

1 PLACE: Dobbs Building, Raleigh, North Carolina  
2 DATE: Tuesday, September 19, 2023  
3 TIME: 9:18 a.m. - 10:27 a.m.  
4 DOCKET: E-2, Sub 1322  
5 BEFORE: Commissioner ToNola D. Brown-Bland, Presiding  
6 Chair Charlotte A. Mitchell  
7 Commissioner Daniel G. Clodfelter  
8 Commissioner Kimberly W. Duffley  
9 Commissioner Jeffrey A. Hughes  
10 Commissioner Floyd B. McKissick, Jr.  
11 Commissioner Karen M. Kemerait

12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

IN THE MATTER OF:

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

1 A P P E A R A N C E S:  
2 FOR DUKE ENERGY PROGRESS, LLC:  
3 Ladawn Toon, Esq.  
4 Associate General Counsel  
5 Duke Energy Progress, LLC  
6 411 Fayetteville Street  
7 Raleigh, North Carolina 27601

8  
9 Will Middleton, Esq.  
10 Baker Donelson  
11 2235 Gateway Access Point, Suite 220  
12 Raleigh, North Carolina 27607

13  
14 FOR CAROLINA INDUSTRIAL GROUP FOR FAIR UTILITY  
15 RATES II:  
16 Douglas D.C. Conant, Esq., Associate  
17 Bailey & Dixon, LLP  
18 434 Fayetteville Street, Suite 2500  
19 Raleigh, North Carolina 27601

20  
21  
22  
23  
24

1 FOR CAROLINA UTILITY CUSTOMERS ASSOCIATION:

2 Amanda Hawkins, Esq.

3 Brooks Pierce McLendon Humphrey & Leonard, LLP

4 1700 Wells Fargo Capitol Center

5 Raleigh, North Carolina 27601

6

7 FOR THE USING AND CONSUMING PUBLIC:

8 Anne M. Keyworth, Esq.

9 Nadia L. Luhr, Esq.

10 Public Staff - North Carolina Utilities Commission

11 4326 Mail Service Center

12 Raleigh, North Carolina 27699-4300

13

14

15

16

17

18

19

20

21

22

23

24

1	T A B L E O F C O N T E N T S	
2	E X A M I N A T I O N S	
3		PAGE
4	As a panel,	
5	CAROLYN T. MILLER, CASEY Q. FIELDS,	
6	and LARK L. LEE	
7	Direct Examination by Ms. Toon .....	13
8	PREFILED DIRECT TESTIMONY OF MS. MILLER .....	17
9	PREFILED SUPPLEMENTAL DIRECT TESTIMONY OF ...	36
10	MS. MILLER	
11	SUMMARY OF DIRECT AND SUPPLEMENTAL .....	42
12	TESTIMONY OF MS. MILLER	
13	PREFILED REBUTTAL TESTIMONY OF MS. MILLER ...	46
14	PREFILED DIRECT TESTIMONY OF MR. FIELDS .....	52
15	PREFILED SUPPLEMENTAL DIRECT TESTIMONY OF ...	82
16	MR. FIELDS	
17	SUMMARY OF DIRECT AND SUPPLEMENTAL .....	86
18	TESTIMONY FOR MR. FIELDS	
19	PREFILED REBUTTAL TESTIMONY OF MR. FIELDS ...	91
20	PREFILED REBUTTAL TESTIMONY OF MS. LEE .....	98
21	SUMMARY OF TESTIMONY FOR MS. LEE .....	112
22	Cross Examination by Ms. Keyworth .....	118
23	Redirect Examination by Ms. Toon .....	124
24	Examination by Commissioner Duffley .....	129

1 E X A M I N A T I O N S Cont'd.:

2 PAGE

3 Examination by Commissioner Brown-Bland ..... 131

4 Examination by Commissioner Kemerait ..... 132

5 Examination by Commissioner Brown-Bland ..... 136

6 Examination by Ms. Keyworth ..... 142

7 As a panel,

8 MICHELLE BOSWELL, TOMMY WILLIAMSON, JR.,

9 and WARREN HIRONS

10 Direct Examination by Ms. Keyworth ..... 145

11 PREFILED DIRECT TESTIMONY AND APPENDIX A .... 148

12 OF MS. BOSWELL

13 PREFILED DIRECT TESTIMONY AND APPENDIX A .... 163

14 OF MR. WILLIAMSON

15 PREFILED DIRECT TESTIMONY OF WARREN HIRONS .. 181

16 Examination by Commissioner Brown-Bland ..... 219

17 Examination by Commissioner Kemerait ..... 223

18 Examination by Commissioner Brown-Bland ..... 225

19 Examination by Mr. Middleton ..... 227

20 Examination by Ms. Keyworth ..... 228

21

22

23

24

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

E X H I B I T S

IDENTIFIED / ADMITTED

Miller Direct Exhibits 1 - 6 .....	15 / 143
Miller Supplemental Revised .....	35 / 143
Exhibits 1 - 3	
Miller Rebuttal Revised .....	45 / 143
Exhibits 1 - 3	
Fields Direct Exhibits 1 - 13 .....	51 / 144
and A - J	
Fields Supplemental Revised .....	81 / 144
Exhibits 1, 2, 5, 7, and 12	
Fields Rebuttal Revised .....	90 / 144
Exhibits 1, 2, 5, 7, and 12	
Application of Duke Energy .....	-- / 115
Carolinas, LLC	
Williamson Exhibits 1 and 2 .....	162 / 230
Hirons Exhibits 1 - 7 .....	180 / 230
(Confidential filed under seal)	

## P R O C E E D I N G S

1  
2 COMMISSIONER BROWN-BLAND: Good morning.  
3 Let us come to order and go on the record. I am  
4 Commissioner Brown-Bland with the North Carolina  
5 Utilities Commission, presiding Commissioner for this  
6 hearing. With me this morning are Commissioners Chair  
7 Charlotte A. Mitchell, Daniel G. Clodfelter, Kimberly  
8 W. Duffley, Jeffrey A. Hughes, Floyd B. McKissick,  
9 Jr., and Karen M. Kemerait.

10 I now call for hearing Docket Number E-2,  
11 Sub 1322, In The Matter of Application of Duke Energy  
12 Progress, LLC's Annual Review for Approval of  
13 Demand-Side Management and Energy Efficiency Cost  
14 Recovery Rider.

15 North Carolina General Statute § 62-133.9  
16 establishes the procedure for cost recovery of  
17 Demand-Side Management, hereinafter DSM, and Energy  
18 Efficiency, hereinafter EE, expenditures.

19 The Statute provides for an annual DSM/EE  
20 Rider for electric public utilities to recover all  
21 reasonable and prudent costs incurred and appropriate  
22 incentives for adoption and implementation of new DSM  
23 and EE measures.

24 On June 13th, 2023, Duke Energy Progress,

NORTH CAROLINA UTILITIES COMMISSION

1 LLC, hereafter DEP, or Applicant, or Company, filed  
2 its Application for approval of DSM and EE Cost  
3 Recovery Rider pursuant to General Statute § 62-133.9  
4 and Commission Rule R8-69, along with the direct  
5 testimony and exhibits of Casey Q. Fields and Carolyn  
6 T. Miller in support of the Application.

7           On June 30th, 2023, the Commission issued an  
8 Order Scheduling Hearing and Requiring Filing of  
9 Testimony, Establishing Discovery Guidelines and  
10 Requiring Public Notice. The Order scheduled the  
11 hearing in this docket for today, Tuesday, September  
12 19th, 2023, immediately following the hearings in the  
13 Company's annual fuel and REPS charge adjustment  
14 proceedings which was scheduled to begin at 9:00 a.m.

15           Based on their timely Petitions to Intervene  
16 in this docket, the following parties were allowed to  
17 intervene by Order of the Commission: Carolina  
18 Utility Customers Association, referred to as CUCA,  
19 and Carolina Industrial group for Fair Utility Rates  
20 II, referred to as CIGFUR II.

21           The intervention and participation of the  
22 Public Staff is recognized pursuant to General  
23 Statute § 62-15(d) and Commission Rule R1-19E.

24           On August 24th, 2023, DEP filed the



1 supplemental testimony of Witness Fields and Witness  
2 Miller. This testimony of Witnesses Fields and Miller  
3 was refiled on August 28th, 2023, in order to identify  
4 correctly the attorney making the filing on behalf of  
5 DEP.

6 On August 29th, 2023, the Public Staff filed  
7 the testimony and exhibits of Tommy Williamson, Jr.,  
8 Warren Hirons, and Hemanth Meda.

9 On September 7th, 2023, DEP filed the  
10 rebuttal testimony and exhibits of Witness Fields,  
11 Witness Miller, and Lark L. Lee.

12 On September 15th, 2023, the Public Staff  
13 filed a Motion stating that Witness Meda would not be  
14 available to testify at today's hearing and requesting  
15 that Michelle Boswell, Director of the Public Staff  
16 Accounting Division, be allowed to adopt Witness  
17 Meda's testimony and testify at the hearing.

18 On September 18th, 2023, the Commission  
19 issued an Order granting the Public Staff's motion.

20 Also, on September 18, 2023, DEP filed the  
21 Affidavit of Public Notice in this matter.

22 In compliance with the requirements of the  
23 State Government Ethics Act, I remind all members of  
24 the Commission of our duty to avoid conflicts of

1 interest, and inquire at this time whether any member  
2 has any known conflict of interest with respect to  
3 matter coming before us?

4 (No response)

5 The record will reflect no conflicts were  
6 identified.

7 I now call for appearances of counsel,  
8 beginning with the Applicant.

9 MS. TOON: Good morning, Commissioner  
10 Brown-Bland. Ladawn Toon, Associate General Counsel,  
11 on behalf of Duke Energy Progress. I have with me  
12 Mr. Middleton who will introduce himself.

13 MR. MIDDLETON: Hi. Will Middleton with the  
14 law firm Baker Donelson on behalf of the Company.  
15 It's a pleasure to be here.

16 COMMISSIONER BROWN-BLAND: Good morning and  
17 welcome.

18 MS. KEYWORTH: Good morning, Commissioners.  
19 This is Anne Keyworth on behalf of the Public Staff  
20 and with me today is Nadia Luhr.

21 COMMISSIONER BROWN-BLAND: Good morning.

22 MR. CONANT: Good morning. D.C. Conant on  
23 behalf of CIGFUR II.

24 MS. HAWKINS: Good morning. Amanda Hawkins

1 on behalf of CUCA.

2 COMMISSIONER BROWN-BLAND: Good morning to  
3 all.

4 Before I make inquiry regarding the public  
5 witness hearing, is there any preliminary matters to  
6 be addressed?

7 MS. KEYWORTH: I have a brief one,  
8 Commissioner Brown-Bland. Just that, although the  
9 Public Staff filed the Motion to substitute Witness  
10 Boswell for Witness Meda, we did not file the  
11 testimony in that form until yesterday. And so that  
12 was filed in the docket yesterday, Michelle Boswell's  
13 testimony including the Appendix with her  
14 qualifications.

15 COMMISSIONER BROWN-BLAND: So it was filed  
16 with her adopting Mr. Meda's testimony; is that what  
17 you --

18 MS. KEYWORTH: That's correct. The Motion  
19 was filed on Friday and the testimony in its current  
20 form under Witness Boswell was filed yesterday.

21 COMMISSIONER BROWN-BLAND: Thank you for  
22 that, and the record will so reflect.

23 Has the Public Staff identified any public  
24 witnesses?

1 MS. KEYWORTH: We have not, Commissioner  
2 Brown-Bland.

3 COMMISSIONER BROWN-BLAND: Just for the  
4 record, is there anyone who's a member of the public  
5 or a customer who wishes to give testimony this  
6 morning?

7 (No response)

8 The record will reflect that no one came  
9 forward.

10 So the case is with the Applicant.

11 MS. TOON: Good morning. Commissioner  
12 Brown-Bland, one preliminary matter. With your  
13 permission, we would like to call Witnesses  
14 Mr. Fields, Ms. Miller, and Ms. Lee as a rebuttal --  
15 as a panel to address our rebuttal and direct case.

16 COMMISSIONER BROWN-BLAND: So rebuttal and  
17 direct at one time --

18 MS. TOON: Please.

19 COMMISSIONER BROWN-BLAND: -- and one panel?

20 MS. TOON: Thank you. I now call Carolyn T.  
21 Miller, Casey Q. Fields, and Laura L. -- I'm sorry,  
22 Lark L. Lee. I apologize, Ms. Lee. Please be careful  
23 when you're getting on the stand.

24 COMMISSIONER BROWN-BLAND: If the three of

1 you can reach the Bible with your left hands and raise  
2 your right.

3 As a panel,

4 CAROLYN T. MILLER, CASEY Q. FIELDS,

5 and LARK L. LEE;

6 having been duly sworn,

7 testified as follows:

8 DIRECT EXAMINATION BY MS. TOON:

9 Q Starting with Ms. Miller, would you please state  
10 your name and business address for the record?

11 A My name is Carolyn Miller and my business address  
12 is 525 South Tryon Street, Charlotte, North  
13 Carolina.

14 Q And by whom are you employed and in what  
15 capacity?

16 A I'm the Manager of Rates and Regulatory Strategy  
17 for Duke Energy Carolinas, LLC, supporting both  
18 Duke Energy Progress and Duke Energy Carolinas.

19 Q And did you cause to be prefiled in this docket  
20 on June 13th, 2023, 18 pages of direct testimony  
21 and six exhibits?

22 A Yes, I did.

23 Q Do you have any changes or corrections to your  
24 direct testimony?

1 A I do not.

2 Q And did you cause to be prefiled in this docket  
3 on August 24th, 2023, five pages of supplemental  
4 testimony and three exhibits?

5 A Yes, I did. The supplemental testimony was  
6 refiled on August 28th, 2023, but was identical  
7 to the original supplemental testimony.

8 Q Do you have any changes or corrections to your  
9 supplemental testimony including exhibits?

10 A No, I do not.

11 Q Did you also cause to be prefiled in this docket  
12 on September 7th, 2023, three pages of rebuttal  
13 testimony and three exhibits?

14 A Yes.

15 Q Do you have any changes or corrections to your  
16 rebuttal testimony?

17 A No.

18 Q If I were to ask you the same questions that  
19 appear in your direct, supplemental, and rebuttal  
20 testimony today, would your answers be the same?

21 A Yes.

22 Q And have you prepared a summary of your testimony  
23 for the Commission?

24 A Yes.

1 MS. TOON: Commissioner Brown-Bland, I move  
2 that Ms. Miller's prefiled direct, supplemental, and  
3 rebuttal testimony, as well as the summary of her  
4 testimonies be copied into the record as if orally  
5 given from the stand.

6 COMMISSIONER BROWN-BLAND: Without  
7 objection, that motion will be allowed and the  
8 prefiled testimonies previously identified as well as  
9 the summary will be received and copied into the  
10 record as if given orally, word-for-word, from the  
11 witness stand. And the exhibits?

12 MS. TOON: I'd also move that Ms. Miller's  
13 exhibits be marked for identification as prefiled.

14 COMMISSIONER BROWN-BLAND: That motion is  
15 allowed.

16 MS. TOON: Thank you.

17 (WHEREUPON, Miller Direct  
18 Exhibits 1 - 6 are marked  
19 for identification as  
20 prefiled.)

21 (WHEREUPON, the prefiled  
22 direct testimony of CAROLYN  
23 T. MILLER is copied into  
24 the record as if given

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

orally from the stand.)



**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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

---

1 **I. INTRODUCTION AND PURPOSE**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION**  
3 **WITH DUKE ENERGY CORPORATION.**

4 A. My name is Carolyn Miller, and my business address is 526 South Church Street,  
5 Charlotte, North Carolina 28202. I work for Duke Energy Carolinas, LLC (“DEC”)  
6 as the Manager of Rates and Regulatory Strategy, supporting both Duke Energy  
7 Progress, LLC (“DEP” or the “Company”) and DEC.

8 **Q. PLEASE BRIEFLY STATE YOUR EDUCATIONAL BACKGROUND**  
9 **AND EXPERIENCE.**

10 A. I graduated from The College of New Jersey in 1994 with a Bachelor of Science degree  
11 in Accounting. I started my career in 1994 at Ernst & Young as a Senior Auditor.  
12 Subsequently, from 1997-1999, I worked for Duke Energy Global Asset Development  
13 as a Business Analyst. From 1999-2001, I worked for Duke Engineering & Services  
14 as a Senior Business Analyst. I then joined Duke Energy in 2001 and served in various  
15 roles, including as Senior Business Analyst, Manager of General Accounting, Manager  
16 of Emerging Issues, and Manager of Tax Accounting. Since 2016, I have worked  
17 for DEC as Manager of Rates and Regulatory Strategy. As part of my role, I am  
18 responsible for providing regulatory support and guidance on DEC and DEP, LLC’s  
19 demand-side management (“DSM”) and energy efficiency (“EE”) cost recovery  
20 process.

21 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN MATTERS**  
22 **BROUGHT BEFORE THIS COMMISSION?**

23 A. Yes. I have provided testimony in support of DEC North Carolina DSM/EE Rider  
24 Docket No. E-7, Sub 1285, and most recently for DEP in Docket No. E-2 Sub 1206.

25 **Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?**

1 A. I am responsible for providing regulatory support for retail rates and providing  
2 guidance on DEC's and DEP's DSM/EE cost recovery process.

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

4 A. The purpose of my testimony is to explain and support DEP's proposed  
5 DSM/EE cost recovery rider and Experience Modification Factor ("EMF") and  
6 provide information required by Commission Rule R8-69.

7 **Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR**  
8 **TESTIMONY.**

9 A. Miller Exhibit 1 provides a summary of the proposed annual rates by customer  
10 class. Miller Exhibit 2, pages 1 through 3, shows the calculation of the EE and  
11 DSM rates for the rate period, as well as the breakdown by program of the  
12 various components of the estimated revenue requirement. Miller Exhibit 2,  
13 pages 4 through 6, presents the calculation of the EE EMF and DSM EMF rates  
14 for the test period, as well as the breakdown by program of the various  
15 components of the final revenue requirement. Adjustments resulting from  
16 Evaluation, Measurement and Verification ("EM&V") of the Company's  
17 DSM/EE programs are also presented in Miller Exhibit 2, page 7. Miller  
18 Exhibit 3, pages 1 through 4, calculates the amount of interest or return due on  
19 over- and under-collections for Vintage 2022. Exhibit 4 shows a summary of  
20 revenue collected during calendar year 2022 by program type and customer  
21 class. Miller Exhibit 5, pages 1 through 8, presents the allocation factors used  
22 in the development of the rider, including the energy allocation factors  
23 applicable to DSM and EE program costs, the North Carolina and South  
24 Carolina retail allocation factors, and the lighting allocation factors. Miller

1 Exhibit 6 includes both forecasted 2024 sales from the Spring 2023 forecast and  
2 the impact of opt-outs.

3 **Q. WERE MILLER EXHIBITS 1-6 PREPARED BY YOU OR AT YOUR**  
4 **DIRECTION AND SUPERVISION?**

5 A. Yes.

6 **II. SUMMARY OF DSM/EE COSTS**

7 **Q. CAN YOU PROVIDE A SUMMARY OF THE COSTS FOR WHICH DEP**  
8 **IS REQUESTING RECOVERY IN THIS PROCEEDING?**

9 A. Yes. The DSM/EE costs DEP is requesting to recover through the rates  
10 proposed in this proceeding are associated with the costs incurred during the  
11 test period, as well as the costs forecasted to be incurred during the rate period.  
12 The test period utilized in the development of the DSM/EE EMF is January 1,  
13 2022 through December 31, 2022. The North Carolina allocated share of  
14 recoverable DSM/EE costs for the test period is \$151,801,256 For the rate  
15 period of January 1, 2024 through December 31, 2024, the North Carolina  
16 allocated share of forecasted DSM/EE costs is \$147,118,919. The total North  
17 Carolina allocated share of DSM/EE costs for the test period plus the rate period  
18 is \$298,920,175.

19 A summary of the costs associated with DEP's recovery request by  
20 period and by DSM/EE program/measure is provided in the following table:

Program/Measure	Test Period	Rate Period
	1/1/22 through 12/31/22	1/1/24 through 12/31/24
CIG DR	\$2,118,943	\$2,617,004
EnergyWise	\$16,332,470	\$17,166,763
EnergyWise for Business	\$910,922	\$1,107,847
DSDR Implementation	\$19,256,561	\$0
Residential Home Advantage	\$517	\$0
Residential Smart Saver/Home Energy Improvement	\$3,581,568	\$4,444,662
Residential Low Income – NES	\$2,345,924	\$3,241,109
Energy Efficient Lighting	\$13,578,054	\$5,135,138
Appliance Recycling	\$31,968	\$7,425
My Home Energy Report	\$15,497,035	\$17,107,376
Small Business Energy Saver	\$7,583,286	\$11,585,828
Residential New Construction	\$20,701,780	\$19,840,370
Multi-Family EE	\$1,147,680	\$2,469,421
Energy Education Program for Schools	\$572,721	\$1,533,825
Save Energy & Water Kit	\$5,425,936	\$610,532
Residential Energy Assessments	\$2,708,016	\$5,890,501
Smart Saver Prescriptive	\$408,457	\$6,849,442
Smart Saver Custom	\$4,296,639	\$22,324,975
Smart Saver Performance Incentive	\$15,735,706	\$7,361,363
Administrative & General Costs	\$6,069,919	\$5,480,550
Carrying Cost on Balances	\$13,309,889	\$12,518,552
Found Revenue (total)	\$(57,247)	\$(173,765)
PPI Cap Adjustment	\$244,515	
Total Cost	\$151,801,256	\$147,118,919

1 In addition to the summary table above, Miller Exhibit 2, page 3, and  
2 Miller Exhibit 2, page 6, provide additional categorizations by cost element.

3 **Q. ARE DEP'S PROPOSED RATES DESIGNED TO RECOVER THE**  
4 **TOTAL NORTH CAROLINA ALLOCATED SHARE OF \$298,920,175?**

5 A. No. Because many of the expenses incurred during the test period to develop  
6 and implement DEP's DSM/EE programs produce benefits covering several  
7 years, a significant portion of those expenses will be deferred and recovered  
8 over varying amortization periods. A summary of the amortization periods for

- 1 program expenses and Program/Portfolio Performance Incentive (“PPI”)<sup>1</sup> is  
 2 shown below:

Program Name	Length of Amortization Period			
	Program Cost – batches prior to 2023	Program Cost – 2023 – present	PPI/PRI – vintages prior to 2023	PPI/PRI – 2023 – present
CIG DR	3	3	3	3
EnergyWise	10	3	10	3
EnergyWise for Business	3	3	1	1
DSDR Implementation	10	3	N/A	N/A
Residential Home Advantage	N/A	N/A	N/A	N/A
Residential Smart Saver/Home Energy Improvement	10	3	10	3
Residential Low Income – NES	10	3	10	3
Energy Efficient Lighting	5	3	5	3
Appliance Recycling	10	3	10	3
My Home Energy Report	1	1	1	1
Residential New Construction	10	3	10	3
CFL Pilot	N/A	N/A	N/A	N/A
Solar Hot Water Pilot	N/A	N/A	N/A	N/A
Multi-Family EE	5	3	5	3
Energy Education	5	3	5	3
CIG EE	3	3	3	3
Save Water & Energy Kit	5	3	5	3
Residential Energy Assessments	5	3	5	3
Small Business Energy Saver	3	3	3	3
Smart Saver Prescriptive	3	3	3	3
Smart Saver Performance	3	3	3	3

<sup>1</sup> As explained further below, for vintages prior to 2016, incentives are calculated on a program basis. Pursuant to the Commission’s *Order Approving Revised Cost Recovery Mechanism and Granting Waivers* issued January 20, 2015 in Docket No. E-2, Sub 931 (“Order Approving Revised Mechanism”), which applies to Vintages 2016 and forward, incentives under the Company’s revised cost recovery mechanism are calculated on a portfolio basis. For ease of reference, I will refer to both incentives as “PPI.”

<b>Length of Amortization Period</b>				
<b>Program Name</b>	<b>Program Cost – batches prior to 2023</b>	<b>Program Cost – 2023 – present</b>	<b>PPI/PRI – vintages prior to 2023</b>	<b>PPI/PRI – 2023 – present</b>
Smart Saver Custom	3	3	3	3
Admin. & General	3	3	3	N/A

1

2

3

4

5

6

7

8

9

10

### **III. EMF REVENUE REQUIREMENT**

11

12

13

14

15

16

17

18

In addition to the aforementioned deferrals, DEP's proposed rates include the recognition and amortization of prior period deferrals. In total, the EMF-related calculations based on test period costs reflect an estimated over-recovery of \$(24,889,788). The DSM/EE rate calculations associated with rate period estimates are based on a revenue requirement of \$167,163,820. The rate period and EMF revenue requirements produce a combined revenue requirement of \$142,274,032. Miller Exhibit 2, pages 1 and 2, and Miller Exhibit 2, pages 4 and 5, detail the calculation of these amounts.

**Q. HOW WAS THE DSM/EE EMF OVER-RECOVERY OF (\$24,889,788) DETERMINED?**

**A.** The EMF over -recovery is a function of the sum of test period costs, including amounts relating to the amortization of deferred costs from prior periods, and credits for actual DSM/EE rider revenues for the period January 1, 2022 through December 31, 2022. The following table illustrates the relationship of these elements with respect to the determination of the DSM/EE EMF:

1

Rate Element	Amounts
Test Period Revenue Requirement	\$152,575,922
Net DSM/EE Rate Revenue	\$173,681,595
Add: Other Adjustments	\$3,784,116
Total EMF Adjustments	\$177,465,710
Adjusted DSM/EE EMF Revenue Requirement	(\$24,889,778)

2 Miller Exhibit 2, pages 4 through 7, provides additional details  
3 associated with the development of these amounts.

4 **Q. PLEASE DESCRIBE THE \$3,784,116 THAT HAS BEEN**  
5 **CATEGORIZED AS “OTHER ADJUSTMENTS.”**

6 A. The \$3,784,116 in “Other Adjustments” is the sum of lines 2 through 11 on  
7 page 7 of Miller Exhibit 2. Lines 2 and 3 are reserved for potential prospective  
8 uncollectible allowances in DEP’s DSM/EE rates and associated true-ups. DEP  
9 is not requesting a prospective uncollectible adjustment as a part of its cost  
10 recovery request in this proceeding. In addition, the Company is not requesting  
11 a true-up of the uncollectible adjustment in this proceeding as the topic of  
12 uncollectible accounts is currently pending in DEP’s base rate case in Docket  
13 E-2 Sub 1300. Once the Commission issues its order in the rate case on this  
14 topic, the Company will examine uncollectible amounts for year ended 2022  
15 and calculate an adjustment if necessary, in a future rider proceeding. In  
16 addition, the adjustments found on lines 4 through 9 reflect the true-up of PPI  
17 and net lost revenues for Vintages 2019, 2020, and 2021. The last of these  
18 adjustments, on line 10, recognizes estimated interest owed to or due from  
19 customers for over and under collections during the period extending from  
20 January 1, 2022 through December 31, 2022. The Direct Testimony of



1 Company witness Casey Q. Fields provides further detail on program-specific  
2 impacts to PPI and net lost revenues.

3 **IV. RATE PERIOD REVENUE REQUIREMENT**

4 **Q. PLEASE DESCRIBE THE BASIS FOR THE RATE PERIOD REVENUE**  
5 **REQUIREMENT.**

6 A. As indicated previously, the estimated revenue requirement for the rate period  
7 is \$167,163,820. This amount reflects the anticipated costs and necessary  
8 recoveries for the rate period, which extends from January 1, 2024 through  
9 December 31, 2024. The \$167,163,820 revenue requirement includes: (1)  
10 \$28,393,238 for anticipated rate period program expenses; (2) amortizations  
11 and carrying costs associated with deferred prior period costs totaling  
12 \$81,809,519; (3) net lost revenues for the rate period totaling \$41,479,043 for  
13 vintage years 2019 through 2024; and (5) PPI totaling \$15,482,020 associated  
14 with vintage years 2015 through 2024. In addition, under the Commission's  
15 October 20, 2020 *Order Approving Revisions to Demand-Side Management*  
16 *and Energy Efficiency Cost Recovery Mechanisms*, issued by the Commission  
17 in Docket Nos. E-2, Sub 931 and E-7, Sub 1032 (the "2020 Mechanism Order"),  
18 beginning in 2022, the Income-Qualified EE and Weatherization programs are  
19 eligible to receive a Program Return Incentive ("PRI") based on shared savings  
20 achieved by these programs. Witness Fields's testimony provides additional  
21 information on this matter.

22 **V. JURISDICTIONAL COST ALLOCATION**

23 **Q. HOW ARE DSM AND EE PROGRAM COSTS ALLOCATED TO THE**  
24 **NORTH CAROLINA RETAIL JURISDICTION?**

1 A. DEP determines the total amount of recoverable costs and separates these costs  
2 into three categories: (1) DSM-related costs, (2) EE-related costs, and (3) costs  
3 that provide a system benefit in support of both DSM and EE programs. For  
4 each of these categories, different allocation methods are employed to assign  
5 those costs to the appropriate jurisdiction.

6 **Q. HOW ARE COSTS IDENTIFIED AS EE-RELATED ALLOCATED TO**  
7 **NORTH CAROLINA?**

8 A. Any program costs that are identified as being EE-related, including  
9 administrative and general (“A&G”) costs, are allocated to the North Carolina  
10 retail jurisdiction based upon the ratio of North Carolina retail sales to DEP  
11 system retail sales at the point of generation. For calendar year test periods  
12 beginning in year 2016, the allocation percentage for the entire calendar year  
13 test period is based on the latest cost of service study available at the time of  
14 filing.

15 **Q. HOW ARE DSM-RELATED COSTS ALLOCATED TO NORTH**  
16 **CAROLINA?**

17 A. Any program costs that are identified as being DSM-related, including A&G  
18 costs, are allocated to the North Carolina retail jurisdiction based upon the ratio  
19 of the North Carolina retail demand to the DEP system retail demand at the hour  
20 of the annual summer system coincident peak. For calendar year test periods  
21 beginning in year 2016, the allocation percentage for the entire calendar year  
22 test period is based on the latest cost of service study available at the time of  
23 filing.

1 **Q. PLEASE ELABORATE ON THE METHODOLOGY USED TO**  
2 **ALLOCATE DSM/EE COSTS THAT OFFER A SYSTEM BENEFIT.**

3 A. Certain A&G costs provide a system benefit in support of both DSM and EE  
4 programs and, therefore, are allocated in both categories. The allocation of  
5 these costs into either the DSM or EE category is based upon the percentage of  
6 program costs for each type of expenditure anticipated during the next forecast  
7 calendar year. For example, if 30% of direct program costs in the forecast  
8 period are EE-related, then 30% of these A&G costs will be considered EE-  
9 related costs for allocation purposes. The use of a forecast period recognizes  
10 the types of new programs DEP will offer in the immediate future that will be  
11 supported by these administrative costs. The assignment of A&G costs as either  
12 DSM- or EE- related is reviewed annually based upon forecasted program costs  
13 for the next calendar year. The A&G costs in this proceeding have been  
14 assigned to these categories based upon forecasted DSM and EE costs for 2024.

15 **Q. IN MILLER EXHIBIT 2, PAGE 3, AND MILLER EXHIBIT 2, PAGE 6,**  
16 **THE DISTRIBUTION SYSTEM DEMAND RESPONSE (“DSDR”)**  
17 **PROGRAM IS SEPARATED FROM THE OTHER DSM/EE**  
18 **PROGRAMS. HOW IS THE DSDR PROGRAM CLASSIFIED?**

19 A. Through 2023, the DSDR program has been classified by the Commission, for  
20 purposes of ratemaking, as an EE program. Due to the scope and nature of  
21 DSDR, its costs are being tracked separately. This separate tracking includes  
22 both direct costs and A&G costs associated with the program.

23 As part of Docket E-2 Sub 1300, the Company proposed including the  
24 DSDR program as part of base rates. Therefore, the Company is not including

1 prospective DSDR costs as part of this rider filing. The Company will continue  
2 to collect DSDR costs and amortizations through Vintage 2023 as part of the  
3 DSM/EE Rider.

4 **VI. UTILITY INCENTIVES AND NET LOST REVENUES**

5 **Q. HOW ARE THE PPI AND PRI CALCULATED?**

6 A. The PPI and PRI are calculated pursuant to the *2020 Mechanism Order* and are  
7 based on the savings achieved by the portfolio of PPI-eligible DSM/EE  
8 programs and PRI-eligible programs. Company witness Fields further  
9 describes the specifics of the PPI and PRI calculations in his testimony. Please  
10 see Fields Exhibit 1 for additional detail by program.

11 **Q. HOW WERE NET LOST REVENUES DETERMINED?**

12 A. The Company determines net lost revenues, which are applicable to both DSM  
13 and EE programs, by multiplying the estimated reduction in kWh sales  
14 associated with a program or measure by a margin-based net lost revenue rate.  
15 The following formula illustrates the basic components of the net lost revenue  
16 calculations: Net Lost Revenues (\$) = Lost Sales (kWh) x Net Lost Revenue  
17 Rate (\$/kWh).

18 Lost Sales are those sales that do not occur because of implementation  
19 of DEP DSM/EE measures. These values are initially based on engineering  
20 estimates and/or past impact evaluations. Future periods are based on updated  
21 impact evaluations resulting from EM&V activities and are applied  
22 prospectively and in conjunction with applicable net lost revenue true ups. The  
23 Net Lost Revenue rate represents the difference between the average retail rate  
24 applicable to the customer class impacted by the measure and the sum of (1) the

1 embedded regulatory fees, (2) the related average customer charge component  
2 of that rate, (3) the average fuel component of the rate, and (4) the incremental  
3 variable operations and maintenance rate as filed in DEP's last Cogeneration  
4 and Small Power Producer tariff. When multiple customer classes are impacted  
5 by a DSM/EE measure, as with the DSDR program, a weighted or system-wide  
6 net lost revenue rate is employed.

7 Pursuant to the 2020 Mechanism Order, DEP may only recover net lost  
8 revenues for up to 36 months of an installed measure's life, and as with the PPI,  
9 recoveries are subject to true-up based on future EM&V results.

10  
11

## **VII. COST ALLOCATION METHODOLOGY**

12 **Q. HOW ARE DSM- AND EE-RELATED COSTS ALLOCATED TO EACH**  
13 **RATE CLASS?**

14 A. Costs are assigned to customer classes based on program design and  
15 participation. In other words, residential program costs are allocated solely to  
16 residential customers, general service program costs are allocated solely to  
17 general service customers, and lighting program costs are allocated solely to  
18 lighting customers. Where programs benefit multiple customer groups, the  
19 costs are allocated directly to groups receiving benefits or by employing annual  
20 energy- and/or coincident peak demand-based allocation factors.

21 Miller Exhibit 2, pages 1 and 2, and Miller Exhibit 2, pages 4 and 5,  
22 demonstrate how the costs associated with a specific program have been  
23 assigned to customer groups.

1 **Q. HOW ARE SALES AND DEMAND ADJUSTED FOR THE IMPACT OF**  
2 **OPT-OUT CUSTOMERS?**

3 A. Commercial customers with annual consumption of 1,000,000 kWh or greater  
4 in the billing months of the prior calendar year and all industrial customers who  
5 implement or will implement alternative DSM/EE measures may elect not to  
6 participate in DEP's DSM and/or EE programs. DEP reviewed its customer  
7 records and identified that commercial and industrial customers choosing to opt  
8 out of EE programs consumed 12,765,879,707 kWh during the year ended  
9 December 31, 2022. In addition, DEP identified that commercial and industrial  
10 customers choosing to opt out of DSM programs consumed 12,840,285,582  
11 kWh during the year ended December 31, 2022.

12 DEP developed rate class allocation factors based on the assumption  
13 that customers that have elected to opt out of the Company's DSM/EE rider will  
14 remain opted out. If customers decide to change their opt-out status, revenue  
15 gains or losses will be recognized in subsequent DSM/EE EMF calculations.

16 Sales for the year ended December 31, 2022 for all customers electing  
17 to opt out of the DSM/EE rate are provided in Miller Exhibit 6.

18 **Q. THE SALES FOR OPT-OUT CUSTOMERS ARE EASILY**  
19 **IDENTIFIED, BUT HOW IS THE COINCIDENT PEAK OF THESE**  
20 **CUSTOMERS ESTIMATED?**

21 A. Currently installed metering for a great number of opt-out customers does not  
22 provide sufficient detail to determine their contribution to the system coincident  
23 peak hour load. Instead, the impact is estimated based upon the ratio of opt-out  
24 sales to total sales for the rate class multiplied by the rate class peak demand.

1 This approach should accurately approximate the demand of opt-out accounts.  
2 This calculation can be seen at Miller Exhibit 5, page 7.

3 **Q. AFTER ADJUSTING ENERGY AND DEMAND FOR OPT-OUT**  
4 **CUSTOMERS, HOW ARE THE RESULTING ALLOCATION**  
5 **FACTORS THEN USED TO DETERMINE THE REVENUE**  
6 **REQUIREMENT FOR EACH RATE CLASS?**

7 A. Energy- and demand-based allocators are used in cases where programs or  
8 measures directly benefit multiple rate groups. When a DSM or EE program  
9 benefits multiple rate groups, DEP multiplies EE costs by rate class energy  
10 allocation factors and multiplies any associated DSM costs by rate class demand  
11 allocation factors for purposes of cost assignment.

12 Since usage for opt-out customers is not forecasted, the rate class energy  
13 allocation factors were developed from the forecasted rate class usage after  
14 subtracting actual sales for opt-out customers for the year ended December 31,  
15 2022. Miller Exhibit 5, page 6, provides the energy allocation factors applicable  
16 to each rate class based upon the forecast of rate class sales for the rate period  
17 of January 1, 2024 through December 31, 2024.

18 The allocation rate class demand allocation factors are based on the  
19 summer coincident peak demand for 2022 after subtracting the estimated  
20 demand for opt-out customers as discussed above. The forecast does not  
21 provide rate class coincident peak demands; therefore, the most recent historic  
22 data was deemed to be representative of future demand impacts. Miller Exhibit  
23 5, page 7, shows the demand allocation factors applicable to each rate class for  
24 the rate period.

1 **Q. WHICH OF DEP'S PROGRAMS OR MEASURES BENEFIT**  
2 **MULTIPLE CUSTOMER CLASSES?**

3 A. The Company's DSDR program benefits all customer classes. To allocate  
4 DSDR costs, DEP employs rate class energy allocation factors. These  
5 allocation procedures are elements of Miller Exhibit 2, pages 1 and 4. In  
6 addition, DEP's Energy Efficient Lighting Program provides benefits to both  
7 the residential and general service customer classes. These costs were allocated  
8 based on the bulbs provided to those classes using EM&V results as shown in  
9 Miller Exhibit 5, page 8.

10 **Q. HOW DOES DEP DETERMINE RATE CLASS DSM/EE RATES?**

11 A. The calculated rate class DSM and EE revenue requirements are divided by  
12 forecasted rate class sales, after adjustment for opt-out customers, to establish  
13 the rate class DSM/EE rate. Miller Exhibit 2, page 1, provides the derivation  
14 of the EE rate. Miller Exhibit 2, page 2, provides the derivation of the DSM  
15 rate.

16 **Q. HOW DOES DEP DETERMINE RATES FOR THE DSM/EE EMF?**

17 A. As with DSM/EE rate determination, the calculated rate class DSM and EE  
18 EMF revenue requirements, adjusted for cost recoveries, are divided by  
19 forecasted rate class sales, after adjustment for opt-out customers, to establish  
20 the rate class DSM/EE EMF rate. Miller Exhibit 2, page 4, provides the  
21 derivation of the EE EMF rate. Miller Exhibit 2, page 5, provides the derivation  
22 of the DSM EMF rate.

23 **VIII. PROPOSED RATES**

24 **Q. WHAT RATES ARE PROPOSED FOR EACH RATE CLASS?**



1 A. Miller Exhibit 1 is populated with the DSM/EE rates and EMF rates proposed  
 2 in this proceeding. The DSM/EE rates recover costs forecasted to be incurred  
 3 from January 1, 2024 through December 31, 2024. The DSM/EE EMF is a  
 4 true-up mechanism recognizing costs and recoveries for the test period of  
 5 January 1, 2022 through December 31, 2022. DEP proposes the following  
 6 rates, exclusive of North Carolina regulatory fees, for each rate class:

Rate Class	DSM Rate (¢/kWh)	EE Rate (¢/kWh)	DSM EMF (¢/kWh)	EE EMF Rate (¢/kWh)	DSM/EE Annual Rider (¢/kWh)
Residential	0.146	0.529	0.000	(0.047)	0.628
General Service EE		0.539		(0.182)	0.357
General Service DSM	0.051		(0.009)		0.042
Lighting		0.021		(0.021)	0.000

7 **Q. WHAT ARE THE RATES INCLUDING NORTH CAROLINA**  
 8 **REGULATORY FEES?**

9 A. The following table reflects the proposed billing rates, including North Carolina  
 10 regulatory fees, for each rate class:

Rate Class	DSM Rate (¢/kWh)	EE Rate (¢/kWh)	DSM EMF (¢/kWh)	EE EMF (¢/kWh)	Annual DSM/EE Rider (¢/kWh)
Residential	0.146	0.530	0.000	(0.047)	0.629
General Service EE		0.540		(0.182)	0.358
General Service DSM	0.051		(0.009)		0.042
Lighting		0.021		(0.021)	0.000

1 **Q. HOW WILL DEP REVISE ITS TARIFFS TO RECOVER THESE**  
2 **RATES?**

3 A. The Company will update its Annual Billing Adjustment, Rider BA, to  
4 recognize these rates, adjusted for the North Carolina regulatory fees.

5 **IX. CONCLUSION**

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

7 A. Yes.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, Miller  
Supplemental Revised  
Exhibits 1 - 3 are marked  
for identification as  
prefiled.)  
  
(WHEREUPON, the prefiled  
supplemental testimony of  
CAROLYN T. MILLER is copied  
into the record as if given  
orally from the stand.)

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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

---

OFFICIAL COPY

Aug 16 2023

1

**I. INTRODUCTION AND PURPOSE**

2

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3

A. My name is Carolyn T. Miller, and my business address is 525 South Tryon Street, Charlotte, North Carolina, 28202.

4

5

**Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS MATTER BEFORE THE NORTH CAROLINA UTILITIES COMMISSION (“COMMISSION”)?**

6

7

8

A. Yes. I filed direct testimony on behalf of Duke Energy Progress, LLC (“DEP” or the “Company”) in this matter on June 13, 2023.

9

10

**Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY?**

11

12

A. The purpose of my supplemental direct testimony is to update Miller Exhibits 1, 2 and 3 filed with my direct testimony in this docket on June 13, 2023, to reflect certain updates and corrections.

13

14

15

**Q. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR DIRECTION?**

16

17

A. Yes.

18

**II. CORRECTIONS TO DIRECT TESTIMONY**

19

**Q. PLEASE DESCRIBE THE CORRECTIONS TO YOUR DIRECT TESTIMONY.**

20

21

A. Following the submission of my direct testimony and exhibits, in the course of our comprehensive review and during the discovery process, a few minor

22

1 corrections were identified that impacted the proposed non-residential  
2 billing factor.

3 The first correction pertains to the updates made to the Smart Saver  
4 Non-Residential Prescriptive Program to correct the application of  
5 Evaluation, Measurement, and Verification in Vintages 2021, 2022, and  
6 2024 as well as to reconcile participation in Vintage 2021. These  
7 adjustments are outlined in the supplemental direct testimony of Company  
8 witness Casey Q. Fields. Miller Exhibits 1, 2 and 3 have been updated to  
9 reflect these changes.

10 The second update pertains to the change in the regulatory fee  
11 applied to noncompetitive jurisdictional revenues from 0.14% to 0.1475%  
12 as approved in the Commission's June 30, 2023 *Order Increasing*  
13 *Regulatory Fee Effective July 1, 2023* issued in Docket No. M-100, Sub  
14 142. Increasing the regulatory fee multiplier had no impact on the rates  
15 supplied in the original application and direct testimony filed on June 13,  
16 2023; however, Miller Exhibit 1 has been updated to reflect the new  
17 regulatory fee rate in the calculation of the revised rates proposed for  
18 approval.

19 **Q. WHAT IS THE IMPACT OF THESE UPDATES ON THE**  
20 **PROPOSED DEMAND-SIDE MANAGEMENT (“DSM”) AND**  
21 **ENERGY EFFICIENCY (“EE”) RESIDENTIAL AND NON-**  
22 **RESIDENTIAL BILLING FACTORS?**

- 1 A. The impact of the proposed updates is an overall reduction to the non-  
 2 residential EE rates as shown in the table below. The table below reflects  
 3 the rates originally proposed in my direct testimony (including a regulatory  
 4 fee of 0.0014) and the revised rates proposed for approval (including a  
 5 regulatory fee of 0.001475) in my supplemental direct testimony.

	<b>Supplemental ¢/kWh</b>	<b>Direct ¢/kWh</b>	<b>Difference</b>
Residential	0.629	0.629	0.000
Non-Residential EE	0.345	0.358	(0.013)
Non-Residential DSM	0.042	0.042	0.000
Lighting	0.000	0.000	0.000

6

- 7 **Q. ARE THERE ANY OTHER CORRECTIONS THAT NEED TO BE**  
 8 **MADE TO YOUR DIRECT TESTIMONY?**

- 9 A. Yes. A summary of the costs associated with DEP's recovery request by  
 10 period and DSM/EE program/measure provided in a table on page 5 of my  
 11 direct testimony included some misclassification of program costs by  
 12 program. A revised table is provided below.

Program/Measure	Test Period	Rate Period
	<b>1/1/22 through 12/31/22</b>	<b>1/1/24 through 12/31/24</b>
CIG DR	\$2,118,943	\$2,617,004
EnergyWise	\$16,332,470	\$17,166,763
EnergyWise for Business	\$910,922	\$1,107,847
DSDR Implementation	\$19,256,561	\$0
Residential Home Advantage	\$517	\$0
Residential Smart Saver/Home Energy Improvement	\$3,581,568	\$4,444,662
Residential Low Income – NES	\$2,345,924	\$3,241,109

Program/Measure	Test Period	Rate Period
	1/1/22 through 12/31/22	1/1/24 through 12/31/24
Energy Efficient Lighting	\$13,578,054	\$5,135,138
Appliance Recycling	\$31,968	\$7,425
My Home Energy Report	\$15,497,035	\$17,107,376
Small Business Energy Saver	\$7,583,286	\$11,585,828
Residential New Construction	\$20,701,780	\$19,840,370
Multi-Family EE	\$1,147,680	\$2,469,421
Energy Education Program for Schools	\$572,721	\$1,533,825
Save Energy & Water Kit	\$5,425,936	\$5,890,501
Residential Energy Assessments	\$2,708,016	\$6,849,442
Smart Saver Prescriptive	\$15,735,706	\$22,324,975
Smart Saver Custom	\$4,296,639	\$7,361,363
Smart Saver Performance Incentive	\$408,457	\$610,532
Administrative & General Costs	\$6,069,919	\$5,480,550
Carrying Cost on Balances	\$13,309,889	\$12,518,552
Found Revenue (total)	\$(57,247)	\$(173,765)
PPI Cap Adjustment	\$244,515	
Total Cost*	\$151,801,256	\$147,118,919

1                   \*Totals may not foot due to rounding

2   **Q.    DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT**  
3           **TESTIMONY?**

4   **A.    Yes.**



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, the summary of  
direct and supplemental  
testimony of CAROLYN T.  
MILLER is copied into the  
record as if given orally  
from the witness stand.)

**DUKE ENERGY PROGRES, LLC**  
**CAROLYN T. MILLER DIRECT AND SUPPLEMENTAL TESTIMONY**  
**SUMMARY**  
**DOCKET NO. E-2, SUB 1322**

The purpose of my direct testimony is to explain and support Duke Energy Progress's or the Company's proposed demand-side management/energy efficiency ("DSM/EE") cost recovery rider (the "Rider"), including prospective and Experience Modification Factor (EMF) components and to provide information required by Commission Rule R8-69. I describe the structure of the Rider, and I explain how the Company calculates the proposed billing factors for residential and non-residential customers.

The Company's approved cost recovery mechanisms are designed to allow the Company to collect revenue equal to its incurred programs cost for a rate period plus a Portfolio Performance Incentive ("PPI") based on shared savings achieved by the Company's DSM/EE programs and to recover net lost revenues for EE programs only. In addition, under the 2020 Cost Recovery Mechanism, the Income-Qualified EE and Weatherization programs are eligible to receive a Program Return Incentive ("PRI") based on the shared savings achieved by these programs. The Company is also allowed to recover net lost revenues associated with a particular vintage of EE measure for the lesser of 36 months or the life of the measure, provided that the recovery of net lost revenues shall cease upon implementation of new rates in a general rate case to the extent the new rates are set to recover net lost revenues.

I describe that DEP prospective and EMF rates are designed to recover a portion of program benefits based on program specific amortization periods. Program costs are allocated based on methodologies approved under the 2020 Cost Recovery Mechanism. I

also discuss how the Company calculates net lost revenues for both the prospective components of the Rider and the EMF components of the Rider.

In addition, my direct testimony discusses the treatment of the Distribution System Demand Response (“DSDR”) program in the Rider filing and the impact of moving the DSDR program into base rates.

My direct testimony discusses the opt-out process for non-residential customers. Pursuant to Commission Orders, the Company is allowed to permit qualifying non-residential customers to opt out of the DSM and/or EE portion of the Rider. I explain how the Company adjusts the rate for non-residential customers to reflect this opt out.

Finally, my direct testimony addresses how the Company calculates the prospective and EMF components of the Rider. I provide the proposed initial billing factors applicable to North Carolina retail (?) electric customers for the prospective components and the EMF components for Rider 15.

My supplemental testimony outlines corrections that the Company identified during the Public Staff’s review of its proposed Rider 15. In addition, the Company updated the regulatory fee percentage that was applied in the rider filing to reflect the rates as approved in the Commission’s June 30, 2023 *Order Increasing Regulatory Fee Effective July 1, 2023* issued in Docket No. M-100, Sub 142. Finally, my supplemental testimony corrected a table on page 5 of my direct testimony. These updates resulted in either no change to or a decrease in the Company’s initial proposed billing factors.

My rebuttal testimony incorporates an adjustment described in the rebuttal testimony of Company Witness Casey Q. Fields. This update resulted in no change to the proposed billing factors presented in my supplemental testimony.

This concludes my direct, supplemental and rebuttal testimony summary.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, Miller Rebuttal Revised Exhibits 1 - 3 are marked for identification as prefiled.)

(WHEREUPON, the prefiled rebuttal testimony of CAROLYN T. MILLER is copied into the record as if given orally from the stand.)

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
	)	
Application of Duke Energy Progress, LLC	)	<b>REBUTTAL TESTIMONY</b>
for Approval of Demand-Side Management	)	<b>OF CAROLYN T. MILLER</b>
and Energy Efficiency Cost Recovery Rider	)	<b>FOR DUKE ENERGY</b>
Pursuant to N.C. Gen. Stat. § 62-133.9 and	)	<b>PROGRESS, LLC</b>
Commission Rule R8-69	)	
	)	

---

OFFICIAL COPY

Exp 16 2023

1 **I. INTRODUCTION AND PURPOSE**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Carolyn T. Miller, and my business address is 525 South Tryon  
4 Street, Charlotte, North Carolina, 28202.

5 **Q. DID YOU PREVIOUSLY FILE TESTIMONY IN THIS MATTER?**

6 A. Yes. I filed direct testimony on behalf of Duke Energy Progress, LLC  
7 (“DEP” or the “Company”) in this matter on June 13, 2023, and filed  
8 supplemental direct testimony on August 24, 2023, with a corrected  
9 testimony filed on August 28, 2023.

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

11 A. The purpose of my rebuttal testimony is to update Miller Exhibits 1, 2, and  
12 3 filed with my supplemental direct testimony in this matter to reflect the  
13 adjustment described in the rebuttal testimony of Company Witness Casey  
14 Q. Fields.

15 **Q. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR  
16 DIRECTION?**

17 A. Yes.

18 **II. REBUTTAL**

19 **Q. WHAT IS THE IMPACT OF THE ADJUSTMENT DESCRIBED IN  
20 WITNESS FIELDS REBUTTAL TESTIMONY ON THE PROPOSED  
21 DEMAND-SIDE MANAGEMENT (“DSM”) AND ENERGY  
22 EFFICIENCY (“EE”) EXPERIENCE MODIFICATION FACTOR  
23 (“EMF”) REVENUE REQUIREMENTS?**

- 1 A. The table below reflects the impact of the adjustment on the DSM/EE EMF  
2 revenue requirements proposed in my supplemental direct testimony.

	<b>Rebuttal</b>	<b>Supplemental</b>	<b>Difference</b>
Residential	\$(8,130,707)	\$(8,134,155)	\$3,448
Non-Residential EE	\$(15,909,290)	\$(15,888,820)	\$(20,470)
Non-Residential DSM	\$(766,552)	\$(790,236)	\$23,684
Lighting	\$(77,976)	\$(77,976)	\$0

3

- 4 **Q. WHAT IS THE IMPACT OF THE ADJUSTMENT ON THE**  
5 **PROPOSED DSM AND EE BILLING FACTORS?**

- 6 A. The adjustment was not significant enough to change the billing factors  
7 proposed in my supplemental direct testimony as shown in the table below.

	<b>Rebuttal ¢/kWh</b>	<b>Supplemental ¢/kWh</b>	<b>Difference</b>
Residential	0.629	0.629	0.000
Non-Residential EE	0.345	0.345	0.000
Non-Residential DSM	0.042	0.042	0.000
Lighting	0.000	0.000	0.000

8

- 9 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

- 10 A. Yes.



1 BY MS. TOON:

2 Q Turning to you, Mr. Fields. Would you please  
3 state your name and business address for the  
4 record?

5 A Yes. My name is Casey Q. Fields and my business  
6 address is 411 Fayetteville Street, Raleigh,  
7 North Carolina 27601.

8 Q And why whom are you employed and in what  
9 capacity?

10 A I'm employed by Duke Energy Business Services as  
11 a Strategy and Collaboration Manager for the  
12 Carolinas in the Customer Solutions Regulatory  
13 Enablement Group.

14 Q Did you cause to be prefiled in this docket on  
15 June 13th, 29 pages of direct testimony and 23  
16 exhibits?

17 A Yes.

18 Q Do you have any changes or corrections to your  
19 direct testimony?

20 A I do not.

21 Q And did you also cause to be prefiled in this  
22 docket on August 24th, 2023, three pages of  
23 supplemental testimony and five exhibits?

24 A Yes, I did. The supplemental testimony was

1           refiled on August 28th, 2023, and it was  
2           identical to the original supplemental testimony.

3   Q       Do you have any changes or corrections to your  
4           supplemental testimony including exhibits?

5   A       I do not.

6   Q       Did you also cause to be prefiled in this docket  
7           on September 7th, 2023, five pages of rebuttal  
8           testimony and four exhibits?

9   A       Yes, I did.

10   Q       Do you have any changes or corrections to your  
11           rebuttal testimony or exhibits?

12   A       I do not.

13   Q       If I were to ask you the same questions today  
14           that appear in your direct, supplemental, and  
15           rebuttal testimony, would your answers remain the  
16           same?

17   A       Yes.

18   Q       And have you prepared a summary of your direct,  
19           supplemental, and rebuttal testimony for the  
20           Commission?

21   A       Yes, I have.

22           MS. TOON: Commissioner Brown-Bland, at this  
23           time, I request that Mr. Fields prefiled direct,  
24           supplemental, and rebuttal testimony, as well as his

1 summary of his testimonies be copied into the record  
2 as if orally given from the stand; as well as move  
3 Mr. Fields' exhibits be premarked for identification  
4 as prefiled.

5 COMMISSIONER BROWN-BLAND: Without  
6 objection, that motion is allowed.

7 MS. TOON: Thank you.

8 (WHEREUPON, Fields Direct  
9 Exhibits 1 - 13 and A - J  
10 are marked for  
11 identification as  
12 prefiled.)

13 (WHEREUPON, the prefiled  
14 direct testimony of CASEY  
15 Q. FIELDS is copied into  
16 the record as if given  
17 orally from the stand.)

18  
19  
20  
21  
22  
23  
24

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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

---

OFFICIAL COPY

Oct 16 2023

**I. INTRODUCTION AND PURPOSE**

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**  
2 **POSITION WITH DUKE ENERGY.**

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

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

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

20 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN MATTERS**  
21 **BROUGHT BEFORE THIS COMMISSION OR OTHER**  
22 **REGULATORY COMMISSIONS?**

1 A. Yes. I testified in Docket No. E-7, Sub 1285, the most recent Duke Energy  
2 Carolinas, LLC's annual demand-side management ("DSM")/energy efficiency  
3 ("EE") recovery rider proceeding.

4 **Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?**

5 A. I am responsible for the regulatory support of DSM/EE programs in North  
6 Carolina for both Duke Energy Carolinas, LLC ("DEC" or the "Company") and  
7 Duke Energy Progress, LLC ("DEP").

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

10 A. The purpose of my testimony is to explain and support DEP's proposed  
11 DSM/EE Cost Recovery Rider and Experience Modification Factor ("EMF").  
12 My testimony is organized as follows: In Section II, I discuss the items that the  
13 Commission specifically directed the Company to address in this proceeding.  
14 Section III provides an overview of the Commission's Rule R8-69 filing  
15 requirements; Section IV is a synopsis of the DSM/EE programs included in  
16 this filing; Section V discusses program results; Section VI explains how these  
17 results have affected DSM/EE rate calculations; Section VII describes DEP's  
18 Evaluation Measurement & Verification ("EM&V") activities; Section VIII  
19 explains the rate impacts); Section IX details the Net Lost Revenues; Section  
20 X explains the PPI and PRI Calculations; (Section XI updates the Commission  
21 on how the Company is engaging with the Inflation Reduction Act; Section  
22 XII describes an agreement between the Public Staff – North Carolina Utilities  
23 Commission ("Public Staff") and Company related to the continued

1 application of the updated Avoided Transmission and Distribution (“T&D”)  
2 Rates that were applied beginning with Vintage 2022.

3 **Q. PLEASE DESCRIBE THE EXHIBITS ATTACHED TO YOUR**  
4 **TESTIMONY.**

5 A. Fields Exhibit 1 supplies, for each program, load impacts and avoided cost  
6 revenue requirements by vintage. Fields Exhibit 2 contains a summary of net  
7 lost revenues for the period January 1, 2019 through December 31, 2024. Fields  
8 Exhibit 3 contains the actual program costs for North Carolina for the period  
9 January 1, 2019 through December 31, 2022. Fields Exhibit 4 contains the  
10 found revenues used in the net lost revenues calculations. Fields Exhibit 5  
11 supplies evaluations of event-based programs. Fields Exhibit 6 contains  
12 information about the results of DEP’s programs and a comparison of actual  
13 impacts to previous estimates. Fields Exhibit 7 contains the projected program  
14 and portfolio cost-effectiveness results for DEP’s approved programs. Fields  
15 Exhibit 8 contains a summary of 2022 program performance and an explanation  
16 of the variances between the expected program results and the actual results.  
17 Fields Exhibit 8 is designed to create more transparency regarding the factors  
18 that have driven these variances. Fields Exhibit 9 lists DEP’s industrial and  
19 large commercial customers that have opted out of participation in the  
20 Company’s DSM and/or EE programs and also lists those customers that have  
21 elected to participate in new measures after having initially notified the  
22 Company that they declined to participate, as required by Commission Rule R8-  
23 69(d)(2). Fields Exhibit 10 provides the actual and expected dates when the

1 EM&V for each program or measure will become effective. Fields Exhibit 11  
2 provides a summary of the estimated activities and timeframe for completion  
3 of EM&V by program. Fields Exhibit 12 provides a table showing program  
4 costs and avoided costs savings for the test year ending December 31, 2022 and  
5 for the previous five test periods. Fields Exhibit 13 provides information  
6 showing the method used to exclude Find it Duke amounts from the energy  
7 efficiency portfolio.

8 Fields Exhibits A through I provide detailed EM&V reports, completed  
9 or updated since DEP's DSM/EE Cost Recovery Rider Filing in Docket No. E-  
10 2, Sub 1273, for the following programs: Energy Wise Home Demand  
11 Response Program Summer 2021 (Fields Exhibit A); Neighborhood Energy  
12 Saver Program 2021 Evaluation Report (Fields Exhibit B); Small Business  
13 Energy Saver Program 2019-2020 Evaluation Report (Fields Exhibit C);  
14 EnergyWise Business 2020/2021 (Fields Exhibit D); SmartSaver Non-  
15 Residential Custom Program 2018-2019 Evaluation Report (Fields Exhibit E);  
16 Non-Profit Low Income Weatherization Pay for Performance Pilot Program  
17 Evaluation Report 2022 (Fields Exhibit F); Retail Lighting Program 2022  
18 Evaluation Report (Fields Exhibit G); EnergyWise Home Demand Response  
19 Program Winter 2021/2022 (Fields Exhibit H); and Non-Residential  
20 SmartSaver Prescriptive Program Evaluation (Fields Exhibit I). Fields Exhibit  
21 J includes the Low and Moderate Income Penetration Study.

22 **Q. WERE FIELDS EXHIBITS 1-13 PREPARED BY YOU OR AT YOUR**  
23 **DIRECTION AND SUPERVISION?**



1 A. Yes, they were.

2 **II. ACTIONS ORDERED BY THE COMMISSION**

3 **Q. PLEASE DESCRIBE THE ACTIONS THE COMMISSION DIRECTED**  
4 **DEP TO TAKE IN THE COMMISSION’S ORDER IN DOCKET NO. E-**  
5 **2, SUB 1294.**

6 A. In its December 22, 2022 *Order Approving DSM/EE Rider and Requiring*  
7 *Filing of Proposed Customer Notice* in Docket No. E-2, Sub 1294 (“Sub 1294  
8 Order”), the Commission ordered that: (1) that DEP should continue to leverage  
9 its collaborative stakeholder meetings (Collaborative) to expand on the existing  
10 discussions related to the decline in current and forecasted energy savings and  
11 the expansion and improvements of low-income EE programs and other  
12 program design issues raised in the testimony of NC Justice Center, et al.  
13 witness Bradley-Wright and provide a summary of those discussions in the  
14 Company’s next DSM/EE rider filing; (2) that DEP shall continue to leverage  
15 its Collaborative to discuss the on-going challenges to customers adopting  
16 energy efficiency in the market that has led to current and forecasted decline in  
17 energy savings and the development and expansion of EE for low-income  
18 customers and report the results of these discussions in the Company’s 2023  
19 DSM/EE rider filing; (3) that the combined DEC/DEP Collaborative shall  
20 continue to meet every other month; (4) that DEP shall coordinate with DEC to  
21 conduct a study of the persistence of My Home Energy Report (“MyHER”)  
22 energy savings over time, in compliance with the discussion of in the

1 Commission's Order and in the DEC DSM/EE Order issued on December 12,  
2 2022, in Docket No. E-7, Sub 1265.

3 **Q. DID DEP CONTINUE TO LEVERAGE THE COLLABORATIVE TO**  
4 **DISCUSS ISSUES RAISED BY INTERVENORS IN DOCKET E-2, SUB**  
5 **1294?**

6 A. As part of the regular Collaborative meetings, DEP has facilitated and  
7 participated in a number of discussions regarding developing new programs,  
8 expanding the reach and increasing the impacts of existing programs, and  
9 identifying and overcoming market barriers. In addition to the feedback from  
10 members, the Company commissioned a study to evaluate the rate at which  
11 low-and moderate-income households participate in market-rate programs.  
12 This study, entitled the Low- and Moderate-Income Participation Study (LMI  
13 Study), identified a number of barriers to participation and recommended  
14 several ways to improve programs. The Collaborative has been reviewing the  
15 study since it was finalized last year and will continue to incorporate its finding  
16 in meetings this year. For the Commission's review, the LMI Study is attached  
17 to my testimony as Exhibit J.

18 The Company has reviewed all suggestions offered by Collaborative  
19 members. Several of the suggestions did not meet the Company's requirements  
20 for a stand-alone program but have been incorporated into existing programs.  
21 Other ideas the Collaborative offered have been tabled until regulatory  
22 conditions evolve or technology advances. For example, the Collaborative  
23 suggested that DEP explore claiming savings from advancing building energy

1 codes and appliance standards in the Carolinas similar to how they are claimed  
2 in other states. The Company has tabled this suggestion until such time as  
3 North Carolina adopts a framework that defines the actions a utility must take  
4 to claim attributed savings and determines the appropriate attribution  
5 methodology. The Company will continue conversations with the  
6 Collaborative to incorporate new ideas and measures into the portfolio.

7 **Q. DID DEP CONTINUE TO LEVERAGE THE COLLABORATIVE TO**  
8 **DISCUSS ON-GOING CHALLENGES TO CUSTOMERS ADOPTING**  
9 **ENERGY EFFICIENCY IN THE MARKET, INCLUDING CURRENT**  
10 **AND FORECASTED DECLINE IN ENERGY SAVINGS AND**  
11 **DEVELOPMENT AND EXPANSION OF EE FOR LOW-INCOME**  
12 **CUSTOMERS?**

13 A. Yes, the forecasted decline in savings was a primary focus of the Collaborative  
14 in 2022. Declines attributed primarily to changing lighting standards and  
15 widespread adoption of LEDs have continued to impact programs' savings.  
16 However, the Company has discussed a number of new programs with the  
17 Collaborative, including several which have been filed for Commission  
18 approval. Additionally, the Collaborative is involved in ongoing discussions  
19 about expanding program footprints and leveraging state and federal legislation  
20 to capture more opportunities.

21 The Collaborative has been focused on assisting income-qualified  
22 households. Not only have Collaborative members been active in other  
23 working groups during 2021 and 2022, but they have also brought findings from

1 those groups to the work they do for DSM/EE programs. For example, the  
2 Company filed the DEP Weatherization Program based on feedback from Low-  
3 Income Affordability Collaborative (“LIAC”) working groups. The  
4 Collaborative also reviewed findings of the LMI Participation Study, discussed  
5 earlier in my testimony, and offered insights and comments on the preliminary  
6 findings of that study.

7 **Q. PLEASE SUMMARIZE THE COLLABORATIVE ACTIVITIES**  
8 **OCCURRING IN 2022.**

9 A. The Collaborative met for formal meetings in January, March, May, July,  
10 September, and November. Between meetings, interested stakeholders joined  
11 conference calls as needed to focus on certain agenda items or priorities that  
12 could not be fully explored during the formal meetings. These items included  
13 new program development, study results and federal funding opportunities.  
14 Collaborative members gained a deeper understanding of the issues facing  
15 Duke’s DSM/EE programs and brought the Company valuable feedback and  
16 perspective. Meetings and calls have begun and will similarly through 2023.

17 **Q. DOES DEP HAVE AN UPDATE ON THE COORDINATION WITH**  
18 **DEC TO CONDUCT A STUDY OF PERSISTENCE OF MYHER**  
19 **ENERGY SAVINGS OVER TIME?**

20 A. Yes, DEP and DEC have engaged with a third-party EM&V vendor to scope  
21 the requirements of the study, which began in the first quarter of 2023 following  
22 the Commission’s December 2022 order to undertake such coordination. In its  
23 previous DSM/EE rider proceeding, DEC updated the Commission that “The

1 Company anticipates the persistence study of the MyHER energy savings will  
2 be scheduled to be finalized by fourth quarter 2023, thereby making its findings  
3 potentially available for inclusion in the filing of the Company's next annual  
4 DSM/EE rider filing in 2024." Since that update, the Company and the third-  
5 party party EM&V vendor are expecting ongoing work to continue throughout  
6 2023. The recommendation from the vendor is to study for persistence of  
7 energy savings for a period of two years. This would make the timing such that  
8 MyHER participants would stop receiving email and paper MyHER reports  
9 beginning January 2024. An interim report for first-year persistence would be  
10 available in the First Quarter of 2025, with a final report expected to be  
11 available in the Third Quarter of 2026, which would encompass persistence  
12 impacts for both the first and second year of the persistence study. The results  
13 of the study will be reflected in next upcoming rider filing following its  
14 completion.

### 15 **III. RULE R8-69 FILING REQUIREMENTS**

16 **Q. PLEASE PROVIDE AN OVERVIEW OF THE INFORMATION DEP IS**  
17 **PROVIDING IN RESPONSE TO THE COMMISSION'S FILING**  
18 **REQUIREMENTS.**

19 A. The information for this filing is provided pursuant to the Commission's filing  
20 requirements contained in R8-69(f)(1) and can be found in my testimony and  
21 exhibits, as well as the testimony and exhibits of Company witness Carolyn T.  
22 Miller as follows:

<b>R8-69(f)(1)</b>		<b>Items</b>	<b>Location in Testimony</b>
	(i)	Projected NC retail sales for the rate period	Miller Exhibit 6
	(ii)	For each measure for which cost recovery is requested through DSM/EE rider:	
	(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 Exhibits 10 and 11
	(ii)	d. Expected summer and winter 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 Q. Fields and Fields Exhibits A-G
	(iii)	d. Total summer and winter 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 Q. 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 Q. Fields and Fields Exhibits 6 and 8
	(iv)	Determination of utility incentives	Testimony of Casey Q. Fields and Fields Exhibit 1

(v)	Actual revenues from DSM/EE and DSM/EE EMF riders	Miller Exhibit 3
(vi)	Proposed DSM/EE rider	Testimony of Carolyn T. Miller and Miller Exhibit 1
(vii)	Projected NC sales for customers opting out of measures	Miller Exhibit 6
(viii)	Supporting work papers	Digital medium accompanying filing

1

#### **IV. PROGRAM OVERVIEW**

2

#### **Q. WHAT ARE DEP'S CURRENT DSM AND EE PROGRAMS?**

3

A. The Company's vintage 2022 DSM and EE programs are as follows:

4

#### **RESIDENTIAL CUSTOMER PROGRAMS**

5

- EE Education Program

6

- Multi-Family EE Program

7

- MyHER Program

8

- Neighborhood Energy Saver Program

9

- Residential Smart Saver EE Program

10

- New Construction Program

11

- Load Control Program (EnergyWise)

12

- Save Energy and Water Kit Program (now part of the EE Appliances and Devices Program)

13

14

- Energy Assessment Program

15

- Low-Income Weatherization Pay for Performance Pilot Program

16

- Energy Efficient Appliances and Devices Program

1           **NON-RESIDENTIAL CUSTOMER PROGRAMS**

- 2           • Non-Residential Smart \$aver Energy Efficient Products and  
3           Assessment Program
- 4           • Non-Residential Smart \$aver Performance Incentive Program
- 5           • Small Business Energy Saver Program
- 6           • CIG Demand Response Automation Program
- 7           • EnergyWise for Business

8           **COMBINED RESIDENTIAL/NON-RESIDENTIAL PROGRAMS**

- 9           • Energy Efficient Lighting Program
- 10          • DSDR

11   **Q.   PLEASE DESCRIBE ANY UPDATES MADE TO THE UNDERLYING**  
12   **ASSUMPTIONS FOR DEP’S PROGRAMS THAT HAVE ALTERED**  
13   **PROJECTIONS FOR VINTAGE 2024.**

14   A.   Updates to underlying assumptions that materially impact DEP’s 2024 portfolio  
15   projection are due to EM&V-related impacts. Additionally, the underlying  
16   assumptions in Smart \$aver programs and EE Lighting programs, which offer  
17   rebates and incentives to install higher efficiency heating, air conditioning and  
18   ventilation measures, have been updated to reflect the recent federal appliance  
19   standards advancements and changes to the efficient lighting standards that will  
20   be effective mid-2023.

21   **Q.   PLEASE DESCRIBE THE EM&V IMPACT TO DEP’S ESTIMATED**  
22   **2024 PROGRAM PORTFOLIO.**



1 A. Changes in the EM&V results were updated to reflect the savings impacts for  
2 those programs for which DEP received EM&V results after it prepared its  
3 application for approval of its DSM/EE Rider in its previous annual DSM/EE  
4 Rider proceeding in Docket No. E-2, Sub 1294. These changes updated the  
5 EM&V results for changes to the projected avoided cost benefits associated  
6 with the projected participation. Hence, these EM&V updates will impact the  
7 calculation of the specific program and overall portfolio cost-effectiveness, as  
8 well as impact the calculation of DEP's projected shared savings incentive.

9 **Q. AFTER FACTORING THESE UPDATES INTO DEP'S PROGRAMS**  
10 **FOR VINTAGE 2023, DO THE RESULTS OF DEP'S PROSPECTIVE**  
11 **COST-EFFECTIVENESS TESTS INDICATE THAT IT SHOULD**  
12 **DISCONTINUE OR MODIFY ANY OF ITS PROGRAMS?**

13 A. DEP performed a prospective analysis of each of its programs and the aggregate  
14 portfolio for the Vintage 2024 period. The results of this prospective analysis  
15 are contained in Fields Exhibit 7. This exhibit shows that all programs pass the  
16 Utility Cost Test ("UCT") cost effectiveness threshold of 1.0. This includes  
17 programs that did not previously pass, including Neighborhood Energy Saver,  
18 Income-Qualified Energy Efficiency and Weatherization, which are income-  
19 qualified programs and measures, as well as and EnergyWise for Business.  
20 EnergyWise for Business is in its first year of the newly modified program  
21 which was designed to increase its cost effectiveness and is in the process of  
22 ramping up.

23

1

2 Based on the results of these cost-effectiveness tests, there are no reasons to  
3 discontinue any of DEP's programs. Notably, the Company continues to  
4 examine its programs for potential modifications to increase their effectiveness,  
5 regardless of the current cost-effectiveness results.

6

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

7

**Q. HOW MUCH ENERGY, CAPACITY AND AVOIDED COST SAVINGS  
8 DID DEP DELIVER AS A RESULT OF ITS DSM/EE PROGRAMS  
9 DURING VINTAGE 2021?**

10 A. During Vintage 2022, DEP's DSM/EE programs delivered 399 million kilowatt  
11 hours ("kWh") of energy savings and over 234 megawatts ("MW") of capacity  
12 savings, which produced a net present value of avoided cost savings of over  
13 \$119 million. The 2022 performance results for individual programs are  
14 provided in Fields Exhibits 6 and 8.

15 **Q. DID ANY PROGRAMS SIGNIFICANTLY OUT-PERFORM  
16 RELATIVE TO THEIR ORIGINAL ESTIMATES FOR VINTAGE 2021?**

17 A. Yes. In the residential market, three programs did significantly out-perform  
18 compared to their original energy savings estimates: the Energy Efficient  
19 Lighting Program, Residential New Construction and My Home Energy  
20 Report. When compared to estimates originally filed for Vintage 2022, the  
21 programs exceeded projections by 36 percent, 21 percent and 22 percent,  
22 respectively. The increases in both were achieved primarily through changes  
23 in participation and EM&V.

1 **Q. HAVE ANY PROGRAMS SIGNIFICANTLY UNDERPERFORMED**  
 2 **RELATIVE TO THEIR ORIGINAL ESTIMATES FOR VINTAGE 2022?**

3 A. Yes. The ongoing effects of the COVID pandemic had on program workforces,  
 4 supply chain, and customer willingness to have program administrators onsite  
 5 continues to impact forecasted performance. Inflation and the increase of  
 6 measure costs have impacted the adoption of energy efficiency measures.  
 7 Federal baselines changes have also played in impacting programs.

8 **VI. PROJECTED RESULTS**

9 **Q. PLEASE PROVIDE A PROJECTION OF THE RESULTS THAT DEP**  
 10 **EXPECTS FROM IMPLEMENTING ITS PORTFOLIO OF**  
 11 **PROGRAMS.**

12 A. DEP will update the actual and projected DSM/EE achievement levels in its  
 13 next annual DSM/EE cost recovery filing to account for any program or  
 14 measure additions based on the performance of programs, market conditions,  
 15 economics, and consumer demand. The actual results for Vintage 2022 and  
 16 projection of the results for the next two years, as well as the associated actual  
 17 and projected program expenses, are summarized in the table below:

DEP System (NC & SC) DSM/EE Portfolio 2022 Actual Results and 2023-2024 Projected Results			
	2022	2023	2024
Annual System MW	234	359	167
Annual System Net Gigawatt-Hours	399	410	398
Annual Program Costs (Millions)	\$71	\$96	\$81

18

1 **Q. PLEASE EXPLAIN IF THE COMPANY’S PROJECTIONS REFLECT**  
 2 **THE FUNDING MADE AVAILABLE BY THE INFLATION**  
 3 **REDUCTION ACT (IRA).**

4 A. At this time, the Company’s projections do not reflect any impacts of the IRA.  
 5 Although the IRA was signed into law in 2022, the availability and impact of  
 6 the funds are still being determined. The Company itself is rarely, if ever, a  
 7 direct recipient of such funding, but it believes it can help customers leverage  
 8 their available funding to achieve greater savings, as I discuss later in my  
 9 testimony.

## 10 **VII. EM&V ACTIVITIES**

11 **Q. CAN YOU PROVIDE INFORMATION ON THE COMPANY’S EM&V**  
 12 **ACTIVITIES?**

13 A. Fields Exhibit 10 summarizes the estimated activities and timeframe for  
 14 completion of EM&V by program. Fields Exhibit 11 provides the actual and  
 15 expected dates when the EM&V for each program or measure will become  
 16 effective. Fields Exhibits A through I provide the completed EM&V reports or  
 17 updates for the following programs:

<b>Fields Exhibit</b>	<b>EM&amp;V Reports</b>	<b>Report Finalization Date</b>	<b>Effective Date</b>	<b>Evaluation Type</b>
A	EM&V Report for the EnergyWise Home Demand Response Program; Summer 2021	4/1/2022	10/1/2022	Impact
B	Duke Energy Progress & Duke Energy Carolinas Neighborhood Energy Saver Program 2021 Evaluation Report - FINAL	5/11/2022	7/1/2019	Impact and Process
C	EM&V Report for the Duke Energy Small Business Energy Saver Program 2019-2020 (Revised)	6/9/2022	7/1/2020	Impact and Process

D	EM&V Report for the Duke Energy 2020/2021 EnergyWise Business Program (DR)	7/7/2022	10/1/2021	Impact
E	Smart \$aver Non-Residential Custom Program Years 2018-2019 Evaluation Report	7/14/2022	8/1/2022	Impact and Process
F	Duke Energy Progress 2022 Non-Profit Low Income Weatherization Pay for Performance Pilot Program Evaluation Report – Final	8/16/2022	1/1/2019	Impact
G	Duke Energy Carolinas & Duke Energy Progress Retail Lighting Program 2022 Evaluation Report - Final	12/5/2022	4/1/2022	Impact and Process
H	EM&V Report for the EnergyWise Home Demand Response Program; Winter 2021/2022	2/1/2023	4/1/2022	Impact
I	Duke Energy Carolinas/Duke Energy Progress Non-Residential Smart \$aver® Prescriptive Program Evaluation Report – Final	3/20/2023	1/1/2021	Impact and Process

1

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

4 A. The Company has applied EM&V consistent with the Commission's  
5 Orders in Docket E-2 Sub 931 on October 20, 2020. The level of EM&V  
6 required varies by program and depends upon that program's contribution to  
7 the total portfolio, the duration the program has been in the portfolio without  
8 material change, and whether the program and administration is new and  
9 different in the energy industry. All program impacts from EM&V apply only  
10 to the programs for which the analysis was directly performed, though DEP's  
11 new product development may utilize actual impacts and research about EE and  
12 conservation behavior directly attributed to existing DEP program offerings.

1 DEP estimates, however, that no additional costs above five percent of total  
2 program costs will be associated with performing EM&V for all measures in  
3 the portfolio.

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

6 A. All of the impact results included in the Company's filing (Fields Exhibits A  
7 through I) are based on Carolinas-based EM&V.

8 **VIII. RATE IMPACTS**

9 **Q. HAVE THE PARTICIPATION RESULTS AFFECTED THE VINTAGE**  
10 **2021 EMF?**

11 A. Yes. The EMF accounts for changes to actual participation relative to the  
12 forecasted participation levels used in DEP's 2022 DSM/EE rider. As DEP  
13 receives actual participation information, it updates the participation-driven  
14 actual avoided cost benefits and the net lost revenues derived from its DSM and  
15 EE programs. For example, with all other things being equal, for programs that  
16 underperform relative to their original participation targets, the EMF will be  
17 reduced to reflect lower costs, net lost revenues, and shared savings incentives.  
18 On the other hand, higher-than-expected participation in programs causes the  
19 EMF to reflect higher program costs, net lost revenues, and shared savings  
20 incentives. In addition, the EMF is impacted by the application of EM&V  
21 results.

22 **Q. HOW WILL EM&V BE INCORPORATED INTO THE VINTAGE 2022**  
23 **EMF COMPONENT OF ITS RATES?**

1 A. All of the final EM&V results that were received by DEP as of March 31, 2023  
2 have been applied prospectively from the first day of the month immediately  
3 following the month in which the study participation sample for the EM&V was  
4 completed. Accordingly, for any program for which DEP has received EM&V  
5 results, the per participant impact applied to the projected program participation  
6 in Vintage 2024 is based upon the actual EM&V results that have been received.

7 **Q. HAS THE OPT-OUT OF CERTAIN NON-RESIDENTIAL**  
8 **CUSTOMERS AFFECTED THE RESULTS OF APPROVED**  
9 **PROGRAMS?**

10 A. Yes, the opt-out of qualifying non-residential customers has significantly  
11 impacted DEP's overall non-residential participation and the associated  
12 impacts. For Vintage 2022, DEP had 4,760 eligible customer accounts opt out  
13 of participating in DEP's non-residential portfolio of EE programs and had  
14 4,694 eligible customer accounts opt out of participating in DEP's non-  
15 residential portfolio of DSM programs. Also during 2022, 60 opt-out eligible  
16 accounts opted-in to the EE portion of the Rider, and one opt-out eligible  
17 accounts opted-in to the DSM portion of the Rider.

18 **Q. IS THE COMPANY CONTINUING ITS EFFORTS TO ATTRACT THE**  
19 **PROGRAM PARTICIPATION OF OPT-OUT ELIGIBLE**  
20 **CUSTOMERS?**

21 A. Yes. Increasing the participation of opt-out eligible customers in DSM and EE  
22 programs is a priority to the Company. DEP continues to evaluate and revise  
23 its nonresidential portfolio of programs to accommodate new technologies,

1 eliminate product gaps, remove barriers to participation, and make its programs  
2 more attractive. It also continues to leverage its Large Account Management  
3 Team to make sure customers are informed about product offerings and the  
4 March Opt-in Window.

5 The Company has discussed an approach to a demand response offering  
6 with customers and interested parties to explore whether a larger incentive  
7 would encourage opted out customers with quicker response times to opt in.  
8 This potential approach was based on similar programs operating in California.  
9 The Company worked with interested parties to define the parameters that  
10 would work operationally and cost effectively in Duke Energy's Progress  
11 territories. Ultimately, that proposed concept was found to garner insufficient  
12 interest from potential participants, but the Company is continuing to review  
13 new opportunities with opted out customers and will continue to engage  
14 customers that may benefit from those type programs.

15 **IX. NET LOST REVENUES**

16 **Q. IS DEP REQUESTING RECOVERY OF NET LOST REVENUES FOR**  
17 **ALL OF ITS PROGRAMS?**

18 A. No. At this time, DEP is not requesting recovery of net lost revenues for its  
19 DSDR, EnergyWise, or CIG Demand Response Automation programs.

20 **Q. HAS THE COMPANY RECOGNIZED FOUND REVENUES IN ITS**  
21 **CALCULATION OF NET LOST REVENUES?**

22 A. Yes. The recognized found revenues are provided in Fields Exhibit 4.



1 **Q. PLEASE DESCRIBE HOW DEP DETERMINES ITS FOUND**  
2 **REVENUES.**

3 A. Consistent with the Commission’s 2020 Mechanism Order, DEP has adopted  
4 the “Decision Tree” located in Attachment C of the approved revised cost  
5 recovery mechanism. Consistent with the methodology employed by DEP,  
6 found revenue activities are identified, categorized, and netted against the net  
7 lost revenues created by DEP’s EE programs. Found revenues, as calculated,  
8 result from DEP’s activities that are perceived to directly or indirectly result in  
9 an increase in customer demand or energy consumption within DEP’s service  
10 territory. However, revenues resulting from load-building activities would not  
11 be considered found revenues if they (1) would have occurred regardless of  
12 DEP’s activity, (2) were a result of a Commission-approved economic  
13 development activity not determined to produce found revenues, or (3) were  
14 part of an unsolicited request for DEP to engage in an activity that supports  
15 efforts to grow the economy. Additionally, under N.C. Gen. Stat. § 62-3(23)(n)  
16 any increases from customer demand or energy consumption associated with  
17 transportation electrification shall not constitute found revenues for an electric  
18 public utility. DEP also adjusts the calculation of found revenues to account  
19 for the impacts of activities outside of DSM/EE programs that it undertakes that  
20 reduce customer consumption – i.e., “negative found revenues.” Based on the  
21 results of this work, all potential found revenue-related activities are identified  
22 and categorized in Fields Exhibit 4.

1 **Q. PLEASE DISCUSS DEP’S ADJUSTMENT TO ITS FOUND REVENUE**  
2 **CALCULATION TO ACCOUNT FOR NEGATIVE FOUND**  
3 **REVENUES.**

4 A. DEP continues to aggressively pursue, with its outdoor lighting customers, the  
5 replacement of aging Mercury Vapor lights with Light Emitting Diode (“LED”)   
6 fixtures. By moving customers past the standard High-Pressure Sodium   
7 (“HPS”) fixture to an LED fixture in this replacement process, DEP is   
8 generating significant energy savings. Because they come outside of DEP’s EE   
9 programs, these energy savings are not captured in DEP’s calculation of lost   
10 revenues. One of the activities that DEP includes in the calculation of found   
11 revenues is the increase in consumption from new outdoor lighting fixtures   
12 added by DEP; accordingly, it is logical and symmetrical to count the energy   
13 consumption reduction realized in outdoor lighting efficiency upgrades. The   
14 Company does not take credit for the entire efficiency gain from replacing   
15 Mercury Vapor lights, but rather takes credit only from the efficiency gain from   
16 replacing HPS with LED fixtures. Also, DEP has not recognized any negative   
17 found revenues in excess of the found revenues calculated; in other words, the   
18 net found revenues number will never be negative and have the effect of   
19 increasing net lost revenue calculations.

20 **X. PPI AND PRI CALCULATIONS**

21 **Q. PLEASE PROVIDE AN OVERVIEW OF THE SHARED SAVINGS**  
22 **RECOVERY MECHANISM APPROVED IN THE COMMISSION’S**  
23 **2020 MECHANISM ORDER.**

1 A. Pursuant to the Commission’s 2020 Mechanism Order, for Vintage Year 2017  
2 and subsequent vintage years, DEP’s revised cost recovery mechanism allows  
3 it to (1) recover the reasonable and prudent costs incurred for adopting and  
4 implementing DSM and EE measures in accordance with N.C. Gen. Stat. § 62-  
5 133.9 and Commission Rules R8-68 and R8-69; (2) recover net lost revenues  
6 incurred for up to 36 months of a measure’s life for DSM and EE programs;  
7 and (3) earn a PPI based upon the sharing of a percentage of the net savings  
8 achieved through DEP’s DSM/EE programs on an annual basis. Prior to 2022,  
9 the shared savings percentage was 11.5 percent; starting in 2022, this  
10 percentage is lowered to 10.6 percent. The PPI is also subject to certain  
11 limitations that are set forth in the Cost Recovery and Incentive Mechanism  
12 consistent with the Commission’s Orders in Docket No. E-2 Sub 931.

13 **Q. PLEASE EXPLAIN HOW DEP DETERMINES THE PPI.**

14 A. First, DEP determines the net savings eligible for incentive by subtracting the  
15 present value of the annual lifetime DSM/EE program costs (excluding  
16 approved low-income programs as described below) from the net present value  
17 of the annual lifetime avoided costs achieved through the Company’s programs  
18 (again, excluding approved low-income programs). Estimated net savings for  
19 all periods are determined by multiplying the number of measurement units  
20 projected to be installed for a specific program or measure in a vintage year by  
21 the most current estimate of the annual per installation kilowatt (“kW”) and  
22 kilowatt-hour (“kWh”) savings over the measurement unit’s life and by the  
23 annual kW and kWh avoided costs. DEP then subtracts the estimated utility

1 costs over the measurement unit's life related to the projected installations in  
2 that vintage year and discounts the result to determine a net present value. The  
3 Company then multiplies the net savings eligible for incentive by the applicable  
4 shared savings percentage, or PPI, to determine its pre-tax incentive.

5 The PPI for each program vintage is converted into a stream of up to ten  
6 levelized annual payments. DEP's overall weighted average net-of-tax rate of  
7 return approved in DEP's most recent general rate case is used as the  
8 appropriate discount rate. Pursuant to the *2020 Mechanism Order*, PPI  
9 recoveries are subject to true-up on the basis of future EM&V results. PPI  
10 calculations are based on calendar year vintages. The PPI vintage assigned to  
11 the test period in this filing encompasses calendar year 2022. These values will  
12 be trued-up on the basis of future EM&V results. The estimated PPI for the rate  
13 period used in this filing is based on calendar year 2024 and will be trued-up as  
14 a part of DEP's 2024 DSM/EE cost recovery proceeding.

15 **Q. PLEASE EXPLAIN WHETHER DEP EXCLUDES ANY PROGRAMS**  
16 **FROM THE DETERMINATION OF ITS PPI CALCULATION.**

17 A. Consistent with the Commission's Orders in Docket No. E-2 Sub 931, DEP has  
18 excluded the impacts and costs associated with the Neighborhood Energy Saver  
19 Program and the EE Education Program from its calculation of the PPI. At the  
20 time these programs were approved, they were not cost-effective, but were  
21 instead approved based on their societal benefit. Beginning in 2022, the  
22 Weatherization Pilot, Neighborhood Energy Saver and EE Education programs  
23 are eligible to receive a program return incentive ("PRI").

1 **Q. PLEASE EXPLAIN HOW DEP DETERMINES PRI.**

2 A. The PRI is determined by multiplying the net present value of avoided cost by  
3 10.6 percent. As with the PPI, the PRI is also subject to certain limitations that  
4 are set forth in the 2020 Mechanism. The percentage used to determine the  
5 final PRI for each Vintage Year will be based on the Company's ability to  
6 maintain or improve the cost effectiveness of the PRI-eligible programs.

7 The PRI percentage for each PRI-eligible Program will be determined  
8 by comparing (1) the projected UCT ratio for the portfolio of PRI-eligible  
9 Programs for the Vintage Year at the time of the Company's DSM Rider filing  
10 first estimating that projected Vintage Year UCT ratio to (2) the actual UCT  
11 ratio achieved for that portfolio of PRI-eligible Programs as that Vintage Year  
12 is trued up in future filings. The ratio (UCT actual/UCT estimate) will then be  
13 multiplied by 10.60% to determine the PRI percentage that will be applied to  
14 the actual avoided costs generated by each approved PRI eligible program.

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

16 **Q. HAS THE COMPANY PURSUED THE OPPORTUNITIES THAT MAY**  
17 **ARISE THROUGH TAX INCENTIVES OR FEDERAL FUNDING TO**  
18 **BENEFIT ITS CUSTOMERS?**

19 A. Yes, the Company has internally reviewed the Home Energy Performance-  
20 Based, Whole House Rebates and High-Efficiency Electric Home Rebate  
21 Program to consider how our customers would uniquely benefit from  
22 coordinating the Company's energy efficiency incentives and IRA rebates. As  
23 I previously discussed, the Company itself does not directly receive IRA funds

1 to apply to its energy efficiency programs, but it nonetheless believes it can  
2 provide significant value to its customers by acting as a “one-stop shop” for  
3 customers to help them to understand, qualify for, and receive IRA funds that,  
4 when possible, can be used to compliment the Company’s energy efficiency  
5 programs. For example, in addition to its existing equipment incentive  
6 programs, the MyHER and Home Energy House Call programs will continue  
7 to provide opportunities to proactively educate and engage residential  
8 customers about the opportunities that IRA funds can provide. Use of the funds  
9 in this way can help to ensure that customer efficiency and energy savings are  
10 realized at the lowest possible cost to customers. Moreover, to best understand  
11 and maximize the opportunities that these funds provide to customers to become  
12 more energy efficient, the Company is actively working with the North Carolina  
13 State Energy Office, who will likely be dispersing the funds. The Company  
14 will be submitting a response on March 3<sup>rd</sup> to the United States Department of  
15 Energy’s Office of State and Community Energy Programs’ January 18, 2023,  
16 Request for Information on the Inflation Reduction Act Home Efficiency &  
17 Electrification Rebate Programs. The Company intends to provide on-going  
18 status updates on its efforts around the IRA funds to the Collaborative and will  
19 provide an update in next year’s annual rider filing.

20 The Company also continues to engage with members of the  
21 Collaborative who have expressed interest in understanding how the Company  
22 will coordinate and optimize the deployment of those rebates.

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

1 **Q. DID THE COMPANY AND THE PUBLIC STAFF COMPLETE THEIR**  
2 **REVIEW OF DUKE’S 2021 AVOIDED T&D STUDY?**

3 A. Yes. As discussed in the Public Staff’s December 19, 2022, update letter to the  
4 Commission referencing Dockets E-2, Sub 1294 and E-7, Sub 1265, the review  
5 of the 2021 Avoided T&D Study was completed after numerous meetings and  
6 discussions between DEP and the Public Staff.

7 **Q. PLEASE GENERALLY DESCRIBE THE REVIEW OF THE AVOIDED**  
8 **T&D STUDY.**

9 A. Although the 2021 Avoided T&D Study was performed by Duke Energy  
10 consistently with the approach utilized to conduct previous studies, in the  
11 process of responding to the Public Staff’s questions, the Company determined  
12 that a more detailed screening of the underlying T&D capital investments was  
13 needed. Rather than relying on general cost categorization, the additional  
14 screening reviews the actual project description within each of the cost  
15 categories. The additional screening is designed to ensure that capital  
16 investment associated with the T&D system was appropriately limited to those  
17 specifically related to system capacity expansion and excluded those related to  
18 reliability investments.

19 **Q. PLEASE DESCRIBE HOW THE RESULTS OF THE REVIEW OF THE**  
20 **2021 AVOIDED T&D STUDY WILL BE APPLIED IN THE FUTURE.**

21 A. After developing the additional screening methodologies, the Company applied  
22 them to the 2021 Avoided T &D study and found that the results validated the  
23 agreed-upon avoided T&D rate applied to Vintage 2023. Following this

1 validation, the Company and the Public Staff agreed that it is appropriate that  
2 avoided T&D rates agreed to in late 2021 should continue, using the associated  
3 escalator rates, until the next Avoided T&D study is completed and  
4 incorporated. Consistent with the schedule set out in the Company's approved  
5 EE/DSM Mechanisms, the next Avoided T&D Study will be conducted in 2024  
6 and utilize the new agreed-upon methodology. The next Avoided T&D Study  
7 will then be applied to the projection for Vintage Year 2026.

8 **XIII. CONCLUSION**

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

10 A. Yes.



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, Fields  
Supplemental Revised  
Exhibits 1, 2, 5, 7 and 12  
are marked for  
identification as  
prefiled.)

(WHEREUPON, the prefiled  
supplemental testimony of  
CASEY Q. FIELDS is copied  
into the record as if given  
orally from the stand.)

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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

---

OFFICIAL COPY

Aug 18 2023

1 **I. INTRODUCTION AND PURPOSE**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Casey Q. Fields, and my business address is 411 Fayetteville Street,  
4 Raleigh, North Carolina 27601.

5 **Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS**  
6 **MATTER BEFORE THE NORTH CAROLINA UTILITIES**  
7 **COMMISSION?**

8 A. Yes. I filed direct testimony on behalf of Duke Energy Progress, LLC (“DEP”  
9 or the “Company”) in this matter on June 13, 2023.

10 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT**  
11 **TESTIMONY IN THIS PROCEEDING?**

12 A. The purpose of my supplemental direct testimony is to update Fields Exhibits  
13 1, 2, 5, 7, 12 with my direct testimony in this docket on June 13, 2023, to reflect  
14 certain updates and corrections.

15 **Q. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR**  
16 **DIRECTION?**

17 A. Yes.

18 **II. UPDATES TO DIRECT TESTIMONY**

19 **Q. PLEASE DESCRIBE THE UPDATES TO YOUR DIRECT**  
20 **TESTIMONY.**

21 A. Exhibits 1, 2, 7, 12 have been updated to include a few minor modifications to  
22 tables that includes the impacts of the Smart Saver Non-Residential Prescriptive  
23 Program to appropriately reflect the application of a recent Evaluation,

1 Measurement, and Verification in Vintages 2021, 2022, and 2024 as well as  
2 to reconcile participation in Vintage 2021. The modifications impacted the  
3 proposed non-residential energy efficiency billing factor as outlined in the  
4 supplemental direct testimony of Company witness Carolyn T. Miller.

5 **Q. ARE THERE ANY OTHER UPDATES OR CORRECTIONS THAT**  
6 **NEED TO BE MADE TO YOUR DIRECT TESTIMONY?**

7 A. Exhibit 5 has been updated to provide corrections to the table to align with the  
8 Annual Report for Distribution System Demand Response.

9 **Q. DOES THIS CONCLUDE YOUR PRE-FILED SUPPLEMENTAL**  
10 **DIRECT TESTIMONY?**

11 A. Yes.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, the summary of  
direct and supplemental  
testimony of CASEY Q.  
FIELDS is copied into the  
record as if given orally  
from the witness stand.)

**DUKE ENERGY PROGRESS, LLC  
CASEY Q. FIELDS DIRECT AND SUPPLEMENTAL TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1322**

My testimony supports Duke Energy Progress, LLC's (the "Company" or "DEP") application for approval of its demand-side management (DSM") and energy efficiency ("EE") Cost Recovery Rider for 2024 ("Rider 15"), which encompasses the Company's portfolio of programs and cost recovery and incentive mechanism approved in the Commission's orders approving the Company's Cost Recovery Mechanisms.

I testify that through the DSM/EE Collaborative, the Company has facilitated discussions regarding developing new programs, expanding and increasing the impacts of existing programs, and identifying and overcoming market barriers. The Company commissioned a study to evaluate the rate at which low- and moderate-income households participate in market-rate programs. This study, entitled the Low- and Moderate-Income Participation Study (LMI Study), identified barriers to participation and recommended ways to improve programs. The Collaborative has been reviewing the study since it was finalized last year and will continue to incorporate its findings in meetings this year.

I also testify that the Company has also begun working with its third-party EM&V vendor to initiate in the first quarter of 2023 its study of the persistence of the MyHER program's energy savings. The Company will continue to update the Commission on the progress of the persistence study until it is final.

My testimony also outlines how the Company has complied with Commission Rule R8-68 requirements. I note that the aggregate DSM/EE portfolio continues to project cost-effectiveness, with the exception of the Income-Qualified EE Products and Services Program, which was not cost-effective at the time of approval and an element of the

Nonresidential Smart Saver Program. Based on these results, there are no reasons to discontinue any of DEP's programs. The Company continues to examine its programs for potential modifications to increase their effectiveness.

I further testify that during Vintage 2022, DEP's DSM/EE programs delivered over 399 million of kilowatt-hours of energy savings, 276 megawatts of summer peak capacity savings and nearly 234 megawatts of winter peak capacity, which produced net present value avoided cost savings of over \$119 million. The Company's overall performance during 2022, was less than forecasted, however effects of the COVID pandemic had on program workforces, supply chain, and customer willingness to have program administrators onsite continues to impact forecasted performance. Inflation and the increase of measure costs have impacted the adoption of energy efficiency measures. Federal baselines changes have also played in impacting programs. I do note, however, that energy savings associated with the Energy Efficient Lighting Program, Residential New Construction and My Home Energy Report. When compared to estimates originally filed for Vintage 2022, the programs exceeded projections by 36 percent, 21 percent and 22 percent, respectively. I also provide a projection of the results that DEP expects to see from implementation of its DSM/EE portfolio Vintages 2023 and 2024 and the associated projected program expense.

With respect to the EM&V results, I explain how the Company has applied EM&V consistently with the agreement among DEP, the Southern Alliance of Clean Energy and the Public Staff that has been approved by Commission. For any program for which DEP has received EM&V results, the per participant impact applied to the projected program participation in Vintage 2022 is based upon the actual EM&V results that have been

received. I also explain how the DEP has calculated found revenues and negative found revenues.

With respect to the opt-outs of nonresidential customers, I testify that for Vintage 2022, DEP had 4,760 eligible customer accounts opt out of participating in DEP's nonresidential portfolio of EE programs and 4,694 eligible customer accounts opt out of DEP's nonresidential DSM programs. Increasing the participation of opt-out eligible customers in DSM and EE programs is a priority for the Company, and it continues to leverage its Large Account Management Team to ensure customers are informed about product offerings. I also give an overview of the PPI and PRI calculations pursuant to Commission orders and the Mechanisms.

With respect to the Inflation Reduction Act ("IRA"), I testify that the Company has reviewed its Home Energy Performance-Based, Whole House Rebates and High-Efficiency Electric Home Rebate Program to consider how our customers would uniquely benefit from coordinating the Company's EE incentives and IRA rebates. The Company itself does not directly receive IRA funds to apply to its EE programs, but the Company nonetheless believes that it can provide significant value to its customers by acting as a "one-stop shop" for customers to help them receive IRA funds, when possible, to complement the Company's EE programs. The Company intends to provide ongoing status updates on its efforts around the IRA funds to the Collaborative and will provide an update in next year's annual rider filing.

Finally, I testify that the Company and the Public Staff have completed their review of the avoided transmission and distribution ("T&D") study. The Company and the Public Staff have agreed that it is appropriate that the avoided T&D rates agreed to in late 2021



should continue, using the associated escalator rates, until the next avoided T&D study is completed and incorporated.

In my supplemental direct testimony, I revise the Company's EE and DSM costs that the Company proposes to recover in this proceeding. In the process of responding to discovery, the Company applied a minor modification to the tables that impacted the Smart Saver Non-Residential Prescriptive Program.

In my rebuttal testimony, after clarification with the evaluators, the Company applied the combined net-to-gross value of 83.18% as appropriately reflects the programs' influence. The Company intends to closely collaborate with evaluators in the future to ensure this instance does not occur in future rider filings.

This concludes my direct, supplemental, rebuttal testimony summary.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, Fields Rebuttal Revised Exhibits 1, 2, 5, 7 and 12 are marked for identification as prefiled.)

(WHEREUPON, the prefiled rebuttal testimony of CASEY Q. FIELDS is copied into the record as if given orally from the stand.)

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of )

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

**REBUTTAL TESTIMONY OF  
CASEY Q. FIELDS  
FOR DUKE ENERGY  
PROGRESS, LLC**

OFFICIAL COPY

Exp 16 2023

**I. INTRODUCTION AND PURPOSE**

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

2 A. My name is Casey Q. Fields, and my business address is 411 Fayetteville Street,  
3 Raleigh, North Carolina 27601.

4 **Q. DID YOU PREVIOUSLY FILE TESTIMONY IN THIS MATTER**  
5 **BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**  
6 **(“COMMISSION”)?**

7 A. Yes. I filed direct testimony in this matter on June 13, 2023, and filed  
8 supplemental direct testimony on August 24, 2023, with a corrected testimony  
9 filed on August 28, 2023, on behalf of Duke Energy Progress, LLC (“DEP” or  
10 the “Company”).

11 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

12 A. The purpose of my rebuttal testimony is to: (i) make an adjustment to the  
13 Company’s Non-Residential Smart Saver Custom Program and Non-  
14 Residential Custom Performance Program (the “Custom Programs”) net  
15 savings; and (ii) explain the impact of the adjustment, as further discussed and  
16 supported by Company Witness Lee's rebuttal testimony. I also update Fields  
17 Exhibits 1, 2, 8, and 12.

18 **Q. WERE THESE EXHIBITS PREPARED BY YOU OR AT YOUR**  
19 **DIRECTION?**

20 A. Yes.

21 **II. REBUTTAL**

1 **Q. DOES THE COMPANY AGREE WITH WITNESS WARREN HIRONS’**  
2 **RECOMMENDATION TO REMOVE ALL SAVINGS ASSOCIATED**  
3 **WITH NON-PARTICIPANT SPILLOVER (“NPSO”)?**

4 A. No, the Company believes Witness Lee’s rebuttal testimony regarding the  
5 NPSO results in the program evaluation provide justification for including  
6 NPSO savings in the Company’s impacts.

7 **Q. DOES THE COMPANY RECOMMEND ANY CHANGES TO THE**  
8 **SAVINGS ASSOCIATED WITH NPSO?**

9 A. Yes. The Company recommends adjusting the Custom Programs net savings  
10 net-to-gross value (“NTG”) from 91.37% to a combined 83.18%. Initially, the  
11 Company applied the DEP-specific NPSO value of 24.03%. However, after  
12 further clarification from the evaluators, the Company believes that the  
13 combined NPSO of 12.95% more appropriately reflects the programs’ influence  
14 and results in an overall NTG of 83.18%.

15 **Q. HAS THE COMPANY REVISED EXHIBITS IN LIGHT OF WITNESS**  
16 **LEE’S FURTHER EVALUATION AND SUBSEQUENT**  
17 **RECOMMENDATION?**

18 A. Yes. Fields Exhibits 1, 2, 8, and 12 have been updated to reflect the appropriate  
19 kWh impacts after the adjusted NTG was applied. The net effect of the  
20 adjustment is an increase of approximately \$6,662 to the total revenue  
21 requirement. As Company Witness Carolyn T. Miller explains, the adjustment  
22 does not impact the rates requested on Miller Exhibit 1 in the Company’s  
23 August 24, 2023, supplemental filing.

1 **Q. IS WITNESS HIRONS' APPROACH OF REVISING GROSS VERIFIED**  
2 **KWH FOR DEP CONSISTENT WITH THE COST RECOVERY**  
3 **MECHANISM?**

4 A. No. Witness Hirons applies his findings for the gross verified kWh  
5 retrospectively which is a departure from the method outlined in the most  
6 recently approved cost recovery mechanism in Docket No. E-2, Sub 931.<sup>1</sup> The  
7 order approving DEP's current cost recovery mechanism provides the  
8 following guidance for incorporating findings from Evaluation, Measurement,  
9 and Verification ("EM&V"): "EM&V for the Non-Residential SmartSaver  
10 Custom Rebate Program not apply retrospectively and this program shall be  
11 trued up based on the actual participants and actual projects undertaken."<sup>2</sup>  
12 Witness Hirons' testimony provides no justification for deviating from the  
13 Commission's previous instruction and the Company asks that the Commission  
14 approve updated impacts to Vintage Year 2022 as reflected in the Company's  
15 updated exhibits.

16 **Q. WITNESS HIRONS STATES THAT THE EM&V RESULTS CREATE**  
17 **A CROSS SUBSIDY FOR CUSTOMERS PAYING THE DEMAND SIDE**  
18 **MANAGEMENT/ENERGY EFFICIENCY RIDER BECAUSE AN**  
19 **OPTED-OUT CUSTOMER SHOULD NOT BE ABLE TO INFLUENCE**  
20 **THE NPSO. DO YOU AGREE?**

---

<sup>1</sup> See *Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms*, Docket Nos. E-2, Sub 931 and E-7, Sub 1032, October 20, 2020. This reference encompasses both the Non-Residential Smart Saver Custom and Custom Performance programs.

<sup>2</sup> *Id.* at p. 9, Attachment A.

1 A. No, NPSO savings from non-participants are not a cross subsidy, but rather an  
2 indication of the additional system benefits recognized by all customers  
3 regardless of opt-out status arising from operating effective programs. I do not  
4 agree that the impacts resulting from the influence the Company's programs  
5 have on opted out customers should be ignored. The standardized EM&V  
6 process evaluates how energy efficiency programs influence the energy  
7 consumption of both participants and non-participants and is consistent with the  
8 method that the Company has used historically. The NPSO surveys found that  
9 the Custom Programs have a substantial impact on non-participants thus  
10 accruing savings to the utility system beyond what participants experience.

11 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

12 A. Yes.

1 BY MS. TOON:

2 Q And finally, Ms. Lee, and apologies for calling  
3 you Laura.

4 A I'm used to it.

5 Q And would you please state your name and business  
6 address for the record?

7 A Yes. Lark L. Lee, 2600 Laurel Cliff, New  
8 Braunfels, Texas.

9 Q Thank you. And by whom are you employed?

10 A I'm employed by Tetra Tech as a Senior Director.

11 Q And Ms. Lee, did you cause to be prefiled in this  
12 docket on September 7th, 2023, 13 pages of  
13 rebuttal testimony?

14 A Yes, I did.

15 Q Do you have any changes or corrections?

16 A I do not.

17 Q And if I were to ask you the same questions that  
18 appear in your rebuttal testimony today, would  
19 your answers be the same?

20 A Yes.

21 Q Did you also prepare a summary of your rebuttal  
22 testimony?

23 A I did.

24 MS. TOON: Commissioner Brown-Bland, at this



1 time, I move that Ms. Lee's summary, as well as her  
2 prefiled rebuttal testimony be copied into the record  
3 as if orally given from the stand.

4 COMMISSIONER BROWN-BLAND: That motion is  
5 allowed, without any objection.

6 (WHEREUPON, the prefiled  
7 rebuttal testimony of LARK  
8 L. LEE is copied into the  
9 record as if given orally  
10 from the stand.)

11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

**STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH**

DOCKET NO. E-2, SUB 1322

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of )

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

**REBUTTAL TESTIMONY  
OF LARK L. LEE  
FOR DUKE ENERGY  
PROGRESS, LLC**

OFFICIAL COPY

Exp 16 2023



1 **I. INTRODUCTION AND PURPOSE**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**  
3 **POSITION WITH TETRA TECH, INC. (“TETRA TECH”).**

4 A. My name is Lark L. Lee, a Senior Director at Tetra Tech, a global provider of  
5 consulting and engineering services to commercial and government clients  
6 focused on water, environment, sustainable infrastructure, energy, and  
7 international development. My business address is 2600 Laurel Cliff, New  
8 Braunfels, Texas, 78132.

9 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**  
10 **PROFESSIONAL EXPERIENCE.**

11 A. I graduated with a Bachelor’s degree in Economics and Political Science with  
12 a minor in Spanish from Trinity University in 1995, followed by a year as a  
13 Rotary Ambassadorial Scholar in Costa Rica. I subsequently completed my  
14 Master’s of Policy Analysis at the University of Wisconsin-Madison in 1998. I  
15 was employed by the University of Wisconsin-Madison as a research assistant  
16 during my graduate studies, which became a full-time academic staff position  
17 upon my graduation. In January 1999, I accepted an Evaluation Analyst position  
18 with Tetra Tech (previously PA Consulting Group, previously Hagler Bailly  
19 Services). Since that time, I have conducted over 100 evaluation studies,  
20 presented over 50 conference papers or sessions, participated in expert panels  
21 and plenaries, and developed and delivered evaluation, measurement and  
22 verification (“EM&V”) trainings on behalf of the Association of Energy  
23 Services Professionals (“AESP”) to both utilities and commissions.

1           The first five years of my career included (i) evaluating Wisconsin  
2           Focus on Energy programs for the Wisconsin Public Service Commission; (ii)  
3           evaluating nationwide energy efficiency programs in Mexico on behalf of the  
4           Mexican Trust Fund for Electric Energy Savings (“FIDE”) and the United  
5           States Agency for International Development (“USAID”); (iii) leading a multi-  
6           utility, multi-year low-income evaluation for the Maryland Public Service  
7           Commission; and (iv) conducting net-to-gross (“NTG”) studies for National  
8           Grid in their Massachusetts and Rhode Island territories.

9           Next, I expanded my evaluation expertise as I led energy efficiency and  
10          demand response portfolio evaluations for (i) Allegheny Power (acquired by  
11          First Energy) in Pennsylvania; (ii) Black Hills Energy in Colorado, Iowa, and  
12          Wyoming; (iii) Entergy in Arkansas; (iv) Efficiency Maine for the Maine Public  
13          Utilities Commission; (v) MidAmerican Energy in Iowa and Illinois; (vi) NV  
14          Energy in Nevada; and (vii) Xcel Energy in Minnesota and Colorado. All of  
15          these portfolio evaluations included NTG research and totaled hundreds of  
16          interviews with contractors, many of which I conducted myself. They also  
17          included direct and rebuttal testimony to the Nevada Public Utilities  
18          Commission and the Iowa Utilities Board and supporting testimony to the  
19          Arkansas Public Service Commission.

20          For the last decade, on behalf of the Public Utility Commission of  
21          Texas, I have led the EM&V of the eight Texas investor-owned utilities’ energy  
22          efficiency and demand response portfolios. As the Public Utility Commission  
23          of Texas’ EM&V lead, I regularly (i) support Commission Staff testimony, (ii)

1 provide subject matter expertise to both Commission Staff and Commissioners  
2 and their staff, and (iii) organize and facilitate the statewide energy efficiency  
3 collaborative group. Most recently, I developed and facilitated the stakeholder  
4 input process involving multiple working groups for an upcoming energy  
5 efficiency rulemaking. Another critically important component of my Senior  
6 Director position is to serve as a technical advisor on evaluations managed by  
7 my direct reports such as for Duke Energy Corporation (“Duke Energy”) in  
8 North Carolina. As a technical advisor, I ensure studies are based on industry-  
9 leading methodologies supported with robust data collection and analysis to  
10 result in actionable and defensible results.

11 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NORTH**  
12 **CAROLINA UTILITIES COMMISSION?**

13 A. No, I have not. However, as noted above, I have provided testimony to utility  
14 commissions in several jurisdictions.

15 **Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS**  
16 **PROCEEDING?**

17 A. No, I did not.

18 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

19 A. The purpose of my rebuttal testimony is to respond to the testimony of Witness  
20 Warren Hirons, Project Manager at GDS Associates, who provided the Public  
21 Staff with review of EM&V work performed by evaluation contractors on  
22 behalf of Duke Energy. Specifically, I respond to Witness Hirons’ concerns and  
23 recommendations regarding the calculation of non-participant spillover

1 (“NPSO”) used in the calculation of net program savings for Duke Energy  
2 Progress, LLC’s (“DEP” or the “Company”) Non-Residential Smart Saver  
3 Custom Program and Non-Residential Custom Performance Program (the  
4 “Custom Programs”) contained in the Custom Programs’ 2018-2019 Evaluation  
5 Report (the “Report”) filed as Company Witness Casey Q. Fields’ Exhibit E in  
6 this proceeding. The Report was created by Nexant (now known as Resource  
7 Innovations) in partnership with Tetra Tech (the “Evaluator”) for DEP and  
8 Duke Energy Carolinas, LLC (“DEC” and, together with DEP, the  
9 “Companies”).

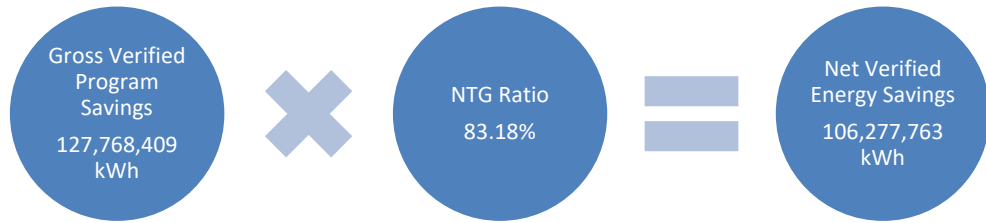
10 **II. REBUTTAL**

11 **Q. DO YOU AGREE WITH WITNESS HIRONS’ CONCERN THAT**  
12 **THERE IS DOUBLE-COUNTING IN THE NPSO?**

13 A. No, the methodology used to calculate the NPSO of 12.95% is based on each  
14 contractor’s activity and reported number of projects. There is only one instance  
15 of one contractor that reported unincentivized projects influenced by the  
16 programs who had overlapping program activity in both DEC and DEP  
17 territories. The Evaluator did not intend for the territory specific NTG (with  
18 NPSO) values in Appendix A of the Report to be used. The Evaluator reported  
19 a combined NTG value including 12.95% NPSO to calculate the net verified  
20 savings in Figure 5-3 of the Report, which Witness Hirons reproduced on page  
21 12 of his testimony.

1

**Figure 5-3 Net Verified Program Savings Calculation**



2

3

4 **Q. DOES THE EVALUATOR RECOMMEND REVISED NET SAVINGS**  
 5 **FOR THE CUSTOM PROGRAMS?**

6 A. Yes, the Evaluator has recommended to the Company that the Custom  
 7 Programs net savings be revised using the Evaluator’s combined reported NTG  
 8 value of 12.95% in Figure 5.3, which the Evaluator intended to be used in the  
 9 calculation of net savings. The Evaluator also provided territory-level NPSO  
 10 values in Table 5-13 in the Report, reproduced below, to provide context on  
 11 levels occurring in each territory.

12

**Table 5-13 Net-to-Gross Evaluation Results**

Measurement	DEC	DEP	Combined <sup>1</sup>
Free-ridership (FR)	29.16%	32.67%	29.99%
Net of Free-ridership (1-FR)	70.84%	67.33%	70.01%
Program-influenced Participant Spillover (PSO)	0.28%	0.01%	0.22%
Program-influenced Nonparticipant Spillover (NPSO)	12.54%	24.03%	12.95%
<b>Net-to-Gross (1-FR)+PSO+NPSO</b>	<b>83.66%</b>	<b>91.37%</b>	<b>83.18%</b>
Precision at the 90% confidence interval	± 2.5% for FR ± 2.3% for NPSO	± 4.0% for FR ± 8.1% for NPSO	± 2.1% for FR ± 0.7% for NPSO

13

<sup>1</sup> The combined results are weighted using the same kWh-based weights used for DEC and DEP results, since this accounts for individual project sizes as well as the relative size of the programs across the two jurisdictions.

1 **Q. DO YOU AGREE WITH WITNESS HIRONS' ASSERTION ON PAGE**  
2 **34 OF HIS TESTIMONY THAT NPSO SHOULD BE EXCLUDED**  
3 **FROM THE CUSTOM PROGRAMS' NET SAVINGS?**

4 A. No. Generating additional energy savings by influencing contractor practices is  
5 foundational to DEP and DEC energy efficiency programs' theories and  
6 activities—just as it is for energy efficiency programs throughout the Carolinas  
7 and the country. The Evaluator reliably measured the Custom Programs'  
8 influence on contractor practices outside the programs utilizing an industry-  
9 standard, transparent NPSO methodology—based upon the Department of  
10 Energy's Uniform Methods Project—called the Pennsylvania Framework.<sup>2</sup> The  
11 Pennsylvania Framework provides free ridership and spillover estimation.<sup>3</sup>  
12 Those methods are consistent with other established frameworks, such as those  
13 used in Massachusetts and Oregon, that provide free ridership and spillover  
14 estimation. As demonstrated by my rebuttal testimony, the Evaluator  
15 implemented the methodology with robust sampling, data collection, and  
16 analysis to reliably calculate NPSO.

17 **Q. WERE NPSO RESULTS CORRECTLY WEIGHTED?**

18 A. Yes, the NPSO results are based on the most robust approach—a census sample  
19 of the contractor population. The results were then weighted by contractor size,  
20 the most appropriate method for custom projects. As Witness Hirons cites on  
21 page 23 of his testimony, “the Pennsylvania Framework recommends either a

---

<sup>2</sup> Evaluation Framework for Pennsylvania Act 129 Phase III Energy Efficiency and Conservation Programs, Final Version, May 8, 2018, available at: [puc.pa.gov/Electric/pdf/Act129/SWE\\_PhaseIII-Evaluation\\_Framework050818.pdf](http://puc.pa.gov/Electric/pdf/Act129/SWE_PhaseIII-Evaluation_Framework050818.pdf) (the “Pennsylvania Framework”).

<sup>3</sup> *Id.* at p. 57.



1 sample representative of the target population or capable of producing results  
 2 that can be made representative through appropriate weighting of data.” The  
 3 Evaluator both sampled the complete participating contractor population and  
 4 achieved survey completes representative of the target population. The  
 5 Evaluator determined that stratum weighting, which Witness Hirons asserts  
 6 should have been done on page 24 of his testimony, was not needed based on  
 7 the representation across stratum proportional to representation in the total  
 8 population as can be seen in Table 1 below.

9 **Table 1. Contractor Survey Responses by Program Stratum**

	Lighting- Large	Lighting- Small	Non Lighting- Large	Non Lighting- Small
Contractor Population	23.3%	62.0%	8.0%	18.4%
Survey Completes	24.1%	66.7%	5.6%	14.8%

10

11 The Evaluator did weight by project size for participant freeridership and  
 12 participant-like spillover estimates, which aligns with portion of the Evaluator’s  
 13 2020 Evaluation Plan cited by Witness Hirons on page 23 of his testimony. The  
 14 Evaluator further agrees weighting NPSO by project size may be appropriate  
 15 for deemed or partially deemed prescriptive project savings; however, the  
 16 Evaluator asserts weighting NPSO by contractor size is the most appropriate  
 17 method for custom projects where project size tends to be atypical. The  
 18 Evaluator used expert judgment to weight by trade ally size using the number

1 of projects reported by each contractor given the Custom Programs are  
2 comprised of custom projects. In conclusion, the Evaluator fully met the criteria  
3 of the Pennsylvania Framework cited by Witness Hirons.

4 **Q. PLEASE EXPLAIN HOW THE EVALUATOR CALCULATED NPSO.**

5 A. The Evaluator asked contractors three questions to calculate NPSO and  
6 analyzed responses following the Pennsylvania Framework.<sup>4</sup> The three  
7 questions ascertained (1) the number of projects sold within the Companies'  
8 service territory that were similar to the projects incentivized through the  
9 Custom Programs, (2) the percent of those sales that received an incentive from  
10 Duke Energy, and (3) how influential the Custom Programs were on those sales.  
11 Based on responses to these questions, the Evaluator calculated the number of  
12 projects outside the programs to projects inside the programs for each contractor  
13 to determine a contractor-specific NPSO ratio. The number of contractor  
14 projects influenced by the programs that did not receive an incentive was  
15 calculated by multiplying the contractor-specific NPSO ratio by the number  
16 incentivized through the programs. The final step in the process was to calculate  
17 the total number of unincentivized projects influenced by the programs divided  
18 by the total number of projects incentivized through the programs. This  
19 weighted mean is the ratio of the total number of projects done in the  
20 Companies' service territory that did not receive an incentive to the total  
21 number of projects in the Companies' service territory that did receive an  
22 incentive.

---

<sup>4</sup> This explanation was provided to Witness Hirons and Public Staff and is included as Exhibit 2 in Witness Hirons' direct testimony.

1 **Q. DOES THE ANALYSIS RESULT IN A RELIABLE NPSO ESTIMATE?**

2 A. Yes. The NPSO value of 12.95% is a reliable estimate consistent with industry  
3 standard NPSO methodologies that the Evaluator implemented with robust  
4 sampling and survey techniques. The Evaluator carefully employed the  
5 Pennsylvania Framework NPSO methodology discussed above to both collect  
6 and analyze survey response data. The Evaluator utilized a census sample  
7 including all 199 participating contractors. Survey techniques resulted in 67  
8 contractor surveys, a 33.7% response rate, which is higher than what is typically  
9 achieved in other evaluation trade ally research. Furthermore, as summarized  
10 in Table 1 above, the contractors who completed the survey were representative  
11 of the population.

12 Further supporting the robustness of the NPSO results, the Evaluator  
13 achieved a confidence interval with greater precision than industry standard.  
14 Confidence intervals are one way to represent how “good” an estimate is—the  
15 larger a confidence interval for a particular estimate, the less certain we are in  
16 the point estimate. Program evaluations routinely employ 90% confidence plus  
17 or minus 10% as the industry standard. The resulting precision level of 8.1% is  
18 less than the industry accepted 10% precision level. This results in a smaller  
19 confidence interval for the NPSO estimate, meaning that we have more  
20 certainty in the NPSO estimate of 12.95% than the industry standard.

21 Witness Hirons’ concerns appears to center around two contractor  
22 responses as discussed on pages 26 and 27 of his testimony. Contractor  
23 variations reflect levels of engagement with the programs and overall sales

1 volume. Based on the Evaluator's extensive experience with trade ally research,  
2 we expect results to reflect varying trade ally sizes and activity in the  
3 marketplace. The marketplace is made up of a variety of trade ally sizes, volume  
4 of projects and influence. That diversity was reflected in the data and resulting  
5 analysis. High contractor-specific NPSO does not mean an invalid response.

6 **Q. DID THE NPSO ESTIMATE INCORRECTLY INCLUDE INELIGIBLE**  
7 **CUSTOMERS?**

8 A. No. NPSO measures energy savings and demand reductions on the grid as  
9 defined in the Pennsylvania Framework, the basis of the Evaluator's work. The  
10 Pennsylvania Framework defines spillover on Page A-7 as follows:

11 Additional reductions in energy consumption and demand that are due  
12 to [energy efficiency] program influences beyond those directly  
13 associated with program participation.

14 Pennsylvania Framework at p. A-7.

15 Customer eligibility is not a criteria to estimate NPSO. The criteria are if the  
16 project: 1) was influenced by the programs, and 2) reduces energy consumption  
17 and/or demand. The survey questions asked about "projects similar to what was  
18 done through the program" to solicit responses about projects that save energy.

19 **Q. DO YOU AGREE WITH WITNESS HIRONS THAT BENCHMARKING**  
20 **FROM OTHER JURISDICTIONS INVALIDATES THE CUSTOM**  
21 **PROGRAMS' NPSO?**

22 A. No. The purpose of collecting data with Duke Energy customers and contractors  
23 is to understand the unique markets in which they operate. Tetra Tech regularly  
24 includes benchmarking results in our evaluation studies to provide context of  
25  
26

1           how specific program results compare to other programs. However, we do not  
2           adjust primary data results based on benchmarking results as primary data is the  
3           most accurate tool to understand unique marketplaces and specific program  
4           impacts in those markets. In addition, different jurisdictions not only have  
5           different markets, but they also have vastly different policy and regulatory  
6           contexts affecting program design and delivery and resulting market effects  
7           such as NPSO. Given the importance of external factors on program influence,  
8           benchmarking results should be viewed only as contextual.

9   **Q.   DO YOU AGREE WITH WITNESS HIRONS' RECOMMENDATIONS**  
10 **TO IMPROVE NPSO REPORTING GOING FORWARD?**

11  A.   We appreciate Witness Hirons' expressed desire in his testimony to continue to  
12       work with the Evaluator and the Company to improve future evaluations. While  
13       we fully support the application of the NPSO 12.95% value, opportunities for  
14       continuous improvement should always be explored not only in program design  
15       and delivery, but in program EM&V as well. The Evaluator shares this  
16       commitment. The Evaluator agrees that future evaluation reports should clearly  
17       state how net program savings are calculated for each service territory and  
18       clearly disclose the magnitude of the estimated program net savings in the main  
19       body of the report. These future modifications will ensure the methodology is  
20       transparent and make external review easier. To address contractors with  
21       overlapping projects across the Companies' territories, the Evaluator  
22       recommends that in the future the contractor-specific NPSO estimate is  
23       proportioned to DEP and DEC based on the percentage of projects incentivized

1 through the programs within each territory. The Evaluator considered Witness  
2 Hirons' recommendation to ask contractors about the proportion of sales in each  
3 territory; however, from research conducted to date, it is often difficult for  
4 contractors to accurately indicate which territory the sales were in given the  
5 proximity between the DEC and DEP territories and work across both.

6 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

7 A. Yes.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

(WHEREUPON, the summary of  
rebuttal testimony of LARK  
L. LEE is copied into the  
record as if given orally  
from the witness stand.)

**DUKE ENERGY CAROLINAS, LLC  
LARK L. LEE REBUTAL TESTIMONY SUMMARY  
DOCKET NO. E-2, SUB 1322**

My testimony responds to the direct testimony of Warren Hirons, Project Manager at GDS Associates, who provided the Public Staff - North Carolina Utilities Commission with review of evaluation, measurement and verification (EM&V) work performed by evaluation contractors on behalf of Duke Energy. Specifically, I respond to Mr. Hirons' concerns and recommendations regarding the calculation of non-participant spillover (NPSO), which is used in the calculation of net program savings for Duke Energy Progress, LLC's (DEP or the Company) Non-Residential Smart Saver Custom (Custom Program) program contained in the Custom Program's 2018-2019 Evaluation Report (the Report) filed as Company witness Casey Q. Fields' Fields Exhibit E in this proceeding.

I testify that the Evaluator reliably measured the program's influence on contractor practices outside of the program based on an industry-standard, transparent NPSO methodology found in the Pennsylvania Framework. The Department of Energy's Uniform Methods Project is the basis of the Pennsylvania Framework and it is consistent with other established frameworks to provide free ridership and spillover estimation (Pennsylvania Framework, p. 57). The Evaluator robustly implemented the methodology, achieving a more precise confidence interval than the industry standard by i) census sampling of all participating contractors, ii) data collection that achieved a higher than average response rate with 67 contractor survey completes representative of the population, and iii) analysis that rigorously employed the framework and used each contractor's activity and reported number of projects to calculate the recommended NPSO of 12.95%.



I testify that the Evaluator recognizes there is one instance of one contractor that reported unincentivized projects influenced by the program who had overlapping activity in both DEC and DEP territories. Therefore, the Evaluator recommended to the Company that DEP's Custom Program net savings are revised using the Evaluator's reported NTG value of 12.95% in Figure 5.3 of the Report, which the Evaluator intended to be used in the calculation of net savings. The Evaluator had also provided territory-level NPSO values in Table 5-13 in the Report to provide context on levels occurring in each territory.

I further testify to the importance of measuring NPSO: influencing contractor practices to generate additional energy savings outside of programs is foundational to DEP energy efficiency programs' theories and activities as it is for energy efficiency programs throughout the Carolinas and the country. I clarify that eligibility is not a criteria to estimate NPSO, which is defined as energy savings and demand reductions on the grid (Pennsylvania Framework, A-7). While Tetra Tech regularly includes benchmarking results in our evaluation studies to provide context of how specific program results compare to other programs, I discuss that primary data collection is the best source to estimate NPSO given the unique markets and external factors that affect program influence.

Finally, I acknowledge Mr. Hirons' recommendations to improve future evaluation reports. The Evaluator shares the commitment to continuous improvement and agrees that future evaluation reports will ensure the methodology is transparent to make external review easier. The Evaluator will clearly state how net program savings are calculated for each service territory and directly address contractors with overlapping projects across the Company's territories by proportioning NPSO based on the percentage of projects incentivized through the program within each territory.

This concludes my rebuttal testimony summary.

1 MS. TOON: And I'd also move that the  
2 Company's Application which was filed on June 13th,  
3 2023, be copied into the record.

4 COMMISSIONER BROWN-BLAND: That motion  
5 likewise is allowed.

6 (WHEREUPON, Application of  
7 Duke Energy Carolinas, LLC,  
8 is received into evidence.)

9 MS. TOON: And Commissioner Brown-Bland,  
10 with your permission, I'd like to ask Ms. Lee a few  
11 questions before tendering the panel for cross  
12 examination.

13 COMMISSIONER BROWN-BLAND: You may do so.

14 BY MS. TOON:

15 Q Ms. Lee, have you had an opportunity to review  
16 Mr. Hirons rebuttal testimony?

17 A I have.

18 Q Do you have a copy of the testimony before you?

19 A I do.

20 Q Would you please turn to page 34 of Mr. Hirons'  
21 testimony?

22 A All right.

23 Q And do you see where Mr. Hirons began linking  
24 recommendations to the Company with respect to

1 this current proceeding and future evaluations?

2 A I do.

3 Q As the Company's Evaluator, would you please  
4 explain to the Commission why you've recommended  
5 the Company not remove NPSO savings from the  
6 current evaluation in this proceeding?

7 A Absolutely. So it's very important to measure  
8 nonparticipant spillover that results in direct  
9 system benefits for North Carolina's customers.  
10 And the Evaluator reliably did this as  
11 demonstrated in my rebuttal, so we do not agree  
12 with this recommendation.

13 Q And would you -- with regards to the  
14 recommendations Mr. Hirons is making for future  
15 evaluations, would you please identify for the  
16 Commission those recommendations which you agree  
17 with?

18 A Yes, absolutely. So continuous improvement is  
19 very important in evaluation just like it is in  
20 the Program, so we agree with three of these very  
21 much as best practices. Recommendation 1 which  
22 is about report transparency; that's very  
23 important. We also agree with Recommendation 2  
24 which will agree on a methodology to proportion

1 nonparticipant spillover across territories. So  
2 having that clear will help clear up  
3 misunderstandings in the future, which is what  
4 happened are here. And we also agree completely  
5 with Number 4 which is about reasonable checks on  
6 results.

7 Q Thank you, Ms. Lee. And will you also address  
8 the remaining recommendations?

9 A Yeah, absolutely.

10 MS. KEYWORTH: I would object to that at  
11 this time just because I think it would be more  
12 appropriate for Witness Hirons to go through his  
13 recommendations.

14 MS. TOON: And Commissioner Brown-Bland,  
15 Ms. Lee, who is representing the Company as an  
16 Evaluator, is responding to how she's advised the  
17 Company to implement those recommendations going  
18 forward.

19 MS. KEYWORTH: And I think that that's  
20 better handled on redirect than on direct.

21 COMMISSIONER BROWN-BLAND: Yes, that motion  
22 will be sustained.

23 MS. TOON: Okay.  
24

1 BY MS. TOON:

2 Q Ms. Lee, do have any further comments with  
3 respect to recommendations at this time?

4 A No.

5 Q Okay. Well, thank you.

6 MS. TOON: Commissioner Brown-Bland, the  
7 panel is now available for cross examination.

8 COMMISSIONER BROWN-BLAND: Is there cross  
9 examination for this panel?

10 MS. KEYWORTH: The Public Staff has a few  
11 questions.

12 CROSS EXAMINATION BY MS. KEYWORTH:

13 Q Mr. Fields, I'll start with you. In your  
14 rebuttal testimony, on page 5, you indicated that  
15 the EM&V process used for this custom program is  
16 consistent with the method that the Company has  
17 used historically. I just want to make sure that  
18 I'm understanding your use of the term  
19 "historically" in that context properly.

20 So when you say consistent with the  
21 method that the Company has used historically,  
22 are you referring to when the savings of a report  
23 take effect in the Rider. Was that your intent  
24 with that term?

1 A (Mr. Fields) Yes. So when we look at the  
2 net-to-gross -- and really I'm trying to draw  
3 back to the mechanism.

4 I think earlier in my rebuttal  
5 testimony, we talk about a reference to  
6 Attachment A of the mechanism which is referred  
7 to as DEC's portion of the mechanism, but it is  
8 specific to the custom program and it spells that  
9 out. Attachment A is the DEP proportion of that  
10 and it does not have the custom specifically  
11 spelled out but it talkies about when to apply  
12 the net-to-gross specifically. And so just to  
13 kind of -- that to specifically say not to  
14 address it retroactively or retrospectively so  
15 that is what I'm trying to get at in my  
16 testimony.

17 Q Thank you for the clarification. So am I correct  
18 then in thinking that you're not saying that  
19 previous reports have similarly included NPSO in  
20 the analysis for this custom program?

21 A Can you repeat the question? I'm sorry.

22 Q Yeah. So, am I correct in thinking that what  
23 you're not saying in that, in that sentence, is  
24 that previous customer reports have similarly

1 included NPSO in the analysis?

2 A I -- I'm trying to think back to the previous  
3 report and I'm unsure of that at this time if  
4 that included NPSO. I do not recall off the top  
5 of my head.

6 Q Subject to check, would you agree that it  
7 would -- would you take that it does not?

8 A Subject to check.

9 Q Thank you. And Ms. Lee --

10 A (Ms. Lee) Yes.

11 Q Page 6 of your rebuttal testimony?

12 A May I get there, please?

13 Q Absolutely. I am as well.

14 You stated that the combined -- in your  
15 footnote, footnote one, you stated that the  
16 combined results are weighted using the same  
17 kilowatt-hour-based weights used for DEC and DEP  
18 results since this accounts for individual  
19 project sizes as well as the relative size of the  
20 programs across two jurisdictions. But in this  
21 instance, isn't it the case -- sorry. Isn't it  
22 true that this is only the case for free  
23 ridership and participant spillover in this  
24 instance and not for NPSO?



1 A That's correct. Because for custom, we only have  
2 confidence in the project savings numbers for  
3 projects that were done by participants. That's  
4 not the case for nonparticipants.

5 Q On page 7, you indicated that the Evaluator  
6 weighted savings by contractor size. Was this  
7 method noted in the associated evaluation plan or  
8 in the report of utilizing specifically savings  
9 by contractor size?

10 A I would have to check that, if the contractor  
11 size is noted in the report. Again, we agreed  
12 with the recommendation on increased transparency  
13 to help external review. So that is probably a  
14 process improvement that needs to be made. I  
15 would actually have to go double-check the  
16 report. I did check the plan and that really was  
17 about participant spillover and free ridership.  
18 So I do agree with that for sure on the plan.

19 Q Thank you. And did the Evaluator have the  
20 information necessary to weight the NPSO savings  
21 calculations by measure Strata?

22 A So, when you weight, you always have to think  
23 about weighting of does it make sense to do it or  
24 not, and we did a census sample of contractors.

1 We had four different Strata. We checked the  
2 percent of survey completes in the Strata, it was  
3 representative of the contractor population, so  
4 no weighting was necessary.

5 Q But you did have the information necessary to do  
6 it?

7 A As far as contractor by Strata, yes, but not as  
8 far as contract size.

9 Q So if I'm following correctly then, you could  
10 have done the analysis in the -- and that the  
11 plan indicated it would have been -- it would be  
12 conducted?

13 A Not for nonparticipant spillover. So you ask  
14 contractors about, thinking about the projects  
15 you did through the Program, did you do projects  
16 like that outside of the Program where they  
17 didn't receive incentive. And then you really  
18 want to understand the activities to the Program  
19 like training, your education, lead to them doing  
20 those more energy efficient projects. So you  
21 don't actually say, okay, give me the kW and kWh  
22 for each of those projects. So, you don't  
23 actually have that information for nonparticipant  
24 spillover.

1 Q At page 11, lines -- let me get there myself --  
2 lines 17 through 19. In stating that customer  
3 eligibility is not a criteria to estimate NPSO,  
4 you discuss the Pennsylvania framework criteria  
5 for estimating NPSO as being that the project was  
6 influenced by the Program and that the project  
7 reduces energy consumption and/or demand. But  
8 are customers in Pennsylvania even allowed to  
9 opt-out of DSM/EE programs?

10 A So it's been awhile since I've worked in  
11 Pennsylvania. That's really not relevant because  
12 by using the framework what we're doing is  
13 applying the survey questions and analysis to  
14 measure nonparticipant spillover. So I'm not  
15 sure how that policy context in Pennsylvania  
16 applies.

17 Q Okay.

18 MS. KEYWORTH: That's it from the Public  
19 Staff.

20 COMMISSIONER BROWN-BLAND: Any further cross  
21 examination from CIGFUR?

22 MR. CONANT: (Shakes head no).

23 COMMISSIONER BROWN-BLAND: CUCA?

24 MS. HAWKINS: No.

1 COMMISSIONER BROWN-BLAND: Redirect?

2 MS. TOON: Just a few questions.

3 REDIRECT EXAMINATION BY MS. TOON:

4 Q Ms. Lee, you received a few questions from Public  
5 Staff regarding NPSO from a level side. Can you  
6 explain how NPSO occurs?

7 A How it occurs; well, it's just so -- I work all  
8 over. Duke does a lot with contractors. So they  
9 have dedicated trade ally outreach. They have  
10 energy efficiency engineers that provide  
11 technical assistance, which is really important  
12 for custom projects. And then they also have  
13 implementation contractors for this particular  
14 program. It's Willdan that also works with the  
15 contractors. So it really changes the way they  
16 view energy efficiency, how they work in the  
17 field, how they sell it to customers. So even  
18 without an incentive, it's influenced the way  
19 contractors work in the market and with other  
20 customers. So that's what nonparticipant  
21 spillover does, is it's looking how has the  
22 Program affected contractors. It looks to count  
23 that percent into savings.

24 Q Thank you. And when you talk about counting the

1 percent into savings, can you talk about what  
2 steps you took to capture those savings, sort of,  
3 a new methodology, the steps you took to do that?

4 A The overall percent or net to gross or  
5 nonparticipant --

6 Q For NPSO?

7 A Yeah, for NPSO, so it is -- so we took a really  
8 robust sampling approach. We took a census  
9 sample. It would be ideal if we could actually  
10 get every single contractor on the phone, but we  
11 work really hard to get a high response rate for  
12 that population. We're at 37 percent.

13 So we talked at 67 contractors that are  
14 out there working with North Carolina customers  
15 to ask them about their influence. We asked  
16 those survey questions that are in the  
17 Pennsylvania framework and we analyzed them based  
18 on how it's laid out in the framework to  
19 determine the percent of projects that are like  
20 projects done in the Program that they did  
21 without the incentive.

22 Q And you talked about -- a little about this  
23 Pennsylvania framework. Is that industry  
24 standard? Why are you relying on that framework?

1 A It's great to have an energy standard transparent  
2 consistent framework. It is based on the uniform  
3 methods project by the Department of Energy. It  
4 also references other statewide frameworks as  
5 well such as that in Massachusetts and Oregon.

6 Q And turning your attention back to the  
7 recommendations that Mr. Hirons has made --

8 A Can I get there?

9 Q Yes, please do. Page 34.

10 MS. KEYWORTH: I'm going to object because I  
11 don't believe that this was asked on cross.

12 MS. TOON: Ms. Lee did speak to the  
13 recommendations that you appreciated from Mr. Hirons  
14 and that -- and one of those was transparency and sort  
15 of net-to-gross so she did have the discussions with  
16 respect to Mr. Hirons' recommendations.

17 COMMISSIONER BROWN-BLAND: I'll allow it and  
18 I'll overrule the objection.

19 MS. TOON: Thank you.

20 Q When you're on page 34, just let me know.

21 A I am.

22 Q And with respect to the recommendation, the one  
23 that you mentioned, the transparency that  
24 Mr. Hirons made, could you address the other

1            recommendations that Mr. Hiron has made with  
2            respect to future evaluations that you'll agree  
3            with?

4        A        That I agree with. Okay. So again, the first  
5            one, with report transparency; very much agree  
6            with that. The second one was about  
7            proportioning nonparticipant spillover by DEP and  
8            DEC territory; very much agree with that. And  
9            then we also agree on those reasonable checks on  
10           results that they are defensible, reliable; we  
11           agree with that, and we do that as my rebuttal  
12           testimony demonstrated.

13        Q        Are there any recommendations that you don't with  
14            agree with?

15        A        Well, there are two that I agree with, with some  
16            nuance changes in order to make sure that they're  
17            evaluation best practices. As an evaluation  
18            expert, there is one that I do disagree with for  
19            North Carolina.

20        Q        And with respect to that one, can you explain why  
21            you disagree?

22                    MS. KEYWORTH: Again, I'm going to object  
23            based on the fact that I don't think we got into that  
24            on cross.

1                   COMMISSIONER BROWN-BLAND: I'll sustain that  
2 objection.

3 BY MS. TOON:

4 Q     And with respect to the calculation of NPSO, was  
5 there any error in that calculation?

6 A     There was no error in the recommended  
7 net-to-gross ratio which included nonparticipant  
8 spillover of 12.95 percent.

9 Q     And is that with regard to the adjustment that  
10 the Company made?

11 A     There was a miscommunication between the  
12 evaluator and the Company. And Mr. Fields can  
13 address that further.

14 A     (Mr. Fields) So, in our conversations during  
15 rebuttal, there was a -- we try to apply very  
16 jurisdictional-specific values in our measures  
17 and how we apply them, and we applied a DEP  
18 value.

19                   In the incidence -- in the conversation  
20 talking with Ms. Lee, we understood that the  
21 contractor was working in both DEC and DEP and it  
22 found that using a combined 12.95 percent was  
23 more appropriate to remove that one opportunity  
24 of crossing over the path. So, we've combined



1           it, has reduced it from I think it was the 25  
2           point -- 25 percentage down to the 12.95 percent.

3   Q       Do you believe that the analysis has provided  
4           reliable results?

5   A       (Mr. Fields) So we do. You know, moving  
6           forward, the reliable results were there, the  
7           reports there. I think moving forward, our  
8           conversations with Ms. Lee and her team will be  
9           to make sure when we apply the appropriate  
10          percentages we're doing it in the correct way as  
11          the report is. We took a look at the report and  
12          interpreted it a different way. Moving forward,  
13          we'll be working with them to make sure we input  
14          the correct figures to our programs and measures.

15                MS. TOON: Thank you. No further questions.

16                COMMISSIONER BROWN-BLAND: Questions by the  
17   Commission? Commissioner Duffley.

18   EXAMINATION BY COMMISSIONER DUFFLEY:

19   Q       So I was interested in hearing what  
20           recommendation you disagreed with by Public Staff  
21           Witness Hiron, please.

22   A       (Ms. Lee) All right. So he recommends that  
23           opt-out customers are removed from nonparticipant  
24           spillover calculations. Getting them to do more

1 energy efficiency because of how the Program  
2 works with contractors does generate system  
3 benefits. I think that is really important in  
4 fast-growing states like North Carolina, so I  
5 really recommend that nonparticipant spillover  
6 includes all-system benefits.

7 A (Mr. Fields) And if it's okay and to follow up  
8 with that, we talk a lot about opt-outs and how  
9 we deal with customers that opt out of the DSM/EE  
10 Rider. In this one instance I think it's a good  
11 representation of our trade ally network. Our  
12 contractors in the Program deem educating our  
13 contractors about energy efficiency and seeing  
14 what the effects are that are going beyond just  
15 the participants of the DSM/EE Rider. So we are  
16 seeing an opportunity here that the trainings  
17 that we have do impact other customers within  
18 North Carolina.

19 COMMISSIONER DUFFLEY: Thank you.

20 COMMISSIONER BROWN-BLAND: Any other  
21 questions?

22 (No response)

23 I have a few. And for clarity purposes,  
24 the -- well, let me just say if I should ask anything

1 that comes close to eliciting any confidential  
2 information, I hope you will alert us, and we will  
3 deal with it appropriately at that time.

4 EXAMINATION BY COMMISSIONER BROWN-BLAND:

5 Q So my first question has to do with the magnitude  
6 of the issue that we're dealing with here in  
7 terms of the Exhibit E. Given the adjustments  
8 that have been made and brought to our attention  
9 through the rebuttal testimony, what is the  
10 impact of this issue in terms of the -- well,  
11 just the impact?

12 A (Mr. Fields) Absolutely. So the rebuttal does a  
13 reworking of the exhibits there. That changed  
14 the net to about \$6,662. The impact to the  
15 Rider -- Carolyn, I'll kind of let you take that.

16 A (Ms. Miller) In my rebuttal testimony there is  
17 no impact to the Rider based on the \$6,660  
18 adjustment. If we went and implemented the  
19 Public Staff's adjustments as their Witness  
20 Hiron recommended, the amount would be about  
21 \$20,000 and it would increase our nonresidential  
22 DSM rates by .0001 cents per kWh.

23 Q Thank you. And that additional -- that \$6000, is  
24 that to the revenue requirement?

1 A Yes.

2 Q And then that would be \$20,000 if -- or in that  
3 neighborhood of \$20,000 if the Public Staff's  
4 recommendation were implemented?

5 A That's correct.

6 Q Thank you. And impact to perspective rates, if  
7 you're able to say.

8 A We did not float the adjustments through  
9 perspective rates as they are an estimate and we  
10 would just true those up when we true up vintage  
11 year 2024.

12 Q And was there any separate impact on the  
13 Experience Modification Factor? Either one of  
14 you prepared to say?

15 A For the rebuttal testimony that I filed, there  
16 would be no adjustment. For the Public Staff's  
17 position, it would be an increase to the  
18 nonresidential DSM EMF rate of .0001.

19 COMMISSIONER BROWN-BLAND: Commissioner  
20 Kemerait?

21 MS. KEMERAIT: I have a question for  
22 Mr. Fields.

23 EXAMINATION BY COMMISSIONER KEMERAIT:

24 Q This is a separate question. It relates to your

1 direct testimony about industrial and large  
2 commercial customers who have been opting out of  
3 the DSM and EE programs. And I think you stated  
4 on page 20 that a little over 4,700 eligible  
5 nonresidential customers had opted out of EE  
6 programs and a little less than 4,700 customers  
7 have opted out of the DSM programs.

8 Can you tell the Commission what you're  
9 hearing -- again, this has been I think an  
10 ongoing concern about we have not -- why DEP has  
11 not had better participation by industrial and  
12 large commercial customers?

13 A (Mr. Fields) Absolutely. Yes. So customers  
14 that opt-out of the Rider are doing it for a lot  
15 of economic reasons. They are pretty savvy  
16 customers that looked at the benefits of opting  
17 into the Rider and paying that rate versus the  
18 incentives that we'll be paying for these  
19 measures. So they are doing an analysis on that  
20 perspective.

21 Our account managers or account  
22 executives that work with them, they do get  
23 updated information from the DSM/EE Rider and the  
24 Program teams of the custom and prescriptive

1 incentives that we do offer, so they are informed  
2 of that, and educating them as we do move through  
3 current and future years.

4 There is still this economic factor  
5 that plays into it at the end of the day. I  
6 would say that the reason you're probably not  
7 seeing a lot more opted in customers at this  
8 point is, you know, we've got a lot of customers  
9 tightening their belt, trying to figure out if  
10 this is a step that they want to take today or  
11 if, maybe it's payroll, and so they are trying to  
12 prioritize those opportunities. I would say that  
13 if there's any future way that we can work on  
14 increasing incentives, that would be a great  
15 opportunity. Those are maybe looking at enablers  
16 that we could flow through and pass into those  
17 incentives. That will help them make the  
18 decision to probably opt in at that point.

19 Q And that leads to my second question. I wanted  
20 to make sure I was interpreting your testimony  
21 correctly, because I think you talked about  
22 things that DEP was considering to get better  
23 participation by those customers and you  
24 mentioned larger incentives. But my reading of

1 your testimony was, is that the feedback you are  
2 getting is that even the larger incentives are  
3 not participating greater participation. Did I  
4 read your testimony correctly?

5 A Yes. And that's a tough one because we're having  
6 conversations with the large account managers and  
7 with the customers there that were saying, well,  
8 the feedback is we need larger incentives. And  
9 so we go back and we pencil in can we make this  
10 work on a Cost Benefit Analysis; are avoided  
11 costs changing; can we increase these incentives  
12 to make this work. And you kind of bring that  
13 back to the table and you go, okay, this is what  
14 we can make, pencil in work, based on avoided,  
15 and that's not always successful. But the team  
16 is constantly working and trying to increase  
17 those incentives so that we can go back to the  
18 table and work with those customers.

19 There is also -- and, you know, at this  
20 time, these are very close measures that are  
21 meeting cost-effectiveness, and so we don't want  
22 to over-incentivize because then you're not  
23 getting the kW value on the back end to justify  
24 it and then that would tank our

1 cost-effectiveness.

2 So, the Company's approach is to be  
3 conservative but also to entice customers to  
4 participate. It's a fine balance there.  
5 Over-incentive could possibly kill the Program  
6 and we'd have to close it down. So, we want to  
7 make sure we're doing the right thing with how  
8 the avoided costs are coming through and how we  
9 talk to the customers about that. It's a  
10 balancing effort.

11 So, that's one of the enablers. I  
12 think increasing incentives can definitely do  
13 that but I just can't arbitrarily increase them  
14 without maybe negatively affecting the UCT.

15 COMMISSIONER KEMERAIT: Thank you.

16 COMMISSIONER BROWN-BLAND: Witness Lee, a  
17 couple of questions for you and you can just expound  
18 more upon what you've told us already but give us some  
19 more detail.

20 EXAMINATION BY COMMISSIONER BROWN-BLAND:

21 Q So what are the survey tools that the Company  
22 uses to obtain this information about the  
23 nonparticipant spillover and how valuable are the  
24 tools that you know about?



1 A (Ms. Lee) So we actually have an in-house survey  
2 research center. That's something that we do.  
3 We literally do thousands of energy efficiency  
4 surveys a year for utilities throughout the  
5 country. So the method of survey we use does  
6 vary by customers for commercial customers.  
7 We -- and contractors. We do like to use  
8 telephone. Whereas, residential, you actually  
9 kind of want to do a mix mode to get them.

10 So, it was a telephone survey. We use  
11 computer-assisted software where everything is  
12 captured, the data, so we have highs -- because,  
13 it really matters that you have really good data,  
14 too. So, everything is recorded. It's all  
15 captured. We have extensive interviewer  
16 training. We actually have interviewers that  
17 have been with us for over a decade, so are very  
18 experienced on collecting data for energy  
19 efficiency programs.

20 So that really is the foundation. If  
21 you don't have good data -- you know, but we have  
22 excellent data and survey techniques to capture  
23 those responses.

24 Q And so is telephone the sole method or are there

1 other methods; personal interview?

2 A Yeah. So for this one it is a -- so we do often  
3 do personal interviews, too. That is more  
4 qualitative information. When we really want to  
5 dive deeply on a subject, you know, understand  
6 the story behind numbers. But when you're  
7 actually trying to calculate an estimate, you  
8 want quantitative data.

9 So again, we got hold of 67. We took a  
10 census sample. So, you know, calling through  
11 about three times that much we did achieve better  
12 than a 33 percent response rate. But -- so in  
13 that case, we did -- just did the telephone  
14 surveys with that software to capture a very  
15 quantitative data. So, you know, we can produce  
16 descriptives. We can produce estimates.

17 Q Do you have a track record or some type of method  
18 whereby over time you've determined that you're  
19 getting reliable information?

20 A So there is just the industry standard for an  
21 estimate and especially in survey research is  
22 calculating a confident interval and a precision  
23 estimate. So that is very generally accepted  
24 everywhere that that's 90 percent confident plus

1 or minus 10 percent. So that's kind of the  
2 brackets either way around the interval. So we  
3 reported that and we did receive that industry  
4 standard in our NPSO estimate.

5 Q All right. And can you tell us what kinds of  
6 questions that the contractors are asked to  
7 determine whether the customer -- the  
8 contractor's customer was significantly  
9 influenced by his or her knowledge of the  
10 Program?

11 A Absolutely. So we used three questions, and  
12 again, based on the Pennsylvania framework.

13 So I get them in the right order, may I  
14 turn to my testimony to get them exactly right in  
15 the right order?

16 Q Yes, you may.

17 A Of course, it would be somewhere in the middle,  
18 so forgive me.

19 All right. So it's on page 9 of my  
20 testimony, starting with line 7. I briefly  
21 summarize here the three questions that were used  
22 based on the Pennsylvania framework. There is an  
23 attachment in Mr. Hirons' testimony where we kind  
24 of walk through the analysis in detail, but

1           that's rather detailed.

2                         So first, we talk about the number of  
3 projects sold within the Company's service  
4 territory. And then we talk about the percent of  
5 those sales that received an incentive and the  
6 percent that did not. And then how influential  
7 the Programs were on those projects that did not  
8 receive an incentive.

9   Q   All right. And through these questions you would  
10 be able to determine whether they would  
11 significantly influence the customers or not?

12   A   Correct. Correct. We -- customers -- we trust  
13 the contractors that they kind of understand what  
14 they've learned from the Program and then how  
15 they go and use that with other customers, and  
16 if -- then those skills, whether it's the right  
17 kind of measure or how they kind of sell energy  
18 efficiency that they know that that -- skills  
19 they learned from the Program resulted in that  
20 additional savings. And, you know, we get a wide  
21 variety of responses across contractors. We have  
22 contractors that were very influenced by the  
23 Program and really changed practices and we have  
24 ones that weren't as influenced, and that seems

1 to be pretty standard doing this research across  
2 the country.

3 Q And I understand from your testimony and in your  
4 response to Ms. Keyworth a little earlier that  
5 you used the Pennsylvania framework and you  
6 believe that addresses the questions raised by  
7 Mr. Hirons on ineligibility of the participant,  
8 but if you could look at page 30 of Hirons'  
9 testimony and just give me your response to the  
10 argument raised there about cross subsidization.  
11 That's on line 9, so it's answering the question  
12 about the opted-out customers.

13 A Yes, absolutely. So it really, to me, is about  
14 that they generate system benefits. Right. So  
15 it benefits everybody, especially in fast-growing  
16 states for grid reliability, congestion; all of  
17 that. Those are real reductions to the grid  
18 whether they're from an opt-out customer or a  
19 customer who's in the Program.

20 Can I turn it over to Mr. Fields for  
21 additional discussion on cross subsidy?

22 A (Mr. Fields) So this is kind of where I took  
23 issue with this recommendation of removing the  
24 opt-outs. We are talking about a program that is

1 generating energy savings but not having to apply  
2 an incentive to do so. So this is one of the  
3 probably the more cost-effective ways to do  
4 things. It's an opted-out customer but still  
5 receiving system benefits to all the ratepayers,  
6 and that feels like a good story to tell when our  
7 teams are going out there training contractors to  
8 do this kind of work. We should capture that and  
9 analyze it.

10 Q All right.

11 COMMISSIONER BROWN-BLAND: Any other  
12 questions from the Commission?

13 (No response)

14 Questions on Commission's questions?

15 MS. TOON: None from the Company.

16 MS. KEYWORD: I have one.

17 EXAMINATION BY MS. KEYWORD:

18 Q Do -- y'all were talking about opt outs. You  
19 were asked a few questions about that. Do  
20 opted-in customers pay for opt-out savings  
21 attributable to opt outs?

22 A (Mr. Fields) Maybe only in the specific scenario  
23 of NPSO to the extent that they are also  
24 receiving the benefits as well. And that is

1 creating a statistically significant value of  
2 showing the values of savings versus what the  
3 potential cost of that training would do so.

4 MS. KEYWORTH: Thank you. That's it.

5 COMMISSIONER BROWN-BLAND: And still --

6 MS. TOON: No questions. Thank you.

7 COMMISSIONER BROWN-BLAND: Any motion?

8 MS. TOON: No motions at this time.

9 COMMISSIONER BROWN-BLAND: On the exhibits?

10 MS. TOON: Oh, yes, but we'd like to --  
11 thank you. At this time, the Company would ask that  
12 Mr. Fields' direct, supplemental and rebuttal  
13 exhibits, as well as Ms. Miller's direct, rebuttal and  
14 supplemental exhibits be moved into evidence.

15 COMMISSIONER BROWN-BLAND: Hearing no  
16 objection, that motion is allowed and the exhibits are  
17 received into evidence.

18 MS. TOON: Thank you.

19 (WHEREUPON, Miller Exhibits  
20 1 - 6, Supplemental Revised  
21 Exhibits 1 - 3, and  
22 Rebuttal Revised Exhibits 1  
23 - 3 are received into  
24 evidence.)

1 (WHEREUPON, Fields Exhibits  
2 1 - 13 and A - J,  
3 Supplemental Revised  
4 Exhibits 1, 2, 5, 7 and 12,  
5 and Rebuttal Revised  
6 Exhibits 1, 2, 5, 7 and 12  
7 are received into  
8 evidence.)

9 COMMISSIONER BROWN-BLAND: This panel may be  
10 excused.

11 MR. FIELDS: Thank you.

12 MS. LEE: Thank you.

13 MS. KEYWORTH: Commissioner Brown-Bland,  
14 the -- if we're ready for it, the Public Staff would  
15 call Witnesses Boswell, Williamson, and Hiron to the  
16 stand.

17 COMMISSIONER BROWN-BLAND: The veteran  
18 witness knows the drill, so if each could reach the  
19 Bible with your left hand and raise your right.  
20 As a panel,

21 MICHELLE BOSWELL, TOMMY WILLIAMSON, JR.,  
22 and WARREN HIRONS;  
23 having been duly sworn,  
24 testified as follows:



1 COMMISSIONER BROWN-BLAND: Ms. Keyworth.

2 DIRECT EXAMINATION BY MS. KEYWORTH:

3 Q Ms. Boswell, we'll start with you. Would you  
4 please state your name, business address, and  
5 current position for the record?

6 A Michelle Boswell. I'm the Director of Accounting  
7 for the Public Staff. My business address is 430  
8 North Salisbury Street, Raleigh, North Carolina.

9 Q Are you aware that on August 29th, 2023, the  
10 Public Staff Witness Hemanth Meda prepared and  
11 caused to be prefiled direct testimony in this  
12 docket consisting of 11 pages and one appendix?

13 A Yes.

14 Q Were that testimony and appendix prepared with  
15 your knowledge and under your supervision as  
16 Mr. Meda's supervisor?

17 A It was.

18 Q Are you aware of any changes or corrections made  
19 by Mr. Meda to that prefiled direct testimony?

20 A I am not.

21 Q On September 15th, 2023, did you, through  
22 counsel, move the Commission to be substituted as  
23 the sponsor of the testimony prefiled by  
24 Mr. Meda?

1 A I did.

2 Q On September 18th, 2023, did you prepare and  
3 cause to be prefiled direct testimony in this  
4 docket consisting of 11 pages and one appendix  
5 consistent with the Public Staff's motion for  
6 substitution?

7 A I did.

8 Q Do you have any corrections to make to your  
9 prefiled direct testimony?

10 A I do not.

11 Q And if you were asked the same questions today,  
12 would your answers be the same?

13 A They would.

14 MS. KEYWORTH: Presiding Commissioner  
15 Brown-Bland, at this time I would move that the  
16 prefiled direct testimony and appendix of Public Staff  
17 Witness Boswell be entered into the record as if given  
18 orally from the stand.

19 COMMISSIONER BROWN-BLAND: Hearing no  
20 objection, that motion is allowed and the prefiled  
21 testimony will be treated as if given orally from the  
22 witness stand.

23 MS. KEYWORTH: Thank you.

24 (WHEREUPON, the prefiled

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

direct testimony and  
Appendix A of MICHELLE  
BOSWELL is copied into the  
record as if given orally  
from the stand.)

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. E-2, SUB 1322**

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

**September 18, 2023**

1 **Q. Please state your name, business address, and present**  
2 **position.**

3 A. My name is Michelle Boswell. My business address is 430 North  
4 Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am the  
5 Director of Accounting for the Accounting Division of the Public Staff.

6 **Q. Briefly state your qualifications and duties.**

7 A. My qualifications and duties are attached as Appendix A.

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to present my review of the  
10 Application submitted by Duke Energy Progress, LLC (DEP or the  
11 Company) regarding the Demand-Side Management (DSM) and  
12 Energy Efficiency (EE) cost and incentive recovery rider (DSM/EE  
13 Rider)<sup>1</sup> filed in this docket on June 13, 2023, and supplemented on  
14 August 24, 2023. The DSM/EE Rider is authorized by N.C. Gen. Stat.  
15 § 62-133.9 and is implemented pursuant to Commission Rule R8-69.

16 **Q. Please describe the basis for the Company's filing.**

17 A. North Carolina General Statute § 62-133.9(d) allows a utility to  
18 petition the Commission for approval of an annual rider to recover:  
19 (1) the reasonable and prudent costs of new DSM and EE measures;

---

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

1 and (2) other incentives to the utility for adopting and implementing  
2 new DSM and EE measures. However, N.C.G.S. § 62-133.9(f)  
3 allows industrial and certain large commercial customers to opt out  
4 of participating in the power supplier's DSM/EE programs and paying  
5 the DSM/EE rider, if each such customer notifies its electric power  
6 supplier that it has implemented or will implement, at its own  
7 expense, alternative DSM and EE measures. Commission Rule  
8 R8-69, which was adopted by the Commission pursuant to N.C.G.S.  
9 § 62-133.9(h), sets forth the general parameters and procedures  
10 governing approval of the annual rider, including, but not limited to:  
11 (1) provisions for both (a) a DSM/EE rider to recover the estimated  
12 costs and utility incentives applicable to the "rate period" in which that  
13 DSM/EE rider will be in effect, and (b) a DSM/EE EMF rider to  
14 recover the difference between the DSM/EE rider in effect for a given  
15 test period (plus a possible extension) and the actual recoverable  
16 amounts incurred during that test period; and (2) provisions for  
17 interest or a return on amounts deferred and on refunds to  
18 customers.

19 In this proceeding, DEP has calculated its proposed DSM/EE Rider  
20 (incorporating both prospective and EMF DSM and EE billing rates)  
21 using, for vintage years prior to 2022, the Cost Recovery and  
22 Incentive Mechanism for DSM/EE Programs approved by the  
23 Commission in Docket No. E-2, Sub 931 (Sub 931), on January 20,

1           2015, in its Order Approving Revised Cost Recovery and Incentive  
2           Mechanism and Granting Waivers, as subsequently revised by the  
3           Commission in its November 27, 2017 Order Approving DSM/EE  
4           Rider and Requiring Filing of Proposed Customer Notice, issued in  
5           the Company's 2017 DSM/EE rider proceeding in Docket No. E-2,  
6           Sub 1145 (2017 Mechanism).<sup>2</sup> For vintage years 2022 and after, the  
7           Company utilized a revised mechanism, which was also approved by  
8           the Commission on October 20, 2020, in Sub 931, in its Order  
9           Approving Revisions to Demand-Side Management and Energy  
10          Efficiency Cost Recovery Mechanisms, and which took effect on  
11          January 1, 2022 (2020 Mechanism).

12          The Public Staff detailed the development and major components of  
13          the 2017 and 2020 Mechanisms in the testimony of Michael C.  
14          Maness in Docket No. E-2, Sub 1273.

---

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

1 **Q. Please describe the billing factors, vintage years, rate period,**  
2 **and test period being considered in this proceeding.**

3 A. In its Application in this proceeding, DEP requested approval of  
4 prospective and EMF DSM and EE billing rates that would result in  
5 annual North Carolina retail revenue of \$142,274,032. These  
6 proposed billing factors are set forth in DEP witness Carolyn T. Miller  
7 Exhibit 1. The factors (rates), as applicable to each class, are  
8 proposed by the Company to be charged to all participating North  
9 Carolina retail customers (i.e., those that have not opted out pursuant  
10 to N.C.G.S. § 62-133.9(f)) served during the rate period.

11 The decrease in the monthly bill of a residential customer using 1,000  
12 kilowatt-hours (kWh) of energy resulting from this revenue  
13 requirement decrease would be \$0.11. The change in a non-  
14 residential customer's bill would depend on the particular vintage  
15 years of DSM and/or EE rates for which the customer is opted out or  
16 opted in.

17 The rate period for this proceeding is the 12-month period from  
18 January 1, 2024, through December 31, 2024. This is the period over  
19 which the prospective DSM and EE billing rates and the DSM and  
20 EE EMF billing rates determined in this proceeding will be charged.

21 It is also the period for which the estimated revenue requirements  
22 (program costs, net lost revenues (NLR), Program Performance



1 Incentive (PPI) and Program Return Incentive (PRI)) to be recovered  
2 through the prospective DSM/EE rates are determined.

3 The test period applicable to this proceeding is the 12-month period  
4 ended December 31, 2022. This is the period for which the under- or  
5 over-recovery of DSM/EE revenue requirements as compared to  
6 actual DSM/EE rider revenues is measured for purposes of  
7 determining the DSM and EE EMF billing rates (although  
8 Commission Rule R8-69(b) allows the true-up to be extended to  
9 cover additional months, subject to review and adjustment in the  
10 following year's proceeding). Actual program costs considered for  
11 true-up in this proceeding are either costs actually incurred during  
12 the test period, or further true-ups or corrections related to previous  
13 test periods. For purposes of recovery, actual program costs may be  
14 amortized over periods ranging from one to 10 years. A return is also  
15 calculated on program costs deferred during the test year and on  
16 over-recoveries of total revenue requirements after the date the rates  
17 change. NLR and PPI reflected in the EMF revenue requirements  
18 being set in this proceeding are associated with kilowatt-hours (kWh)  
19 and dollar savings achieved during Vintage Year 2022 (which is also  
20 the test year), as well as true-ups associated with prior vintage years.  
21 The PPI revenue requirement may also be amortized on a levelized  
22 basis over several years.

1 **Q. Please explain the purpose of the Company's August 24, 2023**  
2 **supplemental filing.**

3 A. The purpose of the Company's supplemental filing was to: (1) correct  
4 the rates related to the EM&V adjustment for Smart \$aver Non-  
5 Residential Prescriptive Program; (2) reflect updated regulatory fees;  
6 and (3) revise the DSM/EE program/measures table in witness  
7 Miller's testimony, and to update witness Miller Exhibits 1, 2, and 3  
8 to reflect these changes. Based on the revisions set forth in the  
9 Company's supplemental filing, its revised North Carolina retail  
10 revenue request is approximately \$141 million.

11 The decrease in the monthly bill of a residential customer using 1,000  
12 kWh of energy resulting from the revised revenue requirement in the  
13 Company's supplemental filing is \$0.11 as compared to the revenue  
14 requirement from Sub 1294. The change in a non-residential  
15 customer's bill would depend on the particular vintage years of DSM  
16 and/or EE rates for which the customer is opted out or opted in.

17 **Q. What are some of the characteristics of DEP's proposed**  
18 **DSM/EE billing factors in this specific proceeding?**

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

1 NLR, and levelized PPI incentives. The test period true-up DSM and  
2 EE EMF billing rates contain test period actual amounts of the same  
3 types of costs and incentives as the prospective rates. The DSM and  
4 EE EMF billing rates may also include adjustments to any required  
5 return on over- or under-collections of DSM/EE revenues.

6 **Q. Will there be future true-ups of the DSM/EE revenue**  
7 **requirements?**

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

1 participation and EM&V analyses are finalized, reviewed, and  
2 perhaps refined.

3 **Q. Please describe your investigation of DEP's filing.**

4 A. The Public Staff's investigation of DEP's filing in this proceeding  
5 focused on determining whether the proposed DSM/EE Rider: (1)  
6 was calculated in accordance with the 2017 or 2020 Mechanism, as  
7 applicable; and (2) otherwise adhered to sound ratemaking concepts  
8 and principles. The procedures I utilized included a review of the  
9 Company's initial and supplemental filings, relevant prior  
10 Commission proceedings and orders, and workpapers and source  
11 documentation used by the Company to develop the proposed billing  
12 rates. Performing the investigation required the review of responses  
13 to written data requests, as well as discussions with Company  
14 personnel. As part of my investigation, I performed a review of the  
15 actual DSM/EE program costs incurred by DEP during the 12-month  
16 period ended December 31, 2022. To accomplish this, I selected and  
17 reviewed samples of source documentation for test year costs  
18 included by the Company for recovery through the DSM/EE Rider.  
19 Review of this sample is intended to test whether the actual costs  
20 included by the Company in the DSM and EE billing rates are either  
21 valid costs of approved DSM and EE programs or administrative  
22 costs supporting those programs.

1 The investigation, including the sampling of source documentation,  
2 concentrated primarily on costs and incentives related to the January  
3 through December 2022 test period, which will begin to be trued up  
4 through the DSM and EE EMF billing rates approved in this  
5 proceeding. The Public Staff also performed a more general review  
6 of the prospective billing rates proposed to be charged for Vintage  
7 Year 2024, which are subject to true-up in future proceedings.

8 **Q. What is your recommendation in this proceeding?**

9 A. Based on the results of the Public Staff's investigation, I recommend  
10 that the billing factors proposed by the Company, as set forth in  
11 Revised Miller Exhibit 1, be approved by the Commission. These  
12 factors should be approved subject to any true-ups in future cost  
13 recovery proceedings consistent with the 2017 and 2020  
14 Mechanisms and the Commission orders with which they are  
15 associated, as well as other relevant orders of the Commission,  
16 including the Commission's final order in this proceeding.

17 In making this recommendation, the Public Staff notes that reviewing  
18 the calculation of the DSM/EE rider is a process that involves  
19 reviewing numerous assumptions, inputs, and calculations, and that  
20 its recommendation regarding this proposed rider should not  
21 preclude the Public Staff from taking issue in future proceedings with  
22 the same or similar assumptions, inputs, and calculations.

1 **Q. Does the Public Staff have any additional comments?**

2 A. In accordance with my testimony in DEP’s 2022 DSM/EE rider  
3 proceeding (Docket No.  
4 E-2, Sub 1294), the Public Staff undertook a review of DSM/EE  
5 advertising and promotion costs, including their relationship to  
6 incentives directly or indirectly provided to DSM/EE program  
7 participants, and believes them to be reasonable in the current  
8 proceeding.

9 **Q. Does this conclude your testimony?**

10 A. Yes, it does.

**APPENDIX A****QUALIFICATIONS AND EXPERIENCE****MICHELLE BOSWELL**

I graduated from North Carolina State University in 2000 with a Bachelor of Science degree in Accounting. I am a Certified Public Accountant.

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 September 2000.

I have performed numerous audits and/or presented testimony and exhibits before the Commission regarding a wide range of electric, natural gas, and water topics. I have performed audits and/or presented testimony in DEC's 2010, 2015, 2017, 2019, and 2020 REPS Cost Recovery Rider proceedings; DEP's 2014, 2015, 2017, 2018, and 2019 REPS Cost Recovery Rider proceedings; the 2014 REPS Cost Recovery Rider proceeding for Dominion North Carolina Power; the 2008 REPS Compliance Reports for North Carolina Municipal Power Agency 1, North

Carolina Eastern Municipal Power Agency, GreenCo Solutions, Inc., and EnergyUnited Electric Membership Corporation; four recent Piedmont Natural Gas (Piedmont) rate cases; the 2016 rate case of Public Service Company of North Carolina; the 2012 and 2019 rate cases for Dominion Energy North Carolina (DENC, formerly Dominion North Carolina Power); the 2013, 2017, and 2019 DEP rate cases; the 2017 and 2019 DEC rate cases; the 2018 fuel rider for DENC; several Piedmont, NUI Utilities, Inc. (NUI), and Toccoa annual gas cost reviews; the merger of Piedmont and NUI; and the merger of Piedmont and North Carolina Natural Gas.



1 BY MS. KEYWORTH:

2 Q Mr. Williamson, please state your name, business  
3 address, and current position for the record?

4 A Yes. I'm Tommy Williamson, Jr. I work for the  
5 Public Staff at 430 North Salisbury Street,  
6 Raleigh, North Carolina.

7 Q On August 29th, 2023, did you prepare and cause  
8 to be prefiled direct testimony in this docket  
9 consisting of 15 pages, one appendix, and two  
10 exhibits?

11 A Yes, I did.

12 Q Do you have any corrections to your prefiled  
13 direct testimony?

14 A No, I do not.

15 Q If you were asked the same questions today, would  
16 your answers be the same?

17 A Yes, they would.

18 MS. KEYWORTH: Presiding Commissioner  
19 Brown-Bland, at this time, I move that the prefiled  
20 direct testimony and appendix of Public Staff Witness  
21 Williamson be entered into the record as if given  
22 orally from the stand, and that Williamson Exhibits 1  
23 and 2 be marked for identification as premarked.

24 COMMISSIONER BROWN-BLAND: Hearing no

1 objection, that motion is allowed and the two exhibits  
2 will be identified as they were when prefiled.

3 MS. KEYWORTH: Thank you.

4 (WHEREUPON, Williamson  
5 Exhibits 1 and 2 are marked  
6 for identification as  
7 prefiled.)

8 (WHEREUPON, the prefiled  
9 direct testimony and  
10 Appendix A of TOMMY  
11 WILLIAMSON, JR., is copied  
12 into the record as if given  
13 orally from the stand.)  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. E-2, SUB 1322**

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

**August 29, 2023**

1 **Q. Please state your name, business address, and present**  
2 **position.**

3 A. My name is Tommy Williamson, Jr. My business address is 430  
4 North Salisbury Street, Dobbs Building, Raleigh, North Carolina. I am  
5 a Utilities Engineer with the North Carolina Utilities Commission -  
6 Public Staff, Energy Division, Electric Section – Rates and Energy  
7 Services.

8 **Q. Briefly state your qualifications and duties.**

9 A. My qualifications and duties are attached as Appendix A.

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my testimony is to present the Public Staff's analysis  
12 and recommendations with respect to Duke Energy Progress, LLC's  
13 (DEP or the Company) application for approval of its demand-side  
14 management (DSM) and energy efficiency (EE) cost recovery rider  
15 for Vintage Year 2024 (2024 Rider), as well as the testimony and  
16 exhibits of DEP witnesses Casey Q. Fields and Carolyn T. Miller filed  
17 on June 13, 2023, and the supplemental testimony and revised  
18 exhibits of witnesses Fields and Miller filed on August 24, 2023.

19 My testimony discusses: (1) the portfolio of DSM/EE programs  
20 included in the proposed 2024 Rider, including modifications to those  
21 programs; (2) the ongoing cost-effectiveness and performance of  
22 each DSM/EE program; and (3) the evaluation, measurement, and

1 verification (EM&V) studies filed as Exhibits A through I to the  
2 testimony of Company witness Fields.<sup>1</sup>

3 **Q. What documents have you reviewed in your investigation of**  
4 **DEP's proposed 2024 Rider?**

5 A. I reviewed the application, supporting testimony and exhibits, and  
6 DEP's responses to Public Staff data requests. In addition, I  
7 reviewed the following documents, which are pertinent to the 2024  
8 Rider:

- 9 1. The Cost Recovery and Incentive Mechanism for Demand-Side  
10 Management and Energy Efficiency Programs approved on  
11 November 27, 2017, in the Commission's Order Approving  
12 DSM/EE Rider, Revising DSM/EE Mechanism, and Requiring  
13 Filing of Proposed Customer Notice, in Docket No. E-2, Sub  
14 1145 (2017 Mechanism);
- 15 2. The Cost Recovery and Incentive Mechanism for Demand-Side  
16 Management and Energy Efficiency Programs approved on  
17 October 20, 2020, in the Commission's Order Approving  
18 Revisions to Demand-Side Management and Energy Efficiency

---

<sup>1</sup> The Company filed Fields Exhibit J as an EM&V report, but Fields Exhibit J is an informational report to study low- and moderate-income penetration within the Company's DSM/EE portfolio. Fields Exhibit J does not propose any adjustment to the amount of energy savings that will be incorporated in the Company's filing.

- 1 Cost Recovery Mechanisms, in Docket Nos. E-2, Sub 931, and  
2 E-7, Sub 1032 (2020 Mechanism); and  
3 3. The modification to subsection 20 of the 2020 Mechanism to  
4 include language on the Reserve Margin Adjustment Factor,  
5 approved by the Commission in Docket No. E-2, Sub 1294, on  
6 December 22, 2022.

7 **Q. Please summarize your recommendations.**

8 A. The Public Staff makes the following recommendations:

- 9 1. That the EM&V reports filed by DEP as Fields Exhibits A  
10 through D and Exhibits F through I be accepted; and  
11 2. That the EM&V report filed as Fields Exhibit E be accepted  
12 subject to the Public Staff's recommendation on the non-  
13 participant spillover (NPSO) percentage, as set forth in the  
14 testimony of Public Staff witness Warren Hirons.

15 **Q. Are you providing any exhibits with your testimony?**

16 A. Yes, I am. Williamson Exhibit 1 shows the Utility Cost (UC) test  
17 scores for programs for which cost recovery is sought in this  
18 proceeding using the projected UC test scores filed by the Company  
19 for each program in each of the 2020 through 2024 rider filings.  
20 Williamson Exhibit 2 shows the UC test scores provided by the  
21 Company for programs for which cost recovery is sought in this  
22 proceeding following adjustment for actual participation and EM&V

1 over the period of 2018 through 2022 based upon information  
2 provided by the Company through discovery.

3 Individually, these exhibits show the Company's projections and  
4 actuals over five-year periods, and together, the exhibits can be used  
5 to compare the results of the Company's projections for the  
6 overlapping years of 2020 through 2022.

7 **Q. For which programs is DEP seeking cost recovery through the**  
8 **DSM/EE rider in this proceeding?**

9 A. In its proposed 2024 Rider, DEP is seeking recovery of the costs and  
10 incentives associated with the following programs:

11 Residential

- 12 • Energy Education Program for Schools
- 13 • Energy Efficient Appliances and Devices
- 14 • Energy Efficient Lighting
- 15 • EnergyWise Home
- 16 • Low Income Weatherization Pilot
- 17 • Multi-Family Energy Efficiency
- 18 • My Home Energy Report
- 19 • Neighborhood Energy Saver
- 20 • Residential Energy Assessments
- 21 • Residential New Construction

- 1                   • Residential Smart Saver
- 2           Non-Residential
- 3                   • Commercial, Industrial & Government Demand Response
- 4                   • EnergyWise for Business
- 5                   • Non-Residential Smart Saver - Custom
- 6                   • Non-Residential Smart Saver - Performance Incentive
- 7                   • Non-Residential Smart Saver - Prescriptive
- 8                   • Small Business Energy Saver

9   **Q.   What was the purpose of the Company's supplemental**  
10 **testimony and revised exhibits?**

11 A.   The purpose of the supplemental testimony was to update numerous  
12 exhibits of Company witnesses Fields and Miller.

13 **Q.   Did you discover any errors in the supplemental filing?**

14 A.   Yes, I did. During my review, I observed that the Company provided  
15 updated entries for the Weatherization Pilot and EE Lighting that  
16 were not addressed in the Company's supplemental testimony. After  
17 discussions, the Company agrees that entries for these two  
18 residential programs were included in error. This error did not impact  
19 the projections for the Residential portfolio UC test ratio for Vintage  
20 2024.



1 **Q. Did you include information from the Company's supplemental**  
2 **testimony in your exhibits?**

3 A. Yes. From witness Fields' revised Exhibit 7, I incorporated the  
4 updated prospective UC test cost effectiveness ratio for the Non-  
5 Residential Smart Saver – Prescriptive program into Williamson  
6 Exhibit 1. This was the only program cost-effectiveness result that  
7 was changed from the initial filing of Fields Exhibit 7.

8 As a result of updating the Non-Residential Smart Saver –  
9 Prescriptive program, the cost-effectiveness projections for the  
10 overall non-residential portfolio and the combined (residential and  
11 non-residential) portfolios were updated. Those changes are also  
12 reflected in Williamson Exhibit 1.

13 Cost Effectiveness

14 **Q. How is the cost-effectiveness of DEP's DSM/EE programs**  
15 **evaluated?**

16 A. The cost-effectiveness of a program is determined using a ratio of  
17 the benefits versus the costs of the program. The cost-effectiveness  
18 of each DSM/EE program is reviewed when it is proposed for  
19 approval and then annually in the rider proceedings. Pursuant to the  
20 2020 Mechanism, cost-effectiveness is evaluated at both the  
21 program and portfolio levels. Cost-effectiveness is reviewed using  
22 the UC, Total Resource Cost (TRC), Participant, and Ratepayer

1 Impact Measure (RIM) tests. Under each of these four tests, a result  
2 above 1.0 indicates that the benefits of the program outweigh the  
3 costs<sup>2</sup> so that the program is cost effective. It is possible for a  
4 program's score to exceed 1.0 on one or more tests, while still falling  
5 below 1.0 on other tests. While the 2017 Mechanism used the TRC  
6 and UC tests to evaluate initial and ongoing cost-effectiveness, the  
7 2020 Mechanism uses the UC test only.

8 The TRC test represents the combined utility and participant benefits  
9 that will result from implementation of the program, with a result  
10 greater than 1.0 indicating that the benefits outweigh the costs of a  
11 program to both the utility and the program's participants. A UC test  
12 result greater than 1.0 means that the program is cost beneficial<sup>3</sup> to  
13 the utility (the overall system benefits are greater than the utility's  
14 costs incurred to offer the program, including incentives paid to  
15 participants). The Participant test is used to evaluate the benefits  
16 against the costs specific to those ratepayers who participate in a  
17 program. The RIM test evaluates how the rates of customers who do  
18 not participate in a program will be impacted by the program (but

---

<sup>2</sup> Each test uses different costs and benefits in calculating the cost-effectiveness score.

<sup>3</sup> "Cost beneficial" in this sense represents the net benefit achieved by avoiding the need to construct additional generation, transmission, and distribution facilities related to providing electric utility service, or avoiding energy generation from existing or new facilities or purchased power.

1 without consideration of what future rates would have been  
2 otherwise).

3 **Q. How is cost-effectiveness evaluated in DSM/EE rider**  
4 **proceedings?**

5 A. In each DSM/EE rider proceeding, DEP files the projected cost-  
6 effectiveness of each program and for the portfolio as a whole for the  
7 upcoming rate period under each of the four cost-effectiveness tests  
8 (Fields Exhibit 7). The evaluations in DSM/EE rider proceedings look  
9 at the actual performance of a typical measure to provide an  
10 indication of what to expect over the next year. DEP updates each  
11 year's rider filing with the most current EM&V data and other program  
12 performance data. Fields Exhibit 8 illustrates the impact of updated  
13 EM&V data, measure offerings, and participation numbers on the  
14 cost effectiveness projections for each program.

15 **Q. How does the Public Staff review cost-effectiveness in each**  
16 **rider?**

17 A. The Public Staff compares the cost-effectiveness test projections  
18 from previous DSM/EE proceedings to the current filing and  
19 develops a trend of cost-effectiveness projections that serves as the  
20 basis for the Public Staff's recommendation on whether a program  
21 should: (1) continue as currently implemented; (2) be monitored for  
22 further decreases in cost-effectiveness along with any Company

1 efforts to improve cost-effectiveness; or (3) be terminated. While  
2 each DSM/EE rider proceeding provides a snapshot of the cost-  
3 effectiveness and performance of the programs and portfolio, the  
4 Public Staff does not rely on one specific calculation to evaluate  
5 program performance. The trends provide a clearer understanding  
6 of how changes in participation, avoided cost inputs, marketing and  
7 education about DSM/EE matters, and customer behaviors and  
8 preferences impact overall program performance.

9 Program design and delivery may need to be modified to address  
10 changes in cost-effectiveness. For example, incentive levels may  
11 need to be increased or decreased to maintain overall cost-  
12 effectiveness. Changes in the avoided cost inputs that value the  
13 energy savings benefits may increase or decrease the cost-  
14 effectiveness of programs or the portfolio. In either case, the trends  
15 in cost-effectiveness over time are more telling of overall  
16 performance.

17 **Q. How are the benefits determined in a cost-effectiveness**  
18 **evaluation?**

19 A. The benefits associated with a program's cost-effectiveness are  
20 determined by multiplying the applicable avoided cost rates by the  
21 energy or demand savings generated by the program during a  
22 specified vintage year. Additionally, the avoided costs that are used

1 in a proceeding for the upcoming rate period determine how the cost-  
2 effectiveness, Portfolio Performance Incentive (PPI), and Program  
3 Return Incentive (PRI) will be calculated.

4 **Q. What avoided costs should be used as the basis for determining**  
5 **cost-effectiveness for Vintage Year 2024?**

6 A. For purposes of determining cost-effectiveness in Vintage Year 2024,  
7 the applicable avoided cost sourcing that complies with paragraph  
8 77 of the 2020 Mechanism are the rates approved in the Biennial  
9 Determination of Avoided Cost Rates for Electric Utility Purchases  
10 from Qualifying Facilities issued on November 22, 2022, in Docket  
11 No. E-100, Sub 175.

12 **Q. Do you believe the Company's updated assessment of cost-**  
13 **effectiveness for Vintage Year 2024 is reasonable?**

14 A. Yes, I do. I have reviewed its updated information and believe it to  
15 be reasonable.

16 Program Performance

17 **Q. Please discuss the performance of DEP's DSM/EE portfolio.**

18 A. The Company's DSM/EE portfolio offers a wide variety of measures  
19 to support the everyday activities of its customers in an energy-  
20 efficient manner. The Public Staff's review of program performance  
21 involved: (1) reviewing cost-effectiveness trends; (2) reviewing

22 Fields Exhibit 6, which provides specific information on each

1 program's marketing strategy and potential areas of concern; and (3)  
2 performing an overall qualitative analysis.

3 The Public Staff also uses its involvement in the Company's EE  
4 Collaborative meetings, which occur every other month, to stay  
5 informed regarding how the portfolio of programs is performing.  
6 During these meetings, the Collaborative discusses program  
7 performance (participation, customer engagement, and potential  
8 barriers to entry and continuation of the program), recently  
9 completed EM&V and market potential study activities, and potential  
10 new program offerings.

11 Williamson Exhibit 2 shows that both the residential and non-  
12 residential portfolios have been cost-effective during the 2018  
13 through 2022 timeframe. Based on the review discussed above, the  
14 Public Staff believes that the historical performance of the  
15 Company's programs is reasonable.

16 EM&V

17 **Q. Have you reviewed the EM&V reports filed by DEP?**

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

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

5 **Q. Did the Company provide an update to any of the EM&V Reports**  
6 **filed in this proceeding?**

7 A. Yes. In Docket No. E-2, Sub 1294, the Commission held open the  
8 report for the Small Business Energy Saver Program due to an error  
9 in the report. In the current proceeding, the Company filed an  
10 updated and corrected report for that program as Fields Exhibit C.

11 **Q. How much time is required to conduct and incorporate EM&V**  
12 **for a program vintage year?**

13 A. Depending on when the EM&V for a vintage year of a program is  
14 completed, a vintage year may need to remain open for accounting  
15 adjustments for three to five years to incorporate the updated energy  
16 and capacity savings that are determined in the various EM&V  
17 reports.

18 **Q. Does the Public Staff have any concerns regarding how long**  
19 **vintages are held open so that they may be trued up?**

20 A. Not in this proceeding. As part of the upcoming mechanism review  
21 that was initiated by the Company on April 27, 2023, in Docket No.  
22 E-2, Sub 931, the Public Staff intends to discuss with interested

1 parties the appropriate length of time for making corrections to  
2 previous vintage years and how corrections for a given vintage year  
3 will be managed. The Public Staff does not propose any  
4 recommendations on these matters in this proceeding.

5 **Q. With respect to the findings presented in the EM&V reports in**  
6 **this proceeding, do you have any recommendations regarding**  
7 **the EM&V reports you reviewed?**

8 A. Yes. In Docket No. E-7, Sub 1285, Public Staff witness David M.  
9 Williamson testified that, based on his review and discussions with  
10 Duke Energy Carolinas, LLC (DEC), the Public Staff needed more  
11 time to complete a review of the Non-Residential Smart Saver  
12 Custom Program's EM&V report prepared on behalf of both DEC and  
13 DEP.

14 In this proceeding, the Public Staff, with the assistance of GDS, has  
15 completed its review of the Non-Residential Smart Saver Custom  
16 Program EM&V Report filed in this proceeding as Fields Exhibit E.  
17 Public Staff witness Warren Hirons provides testimony and the Public  
18 Staff's recommendation regarding Fields Exhibit E.



1 **Q. Should the remaining EM&V reports filed in this proceeding be**  
2 **accepted as complete?**

3 A. Yes, the remaining EM&V reports filed in this proceeding – Fields  
4 Exhibits A through D, and F through I – should be considered  
5 complete as filed.

6 **Q. Have you confirmed that the Company's calculations**  
7 **incorporate the verified savings of the various EM&V reports?**

8 A. Yes. I verified that the changes to program impacts and participation  
9 were appropriately incorporated into the rider calculations for each  
10 DSM/EE program, as well as the actual participation and impacts  
11 calculated with EM&V data. I reviewed: (1) workpapers provided in  
12 response to data requests; (2) a sampling of the EE programs; and  
13 (3) Fields Exhibit 1, which incorporates data from various EM&V  
14 studies. I also met with DEP's staff to review the calculations, EM&V,  
15 DSMore modeling inputs, and other data related to the  
16 program/measure participation and impacts. Based on my review of  
17 this data, I believe DEP has appropriately incorporated the findings  
18 from EM&V studies and annual participation into its rider calculations  
19 consistent with Commission orders and the 2017 Mechanism and  
20 2020 Mechanism.

21 **Q. Does this conclude your testimony?**

22 A. Yes.

**APPENDIX A****QUALIFICATIONS AND EXPERIENCE****TOMMY WILLIAMSON, JR.**

I am an Engineer with the Public Staff's Energy Division. I graduated from North Carolina State University with a Bachelor of Science in Electrical Engineering. I have approximately three years of electrical distribution design and construction experience with Florida Power & Light Company. During my time at Florida Power & Light Company, I designed distribution circuits for overhead and underground services from the substation through to end users. This work was inclusive of, but not limited to, customer load analysis, feeder line loading analysis, facilities construction, and installation. I then served as an Engineer with General Electric Company for 11 years. In this role, I represented the company with electrical design engineers, industrial and commercial end customers, and installation contractors to develop technical specifications for the procurement and use of electrical distribution equipment.

Since my employment with the Public Staff, I have reviewed customer quality of service complaints, transmission and distribution construction projects, vegetation management, small generator interconnection procedures, and DSM/EE program review and cost recovery. I have filed testimony in general rate cases and regarding the North Carolina Interconnection Procedures.

1 BY MS. KEYWORTH:

2 Q Mr. Hiron, would you please state your name,  
3 title, business affiliation, and business address  
4 for the record?

5 A My name is Warren Hiron. I am a Project Manager  
6 with GDS Associates. Our business address is  
7 1850 Parkway Place, Marietta, Georgia.

8 Q And were you hired by the Public Staff to appear  
9 as an expert witness in this proceeding?

10 A Yes.

11 Q On August 29th, 2023, did you prepare and cause  
12 to be prefiled direct testimony in this docket on  
13 behalf of the Public Staff consisting of 36 pages  
14 and seven exhibits, including one confidential  
15 exhibit?

16 A I did.

17 Q Do you have any corrections to make to your  
18 prefiled direct testimony?

19 A I do not.

20 MS. KEYWORTH: Presiding Commissioner  
21 Brown-Bland, at this time, I move that the prefiled  
22 direct testimony of Public Staff Witness Hiron be  
23 entered into the record as if given orally from the  
24 stand, and that Hiron Exhibit, Exhibits 1 through 7

1 be marked for identification as prefiled?

2 COMMISSIONER BROWN-BLAND: That motion is  
3 allowed, without any objection.

4 MS. KEYWORTH: Thank you.

5 COMMISSIONER BROWN-BLAND: And the court  
6 reporter takes note that there is a confidential  
7 exhibit and we will treat it as such from here out.

8 MS. KEYWORTH: Thank you.

9 (WHEREUPON, Hirons Exhibits  
10 1 - 7 are marked for  
11 identification as prefiled.  
12 Confidential filed under  
13 seal.)

14 (WHEREUPON, the prefiled  
15 direct testimony of WARREN  
16 HIRONS is copied into the  
17 record as if given orally  
18 from the stand.)

19  
20  
21  
22  
23  
24

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. E-2, SUB 1322**

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

**August 29, 2023**

1 **Q. Please state your name, title, business affiliation and business**  
2 **location.**

3 A. My name is Warren Hirons. I am a Project Manager at GDS  
4 Associates, Inc. (GDS), an engineering and management consulting  
5 firm. My business address is 1850 Parkway Place, Marietta, Georgia  
6 30067.

7 **Q. Briefly state your educational background and qualifications.**

8 A. I graduated from North Carolina State University with a Bachelor's  
9 degree in Environmental Engineering in 2009. Previously, I  
10 graduated from the University of Georgia with a Bachelor's degree in  
11 Environmental Economics and Management in 2006. I am a licensed  
12 professional engineer in the State of Georgia. I also hold Certified  
13 Energy Manager (CEM) and Certified Measurement and Verification  
14 Professional (CMVP) certifications from the Association of Energy  
15 Engineers. My education and work experience is provided in my  
16 detailed resume which is attached as Hirons Exhibit 1.

17 **Q. Have you ever testified before a state regulatory commission?**

18 A. Yes. I filed joint testimony before the North Carolina Utilities  
19 Commission (Commission) on August 7, 2013, in Docket E-7, Sub  
20 1032.

1 **Q. Please describe your experience preparing testimony on energy**  
2 **efficiency issues for GDS.**

3 A. I have aided with drafting testimony and performing research to  
4 support testimony on Evaluation, Measurement, and Verification  
5 (EM&V) related items filed with the North Carolina Utilities  
6 Commission (Commission). I served as a consultant in natural gas  
7 rate case proceedings on behalf of various municipalities in the state  
8 of Texas and helped draft testimony in these proceedings, though no  
9 testimony was ultimately filed. I have helped prepare testimony on  
10 behalf of the Connecticut Office of Consumer Counsel, the Indiana  
11 Michigan Power Company, and the Office of the People's Counsel  
12 for the District of Columbia.

13 **Q. Please summarize your experience working on energy**  
14 **efficiency issues in North Carolina.**

15 A. I have provided the Public Staff - North Carolina Utilities Commission  
16 (Public Staff) with oversight and review of EM&V work performed by  
17 evaluation contractors on behalf of the investor-owned utilities in  
18 North Carolina. I have provided this review and oversight assistance  
19 to the Public Staff in more than 30 Demand-Side Management  
20 (DSM) and Energy Efficiency (EE) rider proceedings. I have served  
21 in this capacity since 2012 in my role with GDS.

1 **Q. What is the purpose of your testimony?**

2 A. The purpose of my testimony is to address concerns that I have  
3 related to the calculation of the program savings for Duke Energy  
4 Progress, LLC's (DEP or the Company) Non-Residential Smart  
5 \$aver Custom (Custom Program) program contained in the Custom  
6 Program's 2018-2019 Evaluation Report (Report) filed as Company  
7 witness Casey Q. Fields' Fields Exhibit E in this proceeding. The  
8 Report was created by Nexant (now known as Resource  
9 Innovations) in partnership with Tetra Tech (together, the Evaluator)  
10 for DEP and Duke Energy Carolinas, LLC (DEC and, together with  
11 DEP, Duke Energy). More specifically, my concerns are related to  
12 the calculation of non-participant spillover (NPSO), which is used in  
13 the calculation of net program savings.

14 **Q. Please summarize your concerns and final recommendations.**

15 A. My general concerns regarding the Company's EM&V analysis on  
16 the NPSO issue are summarized as follows:

- 17 1. The analysis contains the double-counting of projects  
18 included in response to one of the Evaluator's survey  
19 questions.  
20  
21 2. The calculation fails to appropriately weight the savings by  
22 measure and project type.



- 1                   3. The results of the analysis are highly sensitive to only a few  
2                   data points.
- 3                   4. The analysis credits NPSO to projects which were likely to  
4                   have been ineligible for the program as well as to projects that  
5                   were likely to have been installed by opt-out customers who  
6                   were ineligible for the program.
- 7                   5. The NPSO estimates are substantially greater than results  
8                   from similar evaluations in other states.

9                   I believe that the evidence related to these concerns indicates that  
10                  the Report's evaluation of NPSO is speculative at best and should  
11                  not be accepted at this time. I recommend that Duke Energy be  
12                  required to remove these savings from the analysis and submit a  
13                  revised evaluation report reflecting this change.<sup>1</sup> As explained in my  
14                  testimony, this change would decrease the program-level net  
15                  savings for both DEC and DEP as shown in the table below, with a  
16                  total reduction in Duke Energy's savings of 19,260,350 kWh for the  
17                  reporting timeframe of 2018 through 2019.

---

<sup>1</sup> Alternatively, an addendum to the Report reflecting revised net verified kWh and kWh savings for the program with NPSO removed would suffice.

**Hirons Table 1. Revised Net Savings for DEC and DEP**

Utility	Net Verified kWh Savings (as reported)	Non-Participant Spillover kWh Savings	Revised Net Verified kWh Savings (non-participant spillover removed)
DEC	83,427,570	12,505,161	70,922,409
DEP	25,685,459	6,755,189	18,930,270
Total	109,113,029	19,260,350	89,852,679

1 **Q. Do you have any Exhibits?**

2 A. Yes. I have seven exhibits. A brief description of each is provided  
3 below:

4 1. Hirons Exhibit 1: Resume of Warren Hirons.

5 2. Confidential Hirons Exhibit 2: This file provides a three-page  
6 explanation of the how the Evaluator determined NPSO and  
7 was provided by Resource Innovations to the Public Staff  
8 through informal communications.

9 3. Hirons Exhibit 3: I developed this database using the  
10 Company's response to data requests to demonstrate the  
11 data inputs and both intermediate and overall calculations of  
12 NPSO for Duke Energy.

13 4. Hirons Exhibit 4: I developed this database using the  
14 Company's response to data requests to demonstrate the

1 data inputs and both intermediate and overall calculations of  
2 NPSO for DEC and DEP, respectively.

3 5. Hirons Exhibit 5: The Evaluator submitted this Smart \$aver  
4 Custom Program evaluation plan to Duke Energy in  
5 November of 2020, which was provided to the Public Staff  
6 through informal communications with the Company.

7 6. Hirons Exhibit 6: This file provides the questions used by the  
8 Evaluator to collect data used to calculate NPSO. This file was  
9 provided by Duke Energy to the Public Staff in response to a  
10 Public Staff data request.

11 7. Hirons Exhibit 7: This file provides a demonstration of an  
12 NPSO methodology previously used by the Evaluator in a  
13 different state which used a validity check to address  
14 potentially ineligible projects being included in the NPSO. This  
15 file can be located through an internet search and be found  
16 on the National Grid website.

17 **Q. Please explain the significance of net program savings in a rider**  
18 **proceeding.**

19 A. Net program savings are used in DSM/EE rider calculations for  
20 purposes of determining net lost revenues and performance  
21 incentives, so it is essential for evaluations to clearly and accurately

1 articulate the estimated program net savings and how these  
2 estimates are developed.

3 **Q. Please describe the elements of the evaluation used to estimate**  
4 **net savings as shown in the Report.**

5 A. The evaluation estimated net savings, which are changes in energy  
6 use attributable to the program,<sup>2</sup> using the following elements:

7 i. Free-ridership (FR): an estimate of the proportion of a  
8 program's savings attributable to customers who would have  
9 installed energy efficient products or measures even in the  
10 absence of the program, but who choose to participate in the  
11 utility's EE program anyway. In other words, these  
12 participants take advantage of program incentives or other  
13 consideration, but the program itself had no impact on the  
14 participant's ultimate decision to engage in the particular  
15 energy efficiency associated with the program.

16 ii. Spillover: an estimate of savings resulting from the installation  
17 of energy efficient products or services without program  
18 participation, which is comprised of either:

---

<sup>2</sup> See Chapter 17: Estimating Net Savings: Common Practices, The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures, page 3, available at: <https://www.energy.gov/sites/prod/files/2015/01/f19/UMPCChapter17-Estimating-Net-Savings.pdf>.

- 1 a. Participant spillover (PSO), which attributes savings to  
 2 the program for equipment that participants  
 3 subsequently installed outside the program, because  
 4 of the program's influence; or
- 5 b. NPSO, an estimate of additional energy savings  
 6 achieved when a program non-participant implements  
 7 energy efficiency measures or practices attributable to  
 8 the program's influence.

9 The FR, PSO, and NPSO elements are combined to calculate the  
 10 net-to-gross (NTG) ratio in the following manner, as illustrated on  
 11 page 50 of the Report:

### Hirons Figure 1. Net-to-Gross Equation

$$NTG_p = (1 - FR_p) + PSO_p + NPSO_p$$

*Where:*

- $NTG_p$  = the program-level net-to-gross ratio  
 $FR_p$  = the program-level free-ridership ratio  
 $PSO_p$  = the program-level participant spillover ratio.  
 $NPSO_p$  = the program-level nonparticipant spillover ratio.

1 **Q. What issues arose in your review of the net program savings in**  
 2 **this rider?**

3 A. As discussed in more detail below, the Report provides incomplete,  
 4 misleading, and at times contradictory information regarding the  
 5 magnitude of net program savings.

6 **Q. What in the Report did you find to be incomplete, misleading or**  
 7 **contradictory?**

8 A. Tables 1-1 and 1-4 of the Report provide the respective DEC and  
 9 DEP reported and verified gross savings as shown in the table below.  
 10 However, the main body of the report does not provide a  
 11 corresponding table or other presentation of the study results  
 12 showing net savings for DEC and DEP.

**Hirons Table 2. Gross Verified kWh Savings for DEC and DEP**

Utility	Gross Verified kWh Savings	Source
DEC	99,722,174	Table 1-1
DEP	28,111,481	Table 1-4
Total	127,833,655	

1 Table 1-7 of the Report (reproduced below from the Report) provides  
 2 the NTG ratios for DEC and DEP and provides a DEC/DEP  
 3 combined NTG ratio.<sup>3</sup>

### Hirons Figure 2. Reproduction of Table 1-7 from Report

Measurement	DEC	DEP	Combined <sup>1</sup>
Free-ridership (FR)	29.16%	32.67%	29.99%
Net of Free-ridership (1-FR)	70.84%	67.33%	70.01%
Program-influenced Participant Spillover (PSO)	0.28%	0.01%	0.22%
Program-influenced Nonparticipant Spillover (NPSO)	12.54%	24.03%	12.95%
<b>Net-to-Gross* (1-FR) + PSO+NPSO</b>	<b>83.66%</b>	<b>91.37%</b>	<b>83.18%</b>

<sup>1</sup> The combined results are weighted using the same kWh-based weights used for DEC and DEP results, since this accounts for individual project sizes as well as the relative size of the programs across the two jurisdictions.

4 The main body of the Report does not show how the gross verified  
 5 savings for each utility are multiplied by the NTG ratios to determine  
 6 program-level net savings.

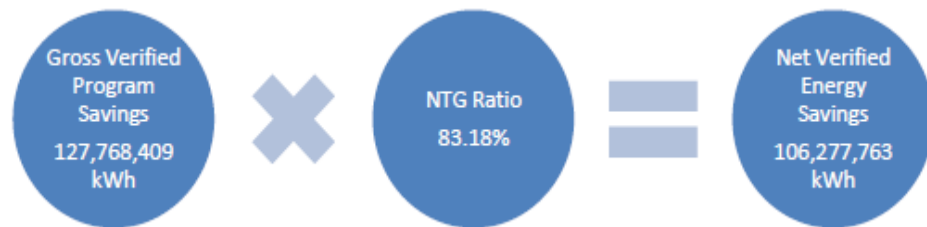
7 Furthermore, based on the information provided in Figure 5-3 of the  
 8 Report, the data provided in Appendix A and Appendix B of the  
 9 Report, and additional information provided by Duke Energy in  
 10 response to a Public Staff data request, I find the Report to be

<sup>3</sup> The footnote to Table 1-7 indicates that the combined results are “weighted using the same kWh-based weights used for DEC and DEP results, since this accounts for individual project sizes as well as the relative size of the programs across the two jurisdictions.” However, this statement is not true for how NPSO is combined, which is demonstrated in Hirons Exhibit 3 and subsequent discussion below.

1 misleading or contradictory regarding whether program-level net  
2 savings are estimated using an overall NTG ratio or a utility-specific  
3 NTG ratio.

4 Figure 5-3 of the Report, reproduced below, provides a visual  
5 demonstration of multiplying gross program verified savings by a  
6 NTG ratio to yield net verified energy savings.

### Hirons Figure 3. Reproduction of Figure 5-3 from Report



7 The NTG ratio in Figure 5-3 utilizes the DEC-DEP combined value  
8 of 83.18% as listed in Table 1-7 of the Report.

9 However, the information provided in both Appendix A and Appendix  
10 B of the Report indicates that utility-specific NTG ratios, rather than  
11 the combined ratio, were used in the determination of program-level  
12 net savings for DEC and DEP.

13 Appendix A provides separate Fact Sheets for DEC and DEP. These  
14 Fact Sheets list separate Net-to-Gross ratios for each utility as well



1 as DEC's and DEP's annual kWh net savings amounts, as shown in  
2 the table below.

**Hirons Table 3. NTG Ratio and Net Verified kWh Savings for  
DEC and DEP**

Utility	Gross Verified kWh Savings	NTG Ratio	Net Verified kWh Savings
DEC	99,722,174	83.66%	83,427,570
DEP	28,111,481	91.37%	25,685,459
Total	127,833,655		109,113,029

3 These values are properly based on multiplying the territory-specific  
4 gross verified energy savings by the territory-specific NTG ratios,  
5 rather than the combined NTG ratio shown in Figure 5-3.

6 Appendix B provides DSMore input summary data for DEC and DEP,  
7 respectively. Tables B-1 and B-2 provide the utility-specific FR,  
8 spillover, and NTG ratio values used to evaluate program cost-  
9 effectiveness with the DSMore model as shown below.

**Hirons Table 4. Free Ridership, Spillover and NTG Ratios for  
DEC and DEP**

Utility	Free Ridership	Spillover	NTG Ratio
DEC	29.16%	12.54%	83.66%
DEP	32.67%	24.03%	91.37%

1           Lastly, in response to a Public Staff data request, Duke Energy  
2           indicated that the NTG Ratio used in the Company's DSM/EE rider  
3           is 91.37%, which aligns with the DEP-specific value.

4           Thus, the main body of the Report does not indicate the utility-  
5           specific program-level net savings, which is pertinent information to  
6           include in the body of the Report. The Report also implies (in Figure  
7           5-3) that a DEC-DEP combined NTG ratio was used for program-  
8           level net savings estimates, when in fact, as shown in Appendices A  
9           and B and in response to a Public Staff data request, that utility-  
10          specific NTG ratios were used in the Company's DSM/EE Rider.  
11          Understanding that utility-specific NTG ratios were used in the  
12          Company's DSM/EE Rider is necessary to support one of my  
13          concerns above that the analysis contains the double-counting of  
14          projects in the Evaluator's calculation of NPSO.

15       **Q.    Please describe the surveying method and variables used by**  
16       **the Evaluator to estimate NPSO for the Custom Program.**

17       A.    The Evaluator estimated NPSO using the results of surveys with  
18       participating implementation contractors about the contractors' sales  
19       of program-eligible equipment that was not associated with Duke  
20       Energy incentives.

1 Through the course of discussions with Duke Energy, the Evaluator,  
2 the Public Staff, and GDS, the Evaluator provided a document that  
3 clarifies and expands upon the discussion of the calculation of NPSO  
4 provided in the Report. I have appended this document as  
5 Confidential Hiron's Exhibit 2 to my testimony.

6 Through discussion with Duke Energy, the Public Staff learned that  
7 the Evaluator surveyed contractors on the variables described  
8 below, as detailed in the Report, to determine NPSO in each utility's  
9 service area:<sup>4</sup>

- 10 i. Variable P1: The number of program-eligible projects  
11 sold/installed for Duke Energy's nonresidential customers  
12 over the last 12 months (at the time of the survey);
- 13 ii. Variable P3: The proportion of the sales/projects identified in  
14 response to P1 that involved an incentive through Duke  
15 Energy's program; and
- 16 iii. Variable NS2: A scale of 1 to 5 evaluation (with 1 being "not  
17 at all influential" and 5 "extremely influential") regarding the  
18 influence of Duke Energy's custom program on the

---

<sup>4</sup> While the survey included other questions, only the responses to the questions assessing the P1, P3, and NS2 variables were used in the calculation of the NPSO estimates.

1 contractor's sales of energy saving projects that did not  
2 receive an incentive.

3 In response to discovery, Duke Energy provided a data file that  
4 shows the responses to the P1, P3, NS2 variables and other  
5 contractor survey questions. While the contractor-level calculations  
6 were not provided in the responses to data requests, I was able to  
7 recreate the requisite contractor-level calculations using the data file  
8 provided in conjunction with the methodology explanation provided  
9 by Duke Energy shown in Hirons Exhibit 2. These contractor-level  
10 calculations, along with the calculation of the total service-territory  
11 level NPSO, are provided in Hirons Exhibit 3.

12 **Q. Please demonstrate how the NPSO is calculated for DEC and**  
13 **DEP.**

14 A. In response to discovery, the Public Staff learned that the Evaluator  
15 utilized a five-step approach to determine how the NPSO was  
16 calculated by the Evaluator.<sup>5</sup> Hirons Exhibit 3 has 40 rows of  
17 contractor (or "vendor") response data used in the Evaluator's NPSO  
18 calculation.<sup>6</sup> For each of the 40 vendors included, there are four  
19 vendor-level calculations, the results of which were combined to

---

<sup>5</sup> The source data needed to apply the five steps are in Hirons Exhibit 3.

<sup>6</sup> Twenty-five rows of contractor response data contained in the database provided by Duke Energy were omitted in Hirons Exhibit 3 on the basis that this data was not used in the Evaluator's NPSO calculation.

1 calculate the overall utility-specific NPSO. A description of the five-  
2 step approach including the four vendor-level calculations and how  
3 that data is demonstrated in Hirons Exhibit 3 is provided below.

- 4 1. **Calculate vendor-level NS2 Score.** This is shown in column  
5 6 and was provided by Duke Energy (already calculated).
- 6 2. **Calculate vendor-specific NPSO ratio.** This is shown in  
7 column 7 using data provided by Duke Energy (already  
8 calculated), and in column 12 using the methodology  
9 described in Confidential Hirons Exhibit 2, which incorporates  
10 both the results of the vendor responses to variable P3  
11 (column 3) and the vendor-level NS2 Score (column 6).
- 12 3. **Calculate vendor-level incentivized projects.** This is shown  
13 in column 8 as an already calculated value provided by Duke  
14 Energy and is also shown in column 13 using the methodology  
15 described in Confidential Hirons Exhibit 2, which incorporates  
16 both the results of the vendor responses to variable P3  
17 (column 3) and variable P1 (column 2).
- 18 4. **Calculate vendor-level unincentivized projects**  
19 **influenced by program.** This is shown in column 9 as  
20 provided and calculated by Duke Energy and is also shown in  
21 column 14 using the methodology described in Confidential

1 Hiron Exhibit 2, which incorporates the vendor-specific  
2 results to Steps 2 and 3 as described above.

3 5. **Calculate program-level NPSO.** As noted in Confidential  
4 Hiron Exhibit 2, the final step is to calculate the “weighted  
5 average” NPSO for the program, which is the average  
6 proportion of unincentivized projects across all responding  
7 contractors. This weighted average is calculated by dividing  
8 the total number of unincentivized projects influenced by the  
9 program (sum of column 9) by the total number of projects  
10 incentivized through the program (sum of column 8). The  
11 result is a “weighted mean,” which is the total number of  
12 inferred projects installed in the Duke Energy service territory  
13 that did not receive an incentive divided by the total number  
14 of projects installed in the Duke Energy service territory that  
15 did receive an incentive. This equation can be written as  
16 follows: (number of unincentivized projects influenced by  
17 program) divided by (total number of projects incentivized by  
18 the program).

19 **Q. What were the results of the program-level NPSO calculation**  
20 **based on the five-step process described above?**

21 A. The results of the calculation described yield a program-level NPSO  
22 of 12.95%, as noted several times in the Report. However, as noted

1           herein, this percentage was not used by the Evaluator in the  
2           calculation of either the DEC or DEP program's net savings.

3   **Q.    Please provide the inputs and results to the DEC-specific and**  
4   **DEP-specific NPSO calculations.**

5   A.    Using the data provided by Duke Energy, I was able to determine  
6           which vendors in the survey were associated with the DEC and DEP  
7           territories, respectively. Calculating the territory-specific NPSO  
8           followed the five-step approach outlined above using utility-specific  
9           inputs. The results of step five at the service-territory level are shown  
10          below. These values match those shown in the main body of the  
11          Report, as well as Appendices A and B of the Report.

$$DEC\ NPSO = \frac{119.3}{951.2} = 0.1254$$

$$DEP\ NPSO = \frac{66.6}{277.3} = 0.2403$$

12   **Q.    Please elaborate on your concern that the Evaluator's analysis**  
13   **contains double-counting of projects included in response to**  
14   **the P1 questions.**

15   A.    Five vendors have customer bases that include both DEC and DEP  
16           territories and are therefore listed as being associated with both DEC  
17           and DEP. The results of these five vendor responses to the  
18           contractor surveys (DEC and DEP combined) are applied in their

1 entirety for each individual utility-specific NPSO calculation; the  
2 Evaluator did not attempt to apportion these projects between the  
3 two utilities. For example, the vendor identified as “DC90” by the  
4 NewID variable in Hirons Exhibit 4 provided a response of 105 to the  
5 P1 question, which is used in both utility’s NPSO calculation. This  
6 double-counting of projects exposes a flaw in the calculation of utility-  
7 specific NPSO, which will be discussed in more detail later in my  
8 testimony.

9 For two of the five vendor responses, this double counting has a  
10 substantial impact on the overall results; these two vendor responses  
11 are responsible for 23.9% and 82.0% of the respective DEC and DEP  
12 spillover weights (step 3 of the calculation – total number of projects  
13 incentivized by the program) and for 48.4% and 86.7% of the  
14 respective DEC and DEP spillover (step 4 of the calculation – total  
15 number of unincentivized projects influenced by the program). The  
16 two tables below illustrate this in tabular form for DEC and DEP,  
17 respectively.



**Hirons Table 5. Contribution of Double Counted Projects to  
DEC NPSO**

NewID	DEC Step 3	DEC Step 4	DEC (% of NPSO weight)	DEC (% of NPSO)
DC90	47.3	57.8	5.0%	48.4%
DC575	180.0	0.0	18.9%	0.0%
DC90+DC575	227.3	57.8	23.9%	48.4%
DEC Total	951.2	119.3	-	-

**Hirons Table 6. Contribution of Double Counted Projects to  
DEP NPSO**

NewID	DEP Step 3	DEP Step 4	DEP (% of NPSO weight)	DEP (% of NPSO)
DC90	47.3	57.8	17.0%	86.7%
DC575	180.0	0.0	64.9%	0.0%
DC90+DC575	227.3	57.8	82.0%	86.7%
DEP Total	277.3	66.6	-	-

1           The lack of information regarding the relative proportion of program-  
 2           eligible projects sold/installed between the DEC and DEP territories  
 3           by just these two vendors creates an extraordinary level of  
 4           uncertainty. For instance, as a hypothetical situation, if the relative  
 5           share of projects identified by the response to P1 were allocated  
 6           according to the shares noted in the table below, the DEC NPSO  
 7           would drop to 7.56%, yet the DEP NPSO would more than double  
 8           and rise to 55.04%.

**Hirons Table 7. Demonstration of NPSO Sensitivity to Double Counted Projects**

NewID	P1 (DEC share)	P1 (DEP share)	DEC NPSO	DEP NPSO
DC90	0.1	0.9	7.56%	55.04%
DC575	0.9	0.1		

This hypothetical situation is a plausible representation of the true share of P1 projects by service territory for these two vendor responses, but since the evaluation did not attempt to determine how the P1 projects should be allocated for vendors serving both DEC and DEP, the actual share of P1 projects by service territory is unknown. Ultimately, the evaluation incorrectly assigns full value to the P1 responses to both DEC and DEP, as is demonstrated in Hirons Exhibit 4.

- 1 **Q. Please explain your concern with the failure to appropriately**  
 2 **weight the savings by measure and project type in the**  
 3 **calculation of NPSO.**
- 4 **A.** To begin with, the evaluation plan provided by Duke Energy to the  
 5 Public Staff in November of 2020<sup>7</sup> (2020 Plan) indicated that NPSO  
 6 savings would be weighted using stratum-level and record-level  
 7 weights. Page 13 of the 2020 Plan states that:

---

<sup>7</sup> Provided as Hirons Exhibit 5.

1 Spillover scores will be weighted to the program level  
2 using a combination of stratum-level weights and  
3 record-level weights. Stratum-level weights account for  
4 disproportionate sampling and survey response at a  
5 stratum level. Record-level weights account for the  
6 differences in savings between projects.

7 The 2020 Plan also notes that Duke Energy would use the  
8 Pennsylvania Evaluation Framework<sup>8</sup> (Pennsylvania Framework) to  
9 evaluate NTG. The Pennsylvania Framework provides sampling  
10 requirements if NPSO is being assessed. Page D-1 of the  
11 Pennsylvania Framework states that:

12 [The] sampling approach should produce a sample that is  
13 representative of the target population (nonparticipants or  
14 trade allies) or capable of producing results that can be  
15 made representative through appropriate weighting of  
16 data. In the case of trade ally surveys, the sampling plan  
17 should take trade ally size (e.g., total sales, total program  
18 savings) and type of equipment sold and installed (e.g.,  
19 lighting or non-lighting) into consideration.

20 The Report did not follow the methodology discussed in its 2020 Plan  
21 and did not follow the guidance provided by the Pennsylvania  
22 Framework with respect to the weighting of savings.

23 In addition, as page 59 of the Report notes, each project in response  
24 to the P1 question in the NPSO analysis was weighted equally, which

---

<sup>8</sup> See Evaluation Framework for Pennsylvania Act 129 Phase III Energy Efficiency and Conservation Programs, prepared by the Statewide Evaluation Team (May 8, 2018), available at: [http://www.puc.pa.gov/Electric/pdf/Act129/SWE\\_PhaseIII-Evaluation\\_Framework050818.pdf](http://www.puc.pa.gov/Electric/pdf/Act129/SWE_PhaseIII-Evaluation_Framework050818.pdf).

1 would be reasonable if most projects were of equal size as it relates  
 2 to a savings per project metric. However, in this Report, the savings  
 3 per project is highly variable based on whether the project is lighting  
 4 or non-lighting, as well as whether the project is considered large or  
 5 small. As noted in the Pennsylvania Framework, it is standard  
 6 practice to appropriately weigh data based on the type of equipment  
 7 sold (e.g. lighting or non-lighting) and total program savings (e.g.  
 8 project size).

9 Tables 8 and 9 below provide a measure category and strata-level  
 10 breakdown of the total number of projects, verified gross energy  
 11 savings, and savings per project.<sup>9</sup>

**Hirons Table 8. DEC Project Savings by Measure and Strata**

DEC		Projects	Savings	
Measure Category	Strata	Total	Gross Verified kWh	Savings per Project kWh
Lighting	Small	359	26,104,266	72,714
Lighting	Large	58	41,723,000	719,362
Non-Lighting	Small	99	11,544,202	116,608
Non-Lighting	Large	13	20,350,706	1,565,439
<b>Total</b>	-	<b>529</b>	<b>99,722,174</b>	<b>188,511</b>

<sup>9</sup> These tables were developed using data available in Table 1-1, Table 1-4, Table 2-1, and Table 2-4 of the Report.

**Hirons Table 9. DEP Project Savings by Measure and Strata**

DEP		Projects	Savings	
Measure Category	Strata	Total	Gross Verified kWh	Savings per Project kWh
Lighting	Small	211	6,803,085	32,242
Lighting	Large	33	11,978,543	362,986
Non-Lighting	Small	35	3,402,256	97,207
Non-Lighting	Large	13	5,927,597	455,969
<b>Total</b>	-	<b>292</b>	<b>28,111,481</b>	<b>96,272</b>

1            Tables 8 and 9 above indicate that the projects have vastly different  
2            savings based on whether the measure is lighting or non-lighting and  
3            whether the strata is small or large. For example, the large non-  
4            lighting projects for DEP are more than 14 times larger, on average,  
5            than its small lighting projects. There are 16 times more small lighting  
6            projects than large non-lighting projects (211 vs. 13), but due to the  
7            much smaller average project size, the small lighting projects  
8            account for only 15% more savings than the large non-lighting  
9            projects (6,803,085 kWh vs 5,927,597 kWh). By weighing all projects  
10           equally in the NPSO analysis, the Evaluator implies that each project  
11           is an average project, or a project characterized as having the mean  
12           of the gross verified energy savings across all projects. As the two  
13           tables above show, this is clearly not the case.

1 This disparity in project size by measure and project numbers, in  
 2 conjunction with lack of information as to which measures and project  
 3 sizes are associated with the vendor responses in the NPSO survey,  
 4 creates highly uncertain results and renders them inappropriate for  
 5 use in this type of analysis.

6 **Q. Please explain your concern that the results are highly sensitive**  
 7 **to only a few data points.**

8 A. Tables 10 and 11 below show the total number of unincentivized  
 9 projects influenced by the Custom Program by service territory, as  
 10 well as the proportion of the NPSO associated with those projects,  
 11 for two highly influential vendor responses, as well as all other  
 12 remaining vendor responses.<sup>10</sup>

**Hirons Table 10. DEC – Sensitivity of NPSO on Two Vendor Responses**

NewID	DEC Step 4	DEC (% of NPSO)
DC90	57.8	48.4%
DC1375	50.0	41.9%
DC90+DC1375	107.8	90.3%
29 other responses combined	11.6	9.7%
<b>Total</b>	<b>119.3</b>	<b>100.0%</b>

<sup>10</sup> As noted earlier, the contractor identified as “DC90” appears in both tables because this vendor’s survey responses are double counted in the NPSO analysis.

**Hirons Table 11. DEP – Sensitivity of NPSO on Two Vendor Responses**

NewID	DEP Step 4	DEP (% of NPSO)
DC90	57.8	86.7%
13 other responses combined	8.9	13.3%
Total	66.6	100.0%

1 For DEC, two vendor responses account for 90.3% of the NPSO  
 2 (numerator in the utility-specific program-level calculation), while the  
 3 remaining 29 responses account for just 9.7% of the NPSO. For  
 4 DEP, one vendor response accounts for 86.7% of the NPSO, while  
 5 the remaining 13 responses account for just 13.3% of the of the  
 6 NPSO.

7 The population of participating contractors was 199 according to  
 8 Section 6.1.2 of the Report, only 67 of which completed the survey  
 9 (33.7% response rate). Of those 67 responses, only ten had an  
 10 NPSO of greater than zero. From those ten with NPSO greater than  
 11 zero, two account for over 90% of the DEC NPSO and nearly 87%  
 12 of the DEP NPSO.

13 In conversations with Duke Energy and its Evaluator, the Evaluator  
 14 stated that the reason for weighting projects in the NPSO analysis by  
 15 number of projects, rather than by measure type and project size as

1 the 2020 Plan indicated would happen, was to limit the impact of any  
2 single vendor response from being overly influential. Clearly, this  
3 approach did not work. The extremely high influence of just two  
4 vendor responses – one of which came from a contractor that served  
5 both the DEC and DEP territory and had its responses double  
6 counted – and the lack of information concerning measure type or  
7 project size makes it impossible for me to conclude that the  
8 evaluated NPSO results are reliable estimates.

9 **Q. Please explain your concern that potentially invalid responses**  
10 **were utilized in the calculation of NPSO.**

11 A. The contractor survey included a follow-up question (NS1) regarding  
12 why some of the contractors' sales did not involve a Duke Energy  
13 incentive. Among the vendors whose responses contributed towards  
14 NPSO, DEC had five responses indicating that the main reason for  
15 not pursuing an incentive was either that the projects were not  
16 eligible or the customers themselves were not eligible because they  
17 were not opted into the program. For DEP, there was one such  
18 response. Table 12 below lists the five responses (emphasis added).



**Hirons Table 12. Vendor Responses Indicative of Ineligible Projects  
and Customers**

NewID	NS1 Responses	GDS comments
DC90	They've already issued a PO before a custom incentive was approved. Where lighting is installed in apartments in tenants apartment <b><u>no longer qualify</u></b> . The payback period was too soon so <b><u>they weren't eligible</u></b> .	Two of the three statements are indicative of non-qualifying projects that should not count as NPSO
DC820	The customers were <b><u>not opted into the rebate program</u></b> .	The response indicates that the projects being credited with NPSO may have been installed by customers who have opted out and are therefore not eligible. This creates a concern that rate payers are subsidizing non-rate payers (or customers who are on a rate schedule which precludes participating in Duke Energy programs.
DC850	They were such a big consumer they had a very low KWh rate; <b><u>Duke would have had them opt into the program</u></b> , which would have cost them to do.	Same opt-out concern as above
DC1375	Negotiated electrical rates. If a customer (like a factory) has a rate that is lower than normal, <b><u>if they receive a rebate they have the possibility of losing the lower rate</u></b> .	Same opt-out concern as above
DC245	<b><u>Most of the time they opted out in the past and took other incentives</u></b> so they could not get the rebate.	Same opt-out concern as above

- 1 Tables 13 and 14 below indicate the relative amount of NPSO these
- 2 five vendor responses contribute towards utility-specific NPSO.

**Hirons Table 13. DEC – Share of NPSO from Vendors with Responses Indicating Ineligible Projects or Customers**

NewID	DEC Step 4	DEC (% of NPSO weight)
DC90	57.8	48.4%
DC820	3.5	2.9%
DC850	2.5	2.1%
DC1375	50.0	41.9%
DC245	0.3	0.3%
Sub-total	114.1	95.6%

**Hirons Table 14. DEP – Share of NPSO from Responses Indicating Ineligible Projects or Customers**

NewID	DEP Step 4	DEP (% of NPSO weight)
DC90	57.8	86.7%

- 1    **Q.    Should a customer that has opted out of the Company’s**  
 2            **DSM/EE rider be eligible to be counted in the surveys submitted**  
 3            **into the EM&V reports?**
- 4    **A.    No.** An opted out customer should be marked as an ineligible project  
 5            and should not be credited with an ability to influence the NPSO. The  
 6            installation of EE projects by Duke Energy customers who are  
 7            ineligible to participate in the program (i.e., a customer who is not  
 8            paying the DSM/EE Rider) should not contribute to the NPSO  
 9            because this creates a cross-subsidization in which DSM/EE rider  
 10          ratepayers are reimbursing Duke Energy for ineligible lost revenues  
 11          attributable to opted-out customers.

1 For DEC, the five vendors whose responses indicated that one of the  
2 main reasons their customers did not receive incentives was  
3 because they were either ineligible projects or the customers  
4 themselves were ineligible because they were opted out of the  
5 program account for 95.6% of NPSO. For DEP, the one such vendor  
6 response accounts for 86.7% of the DEP NPSO. These projects  
7 should not have been fully credited with NPSO, as the responses  
8 clearly indicate that the main reason the customers did not receive  
9 an incentive is that the projects in question were ineligible.

10 Duke Energy's Evaluator indicated that the NS1 question was a  
11 process evaluation question to be used for the purpose of making  
12 program improvements and not for assessing NPSO, even though it  
13 is listed in the NPSO section of the contractor survey (attached as  
14 Hirons Exhibit 6). The NS1 survey question is nearly identical to a  
15 question asked by Tetra Tech in a previous Rhode Island evaluation  
16 finalized in 2019 in which the question was characterized as a  
17 "consistency check" and was used to reduce NPSO, if the vendor  
18 indicated projects did not qualify for the program.<sup>11</sup> It is not clear to  
19 me why the Duke Energy evaluation did not include any consistency

---

<sup>11</sup> See Hirons Exhibit 7 for an excerpt from this evaluation. See *also* 2019 Commercial and Industrial Programs Free-Ridership and Spillover Study, National Grid Rhode Island, at 35, F-5 (Jan. 18, 2021), available at: [http://rieermc.ri.gov/wp-content/uploads/2021/01/national-grid-rhode-island-2020-ci-fr-so-report\\_final.pdf](http://rieermc.ri.gov/wp-content/uploads/2021/01/national-grid-rhode-island-2020-ci-fr-so-report_final.pdf).

1 check questions for the NPSO analysis,<sup>12</sup> when it is clear that there  
2 is an inconsistency between the P1 and NS1 responses, which call  
3 into question the legitimacy of the vast majority of the claimed NPSO  
4 for both DEC and DEP.

5 **Q. Please discuss your concern that the DEC and DEP NPSO**  
6 **estimates are substantially greater than results of evaluation**  
7 **reports in other states.**

8 A. Table 15 below provides results from 12 spillover estimates in recent  
9 evaluations of custom non-residential electric programs across the  
10 country.

---

<sup>12</sup> The FR analysis uses consistency checks.

**Hirons Table 15. Benchmarking of NPSO Results for Other  
Non-Residential Custom Programs**

State	Utilities	Total Spillover	PSO	NPSO	Notes
NC	Duke Energy Progress	24.04%	0.01%	24.03%	
NC	Duke Energy Carolinas	12.82%	0.28%	12.54%	
MA	Mass Save	5.00%	1.10%	3.90%	
NY	NYSEG / RG&E	2.20%	0.70%	1.50%	Section 4.2
RI	National Grid	1.20%	0.50%	0.70%	Table 1
PA	Penelec <sup>13</sup>	0.40%	-		Combined
IN	NIPSCO	0.00%	0.00%	N/A	
IN	Indiana Michigan	0.00%	0.00%	0.00%	
PA	Met-Ed	0.00%	-		PSO / NPSO combined
PA	Penn Power	0.00%	-		PSO / NPSO combined
PA	WPP	0.00%	-		PSO / NPSO combined
PA	PPL	0.00%	-		PSO / NPSO combined

1           Of the six programs that assessed NPSO, the highest estimate in the  
2           benchmarking analysis other than the Duke Energy programs is  
3           3.9% for Massachusetts' "Mass Save" program. Four programs had  
4           a total spillover estimate of between 0.4% and 5%. Six programs had  
5           a combined spillover of 0%.

<sup>13</sup> The five Pennsylvania utilities listed are also shown in the Report. The MA, NY, RI, and IN utilities listed are based on my separate research into other custom program NPSO estimates.

1 Clearly, the results for DEC and DEP are significantly out of line with  
2 other recent NPSO estimates, which also calls the Report's NPSO  
3 estimate into question.

4 **Q. What are your recommendations?**

5 A. Based on my concerns set out above, the Report's evaluation of  
6 NPSO is unreliable and should not be accepted. I recommend that  
7 Duke Energy be required to remove these savings from the analysis  
8 and submit a revised report.

9 Concerning future evaluations of Company's Non-Residential  
10 custom program's NPSO assessment, I make the following  
11 recommendations to strengthen the results of future evaluations and  
12 to reduce the likelihood of the Public Staff being compelled to contest  
13 the program savings estimates used in subsequent DSM/EE Rider  
14 filings.

15 1. Future NPSO evaluation reports should clearly state how net  
16 program savings are calculated for each service territory and  
17 should clearly disclose the magnitude of the estimated  
18 program net savings in the main body of the report.

19 2. If future evaluations leverage vendor survey responses to  
20 estimate NPSO, the methodology should include a method to  
21 ensure that projects are not double counted and are, instead,

- 1                   apportioned to the respective DEC and DEP service-  
2                   territories in a manner which reflects the best available  
3                   information. Additional questions on the vendor survey can  
4                   gather this information or other reasonable proxy data can be  
5                   used.
- 6                   3. If future evaluations leverage vendor survey responses to  
7                   estimate NPSO, Duke Energy's evaluator should include a  
8                   method to ensure that projects appropriately weigh the  
9                   savings by measure and project type. This method is industry  
10                  standard practice and should be used when evaluating Duke  
11                  Energy programs.
- 12                 4. Future evaluations of NPSO for any program type, regardless  
13                 of methodology used, should include a reasonableness check  
14                 to assess whether the results are overly sensitive to a small  
15                 number of data points. This reasonableness check should be  
16                 discussed in the report to help provide the Commission with  
17                 confidence that the results are not overly influenced by outlier  
18                 data points.
- 19                 5. If future evaluations leverage vendor survey responses to  
20                 estimate NPSO, Duke Energy's evaluator should include a  
21                 method to ensure that projects that were ineligible for the

1 program and projects completed by customers who were  
2 ineligible to participate are removed from the calculation of  
3 NPSO.

4 6. Future evaluations of NPSO for any program type, regardless  
5 of methodology used, should include a benchmarking  
6 analysis of the results of the NPSO in comparison to other  
7 programs of similar type (e.g. non-residential custom, non-  
8 residential prescriptive, etc.). The results of this benchmarking  
9 analysis should be discussed in the report. If an evaluation  
10 estimates NPSO to be substantially greater, the  
11 benchmarking analysis should provide an explanation of why  
12 that is the case.

13 **Q. Does this conclude your testimony?**

14 A. Yes.



1 MS. KEYWORTH: And before I open the panel  
2 for cross, similar to Ms. Toon for the Company, I  
3 wanted to ask two questions on direct to elicit  
4 certain changes to our recommendation based on  
5 information learned from the Company's rebuttal and  
6 discovery -- and rebuttal discovery.

7 MS. TOON: No objection.

8 COMMISSIONER BROWN-BLAND: That motion will  
9 be allowed.

10 BY MS. KEYWORTH:

11 Q Ms. Boswell, based on the Company's rebuttal  
12 testimony, has the Public Staff's recommendation  
13 that the NPSO savings be removed changed at all  
14 since the Public Staff filed its direct  
15 testimony?

16 A (Ms. Boswell) It has. Although we still do not  
17 agree with the calculation of net savings  
18 provided in the Company's rebuttal, based on our  
19 issues with the methodology applied we no longer  
20 recommend the removal of NPSO savings.

21 We learned that based on the PPI floor  
22 created by Paragraph 78 and the PRI floor created  
23 by Paragraph 89(d) in DEP's current approved  
24 DSM/EE mechanism, our recommendation would result

1 in a slight increase in rates. The reduced  
2 savings contained in the Company's rebuttal  
3 ensures the rates would not increase, and the  
4 Public Staff withdraws its recommended adjustment  
5 that the Company remove NPSO savings entirely.

6 Q And Mr. Hiron, which of your recommendations  
7 concerning future evaluations in the Company's  
8 nonresidential custom program's NPSO assessment  
9 have been resolved by the rebuttal testimony of  
10 DEP Witness Lee? And I think you were probably  
11 listening to Witness Lee's testimony so you can  
12 indicate, you know, consistent with that  
13 testimony as well.

14 A (Mr. Hiron) The first, second, and fourth  
15 recommendations have been resolved.

16 (WHEREUPON, the Court  
17 Reporter requested the  
18 witness to speak into the  
19 microphone.)

20 THE WITNESS: Sorry. The first, second and  
21 fourth recommendations have been resolved.

22 MS. KEYWORTH: And with that, the panel is  
23 open for cross examination.

24 MR. MIDDLETON: No cross for these

1 witnesses.

2 COMMISSIONER BROWN-BLAND: Any cross?

3 MS. TOON: No.

4 COMMISSIONER BROWN-BLAND: Questions from  
5 the Commission?

6 (No response)

7 Well, Ms. Keyworth, I had a whole list here  
8 and I think you took care of my list.

9 EXAMINATION BY COMMISSIONER BROWN-BLAND:

10 Q I will ask you, Mr. Hiron, just so that I  
11 understand, if you look at, I think it's Witness  
12 Lee's rebuttal page 11, and there is where she  
13 discussed about the Pennsylvania framework, and  
14 it's indicated there in that quotation that the  
15 criteria is to determine the NPSO is an estimate.  
16 And then she goes on to say that the customer  
17 eligibility is not a criteria, the NPSO. Is that  
18 a statement that you agree with?

19 A It is not.

20 Q Could you further explain?

21 A Well, two points: First, I want to note that  
22 while it says that customer eligibility is not a  
23 criteria to estimate NPSO, if you were to look at  
24 the survey question that's the foundation of all

1 of the NPSO calculations, the project itself must  
2 be eligible. The survey asks about program  
3 eligible sales, so that is an eligibility issue  
4 to start. That I believe is P1 in the survey  
5 questionnaire. And I'm not sure of my exhibit  
6 number but it's included.

7 So that's the beginning. It has to be  
8 an eligible project to be included. And if there  
9 are -- well, it has to be an eligible project to  
10 be included. That's the first thing.

11 The second point I would make regarding  
12 the Pennsylvania framework in this context, it's  
13 a great framework. I'm happy that the Evaluator  
14 is using it in many respects and I think they  
15 followed it very closely most of the way. But in  
16 this regard, as I was asked earlier, the -- in  
17 Pennsylvania, customers are not permitted to opt  
18 out. And so the framework, while it doesn't  
19 explicitly state it, it's silent on the issue  
20 because it's irrelevant. So it's something that  
21 is relevant in this state but it's not relevant  
22 in that State of Pennsylvania. So it's not a  
23 one-size-fits-all framework.

24 Q And I think you, like Ms. Keyworth, anticipated

1           where I was going, also. But did the rebuttal  
2           testimony address your issue, stated issue about  
3           the eligibility of the project itself? Did it  
4           address it to your satisfaction or did it  
5           eliminate your --

6   A       Are you referring to --

7   Q       You said there was two reasons. One, that the  
8           customers had opted out and, therefore, were  
9           ineligible, and also that the projects were not  
10          ineligible. So I read -- I read the rebuttal  
11          testimony of Witness Lee to be about the customer  
12          eligibility and I'm asking you did it also -- did  
13          her rebuttal testimony address your concern about  
14          the eligibility of the project?

15   A       I do not believe so. If you could direct me to  
16          the page where she discusses that, but I don't  
17          believe so.

18   Q       Well, I don't -- so I was looking at 11 as the  
19          place where she was addressing -- but again,  
20          that's on -- even the question on line 6 says the  
21          customers. So I didn't know if the Company's  
22          response met your two reasons or just one.

23   A       I believe that this section of the rebuttal  
24          testimony only addresses the opt-out concern.

1 Q And were you aware of the testimony addressing  
2 your other concern?

3 A Yes, I was aware.

4 Q I mean, did it in fact address or you don't know  
5 or you can't recall right now?

6 A No. I do not believe it addressed the project  
7 eligibility concern. It addressed specifically  
8 customer eligibility.

9 Q And --

10 A And if I may add, just to reiterate, the criteria  
11 that is listed on page 11 is, one, that it was --  
12 the project was influenced by the Program. But  
13 if you were to go back and look at the survey  
14 questions, the very first question asks  
15 specifically about program-eligible sales.

16 Q And if you turn to page 12 of that rebuttal  
17 testimony, lines 21 to 23, and going over to the  
18 next page, is that recommendation there one that  
19 you and the Public Staff agree with? The  
20 Evaluator recommends in the future that the  
21 estimate is proportioned.

22 A Yes, I agree with that.

23 COMMISSIONER BROWN-BLAND: All right. Any  
24 other questions from the Commission? Commissioner

1 Kemerait?

2 EXAMINATION BY COMMISSIONER KEMERAIT:

3 Q And Mr. Hiron, I did not catch -- I tried to  
4 write it down -- your recommendations on pages 35  
5 and 36. Can you state again which one of  
6 those -- which of those recommendations have been  
7 fully resolved with DEP? I heard 1, 2, 4 and --

8 A 1, 2 and 4.

9 Q Okay. So number 5 has not been resolved; is that  
10 correct?

11 A Correct.

12 Q And can you respond to Mr. Fields' testimony  
13 earlier when he explained why he believes that  
14 the opt-out or ineligible benefit should be  
15 included in NPSO and he said that the ineligible  
16 projects or the opt-outs provide system benefits  
17 without any incentive. And can you provide your  
18 response to his claim that Duke has a good story  
19 to tell about system benefits without incentives?

20 A Okay. I have two or three points on that.  
21 First, I believe that the methodology used in  
22 this report is not consistent with all of the  
23 other nonresidential program evaluation reports  
24 that have been filed. I believe there are other

1 reports which have a qualification question that  
2 screens out opt-out customers. So that's one  
3 element. I believe that's in Fields Exhibit I of  
4 this docket.

5 Regarding specifically what he said  
6 today, what Witness Fields said today, you know,  
7 taking it one step back, the reason I noted in my  
8 testimony that I believed it was a  
9 cross-subsidization was based on the fact that if  
10 a sale, if a revenue is lost based on the Program  
11 but it is lost because of participation by an  
12 opt-out customer, there is no consequence to that  
13 customer. Their rates don't change. The  
14 customers who are paying the Rider have to foot  
15 that bill. And so that's really as far as I  
16 wanted to take that. It was just more of a  
17 conceptual discussion about opt-outs and  
18 cross-subsidization as far as how that impacts  
19 the cost-recovery mechanism. That's not my area  
20 of expertise so I would defer any of those  
21 questions to Witness --

22 WITNESS BOSWELL: Witness Boswell. That's  
23 okay.

24 A (Mr. Fields) Boswell.



1 A (Ms. Boswell) The Public Staff, at this point,  
2 believes that the Company does have its opinion.  
3 We don't necessarily agree with said opinion but  
4 we believe that the opt-out situation, because  
5 the mechanism is currently silent to it, is best  
6 handled within the confines of a mechanism  
7 review.

8 Q And Ms. Boswell, are you able to respond  
9 specifically to Mr. Fields' statement about the  
10 overall system benefits that would be provided,  
11 or any response to that?

12 A I am not. I know that they believe that there  
13 are overall system benefits. I don't believe  
14 that the Public Staff is of the same opinion as  
15 far as who should be responsible for paying for  
16 it. Again, I think that that's something that  
17 needs to be worked out within the confines of the  
18 next mechanism review.

19 MS. KEMERAIT: Thank you.

20 EXAMINATION BY COMMISSIONER BROWN-BLAND:

21 Q And Ms. Boswell, I do believe in a response to a  
22 question from your counsel you indicated there  
23 was still a calculation you didn't agree with or  
24 something you didn't agree with. Could you

1 explain just as much as you can fully for the  
2 record what disagreement remains from the Public  
3 Staff's side?

4 A (Ms. Boswell) I will attempt to. It is my  
5 understanding that per Witness Hirons and Witness  
6 Williamson, we don't necessarily agree with the  
7 full methodology the Company utilized in  
8 calculating the percentage but we can accept the  
9 percentage for the purposes of this proceeding.

10 Q And would either of them like to explain whether  
11 there is significance? Is there significance to  
12 why you don't agree with the calculation or, for  
13 our purposes in this docket, that it's just no  
14 longer significant?

15 A (Mr. Hirons) Recognizing that in this proceeding  
16 the number is not significant one way or the  
17 other, I would say that it is so important to get  
18 the methodology in alignment with best practices  
19 and something that the Public Staff agrees with,  
20 because there could be consequences in future  
21 rider proceedings if the methodology allows a lot  
22 of nonparticipant spillover that either is not  
23 being calculated correctly or other areas of  
24 methodology inconsistency. There could be a

1 consequence further down the road. So it's  
2 not -- it's a moot point from a dollars  
3 perspective and a savings perspective in this  
4 proceeding, but I still think it's important to  
5 get this right going forward.

6 Q And so going forward that's a conversation that  
7 the Public Staff is willing and ready to engage  
8 in?

9 A We intend to; yes.

10 COMMISSIONER BROWN-BLAND: All right. If  
11 there are no other questions from the Commission, any  
12 questions on the Commission's questions?

13 Ms. Latoon -- or Ms. Toon?

14 MS. TOON: No questions.

15 MR. MIDDLETON: Just a few brief questions.

16 EXAMINATION BY MR. MIDDLETON:

17 Q Mr. Hirons, you received some Commission  
18 questions on the Pennsylvania framework. I think  
19 we probably agree on a few aspects of that and  
20 I'd just like to bring that out.

21 So I think you called the Pennsylvania  
22 framework a great framework, so you would agree  
23 that it's an industry standard framework; is that  
24 correct?

1 A (Mr. Hiron) I would agree with that.

2 Q And so you also agree that it's based upon the  
3 Department of Energy's Uniform Methods Project;  
4 is that correct?

5 A I would agree subject to review and caveating  
6 that it may not be one-for-one alignment, but the  
7 document you cited there did inform many of the  
8 chapters of the framework.

9 Q Okay. And just a last question and I'll be  
10 brief. And then utilizing the framework, the  
11 survey is conducted pursuant to that framework.  
12 Isn't it true that the Company surveyed North  
13 Carolina contractors.

14 A It is true, but I believe there are also South  
15 Carolina contractors as well.

16 Q Okay. Thank you, Mr. Hiron.

17 MR. MIDDLETON: No further questions.

18 COMMISSIONER BROWN-BLAND: All right.

19 MS. KEYWORTH: A couple of questions from  
20 the Public Staff. Thanks.

21 EXAMINATION BY MS. KEYWORTH:

22 Q Mr. Hiron, in your review of the 2020 and 2023  
23 evaluation reports for this custom program, were  
24 ineligible projects explicitly removed from the

1 analysis by the Evaluator?

2 A (Mr. Hiron) They were not.

3 Q Okay.

4 A Could you restate the question to make sure I  
5 understood it?

6 Q Yes. So in your review of the 2020 and 2023  
7 evaluation --

8 A I'm sorry. I thought you said 2022 the first  
9 time.

10 Q So in your review of the evaluation reports --  
11 and I'm sorry, I said the custom program. I am  
12 referring to the prescriptive program. Were  
13 ineligible projects explicitly removed from the  
14 analysis by the Evaluator?

15 A Yes, in both cases.

16 Q Okay. And so -- back on the opt-outs topic.  
17 Customers that are opted out -- excuse me.  
18 Customers that are opted in have to pay Duke for  
19 the lost revenues of the opted-out customers; is  
20 that correct?

21 A That is correct to the extent that we're just  
22 talking about nonparticipant spillover. That's  
23 the really, the only relevant time that this  
24 comes up.

1 Q And they are also paying the incentive as well;  
2 the opted-in customers?

3 A The opted-in customers are not paying. The  
4 opted-in customers are participating without an  
5 incentive. That is the conclusion of the  
6 nonparticipant spillover methodology, that they  
7 are participating without an incentive.

8 Q Okay.

9 MS. KEYWORTH: That's it from the Public  
10 Staff. Thank you.

11 COMMISSIONER BROWN-BLAND: Before this panel  
12 is excused, are there motions?

13 MS. KEYWORTH: Yes. Thank you, Commissioner  
14 Brown-Bland. The Public Staff moves that the exhibits  
15 attached to the prefiled direct testimony of Witnesses  
16 Williamson and Hirons be entered into the record and  
17 marked for identification as premarked.

18 COMMISSIONER BROWN-BLAND: They've already  
19 been marked as they were premarked and identified and  
20 they will now be received into evidence, there being  
21 no objections.

22 (WHEREUPON, Williamson  
23 Exhibits 1 and 2, and  
24 Hirons Exhibits 1 - 7 are

1 received into evidence.)

2 COMMISSIONER BROWN-BLAND: This panel is  
3 excused.

4 MS. BOSWELL: Thank you.

5 MR. HIRONS: Thank you.

6 COMMISSIONER BROWN-BLAND: Is there anything  
7 else to come before the Commission by way of evidence?

8 MS. TOON: Nothing from the Company.

9 MS. KEYWORTH: (Shakes head no).

10 COMMISSIONER BROWN-BLAND: So I think that  
11 brings us to the end, and the last bit of business is  
12 the proposed orders, which would typically be due 30  
13 days from the notification of publication of the  
14 transcript. Is this good with everybody?

15 MS. TOON: Good with Duke.

16 MS. KEYWORTH: (Nods head in agreement).

17 COMMISSIONER BROWN-BLAND: So ordered. And  
18 there being nothing else to come before us this  
19 morning, we'll stand adjourned. Thank you.

20 (The proceedings were adjourned)

21

22

23

24

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

C E R T I F I C A T E

I, KIM T. MITCHELL, do hereby certify that the Proceedings in the above-captioned matter were taken before me, that I did report in stenographic shorthand the Proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

Kim T. Mitchell

Kim T. Mitchell