibit 8 contains a summary of program performance and an explanation of the variances between the expected program results and the actual results. It is designed to create more transparency with regard to the factors that have driven these variances. Barnes Exhibit 9 is a list of DEC's industrial and large commercial customers that have opted out of participation in its DSM or EE programs and a listing of those customers that have elected to participate in new measures after having initially notified the Company that they declined to participate, as required by Commission Rule R8-69(d)(2). Barnes Exhibit 10

contains the detailed calculations underlying DEC's achievement level under the save-a-watt earnings cap. Barnes Exhibit 11 contains the projected shared savings incentive associated with Vintage 2016.

Q. WERE BARNES EXHIBITS 1-11 PREPARED BY YOU OR AT YOUR DIRECTION AND SUPERVISION?

A. Yes, they were.

II. RULE R8-69 FILING REQUIREMENTS

Q. WHAT INFORMATION DOES DEC PROVIDE IN RESPONSE TO THE COMMISSION'S FILING REQUIREMENTS?

A. The information for Rider 7 is provided in response to the Commission's filing requirements contained in R8-69(f)(1) and can be found in the testimony and exhibits of Company witnesses Barnes, Ham and Miller as follows:

R8-69(f)(1)		Items	Location in Testimony
(i)		Projected NC retail sales for the rate period	Miller Exhibit 6
(ii)		For each measure for which cost recovery is requested through Rider 7:	
(ii)	a.	Total expenses expected to be incurred during the rate period	Barnes Exhibit 1
(ii)	b.	Total costs savings directly attributable to measures	Barnes Exhibit 1
(ii)	c.	Evaluation, Measurement, and Verification activities for the rate period	Ham Exhibit 1
(ii)	d.	Expected summer and winter peak demand reductions	Barnes Exhibit 1
(ii)	e.	Expected energy reductions	Barnes Exhibit 1
(iii)		Filing requirements for DSM/EE EMF rider, including:	
(iii)	a.	Total expenses for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Barnes Exhibit 3

(iii)	b.	Total avoided costs for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Barnes Exhibit 1
(iii)	c.	Description of results from EM&V activities	Testimony of Roshena Ham and Ham Exhibits A-I
(iii)	d.	Total summer and winter peak demand reductions in the aggregate and broken down per program	Barnes Exhibit 1
(iii)	e.	Total energy reduction in the aggregate and broken down per program	Barnes Exhibit 1
(iii)	f.	Discussion of findings and results of programs	Testimony of Conitsha Barnes and Barnes Exhibit 6
(iii)	g.	Evaluations of event-based programs	Barnes Exhibit 5
(iii)	h.	Comparison of impact estimates from previous year and explanation of significant differences	Testimony of Conitsha Barnes and Barnes Exhibits 6 and 8
(iv)		Determination of utility incentives	Testimony of Conitsha Barnes & Barnes Exhibits 10 and 11
(v)		Actual revenues from DSM/EE and DSM/EE EMF riders	Miller Exhibit 3
(vi)		Proposed Rider 7	Testimony of Carolyn Miller & Miller Exhibit 1
(vii)		Projected NC sales for customers opting out of measures	Miller Exhibit 6
(viii)		Supporting work papers	CD accompanying filing

III. PORTFOLIO OVERVIEW

Q. WHAT ARE DEC'S CURRENT EE AND DSM PROGRAMS?

A. The Company has two interruptible programs for non-residential customers, Interruptible Service ("IS") and Standby Generation ("SG") that are accounted for outside of the cost recovery mechanism approved by the Commission in the Sub 1032 Order. Aside from IS and SG, the following DSM and EE programs have been implemented by DEC in its North Carolina service territory:

RESIDENTIAL CUSTOMER PROGRAMS

- Appliance Recycling Program
- Energy Assessments Program
- Energy Efficiency Education Program
- Energy Efficient Appliances and Devices
- HVAC Energy Efficiency Program
- Multi-Family Energy Efficiency Program
- My Home Energy Report
- Income-Qualified Energy Efficiency and Weatherization Program
- Power Manager

NON-RESIDENTIAL CUSTOMER PROGRAMS

- Non-Residential Smart $aver® Energy Efficient Food Service Products Program
- Non-Residential Smart $aver® Energy Efficient HVAC Products Program
- Non-Residential Smart $aver® Energy Efficient IT Products Program
- Non-Residential Smart $aver® Energy Efficient Lighting Products Program
- Non-Residential Smart $aver® Energy Efficient Process Equipment Products Program
- Non-Residential Smart $aver® Energy Efficient Pumps and Drives Products Program
- Non-Residential Smart $aver® Custom Program

- Non-Residential Smart $aver® Custom Energy Assessments Program
- PowerShare®
- PowerShare® CallOption
- Energy Management and Information Services Pilot Program[1]
- Small Business Energy Saver (Approved on August 13, 2014 in Docket No. E-7, Sub 1055)
- Smart Energy in Offices (Approved on August 13, 2014 in Docket No. E-7, Sub 961)

Q. ARE THESE SUBSTANTIVELY THE SAME PROGRAMS DEC RECEIVED APPROVAL FOR IN DOCKET NO. E-7, SUB 1032?

A. Yes. The programs contained in the current portfolio are the same as those approved by the Commission in the Sub 1032 Order, with the exception of the additions of the Smart Energy in Offices ("SEO") and Small Business Energy Saver ("SBES") programs and discontinuation of the Energy Management and Information Services ("EMIS") Pilot Program.

Q. PLEASE DESCRIBE ANY UPDATES MADE TO THE UNDERLYING ASSUMPTIONS FOR DEC'S PORTFOLIO OF PROGRAMS THAT HAVE ALTERED PROJECTIONS FOR VINTAGE 2016.

A. Duke Energy Carolinas made several updates to the underlying assumptions for the program portfolio for Vintage 2016 compared to what was filed and

[1] The North Carolina Utilities Commission issued an Order on November 26, 2014 in Docket No. E-7, Sub 1032 approving DEC's request to discontinue the Energy Management and Information Services Pilot Program.

approved in Docket No. E-7, Sub 1032. First, consistent with the notice that the Company filed with the Commission on December 18, 2013 in Docket No. E-7, Sub 1032, DEC, after reaching agreement with the Public Staff, updated the avoided capacity rates to reflect the rates contained in the Stipulation of Settlement among DEC, Duke Energy Progress, Inc. and the Public Staff filed October 29, 2013 in Docket No. E-100, Sub 136. Second, in accordance with the Agreement and Stipulation of Settlement ("Stipulation") that DEC reached with the Public Staff, the North Carolina Sustainable Energy Association ("NCSEA"), the Southern Alliance for Clean Energy ("SACE"), Environmental Defense Fund ("EDF"), Natural Resources Defense Council ("NRDC"), the South Carolina Coastal Conservation League, and the Sierra Club, and which was filed with the Commission on August 19, 2013 (the "Stipulation") and approved in the Sub 1032 Order, DEC updated the avoided transmission and distribution ("T&D") rates. These two updates affect the avoided cost benefits associated with each of the programs and, consequently, the cost-effectiveness of the entire portfolio and DEC's projected shared savings incentive.

The third update reflects restating the estimated program participation and cost for the rate period of January 1, 2016 to December 31, 2016 based on market conditions and program performance experienced in Vintage 2014.

The fourth update reflects the additions of the costs and impacts associated with the SBES and SEO programs to the portfolio, as well as the

removal of costs and impacts associated with the discontinued EMIS Pilot Program.

The final update reflects the application of Evaluation, Measurement, and Verification ("EM&V") results and updating of the savings impacts for those programs for which DEC received EM&V results after it filed its application in Docket No. E-7, Sub 1050. Updating programs for EM&V results will change the projected avoided cost benefits associated with the projected participation and hence will impact the calculation of the specific program and overall portfolio cost-effectiveness, as well as impact the calculation of DEC's projected shared savings incentive.

Q. AFTER FACTORING THESE UPDATES INTO THE VINTAGE 2016 PORTFOLIO, DO THE RESULTS OF DEC'S PROSPECTIVE COST-EFFECTIVENESS TESTS INDICATE THAT IT SHOULD DISCONTINUE OR MODIFY ANY OF ITS PROGRAMS?

A. In accordance with the Stipulation, DEC performed the prospective analysis of each of its programs and the aggregate portfolio for the Vintage 2016 period. As discussed above, this analysis factored in the impact of updating the program cost, participation, avoided energy capacity rates and T&D rates and the impacts of programs for which DEC received updated EM&V. The projected cost-effectiveness from this analysis for each program and the entire portfolio for Vintage 2016 is contained in Barnes Exhibit 7. This exhibit shows that, with the exception of the Income-Qualified EE Products and

Services Program, which was not cost-effective prior to the updates, and the HVAC EE Program, all of the programs and the aggregate portfolio continue to project cost-effectiveness. Since the HVAC EE Program provides efficiency opportunities for such a large component of overall residential usage, and because the program is on the border of being cost effective, DEC does not plan to discontinue the program. Instead, DEC is currently evaluating opportunities to modify the HVAC EE Program in order to enhance the program and return it to being a cost-effective program.

Q. DID DEC MAKE ANY MODIFICATIONS TO ITS PORTFOLIO OF PROGRAMS DURING VINTAGE 2014?

A. Yes. The Company increased the customer incentive from $30 to $50 per recycled appliance for the Appliance Recycling Program.[2] In addition, DEC expanded the number of participants who were offered the My Home Energy Report[3] and added an electronic/interactive report allowing participants to receive reports in an electronic/interactive format that should lead to greater energy savings. The modifications were made in compliance with the Flexibility Guidelines approved by the Commission in the Sub 1032 Order.

IV. EE AND DSM PROGRAM RESULTS TO DATE

[2] The Company filed notification of the program change for the Appliance Recycling Program July 25, 2014 in Docket No. E-7, Sub 1032.

[3] The Company filed notification of the program changes for the My Home Energy Report Program on November 7, 2014 in Docket No. E-7, Sub 1032.

Q. HOW MUCH ENERGY, CAPACITY AND AVOIDED COST SAVINGS DID DEC DELIVER AS A RESULT OF ITS EE AND DSM PROGRAMS DURING VINTAGE 2014?

A. During Vintage 2014, DEC's EE and DSM programs delivered over 546 million kilowatt hours ("kWh") of energy savings and nearly 880 megawatts ("MW") of capacity savings, which produced net present value of avoided cost savings of $324 million.

Q. HOW MUCH ENERGY, CAPACITY AND AVOIDED COST SAVINGS HAS DEC DELIVERED AS A RESULT OF THESE PROGRAMS DURING THE SAVE-A-WATT PILOT?

A. Since receiving approval for the save-a-watt pilot, DEC, through its EE and DSM programs, has generated over 2,030 gigawatt hours ("GWh") of energy reductions and over 980 MW of capacity reductions. These programs have also generated nearly $925 million in nominal avoided cost benefits for DEC's customers.

Q. HOW DO THESE RESULTS COMPARE WITH THE PERFORMANCE TARGETS IN DOCKET NO. E-7, SUB 831?

A. As shown in Barnes Exhibit 10, during the four-year term of the modified save-a-watt pilot, the actual nominal avoided cost benefits generated by these programs are nearly 123 percent of the target to achieve shown in Exhibit B to the Agreement and Joint Stipulation of Settlement between DEC, the Public Staff, SACE, EDF, NRDC, and the Southern Environmental Law Center filed

June 12, 2009 in Docket No. E-7, Sub 831 ("Save-a-Watt Settlement"). Similarly, capacity impacts are over 115 percent of the target over the four-year term of the save-a-watt pilot, and energy impacts are over 135 percent of the cumulative target. Notably, this achievement is as compared to the original targets and does not reflect the impact of opt-outs on the number of eligible participants as contemplated in the Save-a-Watt Settlement. In other words, DEC exceeded the targets without adjustment. Given DEC's achievement beyond the avoided cost targets for its save-a-watt pilot, the Company is entitled to the highest earning cap allowed under the Save-a-Watt Settlement. Essentially, due to the outstanding results delivered during the four-year term of the save-a-watt pilot, DEC is allowed to earn the lesser of the permitted avoided cost revenues or 15 percent of the program costs on an after-tax basis. After comparing the allowed avoided cost revenue calculation to the 15 percent earnings cap on program cost, DEC determined that it is appropriate to apply the 15 percent after-tax earnings cap, which is reflected in the calculation of the final save-a-watt true-up component of Rider 7.

Q. DID ANY PROGRAMS SIGNIFICANTLY OUT-PERFORM RELATIVE TO THEIR ORIGINAL ESTIMATES FOR VINTAGE 2014)?

A. Yes. During Vintage 2014, DEC's portfolio of programs was able to deliver energy and capacity savings that yielded avoided costs that were almost 119 percent of the target, and it did so while only expending 89 percent of targeted

program cost. While DEC's the Company's entire portfolio of programs performed well, programs in the portfolio that feature lighting measures continued to contribute the largest portion of the impacts. In the residential market, the energy efficient lighting component of the Energy Efficient Appliances and Devices Program, the EE Education Program, and the Energy Assessment Program achieved elevated participation with customers adopting measures at much higher rates than originally anticipated. As a result of this higher participation, the savings impacts for the three programs, compared to those originally filed for Vintage 2014, exceeded the projections by 605 percent, 136 percent and 312 percent, respectively. In Vintage 2014, the energy savings associated with the Non-Residential Smart $aver EE Lighting Products program achieved 129 percent of the as-filed impacts.

Q. HAVE ANY PROGRAMS SIGNIFICANTLY UNDERPERFORMED RELATIVE TO THEIR ORIGINAL ESTIMATES IN VINTAGE 2014?

A. Yes. The Income-Qualified EE and Weatherization Program underperformed during Vintage 2014, in large part due to the continuing inability to implement the Weatherization and Equipment Replacement component of the program. Since the exhaustion of the North Carolina and South Carolina State Energy Offices' ARRA funds in late 2012, DEC had been working with the State Energy Offices to reestablish a plan for them to partner and administer the program as a component of the new portfolio filing. In 2014, the State Energy Offices requested to be removed from consideration in providing

weatherization services as the program administrator. The Company has since identified a program administrator for the Weatherization and Equipment Replacement measures through a Request for Proposal ("RFP"). The program administrator signed a contract with DEC in fourth quarter of 2014 and plans to launch the program in March 2015.

Another program that underperformed during Vintage 2014 was the Appliance Recycling Program. The program has struggled to hit its targeted achievement and only delivered 30 percent of the anticipated savings. This underperformance was driven by both lower customer participation (58 percent of target) and an erosion of the savings impact recognized per participant that occurred due to application of EM&V results. The details associated with the change in impacts that resulted from the replacement of the initial impact estimates with the EM&V results, are shown in Ham Exhibit C. In an attempt to address the lower than anticipated participation in early 2014, DEC filed notification to increase the participant incentive from $30 to $50 effective May 1, 2014. This modification appears to have been effective, as the program observed more than a 200 percent increase in participation after the increased participant incentive was implemented.

V. RIDER IMPACTS

Q. HAVE THE PARTICIPATION RESULTS AFFECTED THE VINTAGE 2014 EXPERIENCE MODIFICATION FACTOR?

A. Yes. The Experience Modification Factor ("EMF") in Rider 7 accounts for changes to actual participation relative to the forecasted participation levels utilized in DEC's Vintage 2014 Rider EE. As DEC receives actual participation information, it is then able to update participation-driven actual avoided cost benefits and the net lost revenues derived from its EE and DSM programs. For example, as mentioned above, the Appliance Recycling Program and Income-Qualified EE and Weatherization Program underperformed relative to their original participation targets. As a result, the EMF will be reduced to reflect the lower costs, net lost revenues and shared savings incentive associated with these programs. On the other hand, higher-than-expected participation in the Energy Assessments, Non-Residential Smart $aver EE Lighting Products, and EE Education programs, as well as the additions of the SEO and SBES programs, cause the EMF to reflect higher program costs, net lost revenues, and shared savings incentive.

Q. HOW ARE THE RESULTS OF EVALUATION, MEASUREMENT AND VERIFICATION APPLIED TO DEC'S EE PROGRAMS?

A. As further explained in Company witness Ham's testimony, EM&V is a comprehensive assessment and data collection methodology that DEC utilizes to determine the achieved load reductions, actual free ridership, and the effectiveness of program design for each measure or program. Pursuant to the Stipulation, and consistent with the agreement reached by DEC, SACE, and the Public Staff and approved by the Commission in its *Order Approving*

DSM/EE Rider and Requiring Filing of Proposed Customer Notice issued on November 8, 2011 in Docket No. E-7, Sub 979 ("EM&V Agreement"), for all EE programs, with the exception of Non-Residential Smart $aver Custom Rebate Program and Low Income Energy Efficiency and Weatherization Assistance Program, DEC applies EM&V results retrospectively to the beginning of the program offering. For the purposes of the vintage true-ups, these initial EM&V results will be considered actual results for a program until the next EM&V results are received. The new EM&V results will then be considered actual results going forward and applied prospectively for the purposes of truing up vintages from the first day of the month immediately following the month in which the study participation sample for the EM&V was completed. This EM&V will then continue to apply and be considered actual results until it is superseded by new EM&V results, if any.

For all new programs and pilots, DEC will follow a consistent methodology. In other words, initial estimates of impacts will be used until DEC has valid EM&V results, which will then be applied back retrospectively to the beginning of the offering and will be considered actual results until a second EM&V is performed.

Q. HOW WILL EM&V BE INCORPORATED INTO THE VINTAGE 2014 TRUE-UP COMPONENT OF RIDER 7?

A. All of the final EM&V results that have been received by DEC as of December 31, 2014 have been applied prospectively from the first day of the

month immediately following the month in which the study participation sample for the EM&V was completed in accordance with the EM&V Agreement. Accordingly, for any program for which DEC has received EM&V results, the per participant impact applied to the projected program participation in Vintage 2014 is based upon the actual EM&V results that have been received.

Q. PLEASE DESCRIBE HOW DEC CALCULATED FOUND REVENUES.

A. Consistent with the Stipulation and with the "Decision Tree" found in Appendix A of the Commission's February 8, 2011 order in Docket No. E-7, Sub 831, and approved for the new portfolio in the Sub 1032 Order, possible found revenue activities were identified, categorized, and netted against the net lost revenues created by DEC's EE programs. Found revenues may result from activities that directly or indirectly result in an increase in customer demand or energy consumption within DEC's service territory. Load-building activities such as these, however, would not be considered found revenues *per se* if they (1) would have occurred regardless of DEC's activity, (2) were a result of a Commission-approved economic development activity not determined to produce found revenues, or (3) were part of an unsolicited request for DEC to engage in an activity that supports efforts to grow the economy. On the other hand, found revenues would occur for load growth that did not fall into the previous categories but was directly or indirectly a result of DEC's activities. Based on the results of this work, all potential

found revenue-related activities are identified and categorized in Barnes Exhibit 3. Additionally, as discussed in the testimony of Company witness Timothy J. Duff in Docket E-7, Sub 1050, DEC also proposes to adjust calculation of found revenues to account for the impacts of activities outside of its EE programs that it undertakes that reduce customer consumption – i.e., "negative found revenues."

Q. PLEASE DISCUSS THE ADJUSTMENT THAT DEC PROPOSES TO MAKE TO ITS FOUND REVENUE CALCULATION TO ACCOUNT FOR THE ACTIVITIES IT HAS TAKEN OUTSIDE OF ITS EE PROGRAMS THAT REDUCE CONSUMPTION.

A. In his direct testimony in Docket No, E-7, Sub 1050, Company witness Duff discussed that DEC was planning to aggressively pursue with its outdoor lighting customers the replacement of aging Mercury Vapor lights with Light Emitting Diode ("LED") fixtures. By moving customers past the standard High Pressure Sodium ("HPS") fixture to an LED fixture in this replacement process, DEC is generating significant energy savings. These energy savings, since they come outside of DEC's EE programs, are not captured in DEC's calculation of lost revenues. Since one of the activities that DEC includes in the calculation of found revenues is the increase in consumption from new outdoor lighting fixtures added by DEC, it is logical and symmetrical to count the energy consumption reduction realized in outdoor lighting efficiency upgrades. The Company does not take credit for the entire efficiency gain

from replacing Mercury Vapor lights, but rather only the efficiency gain from replacing HPS with LED fixtures. It is also important to note that DEC has not recognized any negative found revenues in excess of the found revenues calculated; in other words, the net found revenues number will never be negative and have the effect of increasing net lost revenue calculations. The Company does not believe the Public Staff is opposed to DEC's proposal, based on Public Staff Witness Maness's Affidavit filed in Docket No. E-7, Sub 1050, which states: "In general, the Public Staff acknowledges that there may be cases in which it may be appropriate, for purposes of determining the DSM/EE Rider, to offset positive found revenues with negative ones. However, should the Company propose such an offset; the underlying circumstances and impacts on the utility will need to be evaluated very carefully, on a case-by-case basis."

Q. HAS THE OPT-OUT OF NON-RESIDENTIAL CUSTOMERS AFFECTED THE RESULTS FROM THE PORTFOLIO OF APPROVED PROGRAMS?

A. Yes, the opt-out of qualifying non-residential customers has had a negative effect on DEC's overall non-residential impacts. For Vintage 2014, DEC had 1,782 eligible customer accounts opt out of participating in DEC's non-residential portfolio of EE programs. Although this represents slightly more than 15 percent of eligible customer accounts, these same customer accounts represent nearly 49 percent of the load for all eligible customers. Essentially,

this means that DEC could only deliver the efficiency benefits associated with its non-residential programs to customers who comprise approximately 70 percent of its total non-residential customer load.

Q. PLEASE DESCRIBE THE ACTIVITIES UNDERTAKEN BY DEC TO ENCOURAGE NON-RESIDENTIAL CUSTOMERS TO OPT INTO ITS PROGRAMS GOING FORWARD.

A. In addition to the structural enhancements that were incorporated into DEC's portfolio approved in the Sub 1032 Order, DEC continues to enhance its non-residential portfolio through both program additions and program enhancements to make opting into the Rider more attractive to customers. In 2014, DEC successfully commercialized its Smart Energy Now Program and made it available across its entire service territory through the SEO program. In 2014, DEC also worked to develop a midstream channel for its Non-residential Prescriptive Program to provide customers with yet another way to take advantage of the program by working directly with distributors. The Company also worked on developing a streamlined approach to the Non-residential Custom Program application process in order to remove some of the traditional barriers to participation. The Company plans to bring this approach to market in 2015.

VI. THE VINTAGE 2016 COMPONENT OF RIDER 7

Q. WHAT IS THE PRIMARY DIFFERENCE BETWEEN THE VINTAGE 2016 COMPONENT OF DEC'S PROPOSED RIDER 7 AND THE SAVE-A-WATT TRUE-UP PORTION OF THE PROPOSED RIDER 7?

A. The primary difference is that the revenue requirement calculation for the Vintage 2016 component of the Rider 7 filing applies the shared savings recovery mechanism approved in the Sub 1032 Order.

Q. PLEASE PROVIDE AN OVERVIEW OF THE SHARED SAVINGS RECOVERY MECHANISM APPROVED IN DOCKET NO. E-7, SUB 1032.

A. Pursuant to the Stipulation, DEC's cost recovery mechanism allows it to (1) recover the reasonable and prudent costs incurred for adopting and implementing DSM and EE measures in accordance with N.C. Gen. Stat. §62-133.9 and Commission Rules R8-68 and R8-69; (2) recover net lost revenues incurred for up to 36 months of a measure's life for EE programs; and (3) earn a Portfolio Performance Incentive ("PPI") based upon the sharing of 11.5% of the net savings achieved through DEC's EE and DSM programs on an annual basis.

Q. PLEASE EXPLAIN HOW DEC DETERMINES THE PPI.

A. First, DEC determines the net savings eligible for incentive by subtracting the present value of the annual lifetime EE and DSM program costs (excluding approved low-income programs as described below) from the net present value of the annual lifetime avoided costs achieved through the Company's

programs (again, excluding approved low-income programs). The Company then multiplies the net savings eligible for incentive by the 11.5% shared savings percentage to determine its pretax incentive.

Q. PLEASE EXPLAIN IF DEC EXCLUDES ANY PROGRAMS FROM THE DETERMINATION OF ITS PPI CALCULATION.

A. Consistent with the Stipulation, DEC has excluded the impacts and costs associated with the Income-Qualified EE and Weatherization Program from its calculation of the PPI. At the time the program was approved, it was not cost-effective, but was approved based on its societal benefit. As such, although DEC is eligible to recover the program costs and 36 months of the net lost revenues associated with the impacts of the program, it does not earn an incentive, and the negative net savings associated with these types of programs is not factored into the calculation of the annual shared savings PPI.

Q. PLEASE EXPLAIN HOW PROGRAMS THAT ARE DETERMINED NOT TO BE COST-EFFECTIVE, BUT ARE OFFERED BY THE COMPANY ARE TREATED.

A. Duke Energy Carolinas recognizes that there are certain EE programs that may not be cost-effective at an annual view, but are nevertheless offered as DEC evaluates opportunities to redesign the program to restore the program offerings to cost-effectiveness. As discussed previously, the residential HVAC EE Program is not cost-effective for Vintage 2016, but DEC continues to offer it. For this program, because it was approved as a cost effective

program offering, DEC is eligible to recover the program costs and 36 months of the net lost revenues associated with the impacts of the program, but has factored in the negative net savings into the calculation of the projected annual shared savings PPI.

VII. PROJECTED RESULTS

Q. PLEASE PROVIDE A PROJECTION OF THE RESULTS THAT DEC EXPECTS TO SEE FROM IMPLEMENTATION OF THE NEW PORTFOLIO.

A. Consistent with its practices during the save-a-watt pilot, DEC will update the actual and projected EE achievement levels in its annual Rider EE filing to account for any program or measure additions based on the performance of programs, market conditions, economics and consumer demand. The actual results for Vintage 2014 and projection of the results for the next three years as well as the associated projected program expense for DEC's portfolio of programs are summarized in Table 2 below:

Table 2.

Duke Energy Carolinas System (NC & SC) EE/DSM Portfolio 2014 Actual Results and 2015-2017 Projected Results				
	2014	2015	2016	2017
Annual System MW	880	970	1,047	1,049
Annual System Net MWh	545,986	413,574	591,015	434,467
Annual Program Costs (Millions)	$90	$105	$124	$111

These projections are very similar to those provided by DEC and approved by the Commission in Docket No. E-7, Sub 1032. The projected impacts and cost for Vintage 2016 are different as a result of updated participation estimates as well as the EM&V results that have been applied to the following programs: My Home Energy Report, Appliance Recycling, the Residential Neighborhood Component of the Income-Qualified EE and Weatherization Program, the Specialty Bulb Measures included in the Energy Efficient Appliances and Devices Program, the Tune and Seal elements of the HVAC EE Program, Power Manager and PowerShare. In addition, the Vintage 2016 projected impacts and costs reflect projected participation in SEO and SBES, the two new programs approved during Vintage 2014.

VIII. COLLABORATIVE DISCUSSIONS AND COMPANY COMMITMENTS

Q. PLEASE PROVIDE AN UPDATE OF THE STATUS OF THE COLLABORATIVE'S DISCUSSION OF COMBINED HEAT AND POWER ("CHP").

A. When DEC conducted its first quarter Collaborative meeting on February 26, 2015, one of the agenda items discussed was the potential to supplement its current capability to incentivize CHP through its Non-Residential Custom Program with a new dedicated CHP Program Pilot. During the meeting Isaac Panzarella of North Carolina State University presented information regarding other states' CHP programs, as well as his work related to estimating the

potential for CHP in North Carolina. Following his presentation, the Collaborative discussed the belief of some stakeholders that a dedicated pilot program would cause more awareness among potential CHP customers, since there have been no application filed for CHP under the Custom Program to date. As a result of the meeting, the Company agreed to work to establish a CHP Working Group ("CWG") consisting of technical experts, legal support and other interested stakeholders and to conduct the first CWG meeting no later than March 31, 2015. In this meeting, the CWG will discuss and evaluate potential constructs for a CHP Pilot Program, which could then be modeled by the Company to determine cost-effectiveness and feasibility. In the event that a CHP Pilot Program is not developed and filed with the Commission prior to DEC's next EE/DSM annual filing, DEC will report the outcome of the CWG meetings in its 2016 filing.

Q. HAS DEC IMPLEMENTED THE NORTH CAROLINA INCOME-QUALIFIED EE WEATHERIZATION PROGRAM?

A. As discussed earlier, due to the unfortunate withdrawal of the State Energy Office from discussions to establish it as the Program administrator, DEC was forced to select another program administrator for the program, which has delayed program implementation until late March 2015. The Company will continue to provide updates to the Collaborative on the implementation of this program and will also update the Commission in next year's annual filing.

Q. PLEASE PROVIDE AN UPDATE ON THE RESULTS FROM CHANGES MADE TO REDUCE OPT OUTS.

A. In March of 2014, DEC offered customers who had previously elected to opt out in the annual window the opportunity to opt in the first week of March (five business days). During the five-day period, DEC received notification that 101 customer accounts accounting for a total annual usage of 147,294.5 MWh elected to opt in. The implementation of the additional window allowed for these customers to opt in to participate in EE and/or DSM programs that otherwise would not have had this option. In addition to the annual opt-in window, the Sub 1032 Order approved DEC's request to increase the incentive up to 75 percent of the cost difference between new standard equipment and new higher efficiency equipment for measures offered in the Non-Residential Smart $aver Program. To date, DEC has not had EM&V performed on the Non-Residential Smart $aver Program that could potentially provide insight into isolating the effect of the increase to 75 percent has had on opt-out. Given the number of changes that have occurred with the portfolio and the opt out eligibility, without the benefit of any EM&V results DEC cannot determine the impact this change has had on opt-out at this time. The Company will continue to monitor opt out trends and will attempt to further evaluate the impact of the incentive increases upon receiving EM&V results.

IX. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Miller Exhibits 1 - 7

(Identified and Admitted)

(WHEREUPON, the prefiled direct testimony of CAROLYN MILLER is copied into the record as if given orally from the stand.)

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Carolyn T. Miller, and my business address is 550 South Tryon Street, Charlotte, North Carolina.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Rates Manager for Duke Energy Carolinas, LLC ("Duke Energy Carolinas," "DEC," or the "Company").

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from the College of New Jersey in Trenton, New Jersey with a Bachelor of Science in Accountancy. I am a certified public accountant licensed in the State of North Carolina. I began my career in 1994 with Ernst & Young as a staff auditor. In 1997, I began working with Duke Energy (now known as Duke Energy Carolinas) as a senior business analyst and have held a variety of positions in the finance organization. I joined the Rates Department in 2014 as Manager, Rates and Regulatory Strategy.

Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES AT DUKE ENERGY CAROLINAS?

A. I am responsible for providing regulatory support and guidance on DEC's energy efficiency cost recovery process. This includes, but is not limited to, calculating system allocations, determining the earnings cap for save-a-watt vintages, and determining final customer rates.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports DEC's Application for approval of its Demand-Side Management ("DSM")/Energy Efficiency ("EE") Rider, Rider EE, for 2016 ("Rider 7"). Rider 7 includes components relating to both DEC's save-a-watt pilot approved in Docket No. E-7, Sub 831,[1] as well as the new cost recovery mechanism and portfolio of programs approved by the Commission in Docket No. E-7, Sub 1032. The prospective components of Rider 7 include (1) an estimate of the third year of net lost revenues for Vintage 2014 of DEC's EE programs under the new mechanism; (2) an estimate of the second year of net lost revenues for Vintage 2015 of DEC's EE programs under the new mechanism; and (3) estimates of the program costs, incentive and net lost revenues for Vintage 2016 EE and DSM programs under the new mechanism.

The Rider 7 Experience Modification Factor ("EMF") includes the final save-a-watt true-up for Vintages 1-4. This includes final evaluation, measurement and verification ("EM&V") results for all vintages, an updated estimate of total revenue collections through 2015, and expected net lost revenue collections for 2016. The Rider 7 EMF also includes the true-up of the first year of program costs, incentive and net lost revenues for Vintage 2014 of DEC's EE and DSM programs under the new mechanism. In my

[1] The save-a-watt pilot, which included DEC's initial portfolio of EE/DSM programs and modified save-a-watt cost recovery mechanism, expired December 31, 2013. However, because net lost revenue recovery and true-ups of prior vintages extend beyond the expiration of the pilot, components relating to the save-a-watt pilot are included in Rider 7. The save-a-watt pilot also provides for a final true-up upon completion of the four-year term which is also included in Rider 7.

testimony, I discuss the key concepts and attributes of Rider 7, as well as the mechanics and calculations that are incorporated within Rider 7.

Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. Miller Exhibit 1 summarizes the individual rider components for which DEC requests approval in this filing. Miller Exhibit 2 shows calculations of rates for each vintage, with separate calculations for non-residential EE and DSM programs within each vintage. Miller Exhibit 3 shows the actual and prospective amounts collected from customers via Riders 1-6 related to Vintages 1, 2, 3, and 4, the save-a-watt vintages for which a true-up calculation is performed in this filing, as well as Vintages 2014 and 2015. Miller Exhibit 4 presents the calculation of the earnings cap for the save-a-watt pilot program. Miller Exhibit 5 provides the calculation of the allocation factors used to allocate system EE and DSM costs to DEC's North Carolina retail jurisdiction. Miller Exhibit 6 presents the forecasted sales for the rate period (2016), updated forecasted sales for 2015, and the estimated sales related to customers that have opted out of various vintages. These amounts are used to determine the forecasted sales to which the Rider 7 amounts will apply, and to update the projected amounts to be collected in Rider 6. Miller Exhibit 7 is the proposed tariff sheet for Rider 7.

Q. WERE MILLER EXHIBITS 1-7 PREPARED BY YOU OR AT YOUR DIRECTION AND SUPERVISION?

A. Yes.

I. OVERVIEW OF RECOVERY MECHANISMS

A. SAVE-A-WATT PILOT

Q. PLEASE PROVIDE AN OVERVIEW OF COST RECOVERY UNDER THE MODIFIED SAVE-A-WATT COMPENSATION MECHANISM.

A. The modified save-a-watt compensation mechanism is described in the Agreement and Joint Stipulation of Settlement between DEC, the Public Staff - North Carolinas Utilities Commission ("Public Staff"), Southern Alliance for Clean Energy ("SACE"), Environmental Defense Fund ("EDF"), Natural Resources Defense Council ("NRDC"), and the Southern Environmental Law Center, which was filed on June 12, 2009 in Docket No. E-7, Sub 831 ("Save-a-Watt Settlement"), and approved in the Commission's *Order Approving Agreement and Joint Stipulation of Settlement Subject to Certain Commission-Required Modifications and Decisions on Contested Issues* issued on February 9, 2010 ("Save-a-Watt Order"). The modified save-a-watt compensation mechanism is designed to allow DEC to collect a level of revenue equal to 75% of its estimated avoided capacity costs applicable to DSM programs, 50% of the net present value of estimated avoided capacity and energy costs applicable to EE programs, and to recover net lost revenues for EE programs only. Revenues collected under save-a-watt are based on the expected avoided costs and the associated net lost revenues to be realized at an 85% level of achievement of DEC's avoided cost savings target for the applicable vintage per the Save-a-Watt Settlement. The 85% billing factor was used

until an initial true-up was performed at the end of the four-year pilot as calculated in Rider 6.

The Company calculates billing factors for Rider EE for residential and non-residential customers. The Company calculates the residential charge based on the avoided costs of programs targeted to residential customers, and the non-residential charge based on the avoided costs of programs targeted to non-residential customers.

The modified save-a-watt compensation mechanism employs a vintage year concept, and there were four calendar year vintages[2] during the limited term of the modified save-a-watt pilot. Recovery under save-a-watt includes annual net lost revenues associated with each vintage of EE programs for a 36-month period. Therefore, the recovery of net lost revenues applicable to EE programs for certain vintage years extends several years beyond the initial four-year cost recovery period.

The Save-a-Watt Settlement provides for a series of vintage true-ups that are conducted to update revenue requirements, including net lost revenues, based on actual customer participation results for each vintage. EM&V results are applied during vintage true-ups in accordance with the EM&V agreement reached by DEC, SACE and the Public Staff and approved by the Commission in its *Order Approving DSM/EE Rider and Requiring*

[2] Vintage 1 is an exception in terms of length. Vintage 1 is the 19-month period beginning June 1, 2009 and ending December 31, 2010, as a result of the approval of save-a-watt programs prior to the approval of the cost recovery mechanism. The remaining save-a-watt vintages are 12-month periods aligning with calendar years as follows: Vintage 2 (January 1, 2011 through December 31, 2011); Vintage 3 (January 1, 2012 through December 31, 2012); and Vintage 4 (January 1, 2013 through December 31, 2013).

Filing of Proposed Customer Notice issued on November 8, 2011 in Docket No. E-7, Sub 979 ("EM&V Agreement"). The true-ups for each vintage also incorporate the difference between (1) the revenues collected based on billings at 85% of targeted savings, which in turn are established based upon estimated participation levels and initial assumptions of load impacts; and (2) the amount of revenues that DEC is permitted to collect under the Save-a-Watt Settlement based on actual participation levels and load impacts. The vintage true-ups also provide the opportunity to recover the cost of pilot programs or new programs introduced during a vintage year.

After the end of the four-year modified save-a-watt pilot, the Save-a-Watt Settlement calls for a final true-up, which includes a final comparison of the revenues collected from customers through Rider EE during the modified save-a-watt pilot to 100% of the amount of revenue DEC is authorized to collect from customers based on the independently measured and verified results as described in the Save-a-Watt Settlement. The Company will flow the difference through to, or collect from, customers where appropriate. If there are amounts owed to customers, DEC will refund such amounts with interest at a rate to be determined by the Commission in the first true-up proceeding in which an over-collection occurs.

The final true-up process also includes calculations that determine the earnings for the entire program and ensure that the level of DEC's compensation is capped so that the after-tax rate of return on actual program

costs applicable to EE and DSM programs does not exceed the predetermined earnings cap levels set out in the Save-a-Watt Settlement.

Q. PLEASE EXPLAIN THE OPT-OUT PROCESS FOR NON-RESIDENTIAL CUSTOMERS.

A. In its *Order Granting Waiver, in Part, and Denying Waiver, in Part* ("Waiver Order") issued April 6, 2010 in Docket No. E-7, Sub 938, the Commission approved, in part, DEC's request for waiver of Commission Rule R8-69(d)(3), thereby allowing the Company to permit qualifying non-residential customers[3] to opt out of the DSM and/or EE portion of Rider EE during annual election periods. If a customer opts into a DSM program (or never opted out), the customer is required to participate for three years in the approved save-a-watt DSM programs and rider. If a customer chooses to participate in an EE program (or never opted out), that customer is required to pay the EE-related avoided cost revenue requirements and the net lost revenues for the corresponding vintage of the programs in which it participated. Customers that opt out of DEC's DSM and/or EE programs remain opted-out for the term of the save-a-watt pilot, unless they choose to opt back in during any of the succeeding annual election periods, which occur from November 1 to December 31 each year. If a customer participates in any vintage of programs, the customer is subject to all true-up provisions of the approved Rider EE for any vintage in which the customer participates.

Q. WHAT ARE THE SAVE-A-WATT COMPONENTS OF RIDER 7?

[3] Individual commercial customer accounts with annual energy usage of not less than 1,000,000 kWh and any industrial customer account.

A. The proposed Rider 7 consists of five distinct components related to the save-a-watt pilot: (1) an EMF component designed to collect the final half year of net lost revenues for Vintage 4;[4] (2) an EMF component that consists of the true-up of the third year of net lost revenues for Vintage 4 EE programs; (3) an EMF component that consists of the true-up of the final year of net lost revenues for participants in Vintage 3 EE programs;[5] (4) an EMF component for Vintages 1-4 resulting from the final EM&V; and (5) an EMF component for Vintages 1-4 resulting from the final save-a-watt true-up.

Q. WILL RIDER 7 BE THE FINAL RIDER CONTAINING COMPONENTS RELATING TO SAVE-A-WATT VINTAGES?

A. Yes. No further true-ups of save-a-watt vintages will be performed. The filing in this Docket is the last filing reflecting charges relating to the save-a-watt pilot, and Rider 7 will represent the final rider associated with save-a-watt vintages.

B. NEW MECHANISM

Q. PLEASE PROVIDE AN OVERVIEW OF COST RECOVERY UNDER THE NEW MECHANISM.

A. The Company's new cost recovery mechanism, which replaces the modified save-a-watt compensation mechanism, is described in the Agreement and

[4] Lost revenues associated with January through June participation in Vintage 3 have been incorporated into the Company's base rates effective September 25, 2013 (Docket No. E-7, Sub 1026). As a result, the Company will discontinue collection of net lost revenues associated with January through June participation in Vintage 3 through Rider EE effective September 25, 2013.

[5] Lost revenues associated with participation in Vintage 2 have been incorporated into the Company's base rates effective September 25, 2013 (Docket No. E-7, Sub 1026). As a result, the Company will discontinue collection of net lost revenues for Vintage 2 through Rider EE effective September 25, 2013.

Stipulation of Settlement DEC reached with the Public Staff, the North Carolina Sustainable Energy Association ("NCSEA"), EDF, SACE, the South Carolina Coastal Conservation League ("CCL"), NRDC, and the Sierra Club, which was filed with the Commission on August 19, 2013 (the "Stipulation"), and approved in the Commission's *Order Approving DSM/EE Programs and Stipulation of Settlement* issued on October 29, 2013 ("Sub 1032 Order"). The new mechanism is designed to allow DEC to collect revenue equal to its incurred program costs[6] for a rate period plus a Portfolio Performance Incentive ("PPI") based on shared savings achieved by DEC's DSM and EE programs, and to recover net lost revenues for EE programs only.

The Company will continue the practice previously approved by the Commission for the modified save-a-watt pilot program which allowed it to recover net lost revenues associated with a particular vintage for a maximum of 36 months or the life of the measure, and provided that the recovery of net lost revenues shall cease upon the implementation of new rates in a general rate case to the extent that the new rates are set to recover net lost revenues.

Like the modified save-a-watt pilot, the new recovery mechanism employs a vintage year concept based on the calendar year.[7] In each of its annual rider filings, DEC plans to perform an annual true-up process for the prior calendar year vintage. The true-up will reflect actual participation and

[6] Program costs are defined under Rule R8-68(b)(1) as all reasonable and prudent expenses expected to be incurred by the electric public utility, during a rate period, for the purpose of adopting and implementing new DSM and EE measures previously approved pursuant to Rule R8-68.

[7] To distinguish from save-a-watt vintages, each vintage under the new mechanism is referred to by the calendar year of its respective rate period (*e.g.*, Vintage 2016).

verified EM&V results for the most recently completed vintage, applied in the same manner as agreed upon in the EM&V Agreement.

The Company has implemented deferral accounting for over- and under-recoveries of costs that are eligible for recovery through the annual DSM/EE rider. Under the Stipulation, the balance in the deferral account(s), net of deferred income taxes, may accrue a return at the net-of-tax rate of return rate approved in DEC's then most recent general rate case. The methodology used for the calculation of interest shall be the same as that typically utilized for DEC's Existing DSM Program rider proceedings. Pursuant to Commission Rule R8-69(c)(3), DEC will not accrue a return on net lost revenues or the PPI. Miller Exhibit 2, pages 9 through 12, shows the calculation performed as part of the true-up of Vintage 2014.

The Company expects that most EM&V will be available in the timeframe needed to true-up each vintage in the following calendar year. If any EM&V results for a vintage are not available in time for inclusion in DEC's next annual rider filing, however, then the Company will make an appropriate adjustment in the next subsequent annual filing.

Q. HOW DOES DEC CALCULATE THE PPI?

A. Pursuant to the Stipulation, DEC calculates the dollar amount of PPI by multiplying the shared savings achieved by the system portfolio of DSM and EE programs by 11.5%. Company witness Conitsha Barnes further describes the specifics of the PPI calculation in her testimony. In addition, Barnes Exhibit 1 page 6 shows the revised PPI for Vintage 2014 based on updated

EM&V results, and Barnes Exhibit 1 page 7 shows the estimated PPI by program type and customer class for Vintage Year 2016. As referenced on page 5 and page 7 of Miller Exhibit 2, the system amount of PPI is then allocated to North Carolina retail customer classes in order to derive customer rates.

Q. HOW DO CHANGES TO DEC'S OPT-OUT PROVISIONS AFFECT COST RECOVERY UNDER THE MECHANISM?

A. Company witness Barnes discusses an enhancement to the current opt-out provisions in order to increase participation in DEC's programs, namely an additional opportunity for qualifying customers to opt in to DEC's EE and/or DSM programs during the first five business days of March. Under the new mechanism, DEC will continue its practice of charging Rider EE to all customers who have not elected to opt out during an enrollment period and who participate in any vintage of programs. Such customers would be subject to all true-up provisions of the approved Rider EE for any vintage in which the customers participate. In addition, customers who choose to begin participating in DEC's EE and DSM programs during the special "opt-in period" during March of each year will be retroactively billed the applicable Rider EE amounts back to January 1 of the vintage year, such that they will pay the appropriate Rider EE amounts for the full rate period.

Q. WHAT ARE THE NEW MECHANISM COMPONENTS OF RIDER 7?

A. The proposed Rider 7 consists of five distinct components related to the new mechanism: (1) a prospective Vintage 2014 component designed to collect the

third year of estimated net lost revenues for DEC's 2014 vintage of EE programs; (2) a true-up of Vintage 2014 program costs, shared savings and participation for EE as well as DSM programs; (3) a prospective Vintage 2015 component designed to collect the second year of estimated lost revenues for DEC's 2015 vintage of EE programs; (4) a prospective 2016 component designed to collect program costs, an earned incentive (*i.e.*, the PPI), and the first year of net lost revenues for DEC's 2016 vintage of EE programs; and (5) a prospective Vintage 2016 component designed to collect program costs and the PPI for DEC's 2016 vintage of DSM programs.

C. CALCULATIONS CONSISTENT IN BOTH RECOVERY MECHANISMS

Q. HOW DOES DEC ALLOCATE REVENUE REQUIREMENTS TO THE NORTH CAROLINA RETAIL JURISDICTION AND TO THE RESIDENTIAL AND NON-RESIDENTIAL RATE CLASSES?

A. The Company allocates both save-a-watt and the new portfolio revenue requirements related to program costs and incentives for EE programs targeted at retail residential customers across North Carolina and South Carolina to its North Carolina retail jurisdiction based on the ratio of North Carolina retail kWh sales (grossed up for line losses) to total retail kWh sales (grossed up for line losses), and then recovers them only from North Carolina residential customers. The revenue requirements related to EE programs targeted at retail non-residential customers across North Carolina and South Carolina are allocated to North Carolina retail jurisdiction based on the ratio of North

Carolina retail kWh sales (grossed up for line losses) to total retail kWh sales (grossed up for line losses), and then recovered from only North Carolina retail non-residential customers. The portion of revenue requirements related to net lost revenues for EE programs is not allocated to North Carolina retail jurisdiction, but rather is specifically computed based on the kW and kWh savings of North Carolina retail customers.

For DSM programs, because residential and non-residential programs are similar in nature, the aggregated revenue requirement for all retail DSM programs targeted at both residential and non-residential customers across North Carolina and South Carolina are allocated to North Carolina retail jurisdiction based on North Carolina retail contribution to total retail peak demand. Both residential and non-residential customer classes are allocated a share of total system DSM revenue requirements based on each group's contribution to total retail peak demand.

The allocation factors used in DSM/EE EMF true-up calculations for each vintage are based on DEC's most recently filed Cost of Service studies at the time that the Rider EE filing incorporating the true-up is made. If there are subsequent true-ups for a vintage, DEC will use the same allocation factors as those used in the original DSM/EE EMF true-up calculations.

Q. HOW DOES DEC CALCULATE THE NET LOST REVENUES FOR THE PROSPECTIVE COMPONENTS OF RIDER EE?

A. For the prospective components of Rider EE, net lost revenues are estimated by multiplying the portion of DEC's tariff rates that represent the recovery of

fixed costs by the estimated North Carolina retail kW and kWh reductions applicable to EE programs by rate schedule, and reducing this amount by estimated found revenues. The Company calculates the portion of North Carolina retail tariff rates (including certain riders) representing the recovery of fixed costs by deducting the recovery of fuel and variable operation and maintenance ("O&M") costs from its tariff rates. The lost revenues totals for residential and non-residential customers are then reduced by North Carolina retail found revenues computed using the weighted average lost revenue rates for each customer class. The testimony and exhibits of Company witness Barnes provide information on the actual and estimated found revenues which offset lost revenues.

Q. HOW DOES DEC CALCULATE THE NET LOST REVENUES FOR THE EMF COMPONENTS OF RIDER EE?

A. For the EMF components of Rider EE, DEC calculates the net lost revenues by multiplying the portion of its tariff rates that represent the recovery of fixed costs by the actual and verified North Carolina retail kW and kWh reductions applicable to EE programs by rate schedule, and reducing this amount by actual found revenues.

Q. DOES DEC ADJUST THE RATE FOR NON-RESIDENTIAL CUSTOMERS TO ACCOUNT FOR THE IMPACT OF "OPT-OUT" CUSTOMERS?

A. Yes. The impact of opt-out results is considered in the development of the Rider EE billing rates for non-residential customers. Since the revenue

requirements will not be recovered from non-residential customers that opt out of DEC's programs, the forecasted sales used to compute the rate per kWh for non-residential rates exclude sales of customers that have opted out of the vintage to which the rate applies. This adjustment is shown on Miller Exhibit 6. For the final save-a-watt true-up, the most recent opt out information was used in conjunction with the most recent forecasted kWh for 2015 to reflect the most recent estimate of revenues collected. This adjustment is shown on Miller Exhibit 3, page 3 and Miller Exhibit 6, pages 1 and 2.

Q. HOW DOES DEC CALCULATE THE PROPOSED BILLING FACTORS?

A. The billing factors are computed separately for EE and DSM measures by dividing the revenue requirements for each customer class, residential and non-residential, by the forecasted sales for the rate period for the customer class. For non-residential rates, the forecasted sales exclude the estimated sales to customers who have elected to opt out of paying Rider EE. Because non-residential customers are allowed to opt out of DSM and/or EE programs separately in an annual election, non-residential billing factors are computed separately for each vintage.

II. RIDER 7 COMPONENTS

Q. PLEASE DESCRIBE THE STRUCTURE OF RIDER 7 PURSUANT TO THE STIPULATION.

A. The Stipulation provides that DEC shall calculate one integrated (prospective) DSM/EE rider and one integrated DSM/EE EMF rider for the residential

class, to be effective each rate period. The integrated residential DSM/EE EMF rider must include all true-ups for each vintage year appropriately considered in each proceeding. Given that qualifying non-residential customers can opt out of EE and/or DSM programs, DEC calculates separate DSM and EE billing factors for the non-residential class. Additionally, the non-residential DSM and EE EMF billing factors are determined separately for each vintage year appropriately considered in each proceeding, so that the factors can be appropriately charged to non-residential customers based on their opt-in/out status and participation for each vintage year.

A. PROSPECTIVE COMPONENTS

Q. WHAT IS THE RATE PERIOD FOR THE PROSPECTIVE COMPONENTS OF RIDER 7?

A. In accordance with the Commission's *Order on Motions for Reconsideration* issued on June 3, 2010 in Docket No. E-7, Sub 938 ("Second Waiver Order") and the Sub 1032 Order, DEC has calculated the prospective components of Rider 7 using the rate period January 1, 2016 through December 31, 2016.

Q. WHAT IS THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2014?

A. The Company determines the estimated revenue requirements for Vintage 2014 separately for residential and non-residential customer classes, and bases them on the third year of net lost revenues for its Vintage 2014 EE programs. The amounts are based on estimated North Carolina retail kW and kWh

reductions and DEC's rates approved in its most recent general rate case, which became effective September 25, 2013.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2015.

A. The Company determines the estimated revenue requirements for Vintage 2015 separately for residential and non-residential customer classes, and bases them on the second year of net lost revenues for its Vintage 2015 EE programs. The amounts are based on estimated North Carolina retail kW and kWh reductions and DEC's rates approved in its most recent general rate case, which became effective September 25, 2013.

Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE REQUIREMENTS RELATING TO VINTAGE 2016.

A. The estimated revenue requirements for Vintage 2016 EE programs include program costs, a shared savings incentive (PPI), and the first year of net lost revenues determined separately for residential and non-residential customer classes. The estimated revenue requirements for Vintage 2016 DSM programs include program costs and a shared savings incentive (PPI). The program costs and shared savings incentive are computed at the system level and allocated to North Carolina based on the allocation methodologies discussed earlier in my testimony. The net lost revenues for EE programs are based on estimated North Carolina retail kW and kWh reductions and the rates approved in DEC's most recent general rate case, which became effective September 25, 2013.

Q. WHAT ARE DEC'S PROPOSED INITIAL BILLING FACTORS APPLICABLE TO NORTH CAROLINA JURISDICTIONAL ELECTRIC CUSTOMERS FOR THE PROSPECTIVE COMPONENTS OF RIDER 7?

A. The Company's proposed initial billing factor for the Rider 7 prospective components is 0.3324 cents per kWh for DEC's North Carolina retail residential customers. For non-residential customers, the amounts differ depending upon customer elections of participation. The following chart depicts the options and rider amounts:

Non-Residential Billing Factors for Rider 7 Prospective Components	¢/kWh
Vintage 2014 EE participant	0.0256
Vintage 2015 EE participant	0.0345
Vintage 2016 EE participant	0.2164
Vintage 2016 DSM participant	0.0709

B. TRUE-UP (EMF) COMPONENTS

Q. WHAT IS THE TEST PERIOD FOR THE EMF COMPONENT?

A. Pursuant to the Second Waiver Order and Sub 1032 Order, the "test period" for the EMF component is defined as the most recently completed vintage year at the time of DEC's Rider EE cost recovery application filing date, which in this case is Vintage Year 2014 (January 1, 2014 through December 31, 2014). In addition, the Second Waiver Order allows the EMF to cover multiple test periods. Accordingly, the test period for the EMF related to the

final true-up includes the four prior save-a-watt vintages: Vintage 1 (June 1, 2009 through December 31, 2010); Vintage 2 (January 1, 2011 through December 31, 2011); Vintage 3 (January 1, 2012 through December 31, 2012); and Vintage 4 (January 1, 2013 through December 31, 2013).

Q. WHAT IS BEING "TRUED UP" FOR VINTAGE 2014?

A. The chart below demonstrates which components of the Vintage 2014 estimate filed in 2013 are being "trued up" in the Vintage 2014 EMF component of Rider 7. Miller Exhibit 2 contains the calculation of the true-up for Vintage 2014. The second year of net lost revenues for Vintage 2014, which are a component of Rider 6 billings during 2015, will be trued-up to actual amounts during the next rider filing.

	Vintage 2014 Estimate (2014) As Filed (Filed 2013)	**Vintage 2014 True Up (2016) (Filed March 2015)**
	Rider 5	**Rider 7 EMF**
Participation	Estimated participation assuming January 1, 2014 sign up date	Update for actual participation for January – December 2014
EM&V	Initial assumptions of load impacts	Updated according to Commission-approved EM&V Agreement
Lost Revenues	Estimated 2014 participation using half-year convention	Update for actual participation for January – December 2014 and actual 2014 lost revenue rates
Found Revenues	Estimated according to Commission-approved guidelines	Update for actual according to Commission-approved guidelines
New Programs	Only includes programs approved prior to estimated filing	Update for any new programs and pilots approved and implemented since estimated filing

In addition, DEC has implemented deferral accounting for the under/over collection of program costs and calculated a return at the net-of-tax rate of return rate approved in DEC's most recent general rate case. The methodology used for the calculation of interest is the same as that typically utilized for DEC's Existing DSM Program rider proceedings. Pursuant to Commission Rule R8-69(c)(3), DEC is not accruing a return on Net Lost Revenues or the PPI. See Miller Exhibit 2, pages 9 through 12 for the calculation performed as part of the true-up of Vintage Year 2014.

Q. HOW WERE THE LOAD IMPACTS UPDATED?

A. For DSM programs, the contracted amounts of kW reduction capability from participants are considered to be components of actual participation. As a result, the Vintage 2014 true-up reflects the actual quantity of demand reduction capability for the Vintage 2014 period. The load impacts for EE programs were updated in accordance with the Commission-approved EM&V Agreement.

Q. HOW WERE ACTUAL NET LOST REVENUES COMPUTED FOR THE VINTAGE 2014 TRUE-UP?

A. Net lost revenues for year one (2014) of Vintage 2014 were calculated using actual kW and kWh savings by North Carolina retail participants by customer class, based on actual participation and load impacts reflecting EM&V results applied according to the EM&V Agreement. The actual kW and kWh savings were as experienced during the period January 1, 2014 through December 31, 2014. The rates applied to the kW and kWh savings are the rates that were in

effect for the period January 1, 2014 through December 31, 2014. These tariff rates have been reduced by the fuel and other variable costs. The lost revenues were then offset by actual found revenues for year one of Vintage 2014 as explained by Company witness Barnes. The calculation of net lost revenues was performed by rate schedule within the residential and non-residential customer classes.

Q. WHAT IS BEING "TRUED UP" FOR VINTAGE 4?

A. Avoided costs for Vintage 4 EE programs are being trued up based on updated EM&V participation results and program costs. Avoided costs for Vintage 4 DSM programs are being trued up to correct participation results and program costs. Net lost revenues for all years were trued up for updated EM&V participation results. The actual kW and kWh savings were as experienced during the period January 1, 2013 through December 31, 2013. The rates applied to the kW and kWh savings are the rates that were in effect during each period the lost revenues were earned.

Q. WHAT IS BEING "TRUED UP" FOR VINTAGE 3?

A. Avoided costs for Vintage 3 EE programs are being trued up based on updated EM&V results and program costs Avoided costs for Vintage 3 DSM programs are being trued up to reflect participation results and program costs. Net lost revenues for all years of Vintage 3 EE programs were trued up for updated EM&V participation results. The actual kW and kWh savings were as experienced during the period July 1, 2012 through December 31, 2012. Net lost revenues associated with January through June 2012 participation in

Vintage 3 have been incorporated into DEC's base rates effective September 25, 2013 (Docket No. E-7, Sub 1026). As a result, DEC has discontinued collection of net lost revenues associated with January through June 2012 participation in Vintage 3 through Rider EE effective September 25, 2013. The rates applied to the kW and kWh savings are the rates that were in effect during each period lost revenues were earned.

Q. WHAT IS BEING "TRUED UP" FOR VINTAGE 2?

A. Avoided costs for Vintage 2 EE programs are being trued up based on updated EM&V participation results and program costs. Avoided costs for Vintage 2 DSM programs are being also being trued up to reflect updated EM&V participation results and program costs. The actual kW and kWh savings were as experienced during the period January 1, 2011 through December 31, 2011. DEC has incorporated lost revenues associated with participation in Vintage 2 into its base rates effective September 25, 2013 (Docket No. E-7, Sub 1026). As a result, Rider 7 includes collection of net lost revenues for the third year of Vintage 2 only for the period January 1, 2013 through September 25, 2013. The rates applied to the kW and kWh savings are the rates that were in effect during each period lost revenues were earned.

Q. WHAT IS BEING "TRUED UP" FOR VINTAGE 1?

A. Vintage 1 is being trued up to reflect updated DSM program costs.

Q. WHAT IS BEING "TRUED-UP" IN THE FINAL TRUE-UP?

A. The Save-a-Watt Settlement calls for a final true-up, which includes a final comparison of the revenues collected from customers through Rider EE

during the modified save-a-watt pilot to 100% of the amount of revenue DEC is authorized to collect from customers based on the independently measured and verified results as described in the Save-a-Watt Settlement. The final true-up process also includes calculations that determine the earnings for the entire program and ensure that DEC's compensation is capped so that the actual after-tax return on program costs applicable to EE and DSM programs costs does not exceed the predetermined earnings cap levels set out in the Save-a-Watt Settlement. The Company has updated Vintages 1-4 for the final participation and EM&V results. Therefore, although Rider 7 includes estimates for Vintage 3 Year 4 of Lost Revenue, and Vintage 4 Year 3 and 4 net lost revenues, no further true-ups will be made to adjust these components of Rider 7, and all adjustments relating to the save-a-watt pilot are included in the EMF component of the Rider.

The Company is also revising the revenue estimated to be collected in 2015 by utilizing the fall 2014 forecast and the most recent opt-out information. The recalculated 2015 estimated revenue is shown in Miller Exhibit 3, page 3 and the revised forecast and updated opt-out information is shown in Miller Exhibit 6, page 1, and Miller Exhibit 6, page 2.

Finally, the save-a-watt true-up clarifies the amount of gross receipts tax due and paid during the life of each vintage year. A summary of gross receipts tax rates payable for each year is included in Miller Exhibit 2, page 13.

Q. AS A RESULT OF THE FINAL TRUE-UP, DOES DEC OWE ANY INTEREST TO CUSTOMERS? IF SO, HOW DOES IT CALCULATE SUCH INTEREST?

A. Yes. The Company over-collected for the Vintage 3 Non-Residential DSM program. The Company has calculated interest using the same methodology utilized in its North Carolina fuel rider proceedings, whereby interest is calculated at 10% from the mid-point of the over-collection period to the mid-point of the give-back period. This methodology benefits the customers by using a higher interest rate than DEC's weighted average cost of capital approved in its most recent rate case, and provides a simple and consistent approach to finalizing save-a-watt. The detailed calculation is shown in Miller Exhibit 2, page 8.

Q. PLEASE EXPLAIN HOW DEC DETERMINED THE EARNINGS CAP.

A. The Company computed the earnings cap by applying the applicable allowed percentage from the Save-a-Watt Settlement to the program costs based on the level of nominal avoided cost savings achieved. (The actual nominal avoided cost savings achieved during the save-a-watt pilot totaled $925 million. *See* Barnes Exhibit 10.) In order to determine the applicable earnings cap, the actual savings of $925 million were divided by the target savings achievement level set forth in the Save-a-Watt Settlement of $754 million. This yields an achievement level of 123% of target savings. Pursuant to the Save-a-Watt Settlement, achievement greater than 90% of the target savings results in DEC's earnings being capped at 15% of program costs, after-tax. The

earnings that DEC is entitled to collect from customers during the save-a-watt pilot cannot exceed the lesser of the total avoided cost allowed to be collected or the program cost plus pre-tax earnings.

Q. DID DEC COLLECT MORE THAN ITS EARNINGS CAP CONSISTING OF PROGRAM COSTS PLUS ALLOWED RETURN?

A. No. DEC did not collect more than its earnings cap consisting of program costs plus allowed return as shown on Miller Exhibit 4.

Q. WHAT ARE DEC'S PROPOSED EMF BILLING FACTORS APPLICABLE TO NORTH CAROLINA ELECTRIC CUSTOMERS FOR THE TRUE-UP COMPONENTS OF RIDER 7?

A. The Company's proposed EMF billing factor for the true-up components of Rider 7 is 0.0250 cents per kWh for DEC's North Carolina retail residential customers. For non-residential customers, the amounts differ depending upon customer elections of participation. The following chart depicts the options and rider amounts:

Non-Residential Billing Factors EMF Component	**¢/kWh**
Vintage Year 2014 EE Participant	0.0151
Vintage Year 2014 DSM Participant	(0.0044)
Vintage 4 EE participant	0.0330
Vintage 4 DSM participant	0.0003
Vintage 3 EE participant	0.0259
Vintage 3 DSM participant	(0.0008)

Vintage 2 EE participant	0.0146
Vintage 2 DSM participant	0.0018
Vintage 1 EE participant	0.0025
Vintage 1 DSM participant	0.0016

III. CONCLUSION

Q. PLEASE SUMMARIZE THE SPECIFIC RATE MAKING APPROVAL REQUESTED BY DEC.

A. Duke Energy Carolinas seeks approval of Rider 7, which includes the formula for calculation of the Rider, as well as the billing factors to be effective for 2016. As discussed above, Rider 7 contains (1) a prospective component, which includes the third year of net lost revenues for Vintage 2014; the second year of net lost revenues for Vintage 2015, and the revenue requirements for Vintage 2016; and (2) an EMF component related to true-ups of Vintages 1, 2, 3 and 4, which reflects final true-up under save-a-watt, as well as a true-up of Vintage 2014. Consistent with the Stipulation, for DEC's North Carolina residential customers, the Company calculated one integrated prospective billing factor and one integrated EMF billing factor for Rider 7. Also in accordance with the Stipulation, the non-residential DSM and EE billing factors have been determined separately for each vintage year and will be charged to non-residential customers based on their opt-in/out status and participation for each vintage year.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Miller Supplemental Exhibits 1 - 7

(Identified and Admitted)

(WHEREUPON, the prefiled supplemental testimony of CAROLYN MILLER is copied into the record as if given orally from the stand.)

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Carolyn T. Miller. My business address is 550 South Tryon Street, Charlotte, North Carolina.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a Rates Manager for Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN SUPPORT OF DUKE ENERGY CAROLINAS' APPLICATION IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?

A. The purpose of my supplemental testimony is to support the filing of Supplemental Exhibits which reflect several revisions to the Miller Exhibits and Barnes Exhibits filed March 4, 2015 in this proceeding. The specific revisions are noted below in Table 1.

Table 1 – Revisions to Miller and Barnes Exhibits

Miller Exhibit 2, page 3	Correction of Vintage 3 DSM Formulas in True-up Columns
Miller Exhibit 2, page 12	Revision of Tax Rate used in Interest Calculation
Barnes Exhibit 2, page 1	Correction of Vintage 4 Found Revenue cross footing error
Barnes Exhibit 2,	Update of Lost Revenues estimate for Vintage Year

page 2	2014
Barnes Exhibit 3, page 1	Revision of 12-month ending 12/31/13 Allocation Factors

As a result of the above revisions, the revenue requirement has changed for several Vintages of the Company's demand-side management ("DSM") and energy efficiency ("EE") cost recovery rider for 2016 ("Rider 7"). Please see Table 2 for a summary of specific Vintages and associated impacts of these changes.

Table 2 – Summary of Revenue Requirement Impacts

Residential	**Dollar Impact**
Vintage 1	$70,846
Vintage 2	$47,139
Vintage 3	$65,209
Vintage 4	$28,640
Vintage Year 2014	$807,369
Non-Residential	**Dollar Impact**
Vintage 1 EE	$30,400
Vintage 1 DSM	$17,910
Vintage 2 EE	$31,598
Vintage 2 DSM	$20,104
Vintage 3 EE	$52,788
Vintage 3 DSM	$(219,848)
Vintage 4 EE	$(86,321)

Vintage 4 DSM	$27,346
Vintage Year 2014 DSM	$106

To avoid confusion, all Miller Exhibits and Barnes Exhibits will be refiled as supplemental exhibits incorporating the revisions noted above. Supplemental Miller Exhibit 7 is the revised proposed tariff sheet for Rider 7.

Q. WHY IS THE COMPANY REVISING THE VINTAGE 4 ALLOCATION FACTORS FOR PROGRAM COSTS?

A. The allocation factors used in the original filed Barnes Exhibit 3, page 1 were based on the Cost of Service study for the 12-month period ending June 30, 2013. The Company is revising Barnes Exhibit 3, page 1 to include the allocation factors from the Cost of Service study for the year ending December 31, 2013, to meet the requirement that our DSM/EE rider filing incorporate the most recently filed allocation rates. The revised allocation rates reflected on Supplemental Miller Exhibit 5, page 5 and Supplemental Barnes Exhibit 3, page 1 drive a change in the earnings cap calculation on Supplemental Miller Exhibit 4. The revised earnings cap calculation on Supplemental Miller Exhibit 4 impacts the revenue requirement calculation for all save-a-watt vintages as seen on Supplemental Miller Exhibit 2, pages 1-4.

Q. WHY IS THE COMPANY REVISING VINTAGE 4 FOUND REVENUES?

A. The formulas on the original filed Barnes Exhibit 2, page 1a, Lines 61 and 71 only reflected the found revenues through 2015. The formulas did not pick up

the found revenues estimated to be earned in 2016. This revision corrects those formulas. The formula corrections result in a decrease to Residential EE Vintage 4 net lost revenues in the amount of $24,679, and a decrease to Non-Residential EE Vintage 4 net lost revenues in the amount of $135,766.

Q. WHY IS THE COMPANY UPDATING THE YEAR 2014 YEAR 3 ESTIMATE OF NET LOST REVENUES?

A. Based on further analysis of the net lost revenue detail, the Company determined the net lost revenues for the Energy Assessments Program and Applicance Recycling Program for Vintage Year 2014 Year 3 were omitted in error from Barnes Exhibit 2, page 2. In addition, the calculation of the HVAC Energy Efficiency Program net lost revenues on Barnes Exhibit 2, page 2 was incorrect. The revision included in Supplemental Barnes Exhibit 2, page 2 includes the corrected net lost revenues for the Energy Assessments Program, HVAC Energy Efficiency Program, and Appliance Recycling Program. The corrected amounts of $497,583, $71,466, and $255,086 are shown on Lines 1, 4 and 5, respectively, in the Supplemental Barnes Exhibit 2, page 2.

Q. WHY IS THE COMPANY UPDATING THE VINTAGE 3 DSM TRUE-UP?

A. Upon further analysis of Miller Exhibit 2, page 3, Line 26, the Company determined that three columns (Rider 6 Implementation of Earnings Cap, Rider 6 2015 True-up of 85% to 100% and Rider 7 2016 True-up) in the DSM true-up file did not include a regulatory fee calculation or a final revenue requirement. The regulatory fee of 1.001352 was added to those columns and

a revenue requirement was calculated. This resulted in a decrease to the revenue requirement of $183,207, which, in turn, increased the amount of interest due to customers by $36,641.

Q. WHY IS THE COMPANY REVISING THE TAX RATE ON MILLER EXHIBIT 2, PAGE 12?

A. The tax rate utilized in the interest rate calculation should be the actual tax rate in effect during 2014. This rate is used to calculate the tax impact resulting from any over- or under-collection of DSM program costs. The incorrect tax rate of 0.380225 was utilized in the original filing. Updating this exhibit with the correct tax rate of 0.383471 results in an increase to the revenue requirement in the amount of $106.

Q. WHAT ARE THE FINAL RATES REQUESTED IN THE APPLICATION OF DUKE ENERGY CAROLINAS FOR APPROVAL OF ITS DSM/EE RIDER FOR 2016 AS A RESULT OF THESE REVISIONS?

A. Pursuant to the provisions of N.C. Gen. Stat. § 62-133.9 and Rule R8-69, the Company requests Commission approval of the following annual billing adjustments (all shown on a cents per kWh basis, including gross receipts tax and regulatory fee):

Residential Billing Factors	**¢/kWh**
Residential Billing Factor for Rider 7 Prospective Components	0.3361
Residential Billing Factor for Rider 7 EMF Components	0.0260

Non-Residential Billing Factors for Rider 7 Prospective Components	¢/kWh
Vintage 2014 EE participant	0.0256
Vintage 2015 EE participant	0.0345
Vintage 2016 EE Participant	0.2164
Vintage 2016 DSM participant	0.0709

Non-Residential Billing Factors EMF Component	¢/kWh
Vintage 2014 EE Participant	0.0150
Vintage 2014 DSM Participant	(0.0044)
Vintage 4 EE participant	0.0326
Vintage 4 DSM participant	0.0005
Vintage 3 EE participant	0.0261
Vintage 3 DSM participant	(0.0017)
Vintage 2 EE participant	0.0148
Vintage 2 DSM participant	0.0019
Vintage 1 EE participant	0.0027
Vintage 1 DSM participant	0.0017

Q. DOES THIS CONCLUDE YOUR PRE-FILED SUPPLEMENTAL TESTIMONY?

A. Yes.

Ham Exhibits 1 and 2

(Identified and Admitted)

Ham Exhibits A - I

(Identified and Admitted)

(WHEREUPON, the prefiled direct testimony of ROSHENA HAM is copied into the record as if given orally from the stand.)

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Roshena M. Ham and my business address is 550 South Tryon Street, Charlotte, North Carolina.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed as Manager, Measurement and Verification for Duke Energy Carolinas, LLC ("Duke Energy Carolinas," "DEC," or the "Company").

Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I have a Bachelor's degree in engineering from Vanderbilt University and a Masters of Business Administration from Georgetown University.

From 1999-2001, I was in the management associate rotation program at Enron. From 2001-2004, I was co-founder and partner of Liberty Power Corporation, a retail electric provider in deregulated markets. From 2004-2008, I was a consultant on various energy projects including energy efficiency, renewable energy and energy procurement, and also during that time I taught business courses at Central Piedmont Community College. From 2006-2009, I worked for Duke University's Nicholas School of the Environment as the Energy and Environment program manager. In 2009, I began working for Duke Energy Business Services LLC, a wholly-owned service company subsidiary of Duke Energy Corporation ("Duke Energy"), as an energy efficiency program manager, managing the implementation of Non-

Residential Smart $aver Custom Incentives. In 2013, I assumed my current role as Manager, Measurement and Verification.

Q. PLEASE DESCRIBE YOUR DUTIES AS MANAGER, MEASUREMENT AND VERIFICATION.

A. As Manager, Measurement and Verification, I have responsibilities for a variety of analytical functions in support of product development and operations, including managing impact and process evaluation studies, energy efficiency load analysis, and cost-effectiveness analysis. In this role, I provide Evaluation, Measurement and Verification ("EM&V") services for Duke Energy affiliates, including DEC.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes, I submitted testimony in support of DEC's Application for approval of its demand-side management ("DSM") and energy efficiency ("EE") cost recovery rider, Rider EE, for 2015 in Docket No. E-7, Sub 1050.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports DEC's Application for Rider EE for 2016 ("Rider 7"). In particular, my testimony: (1) provides an overview of the EM&V process and activities; and (2) details the current findings from the Company's EM&V work.

Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR TESTIMONY.

A. Ham Exhibit 1 provides a summary of the estimated activities and timeframe for completion of EM&V by program. Ham Exhibit 2 provides the actual and expected dates when the EM&V for each program or measure will become effective. Ham Exhibits A through I provide the detailed completed EM&V reports or updates for the following programs:

Ham Exhibit	EM&V Reports	Report Finalization Date	Evaluation Type
A	My Home Energy Report	2/20/2014	Process and Impact
B	Smart Energy Now	2/21/2014	Process and Impact
C	Appliance Recycling	4/25/2014	Process and Impact
D	Income-Qualified Energy Efficiency: Neighborhoods	11/14/2014	Process and Impact
E	Energy Efficient Appliances and Devices: Specialty Bulbs	11/19/2014	Process and Impact
F	HVAC Energy Efficiency: Tune & Seal	12/10/2014	Impact
G	Power Manager	3/18/2014	Process
H	Power Manager	5/28/2014	Impact
I	Power Share	7/31/2014	Impact

Q. WERE HAM EXHIBITS 1 AND 2 AND A THROUGH I PREPARED BY YOU OR AT YOUR DIRECTION AND SUPERVISION?

A. Yes, they were. The EM&V reports, however, were prepared by DEC's independent third party evaluator.

II. RESULTS FROM EM&V

Q. HOW WERE EM&V RESULTS UTILIZED IN DEVELOPING THE PROPOSED RIDER 7?

A. The Company has applied EM&V in accordance with the process as agreed upon by DEC, Southern Alliance for Clean Energy ("SACE") and the Public Staff and approved by the Commission in its *Order Approving DSM/EE Rider*

and Requiring Filing of Proposed Customer Notice issued on November 8, 2011 in Docket No. E-7, Sub 979 ("EM&V Agreement"). In accordance with the Agreement and Stipulation of Settlement DEC reached with the Public Staff, the North Carolina Sustainable Energy Association ("NCSEA"), Environmental Defense Fund, SACE, the South Carolina Coastal Conservation League, the National Resource Defense Council and the Sierra Club, which was filed with the Commission in Docket No. E-7, Sub 1032 on August 19, 2013 (the "Stipulation") and approved in the Commission's *Order Approving DSM/EE Programs and Stipulation of Settlement* issued in the same docket on October 29, 2013 ("Sub 1032 Order"), DEC continues to apply EM&V in accordance with the EM&V Agreement.

Actual participation and evaluated load impacts are used prospectively to update net lost revenues estimated for 2016.

The EM&V Agreement provides that initial EM&V results shall be applied retrospectively to program impacts that were based upon estimated impact assumptions derived from industry standards (rather than EM&V results for the program in the Carolinas), specifically the DSM and EE programs initially approved by the Commission in Docket No. E-7, Sub 831 ("Sub 831 Programs"), with the exception of the Non-Residential Smart $aver Custom Rebate Program and the Low Income Energy Efficiency and Weatherization Assistance Program.

For purposes of the vintage true-ups and forecast, initial EM&V results are considered actual results for a program and continue to apply until

superseded by new EM&V results, if any. For all new programs and pilots approved after the Sub 831 Programs, DEC will use the initial estimates of impacts until it has EM&V results, which will then be applied retrospectively back to the beginning of the offering and will be considered actual results until a second EM&V is performed.

All program impacts from EM&V apply only to the programs for which the analysis was directly performed, though DEC's new product development may utilize actual impacts and research about EE and conservation behavior directly attributed to existing DEC program offerings not already accounted for.

Since program impacts from EM&V in this Application apply only to the programs for which the analysis was directly performed, there are no costs associated with performing additional EM&V for other measures, other than the original cost for EM&V for these programs. As indicated in previous proceedings, DEC estimates that 5 percent of total portfolio program costs will be required to adequately and efficiently perform EM&V on the portfolio. The level of EM&V required varies by program and depends on that program's contribution to total portfolio, the duration the program has been in the portfolio without material change, and whether the program and administration is new and different in the energy industry. Duke Energy Carolinas estimates, however, that no additional costs above 5 percent of total program costs will be associated with performing EM&V for all measures in the portfolio.

Q. WHICH PROGRAMS CONTAIN IMPACT ESTIMATES BASED ON CAROLINAS-BASED EM&V?

A. The following programs have Carolinas-based EM&V applied and have been provided as Ham Exhibits A through I.

- My Home Energy Report *(Ham Exhibit A)*
- Smart Energy Now *(Ham Exhibit B)*
- Appliance Recycling *(Ham Exhibit C)*
- Income-Qualified Energy Efficiency: Neighborhoods *(Ham Exhibit D)*
- Energy Efficient Appliances and Devices: Specialty Bulbs *(Ham Exhibit E)*
- HVAC Energy Efficiency: Tune & Seal *(Ham Exhibit F)*
- Power Manager *(Ham Exhibit H)*
- Power Share *(Ham Exhibit I)*

Q. WHICH PROGRAMS WILL HAVE INITIAL ESTIMATES REPLACED WITH EM&V IN THE FUTURE?

A. The following programs will have Carolinas-based EM&V applied in future annual filings:

- Energy Efficient Appliances and Devices: *Pool Pumps, Water EE and Heater Products*
- Income-Qualified Energy Efficiency Program: *Weatherization and Refrigerator Replacement*
- Multi-Family Energy Efficiency Program: *Water EE Products*
- Small Business Energy Saver

Q. WHAT WERE THE LOAD IMPACTS FROM THE EM&V AND HOW DO THEY COMPARE TO DEC'S IMPACT ESTIMATES PRIOR TO EM&V?

A. The Company originally estimated gross per-household energy savings[1] from the **My Home Energy Report Program** at 211 kilowatt hours ("kWh"). Based on the most recent EM&V, the gross savings are 183.7 kWh (net energy savings[2] were modified from 224.12 kWh to 195.12 kWh). The gross coincident kilowatts ("kW") had an adjustment from 0.0569 kW to 0.0496 kW. These results became effective November 1, 2013 and apply to participants in the My Home Energy Report Program. This report has been provided as Ham Exhibit A.

The Company originally estimated gross energy savings from the **Smart Energy Now Program** at 5 percent kWh and kW savings for large buildings (greater than or equal to 100,000 square feet) and 3 percent kWh and kW savings for small buildings (less than 100,000 square feet), based upon estimated impact assumptions derived from industry standards. Based on the most recent EM&V, the gross savings are 8.7 percent kWh and kW for large buildings and 2.2 percent kWh and kW for small buildings (net energy savings are 6.4 percent for large buildings and 1.1 percent for small buildings). These results became effective January 1, 2011 (initial participation in program) and apply to participants in the Smart Energy Now

[1] Throughout this section, gross kWh and kW values without line losses.
[2] Net adjustments include free ridership, spillover and line losses.

Pilot and the Smart Energy in Offices Program. The Company provides this report as Ham Exhibit B.

The Company originally estimated gross per-unit energy savings from the **Appliance Recycling Program** at 1,642 kWh for recycled refrigerators and 1,222 kWh for recycled freezers, based upon estimated impact assumptions derived from industry standards. Based on the most recent EM&V, the gross savings are 952 kWh for refrigerators and 869 kWh for freezers (net energy savings were modified from 1,049.65 kWh to 544.03 kWh for refrigerators and from 778.8 kWh to 435.68 kWh for freezers). The coincident kW had an adjustment from 0.39 kW to 0.14 kW for refrigerators and from 0.29 kW to 0.1 kW for freezers. These results became effective October 1, 2012 (initial participation in program) and apply to participants in the Appliance Recycling Program. The Company provides this report as Ham Exhibit C.

The Company originally estimated gross per-household energy savings from the **Income-Qualified Energy Efficiency: Neighborhoods Program** at 882 kWh, based upon estimated impact assumptions derived from industry standards. Based on the most recent EM&V, the gross savings are 357 kWh (net energy savings were modified from 936.85 kWh to 371.59 kWh). The coincident kW had an adjustment from 0.220 kW to 0.0872 kW. These results became effective March 1, 2013 (initial participation in program) and apply to participants in the Income-Qualified Energy Efficiency: Neighborhoods Program. The Energy Information Security Act (EISA) of 2007 legislation

limits the wattage of an incandescent lamp. As described in the evaluation report, the baseline lamp wattage decreases during each replacement of an incandescent lamp, and it is assumed that a baseline incandescent lamp will be replaced several times during the life of a CFL. As such, the portion of program's claimed impacts from CFL installations decrease each year until the end of the projected baseline lamp wattage decreases. Market data on the availability of non-compliant EISA bulbs will continue to be collected over time, which will be used to update projected baseline lamp wattages. The Company provides this report as Ham Exhibit D.

The Company updated gross energy savings from the **Energy Efficient Appliances and Devices: Specialty Bulbs Program** for the measures listed in the following chart.

	Gross kWh		Gross kW	
Specialty Bulb Measure	**Original Assumption**	**Evaluated**	**Original Assumption**	**Evaluated**
3 Way	58.39	53.19	0.008	0.006
A Line	39.77	34.66	0.005	0.004
A Line Dimmable	64.84	59.10	0.009	0.007
A Line LED	40.00	37.66	0.005	0.005
Candelabra	21.55	18.63	0.003	0.002
Globe	25.36	22.34	0.003	0.003
Recessed	41.82	39.57	0.006	0.005
Recessed Dimmable	41.26	38.37	0.005	0.005
Recessed LED	29.47	67.52	0.004	0.008
Recessed Outdoor	111.50	100.57	0.002	0.012

The Company based original estimates upon estimated impact assumptions derived from industry standards. Modifications to energy savings impacts are listed in the following chart:

	Net kWh		Net kW	
Specialty Bulb Measure	**Original Assumption**	**Evaluated**	**Original Assumption**	**Evaluated**
3 Way	52.71	42.88	0.007	0.005
A Line	35.91	27.94	0.005	0.003
A Line Dimmable	58.54	47.65	0.008	0.006
A Line LED	36.11	30.37	0.005	0.004
Candelabra	19.46	15.02	0.002	0.002
Globe	22.89	18.01	0.003	0.002
Recessed	37.76	31.90	0.005	0.004
Recessed Dimmable	37.26	30.93	0.005	0.004
Recessed LED	26.61	54.43	0.004	0.007
Recessed Outdoor	100.67	81.08	0.002	0.010

These results became effective May 1, 2013 (initial participation in program) and apply to participants in the Energy Efficiency Appliances and Devices: Specialty Bulb measures. The Company provides this report as Ham Exhibit E.

The Company updated gross energy savings from the **HVAC Energy Efficiency: Tune & Seal Program** for the measures listed in the following chart.

	Gross kWh		Gross kW	
Tune & Seal Measure	**Original Assumption**	**Evaluated**	**Original Assumption**	**Evaluated**
Attic Insulation & Air Seal	812.00	1163.00	0.19	0.18
Central Air Conditioner Tune Up	228.00	70.00	0.19	0.08
Duct Insulation	570.00	519.00	0.47	0.43
Duct Sealing	266.00	255.00	0.22	0.21
Heat Pump Tune Up	534.00	237.00	0.14	0.08

The Company based original estimates upon estimated impact assumptions derived from industry standards. Modifications to energy savings impacts are listed in the following chart.

	Net kWh		Net kW	
Tune & Seal Measure	**Original Assumption**	**Evaluated**	**Original Assumption**	**Evaluated**
Attic Insulation & Air Seal	603.75	1116.73	0.1417	0.1769
Central Air Conditioner Tune Up	188.90	67.22	0.1573	0.0762
Duct Insulation	472.25	498.35	0.3932	0.4149
Duct Sealing	220.38	244.86	0.1835	0.2039
Heat Pump Tune Up	442.42	227.57	0.12	0.08

These results became effective October 1, 2012 (initial participation in program) and apply to participants in the HVAC Energy Efficiency: Tune & Seal measures. The Company provides this report as Ham Exhibit F.

Q. WHAT IS THE PROJECTED ACTIVITIES SCHEDULE FOR EM&V AND ESTIMATED EFFECTIVE DATES OF IMPACTS?

A. The projected activities schedules for EM&V can be found in Ham Exhibit 1. The effective dates can be found in Ham Exhibit 2.

Q. PLEASE EXPLAIN ANY ADDITIONS OR CHANGES TO THESE SCHEDULES FROM THE PRIOR PROCEEDING?

A. There were a few additions and changes made from the previous EM&V Schedule filed as Ham Exhibit 2 in the Rider 6 Filing, which are reflected in Ham Exhibit 2.

In the program Energy Efficient Appliance and Devices, the evaluation of Water EE products has been delayed due to a later program launch, and the

evaluation of heat pump water heater and pool pump measures has been delayed due to low program participation to date. In the program Income-Qualified Energy Efficiency, the evaluation of Weatherization has been delayed due to later program launch. An evaluation of the recently launched Small Business Energy Saver program has been added to the schedule. Participation in all measures is being monitored and further changes to the schedule may occur.

Ham Exhibit 2 also shows the current projected schedule for impact evaluation reports in 2014-2017. Actual report dates may vary depending on program participation to provide a significant sample and the time needed to collect adequate data.

In the situations where a program offered in DEC and Duke Energy Progress, Inc. are similar, and the evaluation schedules provide the opportunity for such efficiencies, evaluations of the programs across the two Companies will be combined in the future. In such cases, the allocation of combined EM&V costs is proposed to be based on the projected number of participants in the program for each Company.

Q. DO DEC'S CURRENT AND FUTURE EM&V REPORTS EVALUATE SNAPBACK AND PERSISTENCE?

A. Yes. Snapback can be thought of as the additional energy and capacity used by customers who feel they can consume more because they have implemented an energy-efficient product. For example, snapback occurs when a customer decides not to turn off a newly-installed CFL when leaving a

room and thinks that his or her energy consumption does not matter because the CFL is more efficient than his previously-installed incandescent light bulb.

Persistence is the measurement of how long an energy-efficient product remains installed and utilized after its initial acquisition. For example, persistence measures if a customer decides to remove a CFL after installation because he or she does not like the quality of light produced. Both snapback and short-term persistence are measured and included (though not explicitly) in the EM&V reports, as they apply to EE programs.

Billing analysis and on-site metering capture the short-term effects of snapback and persistence, because they capture the impacts that occur soon after an EE action is taken. Because metering and utility bill analyses often examine electric consumption records before and after an action is taken, the effects of snapback and persistence are embedded in the analysis results.

The long-term effects of persistence, however, cannot be directly measured during the current 12- to 18-month cycle for each EM&V report. Long-term analysis of persistence requires regular, cyclical studies with the same respondents over the life of each measure. Such long-term evaluations would increase the cost of EM&V reporting significantly but would provide little, if any, increased accuracy in the analysis.

The EM&V reports for DEC's programs include an explicit paragraph explaining the evaluation of snapback and persistence, as described above.

III. LOST REVENUES

Q. PLEASE EXPLAIN HOW DEC CALCULATED THE ENERGY AND CAPACITY REDUCTIONS FOR THE NET LOST REVENUE CALCULATIONS FOR THE PROSPECTIVE COMPONENTS OF RIDER 7.

A. Based on the available EM&V analysis, DEC ran the DSMore model in order to calculate the kWh and kW reductions associated with net lost revenues. Energy and capacity associated with net lost revenues for one-half of year four of Vintage 4, year three of Vintage 2014, year two of Vintage 2015, and year one of Vintage 2016 were calculated beginning January 1, 2016 and ending December 31, 2016 using rates in effect as of September 25, 2013.

IV. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Allred Exhibits 1 and 2

(Identified and Admitted)

(WHEREUPON, the prefiled direct testimony of TAYLOR ALLRED is copied into the record as if given orally from the stand.)

89

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-7, SUB 1073

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. Gen. Stat. § 62-133.9 and Commission Rule R8-69	)	**TESTIMONY OF TAYLOR ALLRED ON BEHALF OF SOUTHERN ALLIANCE FOR CLEAN ENERGY**

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

A. My name is Taylor Allred. I am an energy policy manager for Southern Alliance for Clean Energy ("SACE"), and my business address is P.O. Box 1842, Knoxville, TN 37901.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of SACE.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND WORK EXPERIENCE.

A. I graduated from the University of Virginia in 2008 with a Bachelor of Arts in History. In 2008, I joined data vendor SNL Financial ("SNL") as an analyst specializing in energy research and product operations. In that role, I published research reports on utility sector trends and created models for analyzing financial and operations data. I was promoted to senior analyst in 2010, and later in that year, I transferred to serve as a senior analyst in SNL's Financial Institutions Group, where I took the lead in publishing analysis on the United States Department of the Treasury's Troubled Asset Relief Program, among other responsibilities. In 2011, I was promoted to serve as a financial analyst at

SNL subsidiary Regulatory Research Associates, where I was the lead analyst in charge of publishing analysis on investor impacts of regulatory commission proceedings for electric and gas utilities in the Mid-Atlantic. In that role, I provided timely reporting on utility and intervenor testimony, issued investor outlooks based on commission decisions, and issued ratings for each jurisdiction based on how utility investors are affected by state regulatory environments and energy policy.

I joined SACE in 2014, and I have been contributing to SACE's utility energy efficiency advocacy in states across the Southeast, including Mississippi, Florida, North Carolina, South Carolina and Tennessee. In this capacity, I am responsible for leading and contributing to written comments and testimony related to energy efficiency policy, program design, and evaluation. My focus is on analyzing energy savings and cost-effectiveness and providing recommendations to improve the performance of demand-side management ("DSM") and energy efficiency ("EE") programs. A copy of my resume is included as Allred Exhibit 1.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE NORTH CAROLINA UTILITIES COMMISSION ("THE COMMISSION")?

A. I have not yet had the opportunity to testify in person before the Commission; however, I submitted testimony in Docket No. E-2, Sub 1044, concerning Duke Energy Progress' 2014 annual DSM/EE rider application.

Q. WHAT IS DUKE ENERGY CAROLINAS REQUESTING THAT THE COMMISSION APPROVE IN THIS PROCEEDING?

A. Duke Energy Carolinas ("DEC" or the "Company") has applied for approval of its annual DSM/EE cost-recovery and incentive rider for 2016 ("Rider 7"). The proposed Rider 7 consists of components calculated under DEC's "modified Save-A-Watt" ("SAW") cost-recovery and incentive mechanism approved in Docket No. E-7, Sub 831, as well as components calculated under the replacement mechanism approved in Docket No. E-7, Sub 1032. The Company also requests recovery of costs associated with its Interruptible Service and Stand-By Generator programs ("Existing DSM Programs") as a separate component of Rider 7.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to describe my evaluation of DEC's proposed Rider 7. I will discuss DEC's performance in delivering energy-efficiency savings to its customers over the past year and over the four-year term of the modified SAW pilot; the Company's energy savings projections; opportunities for DEC to increase its energy savings, particularly in the energy-intensive non-residential sector; the growing rate of eligible customers opting out of DEC's EE programs; new program recommendations designed to increase DEC's achievement of cost-effective energy savings in future years; and ways to improve transparency and stakeholder engagement surrounding the Company's DSM/EE portfolio.

Q. DOES SACE SUPPORT APPROVAL OF RIDER 7?

A. Yes, SACE generally supports DEC's application for approval of Rider 7 (the "Application"). Since launching its modified SAW pilot, DEC has achieved energy efficiency savings impacts that have exceeded the Company's projections in four out of five years.[1] Moreover, DEC reversed a two-year trend of declining savings in 2014 by achieving the highest savings level for any program year so far. However, the Application raises several concerns: (1) DEC's 2014 savings, while higher than in 2013, lag behind savings achieved by leading regional and national utilities, and fall short of the level needed to ensure that the Company fulfills the EE savings targets it agreed to in connection with the Duke Energy-Progress Energy merger; (2) DEC projects low levels of energy savings in the future; and (3) the rate of eligible customers opting out of DEC's DSM/EE programs and rider is persistently high and significantly increasing. My testimony discusses these concerns and provides recommendations designed to increase DEC's achievement of cost-effective energy savings in future years.

DEC'S ENERGY SAVINGS ACHIEVEMENTS AND PROJECTIONS

Q. DID DEC MEET ITS ENERGY EFFICIENCY SAVINGS PROJECTION IN 2014?

A. Yes. In fact, DEC's DSM/EE programs exceeded the Company's projected 406 gigawatt-hours ("GWh") of savings in 2014, and achieved 546 GWh of energy

[1] The modified Save-A-Watt targets were established in NCUC Docket E-7, Sub 831. The 2014 savings estimate was reported in Docket No. E-7, Sub 1050, Company Application, Duff Testimony at 29.

savings, equivalent to 0.72% of the prior year's sales—more than in any year since launching the SAW programs.

Table 1. DEC Estimated Annual Energy Savings and First-Year Cost

Vintage Year	Target (GWh)[2]	Actual First-Year Savings (GWh)[3]	Target First-Year Cost ($/kWh)[4]	Actual First-Year Cost ($/kWh)[5]
Vintage 1 (2010)	234	479	$0.16	$0.09
Vintage 2 (2011)	257	533	$0.18	$0.09
Vintage 3 (2012)	382	506	$0.19	$0.10
Vintage 4 (2013)	567	442	$0.18	$0.11
Year 2014	434[6]	546	$0.25	$0.16[7]

Vintage Year	Projected Savings (GWh)[8]	Projected First-Year Cost ($/kWh)[9]
Year 2015	414	$0.25
Year 2016	591	$0.21
Year 2017	434	$0.26

Q. WAS THE COMPANY'S EE PORTFOLIO COST-EFFECTIVE IN 2014?

A. Yes. DEC's 2014 savings were achieved at a first-year cost of $0.16 per kWh, less than the Company predicted. I commend DEC for achieving its highest level of energy savings yet while keeping costs low.

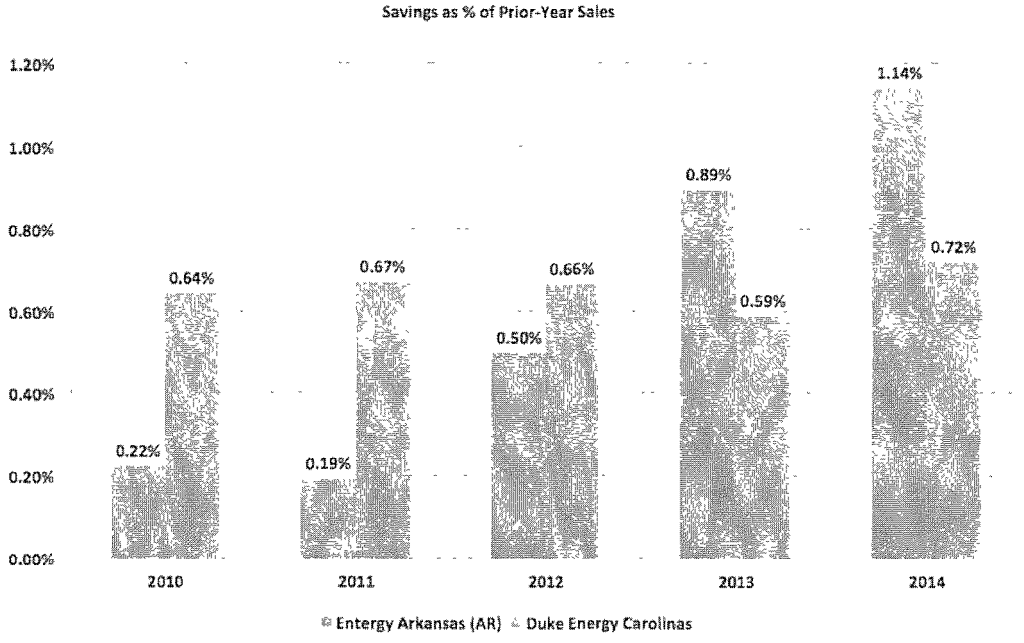
[2] The SAW targets were established in Docket No. E-7, Sub 831. The 2014 savings estimate was reported in Docket No. E-7, Sub 1050, Company Application, Testimony of Timothy Duff at 29.
[3] Docket No. E-7, Sub 1073, Barnes Exhibit 1 for each vintage.
[4] SAW first year cost calculations are based on information contained in the Modified SAW Settlement Agreement, Docket No. E-7, Sub 831, Exhibit B at 23. First year cost is calculated by dividing the first-year budget into the first-year savings; it does not cover the lifetime of the measure. This is a NC-only cost.
[5] Estimated first-year cost calculations are based on information provided in Docket No. E-7, Sub 1050, Testimony of Timothy Duff, Exhibit 1 at 2-3 and Exhibit 3. First-year cost is calculated by dividing the first-year budget into the first-year savings; it does not cover the lifetime of the measure. System-wide costs are reported here.
[6] Revised goal from Docket No. E-7, Sub 1050, Company Application, Testimony of Timothy Duff at 29. The original SAW goal for Vintage Year 4 was 567 GWh, based on the targets approved in Docket No. E-7, Sub 831.
[7] Calculated based on data provided in Docket No. E-7, Sub 1073, Testimony of Conitsha Barnes, Table 2.
[8] Id.
[9] Id.

Q. HOW DO THE COMPANY'S 2014 SAVINGS COMPARE TO SAVINGS ACHIEVED BY LEADING UTILITIES?

A. DEC'S incremental savings of 0.72% of prior-year sales in 2014 are significantly lower than the savings achieved by leading utilities. For example, as shown in Figure 1 on the following page, Entergy Arkansas achieved 1.14% net savings in 2014 after ramping up from levels significantly below those achieved by DEC in 2012 and earlier. I will note that Entergy Arkansas' baseline sales are adjusted downward for their self-direct customers, and DEC's sales are not. However, even without adjusting for self-direct customers, Entergy Arkansas achieved 0.99% savings as a percent of prior year sales, still exceeding DEC. [10]

[10] Entergy Arkansas net savings as a percent of sales was calculated based on savings data from Entergy Arkansas, 2014 Program Year Evaluation, Arkansas Public Service Commission Docket No. 07-085-TF, and sales data from EIA 861.

Figure 1. DEC Savings as a Percentage of Sales Compared to Entergy Arkansas[11]



Q. WHAT PROGRAMS PRIMARILY DROVE THE INCREASE IN ENERGY SAVINGS ACHIEVED BY DEC IN 2014?

A. As shown in Table 2 on the following page, new residential EE programs primarily drove the increase in energy savings achieved by DEC in 2014. Overall, the Company's residential EE portfolio achieved 352 GWh in savings in 2014, a 41% increase from 2013. The largest share of the savings achieved by DEC's 2014 residential EE portfolio came from the new Energy Efficient Appliances and Devices program, which achieved 167 GWh in savings in 2014. The next-largest share came from the new My Home Energy Report behavioral program, which achieved 2014 savings of nearly 143 GWh — 34 GWh higher

[11] DEC net savings as a percentage of sales was calculated based on savings data from Company Application, Barnes Exhibit 1 for each vintage in Docket No. E-7, Sub 1073, and retail sales data from EIA 861. Entergy Arkansas net savings as a percentage of sales from Arkansas Public Service Commission, Docket No. 07-078-TF, Direct Testimony of Lovita Griffin, Table 3, filed May 8, 2015.

than the 2013 savings from the program it replaced, Home Energy Comparison Report. Each of the residential programs that operated in both 2013 and 2014 yielded increased savings.

Q. HOW DID DEC'S NON-RESIDENTIAL PROGRAM SAVINGS COMPARE TO SAVINGS FROM RESIDENTIAL PROGRAMS?

A. While DEC's residential EE programs performed well in 2014, the Company's non-residential EE programs performed poorly by comparison, as shown in Table 2. Overall, DEC's non-residential portfolio achieved 194 GWh of savings in 2014, remaining roughly flat compared to 2013. Large commercial customers in South Carolina were able to opt out of the energy efficiency programs for the first time in 2014, and this may have contributed to the weak performance of DEC's non-residential portfolio. Three of the non-residential programs showed notably weaker performance in 2014 than in the prior year, including the two programs that accounted for the vast majority of the Company's non-residential EE portfolio savings in 2013. In particular, the Smart Saver Custom Rebate program savings dropped from 101 GWh in 2013 to 78 GWh in 2014 — a decline of 22%. The declining performance of key non-residential EE programs was only offset by the addition of new programs, including Smart Energy in Offices, which achieved 18 GWh of savings in 2014.

Table 2. EE Program Energy Savings in 2013 and 2014

Program Name	2013 Savings (GWh)	2014 Savings (GWh)	% Change
Appliance Recycling	4.9	5.1	5%
Residential Energy Assessments	7.7	10.6	38%
Smart Saver for Residential Customers	122.8	NA	NA
Low-Income EE and Weatherization Assistance	1.1	3.4	196%
Energy Efficiency Education Program for Schools	5.5	7.1	30%
Home Energy Comparison Report	108.7	NA	NA
My Home Energy Report	NA	142.9	NA
Energy Efficient Appliances and Devices	NA	167.0	NA
HVAC Energy Efficiency	NA	4.5	NA
Multi-Family Energy Efficiency	NA	11.6	NA
Residential Total	**250.6**	**352.2**	**41%**
Smart Saver – Lighting	76.7	70.3	-8%
Smart Saver – Motors	8.1	NA	NA
Smart Saver – Process Equipment	0.1	0.7	397%
Smart Saver – Food Service Products	1.1	2.3	107%
Smart Saver – HVAC	5.1	4.7	-8%
Smart Saver – Custom Rebate	100.7	78.2	-22%
Smart Saver Customer Technical Assessments	NA	9.1	NA
Energy Efficient Pumps and Drives Products	NA	6.5	NA
Energy Efficient ITEE	NA	0.1	NA
Small Business Energy Saver	NA	3.8	NA
Smart Energy in Offices	NA	18.1	NA
Non-Residential Total	**191.8**	**193.8**	**1%**
Portfolio Total	**442.4**	**546.0**	**23%**

Q. DOES DEC'S FORECAST OF ENERGY SAVINGS FOR 2015 BUILD ON THE PAST SUCCESS OF ITS EE PROGRAMS?

A. No. Despite the overall success of the modified SAW pilot and the Company's best-ever savings year in 2014, the energy savings impacts of DEC's programs are projected to decline in 2015. DEC projects that it will achieve only 414

GWh of net savings in 2015, representing 0.49% of 2014 retail sales[12] – not only less than savings achieved in 2014, but also less than the savings achieved in 2010, the first year of the modified SAW pilot. DEC estimates that portfolio savings will rebound in 2016 to 591 GWh, representing 0.70% of 2015 sales.[13] However, the Company projects 2017 savings of just 434 GWh, which would represent 0.50% of 2016 sales and the lowest savings level achieved since the launch of the SAW pilot.[14]

Q. HOW DOES THE COMPANY'S FORECASTED EE GROWTH COMPARE TO THE ENERGY SAVINGS TARGETS IN THE MERGER SETTLEMENT?

A. In a settlement agreement with SACE, Environmental Defense Fund and the South Carolina Coastal Conservation League in connection with the then-proposed merger of Duke Energy and Progress Energy, DEC agreed to an annual energy savings target of at least 1% of prior-year sales beginning in 2015 and a cumulative savings target of at least 7% over the period from 2014 through 2018 (the "Merger Settlement"). While the Company ramped up its savings in 2014, they still fall short of the EE goals in the Merger Settlement. If DEC's savings projections for 2015 through 2017 come to fruition, the Company would fail to fulfill the EE goals approved in the Merger Settlement.

[12] Calculated from savings provided in Docket No. E-7, Sub 1073, Testimony of Conitsha Barnes, Table 2. 2014 retail sales (without efficiency) data from DEC's 2014 Integrated Resource Plan filed in Docket No. E-100, Sub 141.
[13] Calculated from savings provided in Docket No. E-7, Sub 1077, Testimony of Conitsha Barnes, Exhibit 1 at 7. 2015 retail sales (without efficiency) data utilized from DEC's 2014 Integrated Resource Plan filed in Docket No. E-100, Sub 141.
[14] Id.

OPPORTUNITIES TO INCREASE ENERGY SAVINGS

Q. ARE THERE STEPS THAT DEC COULD TAKE TO INCREASE ITS ENERGY SAVINGS?

A. Yes. DEC could offer additional programs to decrease the opt-out rate for commercial and industrial customers and improve participation among residential customers. In developing new programs, DEC should look to best practices of exemplary EE programs across the country. Examples of such programs are discussed in the following subsections.

Q. PLEASE DESCRIBE THE STATUS OF OPT-OUTS BY INDUSTRIAL AND LARGE COMMERCIAL CUSTOMERS FROM THE COMPANY'S PROGRAMS.

A. Qualifying industrial and large commercial customers may opt out of DEC's efficiency programs and associated rider by providing the Company with written notification that they have installed their own DSM/EE measures. Unfortunately, the trend in opt-outs is headed in the wrong direction, as shown in Table 3, below. In 2013, North Carolina customers making up 23% of non-residential sales opted out of participation in the Company's EE programs for Vintage 4. In 2014, Vintage 4 opt-outs jumped to 34% of non-residential sales, and opt-outs for Vintage Year 2014 made up 37% of non-residential sales.

Table 3. DEC North Carolina Customer Opt-out Rate By Vintage Year – 2013[15] and 2014[16]

Vintage Year	EE opt-outs as % of non-residential sales	
	2013	2014
2010 (1)	25%	37%
2011 (2)	25%	36%
2012 (3)	24%	35%
2013 (4)	23%	34%
2014	NA	33%

Q. WHY ARE YOU CONCERNED ABOUT THE COMPANY'S HIGH OPT-OUT RATE?

A. Non-residential customers represent a large pool of efficiency potential that the Company could tap to boost its savings achievements. In addition, without greater accountability, opted-out customers that do not install energy efficiency measures on their own can act as "free riders" that receive, at no cost, the system-wide benefit of energy efficiency savings produced by participating customers.

Q. WHAT STEPS DO YOU RECOMMEND THAT DEC TAKE TO INCREASE PARTICIPATION BY NON-RESIDENTIAL CUSTOMERS?

A. DEC has taken several steps to increase non-residential EE participation, including: obtaining a waiver to allow customers to make separate decisions about opting out of EE versus DSM programs; adding an "Opt-In Window" for customers who had previously opted out of the Company's programs and rider; and restructuring its non-residential program offerings.[17] DEC has also

[15] Calculated based on data provided in Docket No. E-7, Sub 1050, Company Application, McGee Exhibit 6.
[16] Calculated based on data provided in Docket No. E-7, Sub 1073, Company Application, Miller Exhibit 6.
[17] Docket No. E-7, Sub 1073, Company Application, Barnes Testimony at 21.

indicated that it planned to investigate adding new measures and programs to its portfolio and to continue to work to educate vendors, trade allies and suppliers.

These are positive steps, but have not succeeded in reducing the opt-out rate. The Company should look for even more ways to attract and retain participants from this energy-intensive sector. To this end, DEC should work with the Collaborative to develop and launch a "self-direct" EE program targeted to its non-residential customers. Self-direct programs allow some customers, usually large industrial or commercial, to "self-direct" the energy efficiency tariff directly to energy efficiency investments in their facilities instead of into a broader aggregated pool of funds.[18] This recommendation is particularly urgent due to the increasing opt-out rate, the recent and forecasted performance of the Company's non-residential programs, and the lack of measures in the new non-residential programs targeting large customers.

Self-direct programs offered by other utilities could serve as models for a DEC program. For example, Rocky Mountain Power offers a self-direct credit program that is available to Utah business customers who meet minimum usage requirements of 5,000,000 kWh per year or have a peak load of at least 1,000 kW in the prior 12 months. Customers are responsible for providing the energy engineering work necessary to document the energy savings of proposed projects. Incentives of 50-80% of the eligible expense are provided in the form

[18] ACEEE, Self-Direct Programs for Large Energy Users. Available at http://aceee.org/sector/state-policy/toolkit/industrial-self-direct.

of credits used to offset the DSM Cost Adjustment surcharge on the monthly bill and are available for both new construction and retrofit projects.[19]

Q. TURNING TO THE RESIDENTIAL SECTOR, DO YOU HAVE ANY RECOMMENDATIONS FOR ADDITIONAL PROGRAMS THAT THE COMPANY COULD OFFER TO ITS RESIDENTIAL CUSTOMERS?

A. One of the main barriers to customer participation in EE programs is the up-front cost of installing cost-effective efficiency measures. Even for EE programs that include customer incentives, customers must often bear much of the up-front cost of energy-efficient appliances or home improvements. Many customers do not have money in the bank to pay for these upgrades, or may not be able to obtain financing on favorable terms. SACE recommends that DEC work with the Collaborative to develop and implement on-bill financing ("OBF") programs for residential and non-residential customers, as a cost-effective way to give customers access to capital. We have discussed the importance of exploring OBF in past comments, and we plan to discuss this in the June DEC Collaborative meeting, making use of the Company's program suggestion template.

Q. DO YOU HAVE ANY RECOMMENDATIONS FOR EE PROGRAMS TO ASSIST LOW- AND FIXED-INCOME CUSTOMERS IN MANAGING THEIR ENERGY USE?

A. Robust EE programs for low- and fixed-income households are essential to ensuring that all customers are able to afford basic utility service on a

[19] Evaluation Report for Utah's Self-Direction Credit Program (PY 2012 through 2013) Prepared by Navigant for Rocky Mountain Power. Available at: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Demand_Side_Management/2015/Self-Direction_Program_Evaluation.pdf.

sustainable basis. According to the Georgia Environmental Finance Authority ("GEFA"), low-income customers typically spend 19% of their income on energy, far exceeding other residents, who spend 3.5% of their income on energy.[20] Low-income residents also tend to live in less efficient housing.[21] As a result of these factors, low-income programs can yield very high levels of energy savings, with even basic weatherization creating an average of $350 or more in savings per year per household.[22]

In addition to energy savings, low-income energy efficiency programs have significant, often unaccounted for, non-energy benefits ("NEBs"). These include reduced utility bill arrearages and disconnections, improved health, safety and comfort, increased productivity, environmental benefits, and economic development and job creation. Two states that utilize quantitative estimates of NEBs, Massachusetts and Rhode Island, have found that by appropriately quantifying all benefits, the overall benefits associated with low-income programs increase by 70% and 39%, respectively.[23]

It is essential to recognize NEBs in program cost-effectiveness screening, particularly for low-income programs. In order to appropriately value all energy savings, Petitioners recommend that DEC work with the Collaborative to develop values for the non-energy benefits associated with

[20] GEFA, Weatherization Facts and Figures, http://gefa.georgia.gov/weatherization-facts-and-figures.
[21] ACEEE, Myths of Low-Income Energy Efficiency Programs: Implications for Outreach, http://bit.ly/1FMQ7KZ.
[22] GEFA, Weatherization Facts and Figures, http://gefa.georgia.gov/weatherization-facts-and-figures.
[23] Tim Woolf, Synapse Energy Economics, Non-Energy Benefits and Efficiency Screening Tests, March 5, 2015.

low-income programs, and then evaluate new programs with this more robust evaluation framework. A starting point could be quantifying the cost of involuntary disconnections that occur. According to a recent DEC filing with the Public Service Commission of South Carolina, more than 13,000 accounts were disconnected due to non-payment in the first quarter in South Carolina.[24]

In addition to quantifying NEBs, SACE recommends that DEC implement a Single-Family Residential Low-Income Add-On Program and a Multifamily Low-Income Add-On Program to complement current Weatherization Assistance Programs. I recommend that the Company implement these programs to add on to the existing WAP in the following ways: (1) expanding customer eligibility to 80% of the state median household income; (2) providing direct installation of all cost-effective energy efficiency measures; (3) funding statewide implementation teams to alleviate any waiting periods at community action agencies; and, (4) offering all measures to renters with streamlined landlord approval.

In developing the new programs with the Collaborative, DEC should consider the best practices from existing programs. These include Efficiency Vermont's Weatherization Assistance Add-On Program and Major Appliance Rehabilitation Services,[25] as well as National Grid's Low-Income Retrofit

[24] Duke Energy Carolinas, Quarterly Reports on Involuntary Termination of Electric and/or Gas Service - Report for the First Quarter of 2015. Docket No. 2006-193-EG. Data on North Carolina disconnections are not available.
[25] ACEEE's Third National Review of Exemplary Energy Efficiency Programs, June 2013, http://bit.ly/18jRRhL.

Program and Low Income Multi Family Energy Retrofits Program.[26] SACE participates in the Collaborative and would be pleased to offer additional details on these programs for DEC to consider.

Beyond WAP add-ons, there are other opportunities to expand low-income access to and participation in efficiency programs. SACE has previously recommended that DEC work with the Collaborative to develop an upstream EE program that is targeted at manufactured homes, similar to a program offered by the Tennessee Valley Authority ("TVA").[27] In TVA's program, each home saves approximately 12,000 kWh when it is purchased with a heat pump heater instead of electric resistant heat.[28] The Collaborative should also consider Idaho Power's Rebate Advantage program, where customers that purchase new all-electric ENERGY STAR manufactured homes receive a $1000 sales rebate and sales consultants receive a $200 sales bonus every time they sell a new all-electric ENERGY STAR manufactured home to an Idaho Power customer.[29]

SACE acknowledges that DEC has recently implemented the Weatherization and Equipment Replacement component of the Income-Qualified EE and Weatherization Program with a new program implementation

[26] Cadmus Group, Low Income Single Family Program Impact Evaluation, June 2012, http://bit.ly/17QpwzL; ACEEE's Third National Review of Exemplary Energy Efficiency Programs, June 2013, http://bit.ly/18jRRhL.
[27] Witness Mims, Docket No. 2013-208-E; Petitioners' comments, Docket No. 2014-44-E.
[28] ACEEE's Third National Review of Exemplary Energy Efficiency Programs, June 2013, http://bit.ly/18jRRhL.
[29] Idaho Power, 2014 DSM Annual Report, http://www.puc.idaho.gov/fileroom/cases/elec/IPC/IPCE1404/20140317DSM%20ANNUAL%20REPORT%202013.PDF.

partner. We look forward to learning more about the implementation of the new measures and working through the Collaborative to provide feedback on ways to enhance the program further.

SACE plans to request that the Company devote part of one or more upcoming Collaborative meetings to discuss these and other low-income program opportunities, and report to the Commission the results of the Company's exploration of these topics and the Collaborative discussion.

IMPROVING TRANSPARENCY AND STAKEHOLDER ENGAGEMENT

Q. ARE THERE IMPROVEMENTS THE COMPANY COULD MAKE TO INCREASE THE TRANSPARENCY IN ITS EE PROGRAM REPORTING?

A. Yes. Another essential element in quickly ramping up cost-effective energy savings is maintaining adequate transparency and stakeholder engagement through EE proceedings and Collaborative activities. SACE appreciates the opportunity to engage with DEC and with other stakeholders through the Collaborative, and we look forward to continuing to contribute to future discussions. DEC could take two steps.

One step DEC could take to increase transparency is to provide access to detailed program cost data. This would allow stakeholders to identify more easily program opportunities based on the successes at utilities elsewhere in the Southeast, and benchmark cost and performance. Identification of optimal and sub-optimal program design and performance is the basis for a streamlined, cost-effective portfolio. If, for example, a highly cost-effective program is

struggling to achieve its savings targets due to low participation rates, stakeholders may be able to use detailed cost data to identify potential under-spending on marketing and outreach, and point to best practices of similar programs that have had success in cost-effectively driving high participation rates. Currently, the Company has only reported total program costs and has not provided a breakdown of program costs that could shed light on the distribution of spending across various components of program implementation and administration. Petitioners request that in future EE rider applications, the Company report detailed projected and actual cost components for each of its DSM programs. Petitioners further recommend that DEC work with the Collaborative to develop cost reporting procedures using the Florida Power & Light tables in Allred Exhibit 2 as an example.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS WITH REGARD TO DEC'S APPLICATION FOR APPROVAL OF RIDER 7.

A. In conclusion, SACE generally supports DEC's request for approval of the proposed Rider 7. However, I am concerned about several aspects of the Application, including the Company's historical and projected energy savings performance, and the persistently high opt-out rates among non-residential customers. In order to expeditiously ramp up its energy savings towards the goals in the Merger Settlement, SACE recommends that the Company: (1) adopt new programs based on best practices from around the country, including a non-residential self-direct program, on-bill financing programs for residential and non-residential customers, and additional lower-income residential EE

programs; and, (2) enhance the reporting of EE program performance metrics in future applications for new DSM cost-recovery and incentive riders, by including detailed cost category fields for each EE program.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

(WHEREUPON, the prefiled affidavit of JACK L. FLOYD is copied into the record as if given orally from the stand.)

110

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1073

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application of Duke Energy Carolinas, LLC, For Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69	)))))	AFFIDAVIT OF JACK L. FLOYD

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, Jack L. Floyd, being first duly sworn, do depose and say:

I am an Engineer in the Electric Division of the Public Staff – North Carolina Utilities Commission representing the using and consuming public. I have attached, as Appendix A, a summary of my education and experience.

In preparing this affidavit, I reviewed the application and the testimony and exhibits of Conitsha B. Barnes and Roshena M. Ham filed on March 4, 2015, the corrected testimony and exhibits of Carolyn T. Miller filed on March 16, 2015, and the supplemental testimony and exhibits of Carolyn T. Miller and the supplemental exhibits of Conitsha B. Barnes filed on May 15, 2015, by Duke Energy Carolinas, LLC (DEC), pursuant to G.S. 62-133.9 and Commission Rule R8-69, as well as DEC's responses to Public Staff data requests. In addition, I have reviewed previous Commission orders related to DEC's demand-side management (DSM)

and energy efficiency (EE) programs and cost recovery rider proceedings, and more specifically:

1. The Agreement and Stipulation of Settlement (Sub 1032 Agreement) approved by the Commission on October 29, 2013, in Docket No. E-7, Sub 1032,

2. The Agreement and Joint Stipulation of Settlement (Sub 831 Agreement) approved by the Commission on February 9, 2010, in Docket No. E-7, Sub 831,

3. The agreement regarding evaluation, measurement, and verification (EM&V) approved by the Commission on November 8, 2011, in Docket No. E-7, Sub 979 (EM&V Agreement), and

4. The joint motion regarding program modifications approved by the Commission on July 16, 2012, in Docket No. E-7, Sub 831 (Flexibility Guidelines).

The EM&V Agreement and the Flexibility Guidelines were incorporated into the Sub 1032 Agreement and approved by the Commission on October 29, 2013, in Docket No. E-7, Sub 1032 (Sub 1032 Order).

I also assisted Public Staff witness Maness with his review of the rider calculations and inputs underlying the riders proposed by DEC in this proceeding.

The purpose of my affidavit is to present the Public Staff's analysis and recommendations with respect to: (1) the portfolio of DSM and EE programs included in DEC's application for approval of its DSM/EE rider (Rider 7), including modification of those programs; (2) the cost-effectiveness of each DSM and EE program; and (3) the EM&V studies filed as exhibits to DEC witness Ham's testimony in this proceeding.

DSM and EE Programs in Rider 7

In its proposed Rider 7, DEC included the costs and incentives associated with the following programs:

- Residential Energy Assessments;
- Energy Efficient Appliances and Devices (formerly Residential Smart $aver® - Energy Star Products);
- HVAC Energy Efficiency (formerly Residential Smart $aver® – HVAC EE);
- Income-Qualified Energy Efficiency and Weatherization Assistance, including the former Residential Low Income Neighborhood program;
- Energy Efficiency Education;
- Residential Retrofit Pilot[1];
- My Home Energy Report;

[1] The Residential Retrofit Pilot has been canceled; however, costs associated with measures installed in 2011 and 2012 are included in Rider 7.

- Multi-Family Energy Efficiency;
- Appliance Recycling;
- Power Manager;
- Nonresidential Smart $aver® Custom Energy Assessments;
- Nonresidential Smart $aver® Energy Efficiency Food Service Products;
- Nonresidential Smart $aver® Energy Efficiency HVAC Products;
- Nonresidential Smart $aver® Energy Efficiency IT Products;
- Nonresidential Smart $aver® Energy Efficiency Lighting Products;
- Nonresidential Smart $aver® Energy Efficiency Process Equipment Products;
- Nonresidential Smart $aver® Energy Efficiency Pumps and Drives
- Nonresidential Smart $aver® Energy Efficiency Custom;
- PowerShare® Nonresidential Load Curtailment, which includes the Mandatory, Voluntary, and Stand-by Generator options;
- Power Share® Nonresidential Call Option;
- Energy Management and Information Services Pilot[2];
- Smart Energy in Offices (formerly the Smart Energy Now Pilot); and
- Small Business Energy Saver.

[2] The Energy Management and Information Services Pilot was canceled by the Commission on November 26, 2014, in Docket No. E-7, Sub 1032. Program costs are included Rider 7 pursuant to the cost recovery mechanism approved by the Sub 1032 Order.

Each of these programs has previously received Commission approval as a new DSM or EE program and is eligible for cost recovery in this proceeding under G.S. 62-133.9, subject to certain program-specific conditions imposed by the Commission. Also, several of these programs were included in the Save-A-Watt portfolio of programs approved in Docket No. E-7, Sub 831. The Commission approved the current portfolio of DSM/EE programs in its Sub 1032 Order, along with the new cost recovery mechanism.

Program Performance

In her testimony and exhibits, Ms. Barnes discusses the performance of each program in DEC's portfolio. While I do not discuss each program in the portfolio, I want to bring certain information to the Commission's attention regarding the performance of DEC's portfolio and particular programs.

DEC witness Barnes states in her direct testimony that DEC's portfolio of programs for Vintages 1 through 4 (2009-2013) exceeded the targets for capacity and energy impacts by 15% and 35%, respectively, and that the actual nominal avoided cost benefits associated with the Save-A-Watt program portfolio exceeded Save-A-Watt's target by 23%. Vintage 2014 (the first year covered by the Sub 1032 Agreement) exceeded its target for energy impacts by 38%, and almost achieved its target for capacity (99%), producing an avoided cost benefit that exceeded the target by 19%. Ms. Barnes indicates that through Vintage 2014, lighting measures in several of the residential and non-residential programs continue to provide substantial contributions to the overall portfolio impacts. Ms.

Barnes also notes that changes to the Energy Efficiency Education program in 2012 have improved its impacts.

While not specifically mentioned by witness Barnes in her testimony, it is also noteworthy that the My Home Energy Report program provided 40% of the overall residential portfolio energy savings for Vintage 2014. This program is projected to produce 72%[3] of the Vintage 2016 residential portfolio energy savings.

The Low Income program (weatherization and refrigerator replacement measures), which was approved in Docket No. E-7, Sub 831, was not actually implemented until April 2015. In my affidavit in the last DSM/EE rider proceeding, Docket No. E-7, Sub 1050 (Sub 1050), I noted that DEC was working on implementing this program and expected to begin delivering measures in the third quarter of 2014. However, due to logistical issues with vendors, DEC did not actually begin implementation until recently. In its data responses to the Public Staff, DEC stated that as of April 17, 2015, it had completed 34 weatherization installations and two refrigerator replacements.

DEC witness Barnes also states that the HVAC EE program was not cost-effective under the Utility Cost (UC) or Total Resource Cost (TRC) tests. In response to a Public Staff data request, DEC indicated that the cost-effectiveness of the HVAC EE program was impacted by new federal standards increasing the efficiency of heat pumps and air conditioning units that became effective in January

[3] System energy savings for Vintage 2016 (Barnes Exhibit 1, page 7, line 9 divided by line 10).

2015. DEC states that it intends to discuss continuation of this program with its EE Collaborative later this year to see if there are program design changes that can be made to improve the cost-effectiveness of the program.

DEC witness Barnes also states that the Appliance Recycling Program underperformed in Vintage 2014. However, since the participant payment was increased in May 2014, participation has increased two-fold.

Cost-Effectiveness

The Public Staff reviews the cost-effectiveness of the individual programs at the time they are proposed for approval, and annually in the rider proceedings, to ensure that the benefits of the DSM/EE programs continue to outweigh the costs. Pursuant to the Sub 1032 Agreement, cost-effectiveness is evaluated at both the program and portfolio levels. The Public Staff reviews cost-effectiveness using the 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.

DEC's calculations of the cost-effectiveness of its portfolio of DSM and EE programs included the modeling inputs associated with the calculations relating to unit savings and net-to-gross (NTG) data obtained from EM&V reports, avoided costs, and program participation. The Public Staff's review of this information indicates that:

1. With the exception of the Income-Qualified EE and Weatherization program, and the HVAC EE program, the DSM and EE programs are cost-effective under the TRC and UC tests;

2. A comparison of the cost-effectiveness test results in Docket No. E-7, Sub 1050 (Duff Exhibit 7) to Barnes Exhibit 7 in this proceeding suggests that several programs produced lower cost-effectiveness test results under all four tests. As discussed by DEC witness Barnes, DEC updated its avoided capacity cost rate pursuant to the Agreement and Settlement filed October 29, 2013, in Docket No. E-100, Sub 136. DEC also updated its transmission and distribution avoided cost rates to those determined by the avoided cost study conducted pursuant to the Sub 1032 Order. While the updated avoided capacity cost rate was higher than originally filed in the Sub 136 case, the updated transmission and distribution rates were substantially lower, which netted in fewer avoided cost benefits from all programs.[4] Additionally, participation and EM&V may have negatively impacted the results. Barnes Exhibit 8, which provides the variances in program performance as related to both impacts and participation, shows that the resulting per participant impacts declined between the Sub 1032 proceeding and this proceeding for several of the programs.

3. The entire portfolio of programs remains cost-effective under all four tests.

The Public Staff will continue to evaluate and monitor the ongoing cost-effectiveness of programs that demonstrated lower test results in this proceeding.

[4] The avoided energy rates did not change from those identified in DEC's 2012 Integrated Resource Plan filed in Docket No. E-100, Sub 137.

With respect to the HVAC EE program, the Public Staff will continue to participate in DEC's EE Collaborative and work with DEC to address how program cost-effectiveness can be improved.

EM&V Recommendations

I have reviewed the testimony and exhibits filed by DEC witness Ham in this proceeding concerning the EM&V of DEC's DSM and EE programs. The Public Staff also contracted the services of GDS Associates to provide additional review of EM&V.

In previous cost recovery proceedings, the Commission has ordered that DEC address certain issues in future EM&V studies. In the Sub 1050 proceeding, I offered several recommendations concerning the determination of program impacts related to light emitting diode (LED) lighting technology, persistence of behavior-oriented programs like the My Home Energy Report program, DEC's adoption of process-related recommendations made by the third-party EM&V evaluator, the use of a "direct-net" approach for certain EE measures, and spillover impacts. Based on my review of DEC witness Ham's exhibits, I believe DEC has appropriately addressed these issues. I will address these more specifically below:

1. Ham Exhibit E included a discussion of the baseline impacts related to LED lighting;

2. DEC provided information from an independent evaluator that suggested a long term evaluation of the persistence of program impacts would be too costly and likely not cost beneficial;

3. In response to a Public Staff data request, DEC addressed the process-oriented recommendations made by the program evaluator, and indicated which recommendations it adopted and did not adopt. For those that were not adopted, DEC explained why;

4. The use of a "direct-net" approach, which uses a billing analysis to estimate net savings without making adjustments for free ridership or spillover, is becoming a more widely accepted industry practice in the EM&V of certain prescriptive EE measures. The Public Staff's earlier reservations with this approach have been addressed; and,

5. The EM&V reports in this proceeding appropriately addressed spillover when it was included in an NTG analysis.

Based on my review of the EM&V studies contained in Ms. Ham's exhibits in this proceeding, I make the following recommendations concerning EM&V[5]:

1. The Public Staff and DEC should further discuss the EM&V presented in Ham Exhibit E (Energy Efficient Appliances and Devices Program (Specialty Bulbs measures)), and Ham Exhibit B (Smart Energy Now Pilot) and therefore agree that the vintages of these programs covered by these EM&V

[5] DEC's implementation of these recommendations would be subject to the consideration of whether the cost would outweigh the benefit. If the cost does outweigh the benefit, the EM&V should discuss that analysis.

reports are subject to further adjustment in next year's proceeding. Therefore, the impacts derived through these EM&V analyses should be accepted for purposes of this rider, but may be subject to true up in next year's proceeding.

2. DEC and the Public Staff should work to coordinate an expeditious review of future planned program evaluations of existing programs and methodologies proposed for future EM&V;

3. Future planned program evaluation plans of existing programs, should include, as applicable, the survey instrument and scoring methodology used to account for NTG adjustments;

4. Future light logging studies should consider using stratification criteria to account for variables such as the percentage of people at home during the weekday (in the sample vs. the population) when appropriate;

5. Future evaluations which use an S-curve to estimate free-ridership (or spillover) in any NTG analysis, should provide an explanation of changes made to current S-curves relative to S-curves used in past evaluations of DEC programs;

6. Future evaluations which use technical reference manuals (TRMs) from other states to estimate program savings, should use available data (to the extent that is reasonable and cost-effective do to so) from DEC's Carolinas' service territory when calculating savings using algorithms in these TRMs; and,

7. Future evaluation plans (for any program which addresses residential lighting measures) should consider the feasibility of collecting specific data from DEC's Carolinas' service territory to revise the final adjusted in-service rates for program bulbs.

Status of EM&V

Pursuant to the EM&V Agreement, initial EM&V results apply retrospectively to the initiation of a program to replace initial estimates of all program impacts, with the exception of those impacts associated with the Non-Residential Smart $aver Custom Program. Subsequent EM&V results would apply prospectively for the purposes of truing up vintages from the first day of the month immediately following the month in which the study participation sample for that EM&V was completed.

I reviewed EM&V data and the exhibits of Company witnesses supporting EM&V from each of DEC's DSM/EE rider proceedings to gain a better understanding of the application of the EM&V results. Beginning in the DSM/EE rider proceeding in Docket No. E-7, Sub 1031, DEC included an exhibit comparing the impacts derived through EM&V of various measures with the original estimates of the impacts of kW and kWh savings for those measures. This data is provided in Barnes Exhibit 8 and serves as the basis for the true-ups to previous riders and vintages.

These data illustrate where EM&V results are final and where additional EM&V needs to be performed in order to verify the savings related to a particular vintage of a program or measure. Any program or measure that has not had any EM&V applied to it remains open for true-up. In this proceeding, DEC witness Barnes states that all program vintages for the original Save-A-Watt portfolio have been evaluated and that this rider represents a "final" true-up of the program impacts for these vintages and programs. Based on my review of the exhibits

attached to the direct testimony of Company witnesses Barnes and Ham, I believe that, with the exception of the Specialty Bulb measures in the Energy Efficient Appliances and Devices program, and the Smart Energy Now pilot (Smart Energy in Offices) program, each of the vintages and programs have been sufficiently evaluated such that those vintages can be considered complete.

With respect to program vintages for which EM&V reports were filed in this proceeding, I do not recommend any adjustment to the impacts at this time. However, DEC and the Public Staff have agreed to further discuss the EM&V presented in Ham Exhibit E (Energy Efficient Appliances and Devices Program (Specialty Bulbs measures)), and Ham Exhibit B (Smart Energy Now Pilot) and therefore agree that the impacts derived through these EM&V analyses may be subject to further review and adjustment in next year's proceeding. With the exception of Ham Exhibits B and E, the EM&V of the vintages of the measures covered by the reports filed in this proceeding should be considered complete.

Review of Rider Calculations

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) Barnes Exhibit 1, which incorporates data from various EM&V studies. 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. I continue to review this information and, if necessary, will file further information with the Commission should my review discover any relevant issues that would cause me to alter my recommendation herein.

This completes my affidavit.

Jack L. Floyd

Sworn to and subscribed before me

on this the 20th day of May 2015.

KIMBERLEY A CAMPBELL
Notary Public, North Carolina
Wake County
My Commission Expires
11-15-16

Notary Public

My Commission Expires: 11-15-16

APPENDIX A

JACK L. FLOYD

I am a graduate of North Carolina State University with a Bachelor of Science Degree in Chemical Engineering. I am also licensed in North Carolina as a Professional Engineer. I have more than seventeen years of experience in the water and wastewater treatment field, nine of which have been with the Public Staff's Water Division. In addition, I have been with the Electric Division for over eleven years.

Prior to my employment with the Public Staff, I was employed by the North Carolina Department of Natural Resources, Division of Water Quality as an Environmental Engineer. In that capacity, I performed various tasks associated with environmental regulation of water and wastewater systems, including the drafting of regulations and general statutes.

In my capacity with the Public Staff's Water Division, I investigated the operations of regulated water and sewer utility companies and prepared testimony and reports related to those investigations.

Currently, my duties with the Public Staff include evaluating the operation of regulated electric utilities, including rate design, cost of service, and demand side management and energy efficiency resources. My duties also include assisting in the preparation of reports to the Commission; preparing testimony regarding my investigation activities; reviewing Integrated Resource Plans; and making

recommendations to the Commission concerning the level of service for electric utilities.

Maness Exhibits 1

(Identified and Admitted)

(WHEREUPON, the prefiled affidavit of MICHAEL C. MANESS is copied into the record as if given orally from the stand.)

127

DOCKET NO. E-7, SUB 1073

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Application of Duke Energy Carolinas, LLC, For Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69	)))))	AFFIDAVIT OF MICHAEL C. MANESS

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, Michael C. Maness, first being duly sworn, do depose and say:

I am an Assistant Director of the Accounting Division of the Public Staff, which is charged by statute with intervening on behalf of the using and consuming public in Commission proceedings affecting public utility rates and service. I am responsible for the performance, supervision, and/or 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. A summary of my education and experience is attached to this affidavit as Appendix A.

The purpose of my affidavit is to present my recommendations regarding the overall Demand-Side Management / Energy Efficiency (DSM/EE) rider (Rider

7) proposed by Duke Energy Carolinas, LLC (DEC or the Company), in its Application filed in this docket on March 4, 2015, pursuant to G.S. 62-133.9 and Commission Rule R8-69, as revised and amended on March 16, 2015, and as further modified by the Supplemental Testimony and Exhibits of Carolyn T. Miller and Supplemental Exhibits of Conitsha B. Barnes (Supplemental Filing), filed on May 15, 2015.

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

G.S. 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. Commission Rule R8-69, which was adopted by the Commission pursuant to G.S. 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 incentives (including Net Lost Revenues (NLR)) 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.

In this proceeding, DEC has calculated each proposed billing factor making up Rider 7 by use of one of two "mechanisms" previously approved by the

Commission. To calculate the Rider 7 billing components related to DSM and EE measures installed or implemented during the period stretching from June 1, 2009, through December 31, 2013, DEC has used the Modified Save-A-Watt Mechanism (Save-A-Watt) approved on February 9, 2010, in Docket No. E-7, Sub 831 (the Sub 831 Order). To calculate the billing components applicable to this proceeding that are related to DSM and EE measures actually or expected to be installed or implemented during calendar years 2014, 2015, and 2016, the Company has used the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs (the Sub 1032 Mechanism) approved on October 29, 2013, in Docket No. E-7, Sub 1032 (the Sub 1032 Order). In the following paragraphs, I will describe the essential characteristics of each rate-setting method; however, both the Save-A-Watt Mechanism and the Sub 1032 Mechanism include and are subject to many additional and more detailed criteria than are set forth in this affidavit.

The Modified Save-A-Watt Mechanism and Related Commission Orders

Docket No. E-7, Sub 831:

In the Sub 831 Order, the Commission approved, with modifications, an Agreement and Joint Stipulation of Settlement by and between DEC, the Public Staff, and certain other intervenors (Sub 831 Settlement). The Sub 831 Settlement set forth the parameters of Save-A-Watt, including the following major characteristics, subject to many additional, detailed criteria:

1. Save-A-Watt was a four-year pilot, with an extension to allow for the recovery of NLR experienced due to EE measures installed or implemented during the four years.

2. DEC would be allowed to recover in revenues 75% of the avoided generation costs resulting from its DSM measures installed or implemented during the four-year term, and 50% of the net present value of the avoided generation costs resulting from its installed or implemented EE measures, as determined pursuant to the Utility Cost Test. Initial revenue requirements were set based on 85% of targeted savings.

3. DEC's final avoided cost related revenue requirements would be based on its measured and verified savings achieved, as well as how well those achievements measured up to an aggregate monetary target.

4. The final avoided cost related revenue requirements would also be subject to an earnings cap, with earnings measured as the excess of those revenue requirements over DSM/EE program costs.

5. The Company would be allowed to recover the first 36 months of NLR resulting from the installation of EE measures.[1] NLR would be net of any increases in revenues resulting from any activity by the Company's public utility operations that caused a customer to increase demand or energy consumption, whether or not that activity had been approved as a DSM/EE program ("found revenues").

Docket No. E-7, Sub 938

On April 6, 2010, the Commission issued an Order in Docket No. E-7, Sub 938 (Sub 938), approving in part a request by DEC for a waiver from certain provisions of Commission Rule R8-69 dealing with the right of industrial and large commercial customers to "opt out" of participating in and paying the rider associated with utility DSM and EE programs. The waiver allows eligible non-residential DEC customers the flexibility to opt out of either or both of the DSM and

[1] The Sub 831 Settlement erroneously did not reflect the parties' intent that recovery of NLR was limited to amounts resulting from EE programs only. The Commission's February 9, 2010, Order in Docket No. E-7, Sub 831, corrected this error and expressly limited the recovery of NLR to amounts associated with EE programs.

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, the Sub 938 Order clarified that if a customer opts out of paying the Rider for a vintage year after one or more 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.

Subsequent Sub 831 Order

On February 8, 2011, the Commission issued an Order in Sub 831 approving the Decision Tree approach developed by DEC and the Public Staff to aid the Company in identifying activities that produce found revenues.

Docket No. E-7, Sub 979

On November 8, 2011, the Commission issued its Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice (Sub 979 Order). As part of this Order, the Commission accepted and found reasonable and appropriate an agreement reached between DEC, the Southern Alliance for Clean Energy (SACE), and the Public Staff regarding the application of Evaluation, Measurement, and Verification (EM&V) results to DSM/EE revenue requirements (EM&V Agreement).

The Sub 1032 Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs

Docket No. E-7, Sub 1032

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[2] (Sub 1032 Settlement), which incorporates the Sub 1032 Mechanism. The Sub 1032 Settlement, as approved by the Commission, included the following major terms:

1. The portfolio of DSM and EE programs filed by the Company was approved with no specific duration.

2. The Company's annual DSM/EE rider would be determined according to the Stipulation and the terms and conditions set forth in the Sub 1032 Mechanism.

3. The Company and Public Staff would study the issue of the appropriate avoided transmission and distribution (T&D) costs to be used in the Company's calculations of cost-effectiveness and, if appropriate, recommend in the Company's 2014 DSM/EE rider proceeding adjustments to the rate filed in this proceeding to be made on a prospective basis.

4. Within a short time after the proceeding, the Company would meet with the North Carolina Waste Awareness and Reduction Network (NC WARN) and other interested intervenors to discuss the low income program proposed by NC WARN. The parties also agreed to discuss and consider on-bill repayment and combined heat and power as part of the Collaborative, and to report to the Commission the status and results of that discussion and consideration.

[2] The parties participating in the Sub 1032 Settlement are DEC; the North Carolina Sustainable Energy Association; the Environmental Defense Fund; SACE; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the Public Staff.

The Sub 1032 Settlement also set forth the parameters of the Sub 1032 Mechanism, the overall purpose of which 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 NLR and a Portfolio Performance Incentive (PPI) to reward DEC for adopting and implementing new DSM and EE measures and programs; and (4) provide for an additional incentive to further encourage kWh savings achievements. The Sub 1032 Mechanism includes the following major characteristics:

1. The Sub 1032 Mechanism shall continue until terminated pursuant to Commission Order.

2. Modifications to Commission-approved DSM/EE programs will be made using the Flexibility Guidelines approved on July 16, 2012, in Docket No. E-7, Sub 831.

3. Treatment of opted-out and opted-in customers will continue to be guided by the Commission's Orders in Docket No. E-7, Sub 938, with the addition of an additional opt-in period during the first week in March of each year.

4. DSM/EE and DSM/EE EMF riders shall continue to 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 Duke Energy Carolinas DSM/EE program options in which they can participate.

5. Incurred DSM and EE program costs shall 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 shall 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 shall 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 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 in Docket No. E-7, Sub 831.

9. DEC shall 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-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for a vintage year shall be equal to 11.5% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year. Low-income programs approved with expected Utility Cost Test results less than 1.00 and other non-cost-effective programs with similar societal benefits as approved by the Commission shall not be included in the portfolio for purposes of the PPI calculation.

10. The PPI for each vintage year shall ultimately be trued up based on net dollar savings as verified by the EM&V process and approved by the Commission.

11. 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.

12. The terms and conditions of the Mechanism shall be reviewed by the Commission every four years unless otherwise ordered.

The Company's Proposed Billing Factors and Other Aspects of Its Filing

Proposed Revenue Requirements, Billing Factors, and Applicability

In its Application (as revised and corrected) and the supporting testimony and exhibits, as modified by the Supplemental Filing, DEC requested approval of 16 billing factors [including the North Carolina Regulatory Fee (NCRF)] comprising Rider 7, which is to be charged for service rendered during the rate period January 1, 2016, through December 31, 2016. These proposed billing factors are set forth on Maness Exhibit I.

Vintage Years

For purposes of the Company's filing, the following vintage year time periods apply:

Vintage Year 1:	The 19-month period ended December 31, 2010.
Vintage Year 2:	The 12-month period ended December 31, 2011.
Vintage Year 3:	The 12-month period ended December 31, 2012.
Vintage Year 4:	The 12-month period ended December 31, 2013.
Vintage Year 2014:	The 12-month period ended December 31, 2014.
Vintage Year 2015:	The 12-month period ended December 31, 2015.
Vintage Year 2016:	The 12-month period ended December 31, 2016.

The billing factor(s) applicable to each vintage year and group of customers is/are determined pursuant to G.S. 62-133.9 and Commission Rule R8-69. For Vintage Years 1 through 4, the factors are also subject to Commission rulings in Docket No. E-7, Subs 831, 938, and 979, including the Sub 831 Settlement and the Save-A-Watt Mechanism. For Vintage Years 2014, 2015, and 2016, the billing factors are subject to the Commission's findings and conclusions in Docket No. E-7, Sub 1032 (including the Sub 1032 Settlement and the Sub 1032 Mechanism). Particular billing factors may also be subject to Commission rulings in the various

annual DSM/EE cost and incentive recovery proceedings, as well as individual program approval proceedings.

General Characteristics of DEC's Proposed DSM/EE Billing Factors:

As discussed earlier, DEC has proposed certain billing factors applicable to each of Vintage Years 1, 2, 3, 4, 2014, 2015, and 2016 for inclusion in DSM/EE Rider 7, as follows:

1. For Vintage Year 2016, pursuant to the Sub 1032 Settlement, proposed Rider 7 includes billing factors intended to recover estimated program costs and a PPI, as well as estimated calendar year 2016 NLR, applicable to DSM and EE measures projected to be installed or implemented during Vintage Year 2016, all subject to future true-up.
2. For Vintage Year 2015, pursuant to the Sub 1032 Settlement, the proposed Rider includes billing factors (or components of billing factors) intended to prospectively recover estimated calendar year 2016 NLR associated with Vintage Year 2015 installations, subject to future true-up.
3. For Vintage Year 2014, pursuant to the Sub 1032 Settlement, the proposed Rider includes billing factors (or components of billing factors) intended to (a) prospectively recover estimated calendar year 2016 NLR associated with Vintage Year 2014 installations, subject to future true-up, and (b) true up 2014 program cost and, to the extent EM&V of these results has been completed, participation and per-participant avoided cost savings and calendar year 2014 NLR.

4. For Vintage Years 3 (2012) and 4 (2013), pursuant to the Sub 831 Settlement and associated Orders, proposed Rider 7 includes billing factors intended to (a) true-up all NLR revenue requirements related to those vintage years, (b) true up participation and per-participant avoided cost savings, and (c) make certain final corrections and reflect the Company's final calculation of the true-up of avoided cost revenue requirements to reflect 100% of avoided cost revenues and the impact of the Save-A-Watt earnings cap.

5. For Vintage Years 1 (June 1, 2009 through December 31, 2010) and 2 (2011), pursuant to the Sub 831 Settlement and associated Orders, proposed Rider 7 includes billing factors intended to make certain final corrections and reflect the Company's final calculation of the true-up of avoided cost revenue requirements to reflect 100% of avoided cost revenues and the impact of the Save-A-Watt earnings cap.

Limitations on the Recovery of NLR

There are certain limitations on the recovery of NLR reflected in DEC's proposed billing factors in this proceeding due to the Company's most recent general rate case (Docket No. E-7, Sub 1026). In that proceeding, for purposes of setting rates, DEC's kWh usage per customer and sales revenues were annualized through June 30, 2012. In this DSM/EE proceeding, therefore, pursuant to the Sub 831 Settlement, for any participation beginning on or prior to June 30, 2012, DEC has ceased including NLR in the billing factor calculations, effective September 25,

2013 (the effective date of the rates established in the Sub 1026 general rate case). In this proceeding, this limitation affects NLR related to Vintage Years 2 and 3. For participation commencing after June 30, 2012, full recovery of 36 months of NLR will be allowed (barring another general rate case or other cessation event covered by the Sub 831 and Sub 1032 Settlements), since those NLR will not be recovered through base rates.

Net Found Revenues and Negative Found Revenues

In this proceeding, in accordance with the Sub 831 Settlement, the Commission's February 8, 2011, further Order in Sub 831, and the Sub 1032 Settlement, DEC has continued to reduce NLR by net found revenues, as they are defined earlier in this affidavit. Additionally, as discussed in DEC's 2014 DSM/EE cost and incentive recovery proceeding (Docket No. E-7, Sub 1050), the Company has begun reducing net found revenues by the monetary impact ("negative found revenues") caused by reductions in consumption resulting from the current initiative to replace mercury vapor (MV) lights with light emitting diode (LED) fixtures. More specifically, Company witness Barnes testifies that DEC has recognized negative found revenues for the differential between energy consumed by an installed LED fixture and a standard high pressure sodium (HPS) fixture, even though the lights being replaced are MV lights. She also notes that the Company has not reduced any total net found revenues to a negative amount. Per Barnes Exhibit 4, negative found revenues affect the net found revenues totals for Vintage Years 2014, 2015, and 2016.

Final True-up of Save-A-Watt before Application of Earnings Cap

In Sub 1050, although the EM&V of Save-A-Watt Vintage Years 2 through 4 was not yet complete, DEC calculated a preliminary true-up of avoided cost revenues at the 100% level, as opposed to the 85% level it had utilized in previous annual proceedings pursuant to the Sub 831 Settlement and the Save-A-Watt Mechanism. In the current proceeding, the Company has adjusted this true-up to what it deems a final amount, taking into account its proposed final Save-A-Watt avoided cost revenues.

Final Save-A-Watt Earnings Cap True-Up

In Sub 1050, although the EM&V of Save-A-Watt Vintage Years 2 through 4 was not yet complete, DEC calculated a preliminary earnings cap true-up pursuant to the Sub 831 Settlement and the Save-A-Watt Mechanism, and applied it to the calculation of the Rider 6 billing factors. In the current proceeding, the Company has adjusted the earnings cap true-up to what it deems a final amount, taking into account its proposed final Save-A-Watt avoided cost revenues and program costs. Company witness Barnes testifies that during the four-year term of Save-A-Watt, DEC has achieved nearly 123% of the nominal $754 million avoided cost savings target set forth in the Sub 831 Settlement. Therefore, she concludes that the maximum percentage allowed by the Sub 831 Settlement, 15%, should be used to determine the earnings cap. Using this percentage, Company witness Miller has performed calculations that indicate that the final four-year

Save-A-Watt avoided cost revenue requirements calculated using the 75% and 50% factors applied to DSM and EE avoided cost savings, respectively, are in excess of the earnings cap by approximately $42 million. Therefore, Ms. Miller has incorporated allocated credits equal in the aggregate to this amount in the calculations of the Company's final trued-up Save-A-Watt vintage year revenue requirements proposed by the Company in this case. Company witness Miller also testifies that Rider 7 will be the final DSM/EE rider to include any amounts related to the Save-A-Watt vintages.

Future True-Ups

It should also be noted that certain components of the revenue requirements related to prior years (Vintage Years 2014 and 2015) will remain subject to prospective update adjustments and/or retrospective true-ups in the future; no final rate for those vintage years is being set in this proceeding. The various types of other expected and/or possible adjustments to the revenue requirement for these vintage years include prospective recovery of years 2 and/or 3 NLR requirements; true-ups of program cost; and true-ups of the PPI and NLR requirements to reflect the results of and possible adjustments to participation and EM&V analyses.

Investigation and Conclusions

Investigation

My investigation of DEC's filing in this proceeding focused on whether the Company's proposed DSM/EE billing factors (a) were calculated in accordance with the Sub 831 Settlement (as modified by the Commission) and the Sub 1032 Settlement, as applicable, as well as other relevant Commission orders, 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 (a) the Company's filing, (b) relevant Commission proceedings and orders, and (c) 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.

Conclusions

Effects of Public Staff Witness Floyd's Affidavit

Public Staff witness Floyd has filed an affidavit in this proceeding discussing several topics and issues related to the Company's filing. None of these topics and issues necessitate an adjustment in this particular proceeding to the Company's billing factor calculations. However, as Mr. Floyd notes, the Public Staff and DEC have agreed to further discuss the EM&V for the Smart Energy Now pilot program and the specialty bulb measure of the Energy Efficient Appliances and Devices program, and therefore agree that the vintages of these programs covered

by the EM&V filed in Ham Exhibits B and E in this proceeding are subject to further adjustment in next year's proceeding.[3]

My Findings and Conclusions

Overall with regard to the DSM/EE billing factors proposed by the Company in this proceeding, with the possible exception of the EM&V items identified by Mr. Floyd, which may require adjustment in next year's proceeding, I am of the opinion that the Company has calculated the Rider 7 billing factors in a manner consistent with G.S. 62-133.9, Commission Rule R8-69, the Sub 831 Settlement as modified by the Commission, the EM&V Agreement, the Sub 1032 Settlement, 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; should this review result in any further issues, the Public Staff will file additional information with the Commission.

I would like to note the following particulars regarding my investigation:

(1) Accounting Errors – In the course of the investigation, the Public Staff and DEC became aware of certain relatively minor input and calculation errors in the determination of the billing factors. Although these errors were relatively minor, their correction did affect program costs, net found revenues, and net lost revenues. These corrections are reflected in the Supplemental Filing.

[3] It should be noted that, pursuant to the Commission's Order of February 14, 2011, in Docket No. E-7, Sub 961, the Smart Energy Now Program pilot shall be eligible for recovery of NLR only if it is ultimately determined to have been cost effective. Thus, if further adjustments to the cost-effectiveness of the Program should result in its being found to be not cost-effective overall, DEC should be required to refund to the customers all NLR collected.

(2) Save-A-Watt Earnings Cap True-Up – As noted previously in this affidavit, DEC has calculated its proposed final earnings cap true-up and applied it to the calculation of the Rider 7 billing factors. Per the Company (and as agreed to by Public Staff witness Floyd), EM&V analyses covering all of the Save-A-Watt vintage years have been completed. The results of these analyses have been incorporated into the avoided cost revenue requirements used in the earnings cap calculation. (As discussed previously, the Public Staff and DEC have agreed to further discuss the EM&V for the Smart Energy Now program and the specialty bulb measure of the Energy Efficient Appliances and Devices program; thus, the vintages of these programs covered by the EM&V filed in Ham Exhibits B and E in this proceeding are subject to further adjustment in next year's proceeding.) Additionally, as noted in the letter filed by the Public Staff in Sub 1050 on October 1, 2014, the Public Staff has completed its audit of Save-A-Watt program costs, and the revised level of costs has also been incorporated into the final calculation. Therefore, subject to future adjustment to vintages of the programs covered by the EM&V filed in Ham Exhibits B and E in this proceeding, the Public Staff has no objection to the Company making an earnings cap true-up in this case, subject to possible future adjustment and further true-up.

My affidavit in the Sub 1050 proceeding expressed certain concerns regarding the Company's application of the Save-A-Watt Stipulation's provisions regarding interest on various true ups, and specifically the Company's decision not to calculate interest on the earnings cap overcollection. I discussed the appropriateness of calculating interest on the various true ups separately, versus

netting them as DEC has done. Based on further discussions with the Company and further internal deliberation, the Public Staff has concluded that the Company's approach is reasonable, and that no interest (other than the amount that the Company has calculated for Vintage 3 non-residential DSM) is necessary. Essentially, the earnings cap overcollection has been beneficially offset by the avoided cost revenue requirement being set at 85% of the amount that could be justified throughout the Save-A-Watt period, resulting in customers' bills being lower than they otherwise would have been (in fact, lower than the bills justified by the earnings cap). In this particular case, the Public Staff considers it reasonable to allow this benefit to offset the earnings cap for purposes of the calculation of interest.

(3) Negative Found Revenues – In my testimony in Sub 1050, I stated that the Commission possesses significant discretion as to what items may be included in the calculation of the DSM/EE rider as either NLR or found revenues, but that negative found revenues should be approved only to the extent to which the underlying activity actually reduces the Company's profitability, much like positive found revenues increase profitability. I also testified that the underlying circumstances and impacts on the utility of any proposal to offset positive found revenues with negative ones should be evaluated very carefully, on a case-by-case basis.[4] As noted previously, Company witness Barnes testifies in this

[4] My affidavit also states that in order for DEC to include negative found revenues as an offset to NLR, it would appear that either an amendment to or a waiver of Rule R8-68(b)(5) would be necessary. However, on advice of counsel, I am no longer making this recommendation. After further consideration, the Public Staff has concluded that negative found revenues can be considered a component of found revenues under the rule as currently formulated.

proceeding that DEC has recognized negative found revenues for the differential between energy consumed by an installed LED fixture and a standard high pressure sodium (HPS) fixture. After review, the Public Staff has concluded that DEC's currently ongoing initiative to replace MV lighting with LED fixtures is an activity that can reasonably be considered to produce negative found revenues for inclusion in the Company's calculations. The Public Staff has reviewed DEC's calculations of negative found revenues and accepts them for purposes of this proceeding.

(4) Review of Vintage Year 2014 Program Costs – As part of its investigation in this proceeding, the Public Staff performed a review of the DSM/EE program costs incurred by DEC during the 12-month period ended December 31, 2014. To accomplish this, the Public Staff selected and reviewed a sample of source documentation for test year costs included by the Company for recovery through the DSM/EE riders. Review of this sample was intended to test whether the costs included by the Company in the DSM/EE riders are valid costs of approved DSM and EE programs. The Public Staff's review resulted in only one error being found in the costs included in the sample; however, this error had already been corrected by DEC in its books and records. Therefore, no adjustments to program costs have been found necessary as a result of this review.

Summary of Conclusions Regarding Rider 7 Billing Factors

In summary, other than possible future adjustments resulting from the ongoing discussions between the Public Staff and DEC regarding the Smart Energy Now program and the specialty bulb measure of the Energy Efficient Appliances and Devices program, the Public Staff has found no errors or other issues related to the Rider 7 billing factors that have not been satisfactorily resolved by the Company in its Supplemental Filing.

Recommendation

Based on the results of the Public Staff's investigation, I recommend approval of the DSM/EE riders proposed by DEC in its Supplemental Filing in this proceeding. All of the recommended factors should be approved subject to any appropriate and reasonable true-ups in future cost recovery proceedings consistent with the Sub 831 and Sub 1032 Orders, as well as other relevant orders of the Commission, including the Commission's final order in this proceeding.

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.

147

This completes my affidavit.

Michael C. Maness

Sworn to and subscribed before me

this the 20th day of May, 2015.

Laura D. Bradley
Notary Public
WAKE COUNTY
State Of North Carolina

Laura D. Bradley
Notary Public

My Commission Expires: 8-28-2016

APPENDIX A

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.

Since joining the Public Staff in July 1982, I have filed testimony or affidavits in several general, fuel, and demand-side management/energy efficiency rate cases of the utilities currently organized as Duke Energy Carolinas, LLC, Duke Energy Progress, Inc., and Virginia Electric and Power Company (Dominion North Carolina Power) 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.

COMMISSIONER BROWN-BLAND: All right. To Ms. Edmondson, have you identified any public witnesses that wish to testify this morning?

MS. EDMONDSON: I have not.

COMMISSIONER BROWN-BLAND: All right. Is there anyone present this morning who wishes to provide public testimony in this docket? If so, please come forward.

(No response.)

Let the record reflect that no one was anxious to come forward.

MR. LEDFORD: Madam Commissioner.

COMMISSIONER BROWN-BLAND: Yes.

MR. LEDFORD: NCSEA does have two exhibits that we would like entered into the record.

COMMISSIONER BROWN-BLAND: All right. Have those been shared with opposing counsel?

MR. LEDFORD: Yes, they have.

MR. KAYLOR: Yes, they have and Duke has no objection to these exhibits.

COMMISSIONER BROWN-BLAND: All right. Then you may proceed. All right. The record will reflect Mr. Ledford passed out two documents. One of them has identification on it as Item Number 1-4; that will be

received without objection into the record as NCSEA Exhibit 1. And the other that is marked and identified as Item Number 1-6 will be identified and received into the record as NCSEA Exhibit 2.

MR. LEDFORD: Thank you.

NCSEA Exhibits 1 and 2

(Identified and Admitted)

COMMISSIONER BROWN-BLAND: All right. Is there anything further to come before the Commission before we decide on the proposed order?

MR. KAYLOR: I think that's all we have, Commissioner.

COMMISSIONER BROWN-BLAND: All right. Then the record will be closed -- the evidentiary record will be closed. Are all parties in agreement that proposed orders could be submitted 30 days from today?

MR. KAYLOR: I think we have that additional public hearing in July and I think that it might be appropriate to have those filed maybe a day or two after that public hearing.

COMMISSIONER BROWN-BLAND: You're correct. That's correct. All right.

MR. KAYLOR: We could say two days after the the public hearing would be --

MS. EDMONDSON: (Interposing) Or the transcript --

MR. KAYLOR: -- or the transcript, yes.

MS. EDMONDSON: I'd assume that it would be pretty quick.

MR. KAYLOR: Yes.

COMMISSIONER BROWN-BLAND: All right. We will proceed with the proposed orders to be filed two days after the transcript is made available.

MR. KAYLOR: Thank you.

COMMISSIONER BROWN-BLAND: All right. If there is nothing else to come before us, we'll stand at ease and we'll move into our third proceeding.

(WHEREUPON, the proceedings adjourned at 9:52 a.m.)

C E R T I F I C A T E

I, KIM T. MITCHELL, DO HEREBY CERTIFY that the Proceedings in the above-captioned matter were taken before me, that I did report in stenographic shorthand the Proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

Kim T. Mitchell
Court Reporter II