

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-7, SUB 1305

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	<b>DIRECT TESTIMONY OF</b>
Application of Duke Energy Carolinas, LLC	)	<b>CASEY Q. FIELDS</b>
for Approval of Demand-Side Management	)	<b>FOR DUKE ENERGY</b>
and Energy Efficiency Cost Recovery Rider	)	<b>CAROLINAS, LLC</b>
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	
Commission Rule R8-69	)	

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## I. INTRODUCTION AND PURPOSE

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TITLE.**

2 A. My name is Casey Q. Fields, and my business address is 411 Fayetteville  
3 Street, Raleigh, North Carolina 27601. I am employed by Duke Energy  
4 Business Services, LLC as Lead Strategy and Collaboration Manager for the  
5 Carolinas in the Customer Solutions Regulatory Enablement group.

6 **Q. PLEASE BRIEFLY STATE YOUR EDUCATIONAL BACKGROUND  
7 AND EXPERIENCE.**

8 A. I graduated from North Carolina State University in 2008 with a Bachelor of  
9 Science Degree in Science, Technology and Society. While obtaining my  
10 degree, I interned for Progress Energy at the Harris Nuclear Plant in Corporate  
11 Communications in 2006 and later served as a contractor until 2010. Upon  
12 graduation, I worked for Disability Determination Services for the North  
13 Carolina Department of Health and Human Services performing case work  
14 and interacting with applicants. In 2010, I joined Ecova where my primary  
15 focus was helping implement Progress Energy's Residential Lighting  
16 Program. I joined Duke Energy in 2013 and have held multiple roles,  
17 including Program Manager in income-qualified programs and a Senior  
18 Solutions Developer. I moved into my current role in March of 2022.

19 **Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES FOR DEC?**

20 A. I am responsible for the regulatory support of demand-side management  
21 ("DSM")/energy efficiency ("EE") programs in North Carolina for both Duke

1 Energy Carolinas, LLC (“DEC” or the “Company”) and Duke Energy  
2 Progress, LLC (“DEP”).

3 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY TO THIS**  
4 **COMMISSION?**

5 A. Yes. I provided testimony in support of the DEC DSM/EE Rider Application  
6 in Docket No. E-7, Sub 1285 and the DEP DSM/EE Rider Application in  
7 Docket No. E-2, Sub 1322.

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

10 A. My testimony supports DEC’s application for approval of its DSM/EE Cost  
11 Recovery Rider, Rider EE, for 2025 (“Rider 16”), which encompasses the  
12 Company’s portfolio of programs and cost recovery and incentive mechanism  
13 approved in the Commission’s *Order Approving DSM/EE Programs and*  
14 *Stipulation of Settlement* issued October 29, 2013, in Docket No. E-7, Sub  
15 1032 and the Mechanism approved in the Commission’s *Order Approving*  
16 *Revisions to Demand-Side Management and Energy Efficiency Cost Recovery*  
17 *Mechanisms* (“2020 Mechanism” and, collectively with 2013 cost recovery  
18 mechanism, the “Mechanisms”) issued on October 20, 2020, in Docket Nos.  
19 E-2, Sub 931 and E-7, Sub 1032 (“2020 Sub 1032 Order,” collectively, “Sub  
20 1032 Orders”). My testimony supports the Company’s Application and  
21 includes the following sections:

- 22 • Section II – Overview and Proceeding and Actions Ordered by the  
23 Commission.

- 1 • Section III – Rule R8-69 Filing Requirements.
- 2 • Section IV – Portfolio Overview.
- 3 • Section V – DSM/EE Program Results to Date.
- 4 • Section VI – Projected Results.
- 5 • Section VII – Evaluation Measurement & Verification (“EM&V”)
- 6 Activities.
- 7 • Section VIII – Impacts on Rider.
- 8 • Section IX – Portfolio Performance Incentive (“PPI”) and Program
- 9 Return Incentive (“PRI”) Calculation.
- 10 • Section X – Collaborative.
- 11 • Section XI – Inflation Reduction Act – Residential Rates.
- 12 • Section XII – Avoided Transmission and Distribution (“T&D”)
- 13 Study.
- 14 • Section XIII – Conclusion.

15 **Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR**  
16 **TESTIMONY.**

17 A. Fields Exhibit 1 supplies load impacts and avoided cost revenue requirements  
18 by vintage for each DSM/EE program. Fields Exhibit 2 contains a summary  
19 of net lost revenues for the period January 1, 2019 through December 31,  
20 2025. Fields Exhibit 3 contains the actual program costs for North Carolina  
21 for the period January 1, 2019, through December 31, 2023. Fields Exhibit 4  
22 contains the found revenues used in the net lost revenue calculations. Fields  
23 Exhibit 5 supplies evaluations of event-based programs. Fields Exhibit 6

1 contains information about the results of DEC's programs and a comparison  
2 of actual impacts to previous estimates. Fields Exhibit 7 contains the  
3 projected program and portfolio cost-effectiveness results for the Company's  
4 current portfolio of programs. Fields Exhibit 8 contains a summary of 2023  
5 program performance and an explanation of the variances between the  
6 forecasted program results and the actual results. Fields Exhibit 9 is a list of  
7 DEC's industrial and large commercial customers that have opted out of  
8 participation in its DSM or EE programs and a listing of those customers that  
9 have elected to opt in to DEC's DSM or EE programs after having initially  
10 notified the Company that they declined to participate, as required by  
11 Commission Rule R8-69(d)(2). Fields Exhibit 10 contains the projected PPI  
12 and PRI associated with Vintage 2025. Fields Exhibit 11 contains the six-  
13 year history of program and avoided costs. Fields Exhibit 12 provides the  
14 actual and expected dates when the EM&V for each program or measure will  
15 become effective. Fields Exhibit 13 provides a summary of the estimated  
16 activities and timeframe for completion of EM&V by program. Fields  
17 Exhibit 14 provides information showing the method used to exclude Find It  
18 Duke amounts from the EE portfolio.

19 Fields Exhibits A through J provide the detailed completed EM&V  
20 reports for the following: EM&V Report for the PowerShare® Program  
21 2022-2023 (Fields Exhibit A); 2020 – 2021 Smart Saver® Non-Residential  
22 Custom Program Evaluation (Fields Exhibit B); DEC/DEP Residential  
23 Assessments (Fields Exhibit C); Save Energy and Water Kit Program 2020-

1 2021 Evaluation (Fields Exhibit D); Smart Saver HVAC 2020-2022  
2 Evaluation Report (Fields Exhibit E); Power Manager Winter BYOT 2022-  
3 2023 Evaluation (Fields Exhibit F); DEC 2022 Power Manager Evaluation  
4 (Summer) (Fields Exhibit G); Energy Efficiency in Schools Program 2021-  
5 2022 Evaluation (Fields Exhibit H); DEC Power Manager BYOT Winter  
6 2021-2022 (Fields Exhibit I); and DEC/DEP Non-Residential Smart Saver®  
7 Prescriptive Program (Fields Exhibit J).

8 **Q. WERE THE EXHIBITS INCLUDED WITH YOUR PRE-FILED**  
9 **TESTIMONY PREPARED BY YOU OR AT YOUR DIRECTION AND**  
10 **SUPERVISION?**

11 A. Yes, they were.

12 **II. OVERVIEW OF PROCEEDING AND ACTIONS ORDERED BY**  
13 **THE COMMISSION**

14 **Q. PLEASE BRIEFLY DESCRIBE THE PURPOSE OF THIS**  
15 **PROCEEDING.**

16 A. This proceeding is a cost recovery proceeding related to the Company's  
17 EE/DSM portfolio of programs. Specifically, the Commission will review  
18 and approve an annual rider to the rates of electric customers that will allow  
19 the Company to recover all reasonable and prudent costs incurred by DEC for  
20 adoption and implementation of new DSM and EE measures. These costs  
21 relate to DSM and EE measures that have been reviewed, approved, and, in  
22 some cases, modified by the Commission. This proceeding is also where the  
23 Commission approves recovery of net lost revenues and appropriate utility

1 incentives as set forth in the Mechanisms. The rider approved in this  
2 proceeding will replace the rider approved in last year's proceeding and will  
3 be effective until the Commission approves a new rider in next year's  
4 proceeding.

5 The annual DSM/EE/Rider has two components, a projection for the  
6 following vintage year and a reconciliation of prior vintage years. The  
7 reconciliation component trues up the projection of the vintage year for actual  
8 results based on Evaluation, Measurement, and Verification ("EM&V"),  
9 which looks at all aspects of the approved programs, including any new  
10 programs and measures approved and added, actual program expenditures,  
11 actual program participation, and energy savings per participant. Initial  
12 EM&V results are considered actual results for a program until the next  
13 EM&V results are received at which time the new EM&V results are then  
14 considered actual results going forward and applied prospectively for the  
15 purposes of truing up vintages. This EM&V continues to apply until it is  
16 superseded by new EM&V results. In each annual rider proceeding, DEC  
17 must also evaluate the prospective cost-effectiveness for each of its approved  
18 DSM/EE programs and for its aggregated portfolio of approved DSM/EE  
19 programs.

20 **Q. PLEASE DESCRIBE THE ACTIONS DEC HAS TAKEN IN**  
21 **RESPONSE TO THE COMMISSION'S 2023 ORDER IN DEC'S MOST**  
22 **RECENT DSM/EE RIDER PROCEEDING.**

1 A. In its August 29, 2023, *Order Approving DSM/EE Rider and Requiring Filing*  
2 *of Proposed Customer Notice* with a subsequent *Errata Order* issued on  
3 September 20, 2023, in Docket No. E-7, Sub 1285 (“Sub 1285 Order”), the  
4 Commission ordered that DEC and the DSM/EE Carolinas Collaborative  
5 (“Collaborative”) participants continue work to better understand and  
6 identify potential means of addressing energy savings forecasts. As a result  
7 of the regular Collaborative meetings, DEC has facilitated and participated in  
8 a number of discussions regarding developing new programs, expanding the  
9 reach and increasing the impacts of existing programs, and identifying and  
10 overcoming market barriers to achieve increased energy savings for  
11 customers. The Company also presented and discussed results on Non-  
12 Energy Benefits (“NEBs”) study with the Collaborative. This included  
13 discussing the elements of NEBs (which could include water savings,  
14 equipment performance, participant comfort, and health and safety) and  
15 looking at ways NEBs could be utilized in cost effectiveness tests.

16 **Q. PLEASE DESCRIBE THE ACTIONS DEC HAS TAKEN IN**  
17 **RESPONSE TO THE COMMISSION’S 2022 EE/DSM RIDER ORDER**  
18 **RELATED TO THE MYHER PERSISTENCE STUDY.**

19 A. In its December 12, 2022, *Order Approving DSM/EE Rider and Requiring*  
20 *Filing of Proposed Customer Notice* in Docket No. E-7, Sub 1265 (“Sub 1265  
21 Order”), the Commission ordered DEC to initiate a persistence study of the  
22 MyHER energy savings. The persistence study evaluates the endurance of  
23 savings after a customer ceases to participate after having participated in the



1 MyHER program for a designated period of time. I submitted testimony in  
2 that docket explaining that the third-party EM&V vendor recommended to  
3 study persistence for a period of two years and that the study schedule would  
4 be finalized by Fourth Quarter 2023.

5 The vendor has now completed a power analysis to determine the  
6 appropriate sample size of DEC and DEP customers to include in the study.  
7 As a result of the analysis, the vendor recommended to remove multi-family  
8 customers from the persistence study because the persistence effects for this  
9 segment may not be statistically significant. This is primarily due to two  
10 reasons. First, the attrition of customers residing in multi-family homes is  
11 higher than that of single-family residences. Multifamily customers are more  
12 likely to move residences and not have two years of usage to analyze in the  
13 study. Second, the savings effect from HER in the multifamily segment is  
14 relatively small compared to single-family residences.

15 An interim report for first-year persistence would be available in the  
16 First Quarter of 2025, with a final report expected to be available in the  
17 Second Quarter of 2026. The Company will provide each report to the  
18 Commission.

19 **III. RULE R8-69 FILING REQUIREMENTS**

20 **Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S**  
21 **APPLICATION AND SUPPORTING TESTIMONY IN THIS**  
22 **PROCEEDING.**

1 A. The information filed in support of Rider 16 is provided in response to the  
2 Commission's filing requirements contained in R8-69(f)(1) and can be found  
3 in my testimony and exhibits, as well as the testimony and exhibits of  
4 Company witness Miller, as follows:  
5

<b>R8-69(f)(1)</b>	<b>Items</b>	<b>Location in Testimony</b>
(i)	Forecasted NC retail sales for the rate period	Miller Exhibit 6
(ii)	For each measure for which cost recovery is requested through Rider 16:	
(ii)	a. Total expenses expected to be incurred during the rate period	Fields Exhibit 1
(ii)	b. Total costs savings directly attributable to measures	Fields Exhibit 1
(ii)	c. EM&V activities for the rate period	Fields Exhibit 12
(ii)	d. Expected peak demand reductions	Fields Exhibit 1
(ii)	e. Expected energy reductions	Fields Exhibit 1
(iii)	Filing requirements for DSM/EE EMF rider, including:	
(iii)	a. Total expenses for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Fields Exhibit 3
(iii)	b. Total avoided costs for the test period in the aggregate and broken down by type of expenditure, unit, and jurisdiction	Fields Exhibit 1
(iii)	c. Description of results from EM&V activities	Testimony of Casey Fields and Fields Exhibits A-J
(iii)	d. Total peak demand reductions in the aggregate and broken down per program	Fields Exhibit 1
(iii)	e. Total energy reduction in the aggregate and broken down per program	Fields Exhibit 1
(iii)	f. Discussion of findings and results of programs	Testimony of Casey Fields and Fields Exhibit 6
(iii)	g. Evaluations of event-based programs	Fields Exhibit 5
(iii)	h. Comparison of impact estimates from previous year and explanation of significant differences	Testimony of Casey Fields and Fields Exhibits 6 and 8
(iv)	Determination of utility incentives	Testimony of Casey Fields and Fields Exhibit 10
(v)	Actual revenues from DSM/EE and DSM/EE EMF riders	Miller Exhibit 4
(vi)	Proposed Rider 16	Testimony of Shannon Miller Exhibit 1
(vii)	Projected NC sales for customers opting out of measures	Miller Exhibit 6
(viii)	Supporting work papers	Via Data Transfer

1

**IV. PORTFOLIO OVERVIEW**

2

**Q. PLEASE PROVIDE AN OVERVIEW OF DEC'S CURRENT DSM/EE**

3

**PROGRAMS.**

1 A. The following DSM/EE programs have been implemented by DEC in its  
2 North Carolina service territory:<sup>1</sup>

3 **RESIDENTIAL CUSTOMER PROGRAMS**

- 4 • EE Education Program
- 5 • Energy Efficient Appliances and Devices Program
- 6 • Income-Qualified High-Energy Use Pilot
- 7 • Income-Qualified EE and Weatherization Program for Individuals
  - 8 ○ Neighborhood Energy Saver Program
  - 9 ○ Weatherization
- 10 • Multi-Family EE Program
- 11 • Energy Assessments Program
- 12 • New Construction Program
- 13 • Smart Saver – Early Replacement and Retrofit
- 14 • Smart Saver Program
- 15 • My Home Energy Report
- 16 • Income-Qualified Power Manager
- 17 • Power Manager Load Control Service Program

18 **NONRESIDENTIAL CUSTOMER PROGRAMS**

- 19 • Nonresidential Smart Saver Energy Efficient Products and  
20 Assessment Prescriptive Program includes the following subsets of  
21 measures:

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<sup>1</sup> The Company has two interruptible programs for nonresidential customers, Interruptible Service (“IS”) and Standby Generation (“SG”), which are accounted for outside of the Mechanisms approved by the Commission in the Sub 1032 Orders.

- 1                   ○ Energy Efficient Food Service Products
- 2                   ○ Energy Efficient HVAC Products
- 3                   ○ Energy Efficient Lighting Products
- 4                   ○ Energy Efficient Process Equipment Products
- 5                   ○ Energy Efficient Pumps and Drives Products
- 6                   • Smart \$aver Custom Incentive and Energy Assessment
- 7                   • Smart \$aver Performance Incentive Program
- 8                   • Business Energy Saver Program
- 9                   • EnergyWise for Business Program
- 10                  • PowerShare Program

11   **Q.   HAS THE COMMISSION APPROVED NEW PROGRAMS OR**  
12   **MODIFICATIONS SINCE THE SUB 1032 ORDER WAS ISSUED?**

13   A.   Yes. The programs contained in the current portfolio are the same as those  
14   approved by the Commission in the initial Sub 1032 Order, with the exception  
15   of the Weatherization and the Residential Smart \$aver Programs, which have  
16   been modified with the Commission’s approval. Additionally, the High-  
17   Energy Use Pilot, Smart \$aver Early Replacement and Retrofit, and Income-  
18   Qualified Power Manager Program were all approved by the Commission as  
19   new programs since the Sub 1032 Order was issued.

20   **Q.   PLEASE EXPLAIN WHY CERTAIN INPUTS FOR DEC’S**  
21   **PORTFOLIO OF PROGRAMS WERE UPDATED.**

22   A.   Certain inputs were updated in DEC’s 2025 portfolio projection to account  
23   for EM&V-related impacts and launching of new approved programs.

1           Additionally, the underlying assumptions in Smart Saver programs, which  
2           offer rebates and incentives to install higher efficiency heating, air  
3           conditioning, and ventilation measures, have been updated to reflect the  
4           recent federal appliance standards advancements and changes to the efficient  
5           lighting standards that were effective mid-2023.

6   **Q.    DID THE COMPANY UPDATE ANY INPUTS TO ACCOUNT FOR**  
7   **IRA-RELATED IMPACTS?**

8   A.    No, impacts from the IRA have not been assumed in the program projections  
9           because the impacts that the IRA will have on the Company’s DSM/EE  
10          programs are not able to be quantified at this time. The Company is  
11          continuing to work and coordinate with the North Carolina State Energy  
12          Office (“NC SEO”) to fully understand and identify the impacts, if any, IRA  
13          funding will have on program forecasts. Guidance from NC SEO and the  
14          Department of Energy (“DOE”) around implementation will be needed to  
15          inform the impacts IRA funding will have to the Company’s DSM/EE  
16          programs.

17 **Q.    PLEASE DESCRIBE HOW EM&V ACTIVITIES IMPACTED DEC’S**  
18 **ESTIMATED 2025 PROGRAM PORTFOLIO.**

19 A.    The Company updated the savings impacts of certain programs due to EM&V  
20          results that the Company received after it submitted its application for  
21          approval of its DSM/EE Rider in its previous annual DSM/EE Rider  
22          proceeding in Docket No. E-7, Sub 1285. These routine updates result in  
23          changes to the projected avoided cost benefits associated with the projected

1 participation. These EM&V updates will impact the calculation of the  
2 specific program and overall portfolio cost-effectiveness, as well as the  
3 calculation of DEC's projected shared savings incentive.

4 **Q. AFTER FACTORING THESE UPDATES INTO THE VINTAGE 2025**  
5 **PORTFOLIO, DO THE RESULTS OF DEC'S PROSPECTIVE**  
6 **UTILITY COST-EFFECTIVENESS TESTS INDICATE THAT IT**  
7 **SHOULD DISCONTINUE OR MODIFY ANY OF ITS PROGRAMS?**

8 A. No. DEC performed a prospective analysis of each of its programs and the  
9 aggregate portfolio for the Vintage 2025 period. The cost-effectiveness  
10 results for the entire portfolio for Vintage 2025 are contained in Fields Exhibit  
11 7. The aggregate portfolio continues to project cost-effectiveness, with the  
12 exception of the Income-Qualified EE Products and Services Program and  
13 Income-Qualified High-Energy Use Pilot, which were not cost-effective at  
14 the time of Commission approval. Income-qualified programs are typically  
15 not cost-effective because they require higher incentives that cover the full  
16 cost of the measure and installation to attract income-qualified customers.  
17 This higher incentive level typically negatively impacts cost-effectiveness  
18 scores. However, income-qualified programs such as these are not required  
19 to pass cost-effectiveness thresholds under the EE/DSM Mechanism because  
20 these programs provide a broader societal benefit by alleviating energy  
21 burdens on income-qualified programs—therefore, they serve the public  
22 interest.

1           Aside from these programs, the only other program in DEC’s portfolio that is  
2           not cost-effective is the Income-Qualified Power Manager. Although this  
3           program is an income-qualified program, it was projected to be cost-effective  
4           at the time it was approved by the Commission based upon a forecast covering  
5           the first five years of the program. However, the program does not yet have  
6           sufficient participation to achieve cost-effectiveness because it was approved  
7           by the Commission in late 2023. The Company expects the program to be  
8           cost-effective as participation increases. Therefore, there are no reasons to  
9           discontinue any of DEC’s programs. Notably, the Company continues to  
10          examine its programs for potential modifications to increase their  
11          effectiveness, regardless of the current cost-effectiveness results.

12                           **V.    DSM/EE PROGRAM RESULTS TO DATE**

13   **Q.    HOW MUCH ENERGY, CAPACITY, AND AVOIDED COST**  
14   **SAVINGS DID DEC’S DSM/EE PROGRAMS DELIVER IN 2023?**

15   A.    During 2023, DEC’s DSM/EE programs delivered over 697 million kilowatt-  
16   hours (“kWh”) of energy savings, nearly 1,181 megawatts (“MW”) of  
17   summer peak capacity savings, and nearly 598 MW of winter peak capacity  
18   savings, which produced over \$422,000,000 in net present value of avoided  
19   cost savings. The 2023 performance results for individual programs are  
20   provided on page 5 of Fields Exhibit 1.

21   **Q.    HOW DID THE COMPANY’S PROGRAMS PERFORM RELATIVE**  
22   **TO THEIR ORIGINAL ESTIMATES FOR 2023?**



1 A. As demonstrated by Fields Exhibit 8, overall performance during 2023 was  
 2 less than forecasted, although the overall portfolio remained cost-effective.  
 3 Inflation, high interest rates, challenging workforce environments, and new  
 4 lighting standards continue to make investments in EE difficult for customers,  
 5 which resulted in decreased participation in DSM/EE programs. This  
 6 decreased participation negatively impacted the forecasted performance and  
 7 was the primary driver in creating less-than-expected performance.

## 8 VI. PROJECTED RESULTS

9 **Q. PLEASE PROVIDE A PROJECTION OF THE RESULTS THAT DEC**  
 10 **EXPECTS TO SEE FROM IMPLEMENTATION OF ITS**  
 11 **PORTFOLIO OF PROGRAMS.**

12 A. The actual results for Vintage 2023 and projection of the results for Vintages  
 13 2024 and 2025, as well as the associated projected program expense for  
 14 DEC's portfolio of programs, are summarized in the following table:

15

DEC System (NC & SC) DSM/EE Portfolio 2023 Actual Results and 2024-2025 Projected Results			
	2023	2024	2025
Annual System Net MW - Summer	1,181	1,180	1,265
Annual System Net MW - Winter	598	608	715
Annual System Net GWh	698	808	685
Annual Program Costs (Millions)	\$137.6	\$161.9	\$172.8

16

1 Consistent with the terms of its Commission-approved cost recovery  
 2 Mechanisms, DEC will update the actual and projected EE achievement  
 3 levels in its annual Rider EE filing to account for any program or measure  
 4 additions based on the performance of programs, market conditions,  
 5 economics, and consumer demand.

## 6 VII. EM&V ACTIVITIES

7 **Q. PLEASE DESCRIBE THE COMPANY'S EM&V ACTIVITIES**  
 8 **RELEVANT TO THIS PROCEEDING.**

9 A. The Company's EM&V activities are summarized in greater detail within the  
 10 exhibits attached to my testimony. Fields Exhibit 12 summarizes the  
 11 estimated activities and timeframe for completion of EM&V by program.  
 12 Fields Exhibit 13 provides the actual and expected dates when the EM&V for  
 13 each program or measure will become effective. Fields Exhibits A through J  
 14 provide the detailed completed EM&V reports or updates for the following  
 15 programs:

Fields Exhibit	EM&V Reports	Report Finalization Date	Effective Date	Evaluation Type
A	EM&V Report for the PowerShare® Program 2022-2023	1/4/2024	6/1/2023	Impact
B	2020 – 2021 Smart Saver® Non-Residential Custom Program Evaluation	12/6/2023	1/1/2024	Impact & Process
C	DEC/DEP Residential Assessments	11/27/2023	Varies by measure; most measures are 9/1/21, some 3/1/19, others 3/1/20	Impact & Process
D	Save Energy and Water Kit Program 2020-2021 Evaluation	11/27/2023	7/1/2021	Impact & Process

E	Smart Saver HVAC 2020-2022 Evaluation Report Duke Energy Carolinas and Progress	11/21/2023	4/1/2022	Impact & Process
F	Power Manager Winter BYOT 2022-2023 Evaluation	10/24/2023	4/1/2023	Impact
G	Duke Energy Carolinas 2022 Power Manager Evaluation (Summer)	10/6/2023	10/1/2022	Impact
H	Energy Efficiency in Schools Program 2021-2022 Evaluation	9/1/2023	8/1/2022	Impact & Process
I	DEC Power Manager BYOT Winter 2021/2022	7/5/2023	4/1/2022	Impact & Process
J	Duke Energy Carolinas/Duke Energy Progress Non-Residential Smart Saver® Prescriptive Program Evaluation	3/20/2023	1/1/2021	Impact & Process

1

2 **Q. HOW WERE EM&V RESULTS UTILIZED IN DEVELOPING THE**  
3 **PROPOSED RIDER 16?**

4 A. The Company applied EM&V results in accordance with the agreement  
5 among DEC, the Southern Alliance for Clean Energy, and the Public Staff,  
6 approved by the Commission in its *Order Approving DSM/EE Rider and*  
7 *Requiring Filing of Proposed Customer Notice* issued on November 8, 2011,  
8 in Docket No. E-7, Sub 979 (“EM&V Agreement”).

9 Pursuant to the EM&V Agreement, actual participation and evaluated load  
10 impacts are used prospectively to update net lost revenues estimates. In  
11 addition, the EM&V Agreement provides that initial EM&V results shall be  
12 applied retrospectively to program impacts that were based upon estimated  
13 impact assumptions derived from industry standards (rather than EM&V  
14 results for the program in the Carolinas), in particular the DSM/EE programs  
15 initially approved by the Commission in Docket No. E-7, Sub 831  
16 (collectively, the “Sub 831 Programs”), with the exception of the

1 Nonresidential Smart Saver Custom Rebate Program. For purposes of the  
2 vintage true-ups and forecast, initial EM&V results are considered actual  
3 results for a program and continue to apply until superseded by new EM&V  
4 results, if any. For all new programs and pilots approved after the Sub 831  
5 Programs, DEC will use initial estimates of impacts until it has EM&V  
6 results, which will then be applied retrospectively to the beginning of the  
7 offering and will be considered actual results until a second EM&V is  
8 performed.

9 All program impacts from EM&V apply only to the programs for which the  
10 analysis was directly performed. Actual impacts and research about EE and  
11 conservation behavior directly attributed to existing DEC program offerings  
12 may be utilized by DEC when developing new product offerings.

13 **Q. PLEASE PROVIDE AN OVERVIEW OF THE COSTS ASSOCIATED**  
14 **WITH EM&V.**

15 A. The level of EM&V and associated costs varies by program and depends on  
16 that program's contribution to total portfolio, how long the program has been  
17 in the portfolio without material change, and whether the program and  
18 administration have been updated to account for new industry standards  
19 related to EM&V. DEC estimates, however, that no costs associated with  
20 performing EM&V for all measures in the portfolio will not exceed 5% of  
21 total program costs.

22 **Q. WHICH PROGRAMS CONTAIN IMPACT RESULTS BASED ON**  
23 **CAROLINAS-BASED EM&V?**

1 A. All the filed EM&V studies, provided as Fields Exhibits A through J, were  
2 Carolinas-based.

3 **Q. DID THE COMPANY UPDATE THE SMART SAVER CUSTOM**  
4 **PROGRAM TO INCLUDE THE UPDATED COMBINED NON-**  
5 **PARTICIPANT SPILLOVER (“NPSO”)?**

6 A. Yes. The Company applied the updated combined NPSO to be consistent with  
7 the Order received in Docket No. E-2, Sub 1322 (“DEP Order”). The Custom  
8 EM&V report was held open until the DEP Order was received to fully  
9 understand what changes need to be made for the Custom Program relating  
10 to EM&V impacts to ensure consistency with DEP. In the DEP Order, the  
11 Commission concluded that “based on the application of the DEP Mechanism  
12 and the fact that removing NPSO savings would result in an increase in rates,  
13 the Commission finds it appropriate to utilize the combined savings reflected  
14 in the Companies’ rebuttal testimony for purposes of setting rates in this  
15 proceeding.” As such, the Company has therefore updated the NPSO  
16 application consistent with the DEP Order and the DEC Mechanism.

17 **VIII. IMPACTS ON RIDER**

18 **Q. IS THE VINTAGE 2023 EXPERIENCE MODIFICATION FACTOR**  
19 **(“EMF”) IMPACTED BY ACTUAL PARTICIPATION?**

20 A. Yes. The EMF in Rider 16 accounts for changes to actual participation  
21 relative to the forecasted participation levels utilized in DEC’s Vintage 2023  
22 Rider EE. As DEC receives actual participation information, it can then  
23 update participation-driven actual avoided cost benefits from its DSM/EE

1 programs and the net lost revenues derived from its EE programs. For  
2 example, as previously mentioned, the overall savings along with their related  
3 expenditures were less than those that were forecasted. As a result, the EMF  
4 will be reduced to reflect the lower costs, net lost revenues, and shared savings  
5 incentive (PPI and PRI) associated with its programs.

6 **Q. HOW HAVE EM&V RESULTS BEEN INCORPORATED INTO THE**  
7 **VINTAGE 2023 TRUE-UP COMPONENT OF RIDER 16?**

8 A. In accordance with the EM&V Agreement, all of the final EM&V results that  
9 were received by December 31, 2023 have been applied. These results were  
10 applied prospectively from the first day of the month immediately following  
11 the month in which the study participation sample for the EM&V was  
12 completed. This means that if DEC has received EM&V results for a  
13 program, the per participant impact applied to that program's projected  
14 participation in Vintage 2023 is based upon those actual EM&V results.

15 **Q. PLEASE DESCRIBE HOW DEC CALCULATED FOUND**  
16 **REVENUES.**

17 A. Consistent with the Sub 1032 Orders and with the "Decision Tree" found in  
18 Appendix A of the Commission's February 8, 2011 Order in Docket No. E-  
19 7, Sub 831, and approved for the new portfolio in the Sub 1032 Orders,  
20 possible found revenue activities were identified, categorized, and netted  
21 against the net lost revenues created by DEC's EE programs. Found revenues  
22 may result from activities that directly or indirectly result in an increase in  
23 customer demand or energy consumption within DEC's service territory.

1 Load-building activities such as these, however, would not be considered  
2 found revenues if they (1) would have occurred regardless of DEC’s activity,  
3 (2) were a result of a Commission-approved economic development activity  
4 not determined to produce found revenues, or (3) were part of an unsolicited  
5 request for DEC to engage in an activity that supports efforts to grow the  
6 economy. On the other hand, found revenues would occur for load growth  
7 that did not fall into the previous categories but was directly or indirectly a  
8 result of DEC’s activities. Based on the results of this work, all potential  
9 found revenue-related activities are identified and categorized in Fields  
10 Exhibit 4. Additionally, consistent with the methodology employed and  
11 approved in Docket No. E-7, Sub 1073, as discussed in detail in the testimony  
12 of Company witness Timothy J. Duff in Docket No. E-7, Sub 1050, DEC also  
13 proposes to adjust the calculation of found revenues to account for the impacts  
14 of activities outside of EE programs that it undertakes that reduce customer  
15 consumption – i.e., “negative found revenues.”

16 **Q. DOES THE COMPANY’S CALCULATION OF FOUND REVENUES**  
17 **CONTINUE TO ACCOUNT FOR NEGATIVE FOUND REVENUE**  
18 **ACTIVITIES?**

19 A. Yes, Consistent with the methodologies approved in the DEC Mechanism,  
20 the Company’s calculation of Found Revenues appropriately accounts for  
21 Negative Found Revenues.

1 **Q. HAS THE OPT-OUT OF NONRESIDENTIAL CUSTOMERS**  
2 **AFFECTED THE RESULTS FROM THE PORTFOLIO OF**  
3 **APPROVED PROGRAMS?**

4 A. Yes, the opt-out of qualifying nonresidential customers affects DEC's overall  
5 nonresidential impacts. For Vintage 2023, DEC had 4,816 eligible customer  
6 accounts opt out of participating in DEC's nonresidential portfolio of EE  
7 programs, representing a 6% increase from 2022. In addition, DEC had 4,485  
8 eligible customer accounts opt out of participating in DEC's nonresidential  
9 DSM programs, representing a 6% decrease from 2022. For 2023, eighty-  
10 nine opt-out eligible accounts opted-in to the EE portion of the Rider, and five  
11 opt-out eligible accounts opted-in to the DSM portion of the Rider.

12 **IX. PPI & PRI CALCULATION**

13 **Q. PLEASE PROVIDE AN OVERVIEW OF THE INCENTIVE-**  
14 **RELATED PROVISIONS IN THE DEC MECHANISM.**

15 A. Pursuant to the related Sub 1032 Orders, the DEC Mechanism allows the  
16 Company to (1) recover the reasonable and prudent costs incurred for  
17 adopting and implementing DSM and EE measures in accordance with N.C.  
18 Gen. Stat. § 62-133.9 and Commission Rules R8-68 and R8-69; (2) recover  
19 net lost revenues incurred for up to 36 months of a measure's life for EE  
20 programs; and (3) earn a PPI based upon the sharing of a percentage of the  
21 net savings achieved through DEC's DSM/EE programs on an annual basis.  
22 Prior to 2022 the shared savings percentage is 11.5% and, starting in 2022,



1 this percentage was lowered to 10.6%. The PPI is also subject to certain  
2 guidelines that are set forth in the Mechanisms.

3 **Q. PLEASE EXPLAIN HOW THE PPI IS CALCULATED.**

4 A. First, DEC calculates the net savings eligible for an incentive by subtracting  
5 the present value of the annual lifetime DSM/EE program costs (excluding  
6 approved income-qualified programs as described below) from the net  
7 present value of the annual lifetime avoided costs achieved through the  
8 Company's programs (again, excluding approved income-qualified  
9 programs). Second, the Company multiplies the net savings eligible for  
10 incentive by the applicable shared savings percentage to determine its pretax  
11 incentive.

12 **Q. DOES DEC EXCLUDE ANY PROGRAMS FROM THE**  
13 **DETERMINATION OF ITS PPI CALCULATION?**

14 A. Yes, consistent with the Sub 1032 Orders, DEC excludes the impacts and  
15 costs associated with the Neighborhood Energy Saver Program and the  
16 Income-Qualified EE and Weatherization Program for Individuals from its  
17 calculation of the PPI. At the time the program was approved, it was not cost-  
18 effective, but was approved based on its societal benefit. Beginning in 2022,  
19 the Income-Qualified EE and Weatherization programs are eligible to receive  
20 a PRI, and in 2023, the Income Qualified High Energy Use Pilot became  
21 eligible for PRI.

22 **Q. PLEASE EXPLAIN HOW THE PRI IS CALCULATED.**

1 A. The PRI is calculated by multiplying the net present value of avoided cost by  
2 10.6 percent. As with the PPI, the PRI is also subject to certain limitations  
3 that are set forth in the 2020 Mechanism. The percentage used to determine  
4 the final PRI for each Vintage Year will be based on the Company's ability  
5 to maintain or improve the cost effectiveness of the PRI-eligible programs.  
6 The PRI percentage for each PRI-eligible Program will be determined by  
7 comparing (1) the projected UCT ratio for the portfolio of PRI-eligible  
8 Programs for the Vintage Year at the time of the Company's DSM/EE Rider  
9 filing first estimating that projected Vintage Year UCT ratio to (2) the actual  
10 UCT ratio achieved for that portfolio of PRI-eligible Programs as that Vintage  
11 Year is trued up in future filings. The ratio (UCT actual/UCT estimate) will  
12 then be multiplied by 10.60% to determine the PRI percentage that will be  
13 applied to the actual avoided costs generated by each approved PRI eligible  
14 program.

15 **X. COLLABORATIVE**

16 **Q. PLEASE SUMMARIZE THE COLLABORATIVE ACTIVITIES**  
17 **THAT OCCURRED IN 2023.**

18 A. The Collaborative met for formal meetings in January, March, May, July,  
19 September, and November. Between meetings, interested stakeholders joined  
20 conference calls as needed to zero in on certain agenda items or priorities  
21 which could not be fully explored during the formal meetings, such as new  
22 program development, study results, and federal funding opportunities.  
23 Collaborative members gained a deeper understanding of the issues facing the

1 Company's DSM/EE programs and provided valuable feedback and  
2 perspective. Meetings and calls have begun and will continue in a similar  
3 fashion through 2024 as well.

4 **Q. HAS THE COLLABORATIVE LOOKED SPECIFICALLY AT EE**  
5 **PROGRAMS TO ASSIST INCOME-QUALIFIED CUSTOMERS IN**  
6 **SAVING ENERGY?**

7 A. Yes, the Collaborative has been focused on assisting income-qualified  
8 households. Program updates specific to the income-qualified programs have  
9 been presented at the Collaborative, in addition to a deeper dive in the  
10 program operations. The High Energy Use Pilot has also generated questions  
11 and the Company provided an update to the Collaborative regarding the  
12 Company's efforts to leverage city and county funding in the eligible  
13 counties.

14 The Collaborative has also discussed how NEBs may impact income-  
15 qualified programs. Specifically, the recently-completed NEBs study showed  
16 that NEBs are generally higher in income-qualified programs and programs  
17 that offer weatherization, HVAC and water saving measures have the highest  
18 value. Incorporating NEBs in the programs gives members of the  
19 Collaborative a more complete picture of the benefits created for these  
20 customers through the Company's DSM/EE programs. The inclusion of  
21 NEBs, however, does not impact the determination of cost effectiveness  
22 which is used to determine whether a program should be offered and in no  
23 way impacts the calculation of PPI or PRI that is earned by the Company.

1 **Q. HOW DOES THE COMPANY EVALUATE SUGGESTIONS**  
2 **RECEIVED THROUGH THE COLLABORATIVE?**

3 A. The Company reviews all suggestions offered by Collaborative members.  
4 When a suggestion is received, the Company analyzes it for appropriateness  
5 in the DSM/EE Rider and determines if it is something that can be included  
6 in an existing program or should be presented as a new DSM/EE program to  
7 be filed with the Commission. The Company then refers to Technical  
8 Resource Manuals around the country and conducts an internal review of our  
9 existing measures to see if there are similarities that can be applied to the  
10 suggestion. A cost effectiveness analysis is also performed to determine if the  
11 suggestion is a viable option in DSM/EE. After careful considerations of the  
12 potential program design, the Company shares its findings with the  
13 Collaborative to gain feedback on the suggestion.

14 **XI. INFLATION REDUCTION ACT – RESIDENTIAL REBATES**

15 **Q. HAS THE COMPANY PURSUED OPPORTUNITIES THAT MAY**  
16 **ARISE UNDER THE IRA THAT COULD BENEFIT ITS**  
17 **CUSTOMERS?**

18 A. Yes. Although the Company itself will not directly receive any IRA funds to  
19 apply to its energy efficiency programs, it believes it can provide significant  
20 value to customers by helping them to understand, qualify for, and receive  
21 IRA funds that, when possible, can be used to complement the Company's  
22 energy efficiency programs. Therefore, the Company continues to review the  
23 guidance issued by DOE for the IRA and determine what impacts IRA

1 funding will have on the DSM/EE programs. Specifically, the Company is  
2 closely reviewing the guidance issued by DOE for HER to determine whether  
3 any changes to the design of the programs will be necessary. Additionally,  
4 the Company has reviewed the Home Energy Performance-Based, Whole  
5 House Rebates and High-Efficiency Electric Home Rebate Program to  
6 consider how our customers would benefit from coordinating the Company's  
7 energy efficiency incentives and rebates.

8 In addition to its existing equipment incentive programs, the Home  
9 Energy House Call program will continue to provide opportunities to  
10 proactively educate and engage residential customers about the opportunities  
11 that IRA funds can provide, once funding is available. Furthermore,  
12 MyHER's ongoing engagement with customers will provide an opportunity  
13 to inform customers of the additional funding opportunities, when available,  
14 and connect the benefits of IRA with the existing Company programs by  
15 looking at customer's electrical use habits and provide customized tips. Use  
16 of the funds in this way can help to ensure that customer efficiency and energy  
17 savings are realized at the lowest possible cost to customers. Moreover, to  
18 better understand and maximize the opportunities that these funds provide  
19 customers to become more energy efficient, the Company continues to work  
20 closely with the NC SEO as IRA guidelines and formula funding for HER  
21 rebates are established. The Company submitted a response on March 3, 2023  
22 to the United States Department of Energy's Office of State and Community  
23 Energy Programs' January 18, 2023, Request for Information on the Inflation

1 Reduction Act Home Efficiency & Electrification Rebate Programs. The  
2 Company also continues to engage with members of the Collaborative who  
3 have expressed interest in understanding how the Company will coordinate  
4 and optimize the deployment of those rebates. The Company intends to  
5 provide on-going status updates to the Collaborative on these matters and will  
6 continue to provide an update to the Commission in next year's annual rider  
7 filing.

8 **Q. WHAT OTHER INTERACTIONS HAS THE COMPANY HAD WITH**  
9 **THE NC SEO REGARDING IRA FUNDS?**

10 A. As the Company continues to engage with NC SEO on all matters related to  
11 IRA, the Contract Training Grant is another funding mechanism that was  
12 identified by NC SEO as beneficial for the State. As such, the Company  
13 provided a letter of support to the SEO for the SEO's application of the grant  
14 that was due on January 31, 2024. The funds will support the important work  
15 of training contractors on relevant provisions within the IRA along with  
16 overall benefits of EE measures. The Company believes that the Contractor  
17 Training Grant is important to ensure that the contractors engaged by the NC  
18 SEO have the training necessary to (i) support the installation of energy  
19 efficiency equipment and (ii) educate customers on the potential availability  
20 of IRA rebates and utility incentives that are available for the customers.

21 Additionally, based on feedback received from stakeholders, the  
22 Company will include the IRA as a standing topic for each Collaborative  
23 meeting in 2024 to open the dialogue for any potential program design

1 changes or updates. This will also allow for stakeholders to share lessons  
2 learned and information from other jurisdictions that may help inform best  
3 practices for DSM/EE programs.

4 **XII. AVOIDED T&D STUDY**

5 **Q. HAS THE COMPANY EVALUATED THE RESULTS OF DUKE**  
6 **ENERGY'S 2021 AVOIDED T&D STUDY?**

7 A. Yes. As discussed in the Public Staff's December 19, 2022, update letter to  
8 the Commission referencing Dockets E-2, Sub 1294 and E-7, Sub 1265, the  
9 review of the 2021 Avoided T&D Study is complete. As a result, the  
10 Company evaluated the results of the 2021 Avoided T&D study and found  
11 that the results validated the agreed-upon avoided T&D rate applied to  
12 Vintage 2023.

13 **Q. WHEN WILL THE NEXT AVOIDED T&D STUDY OCCUR?**

14 A. Yes. Consistent with the schedule set out in the Company's approved  
15 EE/DSM Mechanisms, the next Avoided T&D Study will be conducted in the  
16 4<sup>th</sup> Quarter of 2024 and will utilize the new agreed-upon methodology. The  
17 results of that study will be applied to the projection for Vintage Year 2026.

18 **XIII. CONCLUSION**

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

21 A. Yes.