



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

August 19, 2019

Ms. Janice H. Fulmore, Deputy Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. E-2, Sub 1206 – Application of Duke Energy Progress, LLC pursuant to G.S. 62-133.9 and Commission Rule R8-69 for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider

Dear Ms. Fulmore:

In connection with the above-referenced docket, I transmit herewith for filing on behalf of the Public Staff the Testimony and Exhibits of David M. Williamson, Utilities Engineer, Electric Division, and the Testimony of Michael C. Maness, Director, Accounting Division.

By copy of this letter, we are providing copies to all other parties of record.

Sincerely,

/s/ Lucy E. Edmondson
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Aug 19 2019

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1206

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

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

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

7 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

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

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 A. The purpose of my testimony is to present the Public Staff's analysis
11 and recommendations with respect to the following aspects of the
12 February 26, 2019, application of Duke Energy Progress, LLC (DEP
13 or the Company), for approval of its demand-side management
14 (DSM) and energy efficiency (EE) cost recovery rider for 2020 (2020
15 Rider). This testimony discusses: (1) the portfolio of DSM and EE
16 programs included in the proposed 2020 Rider; (2) the ongoing cost-
17 effectiveness of each DSM and EE program; and (3) the evaluation,
18 measurement, and verification (EM&V) studies filed as Exhibits A
19 through I to the testimony of Company witness Robert P. Evans.

20 **Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR**
21 **INVESTIGATION OF DEP'S PROPOSED 2020 RIDER?**

1 A. I reviewed the application and supporting testimony and exhibits, as
2 well as DEP's responses to Public Staff data requests. In addition, I
3 reviewed previous Commission orders related to DEP's DSM and EE
4 programs and cost recovery rider proceedings, including the
5 Commission's *Order Approving DSM/EE Rider, Revising DSM/EE*
6 *Mechanism, and Requiring Filing of Proposed Customer Notice*
7 issued November 27, 2017, in Docket No. E-2, Sub 1145 (Sub 1145
8 Order), that approved revisions to the Mechanism approved in
9 Docket No. E-2, Sub 931 (Revised Mechanism).

10 **Q. DO YOU HAVE ANY EXHIBITS?**

11 A. Yes. I have two exhibits to my testimony. Williamson Exhibit No. 1
12 shows the changes in the year ahead projected cost-effectiveness of
13 the Company's portfolio of programs as calculated by the Company
14 in its 2017, 2018, and current DSM/EE rider proceedings. Williamson
15 Exhibit No. 2 shows the actual Total Resource Cost (TRC) test
16 scores for the programs across Vintage Years 2016, 2017, and 2018.

17 **DSM and EE Programs in DEP's 2020 Rider Rates**

18 **Q. PLEASE IDENTIFY THE DSM AND EE PROGRAMS FOR WHICH**
19 **DEP IS SEEKING COST RECOVERY THROUGH THE 2020**
20 **RIDER.**

1 A. In its proposed 2020 Rider, DEP included the costs and incentives
2 associated with the following programs:

3 • Residential

- 4 ○ Appliance Recycling Program (Sub 970)
- 5 ○ EE Education Program (Sub 1060)
- 6 ○ Multi-Family EE Program (Sub 1059)
- 7 ○ My Home Energy Report (MyHER) Program (formerly
- 8 the EE Benchmarking Program) (Sub 989)
- 9 ○ Neighborhood Energy Saver (Low Income) Program
- 10 (Sub 952)
- 11 ○ Residential Smart \$aver EE Program (formerly HEIP)
- 12 (Sub 936)
- 13 ○ New Construction Program (Sub 1021)
- 14 ○ Load Control Program (EnergyWise Home) (Sub 927)
- 15 ○ Save Energy and Water Kit Program (Sub 1085)
- 16 ○ Energy Assessment Program (Sub 1094)
- 17 ○ Low-Income Weatherization Pay for Performance
- 18 Program (Pilot implemented in January of 2019)

19 • Non-Residential

- 20 ○ Non-Residential Smart \$aver Energy Efficient Products
- 21 and Assessment Program (formerly Energy Efficiency for
- 22 Business Program) (Sub 938)

- Each of these programs has previously received Commission approval as a new DSM or EE program and is eligible for cost recovery under N.C. Gen. Stat. § 62-133.9, subject to certain program-specific conditions imposed by the Commission regarding the recovery of net lost revenues (NLR) and portfolio performance incentives (PPI).

18 Q. PLEASE DISCUSS THE PERFORMANCE OF THE PORTFOLIO.

TESTIMONY OF DAVID M. WILLIAMSON
PUBLIC STAFF – NORTH CAROLINA UTILITIES COMMISSION
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1 portfolio, I want to bring certain information to the Commission's
2 attention regarding the performance of particular programs, as well
3 as the performance of DEP's overall portfolio. The portfolio of
4 programs seems generally to be performing satisfactorily. However,
5 the impact of the federal rules imposing minimum requirements on
6 the production of lighting-related measures, and the North Carolina
7 market in which these measures are being offered, merit further
8 discussion. I also discuss the performance of certain programs that
9 are struggling to remain cost-effective, as well as comment on the
10 Company's DSDR program.

11 **Q. PLEASE DISCUSS YOUR OBSERVATIONS CONCERNING**
12 **LIGHTING-RELATED MEASURES.**

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

21 On January 19, 2017, the U.S. Department of Energy (DOE)
22 published final rules adopting a revised definition for the general

1 service lamp (GSL) and general service incandescent lamp (GSIL),
2 among other modifications to other definitions, which are to become
3 effective January 1, 2020.¹ These updates are from a DOE
4 rulemaking to implement the second phase of the 2007 Energy
5 Independence and Security Act (EISA) currently scheduled to go into
6 effect on January 1, 2020, otherwise known as EISA 2020.

7 However, on February 11, 2019, DOE issued a notice of proposed
8 rulemaking and request for comment that could result in withdrawal
9 of the current definitions of GSL and GSIL.² As a result of this filing,
10 further rulemaking may occur, but until such time, the current rules
11 guide the path going forward.

12 The extent to which market transformation has occurred is difficult to
13 determine because the metrics associated with market
14 transformation are subjective. However, one of the goals of utility-
15 sponsored EE programs is to build customer awareness of, and
16 confidence in, EE technologies, and, as a result, encourage
17 consumers to adopt EE even without incentives. As technologies
18 become even more energy efficient, costs decrease, and consumer

¹ Energy Conservation Program: Conservation Standards for General Service Lamps, 82 Fed. Reg. 7276-7322 (January 19, 2017).

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

1 acceptance improves, adoption of EE should become more routine,
2 at which point there is “market transformation.”

3 **Q. DO YOU BELIEVE THAT NORTH CAROLINA’S LIGHTING**
4 **MARKET HAS TRANSFORMED OR IS ON THE VERGE OF**
5 **TRANSFORMING?**

6 A. Yes. I have reviewed the Company’s EE Lighting EM&V report on its
7 lighting program, which was (1) accepted in the 2018 DEP Rider
8 Proceeding³ and (2) reviewed in combination with Duke Energy
9 Carolinas, LLC’s Retail LED Lighting Program. Since the Company
10 began distributing lighting measures to its customers through
11 DSM/EE programs, the acceptance of more efficient lighting
12 measures has been increasing. When the Company began issuing
13 lighting measures, the compact fluorescent lamp (CFL) bulb was the
14 primary offering. As LEDs became more affordable to both the
15 utilities and the customers who received them via discount or free
16 incentives, the market slowly began migrating even further toward
17 adopting the LED as the “go to” bulb.

18 **Q. WITH THE NEW EISA 2020 STANDARD ESSENTIALLY MAKING**
19 **NON-SPECIALTY LED BULBS THE STANDARD, DOES THE**
20 **COMPANY STILL OFFER NON-SPECIALTY LED BULBS IN ITS**
21 **PORTFOLIO?**

³ Docket No. E-2, Sub 1174

1 A. Yes, however, the Company has been working to minimize the
2 impacts of EISA 2020, and as such, has been updating its lighting
3 measure offerings to those focused on specialty LED bulbs. The
4 number of non-specialty LED bulbs as a percentage of measure
5 offerings for each program has been greatly reduced since the last
6 rider proceeding.

7 **Q. HOW MUCH LONGER SHOULD NON-SPECIALTY LED BULBS**
8 **BE IN THE COMPANY'S RESIDENTIAL PORTFOLIO?**

9 A. Regardless of whether the EISA 2020 standard takes effect as
10 scheduled or is rolled back, and taking into consideration the
11 Company's efforts to migrate primarily to specialty LED bulbs, it
12 appears that the North Carolina lighting market is adopting EE
13 lighting technologies as the baseline. Therefore, an incentive for non-
14 specialty LED bulbs should no longer be needed after Vintage 2020.

15 Allowing the incentives to be offered for at least one year beyond the
16 January 2020 date should allow the Company time to evaluate any
17 changes in the federal standards, as well as to determine how to
18 handle its current stock of non-specialty LED bulbs.

19 **Q. ARE THERE PROGRAMS THAT ARE STRUGGLING TO BE OR**
20 **REMAIN COST-EFFECTIVE?**

21 A. Yes. As seen in Williamson Exhibit 1, the Residential Smart Saver
22 EE, Neighborhood Energy Saver, Non-Residential Smart Saver

1 Performance Incentive, and EnergyWise for Business programs are
2 not projected to be cost-effective under the TRC test.

3 The Residential Smart Saver EE program was recently granted
4 approval to make modifications to increase its cost-effectiveness.
5 This program's projected cost-effectiveness has greatly increased,
6 but it remains not cost-effective, as it has been since 2013, when the
7 Company was projecting the programs cost effectiveness for Vintage
8 Year 2014. Notwithstanding the Company's efforts to attain cost-
9 effectiveness for this program, the Public Staff continues to be
10 skeptical that it can be cost-effective.

11 **Q. PLEASE DISCUSS THE COMPANY'S DSDR PROGRAM.**

12 A. While I do not have any concerns with the performance of the
13 program, I would like to bring to the Commission's attention certain
14 aspects of the program.

15 The DSDR program was approved as an EE program by this
16 Commission on June 15, 2009, in Docket No. E-2, Sub 926. Since
17 the approval of this program, the Company has spent millions of
18 dollars to implement this program to its full scale, installing upgraded
19 capacitor banks and regulators, as well as the necessary
20 communication equipment to ensure that this technology operates
21 when called. In this proceeding, the DSDR program costs constitute

1 approximately 19% of the projected 2020 program costs of DEP's
2 entire DSM/EE portfolio.

3 Since the implementation of DSDR, the Company has begun an
4 initiative that it calls the Grid Improvement Plan (GIP). The GIP is a
5 plan created in response to the Company's perceived customer
6 expectations and grid needs. This plan has been discussed by the
7 Company in many forums including the Company's 2018 Smart Grid
8 Technology Plan, filed on October 1, 2018, in Docket No. E-100, Sub
9 157.

10 In response to a Public Staff Data Request, the Company
11 acknowledged that, while being handled separately on an accounting
12 level, there are two activities that overlap between the Company's
13 DSDR program and the GIP. The first is the replacement of the end-
14 of-life Capacitor Bank Controls and associated replacement of the
15 2G/3G modems on DSDR line and substation devices with 4G
16 modems and 5G modems. The second is the replacement of end-of-
17 life Core WAN and Edge communication equipment. These efforts
18 are more fully described in the 2018 Smart Grid Technology Plan and
19 are also included as enterprise wide programs in the GIP.

20 The Company also acknowledged that these two overlapping
21 activities are important components of grid improvement, but are not

1 included in the cost of the GIP given that they are being reviewed
2 and evaluated in separate forums (i.e., the DSM/EE proceeding).

3 While implementation of the GIP has just begun, there is the potential
4 that DSDR work and GIP efforts as discussed in the Company's
5 Smart Grid Plan will overlap more and more. As the Company moves
6 forward with its new operational standards of the GIP, the Public Staff
7 will continue to observe and report on the degree of confluence of
8 the GIP and DSDR.

9 Cost Effectiveness

10 **Q. HOW IS THE COST EFFECTIVENESS OF DEP'S DSM AND EE**
11 **PROGRAMS EVALUATED?**

12 A. The Public Staff reviews the cost-effectiveness of the individual
13 DSM/EE programs when they are proposed for approval and then
14 annually in the rider proceedings. Pursuant to the Revised
15 Mechanism, cost-effectiveness is evaluated at both the program and
16 portfolio levels. The Public Staff reviews cost-effectiveness using the
17 Utility Cost (UC), TRC, Participant, and Ratepayer Impact Measure
18 (RIM) tests. Under each of these four tests, a result above 1.0
19 indicates that a program is cost-effective.

20 A program may be above 1.0 on one or more tests, and at the same
21 time below 1.0 on other tests. As called for in the Revised

1 Mechanism, the Public Staff places greater weight on the UC and
2 TRC tests.

3 The TRC test represents the combined utility and participant benefits
4 that will result from implementation of the program; a result greater
5 than 1.0 indicates that the benefits outweigh the costs of a program
6 to both the utility and the program's participants. A UC test result
7 greater than 1.0 means that the program is cost beneficial⁴ to the
8 utility (the overall system benefits are greater than the utility's costs,
9 including incentives paid to participants). The Participant test is used
10 to evaluate the benefits specific to those ratepayers who participate
11 in a program against the costs specific to those ratepayers. The RIM
12 test shows how ratepayers who do not participate in a program will
13 be impacted by the program.

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

16 A. In each DSM/EE rider proceeding, DEP files the expected
17 cost-effectiveness of each program and the portfolio as a whole for
18 the upcoming rate period (Evans Exhibit 7). New DSM/EE programs
19 are approved under Commission Rule R8-68, which evaluates

⁴ "Cost beneficial" in this sense represents the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service, and/or avoiding energy generation from existing or new facilities or purchased power.

1 cost-effectiveness over a three to five year period using estimates of
2 participation and measure attributes that can be reasonably
3 expected over that period. The evaluations in DSM/EE rider
4 proceedings look more specifically at the actual performance of a
5 typical measure, providing an indication of what to expect in the next
6 year. Each year's rider filing is updated with the most current EM&V
7 data and other program performance data.

8 **Q. HOW DOES THE PUBLIC STAFF USE COST-EFFECTIVENESS IN**
9 **MAKING RECOMMENDATIONS REGARDING PROGRAMS IN**
10 **EACH RIDER?**

11 A. The Public Staff compares the cost-effectiveness test results in
12 previous DSM/EE proceedings to the current filing, and reviews any
13 trends of cost-effectiveness. The Public Staff applies Sections 23B-
14 D of the Revised Mechanism to develop its recommendation on
15 whether a program that is not cost effective or appears to be
16 struggling to maintain cost effectiveness should (1) continue as
17 currently implemented, (2) be monitored for signs of decreasing cost-
18 effectiveness combined with modifications to attempt to sustain cost-
19 effectiveness, or (3) be terminated.

20 **Q. HOW HAVE THE COST-EFFECTIVENESS TEST SCORES OF**
21 **THE PORTFOLIO CHANGED OVER THE YEARS?**

1 A. Many programs continue to be cost effective. However, over the
2 years, cost-effectiveness has been affected by changes in (1) the
3 valuing of savings (avoided costs benefits), (2) participation due to
4 measure cost and availability, and (3) technology that alter the
5 measure itself or its delivery. These factors continue to influence the
6 natural ebb and flow of cost effectiveness year-to-year illustrated in
7 each DSM/EE rider proceeding. These trends are shown in
8 Williamson Exhibit No. 1.

9 **Q. ARE THERE OTHER REASONS FOR THESE DIFFERENCES?**

10 A. In addition to the reasons listed above, as programs mature, baseline
11 standards change, or as avoided cost rates change, it becomes more
12 difficult for a program to produce cost-effective savings.

13 **Q. IN ADDITION TO THE TREND OF PROJECTED COST**
14 **EFFECTIVENESS, DOES THE PUBLIC STAFF LOOK AT HOW**
15 **THE PROGRAMS HAVE ACTUALLY PERFORMED?**

16 A. Yes. Recently, the Public Staff began reviewing how the portfolio of
17 programs have actually performed. Obtaining the data to perform this
18 review takes a number of years because of the time it takes to get
19 true actual and finalized results from a vintage year. Only after actual
20 participation numbers are obtained and EM&V is completed can the
21 Public Staff fully evaluate how a program has performed over a given

1 year. Williamson Exhibit 2 provides a table of the actual, year-end
2 TRC results for each program for 2016, 2017, and 2018⁵.

3 EM&V

4 **Q. HAVE YOU REVIEWED THE EM&V REPORTS FILED BY DEP?**

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

9 I also reviewed previous Commission orders to determine if DEP
10 complied with provisions regarding EM&V contained in those orders.
11 In the Sub 1174 DSM/EE rider proceeding for DEP, the Commission
12 approved the following Public Staff recommendations:

13 1. The program evaluator should include the basis for the
14 selected weighting methodology (weightings based on bulb
15 sales, measure savings, or other metric) when assessing
16 program savings. The program evaluator should also indicate
17 what other weighting methodologies were considered and

⁵ These values for the more recent years are still subject to being updated with the completion of new EM&V reports; however, for the purposes of this exhibit they provide a close approximation to the actual values. Blanks in the table indicate that a program is not being offered during that year.

1 why they were rejected, and why the selected methodology is
2 preferable;

3 2. The program evaluator should provide further clarity into the
4 sales of incentivized bulbs at dollar/discount stores to
5 determine the income levels of customers purchasing these
6 bulbs. This information would be useful in determining the
7 appropriate NTGR applicable to this category of sales. The
8 program evaluation in Evans Exhibit H asserts a NTGR of
9 1.00 for these sales, assuming that many of the sales are
10 made by low income customers, who typically would not
11 participate in the program without the incentive. Higher
12 income customers who also shop at dollar/discount stores
13 usually show NTGRs of less than 1.00. The volume of sales
14 from the dollar/discount stores and the potential impacts that
15 result justify my recommendation for further study; and,

16 3. The program evaluator should update its study on the
17 percentage of bulb sales to residential and non-residential
18 customers.

19 DEP has indicated that it will incorporate these recommendations
20 into future EM&Vs of the programs.

21 **Q. DO YOU HAVE ANY RECOMMENDATIONS BASED ON THE**
22 **EM&V REPORTS YOU REVIEWED?**

1 A. I have reviewed the testimony and exhibits of DEP witness Evans
2 concerning the EM&V of DEP's DSM and EE programs. Based upon
3 my review and upon the analysis performed by GDS, I do not have
4 any recommendations regarding the EM&V in this proceeding.

5 **Q. SHOULD THE EM&V REPORTS FILED IN THIS PROCEEDING BE**
6 **CONSIDERED COMPLETE?**

7 A. Yes. The reports filed in this proceeding, labeled as Evans Exhibits
8 A through I, should be considered complete.⁶

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

12 A. Yes. As in previous cost recovery proceedings, I was able, through
13 sampling, to verify that the changes to program impacts and
14 participation were appropriately incorporated into the rider
15 calculations for each DSM and EE program, as well as the actual
16 participation and impacts calculated with EM&V data. I reviewed: (1)
17 workpapers provided in response to data requests; (2) a sampling of
18 the EE programs; and (3) Evans Exhibit 1, which incorporates data
19 from various EM&V studies. I also met with DEP personnel to review
20 the calculations, EM&V, DSMore, and other data related to the

⁶ While the EM&V reports should be considered complete, the Public Staff reserves the right to revisit them should it become aware of issues or mistakes in the reports.

1 program/measure participation and impacts. Based on my review of
2 this data, I believe DEP has appropriately incorporated the findings
3 from EM&V studies and annual participation into its rider calculations
4 consistent with Commission orders and the Revised Mechanism.

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

8 A. Yes. In the Sub 1174 proceeding in 2018, the Public Staff
9 recommended that the EM&V report for the My Home Energy Report
10 program (Evans Exhibit I in Sub 1174) be conditionally accepted until
11 the Public Staff completed its review.

12 The review of the My Home Energy Report has been completed and
13 the Public Staff, based on discussions with the Company, GDS
14 Associates and the EM&V report's evaluator Nexant, concludes that
15 this report should be considered complete. The Public Staff was able
16 to resolve the inconsistencies that delayed the review. In light of the
17 significant contribution of the MyHER program to the Company's
18 portfolio, the Public Staff reviewed whether the appropriate level of
19 rigor was applied to the MyHER EM&V and whether the EM&V
20 provided a thorough analysis of the savings; the Public Staff, with the
21 assistance of its consultant determined that the EM&V in question
22 satisfied these standards. The Public Staff will continue to work with

1 the Company and the EM&V consultants to ensure that the
2 necessary rigor is maintained for future EM&V efforts of the MyHER
3 program.

4 **Q. ARE THERE ANY OTHER ITEMS RELATED TO ANY OF THE**
5 **COMPANY'S EM&V REPORT ACTIVITIES THAT NEED**
6 **DISCUSSION?**

7 A. Yes. The Company's third party evaluator Navigant is currently
8 preparing an EM&V report for the Multi-Family EE program. During
9 its initial review for this new report, Navigant discovered an error in
10 the assumptions applied to the pipe wrap measure that were made
11 in the previous report, filed as Exhibit B in Docket No. E-2, Sub 1130.

12 This error was identified as an inconsistency with the measure units
13 being applied. Normally, a measure is defined as one unit (i.e. one
14 HVAC unit or one faucet aerator). However, for the pipe wrap
15 measure, the measure unit was erroneously calculated on a "per
16 foot" basis, rather than a "per measure" basis.⁷ This overstated the
17 savings by a factor of four.

18 One of the Public Staff's recommendations for this program in Sub
19 1130, while not specifically tied to the length of pipe wrap used,

⁷ Four feet is the standard unit of measurement for this EE measure.

1 compounded the error described above by incorporating the
2 erroneous assumption of pipe wrap length in its impacts equation.

3 The original error as compounded by the incorporation of the Public
4 Staff's recommendation resulted in savings that were approximately
5 four times the actual savings impacts.

6 Navigant and the Company have stated that the next EM&V report
7 for this program, which will apply to both DEC and DEP, will
8 incorporate this updated impact assumption.

9 **Q. WHAT WAS DONE IN THIS PROCEEDING TO CORRECT THIS**
10 **EM&V ERROR?**

11 A. Following discussions, the Company and the Public Staff determined
12 that it would be appropriate to apply these updated savings impacts
13 through the end of the previous EM&V report. As such, the Company
14 has applied a decrement of \$300,153 to the EMF, which is the
15 cumulative dollar impact for this program measure stretching back to
16 June 28, 2017,⁸ which is consistent with the terms of the Mechanism
17 regarding the application of subsequent EM&V efforts.

18 **Q. DO YOU BELIEVE A SIMILAR ISSUE INVOLVING**
19 **MEASUREMENT UNITS IS LIKELY TO REOCCUR?**

⁸ The EM&V report was revised on June 27, 2017, to incorporate the changes originally proposed by the Public Staff.

1 A. I believe that this issue is a onetime and unique situation. The vast
2 majority of the measures used by the Company in their programs are
3 measured in units of one. This measure appears to be the only
4 measure that is measured differently.

5 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

6 A. Yes.

APPENDIX A**QUALIFICATIONS AND EXPERIENCE**

DAVID M. WILLIAMSON

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

My primary responsibility within the Public Staff is reviewing and making recommendations on DSM/EE filings for initial program approval, program modifications, EM&V evaluations, and on-going program performance of the portfolio of programs of Duke Energy Carolinas, LLC (DEC), Duke Energy Progress, LLC (DEP), and Dominion Energy North Carolina (DENC). I filed an affidavit in DEP's 2016 and 2017 DSM/EE rider proceedings in Docket No. E-2, Subs 1108 and 1174, respectively, and I have also filed testimony in various DEC, DEP, and DENC's DSM/EE rider proceedings.

Changes from Sub
1174 to Sub 1206

	Evans Exhibit 7 in Sub 1145				Evans Exhibit 7 in Sub 1174				Evans Exhibit 7 in Sub 1206				
Program	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	TRC % Change
Residential Programs													
Appliance Recycling Program	1.07	1.43	0.50	-	-	-	-	-	-	-	-	-	-
Energy Education Program for Schools	1.15	1.62	0.54	-	1.62	2.24	0.76	-	1.35	1.38	0.51	10.30	-38.7%
Energy Efficient Appliances & Devices	-	-	-	-	-	-	-	-	14.59	15.40	0.88	34.77	-
Energy Efficient Lighting	2.36	4.09	0.74	8.77	1.79	2.58	0.57	6.36	2.01	2.70	0.71	6.42	4.6%
Residential Smart Saver (Home Energy Improvement)	0.91	0.67	0.57	1.30	0.91	0.57	0.48	1.36	1.60	0.97	0.69	1.66	71.1%
Multi-Family	3.39	6.19	0.81	-	3.00	5.58	0.64	-	2.65	2.65	0.54	24.31	-52.5%
Neighborhood Energy Saver	0.57	1.60	0.37	-	0.46	1.55	0.31	-	0.49	0.49	0.31	2.23	-68.1%
Residential Energy Assessments	2.23	2.53	0.77	-	1.54	1.71	0.60	-	2.15	2.19	0.56	49.13	28.2%
Residential New Construction	2.27	1.26	0.97	1.88	1.96	1.03	0.86	1.85	1.55	4.93	1.30	6.84	376.5%
Save Energy and Water Kit	7.77	19.61	0.84	-	12.43	27.29	0.95	-	-	-	-	-	-
Residential Home Advantage	-	-	-	-	-	-	-	-	-	-	-	-	-
My Home Energy Report	1.42	1.42	0.08	-	0.96	0.96	0.48	-	1.01	1.01	0.43	-	5.4%
EnergyWise Home	10.06	94.65	10.06	-	9.28	58.30	9.28	-	5.27	15.93	5.27	-	-72.7%
Residential Total	3.07	3.16	0.66	10.66	2.79	2.70	1.03	5.28	2.56	3.68	1.11	7.90	36.3%
Non-Residential Programs													
Business Energy Reports	-	-	-	-	-	-	-	-	-	-	-	-	-
SmartSaver EE Products and Assessment (formally EE for Business)	-	-	-	-	-	-	-	-	3.36	1.68	0.87	3.32	-
Energy Efficient Lighting	6.13	10.61	1.92	8.77	4.63	7.98	1.21	12.09	4.03	2.03	0.86	4.04	-74.5%
Smart Saver Performance (Custom) ¹	3.94	0.98	1.22	1.33	2.45	1.07	0.77	1.99	2.61	1.17	0.94	2.19	9.3%
Smart Saver Performance (Prescriptive) ¹	2.64	1.19	1.02	1.79	-	-	-	-	-	-	-	-	-
Smart Saver Performance Incentive	0.54	0.40	0.42	1.58	3.75	0.92	0.95	1.64	4.05	0.99	1.09	1.54	8.1%
Small Business Energy Saver	3.13	2.00	1.13	2.83	2.57	1.60	0.87	2.87	2.51	1.55	0.86	2.85	-3.3%
EnergyWise ® for Business	1.80	2.32	1.25	-	0.72	1.07	0.62	-	0.27	0.46	0.27	-	-57.4%
Commercial Industrial Governmental Demand Response	2.67	4.33	2.67	-	2.06	33.28	2.06	-	1.84	28.03	1.84	-	-15.8%
Non-Residential Total	2.87	1.77	1.25	2.36	2.41	1.56	1.01	2.37	2.59	1.77	0.92	3.21	13.8%
Overall Portfolio total	2.99	2.45	0.79	5.94	2.63	2.12	1.03	3.67	2.57	2.51	1.02	4.52	18.4%

¹ Similar to what DEC has done, DEP is combining the Performance Custom and Performance Prescriptive programs due to their similarities in participants and renaming them Non-Residential Smart Saver (formerly known as EE for Business)

Program	TRC 2016	TRC 2017	TRC 2018
Residential Programs			
Appliance Recycling Program	-0.96		
Energy Education Program for Schools	2.97	2.36	3.02
EnergyWise Home	50.62	153.14	55.92
Home Energy Improvement	0.64	0.48	0.60
Neighborhood Energy Saver	1.58	2.13	2.51
Multi-Family Energy Efficiency Program	5.78	7.05	5.29
My Home Energy Report	1.35	1.08	0.97
Residential Energy Assessments	4.26	3.49	3.45
Residential New Construction	1.39	1.24	2.00
Energy Efficient Lighting	4.15	3.79	3.35
Save Energy and Water Kit	51.94	75.82	26.74
Residential Total	3.82	3.27	3.46
Non-Residential Programs			
Energy Efficiency for Business	1.54	1.44	2.37
Business Energy Report	4.70	0.04	
Performance Incentive		1.11	1.14
CIG DRA		28.54	28.28
EnergyWise for Business	0.16	0.65	0.65
Energy Efficient Lighting	12.96	9.47	8.92
Small Business Energy Saver	2.36	2.03	1.76
Non-Residential Total	1.74	1.69	2.32
Overall Portfolio Total	2.74	2.35	2.86

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1206

In the Matter of
Application of Duke Energy Progress,)
LLC, for Approval of Demand-Side)
Management and Energy Efficiency)
Cost Recovery Rider Pursuant to)
N.C.G.S. § 62-133.9 and Commission)
Rule R8-69)

TESTIMONY OF
MICHAEL C. MANESS
Public Staff – North Carolina
Utilities Commission

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

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

7 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

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

10 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

11 A. The purpose of my testimony is to present my recommendations
12 regarding the Demand-Side Management (DSM) and Energy
13 Efficiency (EE) cost and incentive recovery rider (DSM/EE Rider),¹
14 proposed by Duke Energy Progress, LLC (DEP or the Company), in
15 its Application filed in this docket on June 11, 2019 (Application).
16 The DSM/EE Rider is authorized by N.C. Gen. Stat. § 62-133.9 and
17 implemented pursuant to Commission Rule R8-69.

18 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

¹ The DSM/EE Rider is comprised of various class-based DSM, EE, DSM Experience Modification Factor (DSM EMF), and Energy Efficiency Experience Modification Factor (EE EMF) billing rates.

1 A. My testimony begins with a review of the regulatory framework for
2 DSM/EE cost recovery by electric utilities and the historical
3 background of DEP's Application in this docket. I then discuss the
4 Company's proposed billing rates and other aspects of its filing.
5 Following a summary of my investigation, I present my conclusions
6 and recommendations regarding the proposed billing rates and the
7 overall DSM/EE Rider.

8 **THE PROCESS FOR SETTING DEP'S**
9 **DSM/EE REVENUE REQUIREMENTS**

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

11 A. N.C. Gen. Stat. § 62-133.9(d) allows a utility to petition the
12 Commission for approval of an annual rider to recover (1) the
13 reasonable and prudent costs of new DSM and EE measures and
14 (2) other incentives to the utility for adopting and implementing new
15 DSM and EE measures. However, N.C. Gen. Stat. § 62-133.9(f)
16 allows industrial and certain large commercial customers to opt out
17 of participating in the power supplier's DSM/EE programs or paying
18 the DSM/EE rider, if an eligible customer notifies its electric power
19 supplier that it has implemented or will implement, at its own
20 expense, alternative DSM and EE measures. Commission Rule R8-
21 69 sets forth the general parameters and procedures governing
22 approval of the annual rider.

1 In this proceeding, DEP has, for the most part, calculated its
2 proposed DSM/EE Rider (incorporating both prospective and
3 Experience Modification Factor (EMF) DSM and EE billing rates)
4 using the Cost Recovery and Incentive Mechanism for Demand-
5 Side Management and Energy Efficiency Programs (Revised
6 Mechanism) approved by the Commission on January 20, 2015, in
7 its *Order Approving Revised Cost Recovery and Incentive*
8 *Mechanism and Granting Waivers*, in Docket No. E-2, Sub 931
9 (2015 Sub 931 Order), as subsequently amended by the
10 Commission in the Company's 2017 DSM/EE rider proceeding,
11 Docket No. E-2, Sub 1145 (Sub 1145).² The 2017 amendments
12 consisted of certain changes to Paragraphs 18, 22, and 70 of the
13 Revised Mechanism, and the addition of new Paragraphs 22A
14 through 22D and 70A. A copy of the entire Revised Mechanism, as
15 amended, was attached to my testimony in Docket No. E-2, Sub
16 1174, as Maness Exhibit I.

² Certain billing factor components consisting of costs incurred or incentives earned prior to January 1, 2016, but being carried forward to or amortized as part of the billing factors proposed in this proceeding, were determined pursuant to the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs (Initial Mechanism) approved by the Commission on June 15, 2009, in its *Order Approving Agreement and Stipulation of Partial Settlement, Subject to Certain Commission-Required Modifications*, in Docket No. E-2, Sub 931, as modified by the Commission's November 25, 2009, *Order Granting Motions for Reconsideration in Part*, in the same docket.

- 1 **Q. PLEASE DESCRIBE THE REVISED MECHANISM (INCLUDING**
2 **THE 2017 CHANGES) AND ITS MAJOR COMPONENTS.**
- 3 A. The overall purpose of the Revised Mechanism, as amended, is to
4 (1) allow DEP to recover all reasonable and prudent costs incurred
5 for adopting and implementing new DSM and new EE measures;
6 (2) establish the terms, conditions, and methodology for the
7 recovery of certain utility incentives – Net Lost Revenues (NLR)
8 and a Portfolio Performance Incentive (PPI) - to reward DEP for
9 adopting and implementing DSM and EE measures and programs;
10 (3) provide for an additional incentive to further encourage kilowatt-
11 hour (kWh) savings achievements; and (4) establish certain
12 requirements and guidelines to guide requests by DEP for approval,
13 monitoring, and management of DSM and EE programs. The
14 Revised Mechanism includes many provisions that indirectly
15 influence the ratemaking process for DSM and EE costs and
16 incentives, including provisions that address program approval,
17 management, and modification; evaluation, measurement, and
18 verification (EM&V) of program results; operation of a Stakeholder
19 Collaborative; procedural matters and the general structure of the
20 DSM/EE billing rates; allocation methodologies; reporting
21 requirements; and provisions for the term and future review of the
22 Revised Mechanism itself, as well as provisions directly affecting
23 the calculation of the DSM/EE and DSM/EE EMF riders. A

1 summary of these provisions is set forth in Appendix A of this
2 testimony.

3 **THE COMPANY'S PROPOSED BILLING RATES**

4 **Q. PLEASE DESCRIBE THE BILLING FACTORS, VINTAGE**
5 **YEARS, RATE PERIOD, AND TEST PERIOD BEING**
6 **CONSIDERED IN THIS PROCEEDING.**

7 A. In its Application in this proceeding, DEP requested approval of
8 prospective and EMF DSM and EE billing rates that would result in
9 annual North Carolina retail revenue of approximately \$177.1
10 million [including a revenue adder for the North Carolina Regulatory
11 Fee (regulatory fee)]. DEP's request would be a decrease of
12 approximately \$9.9 million from the annual revenues that would be
13 produced by the rates currently in effect. These proposed billing
14 factors are set forth on DEP witness Miller's Exhibit 1. The factors
15 (rates), as applicable to each class, are proposed by the Company
16 to be charged to all participating North Carolina retail customers
17 [i.e., those who have not opted out pursuant to N.C. Gen. Stat. §
18 62-133.9(f)] served during the rate period.

19 The rate period for this proceeding is the twelve-month period from
20 January 1, 2020, through December 31, 2020. This is the period
21 over which the prospective DSM and EE billing rates and the DSM
22 and EE EMF billing rates determined in this proceeding will be

1 charged. It is also the period for which the estimated revenue
2 requirements to be recovered through the prospective DSM/EE
3 rates are determined.

4 The test period applicable to this proceeding is the twelve-month
5 period ended December 31, 2018. This is the presumptive period
6 for which the under- or overrecovery of DSM/EE revenue
7 requirements is measured for purposes of determining the DSM
8 and EE EMF billing rates. Actual program costs considered for true-
9 up in this proceeding are either costs actually incurred during the
10 test period, or amortizations, depreciation, and/or return associated
11 with costs incurred in prior test periods.

12 NLR and PPI reflected in the EMF revenue requirements being set
13 in this proceeding are associated with Vintage Years 2016, 2017,
14 and 2018, as well as amortizations of amounts related to prior
15 years and set in prior proceedings.

16 **Q. WHAT ARE SOME OF THE GENERAL CHARACTERISTICS OF**
17 **DEP'S PROPOSED DSM/EE BILLING FACTORS?**

18 A. The prospective DSM and EE billing rates incorporate several cost
19 recovery elements as estimated for the rate period, including
20 amortizations of operations and maintenance and administrative
21 and general (A&G) costs, capital costs of the Demand Side

1 Distribution Response program (DSDR), carrying costs (return on
2 deferred costs), NLR, and levelized PPI incentives. The test period
3 true-up DSM and EE EMF billing rates contain test period actual
4 amounts of the same types of costs and incentives as do the
5 prospective rates. The DSM and EE EMF billing rates also include
6 adjustments to the 2016 and 2017 NLR and PPI, a reduction for the
7 DSM/EE billing rate amounts billed during the test period, and
8 interest on overcollections and undercollections.

9 NLR amounts included in the DSM and EE billing rates have also
10 been affected by the Company's recently concluded general rate
11 case (Docket No. E-2, Sub 1142). The revenue requirement filed by
12 the Company in that case took into account DEP's total net revenue
13 losses through December 31, 2016, and further residential losses
14 through October 31, 2017. The effective date of the rates set in the
15 case was March 16, 2018. Therefore, NLR being requested in this
16 proceeding exclude, effective March 16, 2018, any net revenue
17 losses due to DSM/EE measures installed or implemented on or
18 prior to December 31, 2016, for all customers, and on or prior to
19 October 31, 2017, for residential customers.

20 **Q. WILL THERE BE FUTURE TRUE-UPS OF THE DSM/EE**
21 **REVENUE REQUIREMENTS?**

1 A. The finalization of the true-ups of NLR and PPI sometimes tends to
2 lag behind the true-ups of program costs and A&G expenses
3 subject to amortization. This feature of the true-up process is due to
4 the fact that while cost amounts are typically known and
5 determinable very soon after they are incurred, it can take several
6 months to complete the applicable EM&V process and to refine and
7 adjust the cost savings results for a given vintage year so that the
8 final actual incentives payable to the utility can be determined.
9 Therefore, while the cost amounts to be trued up as part of the test
10 period DSM/EE EMF revenue requirement in a given annual
11 proceeding typically correspond very closely to the actual costs
12 incurred during the test period, the test period revenue requirement
13 often contains incentives related to more than one vintage year.
14 Additionally, certain components of the revenue requirements
15 related to prior years will remain subject to prospective update
16 adjustments and retrospective true-ups in the future, as
17 participation and EM&V analyses are finalized, reviewed, and
18 perhaps refined.

19 **INVESTIGATION AND CONCLUSIONS**

20 **Q. PLEASE DESCRIBE YOUR INVESTIGATION OF DEP'S FILING.**

21 A. My investigation of DEP's filing in this proceeding focused on
22 determining whether the proposed DSM/EE Rider (a) was

1 calculated in accordance with the Initial or Revised Mechanisms, as
2 applicable, and (b) otherwise adhered to sound ratemaking
3 concepts and principles. The procedures I and other members of
4 the Public Staff's Accounting Division acting under my supervision
5 utilized included a review of the Company's filing, relevant prior
6 Commission proceedings and orders, and workpapers and source
7 documentation used by the Company to develop the proposed
8 billing rates. Performing the investigation required the review of
9 responses to written and verbal data requests, as well as
10 discussions with Company personnel. As part of its investigation,
11 the Accounting Division performed a review of the actual DSM/EE
12 program costs incurred by DEP during the 12-month period ended
13 December 31, 2018. To accomplish this, the Accounting Division
14 selected and reviewed samples of source documentation for test
15 year costs included by the Company for recovery through the
16 DSM/EE Rider. Review of this sample, which is still underway as of
17 the date of pre-filing of this testimony, is intended to test whether
18 the actual costs included by the Company in the DSM and EE
19 billing rates are either valid costs of approved DSM and EE
20 programs or administrative costs supporting those programs.

21 My investigation, including the sampling of source documentation,
22 concentrated primarily on costs and incentives related to the

1 January through December 2018 test period, which will begin to be
2 trued up through the DSM and EE EMF billing rates approved in
3 this proceeding. The Public Staff also performed a more general
4 review of the prospective billing rates proposed to be charged for
5 Vintage Year 2020, which are subject to true-up in future
6 proceedings.

7 **Q. WHAT ARE YOUR FINDINGS AND CONCLUSIONS?**

8 A. Based on my review, with the exception of an item specifically
9 described later in this testimony, I am of the opinion that the
10 Company has calculated its proposed DSM, EE, DSM EMF, and EE
11 EMF billing rates in a manner consistent with N.C. Gen. Stat. § 62-
12 133.9, Commission Rule R8-69, the Initial Mechanism, and the
13 Revised Mechanism, as amended. However, this conclusion is
14 subject to the caveat that the Public Staff is still in the process of
15 reviewing certain data responses received from the Company in the
16 last few days, including documentation of costs selected for review
17 in the Public Staff's sample; should this review result in any further
18 issues, the Public Staff will file additional information with the
19 Commission.

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

- 1 (1) Depreciation of Assets Associated with the DSDR Program –
2 The Company has informed the Public Staff that in the
3 course of responding to one of the Public Staff's data
4 requests, it discovered that the depreciation expense
5 amounts included in its DSM/EE rate calculations for certain
6 DSDR capitalized assets have been overstated, due to the
7 assets being depreciated beyond the end of their estimated
8 useful lives. However, as of the date of my testimony, the
9 Company has not been able to finish its quantification of this
10 miscalculation and revise its rate calculations accordingly.
11 The Public Staff and the Company have discussed this
12 matter, and it is the Public Staff's understanding that the
13 Company plans to file revisions to its DSM/EE billing factor
14 calculations on or before the date of the hearing scheduled
15 in this proceeding.
- 16 (2) EM&V Adjustment – During the course of the Public Staff's
17 investigation, the Company notified the Public Staff that it
18 had found an EM&V-related change that needed to be made
19 to its billing factor calculations. Again, based on discussions
20 with the Company, it is the Public Staff's understanding that
21 the Company plans to file revisions to its DSM/EE billing
22 factor calculations on or before the date of the hearing
23 scheduled in this proceeding.

1 **Q. DO YOU PLAN TO PRESENT TO THE COMMISSION THE**
2 **OVERALL EFFECT OF THE COMPANY’S REVISIONS?**

3 A. Yes. Once the Company has filed its revised calculations and billing
4 factors, the Public Staff will review them, and file with the
5 Commission its conclusions and recommendations regarding both
6 the revisions and the revised billing factors.

7 **Q. WHAT IS THE IMPACT OF RECOMMENDATIONS MADE BY**
8 **PUBLIC STAFF WITNESS WILLIAMSON IN HIS TESTIMONY ON**
9 **YOUR CONCLUSIONS REGARDING THE DSM/EE REVENUE**
10 **REQUIREMENTS IN THIS PROCEEDING?**

11 A. Public Staff witness Williamson has filed testimony in this
12 proceeding discussing several topics and issues related to the
13 Company’s filing. None of these topics and issues necessitates an
14 adjustment in this particular proceeding to the Company’s billing
15 factor calculations.

16 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING**
17 **DEP’S BILLING RATES.**

18 A. In summary, other than the issues identified above, the Public Staff
19 has found no errors or other issues necessitating an adjustment to
20 DEP’s proposed billing rates.

21 **Q. DO YOU HAVE ANY OTHER COMMENTS?**

1 A. Yes. I note that in the calculation of the DSM and EE billing factors
2 including the regulatory fee, the Company utilized a regulatory fee
3 rate of 0.14%, which was revised by the North Carolina General
4 Assembly, effective July 1, 2019, to 0.13%. However, replacing the
5 old rate with the revised rate in the calculation does not change the
6 with-fee billing factors from those that the Company filed.

7 **RECOMMENDATION**

8 **Q. WHAT IS YOUR RECOMMENDATION IN THIS PROCEEDING?**

9 A. Based on the results of the Public Staff's investigation (subject to
10 completion of its review of 2018 program costs and further review
11 of Company-provided information), I recommend that the Company
12 file supplemental testimony and revised exhibits explaining and
13 setting forth both the adjustments to the DSM/EE revenue
14 requirement identified earlier in my testimony and the calculation of
15 the revised proposed billing factors. As noted previously, the Public
16 Staff will then make a supplemental filing addressing the
17 Company's adjustments and revised rates.

18 The billing rates ultimately found reasonable and appropriate by the
19 Commission should be approved subject to any true-ups in future
20 cost recovery proceedings consistent with the Initial Mechanism
21 and the Revised Mechanism, as amended, as well as other
22 relevant orders of the Commission.

1 In making its recommendation, the Public Staff notes that reviewing
2 the calculation of the DSM/EE rider is a process that involves
3 reviewing numerous assumptions, inputs, and calculations, and its
4 recommendation with regard to this proposed rider is not intended
5 to indicate that the Public Staff will not raise questions in future
6 proceedings regarding the same or similar assumptions, inputs,
7 and calculations.

8 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

9 **A.** Yes, it does.

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

1. Eligible non-residential customers may opt out of either or both of the DSM and EE categories of programs, as well as opt back into either or both. Beginning on January 1, 2016, separate DSM and EE billing rates became available to Non-Residential opt-out-eligible customers. A customer receiving program incentives from either a DSM or an EE program will be required to pay the respective portion(s) of the DSM/EE and DSM/EE EMF billing rates for a period of not less than 36 months.
2. In general, DEP shall be allowed to recover, through the DSM/EE and DSM/EE EMF rates, all reasonable and prudent costs of Commission-approved DSM/EE programs. However, any of the Stipulating Parties may propose a procedure for the deferral and amortization over a maximum of ten years of all or a portion of DEP's non-capital program costs to the extent those costs are intended to produce future benefits, and may propose to defer and amortize related non-incremental administrative and general (A&G) costs over a maximum of three years. Deferred program and A&G costs shall be allowed to accrue a return at the overall weighted average net-of-tax rate of return approved in DEP's most recent general rate case (net of income taxes). For program costs not deferred for amortization in future DSM/EE riders, the accrual of a return on any under-recoveries or over-recoveries of cost will follow the requirements of Commission Rule R8-69(b), subparagraphs (3) and (6), unless the Commission determines otherwise.
3. DEP 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.
4. 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 that account for NLR.
5. NLR will be reduced by net found revenues, as defined in the Revised Mechanism, occurring in the same 36-month period. Net found revenues will be determined according to the "Decision Tree" process included in the Revised Mechanism.

6. DEP shall be allowed to recover a PPI per vintage year 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). The inclusion of pilot programs in any PPI calculation 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 to be recovered for the entire allowable DSM/EE portfolio for a vintage year shall be equal to 11.75% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year (as determined by the UCT). Low-income programs or other programs approved with expected UCT results less than 1.00 shall not be included in the portfolio for purposes of the PPI calculation; nor shall the Demand Side Distribution Response (DSDR) program. 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. Unless the Commission determines otherwise, the PPI shall be converted into a stream of no more than ten levelized annual payments, incorporating the overall weighted average net-of-tax rate of return approved in DEP's most recent general rate case as the appropriate discount rate.
7. For Vintage Years 2019 and afterwards, the program-specific per kilowatt (kW) avoided capacity benefits and per kWh avoided energy benefits used for the initial estimate of the PPI and any PPI true-up will be derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 megawatt (MW) reduction.
8. 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 2015-2019 period, the Company will receive a bonus incentive of \$400,000 for that year.

QUALIFICATIONS AND EXPERIENCE

MICHAEL C. MANESS

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

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

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

I have also filed testimony or affidavits in other proceedings, including applications for certificates of public convenience and necessity for the construction of generating facilities, applications for approval of self-generation deferral rates, applications for approval of cost and incentive recovery mechanisms for electric utility demand-side management and energy efficiency (DSM/EE) efforts, and applications for approval of cost and incentive recovery pursuant to those mechanisms.

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

I have had supervisory or management responsibility over the Electric Section of the Accounting Division since 1986, and also was assigned

management duties over the Water Section of the Accounting Division during the 2009-2012 time frame. I was promoted to Director of the Accounting Division in late December 2016.