

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-7, SUB 1249

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

May 10, 2021

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**DOCKET NO. E-7, SUB 1249****Testimony of David M. Williamson****On Behalf of the Public Staff****North Carolina Utilities Commission****May 10, 2020**

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

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

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

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

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

10 A. The purpose of my testimony is to present the Public Staff's analysis
11 and recommendations with respect to the February 23, 2021
12 application and exhibits of Duke Energy Carolinas, LLC (DEC), for
13 approval of its demand-side management (DSM) and energy
14 efficiency (EE) cost recovery rider for 2022 (Rider 13).

1 My testimony discusses: (1) the portfolio of DSM/EE programs
2 included in the proposed Rider 13, including modifications of those
3 programs; (2) the ongoing cost-effectiveness of each DSM/EE
4 program; and (3) the evaluation, measurement, and verification
5 (EM&V) studies filed as Exhibits A through C to the testimony of
6 Company witness Robert P. Evans.

7 **Q. WHAT DOCUMENTS HAVE YOU REVIEWED IN YOUR**
8 **INVESTIGATION OF DEC'S PROPOSED RIDER 13?**

9 A. I reviewed the application, supporting testimony and exhibits, and
10 DEC's responses to Public Staff data requests. In addition, the
11 following documents are pertinent to Rider 13:

- 12 1. The Cost Recovery and Incentive Mechanism for Demand-Side
13 Management and Energy Efficiency Programs approved on
14 August 23, 2017, in the Commission's *Order Approving DSM/EE*
15 *Rider, Revising DSM/EE Mechanism, and Requiring Filing of*
16 *Proposed Customer Notice*, in Docket No. E-7, Sub 1032 (2017
17 Mechanism).
- 18 2. The Cost Recovery and Incentive Mechanism for Demand-Side
19 Management and Energy Efficiency Programs approved on
20 October 20, 2020, in in the Commission's Order Approving
21 Revisions to Demand-Side Management and Energy Efficiency

1 Cost Recovery Mechanisms, in Docket Nos. E-2, Sub 931, and
2 E-7, Sub 1032 (2020 Mechanism).

3 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

4 A. The Public Staff makes the following recommendations to the
5 Commission:

- 6 1. That DEC proceed with the Non-Energy Benefits and Low-to-
7 Moderate Income studies;
8
- 9 2. That the method for calculating the Reserve Margin
10 Adjustment Factor, as proposed, be accepted and used for
11 the calculation of avoided capacity benefits for EE measures
12 for future vintages;
13
- 14 3. That the Company work with the Public Staff to draft language
15 to incorporate in its cost recovery mechanism in an
16 expeditious manner to reflect inclusion of the reserve margin
17 adjustment factor;
18
- 19 4. That the Company refine its referral channel accounting to
20 allow only referral dollars specifically related to Residential
21 EE-related work to be included in the referral channel for the
22 Residential Smart Saver program, and to book other revenues
23 appropriately; and
24
- 25 5. That the Evaluation, Measurement, and Verification reports
26 filed by DEC as Evans Exhibits A through C be accepted.

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

28 A. Yes. I have two exhibits:

- 29 • Exhibit 1: Proposed Cost Effectiveness Scores for Vintage
30 Years 2020, 2021, and 2022; and
- 31 • Exhibit 2: Current Actual Cost Effectiveness Scores for
32 Vintage Years 2018, 2019, and 2020.

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

3 A. In its proposed Rider 13, DEC is seeking recovery of the costs and
4 incentives associated with the following programs:

- 5 • Energy Assessments;
- 6 • EE Education;
- 7 • Residential Smart \$aver® Energy Efficient Appliances and
8 Devices;
- 9 • Residential Smart \$aver® EE (formerly the HVAC EE
10 Program);
- 11 • Multi-Family EE;
- 12 • My Home Energy Report (MyHER);
- 13 • Residential Neighborhood Energy Saver (formerly Income-
14 Qualified Energy Efficiency and Weatherization Assistance);
- 15 • Power Manager;
- 16 • Nonresidential Smart \$aver® Energy Efficient Products and
17 Assessments Program:
 - 18 ○ Energy Efficiency Food Service Products;
 - 19 ○ Energy Efficiency HVAC Products;
 - 20 ○ Energy Efficiency IT Products;
 - 21 ○ Energy Efficiency Lighting Products;
 - 22 ○ Energy Efficiency Process Equipment Products;

- 1 ○ Energy Efficiency Pumps and Drives;
- 2 ○ Custom Incentive and Energy Assessments;
- 3 • PowerShare®;
- 4 • Small Business Energy Saver;
- 5 • EnergyWise for Business; and
- 6 • Nonresidential Smart \$aver® Performance Incentive.

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

9 A. The cost-effectiveness of each DSM/EE program is reviewed when
10 it is proposed for approval and then annually in the rider proceedings.
11 Pursuant to both the 2017 Mechanism and 2020 Mechanism, cost-
12 effectiveness is evaluated at both the program and portfolio levels.
13 Cost-effectiveness is reviewed using the Utility Cost (UC), TRC,
14 Participant, and Ratepayer Impact Measure (RIM) tests. Under each
15 of these four tests, a result above 1.0 indicates that a program is
16 cost-effective. A program may be above 1.0 on one or more tests,
17 and below 1.0 on other tests. While the 2017 Mechanism uses the
18 TRC and UC tests to evaluate initial and ongoing cost-effectiveness,
19 the 2020 Mechanism uses the UC test only.

20 The TRC test represents the combined utility and participant benefits
21 that will result from implementation of the program; a result greater
22 than 1.0 indicates that the benefits outweigh the costs of a program

1 to both the utility and the program's participants. A UC test result
2 greater than 1.0 means that the program is cost beneficial¹ to the
3 utility (the overall system benefits are greater than the utility's costs,
4 including incentives paid to participants). The Participant test is used
5 to evaluate the benefits against the costs specific to those ratepayers
6 who participate in a program. The RIM test is used to understand
7 how ratepayers who do not participate in a program will be impacted
8 by the program.

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

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

¹ "Cost beneficial" in this sense represents the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service, and/or avoiding energy generation from existing or new facilities or purchased power.

1 expect over the next year. Each year's rider filing is updated with the
2 most current EM&V data and other program performance data.

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

5 A. The Public Staff compares the cost-effectiveness test projections
6 from previous DSM/EE proceedings to the current filing, and
7 develops a trend of cost-effectiveness projections that serves as the
8 basis for the Public Staff's recommendation on whether a program
9 should: (1) continue as currently implemented, (2) be monitored for
10 further decreases in cost-effectiveness along with any Company
11 efforts to improve cost-effectiveness, or (3) be terminated.

12 **Q. HOW DO THE FORWARD-LOOKING COST-EFFECTIVENESS**
13 **TEST SCORES FILED IN THIS RIDER COMPARE TO SCORES**
14 **IDENTIFIED IN PREVIOUS RIDERS?**

15 A. Forward-looking projections of program performance over the last
16 few years have remained constant overall. Some programs have
17 benefitted from changes to the make-up of measures offered, both
18 additions and deletions. The performance of low-income programs
19 shows evidence of improved cost-effectiveness over time; however,
20 the cost-effective performance of other programs, such as the Smart
21 Saver EE program, continues to vacillate.

1 These trends are shown for Vintage years 2020, 2021, and 2022 in
2 Williamson Exhibit No. 1.

3 **Q. DO YOU HAVE AN EXPLANATION FOR THE CHANGES SEEN IN**
4 **THE FORWARD-LOOKING PROJECTIONS OF COST**
5 **EFFECTIVENESS SCORES OVER THE THREE YEARS IN YOUR**
6 **EXHIBIT 1?**

7 A. Yes. While many programs continue to be cost effective, the TRC
8 and UC scores as filed by the Company for all programs have a
9 natural ebb and flow over the years of DSM/EE rider proceedings,
10 mainly due to the changes in avoided cost rate determinations. In
11 addition, decreasing cost-effectiveness may be partially attributable
12 to a reduction in the unit savings from the original estimates of
13 savings as determined through EM&V of the program. As programs
14 mature, baseline standards may increase, or avoided cost rates
15 decrease, thus, it becomes more difficult for a program to produce
16 cost-effective savings. On the other hand, some programs have
17 experienced greater than expected participation, which usually
18 results in greater savings per unit cost, generally increasing cost-
19 effectiveness.

20 **Q. DOES THE PUBLIC STAFF ALSO LOOK AT THE ACTUAL COST**
21 **EFFECTIVENESS RESULTS?**

1 A. Yes. In addition to reviewing the forward-looking projections of cost-
2 effectiveness test results, as most of the EM&V reports for the
3 Company's portfolio of programs are completed, the Company
4 provides the Public Staff with updated, actual cost-effectiveness test
5 results for each program, and program year, in this case Vintage
6 years 2018, 2019, and 2020. These actual cost-effectiveness test
7 scores are attached as Williamson Exhibit 2.

8 **Q. WHAT BENEFIT DOES A REVIEW OF ACTUAL COST**
9 **EFFECTIVENESS PROVIDE?**

10 A. While the incorporation period of EM&V within the portfolio may be
11 different from one program to another, having a rolling record of
12 actual cost-effectiveness results provides the Public Staff with
13 confirmation that the activities within the portfolio have been and
14 continue to be worthwhile endeavors. In addition, actual test results
15 highlight programs that ultimately perform above or below original
16 projections. These test results are a reflection of the annual updates
17 to cost-effectiveness resulting from completed EM&V and finalized
18 participation numbers.

19 **Program Performance**

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

21 A. The Company's DSM/EE portfolio offers a wide variety of measures
22 to support everyday activities of its customers. The Public Staff's

1 review of program performance involves: (1) reviewing cost-
2 effectiveness trends; (2) reviewing Evans Exhibit 6, which provides
3 specific information on each program's marketing strategy, and
4 potential areas of concern; and (3) performing an overall qualitative
5 analysis.

6 The Public Staff also uses its involvement in the Company's bi-
7 monthly EE collaborative meetings to determine how a program is
8 performing. During these meetings, the Collaborative discusses
9 program performance (participation, customer engagement, and
10 potential barriers to entry and continuation of the program), recently
11 completed EM&V and market potential study activities, and potential
12 new program offerings.

13 Relying on all of the resources mentioned above, the Public Staff
14 believes that the historical performance of the Company's programs,
15 is reasonable. However, I have a number of matters associated with
16 the portfolio that I wish to bring to the Commission's attention.

17 Residential Smart Saver EE Program

18 In its Sub 1230 Order,² the Commission stated that it would review
19 in this proceeding the effectiveness of additional steps DEC had
20 taken to improve the cost effectiveness of the Residential Smart

² Order Approving DSM/EE Rider and Requiring Filing of Proposed Customer Notice, Docket No. E-7, Sub 1230, December 11, 2020, at 20.

1 Saver EE program, as the Program had demonstrated a prospective
2 or forward-looking TRC projection of less than 1.0 for six consecutive
3 rider proceedings. The Commission indicated that it would determine
4 in this case whether additional steps could be taken or whether the
5 Program should be terminated.

6 As evidenced by Evans Exhibit 7, the Program continues to
7 demonstrate a TRC value of 0.8 and a UC test score of 1.02. Witness
8 Evans did not address this issue in his direct testimony.

9 As seen in Williamson Exhibits 1 and 2, the actual and projected cost
10 effectiveness of the Smart Saver program has vacillated around 1.0
11 for several years under both the TRC and UC tests. It seems that
12 despite the Company's best efforts, there is very little the Company
13 can do that it has not already done to improve the cost effectiveness
14 over the long term.

15 The Public Staff recognizes that encouraging the adoption of high
16 efficiency heating and cooling systems is a fundamental part of the
17 Company's EE portfolio. Given the fluctuations in cost effectiveness,
18 the Commission's past orders regarding this program, and the
19 recognized importance of maintaining a high efficiency space
20 heating/cooling program in the portfolio, the Public Staff is reluctant
21 to recommend termination of the program in this proceeding. The
22 Public Staff will continue to monitor the program and work with the

1 Company and EE Collaborative to look for appropriate ways to build
2 sustained cost effectiveness.

3 Additional Studies

4 **Q. PLEASE DISCUSS THE STUDIES PROPOSED BY THE**
5 **COMPANY.**

6 A. The Company is proposing to study two matters going forward. The
7 first study will focus on Non-Energy Benefits (NEBs) and the second
8 study will focus on investigating the participation of Low and
9 Moderate Income (LMI) customers.

10 **Q. PLEASE ELABORATE ON THE GOALS OF THE NEBS AND LMI**
11 **STUDIES.**

12 A. The NEBs and LMI studies are both a result of work done by the
13 DSM/EE Collaborative. While the Public Staff does not participate as
14 a voting member of the DSM/EE Collaborative, we monitor and
15 participate in the conversations regarding what other DSM/EE
16 Collaborative participants would like to see done and Duke's
17 response to those requests.

18 Through discovery, Duke indicated that the NEBs Study was in an
19 early phase. It indicated that the scope of the study is currently being
20 developed and that it plans to provide the consultant's proposal to
21 the Collaborative at a later date. The Company has not yet
22 determined the NEBs to be researched. The Company indicated that

1 it would collect data regarding a customer's comfort level and peace
2 of mind with regard to certain EE measures and how they are
3 impacting a customer's day-to-day life. The Company provided
4 examples of potential questions such as increases in thermal comfort
5 or reductions in drafts as a result of program participation or
6 heightened safety due to new lighting or reduced heating and cooling
7 maintenance costs. The Company indicated that the study would
8 involve a number of programs: Smart Saver EE, MyHER, Income-
9 Qualified EE and Weatherization, Residential Energy Assessments,
10 and the Multifamily EE programs.

11 While the Company has not officially selected the consultant to
12 perform the study, initial conversations with the potential consultant
13 indicate an approximate cost of \$40,000.

14 Duke also indicated through discovery that the scope of the LMI
15 study will include activities such as participation analyses in LMI and
16 non-LMI programs, consumption analyses, customer surveys to
17 assess drivers and/or barriers to participation, and arrearage and
18 service disconnection analyses. Similar to the NEBs Study, the LMI
19 Study will investigate the LED Kit Program, Residential Assessments
20 Program, Low Income Neighborhoods Program, Low Income
21 Agency Program, Low Income Weatherization Program, Appliance
22 Recycling Program, and Online Store Program.

1 The Company has selected a preferred consultant to perform this
2 evaluation, with the costs totaling approximately \$293,300.

3 Duke indicated that the costs for both studies would be allocated
4 similarly to how the costs of EM&V and other market potential studies
5 are handled. The costs of these two studies would be shared on a
6 system basis between both the Company and Duke Energy
7 Progress, LLC.

8 **Q. DOES THE PUBLIC STAFF HAVE ANY ISSUES WITH THE**
9 **PROPOSED NEBS AND LMI STUDIES?**

10 A. While the Public Staff does not object to DEC conducting these
11 studies, this should not be construed as the Public Staff's consent to
12 inclusion of NEBs as inputs to cost effectiveness.³ Inclusion of NEBs
13 as an input to cost effectiveness would be a major policy shift for
14 North Carolina. In addition, consistent with the 2020 Mechanism, the

³ The Public Staff continues to agree with the Commission's statement in its August 23, 2017 Order Approving DSM/EE Rider, Revising DSM/EE Mechanism, and Requiring Filing of Proposed Customer Notice in Docket No. E-7, Sub 1130 (Sub 1130 Order):

The Commission continues to uphold its consistent position that the costs and benefits associated with DSM and EE programs, and thus included in cost-effectiveness tests, should be those costs and benefits that are directly associated with the avoidance by a DSM or EE program of energy and capacity that the utility would otherwise have been required to produce with its fleet of generation resources. To the extent there is any causal relationship between the avoidance of energy and capacity resulting from a DSM or EE program and NEBs, the Commission believes that it is not easily or readily quantifiable.

Sub 1130 Order at 29.

1 Commission would need to approve the use of specific NEBs in the
2 determination of cost effectiveness, and the Public Staff would have
3 an opportunity to take a position as to the appropriateness of
4 including a particular NEB as an input.

5 Avoided Cost

6 **Q. HAS THE COMPANY PROPOSED A MODIFICATION TO THE**
7 **WAY AVOIDED COST BENEFITS ARE VALUED?**

8 A. Yes, the Company has proposed to include in future proceedings a
9 Reserve Margin Adjustment Factor (RMAF) as an adder in its
10 calculation for avoided capacity rates that are applied to EE
11 measures that contribute system demand savings.

12 **Q. PLEASE DESCRIBE THE RMAF ADJUSTMENT.**

13 A. The RMAF adjustment is an adder applied to the avoided capacity
14 benefits associated with the demand reductions of EE measures on
15 the system. No RMAF adjustment is made to the avoided capacity
16 benefits generated from DSM programs as they are treated as
17 resources for planning purposes. The RMAF adjustment attempts to
18 align how the reserve margin is impacted by the inclusion of EE on
19 the system. Given that EE measures are treated in the Integrated
20 Resource Plan (IRP) as a reduction to the load forecast or a supply-
21 side resource and it lowers the need to build capacity to, among other
22 things, meet the reserve margin.

1 The RMAF percentage is applied to the capacity benefits of the EE
2 programs much in the same manner as the Performance Adjustment
3 Factor (PAF) is applied to the avoided capacity benefits provided by
4 Qualifying Facilities (QFs) that are compensated under a standard
5 offer PURPA⁴ contract. The RMAF attempts to treat the impacts of
6 EE programs the same as the reserve margin does for the capacity
7 resources identified in the IRP (i.e., 17%).

8 To take into consideration the PAF, the Company has proposed
9 removing the impacts associated with the PAF from the 17% target,
10 resulting in an RMAF percentage of 11.429%.

11 **Q. HAS THE COMPANY INCLUDED AN RMAF ADJUSTMENT IN**
12 **PRIOR VINTAGES?**

13 A. Yes. An RMAF was included for the first time in Rider 12 in Docket
14 No. E-7, Sub 1230 (Sub 1230). Prior to Vintage Year 2021, an RMAF
15 has not been included in the avoided capacity rates calculated from
16 the applicable Avoided Cost Proceeding, as determined from the
17 Mechanism. However, a PAF has been recognized in both the
18 Avoided Cost proceedings and in the DSM/EE application of avoided
19 cost.

⁴ Public Utility Regulatory Policies Act (PURPA, Pub. L. 95-617, 92 Stat. 3117, enacted November 9, 1978).

1 **Q. DID THE COMMISSION RULE ON THIS MATTER IN SUB 1230?**

2 A. Yes. The Commission in its December 11, 2020, *Order Approving*
3 *DSM/EE Rider and Requiring Filing of Proposed Customer Notice,*
4 in Sub 1230 (Sub 1230 Order) stated that it agreed with Public Staff
5 witness J. Robert Hinton that there was a theoretical basis for such
6 an adjustment and continued on to say that:

7 The Commission notes that EE is treated as a load
8 resource in the Company's IRP and agrees that with
9 every kW of load reduction that comes from EE, the
10 amount of load serving capacity for which the
11 Company must plan is reduced by more than one kW.
12 However, exactly how much the reserve margin
13 adjustment should be is not supported by substantial
14 evidence in this docket. The Commission concludes
15 that, for purposes of calculating the avoided capacity
16 cost benefits for DSM/EE programs, deviation from the
17 approved methodology for calculating the avoided
18 capacity costs that form the basis for rates paid to QFs
19 is appropriate and that this matter should be studied by
20 the Collaborative.

21 **Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL OF THE**
22 **RMAF ADJUSTMENT?**

23 A. Yes, for purposes of this proceeding, as currently proposed, the
24 Public Staff accepts the inclusion of an RMAF adjustment.

25 However, the Public Staff opposes the Company making changes to
26 the methodology for calculating inputs to the Mechanism or for
27 calculating the Mechanism without first bringing the changes to the
28 attention of the other parties for review and to the Commission for
29 approval. The Company should explain in direct testimony in each

1 rider proceeding the rationale for, and the effect of, any changes it
2 has made, or wishes to make, in its methodology or calculations.

3 **Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION?**

4 A. The Public Staff believes that the RMAF adjustment, should be
5 included in the calculation of avoided capacity benefits of EE
6 measures for future vintages. In calculating the RMAF adjustment,
7 the currently approved PAF should be removed from the recognized
8 IRP reserve margin, as DEC has proposed in this proceeding.

9 In addition, the Company should collaborate with the Public Staff to
10 codify this language in its cost recovery mechanism in an expeditious
11 manner in order to reflect this process change.

12 MyHER Program

13 **Q. PLEASE DISCUSS THE MYHER PROGRAM.**

14 A. The Public Staff has, for several past proceedings, expressed
15 concerns over the MyHER program, a behavioral program that
16 provides customers with information about their energy usage
17 compared to similar customers, along with customized energy saving
18 tips.

19 DEC has installed smart meters (AMI) across its territory and
20 customers are now able to closely monitor their energy usage
21 through a smart phone app. Further, DEC provides customers tips
22 on ways to lower their bills through a number of means outside of the

1 MyHER program. The Public Staff is concerned that the capabilities
2 of the AMI meters and other tips offered by DEC to its customers in
3 the normal course of business call into question the need for the
4 MyHER program. I note that Commission Rule R8-48(b)(5)
5 encourages each utility to provide new customers with energy
6 conservation tips and load management information as part of the
7 normal course of business.

8 As more data analytics are applied to the system, more sophisticated
9 and rigorous EM&V will be necessary to determine how much the
10 market has been transformed and how baselines have changed as
11 all the capabilities that AMI meters provide are realized and more
12 analytics are applied. Thus, it is vital for the EM&V to determine the
13 impact of usage information gleaned through AMI data and energy
14 tips provided in the normal course of business versus information
15 provided only through MyHER so that ratepayers do not overpay.
16 The next report is scheduled for fourth quarter 2021 (Evans Exhibit
17 12).

18 Monitoring the potential for overlap between the impact of the
19 capabilities of AMI meters and system analytics versus the MyHER
20 program is increasingly important as the energy savings from the
21 program as a percentage of the entire residential DSM/EE portfolio
22 have grown from 55%-65% in 2017-2019 to a projected 70-75% in
23 2020-2022.

1 Q. PLEASE DISCUSS THE SMART SAVER “FINDITDUKE”
2 PLATFORM.

3 A. As noted in my testimony in Sub 1230, in the last few years, the
4 Company transitioned its referral channel for the Residential Smart
5 Saver program into a broader channel providing a gamut of services
6 (EE-related and non EE-related) for customers.

7 During the discovery process, the Public Staff learned that the
8 FindItDuke channel is available to both customers and non-
9 customers. Anyone needing a contractor for one of the “FindItDuke”
10 listed services⁵ may contact Duke Energy for recommendations
11 related to residential and non-residential projects. The contractors
12 have paid a fee to Duke Energy to participate in the program. All of
13 these revenues flow into the Residential Smart Saver Program.

14 To begin the process, Duke Energy first refers a contractor to the
15 customer/non-customer. Several of the services provided through
16 this channel are not related to EE, such as building electrical
17 services, solar installation, and tree removal services. The contractor
18 will assess the problem that the customer is experiencing, then
19 perform the necessary work, either EE or non-EE, to resolve the
20 issue or complete the request.

⁵ See Williamson Exhibit 3 for a list of referral services and their scope.

1 Additionally, the Public Staff recently learned in the public
2 stakeholder group meeting for the Electric Transportation Pilot that
3 the Company intends to utilize the FindItDuke initiative to provide
4 referrals to customers for installations of electric vehicle charging
5 stations. In a data response, DEC also indicated that the FindItDuke
6 contractors received sponsored trainings through Advanced Energy
7 regarding electric vehicle charging station installations.

8 The Public Staff has concerns about how the FindItDuke channel
9 allows all the benefits to flow to the Residential Smart Saver
10 program, a residential EE program for DEC customers, when the
11 work done is not always related to an actual EE installation, a
12 residential customer, or even a customer of Duke Energy. While the
13 Public Staff appreciates DEC's efforts to improve the cost-
14 effectiveness of the Residential Smart Saver Program by having the
15 revenues from the participating contractors flow to the program, it
16 appears that some of these revenues should be booked into other
17 non-EE accounts.

18 **Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS**
19 **REGARDING THE SMART SAVER FINDITDUKE PLATFORM?**

20 A. The Public Staff recommends that the Company work to refine its
21 referral channel accounting to only allow referral dollars specifically
22 related to Residential EE work to be included in the referral channel
23 for the Residential Smart Saver program, and book other revenues

1 appropriately. Public Staff witness Maness discusses other
2 accounting issues involving the FindItDuke platform.

3 EM&V

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

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

9 I also reviewed previous Commission orders to determine if DEC
10 complied with provisions regarding EM&V contained in those orders.
11 My review leads me to conclude that the Company is complying with
12 the various Commission orders regarding EM&V of their DSM/EE
13 portfolio.

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

16 A. I have recommendations regarding the EM&V reports for the Save
17 Energy and Water Kit (SEWK) Program (Evans Exhibit A) and Non-
18 Residential Smart Saver Prescriptive Program (Evans Exhibit C).

19 **Q. PLEASE EXPLAIN YOUR RECOMMENDATION FOR THE SEWK**
20 **PROGRAM.**

1 A. The savings and impacts of the SEWK program were evaluated by
2 Nexant (Evans Exhibit A) for the period spanning September 2018
3 to August 2019. During the course of our review in this case, and
4 similar to our findings in the recent Duke Energy Progress, LLC
5 (DEP), DSM/EE rider proceeding,⁶ we discovered a discrepancy
6 between the savings resulting from the engineering analysis that was
7 applied to these measures and the billing analysis. The Public Staff's
8 recommendation in the recent DEP proceeding noted that a
9 continued review was needed to investigate the discrepancies
10 between the billing and engineering analyses.

11 **Q. WHAT ARE YOUR FINDINGS FROM THE CONTINUED**
12 **INVESTIGATION?**

13 A. The results of the continued investigation have not led to a definitive
14 answer as to why the billing and engineering analyses for this
15 program are so different. Thus, the Public Staff has advocated, and
16 will continue to advocate, for the appropriate application of billing
17 versus engineering analyses when it comes to determining impacts.
18 However, for purposes of this proceeding, the Public Staff
19 recommends that the SEWK program report not be delayed, and for
20 it to be accepted, with the condition that further reports presented by
21 Duke Energy that have discrepancies between the billing and

⁶ Docket No. E-2, Sub 1252.

3 Q. PLEASE EXPLAIN YOUR RECOMMENDATION FOR THE NON-
4 RESIDENTIAL SMART SAVER PRESCRIPTIVE PROGRAM.

20 GRID IMPROVEMENT PLAN

21 Q. PLEASE DISCUSS HOW THE COMPANY'S GRID
22 IMPROVEMENT PLAN CAN IMPACT THE DSM/EE PORTFOLIO.

1 A. In the Sub 1230 order⁷, the Commission requested that DEC explain
2 how the Company would distinguish peak demand and energy
3 savings related to the GIP from those savings resulting from the DSM
4 and EE programs, provide a list of GIP programs that had been
5 implemented, and explain how those programs would affect the
6 performance of the DSM/EE portfolio.

7 Company witness Evans indicates in his direct testimony that any
8 GIP impacts on the DSM/EE portfolio would be observed through the
9 EM&V process. He further notes three other GIP-related projects and
10 discusses how they would affect DSM/EE savings.

11 Witness Evans indicated that only the GIP-related IVVC program is
12 anticipated to impact peak demand and energy savings. He further
13 stated that self-optimizing grid (SOG) program is likely to reduce line
14 losses, which are incorporated into the DSM/EE modeling and
15 analysis for cost effectiveness. Third, Mr. Evans noted that the
16 Conservation Voltage Reduction (CVR) program will lower
17 distribution system voltage approximately 90% of the time, reducing
18 system loading, and decreasing generation.

19 In regard to the SOG program, I note that the line losses are a
20 function of the lost energy experienced between the meter and
21 generation source. Any improvements to line losses would manifest

⁷ Sub 1230 Order at 22.

1 in reduced energy requirements at the generation level. Conversely,
2 energy reductions at the generator-level that provide for sales at the
3 meter would likely reduce lost revenues and PPI, thus, in isolation,
4 reducing the DSM/EE rider itself. However, this effect may wholly or
5 partially offset by the baseline impact of SOG on energy sales itself.
6 For example, as the SOG program performs its function on the grid
7 during outage situations, fewer customers will lose power over a long
8 period of time due to serious events, and thus their homes will be
9 energized and draw energy from the grid. SOG, like other GIP work
10 that is designed to increase reliability, will ultimately increase the
11 amount of time that EE measures can operate, thus increasing the
12 savings potential, lost revenues, and, ultimately, PPI to be collected
13 by the Company.

14 In regard to the CVR Program, I note that a consistently lower voltage
15 on the distribution system does not directly translate to peak demand
16 or energy savings, even though as witness Evans suggests, there is
17 a decreased generation need. It remains to be seen whether CVR
18 will impact the kWh savings from DSM/EE. Maintaining lower system
19 voltage 90% of the time could reduce the kWh consumed, and thus
20 reduce any differences between the baseline kWh and the end-use
21 kWh for any EE measure.

22 Given the uncertainty of impacts of GIP on the DSM/EE portfolio, the
23 Public Staff will continue to work with DEC to ensure that GIP

1 reporting will include metrics that will assist in determining the
2 impacts on the DSM/EE portfolio.

3 **Q. SHOULD ALL OF THE EM&V REPORTS FILED IN THIS**
4 **PROCEEDING BE ACCEPTED AS COMPLETE?**

5 A. Yes. The reports filed in this proceeding, labeled as Evans Exhibits
6 A through C, should be accepted and considered complete.

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

10 A. Yes. As in previous cost recovery proceedings, I was able, through
11 sampling, to verify that the changes to program impacts and
12 participation were appropriately incorporated into the rider
13 calculations for each DSM/EE program, as well as the actual
14 participation and impacts calculated with EM&V data. I reviewed: (1)
15 workpapers provided in response to data requests; (2) a sampling of
16 the EE programs; and, (3) Evans Exhibit 1, which incorporates data
17 from various EM&V studies. I also met with DEC personnel to review
18 the calculations, EM&V, DSMore, and other data related to the
19 program/measure participation and impacts. Based on my ongoing
20 review of this data, I believe DEC has appropriately incorporated the
21 findings from EM&V studies and annual participation into its rider
22 calculations consistent with Commission orders and the 2017

1 Mechanism and 2020 Mechanism. I will continue to review this
2 information and, if necessary, file further information with the
3 Commission should my review reveal any relevant issues that would
4 cause me to alter my recommendations or conclusions.

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

6 **A. Yes.**

APPENDIX A

QUALIFICATIONS AND EXPERIENCE

DAVID M. WILLIAMSON

I am a 2014 graduate of North Carolina State University with a Bachelor of Science Degree in Electrical Engineering. I began my employment with the Public Staff's Electric Division in March of 2015. My current responsibilities within the Electric Division include reviewing applications and making recommendations for certificates of public convenience and necessity of small power producers, master meters, and resale of electric service; reviewing applications and making recommendations on transmission proposals for certificates of environmental compatibility and public convenience and necessity; and also interpreting and applying utility service rules and regulations. Additionally, I am currently serving as a co-chairman on the National Association of State Utility and Consumer Advocates' (NASUCA) DER and EE Committee.

My primary responsibility within the Public Staff is reviewing and making recommendations on DSM/EE filings for initial program approval, program modifications, EM&V evaluations, and on-going program performance of DEC, DEP, and DENC's portfolio of programs. I have filed testimony in various DEC, DEP, and DENC DSM/EE rider proceedings, as well as recent general rate case proceedings.

Docket Number E-7, Sub ____ Projected Program/Portfolio Cost Effectiveness	2019				2020				2021				Public Staff Williamson Exhibit 1	
	vintage 2020				vintage 2021				vintage 2022				Percent change from last year	
	Evans Exhibit 7 in Sub 1192				Evans Exhibit 7 in Sub 1230				Evans Exhibit 7 in Sub 1249					
	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC
Residential Programs														
Energy Efficiency Education	1.32	1.32	0.54	7.68	1.40	1.41	0.53	8.97	1.39	1.40	0.54	8.64	-1%	-1%
Energy Efficient Appliances & Devices	3.27	3.54	0.70	7.50	2.64	2.20	0.60	4.96	2.27	1.70	0.54	4.32	-14%	-23%
HVAC Energy Efficiency/Smart Saver EE	1.31	0.95	0.60	1.84	0.81	0.67	0.49	1.68	1.02	0.80	0.57	1.56	25%	19%
Income-Qualified Energy Efficiency and Weatherization Assistance	0.21	0.35	0.17	2.80	0.70	0.72	0.44	2.09	0.75	0.75	0.46	2.05	7%	4%
Multi-Family Energy Efficiency	2.97	2.97	0.61	22.81	3.14	3.16	0.66	20.52	3.11	5.29	0.68	24.02	-1%	67%
My Home Energy Report	1.89	1.89	0.61	-	1.89	1.89	0.66	-	1.88	1.88	0.63	-	0%	0%
Power Manager	4.22	8.72	4.22	-	4.33	9.80	4.33	-	4.26	8.99	4.26	-	-2%	-8%
Residential Energy Assessments	1.36	1.34	0.49	30.23	1.33	1.28	0.48	19.95	1.45	1.40	0.49	20.34	9%	9%
Residential Total	2.50	3.02	1.04	6.61	2.50	2.82	1.04	6.18	2.40	2.55	0.95	5.08	-4%	-10%
Non-Residential Programs														
Non Residential Smart Saver Custom Energy Assessments	3.07	1.08	0.84	1.99	2.70	0.80	0.84	1.38	1.99	0.74	0.76	1.44	-26%	-7%
Non Residential Smart Saver Custom	3.42	1.79	0.84	3.38	3.07	1.18	0.87	1.97	2.89	1.15	0.85	1.99	-6%	-2%
EnergyWise For Business	0.72	1.25	0.61	-	0.63	1.26	0.55	-	0.46	1.38	0.46	-	-26%	9%
Non Residential Smart Saver Energy Efficient Food Service Products	1.40	0.81	0.51	2.02	1.45	0.79	0.45	2.38	2.44	0.61	0.65	1.29	68%	-23%
Non Residential Smart Saver Energy Efficient HVAC Products	1.57	1.24	0.70	2.06	1.47	1.12	0.64	2.05	3.04	1.94	0.61	4.39	107%	74%
Non Residential Smart Saver Energy Efficient Lighting Products	4.29	2.00	0.80	3.75	4.19	2.14	0.78	4.08	3.80	2.11	0.79	4.04	-9%	-1%
Non Residential Smart Saver Energy Efficient Pumps and Drives Products	3.68	2.63	0.86	5.38	3.11	2.41	0.82	4.99	3.02	2.16	0.74	4.71	-3%	-10%
Non Residential Smart Saver Energy Efficient IT Products	0.60	0.46	0.31	2.55	0.65	0.47	0.31	2.26	0.68	0.75	0.33	5.39	5%	60%
Non Residential Smart Saver Energy Efficient Process Equipment Products	2.14	1.85	0.70	3.86	3.50	2.26	0.97	3.66	2.37	1.85	0.72	3.79	-32%	-18%
Non Residential Smart Saver Performance Incentive	3.29	1.06	0.83	1.79	3.22	1.06	0.86	1.79	1.74	1.04	0.69	2.05	-46%	-2%
Small Business Energy Saver	2.70	1.67	0.80	2.93	2.32	1.43	0.76	2.60	3.04	1.73	0.82	3.06	31%	21%
PowerShare	3.35	112.28	3.35	-	3.37	137.02	3.37	-	3.40	105.69	3.40	-	1%	-23%
Non-Residential Total	3.28	2.13	0.94	3.34	3.12	2.03	0.93	3.16	3.13	2.06	0.90	3.36	0%	2%
Overall Portfolio total	2.90	2.43	0.98	4.00	2.81	2.32	0.98	3.83	2.79	2.23	0.92	3.84	-1%	-4%

Public Staff														
Docket Number E-7, Sub ____	Williamson Exhibit 2													
Current Actual YTD Program/Portfolio Cost Effectiveness	vintage 2018				vintage 2019				vintage 2020				Percent change from last year	
	Evans Exhibit 7 in Sub 1130				Evans Exhibit 7 in Sub 1164				Evans Exhibit 7 in Sub 1192					
Program	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC	RIM	PCT	UCT	TRC
Residential Programs														
Energy Efficiency Education	1.44	1.89	0.60	-	1.53	1.48	0.49	10.32	1.18	1.16	0.37	10.17	-23%	-22%
Energy Efficient Appliances & Devices	3.18	5.49	0.78	9.64	2.51	3.05	0.59	6.96	2.75	2.98	0.47	7.10	10%	-2%
HVAC Energy Efficiency/Smart Saver EE	1.02	0.69	0.57	1.31	0.96	0.77	0.50	1.82	1.03	0.83	0.44	1.85	7%	8%
Income-Qualified Energy Efficiency and Weatherization Assistance	0.66	2.57	0.41	-	0.49	0.48	0.30	2.12	0.39	0.40	0.24	1.99	-20%	-17%
Multi-Family Energy Efficiency	3.78	5.56	0.70	-	2.94	2.85	0.56	20.00	1.34	1.43	0.38	18.85	-54%	-50%
My Home Energy Report	1.78	1.78	0.63	-	2.21	2.21	0.66	-	1.88	1.88	0.50	-	-15%	-15%
Power Manager	4.29	8.59	4.29	-	5.21	12.17	5.21	-	5.23	14.68	5.23	-	0%	21%
Residential Energy Assessments	2.03	2.25	0.68	-	1.40	1.35	0.50	22.77	1.36	1.34	0.41	33.13	-3%	-1%
Residential Total	2.77	4.02	0.91	9.27	2.55	2.98	0.80	6.74	2.69	3.13	0.76	6.79	5%	5%
Non-Residential Programs														
Non Residential Smart Saver Custom Energy Assessments	0.17	0.16	0.16	1.25	2.34	0.78	0.52	2.33	1.57	1.18	0.37	5.65	-33%	51%
Non Residential Smart Saver Custom	3.84	1.49	1.18	1.84	4.04	1.72	0.83	3.22	2.75	1.62	0.62	3.35	-32%	-6%
EnergyWise For Business	0.74	0.92	0.59	-	0.74	0.97	0.60	-	0.72	1.03	0.58	-	-3%	6%
Non Residential Smart Saver Energy Efficient Food Service Products	1.83	1.09	0.78	1.82	1.21	0.55	0.59	1.15	0.43	0.44	0.24	1.93	-64%	-20%
Non Residential Smart Saver Energy Efficient HVAC Products	1.73	1.67	0.89	2.09	2.50	1.71	0.62	3.65	3.03	1.87	0.57	3.45	21%	9%
Non Residential Smart Saver Energy Efficient Lighting Products	5.66	2.54	1.17	3.06	5.07	2.43	0.88	4.12	5.50	2.35	0.64	3.95	8%	-3%
Non Residential Smart Saver Energy Efficient Pumps and Drives Products	5.82	3.89	1.03	5.88	3.81	2.29	0.83	4.84	4.53	2.22	0.52	5.13	19%	-3%
Non Residential Smart Saver Energy Efficient IT Products	0.08	0.08	0.08	2.79	0.03	0.05	0.03	11.79	0.11	0.11	0.09	3.59	267%	120%
Non Residential Smart Saver Energy Efficient Process Equipment Products	3.36	3.48	1.16	4.58	3.47	2.14	0.81	3.94	7.96	5.46	0.72	9.65	129%	155%
Non Residential Smart Saver Performance Incentive	3.49	1.03	0.96	1.59	2.85	1.07	0.63	2.78	2.71	1.44	0.44	3.89	-5%	35%
Small Business Energy Saver	2.93	1.95	0.89	3.07	2.25	1.49	0.70	3.03	2.21	1.54	0.51	3.23	-2%	3%
PowerShare	2.79	50.76	2.79	-	3.23	57.30	3.23	-	2.89	34.88	2.89	-	-11%	-39%
Non-Residential Total	3.89	2.48	1.18	2.99	3.59	2.40	0.95	3.77	3.36	2.52	0.74	3.93	-6%	5%
Overall Portfolio total	3.24	3.06	1.03	5.01	2.98	2.66	0.87	5.11	2.96	2.81	0.75	5.21	-1%	6%

DUKE ENERGY CAROLINAS, LLC

Request:

In regard to the Company's Smart Saver referral channel (also known as "Find It Duke"), please breakdown the various referral products or services offered to customers and non-customers (separately). The response should include a brief description of the number, type, operating cost, and fees collected from each referral product or service, whether related to an EE or DSM program or not.

Response:

All services currently available are offered to both customer and non-customers alike. As shown below, the majority of referrals are for services that are related to DSM/EE.

Primary Services include:

- Heating & Air Conditioning Services (related to EE)
- Insulation Services (related to EE)
- Plumbing Services (related to EE)
- Pool Services (related to EE)
- Electrical Services
- Residential Solar Services
- Tree Services

Referrals Generated Per Service DEC

Electrical Services 938

Heating and Air Conditioning Services (related to EE) 2705

Insulation Services (related to EE) 2315

Plumbing Services (related to EE) 1873

Pool Services (related to EE) 296

Residential Solar 174

Tree Services 16

Grand Total 8317

Person responding: Sue Dinnsen, Products & Services Manager

NC Public Staff
Docket No. E-7, Sub 1249
2021 DSM-EE Rider
Data Request No. 4
Item No. 4-2
Page 1 of 1

DUKE ENERGY CAROLINAS, LLC

Request:

Please explain if there are any differences between the “Referral Channel/Find It Duke” process and the Company’s energy assessment programs. This response should identify any crossovers between programs.

Response:

Find It Duke is a referral channel that markets the services of residential contractors to customers who have a variety of energy-related home improvement needs. The energy assessment program offered through Duke Energy (Home Energy House Call) is a separate program filed under the DSM/EE Rider and provides residential customers the opportunity to understand how their home uses energy, characteristics within their home that may be causing excessive usage, and information about potential upgrades to minimize that usage. If a customer has a home improvement need that would require the use of a licensed contractor, then the Home Energy House Call auditor will provide information about Find It Duke so that the customer can generate a referral and receive qualified advice for those needed repairs.

Person responding: Bob Evans, Senior Strategy & Collaboration Manager

DUKE ENERGY CAROLINAS, LLC

Request:

Is the “Find It Duke” channel available to non-residential customers? If so, please:

- a. Identify the specific products and services they will be eligible to receive;
- b. Discuss how costs of the “Find It Duke” channel will be allocated between the residential and non-residential riders.

Response:

- a. Non-residential customers can make requests for referrals. As to products and services requested for referral, there is no distinction between residential and non-residential customers.

Person responding: Sue Dinnsen, Products & Services Manager

- b. As all referral proceeds are used to offset the costs of the Residential Smart Saver program, no costs are allocated to non-residential customers

Person responding: Bob Evans, Senior Strategy & Collaboration Manager