

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1164

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

May 22, 2018

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

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

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

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

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

11   A.    The purpose of my testimony is to present my recommendations  
12           regarding the overall Demand-Side Management/Energy Efficiency  
13           (DSM/EE) rider (Rider 10) proposed by Duke Energy Carolinas, LLC  
14           (DEC or the Company), in its Application filed in this docket on  
15           March 7, 2018, pursuant to G.S. 62-133.9 and Commission Rule  
16           R8-69.

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

18   A.    My testimony begins with a review of the statutory framework for  
19           DSM/EE cost recovery by electric utilities and the historical  
20           background of DEC's Application in this docket. I then discuss the  
21           Company's proposed billing factors and other aspects of its filing.  
22           Following a summary of my investigation, I present my findings,

1 conclusions, and recommendations regarding approval of proposed  
2 Rider 10.

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

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

6 A. G.S. 62-133.9(d) allows a utility to petition the Commission  
7 for approval of an annual rider to recover (1) the reasonable and  
8 prudent costs of new DSM and EE measures and (2) other incentives  
9 to the utility for adopting and implementing new DSM and  
10 EE measures. However, G.S. 62-133.9(f) allows industrial and  
11 certain large commercial customers to opt out of participating in the  
12 power supplier's DSM/EE programs or paying the DSM/EE rider,  
13 if each such customer notifies its electric power supplier that it has  
14 implemented or will implement, at its own expense, alternative  
15 DSM and EE measures. Commission Rule R8-69, which was  
16 adopted by the Commission pursuant to G.S. 62-133.9(h),  
17 sets forth the general parameters and procedures governing  
18 approval of the annual rider, including but not limited to,  
19 (1) provisions for both (a) a DSM/EE rider to recover the estimated  
20 costs and utility incentives applicable to the "rate period" in which that  
21 DSM/EE rider will be in effect, and (b) a DSM/EE experience  
22 modification factor (EMF) rider to recover the difference  
23 between the DSM/EE rider in effect for a given test period

1 (plus a possible extension) and the actual recoverable amounts  
2 incurred during that test period; and (2) provisions for interest or  
3 return on amounts deferred and on refunds to customers.

4 The costs and utility incentives to be recovered via Rider 10 are all  
5 related to DSM and EE measures actually or expected to be installed  
6 or implemented during calendar years 2014-2019 (Vintage Years  
7 2014 through 2019). Therefore, DEC has calculated each proposed  
8 Rider 10 billing factor by use of the Cost Recovery and Incentive  
9 Mechanism (Mechanism) for Demand-Side Management and  
10 Energy Efficiency Programs approved on October 29, 2013, in  
11 Docket No. E-7, Sub 1032 (the Sub 1032 Order). Revisions to  
12 the Mechanism were approved by the Commission in the  
13 2017 DSM/EE rider proceeding, Docket No. E-7, Sub 1130  
14 (Revised Mechanism). The Revised Mechanism is the successor  
15 to the Modified Save-A-Watt Mechanism approved on  
16 February 9, 2010, in Docket No. E-7, Sub 831, which was in effect  
17 for Vintage Years 2009 through 2013 (referred to as Vintage Years  
18 1 through 4 in prior proceedings. In the following paragraphs, I will  
19 describe the essential characteristics of the Revised Mechanism;  
20 however, the Revised Mechanism includes and is subject to many  
21 additional and more detailed criteria than are set forth in this  
22 testimony.

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

3    A.    In the Sub 1032 Order, the Commission approved an Agreement and  
4           Stipulation of Settlement, filed on August 19, 2013, and amended on  
5           September 23, 2013, by and between DEC, the Public Staff, and  
6           certain other intervenors<sup>1</sup> (Sub 1032 Settlement), which incorporated  
7           the Mechanism at that time. However, as the result of discussions  
8           that took place during the Company's 2017 Sub 1130 proceeding,  
9           the Company and the Public Staff recommended certain changes to  
10          Paragraphs 19, 23, and 69 of the Mechanism, and the addition of  
11          new Paragraphs 23A through 23D. These revisions were set forth in  
12          Public Staff witness Maness Exhibit II filed in Sub 1130, and were  
13          approved as set forth therein by the Commission in its *Order*  
14          *Approving DSM/EE Rider, Revising DSM/EE Mechanism,*  
15          *and Requiring Filing of Proposed Customer Notice*, issued  
16          August 23, 2017 (Sub 1130 Order). For purposes of clarity and  
17          convenience, a copy of the entire Revised Mechanism is attached to  
18          my testimony in this docket as Maness Exhibit II.

19          The overall purpose of the Revised Mechanism is to (1) allow DEC  
20          to recover all reasonable and prudent costs incurred for adopting and

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<sup>1</sup> 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 implementing new DSM and new EE measures; (2) establish certain  
2 requirements, in addition to those of Commission  
3 Rule R8-68, for requests by DEC for approval, monitoring, and  
4 management of DSM and EE programs; (3) establish the terms and  
5 conditions for the recovery of certain utility incentives - net lost  
6 revenues (NLR) and a Portfolio Performance Incentive (PPI) to  
7 reward DEC for adopting and implementing new DSM and EE  
8 measures and programs; and (4) provide for an additional incentive  
9 to further encourage kilowatt-hour (kWh) savings achievements.  
10 The Revised Mechanism includes provisions addressing mechanism  
11 continuity and review, program modification flexibility, and the  
12 treatment of opted-out and opted-in customers, as well as provisions  
13 directly affecting the calculation of the DSM/EE and DSM/EE EMF  
14 riders. Among these provisions are the following:

- 15 1. With the exception of Low-Income Programs or certain other  
16 societally beneficial non-cost-effective programs approved by  
17 the Commission, all programs submitted for approval will have  
18 an estimated TRC and UCT test result greater than 1.00. For  
19 purposes of calculating cost-effectiveness for program  
20 approval, the Company shall use projected avoided capacity  
21 and energy benefits specifically calculated for the program, as  
22 derived from the underlying resource plan, production cost  
23 model, and cost inputs that generated the avoided capacity  
24 and avoided energy credits reflected in the most recent  
25 Commission-approved Biennial Determination of Avoided  
26 Cost Rates as of the date of the program approval filing, but  
27 using, for program-specific avoided energy benefits, the  
28 projected EE portfolio hourly shape rather than an assumed  
29 24x7 100 MW reduction.

- 1           2.     In each annual DSM/EE cost recovery filing, DEC shall  
2                 perform and file (a) prospective cost-effective test evaluations  
3                 for each of its approved DSM and EE programs, and (b)  
4                 prospective aggregated portfolio-level cost-effectiveness test  
5                 evaluations for its approved DSM/EE programs, using the  
6                 same methodology for determining avoided capacity and  
7                 energy benefits as set forth in the Revised Mechanism for  
8                 program approval, except that the reference Commission-  
9                 approved avoided cost credits shall be derived from those  
10                approved as of December 31 of the year immediately  
11                preceding the date of the annual DSM/EE rider filing. For any  
12                program that initially demonstrates a TRC, determined  
13                pursuant to paragraph 23A above of less than 1.00, the  
14                Company shall either terminate the program or undertake a  
15                process over the next two years to improve program cost-  
16                effectiveness. For programs that demonstrate a prospective  
17                TRC of less than 1.00 in a third DSM/EE rider proceeding after  
18                the initial non-cost-effective result, the Company shall  
19                terminate the program effective at the end of the year  
20                following the DSM/EE rider order, unless otherwise ordered  
21                by the Commission.
- 22           3.     Industrial and large commercial customers have the flexibility  
23                 to opt out of either or both of the DSM and EE categories of  
24                 programs for one or more vintage years, as well as the ability  
25                 to opt back into either or both the categories for a later vintage  
26                 year. If a customer opts back into the DSM category, it cannot  
27                 opt out again for three years; however, a customer has the  
28                 freedom to opt in or out of the EE category for each vintage  
29                 year. Additionally, if a customer opts out of paying the rider  
30                 for a vintage year after one or more years in which the  
31                 customer was "opted in," DEC may charge the customer  
32                 subsequent DSM/EE and DSM/EE EMF riders only for those  
33                 vintage years in which the customer actually participated in a  
34                 DSM/EE program.
- 35           4.     DSM/EE and DSM/EE EMF riders will be calculated on a  
36                 vintage year basis, with separate riders being calculated for  
37                 the Residential customer class and for those rate schedules  
38                 within the Non-Residential customer class that have DEC  
39                 DSM/EE program options in which they can participate.

- 1           5.       Incurred DSM and EE program costs will be directly recovered  
2               as part of the annual riders. Deferral accounting for over- and  
3               underrecoveries of costs is allowed, and the balance in the  
4               deferral account(s), net of deferred income taxes, may accrue  
5               a return at the net-of-tax rate of return approved in DEC's then  
6               most recent general rate case.
- 7           6.       DEC will be allowed to recover NLR as an incentive (with the  
8               exception of those amounts related to research and  
9               development or the promotion of general awareness and  
10              education of EE and DSM activities), but will be limited for  
11              each measurement unit installed in a given vintage year to  
12              those dollar amounts resulting from kWh sales reductions  
13              experienced during the first 36 months after the installation of  
14              the measurement unit. NLR related to pilot programs are  
15              subject to additional qualifying criteria.
- 16          7.       The eligibility of kWh sales reductions to generate recoverable  
17              NLR during the applicable 36-month period will cease upon  
18              the implementation of a Commission-approved alternative  
19              recovery mechanism that accounts for NLR, or new rates  
20              approved by the Commission in a general rate case or  
21              comparable proceeding.
- 22          8.       NLR will be reduced by net found revenues, as defined in the  
23              Revised Mechanism, that occur in the same 36-month period.  
24              Net found revenues will continue to be determined according  
25              to the "Decision Tree" process approved by the Commission  
26              on February 8, 2011, in Docket No. E-7, Sub 831.<sup>2</sup>
- 27          9.       DEC will be allowed to recover a PPI for its DSM and EE  
28              portfolio based on a sharing of actually achieved and verified  
29              energy and peak demand savings (excluding those related to  
30              general programs and measures and research and  
31              development activities). Any PPI related to pilot programs is  
32              subject to additional qualifying criteria. Unless the  
33              Commission determines otherwise in an annual DSM/EE rider  
34              proceeding, the amount of the pre-income-tax PPI initially to  
35              be recovered for the entire DSM/EE portfolio for a vintage year  
36              will be equal to 11.5% multiplied by the present value of the  
37              estimated net dollar savings associated with the DSM/EE  
38              portfolio installed in that vintage year. Low-income programs

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<sup>2</sup> 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."

1 with expected Utility Cost Test (UCT) results less than 1.00  
2 and other non-cost-effective programs with similar societal  
3 benefits as approved by the Commission will not be included  
4 in the portfolio for purposes of the PPI calculation. The PPI  
5 for each vintage year will ultimately be trued up based on net  
6 dollar savings as verified by the evaluation, measurement,  
7 and verification (EM&V) process and approved by the  
8 Commission. For Vintage Years 2019 and afterwards, the  
9 program-specific per kilowatt (kW) avoided capacity benefits  
10 and per kWh avoided energy benefits used for the initial  
11 estimate of the PPI and any PPI true-up will be derived from  
12 the underlying resource plan, production cost model, and cost  
13 inputs that generated the avoided capacity and avoided  
14 energy credits reflected in the most recent Commission-  
15 approved Biennial Determination of Avoided Cost Rates as of  
16 December 31 of the year immediately preceding the date of  
17 the annual DSM/EE rider filing, but using, for program-specific  
18 avoided energy benefits, the projected EE portfolio hourly  
19 shape rather than an assumed 24x7 100 MW reduction.

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

24 The Revised Mechanism adopted and continued certain  
25 requirements from several prior Commission orders.

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

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

30 A. In its Application and the supporting testimony and exhibits,  
31 DEC requested approval of 14 billing factors [including the  
32 North Carolina Regulatory Fee (NCRF)] comprising Rider 10,  
33 which is to be charged for service rendered during the rate period

1 January 1, 2019, through December 31, 2019. These proposed  
2 billing factors are set forth on Miller Exhibit 1, Pages 1 and 2.

3 For purposes of the Company's filing, the following vintage year time  
4 periods apply<sup>3</sup>:

5 Vintage Year 2014: The year ended December 31, 2014.

6 Vintage Year 2015: The year ended December 31, 2015.

7 Vintage Year 2016: The year ended December 31, 2016.

8 Vintage Year 2017: The year ended December 31, 2017.

9 Vintage Year 2018: The year ended December 31, 2018.

10 Vintage Year 2019: The year ended December 31, 2019.

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

13 A. DEC's proposed billing factors have the following general  
14 characteristics:

15 1. For Vintage Year 2019, proposed Rider 10 includes billing  
16 factors intended to recover estimated program costs and a PPI, as  
17 well as estimated calendar year 2019 NLR, applicable to DSM and  
18 EE measures projected to be installed or implemented during  
19 Vintage Year 2019, all subject to future true-up.

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<sup>3</sup> In addition to the applicable mechanism noted above, particular billing factors may also be subject to Commission rulings in Subs 831, 938, 979, and 1032, as well as the various annual DSM/EE cost and incentive recovery proceedings and individual program approval proceedings.

- 1           2.     For Vintage Year 2018, the proposed Rider includes billing  
2           factors (or components of billing factors) intended to prospectively  
3           recover estimated calendar year 2019 NLR associated with Vintage  
4           Year 2018 installations, subject to future true-up.
- 5           3.     For Vintage Year 2017, the proposed Rider includes  
6           billing factors (or components of billing factors) intended to  
7           (a) prospectively recover estimated calendar year 2019 NLR  
8           associated with Vintage Year 2017 installations, subject to future  
9           true-up, and (b) true up 2017 program cost and, to the extent EM&V  
10          of these results has been completed, Vintage Year 2017 participation  
11          and per-participant avoided cost savings and calendar years 2017  
12          and 2018 NLR.
- 13          4.     For Vintage Year 2016, the proposed Rider includes billing  
14          factors (or components of billing factors) intended to, to the extent  
15          EM&V of these results has been completed, true up Vintage Year  
16          2016 participation and per-participant avoided cost savings and  
17          calendar years 2016, 2017, and 2018 NLR.
- 18          5.     For Vintage Year 2015, the proposed Rider includes billing  
19          factors intended to, to the extent EM&V of these results has been  
20          completed, true up Vintage Year 2015 participation and per-  
21          participant avoided cost savings and calendar years 2015, 2016,  
22          2017, and 2018 NLR.

1           6.       For Vintage Year 2014, the proposed Rider includes billing  
2 factors intended to, to the extent EM&V of these results has been  
3 completed, true up Vintage Year 2014 participation and per-  
4 participant avoided cost savings and calendar years 2014, 2015,  
5 2016, and 2017 NLR.

6           As described in the testimony of DEC witness Carolyn Miller  
7 (as well as my testimony in last year's DEC DSM/EE rider proceeding  
8 and the Sub 1130 Order), the billing factors for Vintage Years 2014-  
9 2018 also include the effect of corrected estimates of revenues to be  
10 recovered through the DSM/EE rider approved in last year's DSM/EE  
11 rider proceeding (Rider 9).

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

14   A.       Certain components of the revenue requirements related to prior  
15 years (Vintage Years 2014 through 2018) will remain subject to  
16 prospective update adjustments and/or retrospective true-ups in the  
17 future. The various types of other expected or possible adjustments  
18 to the revenue requirements for these vintage years include  
19 prospective recovery of NLR requirements; true-ups of program cost;  
20 and true-ups of the PPI and NLR requirements to reflect the results  
21 of and possible adjustments to participation and EM&V analyses.

**INVESTIGATION AND CONCLUSIONS**

1

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

3     A.     My investigation of DEC's filing in this proceeding focused on

4             whether the Company's proposed DSM/EE billing factors (a) were

5             calculated in accordance with the Sub 1032 Settlement,

6             the Sub 1130 Order, and the Revised Mechanism, and (b) otherwise

7             adhered to sound ratemaking concepts and principles. The

8             procedures I and other members of the Public Staff's Accounting

9             Division utilized included a review of the Company's filing, relevant

10            Commission proceedings and orders, and workpapers and source

11            documentation used by the Company to develop the proposed billing

12            factors. Performing the investigation required the review of

13            responses to written and verbal data requests, as well as discussions

14            with Company personnel. As part of its investigation, the Public Staff

15            performed a review of the DSM/EE program costs incurred by DEC

16            during the 12-month period ended December 31, 2017.

17            To accomplish this, the Public Staff selected and reviewed samples

18            of source documentation for test year costs included by the Company

19            for recovery through the DSM/EE riders. Review of this sample,

20            which is still underway as of the date of this testimony, is intended to

21            test whether the costs included by the Company in the DSM/EE

22            riders are valid costs of approved DSM and EE programs.

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

2     A.     With the exception of items specifically described later in this  
3             testimony, as well as subject to the outcome of the Public Staff's  
4             program cost review described above, I am of the opinion that the  
5             Company has calculated the Rider 10 billing factors in a manner  
6             consistent with G.S. 62-133.9, Commission Rule R8-69,  
7             the Sub 1032 Settlement, the Sub 1130 Order, the Revised  
8             Mechanism, and other relevant Commission Orders. However, this  
9             conclusion is subject to the caveat that the Public Staff is still in the  
10            process of reviewing certain data responses received from the  
11            Company, including documentation of costs selected for review in  
12            the Public Staff's sample; should this review result in any further  
13            issues, the Public Staff will file additional information with the  
14            Commission.

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

17           (1)   Review of Vintage Year 2017 Program Costs – As noted  
18           previously, the Public Staff's review of samples of Vintage Year 2017  
19           program costs is underway, but not yet completed. If any concerns,  
20           issues, or necessary adjustments are found during the completion of  
21           this process, the Public Staff will file supplemental information in this  
22           proceeding related to such.

(2) Avoided Costs to be Used in the Determination of the PPI –

In his testimony in this proceeding, Public Staff witness Williams recommends that the avoided capacity cost benefits used to determine the PPI should be consistent with the avoided cost rates for capacity set by the Commission for Qualifying Facilities (QFs) under PURPA<sup>4</sup>, as provided for in the Revised Mechanism. Per Mr. Williams, maintaining this consistency requires that avoided capacity cost benefits for purposes of the PPI be calculated under the assumption that generation kW (capacity) avoided prior to year 2023 be assigned a zero dollar value. Mr. Williams testifies that instead of assigning a zero dollar value to such avoided generation kW, the Company has assigned full capacity value to them.

I concur with Mr. Williams' recommendation. Paragraph 69 of the Revised Mechanism reads as follows:

69. For the PPI for Vintage Years 2019 and afterwards, the program-specific per 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 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

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<sup>4</sup> The Public Utility Regulatory Policy Act of 1978.

1 energy benefits, the calculation will be based on the  
2 projected EE portfolio hourly shape, rather than the  
3 assumed 24x7 100 MW reduction typically used to  
4 represent a qualifying facility.

5 Pursuant to Paragraph 69, for purposes of this proceeding, the  
6 treatment recommended by Mr. Williams should be applied to  
7 calculate the estimated (and, therefore, the eventually trued-up) PPI  
8 for Vintage Year 2019. Since the Company did not do so, it is  
9 appropriate and necessary to make an adjustment to the estimated  
10 Vintage Year 2019 PPI proposed in this case by DEC to bring it into  
11 compliance with the Commission-approved Revised Mechanism.

12 In the course of its investigation, the Public Staff asked the Company  
13 to provide a calculation of estimated avoided cost benefits related to  
14 Vintage Year 2019 under the assumption that avoided capacity kW  
15 occurring prior to year 2023 is assigned a zero dollar value.<sup>5</sup>

16 According to the Company's calculation, making this assumption  
17 reduces the estimated Vintage Year 2019 system-level PPI  
18 from \$25,050,064 to \$16,055,813, a decrease of \$8,994,251.

19 This reduction is incorporated into the billing factors set forth on  
20 Maness Exhibit I. I also recommend that the \$8,994,251 reduction  
21 in the system PPI be included in all future true-ups of the Vintage

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<sup>5</sup> Certain DSM/EE measures installed or implemented in Vintage Year 2019 have lives extending into and beyond 2023, meaning that assigning an avoided capacity cost benefit of \$0 to kW savings achieved before 2023 does not reduce the avoided capacity cost benefit for the entire Vintage Year to \$0.

1           2019 DSM/EE revenue requirement and billing factors. Furthermore,  
2           I recommend that for as long as the Docket No. E-100, Sub 148  
3           avoided cost rates remain in effect, the Company continue to assign  
4           a capacity cost value of zero to all kW savings occurring before year  
5           2023 that are related to Vintage Years 2019 and afterwards,  
6           consistent with Paragraph 69 of the Revised Mechanism.

7           (3)    kWh Sales used to Calculate Billing Factors – As in past years’  
8           DSM/EE rider proceedings, the Company has performed a  
9           calculation of estimated 2019 kWh sales to be used to derive the  
10          various billing factors proposed for approval in the proceeding.  
11          The revenue requirement for each applicable billing group  
12          (Residential or Non-Residential, Prospective or EMF factor, DSM or  
13          EE) and applicable Vintage Year has been divided by the calculated  
14          kWh sales applicable to that revenue requirement to determine the  
15          proposed cents per kWh (cents/kWh) billing factor for that particular  
16          group/vintage combination. More specifically, for the single  
17          residential billing factor, the Company has used its most recent  
18          forecast (as of the time of filing) of N.C. retail Residential kWh  
19          sales for the 2019 rate period to determine the denominator of  
20          the Residential cents/kWh billing factor calculation. For each  
21          Non-Residential DSM, EE, DSM EMF, and EE EMF billing factor, for  
22          each Vintage Year, two steps were involved in the process.  
23          The first was to determine the most recent forecast of N.C. retail

1 Non-Residential kWh sales for the 2019 rate period. The second  
2 step was to subtract from that total the amount of estimated 2019  
3 kWh sales applicable to Non-Residential customers who have  
4 effectively opted out for each Vintage Year. The difference between  
5 the total 2019 Non-Residential kWh sales forecast and the estimated  
6 2019 opt-out kWh sales for each group/vintage combination is the  
7 participating kWh sales total for that combination, which is used as  
8 the denominator for that group/vintage billing factor. Thus, as  
9 presented on Company witness Miller's Exhibit 6, there are 13  
10 separate calculations of estimated participating kWh sales: one for  
11 Residential, six for Non-Residential EE (Vintage Years 2014 through  
12 2019), and six for Non-Residential DSM.

13 In the course of my review of the rate calculations, I noted that for  
14 each Non-Residential vintage/factor combination for Vintage Years  
15 2014-2018, there has been a significant decrease in the level of 2019  
16 participating kWh sales from that which was estimated in last year's  
17 proceeding for 2018, amounting to, on average, a decrease of  
18 approximately 12%. This decrease is the result of two things: first,  
19 the overall Non-Residential kWh sales forecast has decreased by  
20 approximately 3.90% from 2018 to 2019; and second, the  
21 Company's estimate of opt-out sales for the vintage/factor groups  
22 has increased by an average of 6.92%. Since an increase in  
23 estimated opt-out sales translates into a decrease in participating

1 sales, the combination of these two changes results in a “double  
2 whammy” to the estimate of participating 2019 sales, and a  
3 substantial increase to the resulting DSM/EE billing factors.

4 It appears somewhat incongruous that while fewer Non-Residential  
5 sales overall are expected in 2019 from what was expected last year  
6 for 2018, estimated opt-out sales are estimated to be higher in 2019  
7 than they were expected to be in 2018. One of the reasons for this  
8 incongruity, as explained by Company personnel during my review,  
9 is that as customers newly choose to opt out, their sales as  
10 applicable to past Vintage Years are also treated as “opt-out sales,”  
11 to the extent each customer did not actually participate in a DSM or  
12 EE program in those past years. However, another reason may be  
13 that the Company uses as its estimate of opt-out sales for the coming  
14 rate period the actual opt-out sales from the most recent calendar  
15 year. Thus, the estimate of 2019 opt-out kWh sales for each  
16 vintage/factor combination is the actual level of 2017 opt-out sales  
17 for that combination. Therefore, the estimate does not reflect the  
18 overall Non-Residential kWh sales decrease forecasted for 2019 as  
19 compared to what was forecasted for 2018.

20 I am concerned that in the specific circumstances of this case,  
21 the result of this time lag may cause the 2019 Non-Residential billing  
22 factors to be overstated. Although most of this over-statement would

1 be corrected in future periods as the billing factors are trued up to  
2 reflect actual revenue requirements and amounts collected, I do not  
3 believe that it would be reasonable to expose customers who are  
4 charged the Rider 10 billing factors to a possible “rate spike” due to  
5 an understatement of participating Rider 10 kWh sales. Therefore, I  
6 am recommending that the Company’s proposed level of 2019  
7 estimated kWh sales for each Non-Residential vintage/factor  
8 combination be reduced by 3.90% (the average difference between  
9 the overall Non-Residential kWh sales currently forecasted for 2019  
10 and the same as forecasted last year for 2018. Because of this  
11 change in the typical method used to calculate the billing factors, I  
12 also recommend that the true-up process for Rider 10 be held open  
13 until the total actual amount of Rider 10 revenues collected can be  
14 reflected in the rate calculation process, and that the Company be  
15 allowed to recover carrying costs on any understatements of Rider  
16 10 billing factors caused by use of the Public Staff’s recommended  
17 levels of participating Rider 10 kWh sales versus the actual levels of  
18 such kWh sales, but with the understatement eligible for carrying  
19 charges limited to the difference between the Public Staff’s  
20 recommended levels of participating Rider 10 kWh sales and the  
21 Company’s initially proposed levels of such sales in this proceeding.  
22 This adjustment reduces the estimated factors in a manner that  
23 would tend to reduce the overall Non-Residential DSM/EE revenue

1 collected by approximately \$5.7 million. The results of my  
2 recommendation are incorporated into the billing factors set forth on  
3 Maness Exhibit I.

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

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

12 A. Public Staff witness Williamson has filed testimony in this proceeding  
13 discussing several topics and issues related to the Company's filing.  
14 None of these topics and issues necessitates an adjustment in this  
15 particular proceeding to the Company's billing factor calculations,  
16 although some of the recommendations made by Mr. Williamson may  
17 affect the revenue requirements in future proceedings.

18 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE**  
19 **RIDER 10 BILLING FACTORS.**

20 A. In summary, I have identified two issues that necessitate adjustment  
21 to the DSM/EE billing factors proposed by the Company: first, the  
22 valuation of avoided capacity benefits produced by DSM/EE

1 measures estimated to be installed/ implemented in Vintage Year  
2 2019; and second, the potential understatement of calendar year  
3 2019 kWh sales. Other than these issues, the Public Staff has found  
4 no errors or other issues necessitating an adjustment to the Rider 10  
5 billing factors.

6 **RECOMMENDATION**

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

8 A. Based on the results of the Public Staff's investigation  
9 (subject to completion of its review of 2017 program costs),  
10 I recommend approval of the DSM/EE billing factors set forth on  
11 Maness Exhibit I. These factors incorporate both my kWh sales  
12 recommendation and the recommendations of Public Staff Williams.  
13 These factors should be approved subject to any true-ups in future  
14 cost recovery proceedings consistent with the Sub 1032 Settlement,  
15 the Sub 1130 Order, and the Revised Mechanism, as well as other  
16 relevant orders of the Commission, including the Commission's final  
17 order in this proceeding. In making this recommendation, the Public  
18 Staff notes that reviewing the calculation of the DSM/EE rider is a  
19 process that involves reviewing numerous assumptions, inputs, and  
20 calculations, and its recommendation with regard to this proposed  
21 rider is not intended to indicate that the Public Staff will not raise

1            questions in future proceedings regarding the same or similar  
2            assumptions, inputs, and calculations.

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

4    **A.    Yes, it does.**

## Appendix A

**MICHAEL C. MANESS**

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

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

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

certificates of public convenience and necessity for the construction of generating facilities, applications for approval of self-generation deferral rates, applications for approval of cost and incentive recovery mechanisms for electric utility demand-side management and energy efficiency (DSM/EE) efforts, and applications for approval of cost and incentive recovery pursuant to those mechanisms.

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

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

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Duke Energy Carolinas, LLC  
Docket No. E-7, Sub 1164

CALCULATION OF PUBLIC STAFF RECOMMENDED BILLING FACTORS

| Line No. | Item                                                                                | N.C. Retail Amount | 1/ |
|----------|-------------------------------------------------------------------------------------|--------------------|----|
|          |                                                                                     | (a)                |    |
| 1        | <b>Residential Billing Factors</b>                                                  |                    |    |
| 2        |                                                                                     |                    |    |
| 3        | <b>Residential Billing Factor for Rider 10 True-up (EMF) Components</b>             |                    |    |
| 4        |                                                                                     |                    |    |
| 5        | Year 2014 EE/DSM True-Up (EMF) Revenue Requirement                                  | \$ 501,324         |    |
| 6        | Year 2015 EE/DSM True-Up (EMF) Revenue Requirement                                  | (1,014,271)        |    |
| 7        | Year 2016 EE/DSM True-Up (EMF) Revenue Requirement                                  | (2,560,305)        |    |
| 8        | Year 2017 EE/DSM True-Up (EMF) Revenue Requirement                                  | 26,865,491         |    |
| 9        | Total True-up (EMF) Revenue Requirement                                             | 23,792,240         |    |
| 10       | Projected NC Residential Sales (kWh) for rate period                                | 21,806,637,265     |    |
| 11       | EE/DSM Revenue Requirement EMF Residential Rider EE (cents per kWh)                 | 0.1091             |    |
| 12       |                                                                                     |                    |    |
| 13       | <b>Residential Billing Factor for Rider 10 Prospective Components</b>               |                    |    |
| 14       |                                                                                     |                    |    |
| 15       | Vintage 2017 Total EE/DSM Prospective Amounts Revenue Requirement                   | \$ 8,904,587       |    |
| 16       | Vintage 2018 Total EE/DSM Prospective Amounts Revenue Requirement                   | 6,294,025          |    |
| 17       | Vintage 2019 Total EE/DSM Prospective Amounts Revenue Requirement                   | 73,958,064         | 2/ |
| 18       | Total Prospective Revenue Requirement                                               | 89,156,676         |    |
| 19       | Projected NC Residential Sales (kWh) for rate period                                | 21,806,637,265     |    |
| 20       | EE/DSM Revenue Requirement Prospective Residential Rider EE (cents per kWh)         | 0.4089             |    |
| 21       |                                                                                     |                    |    |
| 22       | <u>Total Revenue Requirements in Rider 10 from Residential Customers</u>            |                    |    |
| 23       |                                                                                     |                    |    |
| 24       | Total True-up (EMF) Revenue Requirement                                             | \$ 23,792,240      |    |
| 25       | Total Prospective Revenue Requirement                                               | \$ 89,156,676      |    |
| 26       | <b>Total EE/DSM Revenue Requirement for Residential Rider EE</b>                    | \$ 112,948,915     |    |
| 27       | <b>Total EE/DSM Revenue Requirement for Residential Rider EE (cents per kWh)</b>    | 0.5180             |    |
| 28       |                                                                                     |                    |    |
| 29       |                                                                                     |                    |    |
| 30       | <b>Non-Residential Billing Factors for Rider 10 True-up (EMF) Components</b>        |                    |    |
| 31       |                                                                                     |                    |    |
| 32       | Vintage Year 2014 EE True-up (EMF) Revenue Requirement                              | \$ (1,154,814)     |    |
| 33       | Projected Year 2014 EE Participants NC Non-Residential Sales (kwh) for rate period  | 18,883,365,623     | 3/ |
| 34       | EE Revenue Requirement Year 2014 EMF Non-Residential Rider EE (cents per kWh)       | (0.0061)           |    |
| 35       |                                                                                     |                    |    |
| 36       | Vintage Year 2014 DSM True-up (EMF) Revenue Requirement                             | \$ (39,246)        |    |
| 37       | Projected Year 2014 DSM Participants NC Non-Residential Sales (kwh) for rate period | 18,694,210,397     | 3/ |
| 38       | DSM Revenue Requirement Year 2014 EMF Non-Residential Rider EE (cents per kWh)      | (0.0002)           |    |

|    |                                                                                                         |    |                |    |                         |
|----|---------------------------------------------------------------------------------------------------------|----|----------------|----|-------------------------|
| 39 |                                                                                                         |    |                |    |                         |
| 40 | Vintage Year 2015 EE True-up (EMF) Revenue Requirement                                                  | \$ | 456,319        |    | <b>Maness Exhibit I</b> |
| 41 | Projected Year 2015 EE Participants NC Non-Residential Sales (kwh) for rate period                      |    | 18,763,045,012 | 3/ | <b>Schedule 1</b>       |
| 42 | EE Revenue Requirement Year 2015 EMF Non-Residential Rider EE (cents per kWh)                           |    | 0.0024         |    |                         |
| 43 |                                                                                                         |    |                |    |                         |
| 44 | Vintage Year 2015 DSM True-up (EMF) Revenue Requirement                                                 | \$ | (451,445)      |    |                         |
| 45 | Projected Year 2015 DSM Participants NC Non-Residential Sales (kwh) for rate period                     |    | 18,490,935,207 | 3/ |                         |
| 46 | DSM Revenue Requirement Year 2015 EMF Non-Residential Rider EE (cents per kWh)                          |    | (0.0024)       |    |                         |
| 47 |                                                                                                         |    |                |    |                         |
| 48 | Vintage Year 2016 EE True-up (EMF) Revenue Requirement                                                  | \$ | (2,329,721)    |    |                         |
| 49 | Projected Year 2016 EE Participants NC Non-Residential Sales (kwh) for rate period                      |    | 18,489,604,035 | 3/ |                         |
| 50 | EE Revenue Requirement Year 2016 EMF Non-Residential Rider EE (cents per kWh)                           |    | (0.0126)       |    |                         |
| 51 |                                                                                                         |    |                |    |                         |
| 52 | Vintage Year 2016 DSM True-up (EMF) Revenue Requirement                                                 | \$ | (267,721)      |    |                         |
| 53 | Projected Year 2016 DSM Participants NC Non-Residential Sales (kwh) for rate period                     |    | 18,210,209,070 | 3/ |                         |
| 54 | DSM Revenue Requirement Year 2016 EMF Non-Residential Rider EE (cents per kWh)                          |    | (0.0015)       |    |                         |
| 55 |                                                                                                         |    |                |    |                         |
| 56 | Vintage Year 2017 EE True-up (EMF) Revenue Requirement                                                  | \$ | 53,163,097     |    |                         |
| 57 | Projected Year 2017 EE Participants NC Non-Residential Sales (kwh) for rate period                      |    | 18,183,662,735 | 3/ |                         |
| 58 | EE Revenue Requirement Year 2017 EMF Non-Residential Rider EE (cents per kWh)                           |    | 0.2924         |    |                         |
| 59 |                                                                                                         |    |                |    |                         |
| 60 | Vintage Year 2017 DSM True-up (EMF) Revenue Requirement                                                 | \$ | 86,311         |    |                         |
| 61 | Projected Year 2017 DSM Participants NC Non-Residential Sales (kwh) for rate period                     |    | 18,177,460,568 | 3/ |                         |
| 62 | DSM Revenue Requirement Year 2017 EMF Non-Residential Rider EE (cents per kWh)                          |    | 0.0005         |    |                         |
| 63 |                                                                                                         |    |                |    |                         |
| 64 | <b>Non-Residential Billing Factors for Rider 10 Prospective Components</b>                              |    |                |    |                         |
| 65 |                                                                                                         |    |                |    |                         |
| 66 | Vintage Year 2017 EE Prospective Amounts Revenue Requirement                                            | \$ | 14,570,381     |    |                         |
| 67 | Projected Program Year 2017 EE Participants NC Non-Residential Sales (kwh) for rate period              |    | 18,183,662,735 | 3/ |                         |
| 68 | EE Revenue Requirement Vintage 2017 Prospective Component for Non-Residential Rider EE (cents per kWh)  |    | 0.0801         |    |                         |
| 69 |                                                                                                         |    |                |    |                         |
| 70 | Vintage Year 2018 EE Prospective Amounts Revenue Requirement                                            | \$ | 12,285,044     |    |                         |
| 71 | Projected Vintage 2018 EE Participants NC Non-Residential Sales (kwh) for rate period                   |    | 17,670,299,445 | 3/ |                         |
| 72 | EE Revenue Requirement Vintage 2018 Prospective Component for Non-Residential Rider EE (cents per kWh)  |    | 0.0695         |    |                         |
| 73 |                                                                                                         |    |                |    |                         |
| 74 | Vintage Year 2018 DSM Prospective Amounts Revenue Requirement                                           | \$ | 534,763        |    |                         |
| 75 | Projected Vintage 2018 DSM Participants NC Non-Residential Sales (kwh) for rate period                  |    | 18,078,506,705 | 3/ |                         |
| 76 | DSM Revenue Requirement Vintage 2018 Prospective Component for Non-Residential Rider EE (cents per kWh) |    | 0.0030         |    |                         |
| 77 |                                                                                                         |    |                |    |                         |
| 78 | Vintage Year 2019 EE Prospective Amounts Revenue Requirement                                            | \$ | 54,780,288     | 2/ |                         |
| 79 | Projected Vintage 2019 EE Participants NC Non-Residential Sales (kwh) for rate period                   |    | 17,670,299,445 | 3/ |                         |
| 80 | EE Revenue Requirement Vintage 2019 Prospective Component for Non-Residential Rider EE (cents per kWh)  |    | 0.3100         |    |                         |
| 81 |                                                                                                         |    |                |    |                         |
| 82 | Vintage Year 2019 DSM Prospective Amounts Revenue Requirement                                           | \$ | 13,300,208     | 2/ |                         |
| 83 | Projected Vintage 2019 DSM Participants NC Non-Residential Sales (kwh) for rate period                  |    | 18,078,506,705 | 3/ |                         |
| 84 | DSM Revenue Requirement Vintage 2019 Prospective Component for Non-Residential Rider EE (cents per kWh) |    | 0.0736         |    |                         |

1/ Miller Exhibit 1, Pages 1 and 2, unless otherwise noted.

2/ Maness Exhibit II, Schedule 2

3/ Maness Exhibit II, Schedule 4.

**Duke Energy Carolinas, LLC**  
Docket No. E-7, Sub 1164

**CALCULATION OF PUBLIC STAFF RECOMMENDED VINTAGE 2019 REVENUE REQUIREMENT**

| Line<br>No. | Item                                                                     | N.C. Retail<br>Amount<br>(a) | 1/ |
|-------------|--------------------------------------------------------------------------|------------------------------|----|
| 1           | <b>RESIDENTIAL</b>                                                       |                              |    |
| 2           |                                                                          |                              |    |
| 3           | Residential EE Program Cost                                              | \$ 41,002,874                | 2/ |
| 4           | Residential EE Earned Utility Incentive                                  | 2,890,230                    | 2/ |
| 5           | Total EE Program Cost and Incentive Components                           | 43,893,104                   |    |
| 6           | Residential DSM Program Cost                                             | 10,577,352                   | 2/ |
| 7           | Residential DSM Earned Utility Incentive                                 | 627,157                      | 2/ |
| 8           | Total DSM Program Cost and Incentive Components                          | 11,204,509                   |    |
| 9           | Total EE/DSM Program Cost and Incentive Components                       | 55,097,613                   |    |
| 10          | Revenue-related taxes and regulatory fees factor                         | 1.001402                     |    |
| 11          | Total EE/DSM Program Cost and Incentive Revenue Requirement              | 55,174,860                   |    |
| 12          | Residential Net Lost Revenues                                            | 18,783,204                   |    |
| 13          | <b>Total Residential EE Revenue Requirement</b>                          | <b>\$ 73,958,064</b>         |    |
| 14          |                                                                          |                              |    |
| 15          |                                                                          |                              |    |
| 16          | <b>NON-RESIDENTIAL</b>                                                   |                              |    |
| 17          | <b>Energy Efficiency Programs</b>                                        |                              |    |
| 18          |                                                                          |                              |    |
| 19          | Non- Residential EE Program Cost                                         | \$ 41,671,831                | 2/ |
| 20          | Non-Residential EE Earned Utility Incentive                              | 7,449,143                    | 2/ |
| 21          | Total EE Program Cost and Incentive Components                           | 49,120,974                   |    |
| 22          | Revenue-related taxes and regulatory fees factor                         | 1.001402                     |    |
| 23          | Total Non-Residential EE Program Cost and Incentive Revenue Requirements | 49,189,842                   |    |
| 24          | Non-Residential Net Lost Revenues                                        | 5,590,446                    |    |
| 25          | Total Non-Residential EE Revenue Requirement                             | \$ 54,780,288                |    |
| 26          |                                                                          |                              |    |
| 27          |                                                                          |                              |    |
| 28          | <b>DSM Programs</b>                                                      |                              |    |
| 29          |                                                                          |                              |    |
| 30          | Non-Residential DSM Program Cost                                         | \$ 12,538,168                | 2/ |
| 31          | Non-Residential DSM Earned Utility Incentive                             | 743,419                      | 2/ |
| 32          | Total Non-Residential DSM Program Cost and Incentive Components          | 13,281,587                   |    |
| 33          | Revenue-related taxes and regulatory fees factor                         | 1.001402                     |    |
| 34          | Total Non-Residential DSM Revenue Requirement                            | \$ 13,300,208                |    |

1/ Miller Exhibit 2, Page 6, unless otherwise noted.

2/ Maness Exhibit 2, Schedule 3.

**CALCULATION OF PUBLIC STAFF RECOMMENDED PPI, REFLECTING ADJUSTED AVOIDED CAPACITY COSTS**

| Line No. | Item                                                                    | System NPV of Avoided Cost <sup>1/</sup> | System Cost <sup>2/</sup> | System Net Savings <sup>3/</sup> | System PPI <sup>4/</sup> | N.C. Retail Allocation factor <sup>2/</sup> | N.C. Retail Costs <sup>5/</sup> | N.C. Retail PPI <sup>6/</sup> |
|----------|-------------------------------------------------------------------------|------------------------------------------|---------------------------|----------------------------------|--------------------------|---------------------------------------------|---------------------------------|-------------------------------|
|          |                                                                         | (a)                                      | (b)                       | (c)                              | (d)                      | (e)                                         | (f)                             | (g)                           |
| 1        | <b>Residential Programs</b>                                             |                                          |                           |                                  |                          |                                             |                                 |                               |
| 2        | <b>EE Programs</b>                                                      |                                          |                           |                                  |                          |                                             |                                 |                               |
| 3        | Appliance Recycling Program                                             | \$ -                                     | \$ -                      | \$ -                             | \$ -                     | 0.728087506                                 | \$ -                            | \$ -                          |
| 4        | Energy Efficiency Education                                             | 2,230,499                                | 2,104,087                 | 126,412                          | 14,537                   | 0.728087506                                 | 1,531,959                       | 10,584                        |
| 5        | Energy Efficient Appliances and Devices                                 | 47,922,097                               | 21,726,700                | 26,195,397                       | 3,012,471                | 0.728087506                                 | 15,818,939                      | 2,193,342                     |
| 6        | Residential – Smart Saver Energy Efficiency Program                     | 4,197,690                                | 4,802,289                 | (604,599)                        | (69,529)                 | 0.728087506                                 | 3,496,487                       | (50,623)                      |
| 7        | Income Qualified Energy Efficiency and Weatherization Assistance        | 1,364,009                                | 7,905,880                 | (6,541,871)                      | N/A                      | 0.728087506                                 | 5,756,172                       | N/A                           |
| 8        | Multi-Family Energy Efficiency                                          | 9,052,409                                | 3,382,816                 | 5,669,593                        | 652,003                  | 0.728087506                                 | 2,462,986                       | 474,715                       |
| 9        | Energy Assessments                                                      | 3,956,628                                | 2,987,118                 | 969,510                          | 111,494                  | 0.728087506                                 | 2,174,883                       | 81,177                        |
| 10       | Subtotal                                                                | 68,723,332                               | 42,908,890                | 25,814,442                       | 3,720,976                |                                             | 31,241,426                      | 2,709,195                     |
| 11       | My Home Energy Report                                                   | 15,569,104                               | 13,406,971                | 2,162,133                        | 248,645                  | 0.728087506                                 | 9,761,448                       | 181,035                       |
| 12       | Total for Residential Energy Efficiency Programs                        | \$ 84,292,436                            | \$ 56,315,861             | \$ 27,976,575                    | \$ 3,969,621             |                                             | \$ 41,002,874                   | \$ 2,890,230                  |
| 13       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 14       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 15       | Total DSM Programs - Residential Allocation                             | \$ 47,418,134                            | \$ 31,286,990             | \$ 16,131,144                    | \$ 1,855,082             | 0.338075104                                 | \$ 10,577,352                   | \$ 627,157                    |
| 16       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 17       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 18       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 19       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 20       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 21       | <b>Non-Residential Programs</b>                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 22       | <b>EE Programs</b>                                                      |                                          |                           |                                  |                          |                                             |                                 |                               |
| 23       | Non Residential Smart Saver Custom Energy Assessments                   | \$ 3,252,134                             | \$ 1,618,240              | \$ 1,633,894                     | \$ 187,898               | 0.728087506                                 | \$ 1,178,220                    | \$ 136,806                    |
| 24       | Non Residential Smart Saver Custom                                      | 22,344,177                               | 10,095,189                | 12,248,988                       | 1,408,634                | 0.728087506                                 | 7,350,181                       | 1,025,609                     |
| 25       | Non Residential Smart Saver Energy Efficient Food Service Products      | 5,094,291                                | 2,010,534                 | 3,083,757                        | 354,632                  | 0.728087506                                 | 1,463,844                       | 258,203                       |
| 26       | Non Residential Smart Saver Energy Efficient HVAC Products              | 10,481,670                               | 5,762,803                 | 4,718,867                        | 542,670                  | 0.728087506                                 | 4,195,825                       | 395,111                       |
| 27       | Non Residential Smart Saver Energy Efficient Lighting Products          | 57,897,864                               | 17,828,618                | 40,069,246                       | 4,607,963                | 0.728087506                                 | 12,980,794                      | 3,355,000                     |
| 28       | Non Residential Smart Saver Energy Efficient Pumps and Drives Products  | 2,721,329                                | 1,165,434                 | 1,555,895                        | 178,928                  | 0.728087506                                 | 848,538                         | 130,275                       |
| 29       | Non Residential Smart Saver Energy Efficient IT Products                | 1,759,269                                | 749,325                   | 1,009,944                        | 116,144                  | 0.728087506                                 | 545,574                         | 84,563                        |
| 30       | Non Residential Smart Saver Energy Efficient Process Equipment Products | 480,654                                  | 240,281                   | 240,373                          | 27,643                   | 0.728087506                                 | 174,945                         | 20,127                        |
| 31       | Non Residential Smart Saver Performance Incentive                       | 7,913,257                                | 3,162,160                 | 4,751,097                        | 546,376                  | 0.728087506                                 | 2,302,329                       | 397,810                       |
| 32       | Small Business Energy Saver                                             | 34,256,167                               | 14,602,066                | 19,654,101                       | 2,260,222                | 0.728087506                                 | 10,631,581                      | 1,645,639                     |
| 33       | Total for Non-Residential Energy Efficiency Programs                    | \$ 146,200,812                           | \$ 57,234,649             | \$ 88,966,163                    | \$ 10,231,110            |                                             | \$ 41,671,831                   | \$ 7,449,143                  |
| 34       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 35       |                                                                         |                                          |                           |                                  |                          |                                             |                                 |                               |
| 36       | Total DSM Programs - Non-Residential Allocation                         | \$ 47,418,134                            | \$ 31,286,990             | \$ 16,131,144                    | \$ 1,855,082             | 0.400747013                                 | \$ 12,538,168                   | \$ 743,419                    |

1/ Provided by the Company at the Public Staff's request.

2/ Evans Exhibit 1, Page 5.

3/ Column (a) - Column (b).

4/ Column (c) x PPI percentage of 11.50%.

5/ Column (b) x Column (e).

6/ Column (d) x Column (e).

**Duke Energy Carolinas, LLC**  
**Docket No. E-7, Sub 1164**  
**ADJUSTMENT TO KWH SALES TO CALCULATE BILLING FACTORS**

**Maness Exhibit I**  
**Schedule 4**

| Line No. | Item                           | Total Usage<br>(a) | Opt-Outs Per Company<br>(b) | Public Staff Reduction Factor<br>(c) | Opt-Outs Per Public Staff<br>(d) | Participating Usage Per Public Staff<br>(e) |
|----------|--------------------------------|--------------------|-----------------------------|--------------------------------------|----------------------------------|---------------------------------------------|
| 1        | Vintage 2014 Actual Opt Out    |                    |                             |                                      |                                  |                                             |
| 2        | EE                             | 34,250,780,653     | 15,991,066,628              | 0.9610                               | 15,367,415,030                   | 18,883,365,623                              |
| 3        | DSM                            | 34,250,780,653     | 16,187,898,289              | 0.9610                               | 15,556,570,256                   | 18,694,210,397                              |
| 4        |                                |                    |                             |                                      |                                  |                                             |
| 5        | Vintage 2015 Actual Opt Out    |                    |                             |                                      |                                  |                                             |
| 6        | EE                             | 34,250,780,653     | 16,116,270,178              | 0.9610                               | 15,487,735,641                   | 18,763,045,012                              |
| 7        | DSM                            | 34,250,780,653     | 16,399,422,941              | 0.9610                               | 15,759,845,446                   | 18,490,935,207                              |
| 8        |                                |                    |                             |                                      |                                  |                                             |
| 9        | Vintage 2016 Actual Opt Out    |                    |                             |                                      |                                  |                                             |
| 10       | EE                             | 34,250,780,653     | 16,400,808,135              | 0.9610                               | 15,761,176,618                   | 18,489,604,035                              |
| 11       | DSM                            | 34,250,780,653     | 16,691,541,710              | 0.9610                               | 16,040,571,583                   | 18,210,209,070                              |
| 12       |                                |                    |                             |                                      |                                  |                                             |
| 13       | Vintage 2017 Actual Opt Out    |                    |                             |                                      |                                  |                                             |
| 14       | EE                             | 34,250,780,653     | 16,719,165,367              | 0.9610                               | 16,067,117,918                   | 18,183,662,735                              |
| 15       | DSM                            | 34,250,780,653     | 16,725,619,235              | 0.9610                               | 16,073,320,085                   | 18,177,460,568                              |
| 16       |                                |                    |                             |                                      |                                  |                                             |
| 17       | Vintage 2018 Estimated Opt Out |                    |                             |                                      |                                  |                                             |
| 18       | EE                             | 34,250,780,653     | 17,253,362,339              | 0.9610                               | 16,580,481,208                   | 17,670,299,445                              |
| 19       | DSM                            | 34,250,780,653     | 16,828,588,916              | 0.9610                               | 16,172,273,948                   | 18,078,506,705                              |
| 20       |                                |                    |                             |                                      |                                  |                                             |
| 21       | Vintage 2019 Estimated Opt Out |                    |                             |                                      |                                  |                                             |
| 22       | EE                             | 34,250,780,653     | 17,253,362,339              | 0.9610                               | 16,580,481,208                   | 17,670,299,445                              |
| 23       | DSM                            | 34,250,780,653     | 16,828,588,916              | 0.9610                               | 16,172,273,948                   | 18,078,506,705                              |

- 1/ Miller Exhibit 6  
2/ 34,250,780,653 kWh [5] divided by 35,641,166,806 kWh [6]  
3/ Column (b) x Column (c)  
4/ Column (a) - Column (d)  
5/ Miller Exhibit 6, Line 2  
6/ Miller Exhibit 7, Page 3, Line 2

**COST RECOVERY AND INCENTIVE MECHANISM FOR DEMAND-SIDE  
MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS**

**(Approved in Docket No. E-7, Sub 1032 and Revised in Docket No. E-7, Sub  
1130)**

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 G.S. 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 G.S. 62-133.8 and G.S. 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 G.S. 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 G.S. 62-133.9(a) and satisfies the definition of “demand-side management” as set forth in G.S. 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 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. 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.

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. This Mechanism provides for recovery by the Company of a reasonable amount of Net Lost Revenues, net of any applicable Net Found Revenues. 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 G.S. 62-133.9(a)) EE or DSM measures based on the sharing of dollar savings achieved by those DSM and EE measures. PPI excludes Net Lost Revenues.

13. *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. The costs for the TRC test are the net program 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.

14. *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 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).

15. *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**

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

**Application for Approval of Programs**

17. 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.

18. 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 TRC test 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.

19. 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 TRC and UCT test result greater than 1.00. Additionally, 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 for Electric Utility Purchases from Qualifying Facilities as of the date of the filing for the new program approval. 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.

20. If a program fails the economic test in Paragraph 19 above, Duke Energy Carolinas will determine if certain measures can be removed from the program to satisfy the criteria established in Paragraph 19.

21. 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.

22. 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**

23. 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.

23A. 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, costs, and benefits for the upcoming vintage year.

23B. 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 TRC, determined pursuant to paragraph 23A 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.

23C. For programs that demonstrate a prospective TRC, determined pursuant to paragraph 23A above, of less than 1.00 in a second DSM/EE rider proceeding, the Company shall include a discussion of what actions it [sic] has taken to improve cost-effectiveness. Fluctuations of TRC above and below 1.0 should be addressed on a case by case basis.

23D. For programs that demonstrate a prospective TRC, determined pursuant to paragraph 23A 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.

24. 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 Carolina's 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**

25. 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.

26. 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.

27. 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.

28. 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.

29. 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**

30. 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.

31. 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.

32. 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.

33. 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**

34. 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.

35. 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.

36. 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.

37. 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**

38. 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.

39. 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 facilitates 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.

40. 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.

41. 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.

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

### **General Structure of Riders**

43. 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.

**Cost Recovery**

44. As provided in Rule R8-69 and G.S. 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 G.S. 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.

45. 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.

46. 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.

47. 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.

48. 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.

49. 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.

50. 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**

51. 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.

52. 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.

53. 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.

54. 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.

55. 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.

56. 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.

57. Total Net Lost Revenues as measured for the 36-month period identified in paragraph 52 above shall be reduced by Net Found Revenues

during the same periods. 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.

58. 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 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.

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

**Portfolio Performance Incentive (PPI)**

60. When authorized pursuant to Rule R8-69(c), Duke Energy Carolinas shall be allowed to collect a PPI for its DSM/EE portfolio for each vintage year, separable into Residential, Non-Residential DSM, and Non-Residential EE categories. The PPI shall be subject to the restrictions set out below.

61. 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 calculation.

62. Unless (a) the Commission approves Duke Energy Carolinas' specific request that a pilot program or measure be eligible for PPI 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 will not be factored into the calculation of the PPI.

63. Low-Income 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.

64. 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. The portfolio PPI for each vintage year shall be incorporated into Duke Energy Carolinas' DSM/EE or DSM/EE EMF billing factors, as appropriate.

65. In its annual filing pursuant to Rule R8-69(f), Duke Energy Carolinas shall file an exhibit that indicates, for each program for which it seeks PPI inclusion, 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 which is included in an estimated or trued-up PPI calculation for any given vintage year.

66. Unless the Commission determines otherwise in an annual DSM/EE rider proceeding, the amount of the pre-income-tax PPI initially to be recovered for the entire DSM/EE portfolio for a vintage year shall be equal to 11.5% multiplied by the present value of the estimated net dollar savings

associated with the DSM/EE portfolio installed in that vintage year, 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.

67. 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, 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.

68. For the PPI for Vintage Year 2014, the per kW avoided capacity costs used to calculate avoided cost savings shall be those reflected in the filing by Duke Energy Carolinas in Docket No. E-100, Sub 136. The per kWh avoided

energy costs shall be those reflected in or underlying the most recently filed integrated resource plan (IRP). If both the per kW avoided capacity costs and per kWh avoided energy costs approved by the Commission in Sub 136 and the IRP proceeding are within 2% of the costs filed by the Company, no change from the costs used will be necessary. If one or the other changes by more than 2%, both costs will be changed to the approved amounts.

69. For the PPI for Vintage Years 2019 and afterwards, the program-specific per 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 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.

70. 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.

71. 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.

72. Duke Energy Carolinas bears the burden of proving all dollar savings and costs included in calculating the PPI. 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.

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

74. 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.

75. 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.

#### **Additional Incentive**

76. If the Company achieves incremental energy savings of 1% of the prior year's Duke Energy Carolinas' 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. The Company is eligible to receive the bonus incentive each year during the five-year 2014-2018 period. Verification of this achievement will be obtained through the EM&V process discussed elsewhere in this Mechanism.

#### **Financial Reporting Requirements**

77. 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**

78. 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.