



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 17, 2022

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Re: Docket No. E-7, Sub 1265 – Application by 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

Dear Ms. Dunston:

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

1. Direct Testimony and Exhibits of David M. Williamson, Utilities Engineer, Energy Division; and
2. Direct Testimony and Exhibit of Shawn C. Dorgan, Financial Analyst, Accounting Division.

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

Sincerely,

/s/ Nadia L. Luhr
Staff Attorney
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Attachments

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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1265

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

May 17, 2022

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 Energy 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 March 1, 2022 application
12 and exhibits of Duke Energy Carolinas, LLC (DEC), for approval of
13 its demand-side management (DSM) and energy efficiency (EE) cost
14 recovery rider for Vintage Year 2023 (Rider 14).

15 My testimony discusses: (1) the portfolio of DSM/EE programs
16 included in the proposed Rider 14, including modifications to those
17 programs; (2) the ongoing cost-effectiveness of each DSM/EE
18 program; (3) the responses to Commission Questions filed as
19 Appendix A to the Commission's December 17, 2021 Order
20 Requiring Filing of Additional Testimony; and (4) the evaluation,
21 measurement, and verification (EM&V) studies filed as Exhibits A
22 through F to the testimony of Company witness Robert P. Evans.

1 **Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR**
2 **INVESTIGATION OF DEC’S PROPOSED RIDER 14?**

3 A. I reviewed the application, supporting testimony and exhibits, and
4 DEC’s responses to Public Staff data requests. In addition, I
5 reviewed the following documents which are pertinent to Rider 14:

6 1. The Cost Recovery and Incentive Mechanism for Demand-Side
7 Management and Energy Efficiency Programs approved on
8 August 23, 2017, in the Commission’s Order Approving DSM/EE
9 Rider, Revising DSM/EE Mechanism, and Requiring Filing of
10 Proposed Customer Notice, in Docket No. E-7, Sub 1032 (2017
11 Mechanism).

12 2. The Cost Recovery and Incentive Mechanism for Demand-Side
13 Management and Energy Efficiency Programs approved on
14 October 20, 2020, in the Commission’s Order Approving
15 Revisions to Demand-Side Management and Energy Efficiency
16 Cost Recovery Mechanisms, in Docket Nos. E-2, Sub 931, and
17 E-7, Sub 1032 (2020 Mechanism).

18 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

19 A. The Public Staff makes the following recommendations:

20 1. That the Commission approve the proposed reserve margin
21 adjustment factor (RMAF) language for inclusion in the

1 Company's 2017 Mechanism and 2020 Mechanism
2 (collectively, Mechanisms);

3 2. That, with the exception of Evans Exhibit E, the EM&V reports
4 filed by DEC as Evans Exhibits A through F be accepted; and

5 3. That the EM&V report filed as Evans Exhibit E should be held
6 open until an updated report is filed in the next rider
7 proceeding.

8 **Q. ARE YOU PROVIDING ANY EXHIBITS WITH YOUR TESTIMONY?**

9 A. Yes. I have two exhibits:

- 10 • Exhibit 1: Proposed Cost Effectiveness Scores for Vintage
11 Years 2020, 2021, 2022, and 2023; and
12 • Exhibit 2: Current Actual Cost Effectiveness Scores for
13 Vintage Years 2019, 2020, and 2021.

14 **Q. FOR WHICH PROGRAMS IS DEC SEEKING COST RECOVERY**
15 **THROUGH THE DSM/EE RIDER IN THIS PROCEEDING?**

16 A. In its proposed Rider 14, DEC is seeking recovery of the costs and
17 incentives associated with the following programs:

- 18 • Energy Assessments;
19 • EE Education;
20 • Residential Smart \$aver® Energy Efficient Appliances and
21 Devices;

- 1 • Residential Smart \$aver® EE (formerly the HVAC EE
- 2 Program);
- 3 • Multi-Family EE;
- 4 • My Home Energy Report (MyHER);
- 5 • Residential Neighborhood Energy Saver (formerly Income-
- 6 Qualified Energy Efficiency and Weatherization Assistance);
- 7 • Residential New Construction;
- 8 • Power Manager;
- 9 • Nonresidential Smart \$aver® Energy Efficient Products and
- 10 Assessments Program:
- 11 ○ Energy Efficiency Food Service Products;
- 12 ○ Energy Efficiency HVAC Products;
- 13 ○ Energy Efficiency IT Products;
- 14 ○ Energy Efficiency Lighting Products;
- 15 ○ Energy Efficiency Process Equipment Products;
- 16 ○ Energy Efficiency Pumps and Drives;
- 17 ○ Custom Incentive and Energy Assessments;
- 18 • PowerShare®;
- 19 • Small Business Energy Saver;
- 20 • EnergyWise for Business; and
- 21 • Nonresidential Smart \$aver® Performance Incentive.

1 **Q. HOW IS THE COST EFFECTIVENESS OF DEC'S DSM/EE**
2 **PROGRAMS EVALUATED?**

3 A. The cost-effectiveness of each DSM/EE program is reviewed when
4 it is proposed for approval and then annually in the rider proceedings.
5 Pursuant to the 2020 Mechanism, cost-effectiveness is evaluated at
6 both the program and portfolio levels. Cost-effectiveness is reviewed
7 using the Utility Cost (UC), Total Resource Cost (TRC), Participant,
8 and Ratepayer Impact Measure (RIM) tests. Under each of these
9 four tests, a result above 1.0 indicates that the benefits of the
10 program outweigh the costs¹ so that the program is cost-effective. A
11 program's result may exceed 1.0 on one or more tests, and below
12 1.0 on other tests. While the 2017 Mechanism uses the TRC and UC
13 tests to evaluate initial and ongoing cost-effectiveness, the 2020
14 Mechanism uses the UC test only.

15 The TRC test represents the combined utility and participant benefits
16 that will result from implementation of the program; a result greater
17 than 1.0 indicates that the benefits outweigh the costs of a program
18 to both the utility and the program's participants. A UC test result
19 greater than 1.0 means that the program is cost beneficial² to the

¹ Each test uses different costs and benefits in calculating the cost-effectiveness score.

² "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, or avoiding energy generation from existing or new facilities or purchased power.

1 utility (the overall system benefits are greater than the utility's costs
2 incurred to offer the program, including incentives paid to
3 participants). The Participant test is used to evaluate the benefits
4 against the costs specific to those ratepayers who participate in a
5 program. The RIM test is used to understand how the rates of
6 customers who do not participate in a program will be impacted by
7 the program (but without consideration of what future rates would
8 have been otherwise).

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

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

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

3 A. The Public Staff compares the cost-effectiveness test projections
4 from previous DSM/EE proceedings to the current filing and
5 develops a trend of cost-effectiveness projections that serves as the
6 basis for the Public Staff's recommendation on whether a program
7 should: (1) continue as currently implemented; (2) be monitored for
8 further decreases in cost-effectiveness along with any Company
9 efforts to improve cost-effectiveness; or (3) be terminated. While
10 each DSM/EE rider proceeding provides a snapshot of the cost
11 effectiveness and performance of the programs and portfolio, the
12 Public Staff does not rely on one specific calculation to evaluate
13 program performance. The trends provide a clearer understanding
14 of how changes in participation, avoided cost inputs, marketing and
15 education about DSM/EE matters, and customer behaviors and
16 preferences impact overall program performance.

17 Program design and delivery may need to change to address these
18 changes in cost effectiveness. For example, incentive levels may
19 need to be increased or decreased to maintain overall cost
20 effectiveness. Impacts from changes in the avoided cost inputs may
21 increase or decrease cost effectiveness because of the changes to
22 the value of energy savings benefits realized from the portfolio. In
23 either case, the trends in cost effectiveness are more telling of overall

1 performance. As long as programs are reasonably forecasted to
2 produce cost effective savings, the Public Staff generally supports
3 their approval and inclusion in the DSM/EE rider.

4 **Q. HOW DO THE FORWARD-LOOKING COST-EFFECTIVENESS**
5 **TEST SCORES FILED IN THIS RIDER COMPARE TO SCORES IN**
6 **PREVIOUS RIDERS?**

7 A. Forward-looking projections of program performance over the last
8 few years have remained constant overall. Some programs have
9 benefitted from changes to the make-up of measures offered, both
10 additions and deletions. The performance of low-income programs
11 shows evidence of improved cost-effectiveness over time; however,
12 the cost-effective performance of other programs, such as the Smart
13 Saver EE program, continues to vacillate.

14 These trends of program forecasts are shown for Vintage years
15 2020, 2021, 2022, and 2023 in Williamson Exhibit No. 1.

16 **Q. DO YOU HAVE AN EXPLANATION FOR THE CHANGES SEEN IN**
17 **THE FORWARD-LOOKING PROJECTIONS OF COST**
18 **EFFECTIVENESS SCORES OVER THE FOUR YEARS IN YOUR**
19 **EXHIBIT 1?**

20 A. Yes. While many programs continue to be cost effective, the TRC
21 and UC test scores as filed by the Company for all programs have
22 shown a natural ebb and flow over the years of DSM/EE rider

1 proceedings, mainly due to the changes in avoided cost rate
2 determinations. In addition, decreasing cost-effectiveness may be
3 partially attributable to a reduction in the unit savings from the original
4 estimates of savings as determined through EM&V of the program.
5 As programs mature, baseline standards may increase, or avoided
6 cost rates decrease, thus, it becomes more difficult for a program to
7 produce cost-effective savings. On the other hand, some programs
8 have experienced greater than expected participation, which usually
9 results in greater savings per unit cost, generally increasing cost-
10 effectiveness.

11 **Q. DOES THE PUBLIC STAFF ALSO LOOK AT THE ACTUAL COST**
12 **EFFECTIVENESS RESULTS?**

13 A. Yes. As the EM&V reports for the Company's portfolio of programs
14 are completed, the Company provides the Public Staff with updated,
15 actual cost-effectiveness test results for each program and program
16 year, in this case Vintage years 2019, 2020, and 2021. These actual
17 cost-effectiveness test scores are attached as Williamson Exhibit 2.

18 **Q. WHAT BENEFIT DOES A REVIEW OF ACTUAL COST**
19 **EFFECTIVENESS PROVIDE?**

20 A. While the timing of the incorporation of EM&V within the portfolio may
21 be different from one program to another, having a rolling record of
22 actual cost-effectiveness results provides the Public Staff with

1 confirmation that the activities within the portfolio have been and
2 continue to be worthwhile endeavors for ratepayers. In addition,
3 actual test results highlight programs that ultimately perform above
4 or below original projections. These test results reflect the annual
5 updates to cost-effectiveness resulting from completed EM&V and
6 finalized participation numbers that are not shown again after the
7 earlier rider proceedings are completed.

8 Program Performance

9 **Q. PLEASE DISCUSS THE PERFORMANCE OF THE PORTFOLIO.**

10 A. The Company's DSM/EE portfolio offers a wide variety of measures
11 to support the everyday activities of its customers in an energy
12 efficient manner. The Public Staff's review of program performance
13 involves: (1) reviewing cost-effectiveness trends; (2) reviewing
14 Evans Exhibit 6, which provides specific information on each
15 program's marketing strategy and potential areas of concern; and (3)
16 performing an overall qualitative analysis.

17 The Public Staff also uses its involvement in the Company's bi-
18 monthly EE Collaborative meetings to keep abreast of how the
19 portfolio of programs is performing. During these meetings, the
20 Collaborative discusses program performance (participation,
21 customer engagement, and potential barriers to entry and

1 continuation of the program), recently completed EM&V and market
2 potential study activities, and potential new program offerings.

3 Based on the review discussed above, the Public Staff believes that
4 the historical performance of the Company's programs is
5 reasonable.

6 Avoided Transmission and Distribution Update

7 **Q. HAS THE COMPANY UPDATED ITS AVOIDED TRANSMISSION**
8 **AND DISTRIBUTION (T&D) RATES IN THIS PROCEEDING**
9 **BASED ON ITS AVOIDED T&D STUDY?**

10 A. Yes, the Company updated its avoided T&D rates for purposes of
11 this proceeding. However, while the results of an avoided T&D study
12 are usually used until the next study is completed, the Company and
13 the Public Staff have agreed that the updated avoided T&D rates
14 used in this proceeding will be used only for this proceeding, as the
15 2021 Avoided T&D Study is still being reviewed. I will discuss this
16 agreement in detail later in my testimony.

17 **Q. WHAT HAS CHANGED SINCE THE LAST AVOIDED T&D**
18 **STUDY?**

19 A. The methodology for determining the avoided T&D rates remains the
20 same as the methodology used in the previous 2017 study. However,
21 the Public Staff has been working with the Company in this study

1 review process to look at the inputs into the model at a more granular
2 level.

3 **Q. CAN YOU EXPLAIN WHAT YOU MEAN BY LOOKING AT THE**
4 **INPUTS AT A MORE GRANULAR LEVEL?**

5 A. Yes. Paragraph 78 of the 2020 Mechanism required the Company
6 and the Public Staff, by December 31, 2021, to review the avoided
7 T&D costs to be used in prospective DSM/EE riders, and, if
8 appropriate, make recommendations regarding the avoided T&D
9 cost rates to be used in the Company's annual DSM/EE rider
10 proceeding. When the Company presented the 2021 Avoided T&D
11 Study to the Public Staff in the third quarter of 2021, the Public Staff
12 began to closely review the projects and their associated costs
13 (inputs) that were used to create the annual T&D expenditures that
14 flow into the calculation of the avoided T&D rate.

15 For clarification, the Public Staff did not conduct a prudence review
16 similar to that performed in a general rate case investigation. Instead,
17 the Public Staff looked at the types of T&D projects that were
18 included in the avoided T&D methodology and whether those
19 projects were avoidable due to the implementation of DSM/EE
20 programs or were due to ordinary customer growth.

21 After the Public Staff initially reviewed the Company's proposed 2021
22 Avoided T&D Study, the Company and the Public Staff met several

1 times to discuss these inputs and the evolution of the screening
2 process for this calculation. However, while the meetings were
3 productive, the Company and the Public Staff could not conclude this
4 work by December 31, 2021, meaning that the Company did not
5 have a reasonable amount of time to incorporate it into their
6 upcoming filing. The Company and the Public Staff then agreed to
7 use certain avoided T&D rates for Rider 14 only and to continue the
8 dialogue to develop a reasonable rate that would apply in DSM/EE
9 rider applications filed after January 1, 2023. The agreed-upon rates
10 used to calculate cost effectiveness for Rider 14 are shown in the
11 table below.

	Avoided Transmission (\$/kW-year)	Avoided Distribution (\$/kW-year)	Total Avoided T&D (\$/kW-year)
DEC	30.44	47.58	78.02
DEP	29.88	42.90	72.78

12

13 **Q. HOW WERE THE PROXY RATES FOR AVOIDED T&D**
14 **DETERMINED FOR USE IN THIS RIDER FILING?**

15 A. Until the Company and Public Staff can conclude their review of the
16 avoided T&D rate study, the avoided T&D rates being used in this
17 proceeding are based on an approximate average of the prior
18 avoided T&D rates used in the last DSM/EE rider proceeding and the
19 rates presented to the Public Staff by DEC in the third quarter of

1 2021. The proxy rates agreed to by the Public Staff and DEC, from
2 the Public Staff's perspective, provide assurance that rates are
3 based on projects that were truly avoidable through DSM/EE
4 activities and, from the Company's perspective, represent rates
5 closer to actual avoided T&D rates that are based on a current level
6 of project costs versus the lower level of project costs used in the
7 previous study.

8 **Q. WHEN WILL THE AVOIDED T&D STUDY BE COMPLETED?**

9 A. Given the productive nature of the meetings between the Company
10 and the Public Staff, I believe a final Avoided T&D Rate Study should
11 be finalized this summer and that the avoided T&D rates that result
12 from the Study will be applicable for Vintage Year 2024 and beyond,
13 until the next Avoided T&D Study is completed.

1 Inclusion of a RMAF in the DSM/EE Mechanism

2 **Q. HAS THE COMPANY PROPOSED CHANGES TO THE DSM/EE**
3 **COST RECOVERY MECHANISM?**

4 A. Yes, pursuant to the Commission's order in Docket No. E-7, Sub
5 1249, the Company proposed language for inclusion in the
6 Mechanism regarding the methodology to be used for the RMAF.

7 **Q. HAS THE PUBLIC STAFF REVIEWED THE PROPOSED**
8 **LANGUAGE?**

9 A. Yes. Since the issuance of the Commission's order on September
10 10, 2021, the Company and the Public Staff have worked together to
11 craft agreeable language for the RMAF. Evans Exhibit 18 is the
12 product of this work.

13 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION ON THE**
14 **PROPOSED LANGUAGE?**

15 A. The Public Staff recommends that the Commission approve the
16 Company's language as proposed in Evans Exhibit 18 for inclusion
17 in the Company's DSM/EE Cost Recovery Mechanism. Public Staff
18 witness Dorgan includes the current Mechanism with the RMAF
19 language included as Exhibit I to his testimony.

20 Commission Questions – Appendix A

21 **Q. DESCRIBE ANY IMPACT THAT THE FULL DEPLOYMENT OF**
22 **AMI AND CUSTOMER CONNECT HAS HAD OR IS EXPECTED**

1 **TO HAVE ON THE IMPLEMENTATION OF EE AND DSM**
2 **PROGRAMS AND RIDER CALCULATIONS.**

3 A. Now that DEC has completed the deployment of Advanced Metering
4 Infrastructure (AMI) and the updated Customer Connect billing
5 system, the Company is able to obtain a more refined look at how its
6 system is operating and how customers are using energy at the point
7 of delivery. More importantly, AMI is allowing customers to make
8 more informed decisions about their consumption behavior and
9 providing more opportunity for customers to react in times when
10 there is high demand and system conditions warrant load reductions.
11 It is also allowing DEC to exercise its DSM resources in a more
12 strategic manner (e.g., addressing load and capacity constraints on
13 specific feeders). AMI and the Customer Connect billing system are
14 also able to advance customers' understanding of various rate
15 designs that not only improve system efficiency, but also encourage
16 customers to take advantage of time-of-use (TOU) rates and save
17 on their bills. I discuss TOU rates later in my testimony when I
18 discuss Dynamic Pricing rates.

19 The potential for increased participation in DSM and EE programs as
20 a result of the implementation of AMI and Customer Connect should
21 result in system and operational efficiencies that in turn lead to
22 greater savings for both DEC and the participating customers.

1 Furthermore, the availability of customer usage data to third parties
2 is likely to provide additional customer benefits through the energy
3 efficiency goods and services that third parties might offer. This
4 availability of customer usage data would be subject to the terms and
5 conditions of Duke's code of conduct, and the third party's obligations
6 to protect customer data. A rulemaking proceeding governing the
7 process related to third parties obtaining access to customer usage
8 data is currently underway in Docket No. E-100, Sub 161.

9 **Q. HAS DEC IDENTIFIED ANY WAYS TO LEVERAGE AMI AND**
10 **CUSTOMER CONNECT TO INCREASE THE EFFECTIVENESS**
11 **AND/OR REDUCE THE COST OF ITS EE AND DSM PROGRAMS?**

12 A. As DEC collects more AMI data and is able to identify system trends
13 for usage and costs on a more granular level, the design of DSM/EE
14 programs should evolve due to the increased education available to
15 customers.

16 The Company stated in its response to a Public Staff data request
17 that DSM programs, like the Power Manager program, have used
18 AMI data to validate the responsiveness of customers during peak
19 time events. The Company is able to more accurately determine how
20 many megawatts of load reduction occurred during each hour that
21 the reduction activity was called, along with a list of customers that
22 did not activate or did not shed as much load as expected.

1 Currently, customers are provided financial incentives for their
2 participation in DSM programs that allow Duke to activate the
3 customer's DSM (load control switches/smart thermostat) when
4 there are system needs.

5 The personalization of data provided to participants, using AMI and
6 a customer portal to view the data from their interval AMI meter, will
7 lead to more personalized conversations with customers. This new
8 level of personalization will be key to informing individual customers
9 about their energy consumption and how they can impact their bills.
10 Engaging customers about the price of energy at a particular
11 moment, giving them the data and access to interval data to
12 understand the importance of their energy-oriented response, and
13 then allowing them to see the result of their decisions (positive or
14 negative), will help Duke achieve a more efficient system. Simple
15 programs, priced appropriately, combined with engaging customer
16 participation, is the low-hanging fruit that will bring out these system
17 efficiencies.

18 **Q. DESCRIBE IN DETAIL ANY COST SAVINGS OR INCREASED**
19 **COST EFFECTIVENESS THAT CAN BE ATTRIBUTED TO DEC'S**
20 **DEPLOYMENT OF AMI AND CUSTOMER CONNECT.**

21 A. The Public Staff agrees with the Company's response that the
22 deployment of AMI and Customer Connect may produce savings and
23 that it is difficult to determine those savings at the present time.

1 Moreover, the Public Staff believes there has not been sufficient time
2 to properly assess the transformational aspects of AMI and
3 Customer Connect.

4 Currently, there are some immediate cost savings as a result of
5 meter reading expense reductions, or savings related to connections
6 and disconnections. Those savings have already been observed in
7 the reduced reconnection and meter fees that were part of DEC's
8 last general rate case (Sub 1214). However, there are other savings
9 and cost reductions that should result from the deployment of
10 customer-facing programs, account/data access, and programs to
11 enable customers to save on their bills, and sufficient time has not
12 elapsed to adequately evaluate these savings and reductions. These
13 items are outside of the scope of the DSM/EE Rider, since they have
14 already been approved in the Company's general rate case.

15 AMI's ability to collect data in sub-hourly intervals along with the
16 ability to assimilate this new level of customer data are leading to a
17 new access point for customers. Having access to interval data is a
18 benefit to both the utility and the customer. Unlike in the last decade
19 of DSM/EE deployment where the marketing of EE targeted all
20 customers,³ the utilities now have the ability to analyze the next-day

³ As an example, DSM programs have historically been available to anyone that wishes to participate. While all customers will still have access to programs, in this new paradigm of data access the utilities will be able to personalize their marketing approach for customers that can benefit the most.

1 sub-hourly interval data of a home and provide more personalized
2 DSM/EE opportunities. Prior to having access to AMI data, utilities
3 relied on load research tools to develop a general sense of customer
4 usage. The Company stated in response to a Public Staff data
5 request that it believes the introduction of AMI and Customer
6 Connect alone will lead to more customers participating in its
7 DSM/EE programs. It also acknowledged that as customers become
8 more aware of their usage by reviewing their usage data, they may
9 be encouraged to take action and participate in available DSM/EE
10 programs to reduce their consumption.

11 Educating customers about the tools available to them through their
12 online portal as a result of AMI and Customer Connect will take time
13 to gain traction.

14 **Q. PROVIDE AN UPDATE ON THE PROGRESS OF EXPANDING**
15 **THE USE OF CUSTOMER DATA IN DETERMINING EE AND DSM**
16 **SAVINGS IN PROGRAM EVALUATIONS AND COST**
17 **EFFECTIVENESS TESTS.**

18 A. The Public Staff agrees with the Company's response that progress
19 is being made to incorporate 15-minute, 30-minute, and hourly usage
20 data in the evaluation reports. As stated earlier, utilizing the sub-
21 hourly data will provide a better view of the impacts that are being
22 realized by the activation of the customer DSM.

1 AMI data is providing information that can be used to target specific
2 market participants, validate EM&V, and inform customers of
3 additional behaviors that could be modified.

4 Currently, the programs that may have their EM&V impacted through
5 the use of AMI data are:

- 6 • CIG-DRA;
- 7 • EnergyWise for Business;
- 8 • Power Manager;
- 9 • EnergyWise Home;
- 10 • PowerShare;
- 11 • Residential New Construction;
- 12 • Residential Assessments;
- 13 • EE Education;
- 14 • Neighborhood Energy Saver;
- 15 • Low-Income Weatherization;
- 16 • Smart Saver;
- 17 • Online Savings Store/Marketplace;
- 18 • MyHER;
- 19 • Save Energy and Water Kits; and
- 20 • Non-Residential Custom.

21 As the Company begins to use AMI data in its EM&V evaluations,
22 the Company will need to determine whether it is most appropriate

1 to conduct a billing analysis, an engineering analysis, or a
2 combination of the two with its third-party evaluators.⁴

3 **Q. PROVIDE A TABLE COMPARING THE PERFORMANCE OF**
4 **DEC'S DSM/EE PORTFOLIO'S COSTS AND SAVINGS DURING**
5 **THE 2020 DSM/EE RIDER TEST YEAR WITH THE**
6 **PERFORMANCE IN THE 2021 DSM/EE RIDER TEST YEAR.**

7 A. For purposes of this proceeding, the Public Staff accepts the table
8 provided by the Company.

9 The Public Staff notes that Williamson Exhibits 1 and 2 provide the
10 actual and forecasted performance of the portfolios for Vintage Years
11 2020 and 2021. It should also be noted that the data provided
12 contains the portfolio of programs, all of which are in different stages
13 of evaluation.

14 For many reports, the use of AMI data has not yet been incorporated,
15 as the ability to utilize AMI data for EM&V is still evolving.

16 **Q. INCLUDE IN THE SAME TABLE A COMPARISON OF DEC'S**
17 **FORECASTED DSM/EE KWH SAVINGS AND ACTUALLY**
18 **ACHIEVED KWH SAVINGS DURING THE SAME TEST YEAR**
19 **PERIODS STATED ABOVE.**

⁴ Typically, an evaluator chooses either a billing analysis or an engineering analysis to assess the savings impact of a program.

1 A. Please see the response to the previous question.

2 **Q. PROVIDE A RESPONSE TO PUBLIC STAFF WITNESS**
3 **WILLIAMSON'S TESTIMONY IN DOCKET NO. E-7, SUB 1249**
4 **RELATED TO THE PROVISIONS OF COMMISSION RULE R8-**
5 **69(B)(5) AS APPLIED TO THE OVERLAP OF AMI INFORMED**
6 **SERVICES AND THE SPECIALIZED TIPS SUPPORTED BY THE**
7 **MYHER EE PROGRAM.**

8 A. The Company in its response describes how the MyHER EM&V
9 process accounts for savings, as well as how those savings are
10 teased out from other EE measures. The Company also
11 acknowledges that all customers at their option may go online and
12 see their hourly usage AMI data, regardless of whether they are
13 MyHER participants.

14 The Company's response raises two concerns. First, customers
15 have only recently had the ability to go online and view their hourly
16 usage data. In response to the Public Staff's data request, the
17 Company stated that April 2021 was the earliest date that customers
18 had access to the MyAccount AMI charts. It is expected that as more
19 customers become familiar with this tool, they will begin to utilize this
20 interval AMI data tool to maximize their energy bill savings. Second,
21 as described in the Mechanism, the Company's EM&V reports
22 typically use data points from a sample taken several years prior.

1 The Company discusses in its response that it uses both a treatment
2 and control group to identify MyHER savings. However, the current
3 MyHER EM&V process does not account for customers who utilize
4 the customer web portal where they can view their AMI data and take
5 actions to change their usage patterns going forward. The Company
6 further acknowledged that participants using the Smart Meter Usage
7 App (a mobile app that allows customers to view their AMI interval
8 data) are treated like regular customers and are assigned to either a
9 control or treatment group in the EM&V process.

10 As the EM&V sampling period gets closer to the date when these
11 new AMI tools became available to customers, the Public Staff
12 believes that the EM&V process should increase its rigor by including
13 an analysis, surveys, and other relevant studies that show how
14 having the AMI usage data available to customers influences their
15 behaviors toward implementing DSM and EE. Whether that is
16 through the creation of another treatment group in the EM&V process
17 or by other means is still to be determined.

18 **Q. HOW DOES DEC DISTINGUISH BETWEEN THE ORGANIC**
19 **ENERGY SAVINGS IMPACT OF USING AMI VERSUS THE**
20 **ENERGY SAVINGS FROM THE MYHER PROGRAM?**

21 A. For reasons explained in the response to the previous question, the
22 Public Staff believes that the Company's response to this question

1 should be supplemented. The Company stated that “all Duke Energy
2 customers, at their option, may go online to see their hourly usage
3 AMI data, regardless of whether they receive a My Home Energy
4 Report.” The Company then addresses the distinctions that are
5 made for determining energy savings, namely that they have two
6 identified groups: customers that receive the My Home Energy
7 Report and customers that do not. However, the Company does not
8 address how customer access to sub-hourly AMI data might
9 influence the customer’s usage, nor how that influence might be
10 analyzed in the EM&V process.

11 The influence of AMI data access on the customer is the heart of the
12 concern with the evolution of the MyHER program. Future
13 evaluations of the MyHER program must distinguish the kWh savings
14 of the MyHER program itself from any other kWh savings that might
15 be realized by the customer’s access and use of AMI data that occurs
16 separate from the MyHER program. The delivery of energy services
17 to customers is changing so that customers may better understand
18 their energy-consuming behavior.

19 The MyHER program is intended to provide a comparative analysis
20 of a customer’s energy usage versus other similar customers. That
21 analysis also includes energy-saving tips that customers can adopt
22 to reduce their consumption. Immediate access to AMI data through

1 a customer web portal, mobile phone application, and more
2 personalized advertising and other communications between the
3 Company and customer are also intended to prompt customers to be
4 more aware of their energy-consuming behavior. This improved
5 access to data and the means to make more informed energy-usage
6 choices are engaging customers in ways that produce both
7 customer-specific benefits and system benefits that reduce system
8 costs. The behavioral impacts from better access to data is beyond
9 the scope of the MyHER program. EM&V must begin to distinguish
10 how these non-MyHER-related behavioral impacts are influencing
11 the kWh savings from MyHER and other DSM/EE programs.

12 The Public Staff believes that major energy savers like the MyHER
13 report need to be given a more rigorous review.⁵ The distinction
14 between the kWh savings produced by the MyHER program and the
15 kWh savings produced by non-MyHER-related aspects of utility
16 service must be considered when evaluating programs like the
17 MyHER program. Currently, MyHER comprises almost one-half of
18 the residential portfolio of kWh savings. Such an EE program
19 requires a rigorous EM&V effort. Failing to understand the
20 significance of MyHER's ability to produce behavioral energy savings
21 means customers might be paying for Net Lost Revenues and a

⁵ The MyHER program in this docket represents 72% of the energy savings for Vintage 2023's residential portfolio and 43% of the Company's total portfolio for Vintage 2023.

1 Portfolio Performance Incentive for savings that were not directly
2 attributable to the MyHER program. As data analysis tools become
3 more readily available to customers, the distinction between savings
4 attributable to MyHER and those attributable to other factors
5 becomes more impactful to system planning and cost recovery.

6 The proceeding in Docket No. E-100, Sub 161, also has implications
7 for the use of customer data and how that data might influence
8 customer behavior. Data available to the Company and third parties
9 could be used to craft new goods and services that are meant to
10 assist customers in reducing their consumption and bills. These
11 initiatives also need to be taken into consideration during the EM&V
12 process for the MyHER program, and potentially for other programs
13 to avoid exaggerating the energy savings from the MyHER program.

14 **Q. DOES DEC HAVE METRICS THAT SHOW THE NUMBER OF**
15 **MYHER PARTICIPANTS THAT HAVE UTILIZED NEW**
16 **AMI/CUSTOMER CONNECT CAPABILITIES, SUCH AS THE**
17 **PERCENTAGE OF MYHER CUSTOMERS THAT HAVE VISITED**
18 **THE AMI USAGE WEB SITE? IF SO, PROVIDE THAT**
19 **INFORMATION.**

20 The Public Staff has reviewed the Company's response to this
21 question and notes that the customer count for the My Account AMI
22 charts is based on customers only having access to AMI data since

1 April 2021. As with any initiative, it will take time to grow awareness
2 and usage. Customer awareness and marketing will allow for
3 customers to understand what this portal has to offer.

4 As stated earlier, it will be very important to include in the EM&V
5 report a review of how AMI usage data is impacting the evaluation of
6 the MyHER program. A primary question to consider is how the
7 influence of a monthly paper report on energy usage will compare to
8 a customer's ability to instantaneously access 24-hour lag of sub-
9 hourly interval data. As noted above, the Company has started
10 offering a Smart Meter Usage App. The Company has also been
11 providing semi-annual reports⁶ on the development, goals, and
12 learnings from the deployment of the mobile app. In the most recent
13 report, filed on January 18, 2022, the Company stated that
14 approximately 9,400 North Carolina DEC and DEP customers had
15 enrolled in this pilot program. The most illuminating aspect of the
16 report was the analysis of the percentage of customers continuing to
17 login to view their usage data. As time went on, customers viewed
18 their online data less and less. In fact, after two months of enrollment,
19 roughly only 45% of customers continued to view their data through
20 the mobile app. After approximately ten months, 0% of customers
21 were continuing to view their usage via the app.

⁶ Docket Nos. E-7, Sub 1209 and E-2, Sub 1213.

1 The Public Staff acknowledges that, while the mobile app is still in
2 the pilot phase, getting comparable data to the paper report will have
3 its challenges. However, data points like these raise the concern that
4 a periodic paper report may result in more savings compared to the
5 digital route that electric service is transitioning to with its AMI mobile
6 app.

7 **Q. PROVIDE A COPY OF THE MOST RECENT MYHER EM&V**
8 **REPORT.**

9 A. The Company provided the most recent MyHER EM&V report in its
10 response to this question. It was finalized on July 10, 2019, and its
11 findings were based on data collected between June 2017 and May
12 2018. Duke therefore did not have the benefit of its AMI data and
13 Customer Connect system when this EM&V report was completed.
14 The Company indicated that the next MyHER report is currently
15 being finalized with data collected during calendar year 2020 in its
16 discussion on MyHER in Evans Exhibit 6, and as further detailed in
17 Evans Exhibit 12.

18 **Q. DESCRIBE HOW DEC WILL INTEGRATE ITS NEW DYNAMIC**
19 **PRICING RATES INTO ITS EXISTING EE AND DSM PROGRAMS.**

20 A. To the Public Staff's knowledge, the Commission has never
21 considered dynamic rate tariffs such as the Company's TOU and
22 real-time pricing schedules to be DSM or EE in either the current

1 Mechanism or the initial SaveAWatt proceeding that preceded the
2 current Mechanism.⁷ Like a DSM program, dynamic pricing tariffs
3 encourage customers to shift usage from on-peak periods to off-
4 peak. However, dynamic pricing tariffs solely rely on the customer to
5 take some action to shift usage, while DSM programs are actively
6 managed by the Company, and when necessary, are activated
7 without customer involvement. Another reason to exclude dynamic
8 pricing tariffs from the DSM/EE portfolio is cost recovery. The effects
9 of passive changes in load due to customers reacting to dynamic
10 pricing tariffs are not different than customers choosing to increase
11 their loads. The only difference is the effect on net load - one is an
12 increase; the other is a decrease. Those net impacts are recovered
13 on a cost-of-service basis from all customers. The cost of the
14 DSM/EE portfolio is recovered from the targeted customer class.

15 Another reason to exclude dynamic pricing tariffs from the DSM/EE
16 portfolio is system planning. The utility develops its load forecast on
17 a system and customer class basis. That forecast serves to inform
18 the capacity resources needed in the future. Only controllable
19 resources are used to satisfy the capacity resources needed. DSM
20 programs are controlled by the utility, which allows DEC to

⁷ See Docket No. E-7, Sub 831. This docket established the initial DSM/EE cost recovery mechanism that was adopted pursuant to the promulgation of N.C.G.S. 62-133.8 and 133.9.

1 incorporate the impacts as load resources when system conditions
2 justify their use.

3 **Q. DESCRIBE ANY IMPACTS THAT DEC'S NEW DYNAMIC**
4 **PRICING TARIFFS ARE EXPECTED TO HAVE ON EXISTING EE**
5 **AND DSM PROGRAM MARKETING, IMPLEMENTATION, COST**
6 **EFFECTIVENESS CALCULATIONS AND EVALUATION. FOR**
7 **EXAMPLE, WILL THE SAVINGS ATTRIBUTED TO THE**
8 **IMPLEMENTATION OF AN EE MEASURE FOR A CUSTOMER**
9 **SUBSCRIBED TO A DYNAMIC PRICING TARIFF BE DIFFERENT**
10 **FROM THOSE OF A CUSTOMER ON A TRADITIONAL RATE**
11 **STRUCTURE?**

12 A. Please see the response to the previous question. Dynamic pricing
13 tariffs should have little to no impact on DSM/EE program marketing,
14 implementation, or cost-effectiveness. As previously stated, dynamic
15 pricing tariffs provide passive savings if customers respond to a price
16 signal and shift their loads from on- to off-peak periods. These
17 savings are characteristically different from the capacity savings
18 realized from the Company's active management of a DSM program.
19 Dynamic pricing tariffs can provide further motivation to the customer
20 to adopt EE measures. However, adoption and the incremental
21 savings realized from the EE measures are less certain. Further
22 survey and EM&V work would be required to determine the extent to
23 which the dynamic pricing tariff itself motivated the customer to adopt

1 an EE measure. The Public Staff is not aware of any EM&V that
2 sought to delineate the influence of dynamic pricing tariffs on EE
3 adoption rates. Furthermore, the Public Staff is not aware of any data
4 or calculations of cost-effectiveness that incorporate any impacts
5 from dynamic pricing tariffs.

6 **Q. PROVIDE A SUMMARY OF KEY DSM AND/OR EE PROGRAM**
7 **MODIFICATIONS OR ADDITIONS INTRODUCED DURING AND**
8 **AS A PRODUCT OF THE DSM/EE COLLABORATIVE DURING**
9 **2020 AND 2021 AND ESTIMATE THE ENERGY SAVINGS AND**
10 **ECONOMIC IMPACTS ATTRIBUTED TO THOSE ACTIONS.**

11 A. In addition to the Company's response to this question in its
12 testimony, the Company also stated, in response to a Public Staff
13 data request, that:

14 All measures are presented to the DSM/EE
15 Collaborative before they are finalized to gather and
16 incorporate Collaborative feedback. As a result of that
17 feedback, the Company often evaluates different
18 measures or ensures that specific issues are
19 addressed. Such feedback was incorporated for the
20 Residential Energy Assessments measures, Energy
21 Efficient Appliances and Devices, Low-Income EE and
22 Weatherization Assistance Program, and Power
23 Manager. All of these program expansions originated
24 within the Company. However, the Company
25 presented each of the measures listed in Evans Exhibit
26 17 to the Collaborative prior to the expansions being
27 finalized. Various members asked questions,
28 requested clarifications, and provided input, which may
29 have influenced the final version of implementation or
30 execution of the program.

1 The Public Staff finds the Company's response reasonable at this
2 time.

3 **Q. DESCRIBE ANY IMPLICATIONS THAT S.L. 2021-165 WILL HAVE**
4 **OR IS EXPECTED TO HAVE ON DEC'S EE AND/OR DSM**
5 **PROGRAMS AND THE RIDER APPLICATION. FOR EXAMPLE,**
6 **DESCRIBE WAYS IN WHICH DEC COULD OR WILL**
7 **INCORPORATE EE PROGRAM SAVINGS INTO ITS**
8 **CALCULATIONS RELATED TO CARBON PRODUCTION TO**
9 **MEET THE CARBON REDUCTION GOAL MANDATED IN S.L**
10 **2021-165.**

11 A. The Public Staff currently views two potential scenarios where S.L.
12 2021-165 could have influence on actions in the DSM/EE programs
13 and rider application.

14 One scenario is related to the avoided cost methodology. Currently,
15 in the biennial avoided cost proceeding, the calculation of avoided
16 cost excludes the cost of carbon. If a cost of carbon were to be
17 introduced and approved in an avoided cost proceeding, then that
18 input would be incorporated into the final avoided cost calculations
19 and rates ultimately approved by the Commission. This change
20 would then flow to the avoided cost rates utilized in the DSM/EE
21 Rider, program approval applications, and the calculation of the
22 performance incentive that the utilities are allowed to recover. If a

1 cost of carbon were to be introduced and approved in the avoided
2 cost proceeding and ultimately flowed through to the DSM/EE rider
3 proceeding, the Public Staff would need to assess what, if any,
4 potential changes to the cost recovery mechanism would need to
5 take place to ensure that savings incentives are handled
6 appropriately.

7 The second scenario is a non-financial impact to the DSM/EE rider
8 and programs. The Public Staff believes that the method of
9 accounting for carbon reductions for purposes of satisfying S.L.
10 2021-165 would be similar to how energy efficiency credits are
11 counted for compliance with the Renewable Energy and Energy
12 Efficiency Portfolio Standard (REPS). This method of accounting for
13 carbon reductions would not have a financial impact on the riders or
14 program applications but would allow for the tracking of the carbon
15 reductions produced by each program and by the portfolio as a
16 whole.

17 EM&V

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

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

1 I also reviewed previous Commission orders to determine if DEC
2 complied with provisions regarding EM&V contained in those orders.
3 My review leads me to conclude that the Company is complying with
4 the various Commission orders regarding EM&V of its DSM/EE
5 portfolio.

6 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING THE**
7 **EM&V REPORTS YOU REVIEWED?**

8 A. Yes, I do. Based on my review and discussions with the Company, it
9 has been determined that Evans Exhibit E contains an error in the
10 model inputs associated with the interactive effects that are used to
11 determine the net-to-gross ratio. The Company has agreed to update
12 the report and incorporate the financial impacts associated with the
13 update in the next rider proceeding. The Public Staff is agreeable to
14 this procedure and recommends that the Commission hold this
15 report open until the next rider proceeding.

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

18 A. Yes, all of the remaining EM&V reports filed in this proceeding should
19 be considered complete.

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

1 A. Yes. As in previous cost recovery proceedings, I was able, through
2 sampling, to verify that the changes to program impacts and
3 participation were appropriately incorporated into the rider
4 calculations for each DSM/EE program, as well as the actual
5 participation and impacts calculated with EM&V data. I reviewed: (1)
6 workpapers provided in response to data requests; (2) a sampling of
7 the EE programs; and (3) Evans Exhibit 1, which incorporates data
8 from various EM&V studies. I also met with DEC personnel to review
9 the calculations, EM&V, DSMore modeling inputs, and other data
10 related to the program/measure participation and impacts. Based on
11 my ongoing review of this data, I believe DEC has appropriately
12 incorporated the findings from EM&V studies and annual
13 participation into its rider calculations consistent with Commission
14 orders and the Mechanisms.

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

16 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. In August of 2020, the Electric Division merged with the Natural Gas Division to form the Energy Division, where I am a Utilities Engineer in the Electric Section – Rates and Energy Services. My current responsibilities include reviewing applications and making recommendations for certificates of public convenience and necessity of small power producers, master meters, and resale of electric service. Moreover, my responsibilities include 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 related to Electric and Natural Gas Investor-Owned Utilities. I have filed testimony in various Duke Energy Carolinas, Duke Energy Progress, and Dominion Energy North Carolina DSM/EE rider proceedings. I have also filed testimony in recent general rate case proceedings for Piedmont and Public Service Natural Gas companies related to the approval and tracking of their portfolio of EE programs.

DOCKET NO. E-7, SUB 1265 - Public Staff
D. Williamson Exhibit 1

Docket Number E-7, Sub ____ Projected Program/Portfolio Cost Effectiveness	Vintage 2020 Evans Exhibit 7 in Sub 1192				Vintage 2021 Evans Exhibit 7 in Sub 1230				Vintage 2022 Evans Exhibit 7 in Sub 1249				Vintage 2023 Evans Exhibit 7 in Sub 1265				Percent change from last year	
Program	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC
Residential Programs																		
Energy Efficiency Education	1.32	1.32	0.54	7.68	1.40	1.41	0.53	8.97	1.39	1.40	0.54	8.64	1.31	1.35	0.33	15.97	-6%	-4%
Energy Efficient Appliances & Devices	3.27	3.54	0.70	7.50	2.64	2.20	0.60	4.96	2.27	1.70	0.54	4.32	2.69	2.64	0.71	6.04	18%	56%
HVAC Energy Efficiency/Smart Saver EE	1.31	0.95	0.60	1.84	0.81	0.67	0.49	1.68	1.02	0.80	0.57	1.56	1.26	1.04	0.70	1.69	24%	30%
Income-Qualified Energy Efficiency and Weatherization Assistance	0.21	0.35	0.17	2.80	0.70	0.72	0.44	2.09	0.75	0.75	0.46	2.05	0.81	0.81	0.51	2.13	8%	8%
Multi-Family Energy Efficiency	2.97	2.97	0.61	22.81	3.14	3.16	0.66	20.52	3.11	5.29	0.68	24.02	3.59	3.54	0.77	9.41	15%	-33%
My Home Energy Report	1.89	1.89	0.61	-	1.89	1.89	0.66	-	1.88	1.88	0.63	-	3.59	3.59	0.85	-	91%	91%
Power Manager	4.22	8.72	4.22	-	4.33	9.80	4.33	-	4.26	8.99	4.26	-	4.45	9.28	4.45	-	4%	3%
Residential Energy Assessments	1.36	1.34	0.49	30.23	1.33	1.28	0.48	19.95	1.45	1.40	0.49	20.34	1.57	1.52	0.52	21.92	8%	8%
Residential New Construction	-	-	-	-	-	-	-	-	-	-	-	-	2.09	1.48	0.80	2.36		
Residential Total	2.50	3.02	1.04	6.61	2.50	2.82	1.04	6.18	2.40	2.55	0.95	5.08	2.70	2.84	1.07	5.00	13%	11%
Non-Residential Programs																		
Non Residential Smart Saver Custom Energy Assessments	3.07	1.08	0.84	1.99	2.70	0.80	0.84	1.38	1.99	0.74	0.76	1.44	2.23	0.79	0.80	1.45	12%	6%
Non Residential Smart Saver Custom	3.42	1.79	0.84	3.38	3.07	1.18	0.87	1.97	2.89	1.15	0.85	1.99	2.06	1.21	0.83	2.12	-29%	5%
EnergyWise For Business	0.72	1.25	0.61	-	0.63	1.26	0.55	-	0.46	1.38	0.46	-	1.42	2.79	1.23	69.03	207%	102%
Non Residential Smart Saver Energy Efficient Food Service Products	1.40	0.81	0.51	2.02	1.45	0.79	0.45	2.38	2.44	0.61	0.65	1.29	2.91	0.66	0.71	1.31	19%	9%
Non Residential Smart Saver Energy Efficient HVAC Products	1.57	1.24	0.70	2.06	1.47	1.12	0.64	2.05	3.04	1.94	0.61	4.39	3.66	2.26	0.70	4.37	20%	17%
Non Residential Smart Saver Energy Efficient Lighting Products	4.29	2.00	0.80	3.75	4.19	2.14	0.78	4.08	3.80	2.11	0.79	4.04	4.55	2.46	0.91	4.03	20%	16%
Non Residential Smart Saver Energy Efficient Pumps and Drives Products	3.68	2.63	0.86	5.38	3.11	2.41	0.82	4.99	3.02	2.16	0.74	4.71	2.64	1.88	0.75	3.67	-13%	-13%
Non Residential Smart Saver Energy Efficient IT Products	0.60	0.46	0.31	2.55	0.65	0.47	0.31	2.26	0.68	0.75	0.33	5.39	0.38	0.35	0.23	5.23	-44%	-53%
Non Residential Smart Saver Energy Efficient Process Equipment Products	2.14	1.85	0.70	3.86	3.50	2.26	0.97	3.66	2.37	1.85	0.72	3.79	2.86	2.21	0.81	3.94	20%	19%
Non Residential Smart Saver Performance Incentive	3.29	1.06	0.83	1.79	3.22	1.06	0.86	1.79	1.74	1.04	0.69	2.05	4.54	1.27	0.98	1.85	161%	22%
Small Business Energy Saver	2.70	1.67	0.80	2.93	2.32	1.43	0.76	2.60	3.04	1.73	0.82	3.06	3.23	1.93	0.98	2.88	6%	12%
PowerShare	3.35	112.28	3.35	-	3.37	137.02	3.37	-	3.40	105.69	3.40	-	4.61	170.67	4.61	-	36%	61%
Non-Residential Total	3.28	2.13	0.94	3.34	3.12	2.03	0.93	3.16	3.13	2.06	0.90	3.36	3.82	2.56	1.07	3.49	22%	24%
Overall Portfolio total	2.90	2.43	0.98	4.00	2.81	2.32	0.98	3.83	2.79	2.23	0.92	3.84	3.25	2.67	1.07	3.96	17%	19%

DOCKET NO. E-7, SUB 1265 - Public Staff
D. Williamson Exhibit 2

Docket Number E-7, Sub ____ Current Actual YTD Program/Portfolio Cost Effectiveness	Vintage 2019 Evans Exhibit 7 in Sub 1164				Vintage 2020 Evans Exhibit 7 in Sub 1192				Vintage 2021 Evans Exhibit 7 in Sub 1230				Percent change from last year	
Program	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC
Residential Programs														
Energy Efficiency Education	1.53	1.48	0.49	10.32	1.11	1.08	0.28	13.45	1.32	1.31	0.27	15.96	19%	21%
Energy Efficient Appliances & Devices	2.54	3.09	0.60	6.95	2.80	3.06	0.48	7.10	2.35	2.60	0.46	7.35	-16%	-15%
HVAC Energy Efficiency/Smart Saver EE	0.96	0.77	0.50	1.82	1.04	0.84	0.44	1.85	1.03	0.81	0.45	1.75	-1%	-3%
Income-Qualified Energy Efficiency and Weatherization Assistance	0.47	0.46	0.29	2.06	0.37	0.38	0.23	1.92	0.31	0.30	0.21	1.58	-15%	-21%
Multi-Family Energy Efficiency	2.94	2.85	0.56	20.00	1.34	1.43	0.38	18.85	1.92	1.57	0.38	11.49	44%	10%
My Home Energy Report	2.21	2.21	0.66	-	1.88	1.88	0.50	-	3.01	3.01	0.58	-	61%	61%
Power Manager	5.21	12.17	5.21	-	5.23	14.68	5.23	-	3.42	7.68	3.42	-	-35%	-48%
Residential Energy Assessments	1.40	1.35	0.50	22.77	1.36	1.34	0.41	33.13	0.99	0.95	0.34	19.30	-28%	-29%
Residential Total	2.56	2.99	0.81	6.74	2.70703	3.16	0.76	6.80	2.29	2.68	0.79	5.99	-16%	-15%
Non-Residential Programs														
Non Residential Smart Saver Custom Energy Assessments	2.34	0.78	0.52	2.33	1.57	1.18	0.37	5.65	1.47	0.68	1.47	0.25	-6%	-42%
Non Residential Smart Saver Custom	4.04	1.72	0.83	3.22	2.75	1.62	0.62	3.35	2.57	1.61	0.56	3.59	-7%	-1%
EnergyWise For Business	0.92	1.16	0.63	29.39	0.85	1.17	0.56	37.83	0.80	1.18	0.58	50.52	-6%	1%
Non Residential Smart Saver Energy Efficient Food Service Products	1.21	0.55	0.59	1.15	0.43	0.44	0.24	1.93	2.36	0.80	0.47	1.74	447%	82%
Non Residential Smart Saver Energy Efficient HVAC Products	2.50	1.71	0.62	3.65	3.03	1.87	0.57	3.45	3.04	1.97	0.62	3.28	0%	6%
Non Residential Smart Saver Energy Efficient Lighting Products	5.07	2.43	0.88	4.12	5.50	2.35	0.64	3.95	3.85	2.02	0.60	3.64	-30%	-14%
Non Residential Smart Saver Energy Efficient Pumps and Drives Products	3.81	2.29	0.83	4.84	4.53	2.22	0.52	5.13	3.29	2.33	0.53	5.40	-27%	5%
Non Residential Smart Saver Energy Efficient IT Products	0.03	0.05	0.03	11.79	0.11	0.11	0.09	3.59	0.01	0.01	0.01	6.20	-95%	-95%
Non Residential Smart Saver Energy Efficient Process Equipment Products	3.47	2.14	0.81	3.94	7.96	5.46	0.72	9.65	2.94	2.42	0.45	7.23	-63%	-56%
Non Residential Smart Saver Performance Incentive	2.85	1.07	0.63	2.78	2.71	1.44	0.44	3.89	12.35	2.01	2.08	0.95	356%	39%
Small Business Energy Saver	2.25	1.49	0.70	3.03	2.38	1.58	0.53	3.21	2.09	1.39	0.58	2.66	-12%	-12%
PowerShare	3.23	57.30	3.23	-	2.89	34.88	2.89	-	3.11	29.80	3.11	-	8%	-15%
Non-Residential Total	3.60	2.41	0.95	3.78	3.39	2.52	0.74	3.93	3.05	2.32	0.76	3.51	-10%	-8%
Overall Portfolio total	2.99	2.67	0.87	5.11	2.99	2.83	0.75	5.21	2.68	2.46	0.77	4.25	-10%	-13%

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1265

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

May 17, 2022

INTRODUCTION

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

4 A. My name is Shawn L. Dorgan. My business address is 430 North
5 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am a
6 Financial Analyst with the Accounting Division of the Public Staff –
7 North Carolina Utilities Commission.

8 Q. PLEASE STATE BRIEFLY YOUR QUALIFICATIONS AND
9 EXPERIENCE.

10 A. A summary of my qualifications and professional experience is
11 provided in Appendix A, attached to this testimony.

12 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

13 A. The purpose of my testimony is to discuss the Accounting Division's
14 review of the Application submitted by Duke Energy Carolinas, LLC
15 (DEC or the Company), for approval of a Demand-Side
16 Management/Energy Efficiency (DSM/EE) rider (Rider 14), as
17 authorized by N.C. Gen. Stat. § 62-133.9 and Commission
18 Rule R8-69, and to present my recommendations.

19 Q. HOW IS YOUR TESTIMONY ORGANIZED?

20 A. My testimony opens with an overview of the statutory and rulemaking
21 framework for DSM/EE cost recovery by electric utilities in North

1 Carolina. Next, I discuss the Cost Recovery Mechanism
2 (Mechanism) approved by the Commission for purposes of
3 determining the DSM/EE and DSM/EE Experience Modification
4 Factor (EMF) riders. Then, I discuss the Rider 14 billing factors
5 proposed by the Company in its Application in this proceeding. The
6 next section of my testimony covers the Accounting Division's
7 examination of Rider 14. I end with a discussion of the Public Staff's
8 conclusions and recommendations, and a further discussion of a
9 focused review of certain expense categories that the Public Staff
10 plans to conduct.

11 **BASIS FOR SETTING DEC'S DSM/EE REVENUE**
12 **REQUIREMENTS**

13 **Q. PLEASE BRIEFLY DESCRIBE THE STATUTORY AND**
14 **REGULATORY BASIS APPLICABLE TO THE COMPANY'S**
15 **FILING.**

16 A. North Carolina General Statute § 62-133.9(d) allows a utility to file
17 an application with the Commission for approval of an annual rider
18 to recover: (1) all reasonable and prudent costs associated with
19 implementation of new DSM and EE measures; and (2) other allowed
20 incentives payable to the utility (utility incentives) for the adoption of
21 new DSM and EE measures. Furthermore, Commission Rules
22 R8-68 and R8-69 set forth additional guidelines, definitions, and filing

1 requirements governing annual DSM/EE rate rider applications.

2 **Q. ARE DSM/EE RATE RIDERS “BY-PASSABLE” CHARGES?**

3 A. For DEC residential customers, the combined DSM/EE billing factor
4 (prospective factor and EMF) is not an optional or “by-passable”
5 charge. However, N.C.G.S. § 62-133.9(f) provides that a qualifying
6 commercial or industrial customer may opt out of participating in one
7 or all of the Company’s DSM/EE program offerings. To make the
8 election, a qualifying customer must notify the Company that it has
9 implemented, or will implement at its own expense, alternative DSM
10 and EE measures.

11 **Q. PLEASE SUMMARIZE COMMISSION RULE R8-69.**

12 A. Commission Rule R8-69, adopted pursuant to N.C.G.S. § 62-133.9,
13 establishes provisions for two sets of billing factors. The first set (the
14 DSM/EE rider) is prospective in nature and applies to a forthcoming
15 “rate period” in which the billing factors are to be in effect. The
16 second set is retrospective and provides for a series of EMF rates
17 (DSM/EE EMF rider). For each prior test period covered by the
18 application, DSM/EE EMF rates are established to recover any
19 difference between revenues required (as adjusted for verified
20 changes in DSM/EE program participation and in measure efficiency)
21 and amounts actually collected from utility customers. Though the

1 DSM/EE EMF rider is calculated with respect to a past test period, it
2 is collected from or refunded to customers over the same rate period
3 that the DSM/EE rider is collected. In addition, Rule R8-69 provides
4 provisions for the accrual of interest or return on amounts deferred
5 and on refunds to customers.

6 **COST RECOVERY MECHANISM**

7 **Q. PLEASE DESCRIBE THE DSM/EE COST RECOVERY**
8 **MECHANISMS AND HOW THEY GOVERN THE DETERMINATION**
9 **OF THE DSM/EE RIDERS AND THE DSM/EE EMF RIDERS.**

10 A. The costs and utility incentives proposed to be recovered via
11 Rider 14 are related to DSM and EE measures actually or expected
12 to be installed or implemented during calendar years 2018-2023
13 (Vintage Years 2018 through 2023). DEC has calculated all
14 proposed Rider 14 billing factors related to Vintage Years 2018
15 through 2021 by use of the Cost Recovery and Incentive Mechanism
16 for Demand-Side Management and Energy Efficiency Programs
17 approved on October 29, 2013, in Docket No. E-7, Sub 1032 (the
18 2013 Sub 1032 Order), as revised in the 2017 DSM/EE rider
19 proceeding, Docket No. E-7, Sub 1130 (2017 Mechanism). However,
20 on October 20, 2020, also in Docket No. E-7, Sub 1032 (the 2020
21 Sub 1032 Order), the Commission approved a revised Cost

1 Recovery and Incentive Mechanism of Duke Energy Carolinas, LLC,
2 for Demand-Side Management and Energy Efficiency Programs
3 (2020 Mechanism), to be effective January 1, 2022.¹ Therefore, the
4 Rider 14 billing factors related to estimated Vintage Years 2022 and
5 2023 costs and utility incentives have been calculated by use of the
6 2020 Mechanism (subject to certain adjustments, as described later
7 in this testimony). In the following paragraphs, I will describe the
8 essential characteristics of the 2017 and 2020 Mechanisms;
9 however, each Mechanism includes and is subject to many additional
10 and more detailed criteria than are set forth in this testimony.

11 **Q. PLEASE DESCRIBE THE DEVELOPMENT OF THE 2017 AND**
12 **2020 MECHANISMS AND THEIR MAJOR COMPONENTS.**

13 A. In the 2013 Sub 1032 Order, the Commission approved an
14 Agreement and Stipulation of Settlement, filed on August 19, 2013,
15 and amended on September 23, 2013, between DEC, the
16 Public Staff, and certain other intervenors² (Sub 1032 Settlement),
17 which proposed a new mechanism.

¹ In the same Order, which was also issued in Docket No. E-2, Sub 931, the Commission also approved a revised DSM/EE Cost Recovery and Incentive Mechanism for Duke Energy Progress, LLC (DEP).

² The parties to the Sub 1032 Settlement were DEC; the North Carolina Sustainable Energy Association; the Environmental Defense Fund; the Southern Alliance for Clean Energy; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the Public Staff.

1 **Q. HAS THE COST RECOVERY MECHANISM APPROVED IN 2013**
2 **BEEN MODIFIED SUBSEQUENTLY?**

3 A. Yes. The Mechanism approved in the 2013 Sub 1032 Order has
4 been modified on two occasions, once in 2017, and again in 2020.

5 **Q. PLEASE DESCRIBE BRIEFLY THE 2017 MODIFICATIONS TO**
6 **DEC'S PRIOR MECHANISM.**

7 A. During the 2017 Sub 1130 DSM/EE proceeding the Company and
8 the Public Staff agreed to revise Mechanism Paragraphs 19, 23, and
9 69, and to insert new Paragraphs 23A through 23D. These revisions,
10 described in detail in Public Staff witness Maness Exhibit II filed in
11 Docket No. E-7, Sub 1130, were approved by the Commission in its
12 *Order Approving DSM/EE Rider, Revising DSM/EE Mechanism, and*
13 *Requiring Filing of Proposed Customer Notice*, issued August 23,
14 2017.

15 The overall purpose of the 2017 Mechanism was to: (1) allow DEC
16 to recover all reasonable and prudent costs incurred for adopting and
17 implementing new DSM and new EE measures; (2) establish certain
18 requirements, in addition to those of Commission Rule R8-68, for
19 requests by DEC for approval, monitoring, and management of DSM
20 and EE programs; (3) establish the terms and conditions for the
21 recovery of certain utility incentives - net lost revenues (NLR) and a

1 Portfolio Performance Incentive (PPI) to reward DEC for adopting
2 and implementing new DSM and EE measures and programs; and
3 (4) provide for an additional incentive to further encourage kilowatt-
4 hour (kWh) savings achievements. The 2017 Mechanism included
5 provisions addressing mechanism continuity and review, program
6 modification flexibility, and the treatment of opted-out and opted-in
7 customers, as well as provisions directly affecting the calculation of
8 the DSM/EE and DSM/EE EMF riders. A summary of these
9 provisions is set forth in Appendix B of this testimony.³ The 2017
10 Mechanism adopted and continued certain requirements from
11 several prior Commission orders.

12 **Q. PLEASE DESCRIBE BRIEFLY THE 2020 MODIFICATIONS.**

13 A. The purpose of the 2020 Mechanism remains largely the same as
14 that of the 2017 Mechanism; however, it incorporated several new
15 provisions (as shown in Appendix C to my testimony). In addition to
16 these new provisions, Ordering Paragraph 5 of the 2020 Sub 1032
17 Order states, consistent with the 2020 Stipulation, that “DEC and
18 DEP shall work with the DSM/EE Collaborative to develop a scope
19 for a one-time study on the market penetration of DSM/EE programs

³ A consolidated version of the entire 2017 Mechanism was filed on May 22, 2018, as Maness Exhibit II in DEC’s 2018 DSM/EE rider proceeding, Docket No. E-7, Sub 1164.

1 with low- and moderate-income customers to be performed by
2 qualified independent third-party EM&V providers. DEC and DEP ...
3 shall have the study completed prior to the cost recovery Mechanism
4 modifications approved herein taking effect in 2022;”⁴ The full
5 text of the 2020 DEC Mechanism is appended at the end of the 2020
6 Sub 1032 Order as Attachment A.⁵

7 **Q. HAS THE COMPANY PROPOSED ANY CHANGES IN THIS**
8 **PROCEEDING TO THE 2020 COST RECOVERY MECHANISM?**

9 A. Yes. Pursuant to the Commission’s order in last year’s DSM/EE
10 Rider proceeding (Docket No. E-7, Sub 1249), the Company has
11 proposed language to incorporate the Commission-ordered
12 methodology to be used regarding the inclusion of the Reserve
13 Margin Adjustment Factor. The Public Staff’s review of this language
14 is described in the testimony of Public Staff witness Williamson.

⁴ Additional details regarding the required study are included in the body of the 2020 Sub 1032 Order.

⁵ The revisions to the Mechanism recommended by the Public Staff were also supported by DEC, DEP, the North Carolina Sustainable Energy Association; the Southern Alliance for Clean Energy; the South Carolina Coastal Conservation League; the Natural Resources Defense Council; the Sierra Club; and the North Carolina Attorney General’s Office.

1 Q. HAVE YOU PROVIDED THE PROPOSED LANGUAGE AS IT
2 WOULD BE INCORPORATED INTO THE 2020 MECHANISM?

3 A. Yes. The 2020 Mechanism, revised to include the proposed
4 language agreed to by the Company and the Public Staff (as well as
5 the correction of a typographical error), is attached to my testimony
6 as Dorgan Exhibit I.

7 BILLING FACTORS

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

10 A. As described in witness Listebarger's and Evans's testimonies and
11 exhibits, DEC has requested approval of 15 billing factors (14 in total
12 when the prospective and EMF factors for residential service are
13 combined into a single rate) to apply to electric service rendered
14 during the rate period January 1, 2023, through December 31, 2023.
15 These proposed billing factors – including revenue requirement
16 gross-up to account for the North Carolina Regulatory Fee (NCRF) –
17 are set forth on Listebarger Exhibit 1, Pages 1 and 2.

18 For purposes of DEC's Rider 14 filing, the following vintage years,
19 corresponding to the following time periods, are identified:

- 20 • Vintage Year 2018 → The year ended December 31, 2018.
- 21 • Vintage Year 2019 → The year ended December 31, 2019.
- 22 • Vintage Year 2020 → The year ended December 31, 2020.

- 1 • Vintage Year 2021 → The year ended December 31, 2021.
- 2 • Vintage Year 2022 → The year ended December 31, 2022.
- 3 • Vintage Year 2023 → The year ended December 31, 2023.

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

6 A. DEC's proposed billing factors have the following general
7 characteristics⁶:

- 8 1. For Vintage Year 2023, proposed Rider 14 includes billing
9 factors (or components of billing factors) intended to recover
10 estimated program costs, a PPI, and a Program Return
11 Incentive (PRI), as well as estimated calendar year 2023 NLR,
12 applicable to DSM and EE measures projected to be installed
13 or implemented during Vintage Year 2023, all subject to future
14 true-up;
- 15 2. For Vintage Year 2022, the proposed Rider includes billing
16 factors (or components of billing factors) intended to
17 prospectively recover estimated calendar year 2023 NLR

⁶ In addition to provisions of the 2017 and 2020 Mechanisms, particular billing factors may also be subject to select Commission rulings in Docket Numbers E-7, Subs 831, 938, 979, and 1032. Furthermore, they may be impacted by Commission rulings in DEC's various annual DSM/EE cost and incentive recovery proceedings, as well as in individual program approval proceedings occurring after the 2013 Sub 1032 Order.

- 1 associated with Vintage Year 2022 installations, subject to
2 future true-up;
- 3 3. For Vintage Year 2021, the proposed Rider includes billing
4 factors (or components of billing factors) intended to: (a)
5 prospectively recover estimated calendar year 2023 NLR
6 associated with Vintage Year 2021 installations, subject to
7 future true-up; and (b) true up 2021 program costs and, to the
8 extent evaluation, measurement, and verification (EM&V) of
9 these results has been completed, Vintage Year 2021
10 participation and per-participant avoided cost savings and
11 calendar year 2021 NLR;
- 12 4. For Vintage Year 2020, the proposed Rider includes billing
13 factors (or components of billing factors) intended to: (a)
14 prospectively recover estimated calendar year 2023 NLR
15 associated with Vintage Year 2020 installations, subject to
16 future true-up; and (b) to the extent EM&V of these results has
17 been completed, true up Vintage Year 2020 participation and
18 per-participant avoided cost savings and calendar years 2020
19 and/or 2021 NLR;
- 20 5. For Vintage Year 2019, the proposed Rider includes billing
21 factors intended to, to the extent EM&V of these results has

1 been completed, true up Vintage Year 2019 participation and
2 per-participant avoided cost savings, and calendar years
3 2019, 2020, or 2021 NLR; and

4 6. For Vintage Year 2018, the proposed Rider includes billing
5 factors intended to, to the extent EM&V of these results has
6 been completed, true up Vintage Year 2018 participation and
7 per-participant avoided cost savings, and calendar years
8 2018, 2019, 2020, or 2021 NLR.

9 Billing factor calculations for a given vintage year may also include
10 adjustments to any required return on overcollections or
11 undercollections of DSM/EE revenues, as well as adjustments to
12 amounts collected to compensate DEC for the NCRF.

13 **Q. COULD THERE BE FUTURE TRUE-UPS OF THE DSM/EE**
14 **REVENUE REQUIREMENTS THAT SERVE AS INPUTS TO THE**
15 **COMPANY'S BILLING FACTORS?**

16 A. Going forward, certain revenue requirement components associated
17 with prior, current, or future vintage years will remain subject to
18 prospective or retrospective true-up adjustments. The various types
19 of expected or possible adjustments to vintage year revenue
20 requirements include, but are not limited to: (1) prospective recovery
21 of NLR requirements; (2) true-ups of test year program costs; and (3)

1 true-ups of PPI, PRI, and NLR requirements to reflect adjustments
2 made to DSM/EE program participation and measure efficiency
3 metrics, as determined by updated EM&V analyses.

4 **Q. WHAT IS YOUR ESTIMATE OF THE IMPACT OF THE**
5 **COMPANY'S PROPOSED BILLING FACTORS ON CURRENT**
6 **DSM/EE REVENUES, RATES, AND AVERAGE CUSTOMER**
7 **BILLS?**

8 A. Based on the Company's application, and utilizing the pro forma kWh
9 sales used by DEC to calculate DSM/EE rider rates in this case, the
10 proposed combined DSM/EE prospective and EMF revenue
11 requirement for the Residential customer class is approximately
12 \$77.3 million, an approximate \$31.6 million decrease from the
13 revenue that would be produced by the rates currently in effect. For
14 a typical Residential customer (using 1,000 kWh of energy), the
15 combined residential billing factor, as proposed, would result in a
16 \$1.38 reduction in the customer's monthly bill. For the Non-
17 Residential class, the proposed overall combined revenue
18 requirement is approximately \$96.3 million, an approximate \$15.8
19 million increase over rates currently in effect. The change in a Non-
20 Residential customer's bill will depend on the particular Vintage
21 Years of DSM or EE rates for which the customer is opted in or opted
22 out.

PUBLIC STAFF INVESTIGATION

**Q. PLEASE PROVIDE AN OVERVIEW OF YOUR INVESTIGATION
OF THE COMPANY'S FILING IN THIS PROCEEDING.**

A. The objective of my investigation has been to obtain and evaluate evidence to determine: (1) whether the Company's proposed DSM/EE billing factors have been calculated in conformity with, as appropriate, the 2017 or 2020 Mechanism, including any Commission Orders with which they are associated; and (2) whether the Company's filing otherwise adheres to sound ratemaking concepts and principles.

Working under my guidance, members of the Accounting Division's Program Cost Review Team (hereafter PCR Team) developed and performed a series of review procedures consistent with generally accepted professional standards. These procedures included an overall evaluation of the Company's filing, and a detailed review of workpapers and source documentation used by the Company to develop its proposed billing factors.

Integral to our investigation, the PCR Team performed a compliance review of DSM/EE program costs incurred by the Company during the 12-month period ended December 31, 2021. Pursuant to its review, and using both random and judgmental techniques, the PCR

1 Team selected a sample of general ledger transactions supporting
2 test year costs included for recovery in DEC's DSM/EE EMF rider
3 rates. This sample was intended to test whether 2021 calendar year
4 costs included by the Company for recovery are valid costs of
5 approved DSM and EE programs.

6 **Q. HAS YOUR EXAMINATION RESULTED IN ANY FINDINGS?**

7 A. Our compliance review has not discovered any findings that
8 necessitate adjustment to costs or incentives claimed for recovery.

9 **Q. HAS THE PUBLIC STAFF IDENTIFIED ANY OTHER ISSUES**
10 **WITH THE COMPANY'S BILLING FACTOR CALCULATIONS, AS**
11 **FILED?**

12 A. Yes. Based on our review of the Company's calculations of
13 cumulative deferred income tax for Residential EE Programs for
14 Vintage year 2018 – as reflected on Listebarger Exhibit 3, Page 1 --
15 we identified several computations that appear to be the result of
16 Excel formula errors. These errors occurred first in the Company's
17 Rider 12 application; however, they are cascading in nature and
18 carried forward to the succeeding two riders (Rider 13 and 14).

1 **Q. HAS THE PUBLIC STAFF NOTIFIED THE COMPANY OF THE**
2 **SUSPECTED ERRORS?**

3 A. Yes. The Public Staff asked the Company to review its calculations
4 in Listebarger Exhibit 3, Page 1. As a result of its review, DEC
5 identified several schedules, in addition to Listebarger Exhibit 3,
6 Page 1, that require correction. In total, these corrections result in a
7 \$248,707 increase to the Company's revenue requirement as
8 originally filed. For residential rates, the increase (representing a
9 decrease in the original downward EMF adjustment) is 0.0002 cents
10 per kWh. The impact on the non-residential billing factors is an
11 overall increase in rates of 0.0015 cents per kWh. However, this
12 composite is comprised of increases in certain vintages and
13 decreases in others.

14 In a conference call that took place on May 12, 2022, the Company
15 informed the Public Staff of its intention to file supplemental
16 testimony and exhibits on this issue. Furthermore, the Company
17 informed the Public Staff of its intention to request Commission
18 permission to make all needed corrections as a one-time true-up
19 adjustment to Vintage 2021 billing factors in conjunction with DEC's
20 2023 DSM/EE rider application. The Public Staff has no objection to
21 this arrangement. The Company filed its supplemental testimony
22 and exhibits on May 16, 2022. The Public Staff has reviewed the

1 calculations of the corrected billing factors filed by DEC and believes
2 them to be accurate and reasonable.

3 **Q. WHAT IMPACTS DOES THE TESTIMONY OF PUBLIC STAFF**
4 **WITNESS WILLIAMSON HAVE ON YOUR CONCLUSIONS**
5 **REGARDING THE DSM/EE RIDERS IN THIS PROCEEDING?**

6 A. Witness Williamson has filed testimony in this proceeding discussing
7 several other topics related to the Company's filing. None of the
8 matters discussed by Witness Williamson necessitate an adjustment
9 in this particular proceeding to the Company's billing factor
10 calculations, although some of them may affect the determination of
11 the factors in future proceedings.

12 **CONCLUSIONS AND RECOMMENDATIONS REGARDING**
13 **DEC'S PROPOSED RIDER 14 BILLING FACTORS**

14 **Q. PLEASE STATE YOUR CONCLUSIONS REGARDING THE**
15 **COMPANY'S APPLICATION AND ITS PROPOSED BILLING**
16 **FACTORS.**

17 A. In my opinion, subject to the Company making its proposed true-up
18 adjustment to the Vintage 2021 billing factors described in its
19 supplemental filing, the Company's Rider 14 application is in
20 compliance with the filing requirements of N.C.G.S. § 62-133.9 and

1 Commission Rule R8-69 in all material respects, and the billing
2 factors have been calculated in a reasonable manner.

3 **Q. PLEASE STATE YOUR RECOMMENDATIONS REGARDING THE**
4 **COMPANY'S PROPOSED BILLING FACTORS.**

5 A. Based on the results of the Public Staff's investigation, I recommend
6 that the billing factors proposed by the Company, as set forth in
7 Listebarger Exhibit 1, be approved by the Commission. These
8 factors should be approved subject to the one-time true-up to Vintage
9 2021 rates proposed in the Company's supplemental filing, as well
10 as any other true-ups as may be required in future cost recovery
11 proceedings.

12 **Q. DO YOU HAVE ANY CLOSING COMMENTS?**

13 A. In rendering our opinions regarding the Company's application, the
14 Public Staff notes that the process of reviewing all the calculations
15 included in a DSM/EE rider proceeding involves, by necessity,
16 reviewing and evaluating numerous assumptions, inputs, and
17 calculations. In addition, the Public Staff's recommendations in
18 connection with the Company's Rider 14 filing should not be
19 interpreted to suggest that the Public Staff waives its right to raise
20 questions or concerns regarding the same or similar assumptions,
21 inputs, and calculations in future proceedings, DSM/EE or otherwise.

1 **Q. ARE THERE ANY OTHER MATTERS THAT THE PUBLIC STAFF**
2 **WISHES TO BRING TO THE ATTENTION OF THE COMMISSION?**

3 A. Yes. Based on our review of costs incurred over the past few vintage
4 years, the Public Staff believes that it would be beneficial to
5 undertake a review focused on DEC's DSM/EE advertising and
6 promotion costs, including their relationship to incentives directly or
7 indirectly provided to DSM/EE program participants (participant
8 incentives). The Public Staff has notified the Company that it plans
9 to undertake such a review.

10 **Q. WHY WOULD SUCH A REVIEW BE BENEFICIAL?**

11 A. The Public Staff regularly scrutinizes DEC's DSM/EE advertising
12 costs and has recommended certain adjustments in the past. This
13 scrutiny has most recently focused on the "Find it Duke" (FID)
14 program costs in the 2020 and 2021 DSM/EE rider proceedings.
15 Although the amounts of FID advertising costs to date have been
16 relatively modest, this review heightened the Public Staff's general
17 interest in DEC's DSM/EE advertising and promotion (A&P) costs.

18 **Q. WHAT WILL BE THE PURPOSE OF THE PUBLIC STAFF'S**
19 **REVIEW?**

20 A. The purpose of the Public Staff's review will be to determine the
21 steps the Company regularly takes to right-size its DSM/EE A&P

1 costs, and whether there may be additional steps that could be taken.
2 Additionally, the Public Staff will be inquiring into the relationship
3 between A&P costs and participant incentives.

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

5 **A. Yes.**

SHAWN L. DORGAN**Qualifications and Experience**

I am an accounting graduate of Appalachian State University, having earned a B.S.B.A. in Accountancy in 1988 and a Master of Science in Accountancy (concentration in taxation; functional equivalent of a Master of Science in Taxation) in 1997. After graduation, I entered the public accounting industry, working first at the Charlotte practice office of Deloitte & Touche LLP, and later for several local and regional accounting firms in the metro-Charlotte, metro-Raleigh, and metro-Atlanta areas. I am a Certified Public Accountant, licensed in the State of North Carolina.

Since joining the Public Staff in May 2016, I have provided accounting support in conjunction with rider rate proceedings, particularly in program cost reviews of demand-side management and energy efficiency programs authorized for the state's electric utilities under N. C. Gen. Stat. § 62-133.9. In addition, I have provided expert witness testimony in annual review of gas cost proceedings for Frontier Natural Gas Company, and Public Service Company of North Carolina.

I also have provided accounting and testimonial support in general rate cases involving investor-owned electric and natural gas utilities, serving as the lead technical accountant in the 2019 Duke Energy Progress general rate case (Docket No. E-2, Sub 1219).

**SUMMARY OF CERTAIN PORTIONS OF THE 2017 DEC DSM/EE
MECHANISM¹**

1. With the exception of Low-Income Programs or certain other societally beneficial non-cost-effective programs approved by the Commission, all programs submitted for approval will have an estimated Total Resource Cost (TRC) and Utility Cost (UC) test result greater than 1.00. For purposes of calculating cost-effectiveness for program approval, the Company shall use projected avoided capacity and energy benefits specifically calculated for the program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates as of the date of the program approval filing, but using, for program-specific avoided energy benefits, the projected EE portfolio hourly shape rather than an assumed 24x7 100 MW reduction.
2. In each annual DSM/EE cost recovery filing, DEC shall perform and file (a) prospective cost-effective test evaluations for each of its approved DSM and EE programs, and (b) prospective aggregated portfolio-level cost-effectiveness test evaluations for its approved DSM/EE programs, using the same methodology for determining avoided capacity and energy benefits as set forth in the Revised Mechanism for program approval, except that the reference Commission-approved avoided cost credits shall be derived from those approved as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. For any program that initially demonstrates a TRC result, determined pursuant to paragraph 23A above, of less than 1.00, the Company shall either terminate the program or undertake a process over the next two years to improve program cost-effectiveness. For programs that demonstrate a prospective TRC result of less than 1.00 in a third DSM/EE rider proceeding after the initial non-cost-effective result, the Company shall terminate the program effective at the end of the year following the DSM/EE rider order, unless otherwise ordered by the Commission.
3. Industrial and large commercial customers have the flexibility to opt out of either or both of the DSM and EE categories of programs for one or more vintage years, as well as the ability to opt back into either or both the categories for a later vintage year. If a customer opts back into the DSM category, it cannot opt out again for three years; however, a customer has the freedom to opt in or out of the EE category for each vintage year. Additionally, if a customer opts out of paying the rider for a vintage year after one or more years in which the customer was "opted in," DEC may charge

¹ For a summary of revisions made to the 2017 Mechanism by the 2020 Mechanism, please see Appendix C to the testimony accompanying this Appendix.

the customer subsequent DSM/EE and DSM/EE EMF riders only for those vintage years in which the customer actually participated in a DSM/EE program.

4. DSM/EE and DSM/EE EMF riders will be calculated on a vintage year basis, with separate riders being calculated for the Residential customer class and for those rate schedules within the Non-Residential customer class that have DEC DSM/EE program options in which they can participate.
5. Incurred DSM and EE program costs will be directly recovered as part of the annual riders. Deferral accounting for over- and underrecoveries of costs is allowed, and the balance in the deferral account(s), net of deferred income taxes, may accrue a return at the net-of-tax rate of return approved in DEC's then most recent general rate case.
6. DEC will be allowed to recover NLR as an incentive (with the exception of those amounts related to research and development or the promotion of general awareness and education of EE and DSM activities) but will be limited for each measurement unit installed in a given vintage year to those dollar amounts resulting from kWh sales reductions experienced during the first 36 months after the installation of the measurement unit. NLR related to pilot programs are subject to additional qualifying criteria.
7. The eligibility of kWh sales reductions to generate recoverable NLR during the applicable 36-month period will cease upon the implementation of a Commission-approved alternative recovery mechanism that accounts for NLR, or new rates approved by the Commission in a general rate case or comparable proceeding.
8. NLR will be reduced by net found revenues (as defined in the Revised Mechanism) that occur in the same 36-month period. Net found revenues will continue to be determined according to the "Decision Tree" process approved by the Commission on February 8, 2011, in Docket No. E-7, Sub 831.²
9. DEC will be allowed to recover a PPI for its DSM and EE portfolio based on a sharing of actually achieved and verified energy and peak demand savings (excluding those related to general programs and measures and research and development activities). Any PPI related to pilot programs is subject to additional qualifying criteria. Unless the Commission determines otherwise in an annual DSM/EE rider proceeding, the amount of the pre-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for

² Additionally, in its Order issued on August 21, 2015, in Docket No. E-7, Sub 1073, the Commission found that "it is reasonable, for purposes of this proceeding, for DEC to include negative found revenues associated with its current initiative to replace mercury vapor (MV) lighting with light emitting diode (LED) fixtures in the calculation of net found revenues used in the Company's calculation of NLR."

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

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

**SUMMARY OF 2020 MODIFICATIONS TO THE 2017 DEC DSM/EE
MECHANISM**

1. Addition of a Program Return Incentive (PRI) – The PRI is an incentive to encourage DEC to pursue savings from existing and new low-income DSM/EE programs, and to maintain and increase the cost effectiveness of these programs. For these types of programs, the PRI initially will be based on 10.6% of the net present value of the avoided costs savings achieved by those DSM and EE programs. The percentage ultimately used to determine the PRI for each Vintage Year will be based on the Company's ability to maintain or improve the cost effectiveness of the PRI-eligible programs over and above that initially estimated for the Vintage Year. At no time will the PRI percentage utilized fall below 2.65% or rise above 13.25%.
2. Reduction of PPI Percentage – Beginning with Vintage Year 2022, the PPI percentage is reduced from 11.50% to 10.60%.
3. Cap and Floor on PPI - The amount of pre-tax PPI allowed will not exceed or fall below the amount that produces a specified margin over the aggregate pre-tax program costs for the PPI-eligible programs. The maximum margin is set at 19.50% for Vintage Year 2022 and afterward, until completion of the next Mechanism review. Additionally, a minimum margin over aggregate pre-tax program costs for PPI-eligible programs will be established at 10% for Vintage Year 2022, 6% for Vintage Year 2023, and 2.50% for Vintage Year 2024 and afterward, until completion of the next Mechanism review.
4. Clarification of the Criteria for Bundling Measures within Programs – Measures bundled within a DSM/EE program must be consistent with and related to the measure technologies or delivery channels of the program, unless otherwise ordered by the Commission.
5. Use of the Utility Cost Test (UCT) – The test used to calculate the prospective cost-effectiveness of new and ongoing programs is changed from the Total Resource Cost (TRC) Test to the UCT.
6. Review of Avoided Transmission and Distribution (T&D) Costs – The Public Staff and DEC will review avoided T&D costs no later than December 31, 2021 and make recommendations for any adjustment in the rider proceedings thereafter. Avoided T&D costs will be reviewed at least every three years and will be updated if they change by at least 20%.
7. Additional Incentive and Penalty - If the Company achieves annual energy savings of 1.0% of the prior year's system retail electricity sales in any year during the four-year period of 2022-2025, it will receive an additional incentive of \$500,000 for that year. During that same period, if the Company fails to achieve annual energy savings of 0.5% of retail sales, net of sales associated with customers opting out

of the Company's EE programs, it will reduce its EE revenue requirement by \$500,000.

8. Non-Energy Benefits - The definition of the TRC Test is revised to provide that non-energy benefits, as approved by the Commission, may be considered in the determination of TRC results.

**COST RECOVERY AND INCENTIVE MECHANISM OF DUKE ENERGY
CAROLINAS, LLC, FOR DEMAND-SIDE MANAGEMENT AND ENERGY
EFFICIENCY PROGRAMS**

(Docket No. E-7, Sub 1032, as Modified by the Commission, to be Effective January 1, 2022)

The purpose of this Mechanism is to (1) allow Duke Energy Carolinas, LLC (Duke Energy Carolinas or the Company), to recover all reasonable and prudent costs incurred for adopting and implementing new demand-side management (DSM) and new energy efficiency (EE) measures in accordance with N.C. Gen. Stat. § 62-133.9, Commission Rules R8-68 and R8-69, prior Orders of the Commission, and the additional principles set forth below; (2) establish certain requirements, in addition to those of Commission Rule R8-68, for requests by Duke Energy Carolinas for approval of DSM and EE programs; (3) establish the terms and conditions for the recovery of Net Lost Revenues and a Portfolio Performance Incentive (PPI) to reward Duke Energy Carolinas for adopting and implementing new DSM and EE measures and programs in cases where the Commission deems such recovery and reward appropriate, and (4) provide for an additional incentive to further encourage kilowatt-hour (kWh) savings achievements. The definitions set out in N.C. Gen. Stat. § 62-133.8 and N.C. Gen. Stat. § 62-133.9 and Commission Rules R8-68 and R8-69 apply to this Mechanism. For purposes of this Mechanism, the definitions listed below also apply.

Changes in the terms and conditions of this Mechanism shall be applied prospectively only, to vintage years following any Commission order amending these terms and conditions. Approved programs and measures shall continue to be subject to the terms and conditions that were in effect when they were approved with respect to the recovery of reasonable and prudent costs and Net Lost Revenues. With respect to the recovery of the PPI, approved programs and measures shall continue to be subject to the terms and conditions in effect in the vintage year that the measurement unit was installed.

Definitions

1. *Common costs* are costs that are not attributable or reasonably assignable or allocable to specific DSM or EE programs but are necessary to design, implement, and operate the programs collectively.
2. *Costs* include program costs (including those of pilot programs approved by the Commission for inclusion in the Mechanism), common costs, and, subject to Rule R8-69(b), any other costs approved by the Commission for inclusion in the Mechanism. *Costs* include only those expenditures appropriately allocable to the North Carolina retail jurisdiction.
3. *Low-Income Programs or Low-Income Measures* are DSM or EE programs or DSM or EE measures approved by the Commission as programs or measures provided specifically to low-income customers.

4. *Measure* means, with respect to EE, an "energy efficiency measure," as defined in N.C. Gen. Stat. § 62-133.8(a)(4), that is new under G.S. 62-133.9(a); and, with respect to DSM, an activity, initiative, or equipment, physical, or program change, that is new under N.C. Gen. Stat. § 62-133.9(a) and satisfies the definition of "demand-side management" as set forth in N.C. Gen. Stat. § 62-133.8(a)(2).

5. *Measurement unit* means the basic unit that is used to measure and track the (a) incurred costs; (b) Net Lost Revenues; and (c) net kilowatt (kW), kWh, and dollar savings net of Net-to-Gross (NTG) for DSM or EE measures installed in each vintage year. A measurement unit may consist of an individual measure or bundles of measures. Measurement units shall be requested by Duke Energy Carolinas and established by the Commission for each program in the program approval process, and shall be subject to modification by the Commission when appropriate. If measurement units have not been established for a particular program, the measurement units for that program shall be the individual measures, unless the Commission determines otherwise.

6. *Measurement unit's life* means the estimated number of years that equipment or customer treatment associated with a measurement unit will operate if properly maintained or activities associated with the measurement unit will continue to be cost-effective, and produce energy (kWh) or peak demand (kW) savings, unless the Commission determines otherwise.

7. *Net Found Revenues* means any increases in revenues resulting from any activity by Duke Energy Carolinas' public utility operations that causes a customer to increase demand or energy consumption, whether or not that activity has been approved pursuant to Rule R8-68. The dollar value of Net Found Revenues will be determined in a manner consistent with the determination of the dollar value of NLR provided in Paragraph No. 8 below. In determining which activities constitute Net Found Revenues, the "decision tree" adopted by Order in Docket No. E-7, Sub 831 on February 8, 2011, should be applied. Net Found Revenues may be reduced, if such reduction is approved as reasonable and appropriate by the Commission, by a decrease in revenues resulting from an activity by Duke Energy Carolinas' public utility operations that causes a customer to reduce demand or energy consumption (negative found revenues). To be approved, it must be demonstrated that the activity producing the negative found revenues reduces the profitability of the Company. Additionally, the total amount of Net Found Revenues for a given vintage year will not be reduced to a level below zero by the inclusion of negative found revenues.

8. *Net Lost Revenues* means Duke Energy Carolinas' revenue losses, net of marginal costs avoided at the time of the lost kWh sale(s), or in the case of purchased power, in the applicable billing period, incurred by Duke Energy Carolinas' public utility operations as the result of a new DSM or EE measure. A PPI shall not be considered in the calculation of Net Lost Revenues or Net Lost Revenue recovery.

9. *Net-to-gross (NTG) factor* means an adjustment factor used to compute the net kW/kWh savings by accounting for but not limited to such behavioral effects as rebound, free ridership, moral hazard, free drivers, and spillover.

10. *Program* means a collection of new DSM or EE measures with similar objectives that have been consolidated for purposes of delivery, administration, and cost recovery, and that have been or will be adopted on or after January 1, 2007, including subsequent changes and modifications.

11. *Program costs* are costs that are attributable to specific DSM or EE programs and include all appropriate capital costs (including cost of capital and depreciation expenses), common costs, reasonably assignable or allocable administrative and general costs, implementation costs, incentive payments to program participants, operating costs, and evaluation, measurement, and verification (EM&V) costs, net of any grants, tax credits, or other reductions in cost received by the utility from outside parties.

12. *Portfolio Performance Incentive (PPI)* means a utility incentive payment to Duke Energy Carolinas as a bonus or reward for adopting and implementing new (as defined in N.C. Gen. Stat. § 62-133.9(a)) EE or DSM measures and/or Programs. The PPI is based on the sharing of avoided cost savings, net of Program Costs, achieved by those DSM and EE Programs in the aggregate. The PPI is also subject to certain limitations as further set forth in this Mechanism. PPI excludes Net Lost Revenues.

13. *Program Return Incentive (PRI)* means a utility incentive payment to Duke Energy Carolinas for adopting and implementing programs that fail to pass the Utility Cost Test, but are approved by the Commission due to the societal benefit they provide, such as low-income programs. For these types of programs, the PRI will be based on a percentage of the net present value of the avoided costs savings achieved by those DSM and EE Programs. The PRI is subject to certain additional factors and limitations, as further set forth in this Mechanism.

14. *Total Resource Cost (TRC) test* means a cost-effectiveness test that measures the net costs of a DSM or EE program as a resource option based on the total costs of the program, including both the participants' costs and the utility's costs (excluding incentives paid by the utility to or on behalf of participants). The benefits for the TRC test are avoided supply costs, i.e., the reduction in generation capacity costs, transmission and distribution costs, and energy costs caused by a load reduction. The avoided supply costs shall be calculated using net program savings, i.e., savings net of changes in energy use that would have happened in the absence of the program. Non-energy benefits, as approved by the Commission, may be considered in the determination of TRC results. The costs for the TRC test are the net program or portfolio costs incurred by the utility and participants, and the increased supply costs for any periods in which load is increased. All costs of equipment, installation, operation and maintenance (O&M), removal (less salvage value), and administration, no matter who pays for them,

are included in this test. Any tax credits are considered a reduction to costs in this test.

15. *Utility Cost Test* (UCT) means a cost-effectiveness test that measures the net costs of a DSM or EE program as a resource option based on the costs incurred by the utility (including incentive costs paid by the utility to or on behalf of participants) and excluding any net costs incurred by the participant. The benefits for the UCT are avoided supply costs, i.e., the reduction in generation capacity costs, transmission and distribution costs, and energy costs caused by a load reduction. The avoided supply costs shall be calculated using net program savings, i.e., savings net of changes in energy use that would have happened in the absence of the program. The costs for the UCT are the net program or portfolio costs incurred by the utility and the increased supply costs for any periods in which load is increased. Utility costs include initial and annual costs, such as the cost of utility equipment, O&M, installation, program administration, incentives paid to participants and participant dropout and removal of equipment (less salvage value).

16. *Vintage year* means an identified 12-month period in which a specific DSM or EE measure is installed for an individual participant or group of participants.

Term

17. This Mechanism shall continue until terminated pursuant to Order of the Commission.

Application for Approval of Programs

18. In evaluating potential DSM/EE measures and programs for selection and implementation, Duke Energy Carolinas will first perform a qualitative measure screening to ensure measures are:

- (a) Commercially available and sufficiently mature.
- (b) Applicable to the Duke Energy Carolinas service area demographics and climate.
- (c) Feasible for a utility DSM/EE program.

19. Duke Energy Carolinas will then further screen EE and DSM measures for cost-effectiveness. For purposes of this screening, estimated incremental EM&V costs attributable to the measures shall be included in the measures' costs. With the exception of measures included in Low-Income Programs or other non-cost-effective programs with similar societal benefits as approved by the Commission, an EE or DSM measure with an estimated UCT result less than 1.0 will not be considered further, unless the measure can be

bundled into an EE or DSM Program to enhance the overall cost-effectiveness of that program. Measures under consideration for bundling, whether as part of a new Program or into an existing Program, should, unless otherwise approved by the Commission, be consistent with and related to the measure technologies, and/or delivery channels currently offered in the existing Program or to be otherwise offered in the new Program.

20. With the exception of Low-Income Programs or other non-cost-effective programs with similar societal benefits as approved by the Commission, all programs submitted for approval will have an estimated UCT result greater than 1.00. Additionally, for purposes of calculating cost-effectiveness for program approval, consistent with the Commission's Orders in Docket Nos. E-7, Sub 1130 and E-7, Sub 1164, the Company shall use projected avoided capacity and energy benefits specifically calculated for the program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities as of the date of the filing for the new program approval.

20A. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility. For

purposes of determining cost-effectiveness, estimated incremental EM&V costs attributable to each program shall be included in program costs. Duke Energy Carolinas will comply, however, with Rule R8-60(i)(6)(iii), which requires that Duke Energy Carolinas' biennial Integrated Resource Plan, revised as applicable in its annual report, include certain information regarding the measures and programs that it evaluated but rejected.

20B. Moreover, for the Calculation of the underlying avoided capacity benefits, when authorized pursuant to Commission Rule R8-69(c) and unless the Commission determines otherwise in a G.S. 62-133.9 DSM/EE Rider proceeding, the Company shall be permitted to recognize the impact of the Reserve Margin Adjustment Factor used in the determination of the PPI and PRI values for its energy efficiency programs.

The Reserve Margin Adjustment Factor is equivalent to $(1 + \text{Reserve Margin}) / (\text{Performance Adjustment Factor})$ and will be applied to the avoided capacity costs of all energy efficiency programs.

The Reserve Margin employed shall be based upon the value reflected in the most recent Commission accepted Integrated Resource Plan proceeding as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. The Performance Adjustment Factor employed shall be based upon value reflected in the most recent Commission approved Biennial Avoided Cost

proceeding as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing.

21. If a program fails the economic test in Paragraph 20 above, Duke Energy Carolinas will determine if certain measures can be removed from the program to satisfy the criteria established in Paragraph 20.

22. Nothing in this Mechanism relieves Duke Energy Carolinas from its obligation to comply with Commission Rule R8-68 when filing for approval of DSM or EE measures or programs. As specifically required by Rule R8-68(c)(3)(iii), Duke Energy Carolinas shall, in its filings for approval of measures and programs, describe in detail the industry-accepted methods to be used to collect and analyze data; measure and analyze program participation; and evaluate, measure, verify, and validate estimated energy and peak demand savings. Duke Energy Carolinas shall provide a schedule for reporting the results of this EM&V process to the Commission. The EM&V process description should describe not only the methodologies used to produce the impact estimates utilized, but also any methodologies the Company considered and rejected. Additionally, if Duke Energy Carolinas plans to use an independent third party for purposes of EM&V, it shall identify the third party and include all third-party costs in its filing.

23. For those programs first approved in Duke Energy Carolinas' South Carolina jurisdiction and subsequently in its North Carolina jurisdiction, net dollar savings achieved in the South Carolina jurisdiction will be eligible for consideration

of inclusion in the determination of the incentive to be approved by the Commission.

Program Management

24. In each annual DSM/EE cost recovery filing, Duke Energy Carolinas shall (a) perform prospective cost-effective test evaluations for each of its approved DSM and EE programs, (b) perform prospective aggregated portfolio-level cost-effectiveness test evaluations for its approved DSM/EE programs (including any common costs not reasonably assignable or allocable to individual programs), and (c) include these prospective cost-effectiveness test results in its DSM/EE rider application.

25. Consistent with the Commission's Orders in Docket Nos. E-7, Sub 1130 and E-7, Sub 1164, for purposes of calculating prospective cost-effectiveness in each DSM/EE rider proceeding to be used to determine whether a program should remain in the portfolio, the Company shall assess each program by:

a. Using projected avoided capacity and energy benefits specifically calculated for each program, as derived from the underlying resource plan, production cost model, and cost inputs that generated the avoided capacity and avoided energy credits reflected in the most recent Commission-approved Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities as of December 31 of the year immediately preceding the date of the

annual DSM/EE rider filing. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility; and,

b. Evaluating each cost-effectiveness test using projections of participation, savings, program costs, and benefits for the upcoming vintage year.

26. The parties acknowledge that prospective cost-effectiveness evaluations are snapshots of the program's performance, and that ongoing cost-effectiveness is impacted by many factors outside the Company's control, including but not limited to market and economic conditions, avoided costs, and government mandates. The parties shall continue to work to maintain the cost-effectiveness of its portfolio and individual programs. However, for any program that initially demonstrates a UCT, determined pursuant to Paragraph 24 above of less than 1.00, the Company shall include a discussion in its annual DSM/EE rider proceeding of the actions being taken to maintain or improve cost-effectiveness, or alternatively, its plans to terminate the program.

27. For programs that demonstrate a prospective UCT, determined pursuant to Paragraph 24 above, of less than 1.00 in a second DSM/EE rider proceeding, the Company shall include a discussion of what actions it has taken

to improve cost-effectiveness. Fluctuations of UCT above and below 1.0 should be addressed on a case by case basis.

28. For programs that demonstrate a prospective UCT, determined pursuant to Paragraph 24 above, of less than 1.00 in a third DSM/EE rider proceeding, the Company shall terminate the program effective at the end of the year following the DSM/EE rider order, unless otherwise ordered by the Commission.

29. The Company will seek to leverage available state and federal funds to operate effective efficiency programs. Its application for such funds will be transparent with respect to the cost, operation, and profitability of programs operated with those funds in a manner consistent with its authorized revenue recovery mechanism. Use of such funds helps offset the participant's project costs and is supplemental to Duke Energy Carolinas' incentives to participants. As such, these funds will not change the impacts or cost-effectiveness of Duke Energy Carolinas' programs as calculated using the UCT. Further, the amount of avoided costs recognized by the Company will not be reduced if participants also use state or federal funds to offset any portion of their project costs.

Program Modifications

30. Modifications to Commission-approved DSM/EE programs will be made using the Flexibility Guidelines filed on February 6, 2012, in Docket No. E-7, Sub 831, and approved July 16, 2012, by the Commission. Modifications filed

with the Commission for approval will be evaluated under the same guidelines and parameters used in DEC's most recently filed DSM/EE rider proceeding.

31. If under the Flexibility Guidelines Commission approval of a modification is required, the Company shall file a petition prior to the implementation of the program change no later than 30 days prior to the proposed effective date, pursuant to Commission Rule R8-68.

32. If under the Flexibility Guidelines advance notice is required, Duke Energy Carolinas shall file all program changes no later than 45 days prior to the proposed effective date of the change using the Advance Notice Program Modifications Reporting Template (Template). If any party has concern about the proposed program modification, it shall file comments with the Commission within 25 days of the Company's filing.

33. The Company shall file on a quarterly basis using the Template a notification of all program changes that have been made without Commission preapproval or advance notice.

34. Whenever a change in a program or measure goes into effect, the baseline cost effectiveness test results should be reset for the purposes of applying the Flexibility Guidelines to subsequent modifications.

Evaluation, Measurement and Verification

35. EM&V of programs, conducted by an independent third-party using a nationally-recognized protocol, will be performed to ensure that programs remain cost-effective. This protocol may be modified with approval of the Commission to reflect the evolution of best practices.

36. EM&V will also include updates of any net-to-gross (NTG) factors related to previous NTG estimates for programs and measures. All of the updated information will be used in evaluating the continued cost-effectiveness of existing programs, but updates to NTG estimates will not be applied retrospectively to measures that have already been installed or programs that have already been completed. If it becomes apparent during the implementation of a program that NTG factors are substantially different than anticipated, the Company will file appropriate program adjustments with the Commission.

37. Pursuant to the EM&V Agreement approved by the Commission in Docket No. E-7, Sub 979, for the Company's EE programs, with the exception of the Non-Residential SmartSaver Custom Rebate Program, initial EM&V results shall be applied retrospectively to the beginning of the program offering to replace initial estimates of impacts. 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.

38. EM&V for the Non-Residential SmartSaver Custom Rebate Program does not apply retrospectively and this program shall be trued up based on the actual participants and actual projects undertaken.

Opt-Outs for Industrial Customers and Certain Commercial Customers

39. Pursuant to Commission Rule R8-69(d), commercial customers with annual consumption of 1,000,000 kWh or greater in the billing months of the prior calendar year and all industrial customers may, by meeting certain requirements, elect not to participate in DSM/EE measures for which cost recovery is allowed through the DSM/EE rider and the DSM/EE EMF rider. For purposes of application of this option, a customer is defined as a metered account billed under a single application of a Company rate tariff. For commercial accounts, once one account meets the opt-out eligibility requirement, all other accounts billed to the same entity with lesser annual usage located on the same or contiguous properties are also eligible to opt out of the DSM/EE rider and the DSM/EE EMF rider.

40. Pursuant to the Commission's Orders in Docket No. E-7, Sub 938, eligible non-residential customers may opt out of either or both of the DSM and EE categories of programs for one or more vintage years, as well as opt back into

either or both the categories for a later vintage year. If a customer opts back into the DSM category, it cannot opt out again for three years; however, a customer has the freedom to opt in or out of the EE category for each vintage year. Additionally, if a customer opts out of paying the Rider for a vintage year after one or more in which the customer was “opted in”; the Company can 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.

41. Eligible customers may opt out of the Company’s EE or DSM programs each calendar year during the annual two-month enrollment period between November 1 and December 31 immediately prior to a new DSM/EE rider becoming effective on January 1. Eligible new customers have sixty days after beginning service to opt out.

42. In addition to the two month opt out period between November 1 and December 31 prior to the new DSM/EE rider becoming effective, during the first week of March (5 business days), customers who have previously opted out may elect to opt in and participate in EE and/or DSM programs during the remainder of the vintage year. Any customer choosing to opt in during the March window would be back-billed for the rider amount that they would have paid had the chosen to participate during the November/December enrollment period.

Collaborative

43. Duke Energy Carolinas will continue to conduct quarterly collaborative stakeholder meetings for the purpose of collaborating on new program ideas, reviewing modifications to existing programs, ensuring an accurate public understanding of the programs and funding, reviewing the EM&V process, giving periodic status reports on program progress, helping to set EM&V priorities, providing recommendations for the submission of applications to revise or extend programs and rate structures, and guiding efforts to expand cost-effective programs for low-income customers.

44. The Collaborative should continue to be comprised of a broad spectrum of regional stakeholders that represent a balanced interest in the Company's DSM/EE effort and its impacts, as well as national EE advocates and experts. A third party may facilitate the discussions. The collaborative will continue to determine its own rules of operation, including the process for setting the agendas and activities of the group, consistent with these terms. Members agree to participate in the advisory group in good faith consistent with mutually-agreed upon rules of participation. Meetings are open to additional parties who agree to the participation rules.

45. Duke Energy Carolinas will provide information related to the development of EE and DSM to stakeholders in a transparent manner. The Company agrees to disclose program-related data at a level of detail similar

to that which it has disclosed in other states or as disclosed by other regulated utilities in the Carolinas. The Company will share all aspects of the development and evaluation of programs, including the EM&V process.

46. At its discretion, the Company may require confidentiality agreements with members who wish to review confidential data or any calculations that could be used to determine the data. Disclosure of this data would harm Duke Energy Carolinas competitively and could result in financial harm to its customers.

47. Participation in the advisory group shall not preclude any party from participating in any Commission proceedings.

General Structure of Riders

48. All DSM/EE and DSM/EE EMF riders shall be calculated and charged to customers based on the revenue requirements for each separate vintage year. Separate DSM/EE and DSM/EE EMF riders shall be calculated for the Residential customer class and those rate schedules within the Non-Residential customer class that have Duke Energy Carolinas DSM/EE program options in which they can participate. One integrated (prospective) DSM/EE rider and one integrated DSM/EE EMF rider shall be calculated for the Residential class, to be effective each rate year. The integrated Residential DSM/EE EMF rider shall include all true-ups for each vintage year appropriately considered in each proceeding. Pursuant to the Commission's Orders in Docket No. E-7, Sub 938, separate DSM and EE billing factors shall be calculated for the Non-

Residential class. Additionally, the Non-Residential DSM and EE EMF billing factors shall be 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.

48A. The annual filing date of DEC's DSM/EE rider application, supporting testimony, and exhibits will be no later than 98 days prior to the hearing date prescribed by Commission Rule (currently the first Tuesday of June of each calendar year). Should the Company become aware prior to filing of a determined or possible change in the hearing date, the Company shall strive to file its application and associated documents no later than 98 days prior to the changed hearing date.

48B. DEC shall not request that the annual hearing to consider the proposed DSM/EE and DSM/EE EMF riders be held sooner than 98 days after the filing date of the Company's application, supporting testimony, and Exhibits.

Cost Recovery

49. As provided in Rule R8-69 and N.C. Gen. Stat. § 62-133.9(d), Duke Energy Carolinas shall be allowed to recover, through the DSM/EE rider, all reasonable and prudent costs reasonably and appropriately estimated to be

incurred in expenses during the current rate period for DSM and EE programs that have been approved by the Commission under Rule R8-68. As permitted by N.C. Gen. Stat. § 62-133.9(d), any of the Stipulating Parties may propose a procedure for the deferral and amortization in future DSM/EE riders of all or a portion of Duke Energy Carolinas' reasonable and prudent costs to the extent those costs are intended to produce future benefits.

50. The DSM/EE EMF rider shall reflect the difference between the reasonable and prudent costs incurred during the applicable test period (vintage year) and the revenues actually realized during such test period under the DSM/EE rider then in effect.

51. The cost and expense information filed by Duke Energy Carolinas pursuant to Commission Rules R8-68(c) and R8-69(f) shall be categorized by measurement unit or program, as applicable, and vintage year, consistent with the presentation included in the Company's application.

52. In accordance with Commission Rule R8-69(b)(6), Duke Energy Carolinas may implement deferral accounting for over- and underrecoveries of costs that are eligible for recovery through the annual DSM/EE rider. 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 Duke Energy Carolinas' then most recent general rate case. The methodology used for the calculation of interest shall be the same as that typically utilized for the Company's Existing DSM Program rider

proceeding (taking into account any extensions of the EMF measurement period pursuant to Commission Rule R8-69(b)(2)). Pursuant to Commission Rule R8-69(c)(3), the Company is not allowed to accrue a return on Net Lost Revenues or the PPI.

53. For purposes of cost recovery through the DSM/EE and DSM/EE EMF riders, system-level costs shall be allocated to the North Carolina retail jurisdiction by use of the North Carolina and South Carolina allocation determinants in the following manner (no costs of any approved DSM or EE program will be allocated to the wholesale jurisdiction):

(a) For EE programs, the costs of each program will be allocated based on the annual energy requirements of North Carolina and South Carolina retail customers (grossed up for line losses), as reflected in the annual cost of service studies.

(b) For DSM programs, the aggregated costs of DSM programs will be allocated based on the annual summer coincident peak demand of North Carolina and South Carolina retail customers, as reflected in the annual cost of service studies.

54. The allocation factors and inputs used to allocate the estimated rate period costs of DSM and EE programs shall be those drawn from the most recently filed cost of service study at the time the annual cost recovery filing is made. The allocations of costs shall be trued up at the time that finalized and trued-up costs

for a given test period are initially passed through the DSM/EE EMF, using the most recently filed cost of service study at the time the filing is made (but for no later year than the vintage year being trued up). For subsequent true-ups of that vintage year, the cost of service study used will be the same as that used for the initial true-up.

55. For purposes of recovery through the DSM/EE and DSM/EE EMF riders, the Company's North Carolina retail jurisdictional costs for approved DSM and EE programs and measures shall be assigned or allocated to North Carolina retail customer classes as follows. For EE programs offered to Residential or Non-Residential customers, the North Carolina retail jurisdictional costs will be directly assigned to the customer group to which the program is offered. For DSM programs, the aggregated North Carolina retail jurisdictional cost of those programs will be allocated to the Residential and Non-Residential classes based on the contribution of each class to the North Carolina retail jurisdictional peak demand used to make the jurisdictional allocation. The process of estimating and truing up the class assignments and allocations will be the same as practiced for jurisdictional allocations.

Net Lost Revenues

56. Unless otherwise ordered by the Commission, when authorized pursuant to Rule R8-69(c), Duke Energy Carolinas shall be permitted to recover,

through the DSM/EE and DSM/EE EMF riders, Net Lost Revenues associated with the implementation of approved DSM or EE measurement units, subject to the restrictions set out below.

57. The North Carolina retail kWh sales reductions that result from an approved measurement unit installed in a given vintage year shall be eligible for use in calculating Net Lost Revenues eligible for recovery only for the first 36 months after the installation of the measurement unit. Thereafter, such kWh sales reductions will not be eligible for calculating recoverable Net Lost Revenues for that or any other vintage year.

58. Programs or measures with the primary purpose of promoting general awareness and education of EE and DSM activities, as well as research and development activities, are ineligible for the recovery of Net Lost Revenues.

59. In order to recover estimated Net Lost Revenues associated with a pilot program or measure, Duke Energy Carolinas must, in its application for program or measure approval, demonstrate (a) that the program or measure is of a type that is intended to be developed into a full-scale, Commission-approved program or measure, and (b) that it will implement an EM&V plan based on industry-accepted protocols for the program or measure. No pilot program or measure will be eligible for Net Lost Revenue recovery upon true-up unless it (a) is ultimately proven to have been cost-effective, and (b) is developed into a full-scale, commercialized program.

60. Notwithstanding the allowance of 36 months' Net Lost Revenues associated with eligible kWh sales reductions, the kWh sales reductions that result from measurement units installed shall cease being eligible for use in calculating Net Lost Revenues as of the effective date of (a) a Commission-approved alternative recovery mechanism that accounts for the eligible Net Lost Revenues associated with eligible kWh sales reductions, or (b) the implementation of new rates approved by the Commission in a general rate case or comparable proceeding to the extent the rates set in the general rate case or comparable proceeding are set to explicitly or implicitly recover the Net Lost Revenues associated with those kWh sales reductions.

61. Recoverable Net Lost Revenues shall be calculated in a manner that appropriately reflects the incremental revenue losses suffered by the Company, net of avoided fuel and non-fuel variable O&M expenses.

62. Total Net Lost Revenues as measured for the 36-month period identified in paragraph 57 above shall be reduced by Net Found Revenues during the same periods (offset by any negative found revenues found appropriate and reasonable by the Commission pursuant to the provisions of Paragraph 7 of this Mechanism and other factors deemed applicable by the Commission). The "decision tree" adopted by Order in Docket No. E-7, Sub 831 on February 8, 2011, should be applied for determining what constitutes Net Found Revenues. Duke Energy Carolinas shall closely monitor its utility activities to determine if they are causing a customer to increase demand or consumption, and shall identify and

track all such activities with the aid of the “decision tree,” so that they may be evaluated by intervening parties and the Commission as potential Net Found Revenues. Net found revenues shall be calculated in an appropriate and reasonable manner that mirrors the calculation used to determine Net Lost Revenues.

63. Recoverable Net Lost Revenues shall ultimately be based on kWh sales reductions and kW savings verified by the EM&V process and approved by the Commission. Recoverable Net Lost Revenues shall be estimated and trued-up, on a vintage year basis, as follows:

- (a) As part of the DSM/EE rider approved in each annual cost and incentive recovery proceeding, Duke Energy Carolinas shall be allowed to recover the appropriate and reasonable level of recoverable Net Lost Revenues associated with each applicable program and vintage year (subject to the limitations set forth in this Mechanism), estimated to be experienced during the rate period for which the DSM/EE rider is being set.
- (b) Net lost revenues related to any given program/measure and vintage year shall be trued-up through the DSM/EE EMF rider in subsequent annual cost and incentive recovery proceedings based on the Commission-approved results of the appropriate EM&V studies related to the program/measure and vintage year, as determined pursuant to the EM&V Agreement.

- (c) The true-up shall be calculated based on the difference between projected and actual recoverable Net Lost Revenues for each measurement unit and vintage year under consideration, accounting for any differences derived from the completed and reviewed EM&V studies, including: (1) the projected and actual number of installations per measurement unit; (2) the projected and actual net kWh and kW savings per installation; (3) the projected and actual gross lost revenues per kWh and kW saved; and (4) the projected and actual deductions from gross lost revenues per kWh and kW saved.
- (d) The reduction in Net Lost Revenues due to Net Found Revenues (offset by any approved and applicable negative found revenues) shall be trued up in a manner consistent with the true-up of Net Lost Revenues.
- (e) The combined total of all vintage year true-ups calculated in a given year's Rule R8-69 proceeding shall be incorporated into the appropriate DSM/EE EMF billing factor.

64. Recoverable Net Lost Revenues shall be directly assigned to the program and vintage year with which they are associated.

Portfolio Performance Incentive (PPI) and Program Return Incentive (PRI)

65. When authorized pursuant to Rule R8-69(c), Duke Energy Carolinas shall be allowed to collect a PPI and PRI, as each is applicable, for its DSM/EE portfolio for each vintage year, separable into Residential, Non-Residential DSM,

and Non-Residential EE categories. The PPI and PRI, as applicable, shall be subject to the restrictions set out below.

66. Programs or measures with the primary purpose of promoting general awareness of and education about EE and DSM activities, as well as research and development activities, are ineligible to be included in the portfolio for purposes of the PPI or PRI calculations.

67. Unless (a) the Commission approves Duke Energy Carolinas' specific request that a pilot program or measure be eligible for PPI or PRI inclusion when Duke Energy Carolinas seeks approval of that program or measure, and (b) the pilot is ultimately commercialized, pilot programs or measures are ineligible for and the benefits and costs associated with those pilots will not be factored into the calculation of the PPI or PRI.

68. In its annual filing, pursuant to Commission Rule R8-69(f), Duke Energy Carolinas shall file an exhibit that indicates, for each Program or Measure for which it seeks a PPI or PRI, the annual projected and actual utility costs, participant costs, number of Measurement Units installed, per kW and kWh impacts for each Measurement Unit, and per kW and kWh avoided costs for each Measurement Unit, consistent with the UCT, related to the applicable Vintage Year installations that it requests the Commission to approve. Upon its review, the Commission will make findings based on Duke Energy Carolinas' annual filing for

each Program or Measure that is included in an estimated or trued-up PPI or PRI calculation for any given Vintage Year.

69. Low-Income programs and other specified societal programs approved with expected UCT 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 until they demonstrate UCT results greater than 1.00. However, such programs will be eligible for the PRI, if so approved by the Commission, until they demonstrate UCT results greater than 1.00.

70. The PPI shall be based on net dollar savings for Duke Energy Carolinas' DSM/EE portfolio, as calculated using the UCT, on a total system basis. The North Carolina retail jurisdictional and class portions of the system-basis net dollar savings shall be determined in the same manner as utilized to determine the North Carolina retail jurisdictional and class portions of recoverable system costs.

71. Unless the Commission determines otherwise in an annual DSM/EE rider proceeding, and subject to the factors and limitations set forth elsewhere in this Mechanism, beginning for Vintage Year 2022, 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 10.60% multiplied by the present value of the estimated net dollar savings associated with the DSM/EE portfolio installed in that vintage year, calculated by DSM/EE program using the UCT (and excluding Low - Income

Programs and other specified societal programs). The present value of the estimated net dollar savings shall be the difference between the present value of the annual lifetime avoided cost savings for measurement units projected to be installed in that vintage year and the present value of the annual lifetime program costs for those measurement units. The annual lifetime avoided cost savings for measurement units installed in the applicable vintage year shall be calculated by multiplying the number of each specific type of measurement unit projected to be installed in that vintage year by the most current estimates of each lifetime year's per installation kW and kWh savings and by the most current estimates of each lifetime year's per kW and kWh avoided costs. In calculating the forecasted initial PPI it will be assumed that projections will be achieved.

72. Beginning with Vintage Year 2022, the dollar amount of the pre-tax PPI ultimately allowed for each Vintage Year, after true-up pursuant to Paragraph 83 of this Mechanism, shall be no greater than the dollar amount that produces a 19.50% margin over the aggregate pre-tax Program Costs for the Vintage Year of those programs in the Portfolio that are eligible for the PPI. Likewise, the dollar amount of the pre-tax PPI ultimately allowed for each Vintage Year, after true-up pursuant to Paragraph 83 of this Mechanism, shall be no less than the dollar amount that produces the following margins over the aggregate pre-tax Program Costs for the Vintage Year of those programs in the Portfolio that are eligible for the PPI.

Vintage Year 2022:	10.00%
Vintage Year 2023:	6.00%
Vintage Year 2024:	2.50%
Vintage Year 2025 and afterwards, until the next Mechanism review is completed:	2.50%

When making its initial estimates of the PPI pursuant to this Mechanism, Duke Energy Carolinas shall utilize the best and most accurate estimate of the margin and the resulting PPI percentage it can determine at that time.

73. At the outset of the application of this Mechanism, the entire PPI related to a vintage year shall be recoverable in the rate period covering that vintage year (subject to true-up). However, any of the Stipulating Parties may propose a procedure to convert a vintage year PPI into a stream of levelized annual payments not to exceed ten years through Vintage Year 2021, accounting for and incorporating Duke Energy Carolinas' overall weighted average net-of-tax rate of return approved in Duke Energy Carolinas' most recent general rate case as the appropriate discount rate. After Vintage Year 2021, the PPI will be recovered in the proceedings in which the applicable Vintage Year's revenue requirements are estimated or trued up. Levelized annual payments applicable to Programs in prior vintage periods will continue until all such amounts are recovered.

74. The PRI shall be based on the gross avoided costs of those programs eligible for the PRI. The North Carolina retail jurisdictional and class portions of the system-basis gross dollar savings shall be determined in the same manner as utilized to determine the North Carolina retail jurisdictional and class portions of recoverable system costs.

75. Unless the Commission determines otherwise in an annual N.C. Gen. Stat. § 62-133.9 DSM/EE rider proceeding, and subject to the factors and limitations set forth in this Mechanism, beginning for Vintage Year 2022 the amount of the pre-income-tax PRI initially to be recovered for Low Income Programs and other specified societal programs not eligible for a PPI shall be a percentage, as determined pursuant to this Mechanism, multiplied by the present value of the estimated gross dollar avoided cost savings associated with the applicable DSM/EE Programs installed in that Vintage Year, used in determination of the UCT. The present value of the estimated gross dollar savings shall be determined in the same manner as used for Programs eligible for the PPI.

76. The percentage used to determine the estimated PRI for each Vintage Year shall be 10.60%. This percentage will be multiplied by the Vintage Year avoided costs projected to be generated by each approved PRI-eligible program. When making its initial estimates of the PRI, DEP shall utilize the best and most accurate estimate of the UCT and the resulting PRI percentage it can determine at that time.

77. For the PPI and PRI for Vintage Years 2019 and afterwards, consistent with the Commission's Orders in Docket Nos. E-7, Sub 1130 and E-7, Sub 1164, the program-specific per kW avoided capacity benefits and per kWh avoided energy benefits used for the initial estimate of the PPI and PRI and any PPI or PRI 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 for Electric Utility Purchases from Qualifying Facilities as of December 31 of the year immediately preceding the date of the annual DSM/EE rider filing. However, for the calculation of the underlying avoided energy credits to be used to derive the program-specific avoided energy benefits, the calculation will be based on the projected EE portfolio hourly shape, rather than the assumed 24x7 100 MW reduction typically used to represent a qualifying facility.

78. No later than December 31, 2021, Duke Energy Carolinas and the Public Staff will jointly review the issue of the appropriate avoided T&D costs to be used in the Company's prospective calculations of cost-effectiveness and achieved net dollar savings, and, if appropriate, recommend in the Company's annual DSM/EE rider proceeding adjustments to the avoided T&D cost rates.

79. The per kW avoided transmission and avoided distribution (avoided T&D) costs used to calculate net savings for a Vintage Year shall be based on the

study update at least every three years only if the study update results in a 20% change from the prior study's avoided T&D costs.

80. Unless the Stipulating Parties agree otherwise, Duke Energy Carolinas shall not be allowed to update its avoided capacity costs and avoided energy costs after filing its annual cost and incentive recovery application for purposes of determining the DSM/EE and DSM/EE EMF riders in that proceeding.

81. When Duke Energy Carolinas files for its annual cost recovery under Rule R8-69, it shall comply with the filing requirements of Rule R8-69(f)(1)(iii), reporting all final measurement and verification data to assist the Commission and Public Staff in their review and monitoring of the impacts of the DSM and EE measures.

82. Duke Energy Carolinas bears the burden of proving all dollar savings and costs included in calculating the PPI and PRI. As provided in Rule R8-68(c)(3)(iii), Duke Energy Carolinas shall be responsible for the EM&V of energy and peak demand savings consistent with its EM&V plan.

83. The PPI and PRI for each vintage year shall ultimately be based on net or gross dollar savings, as applicable, as verified by the EM&V process and approved by the Commission. The PPI and PRI for each vintage year shall be trued-up as follows:

- (a) As part of the DSM/EE rider approved in each annual cost and incentive recovery proceeding, Duke Energy Carolinas shall be

allowed to recover an appropriately and reasonably estimated PPI and PRI (subject to the limitations set forth in this Mechanism) associated with the vintage year covered by the rate period in which the DSM/EE rider is to be in effect.

- (b) The PPI and PRI related to any given vintage year shall be trued-up through the DSM/EE EMF rider in subsequent annual cost and incentive recovery proceedings based on the Commission-approved results of the appropriate EM&V studies related to the program/measure and vintage year, as determined pursuant to the EM&V Agreement.
- (c) The PPI amount ultimately to be recovered for a given vintage year shall be based on the present value of the actual net dollar savings derived from all measurement units installed in that vintage year, as associated with each DSM/EE program offered during that year (excluding Low Income Programs and other specified societal programs), and calculated by DSM/EE program using the UCT. The present value of the actual net dollar savings shall be the difference between the present value of the annual lifetime avoided cost savings for measurement units installed in that vintage year and the present value of the annual lifetime program costs for those measurement units. The annual lifetime avoided cost savings for measurement units installed in the applicable vintage year shall be

calculated by multiplying the number of each specific type of measurement unit installed in that vintage year by each lifetime year's per installation kW and kWh savings (as verified by the appropriate EM&V study pursuant to the EM&V agreement) and by each lifetime year's per kW and kWh avoided costs as determined when calculating the initially estimated PPI for the vintage year. The ultimate PPI will also be subject to the additional factors and limitations set forth in this Mechanism. The Stipulating Parties agree to make all reasonable efforts to ensure that all vintages are fully trued-up within 24 months of the vintage program year.

- (d) The amount of the PRI ultimately to be recovered for a given Vintage Year shall be based on the present value of the actual gross dollar savings derived from all Measurement Units installed in that Vintage Year, as associated with each DSM/EE program offered during that year that is eligible for the PRI. Furthermore, the percentage used to determine the final PRI for each Vintage Year will be based on the Company's ability to maintain or improve the cost effectiveness of the PRI-eligible programs. The PRI percentage for each PRI-eligible Program will be determined by comparing (1) the projected UCT ratio for the portfolio of PRI-eligible Programs for the Vintage Year at the time of the Company's DSM Rider filing first estimating that projected Vintage Year UCT ratio to (2) the actual UCT ratio achieved for that

portfolio of PRI-eligible Programs as that Vintage Year is trued up in future filings. The ratio ($UCT_{\text{actual}} / UCT_{\text{estimate}}$) will then be multiplied by 10.60% to determine the PRI percentage that will be applied to the actual avoided costs generated by each approved PRI-eligible program. At no time will the PRI percentage utilized fall below 2.65% or rise above 13.25%. The present value of the estimated gross dollar savings shall be determined in the same manner as used for determining the recovery of the ultimate PPI. The ultimate PRI will also be subject to the additional factors and limitations set forth in this Mechanism. The Stipulating Parties agree to make all reasonable efforts to ensure that all vintages are fully trued-up within 24 months of the vintage program year.

- (e) A program's eligibility for a PPI or PRI will be determined at the time of filing the projection for a Vintage Year and will continue to be eligible for the same incentive at the time of the Vintage Year true-up.
- (f) If a program previously eligible for a PRI becomes cost effective under the UCT, it will no longer be eligible to receive a PRI in the next projected Vintage Year for the program, but will be eligible for the PPI.

84. The combined total of all vintage year true-ups of the PPI calculated in a given year's Rule R8-69 proceeding shall be incorporated into the appropriate DSM/EE EMF billing factor.

85. The PRI will be determined on the basis of the avoided costs employed in the determination of the UCT. PRI amounts will be assigned to the Program in which they were earned.

86. The PPI for each vintage year shall be allocated to DSM and EE programs in proportion to the present value net dollar savings of each program for the vintage year, as calculated pursuant to the method described herein.

Other Incentives

87. As further incentive to motivate the Company to aggressively pursue savings from cost-effective EE and DSM Programs, if the Company achieves annual energy savings of 1.0% of the prior year's Duke Energy Carolinas system retail electricity sales, in any year during the four-year 2022-2025 period, the Company will receive an additional incentive of \$500,000 for that year. During that same period, if the Company fails to achieve annual energy savings of 0.5% of retail sales, net of sales associated with customers opting out of the Company's EE programs, the Company will reduce its EE revenue requirement by \$500,000. Verification of this achievement will be obtained through the EM&V process discussed elsewhere in this Mechanism.

Financial Reporting Requirements

88. In its quarterly ES-1 Reports to the Commission, Duke Energy Carolinas shall calculate and present its primary North Carolina retail jurisdictional earnings by including all actual EE and DSM program revenues, including PPI and Net Lost Revenue incentives, and costs. Additionally, the Company shall prepare and present (a) supplementary schedules setting forth its North Carolina retail jurisdictional earnings excluding the effects of the PPI; (b) supplementary schedules setting forth its North Carolina retail jurisdictional earnings excluding the effects of the Company's EE and DSM programs; and (c) supplementary schedules setting forth earnings, including overall rates of return, returns on common equity, and margins over program costs actually realized from its EE and DSM programs in total and stated separately by program class (program classes are hereby defined to be (i) EE programs and (ii) DSM programs). Detailed workpapers shall be provided for each scenario described above. Such workpapers, at a minimum, shall clearly show actual revenues, expenses, taxes, operating income, rate base/investment, including components, and the applicable capitalization ratios and cost rates, including overall rate of return and return on common equity. Net lost revenues realized (estimated, if not known) for each reporting period shall be clearly disclosed as supplemental information.

Review of Mechanism

89. The terms and conditions of this Mechanism shall be reviewed by the Commission every four years unless otherwise ordered by the Commission. The Company and other parties shall submit any proposed changes to the Commission

for approval at the time of the filing of the Company's annual DSM/EE rider filing. During the time of review, the Mechanism shall remain in effect until further order of the Commission revising the terms of the Mechanism or taking such other action as the Commission may deem appropriate.

No Precedential Effect

90. The terms of this Mechanism, including the methods and results of determining the PPI and PRI, as well as the other incentives outlined in Paragraph 87, shall not be considered precedential for any purpose other than their application to eligible DSM/EE Programs and cost and utility incentive recovery associated with those Programs, and only until those terms are next partially or wholly reviewed.