

# SOUTHERN ENVIRONMENTAL LAW CENTER

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August 24, 2021

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

**RE: 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, Docket No. E-2 Sub 1294**

Dear Ms. Dunston:

Enclosed for filing is the Direct Testimony and Exhibits of Forest Bradley-Wright on behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and Southern Alliance for Clean Energy.

Pursuant to Commission Rule R1-28(e)(1), we plan to deliver via overnight mail fifteen (15) three-hole punched paper copies, one of which shall be single-sided, of the entire filing to the Commission on or before August 25, 2021.

If you have any questions, please let me know.

Sincerely,



David L. Neal

Enclosures  
cc: Parties of Record

**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 )

**Docket No. E-2, Sub 1294**

**DIRECT TESTIMONY AND EXHIBITS OF**

**FOREST BRADLEY-WRIGHT**

**ON BEHALF OF**

**THE NORTH CAROLINA JUSTICE CENTER,  
NORTH CAROLINA HOUSING COALITION, AND  
SOUTHERN ALLIANCE FOR CLEAN ENERGY**

**August 24, 2022**

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## EXHIBITS

- Exhibit FBW-1: Resume of Forest Bradley-Wright
- Exhibit FBW-2: DEP Response to SACE *et al.* Data Request 1-8 in Duke Energy Progress DSM/EE Rider Docket E-2, Sub 1294
- Exhibit FBW-3: DEP Response to SACE *et al.* Data Request 1-16 in Duke Energy Progress DSM/EE Rider Docket No. E-2, Sub 1252
- Exhibit FBW-4: DEP Response to SACE *et al.* Data Request 1-4 in Duke Energy Progress DSM/EE Rider Docket No. E-2, Sub 1294.

1

**I. Introduction and Qualifications**2 **Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**3 A. My name is Forest Bradley-Wright. I am the Energy Efficiency Director for  
4 Southern Alliance for Clean Energy (“SACE”), and my business address is 3804  
5 Middlebrook Pike, Knoxville, Tennessee.6 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS**  
7 **PROCEEDING?**8 A. I am testifying on behalf of SACE, the North Carolina Justice Center (“Justice  
9 Center”), and the North Carolina Housing Coalition (“Housing Coalition”)  
10 (collectively, “Efficiency Intervenors”).11 **Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND WORK**  
12 **EXPERIENCE.**13 A. I graduated from Tulane University in 2001 and in 2013 received my Master of  
14 Arts degree from Tulane in Latin America Studies, with an emphasis on  
15 international development, sustainability, and natural resource planning.16 My work experience in the energy sector began in 2001 at Shell International  
17 Exploration and Production Company, where I served as a Sustainable  
18 Development Team Facilitator.19 From 2005 to 2018, I worked for the Alliance for Affordable Energy. As the  
20 Senior Policy Director, I represented the organization through formal intervenor  
21 filings and before regulators at both the Louisiana Public Service Commission  
22 and the New Orleans City Council on issues such as integrated resource planning,  
23 energy-efficiency rulemaking and program design, rate cases, utility acquisition,  
24 power plant certifications, net metering, and utility scale renewables. As a

1 consultant, I also prepared and filed intervenor comments on renewable energy  
2 dockets before the Mississippi and Alabama Public Service Commissions.

3 Since 2018, I have been the Energy Efficiency Director for SACE. In this  
4 role, I am responsible for leading dialogue with utilities and regulatory officials  
5 on issues related to energy efficiency in resource planning, program design,  
6 budgets, and cost recovery. This takes the form of formal testimony, comments,  
7 presentations, and/or informal meetings in the states of Georgia, Florida, North  
8 Carolina, South Carolina, Mississippi and in jurisdictions under the Tennessee  
9 Valley Authority. A copy of my resume is included as Exhibit FBW-1.

10 **Q. HAVE YOU BEEN AN EXPERT WITNESS ON ENERGY-EFFICIENCY**  
11 **MATTERS BEFORE THE NORTH CAROLINA UTILITIES**  
12 **COMMISSION?**

13 A. Yes, I filed expert witness testimony in response to Duke Energy Carolina's  
14 ("DEC") DSM/EE Recovery Riders in Docket Nos. E-7, Sub 1192, E-7, Sub  
15 1230, and E-7, Sub 1249, E-7, Sub 1265, and Duke Energy Progress' ("DEP" or  
16 "the Company") DSM/EE Recovery Riders in Docket Nos. E-2, Sub 1206, E-2,  
17 Sub 1252, and E-2, Sub 1273.

18 **Q. HAVE YOU BEEN AN EXPERT WITNESS ON ENERGY-EFFICIENCY**  
19 **MATTERS BEFORE OTHER PUBLIC UTILITY COMMISSIONS?**

20 A. Yes, I have filed expert witness testimony in Georgia related to Georgia Power  
21 Company's 2019 and 2022 Demand Side Management applications and in the  
22 five-year energy efficiency goal setting proceeding before the Florida Public  
23 Service Commission in 2019 for Florida Power & Light, Gulf Power, Duke  
24 Energy Florida, Tampa Electric Company, Jacksonville Electric Authority and  
25 Orlando Utilities Commission.

1 **II. Summary of Recommendations**

2 **Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR THE**  
3 **COMMISSION?**

4 A. My key recommendations for Commission consideration are for the Commission  
5 to Direct DEP to:

- 6 • Work with the Collaborative to develop a concrete, multiyear  
7 implementation plan to achieve the efficiency savings levels established  
8 in the Carbon Plan, as directed by the Commission’s final order in Docket  
9 E-100, Sub 179.
- 10 • Annually report the carbon reduction impacts of its DSM/EE portfolio in  
11 future rider proceedings, following a stakeholder process to inform how  
12 the carbon reduction impacts of Duke’s DSM/EE portfolio are to be  
13 quantified and tracked.
- 14 • Annually report on the steps it is taking to (1) increase participation and  
15 achieve higher total savings for low-income customers and (2) help  
16 bridge the gap between existing efficiency offerings and the scale of need  
17 identified by the Low-Income Affordability Collaborative.
- 18 • Include a calculation of its prior-year reported and future-year projected  
19 efficiency savings as a percentage of total annual retail sales in future  
20 DEP DSM/EE Rider filings and to indicate whether the Company  
21 anticipates achieving 1% savings to receive the \$500,000 performance  
22 bonus.
- 23 • Report to the Commission on an annual basis the progress the Company  
24 has made working with the Collaborative to advance stakeholder  
25 proposed recommendations to modify existing efficiency programs or  
26 create new programs.
- 27 • Track prior-year reported and future-year projected efficiency savings  
28 associated with Collaborative-sponsored program recommendations and  
29 report them to the Collaborative and in future DEP DSM/EE Rider filings.
- 30 • File a proposed plan with the Commission by January 31, 2023, for  
31 enhanced verification or reporting of self-certified DSM and EE opt outs  
32 to ensure the savings associated with those customers’ energy efficiency  
33 improvements are valid and consistent with the Company’s resource  
34 planning assumptions.





1 GWh it had projected for 2021<sup>3</sup> and still has not reached the 1% annual savings  
2 target agreed to in the Duke Energy-Progress Energy merger.<sup>4</sup>

3 **Table 1. Duke Energy Progress DSM/EE Performance 2017-2021**

Vintage Year	2017	2018	2019	2020	2021
At Meter Savings (GWh) <sup>5</sup>	359.9	380.2	350.0	305.3	326.3

4 **Q. WAS THE COMPANY'S EE PORTFOLIO COST-EFFECTIVE IN 2021?**

5 A. Yes. The value of DSM/EE programs continued to be cost-effective and  
6 delivered considerable financial value to customers. In 2021, DEP's DSM/EE  
7 portfolio had a Utility Cost Test ("UCT") score of 1.67.<sup>6</sup> Though lower than in  
8 previous years, DEP's portfolio of energy efficiency programs still delivered a  
9 total net present value ("NPV") of avoided costs in 2021 of approximately \$112  
10 million in financial benefit for customers.<sup>7</sup>

11 **Q. HOW DID RESIDENTIAL SAVINGS RELATE TO TOTAL SAVINGS IN**  
12 **2021?**

<sup>3</sup> DEP Response to SACE *et al.* Data Request 1-16 in DEP DSM/EE Rider Docket No. E-2, Sub 1252, attached as Exhibit FBW-3.

<sup>4</sup> The Merger Settlement with SACE, South Carolina Coastal Conservation League, and Environmental Defense Fund calls for annual energy savings of at least 1% of prior-year retail sales beginning in 2015 and cumulative savings of at least 7% over the period from 2014 through 2018. The Merger Settlement was approved by the Public Service Commission of South Carolina in Docket No. 2011-158-E. The 1% savings target has also been memorialized in the mechanism governing North Carolina programs, which provides an opportunity for the Company to earn a bonus incentive for achieving savings of 1% or more of prior year retail sales. *Order Approving DSM/EE Programs and Stipulation of Settlement*, Docket No. E-7, Sub 1032 (Oct. 29, 2013).

<sup>5</sup> Generator savings 2018-2020 obtained from Evans Exhibit 1, Pages 1-5 filed in NCUC Docket No. E-2, Sub 1273; 2017 savings obtained Evans Exhibit 1, Page 7 filed in NCUC Docket No. E-2, Sub 1206; converted to at the meter using line loss factor of 5.1%. Meter savings for 2021 from DEP Response to SACE *et al.* Data Request 1-8 in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-2.

<sup>6</sup> DEP Response to SACE *et al.* Data Request 1-4 in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-4.

<sup>7</sup> *Id.*

1 A. Residential programs have made up an increasing majority of savings in DEP's  
2 portfolio for the past several years and 2021 continued this trend. Residential  
3 programs represented 74% of all savings in 2021.<sup>8</sup> One residential program, My  
4 Home Energy Report (MyHER) now represents more than half (54%) of DEP's  
5 total reported system energy reductions. As noted, numerous times in previous  
6 years, I am concerned that the bulk of DEP's DSM/EE portfolio savings are from  
7 a behavioral program with such limited measure life persistence. We urge the  
8 Company to focus on implementing additional measures that achieve deeper and  
9 longer-lived savings to maintain a more balanced and robust program portfolio  
10 going forward.<sup>9</sup> These measures should include adding to or modifying programs  
11 that target the largest residential end uses of electricity – such as water heating,  
12 space heating and cooling, duct sealing, and comprehensive building envelop  
13 measures.

14 **Q. HOW DID NON-RESIDENTIAL SAVINGS RELATE TO TOTAL**  
15 **SAVINGS IN 2021?**

16 A. DEP's non-residential programs continued to decline to only 26% of total energy  
17 efficiency savings in 2021.<sup>10</sup> This was 36% below the Company's savings  
18 forecast in Docket E-2, Sub 1252. This continues a troubling downward trend  
19 that predates the pandemic. Non-residential savings have decreased 39% from  
20 2018-2021.<sup>11</sup>

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<sup>8</sup> Holbrook Exhibit 1, Page 11 filed in NCUC Docket No. E-2, Sub 1294.

<sup>9</sup> *Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center and Southern Alliance for Clean Energy*, Docket No. E-7, Sub 1192 (May 20, 2019).

<sup>10</sup> Holbrook Exhibit 1, Page 11 filed in NCUC Docket No. E-2, Sub 1294.

<sup>11</sup> *Id.*, pp. 5-11.

1 **Q. WHAT EFFECT DO COMMERCIAL AND INDUSTRIAL OPT OUTS**  
2 **HAVE ON PERCENT OF ENERGY SAVINGS?**

3 A. Commercial and industrial opt outs continue to negatively impact DEP's ability  
4 to reach higher savings benchmarks due to this group's large share of energy  
5 consumption. In a departure from previous years, DEP once again did not provide  
6 system wide data showing the percentage of its commercial and industrial  
7 customers that opted out of the DSM/EE riders, as requested in discovery. The  
8 data it referenced in its discovery response was only for North Carolina, where  
9 in 2021 approximately 55% of DEP's commercial and industrial energy  
10 consumption opted out of the utility's energy efficiency offerings (10,963 GWh  
11 out of 19,772 GWh of DEP's North Carolina non-residential retail sales).<sup>12</sup>  
12 Because commercial and industrial efficiency savings can be among the most  
13 economic, greater savings among these customers would likely translate into  
14 even higher utility-system cost reductions.

15 **Q. IS IT REASONABLE TO INCLUDE OPT-OUT CUSTOMERS IN A**  
16 **PERCENTAGE OF RETAIL SALES CALCULATION?**

17 A. Yes. By calculating energy savings compared to all retail sales, the Commission  
18 can observe the effect of the efficiency portfolio against actual customer energy  
19 consumption in a year. It is also important that the Commission be able to readily  
20 review the impact that opt-out provisions have on overall savings. Because DEP  
21 did not provide system level opt out figures, it is not possible to compare its 2021  
22 efficiency performance as a percentage of retail sales with and without opt out  
23 customers as I have done in past proceedings. It is clear, however, that opt outs

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<sup>12</sup> DEP Response to SACE *et al.* Data Request 1-8c in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-2.

1 continue to drag down DEP's total efficiency savings, which could otherwise be  
2 much higher.

3 **Q. HAVE ALL CUSTOMERS WHO HAVE OPTED OUT MET THE**  
4 **ELIGIBILITY CRITERIA?**

5 A. It is hard to know conclusively, but a reasonable person would suspect that many  
6 customers who opt out may not have satisfied the requirements of making  
7 efficiency improvements at their facilities, despite it being an eligibility  
8 requirement for self-certification. This concern stems from the lack real world  
9 verification of eligibility, and no enforcement in practice.

10 **Q. WHAT ARE THE RESULTING CONSEQUENCE OF UNVERIFIED OPT**  
11 **OUTS ON UTILITY SYSTEM COSTS AND THE COSTS BORNE BY**  
12 **OTHERS?**

13 A. When analyzed by the Utility System Cost test, all cost-effective DSM and EE  
14 programs reduce utility system costs, which in turn lower costs for all customers.  
15 Like any other resource investment, these benefits have a cost, but the cost is  
16 being borne unequally because unverified eligibility by opt-out customers reduce  
17 funding for the DSM and EE programs.

18 Though speaking with regard to a residential program, Duke Witness Karen  
19 Holbrook makes important points that bears consideration here:

20 A UCT score of higher than 1 means that the utility system  
21 savings, that is, reductions in DEP's generation capacity  
22 costs, transmission and distribution capacity costs, and  
23 energy costs resulting from the program, outweigh the  
24 program costs to the utility. Thus, all customers enjoy the  
25 benefits of these lesser costs because DEP has avoided  
26 generation capacity costs, transmission and distribution

1 capacity costs and energy costs that would otherwise be  
2 passed along to its ratepayers. . . .<sup>13</sup>

3 Because all utility system retail customers benefit from cost-  
4 effective EE programs (the avoided costs from the programs  
5 exceed the program costs), all of the Company's retail  
6 customers (except for certain large commercial or industrial  
7 customers) pay under the Company's DSM/EE rider. All  
8 cost-effective EE programs deliver greater system value;  
9 thus, the Company's ratepayers (except for certain large  
10 commercial or industrial customers) all pay under the  
11 Company's DSM/EE riders. When an EE program is first  
12 approved by the Commission and in every subsequent  
13 annual cost recovery proceeding while the EE program  
14 remains in effect, the Commission reviews its cost-  
15 effectiveness.<sup>14</sup>

16 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

17 A. A logical next step would be for the Commission to direct DEP to file a proposed  
18 plan with the Commission by January 31, 2023, for enhanced verification or  
19 reporting of self-certified DSM and EE opt outs to ensure the savings associated  
20 with those customers' energy efficiency improvements are valid and consistent  
21 with the Company's resource planning assumptions.

22 **Q. HOW DID DEP'S LOW-INCOME EFFICIENCY IMPACTS COMPARE**  
23 **TO PREVIOUS YEARS?**

24 A. DEP's only full-scale income qualified energy efficiency program,  
25 Neighborhood Energy Saver (NES), continued to underperform during the  
26 persistence of the COVID-19 pandemic. Like in 2020, DEP's NES program  
27 captured just 16% of its pre-pandemic savings performance in 2021.<sup>15</sup> .  
28 Unfortunately, this reduction in energy saving services came at a time when low-

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<sup>13</sup> Holbrook direct testimony E-2, Sub 1294 page 23.

<sup>14</sup> Holbrook direct testimony E-2, Sub 1294 page 22.

<sup>15</sup> Holbrook Exhibit 1, pp. 5-11.

1 income customers were facing the hardest economic circumstances in recent  
 2 history. Likewise, the Multi-Family Energy Efficiency program, which benefits  
 3 significant numbers of low-income customers, was similarly impacted with an  
 4 88% reduction in 2021 savings relative to its pre-pandemic performance. Both of  
 5 these programs experienced declines that vastly exceeded the negative impact to  
 6 total residential programs.

7 **Table 4. DEP Savings by Residential Customer / Program Type<sup>16</sup>**

Customer/Program Type	Energy Savings (GWh)				% Change
	2018	2019	2020	2021	2019-2020
Neighborhood Energy Saver	3.5	3.7	0.5	0.6	-84%
Multi-Family	13.8	11.9	2.8	1.5	-88%
<b>All Residential Programs</b>	<b>251.9</b>	<b>254.5</b>	<b>229.4</b>	<b>254</b>	<b>-0.2%</b>

8 Continued growth of efficiency savings for low-income customers has been  
 9 a consistent focus at the Collaborative and Duke has shown a willingness to  
 10 engage on this issue. However, as noted in my testimony last year in Docket E-  
 11 2, Sub 1273 and the previous year in E-2, Sub 1252, the spending and impact of  
 12 DEP's programs that aim specifically to serve low-income customers lag far  
 13 behind what DEC has been delivering, which raises significant concerns. Going  
 14 forward, rollout of the long-delayed Neighborhood Energy Saver 2.0 expanded  
 15 measure offerings and DEP's request for Commission of approval of an Income  
 16 Qualified Weatherization program comparable to the one offered by DEC could  
 17 help to close the savings gap between the two companies and deliver much

<sup>16</sup> *Id.*

1 needed deep efficiency savings to low-income households. We applaud Duke for  
2 these efforts and strongly encourage the Commission to support these, and further  
3 efforts, to serve low-income customers who are most in need of efficiency's  
4 benefits.

5 **IV. Observations Concerning Duke Energy Progress' 2023 Savings Forecast**

6 **Q. WHAT LEVEL OF SAVINGS DOES DEP PROJECT FOR 2023?**

7 A. DEP projects that it will achieve approximately 353.5 GWh of energy savings at  
8 the meter from both residential and non-residential programs in 2023.<sup>17</sup> This  
9 projection represents an increase from the 326.3 GWh of at the meter savings  
10 DEP reported for COVID-impacted 2021, but it is a decrease from the 397.7  
11 GWh savings levels forecasted by DEP for 2022 in last year's filing.<sup>18</sup> Notably,  
12 DEP is forecasting higher UCT cost effectiveness scores for 2023 than it reported  
13 in 2020 and 2021, which should result in more financial savings for customers.<sup>19</sup>

14 **Q. HOW DO DEP'S FORECASTED EFFICIENCY SAVINGS RELATE TO**  
15 **ITS PROJECTED ANNUAL RETAIL SALES?**

16 A. Efficiency savings as a percentage of annual retail electric sales is the central  
17 metric by which utility efficiency performance is commonly calculated and  
18 compared. Since the merger between Duke Energy and Progress Energy, a 1%  
19 annual efficiency savings target has served as a primary benchmark for  
20 evaluating Duke Energy's efficiency performance at the portfolio level in the  
21 Carolinas.

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<sup>17</sup> DEP Response to SACE *et al.* Data Request 1-8 in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-2.

<sup>18</sup> *Id.*

<sup>19</sup> DEP Response to SACE *et al.* Data Request 1-4 in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-4.

1 **Q. WHY IS TRACKING DEP'S PERFORMANCE AGAINST THE 1%**  
2 **SAVINGS TARGET STILL IMPORTANT?**

3 A. Under the Commission's most recent Duke EE Mechanism Order,<sup>20</sup> calculating  
4 DEP's efficiency savings as a percentage of annual retail sales is also necessary  
5 to determine whether the Company is entitled to a \$500,000 performance  
6 incentive bonus for exceeding 1% of total annual retail sales.<sup>21</sup> The  
7 Commission's order modified the mechanism by which Duke's energy efficiency  
8 performance incentive payments are set, including establishing a \$500,000 bonus  
9 incentive payment for any year during the four-year period of 2022-2025 where  
10 Duke achieves 1% of prior-year retail sales from efficiency.<sup>22</sup> The Commission  
11 indicated that the purpose of the incentive is "to motivate the Company to  
12 aggressively pursue savings from cost-effective EE and DSM Programs."

13 **Q. DID DEP INCLUDE A CALCULATION OF PERCENT ANNUAL**  
14 **SAVINGS FOR ITS 2023 FORECAST IN ITS RIDER APPLICATION?**

15 A. No. DEP made no reference to the 1% performance incentive target in its  
16 application, and it did not provide its own calculation indicating the level of  
17 savings as a percentage of retail sales it expects to achieve in 2023. Nor did the  
18 Company provide a 2023 system level retail sales forecast in response to our  
19 discovery request, which is needed to analyze whether the Company's forecasted

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<sup>20</sup> E-2, Sub 931.

<sup>21</sup> In a departure from previous years, in 2021 DEP objected to our discovery request seeking the relatively simple calculation of its annual savings as a percentage of previous year's sales – by which a comparison to the 1% savings target can be made.

<sup>22</sup> This target was a key feature of the recently approved Settlement Agreement negotiated between DEP, DEC, the Natural Resources Defense Council ("NRDC"), SACE, Sierra Club, South Carolina Coastal Conservation League ("SCCCL"), North Carolina Sustainable Energy Association ("NCSEA"), and the North Carolina Attorney General's Office ("AGO"), (collectively the "Joint Parties"). That agreement was approved by the Commission in October 2020, and its provisions go into effect for the first time in 2022.



1 efficiency savings levels are on track to meet the 1% savings criteria outlined in  
2 the Commission's DSM/EE Mechanism Order.

3 **Q. WERE YOU ABLE TO ESTIMATE DEP'S 2023 EFFICIENCY SAVINGS**  
4 **FORECAST AS A PERCENTAGE OF ANNUAL RETAIL SALES?**

5 A. Yes. Using the North Carolina retail sales forecast Duke provided in discovery<sup>23</sup>  
6 and its NC Retail kWh Sales Allocation Factor<sup>24</sup> to forecast the Company's  
7 system-wide retail sales, I estimate that DEP's forecasted 2023 efficiency savings  
8 will equal about 0.79% of annual retail sales. This is higher than the 0.75% annual  
9 savings DEP achieved in 2021, but lower than DEP's performance prior to the  
10 pandemic and substantially less than DEC has historically achieved.

11 **Q. HOW DOES DEP'S 2023 EFFICIENCY SAVINGS FORECAST**  
12 **COMPARE TO THE 1% ANNUAL EFFICIENCY SAVINGS TARGET?**

13 A. DEC's forecasted efficiency savings for 2023 are well below the 1% annual  
14 savings mark needed to receive the additional \$500,000 performance incentive  
15 codified in the Commission's latest DSM/EE Cost Recovery Mechanism.

16 Despite the merger settlement, DEP has yet to achieve 1% annual savings.  
17 Nor has the Company ever forecasted achieving 1% savings in any prior  
18 DSM/EE Rider docket filing. By contrast, DEC exceeded 1% annual savings in  
19 2017 and 2018, and nearly reached it again with 0.98% savings in 2019.<sup>25</sup>

20 **Q. SHOULD DEP CONTINUE PURSUING HIGHER LEVELS OF SAVINGS**  
21 **IN 2023?**

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<sup>23</sup> DEP Response to SACE *et al.* Data Request 1-8c in DEP DSM/EE Rider Docket No. E-2, Sub 1294, attached as Exhibit FBW-2.

<sup>24</sup> Holbrook Exhibit 1.

<sup>25</sup> *Direct Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and Southern Alliance for Clean Energy*, Docket No. E-7, Sub 1230 at p. 7 (May 22, 2020).

1 A. Yes. The Company could still exceed its efficiency savings forecast for 2023 and  
2 achieve savings greater than 1% but given past performance it is unlikely to do  
3 so without a defined plan or direction from the Commission.

4 **Q. IF DEP IS PRESENTING CONSERVATIVE FORECASTS IN ITS**  
5 **ANNUAL RIDER FILINGS, IS THERE STILL VALUE IN SHOWING**  
6 **HOW IT WOULD ACHIEVE HIGHER SAVINGS LEVELS?**

7 A. Yes. Even if DEP has presented a conservative estimate of forecasted 2023  
8 savings for the purposes of establishing the charges it will collect from customers  
9 through the rider, it should acknowledge in its DSM/EE Rider filings that the  
10 Commission, Efficiency Intervenors, and members of the Collaborative will be  
11 comparing the Company's 2023 savings forecast with the 1% annual savings  
12 target. DEP could additionally state its intent to strive for these higher levels,  
13 while indicating what course of action it believes would enable to successfully  
14 achieve those more ambitious goals. With the additional performance incentive  
15 bonus for reaching 1% annual savings in effect from 2022-2025, this would also  
16 give the Commission a sense of potential future cost recovery associated with the  
17 Company's annual savings forecast.

18 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

19 A. I recommend the Commission direct DEP to include a calculation of its  
20 forecasted savings as a percentage of total annual retail sales in future rider filings  
21 and indicate whether the Company anticipates achieving 1% savings to receive  
22 the \$500,000 performance bonus.

1       **V. Achieving Greater Efficiency Savings Impact for Low-Income Customers**

2       **Q.     WHAT HAS THE COMMISSION PREVIOUSLY SAID REGARDING**  
3       **THE DEVELOPMENT OF LOW-INCOME ENERGY EFFICIENCY**  
4       **PROGRAMS IN ITS PREVIOUS ORDERS?**

5       A.     Consistent with its statements in previous years, the Commission’s Final Order  
6       in the 2021 DEP Rider Docket E-2, sub 1273 stated:

7                     The Collaborative, however, should continue to emphasize  
8                     developing EE programs that assist low-income customers  
9                     in saving energy and reducing their energy burdens.

10      **Q.     WHAT LEVEL OF SAVINGS DOES DEP PROJECT FOR ITS LOW-**  
11      **INCOME PROGRAMS IN 2023?**

12      A.     Neighborhood Energy Saver accounts for 4.6 GWh of system energy reductions  
13      in DEP’s estimated load impacts for 2023.<sup>26</sup> This accounts for just over 1% of  
14      the Company’s total residential energy savings in 2023, which is higher than the  
15      Company’s pre-pandemic savings performance but essentially unchanged from  
16      what DEP forecasted for 2022.<sup>27</sup> As filed, this is DEP’s only income-qualified  
17      efficiency program with forecasted savings for 2023.

18      **Q.     HOW DO OVERALL SAVINGS LEVELS FOR LOW-INCOME**  
19      **EFFICIENCY PROGRAMS AT DEP COMPARE TO THOSE AT DEC?**

20      A.     In past years, DEP’s low-income efficiency program performance has trailed far  
21      behind DEC. In 2019, DEP’s 3.7 GWh of savings<sup>28</sup> paled in comparison to the  
22      more than 9 GWh DEC saved customers through its low-income efficiency  
23      programs.<sup>29</sup> For 2023, DEP is projecting 4.6 GWh of savings from its income  
24      qualified efficiency programs. DEC’s projected 9.1 GWh of low-income

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<sup>26</sup> Holbrook Exhibit 1, p. 13, NCUC Docket No. E-2, Sub 1294.

<sup>27</sup> Evans Exhibit 1, p. 7, Docket No. E-2, Sub 1273.

<sup>28</sup> Holbrook Exhibit 1, p. 7, Docket No. E-2, Sub 1294.

<sup>29</sup> Evans Exhibit 1, p. 3, Docket No. E-7, Sub 1230.

1 program savings for 2023<sup>30</sup> are 197% higher than DEP's and its annual budget is  
2 259% higher, despite DEC having only 68% more residential customer  
3 accounts.<sup>31</sup>

4 **Q. COULD DEP STILL INCREASE EFFICIENCY SAVINGS FOR ITS**  
5 **LOW-INCOME CUSTOMERS IN 2023?**

6 A. Yes. DEP has submitted a new program application to the Commission that  
7 would essentially replicate a successful program currently offered by DEC: the  
8 Income-Qualified Energy Efficiency and Weatherization Program. The  
9 Efficiency Intervenors have long advocated for DEP to deploy such a program,<sup>32</sup>  
10 both as a strategy to help close the savings gap between DEC and DEP and to  
11 make deeper efficiency services available to customers who struggle to afford  
12 their energy bills. As stated in supportive comments filed in Docket E-2, Sub  
13 1299, we applaud DEP for filing this new program application and urge the  
14 Commission to approve it. We also believe that DEC's experience with the  
15 program and additional insights drawn from a related pilot it deployed in the  
16 Durham community offer valuable lessons learned that will aid DEP's success  
17 with this program. If approved, DEP expects to spend approximately \$2.2 million  
18 annually and projects over 900 MWh of annual efficiency savings.

19 Additionally, DEP received Commission approval for an expansion of  
20 measure offerings in the Neighborhood Energy Saver program, including  
21 measures intended to deliver deeper savings for customers with relatively high

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<sup>30</sup> Evans Exhibit 1, p. 5, Docket No. E-7, Sub 1249.

<sup>31</sup> EIA 861 2021.

<sup>32</sup> See direct testimony of Forest Bradley-Wright in Dockets E-2, Sub 1206, E-2, Sub 1252, and E-2, Sub 1273.

1 energy intensity. Unfortunately, the pandemic initially hampered implementation  
2 of this program, but we understand the Company is in the process of ramping up  
3 deployment.

4 In rebuttal testimony filed last year, DEP witness Bob Evans emphasized that  
5 program budgets do not represent a ceiling on spending, while noting that Duke's  
6 spending would increase if program participation was higher.<sup>33</sup> Given the  
7 relatively large number of households served by the NES program, and the  
8 comparatively modest savings provided through the traditional NES measures, it  
9 seems likely that delivery of the new NES 2.0 measures could result in a  
10 significant increase in participation for deeper savings measures. Therefore, we  
11 strongly encourage Duke to strive to increase overall low-income savings  
12 through a robust deployment of NES 2.0 measures to low-income households.  
13 While greater flexibility on cost effectiveness is customarily allowed for  
14 programs designed to serve low-income households, notably DEP now indicates  
15 that NES has a UCT cost effectiveness score of 1.08,<sup>34</sup> making it even more  
16 appropriate to expand this program now.

17 **Q. WHAT INSIGHTS CAN BE DRAWN REGARDING THE NEED FOR**  
18 **ENERGY EFFICIENCY FROM THE WORK OF THE LOW-INCOME**  
19 **AFFORDABILITY COLLABORATIVE?**

20 A. The Low-Income Affordability Collaborative (LIAC) was created in response to  
21 concerns about energy affordability during the 2019 rate case.<sup>35</sup> The overarching  
22 aim of the LIAC was to gain a better understanding of the affordability challenges

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<sup>33</sup> Docket E-2, Sub 1273 Evans Rebuttal pg. 6.

<sup>34</sup> Holbrook Exhibit 7, NCUC Docket No. E-2, Sub 1294.

<sup>35</sup> Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice, Docket No. E-2, Sub 1219 (Apr. 16, 2021).

1 customers were facing while assessing existing program offerings and  
2 identifying additional actions that could make electricity bills more affordable  
3 for Duke's low- and moderate-income customers. Over the course of the LIAC's  
4 work, it became abundantly clear that energy efficiency was a critical tool to  
5 address energy affordability challenges, and that the scale of need far exceeds the  
6 energy efficiency offerings currently available.

7 The report states that approximately 29% of DEC and DEP residential  
8 accounts fall below 200% of the Federal Poverty Guideline, and therefore qualify  
9 as low-income for Duke's income-qualified efficiency programs.<sup>36</sup> This equates  
10 to an estimated 900,000 households meeting the low-income criteria.<sup>37</sup> Further  
11 analysis indicates that approximately 490,000 households meet Duke's definition  
12 for struggling with arrears.<sup>38</sup>

13 Both Duke and Public Staff provided their perspective on the findings of the  
14 LIAC.

15 **Q. WHAT DID PUBLIC STAFF SAY ABOUT ENERGY EFFICIENCY IN**  
16 **THE LIAC REPORT?**

17 A. Notably, in their concluding remarks Public Staff stated the following regarding  
18 how energy efficiency fits into assisting low-income customers:

- 19 • "There are two primary opportunities to assist low-income customers in  
20 paying their electric energy bills: (1) reduction of customer usage through  
21 participation in energy efficiency programs, or (2) bill assistance, which  
22 is usually for a short term, or through low-income rates."<sup>39</sup>

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<sup>36</sup> LIAC Report pg. 9.

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*, pg. 10.

<sup>39</sup> LIAC Report pg. 85.

- 1           •        “Any bill assistance or low-income rates should include participation in  
2                    the full suite of low-income energy efficiency programs available as  
3                    applicable to the individual customer’s circumstances.”<sup>40</sup>

4   **Q.    DID DUKE EXPRESS SUPPORT FOR ENERGY EFFICIENCY IN THE**  
5   **LIAC REPORT?**

6   A.    Yes, and Duke is to be commended for the substantial contribution of time and  
7           effort it put into gathering and analyzing data on affordability challenges faced  
8           by its customers during the LIAC process. The Company also provided extensive  
9           background information on its existing programs and services. Most of the  
10          recommendations proposed by the LIAC were developed by other stakeholders,  
11          but it is clear that Duke recognized the collective emphasis placed on efficiency  
12          when stating: “Fourteen of the twenty-two proposals recommended by LIAC  
13          were related to expanding energy efficiency programs and offerings to income  
14          qualified customers.”<sup>41</sup> The Company further acknowledged that “The  
15          assessment provides valuable insight for Duke Energy to increase program  
16          participation in its existing customer assistance and energy efficiency  
17          programs.”<sup>42</sup>

18                It goes on to state that “Duke Energy agrees with the LIAC and recommends  
19                improvements be made to the existing energy efficiency programs to increase  
20                program participation and energy savings...,”<sup>43</sup> before listing off several specific  
21                examples.

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<sup>40</sup> LIAC Report pg. 86.

<sup>41</sup> *Id.*, pg. 78.

<sup>42</sup> *Id.*, pg. 30.

<sup>43</sup> *Id.*

1           Finally, echoing a concern raised by the Efficiency Intervenors in DEP’s rider  
2 proceedings, the Company states:

3           Duke Energy recognizes the difference or “gap” in both  
4 energy savings and program spending for energy efficiency  
5 offered in DEC and DEP...As Duke Energy continues to  
6 identify opportunities to offer additional energy efficiency  
7 programs and work toward increasing participation, there is  
8 a likelihood that the gap will be reduced.

9   **Q.   HOW CAN THE EE COLLABORATIVE ADVANCE THE WORK AND**  
10 **LESSONS LEARNED FROM THE LOW-INCOME AFFORDABILITY**  
11 **COLLABORATIVE?**

12   A.   Responding to a clear issue, the Low-Income Affordability Collaborative  
13 validated and reinforced that energy affordability is a significant issue for many  
14 of Duke’s residential customers, and that energy efficiency is a vital part of the  
15 solution. Many of the recommendations raised during the LIAC overlap with  
16 similar recommendations made through the EE Collaborative and past Duke  
17 DSM/EE Rider proceedings. In response, Duke is taking important steps to act  
18 on some of these recommendations. For instance, DEP has filed an application  
19 to the Commission for an Income-Qualified Efficiency and Weatherization  
20 Program, which would increase low-income customer access to deep efficiency  
21 retrofits and help close the savings gap with its sister company DEC. And DEC  
22 has filed an application with the Commission for the Residential Income  
23 Qualified High Energy Use Pilot, which may serve as a model for delivering even  
24 more deep efficiency retrofits to low-income customers in the future.

25           Fundamentally, all agree that the core issue is increasing efficiency program  
26 participation opportunities for low-income customers. Recent steps to increase  
27 efficiency offerings, participation, and savings for low-income customers are



1 commendable, but there is still much to do before the availability of efficiency  
2 services are adequately and equitably provided to meet customer need. The EE  
3 Collaborative is a natural fit for continuing the work of advancing EE-related  
4 recommendations that came out of the LIAC. This includes further effort to  
5 develop new programs and improve existing programs. It is my hope that Duke  
6 will continue to implement more good ideas generated through collaboration to  
7 expand efficiency savings for low-income customers within existing authorized  
8 programs and through new programs submitted to the Commission for approval.

9 **Q. WHICH LIAC PROPOSALS INTERSECT WITH THE WORK OF THE**  
10 **EE COLLABORATIVE?**

11 A. Several of the LIAC proposals overlap with ongoing work at the EE  
12 Collaborative, which is well positioned to continue advancing them now that  
13 LIAC stakeholder meetings have concluded. These include, for instance:

- 14 • Residential Electric Resistance Tank Water Heater (ER) and Hybrid Heat  
15 Pump Hybrid Water Heater (HHPWH) Rental Program
- 16 • Manufactured Homes Energy Efficiency Retrofit and Replacement  
17 Program
- 18 • Arrearage Management Pilot EE Program
- 19 • LI Carve-out from Market Energy Efficiency Programs
- 20 • Comprehensive Affordable Multifamily Energy Efficiency Program

21 As noted, previously, DEP has already filed an application to the Commission  
22 for approval of an Income Qualified Weatherization program, which helps close  
23 the gap in low-income EE savings with DEC, both of which were  
24 recommendations of the LIAC. Additionally, DEC has filed for approval of the  
25 Residential Income Qualified High Energy Use Pilot, another recommendation

1 of the LIAC. Other initiatives proposed by the LIAC related to enhancing state  
2 and federal funds for low-income energy efficiency may intersect with the  
3 Collaborative. It is refreshing to see the recent progress that has been made, as is  
4 the stated interest by all parties to continue this good work going forward.

5 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

6 A. Much of the progress that has been made to advance EE for low-income  
7 customers has followed clear direction by the Commission supported by regular  
8 progress reporting, and those same factors are likely to impact the continued  
9 progress on this good work going forward. Therefore, I recommend the  
10 Commission direct DEP to report on an annual basis the initiatives it is working  
11 on to increase participation and achieve higher total savings for low-income  
12 customers to help bridge the gap between existing efficiency offerings and the  
13 scale of need reflected in the work of the Low-Income Affordability  
14 Collaborative. For each initiative, the report should include:

- 15 • A narrative overview of the initiative;
- 16 • An indication of whether and how many times Duke met with EE  
17 Collaborative stakeholders while developing this initiative;
- 18 • Details on the status of (a) measure selection, (b) input assumptions, (c)  
19 cost effectiveness evaluation, (d) anticipated annual participation and  
20 kWh savings;
- 21 • An update on which program development milestones have been  
22 completed, which remain, and an anticipated timeline for conclusion of  
23 the process;
- 24 • An indication on whether and approximately when the Company  
25 anticipates implementing program the initiatives or submitting an  
26 application to the Commission for approval; and

- 1 • A description of the expected impacts of the initiatives if implemented as  
2 planned.

3 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

4 A. I recommend the Commission direct DEP to seek new ways to increase  
5 participation and achieve higher total savings for low-income customers to help  
6 bridge the gap between existing efficiency offerings and the scale of need  
7 indicated by the work of the Low-Income Affordability Collaborative.

8 **VI. Update on Efforts by the Collaborative to Support Higher Efficiency**  
9 **Savings**

10 **Q. HAS THE COLLABORATIVE WORKED TO DEVELOP STRATEGIES**  
11 **AND RECOMMENDATIONS FOR INCREASING FUTURE DEP**  
12 **DSM/EE SAVINGS?**

13 A. Efforts by the Collaborative to increase future DEP DSM/EE savings are  
14 ongoing, but significant portions of the work over the past year have intersected  
15 with related efforts in other venues. At the big picture level, this included  
16 attention to the role of DSM/EE in the Carbon Plan, and discussions around the  
17 need for the next Market Potential Study to reach beyond past constraints to more  
18 fully embrace potential new savings opportunities. The other major focus has  
19 been development of a Residential Income Qualified High Energy Use Pilot and  
20 Tariffed On-Bill Financing Programs. These program development experiences  
21 have been far more productive than previous efforts to advance stakeholder-  
22 initiated program recommendations within the Collaborative and offer highly  
23 valuable lessons that ought to be incorporated to improve future program  
24 development efforts at the Collaborative.

1 **Q. WHAT SET THE PROCESS OF DEVELOPING A RESIDENTIAL**  
2 **INCOME QUALIFIED HIGH ENERGY USE PILOT APART FROM**  
3 **PREVIOUS ATTEMPTS TO ADVANCE PROGRAM**  
4 **RECOMMENDATIONS AT THE COLLABORATIVE?**

5 A. On June 30, 2022, Duke submitted an application for the Residential Income  
6 Qualified High Energy Use Pilot (“Low-Income EE Pilot”), capping a process  
7 that was more involved and productive than any effort to date to advance  
8 stakeholder-initiated program recommendations at the Collaborative. While  
9 many of the same stakeholders participate in the Collaborative, this program  
10 development effort was conducted separately until the program design was  
11 essentially complete. But the factors that set this apart from previous experiences  
12 at the Collaborative provide potentially game-changing implications for our work  
13 in the future.

14 The first distinguishing feature for the Low-Income EE Pilot is that it was  
15 ordered by the Commission as part of a litigated settlement in the 2020 DEP/DEC  
16 rate case.<sup>44</sup> That order included a directive that required Duke to develop low-  
17 income pilot programs with the settling parties and “*file for approval of the*  
18 *program pilots in North Carolina and South Carolina.*” Accordingly, this work  
19 was pursued with a sense of urgency and the expectation that it would ultimately  
20 culminate in a program application filing. That in turn appeared to translate into  
21 having Duke’s buy-in for the program work from the very beginning. The process  
22 of collaboration itself included many features that distinguished it from program  
23 recommendation experiences at the Collaborative, such as:

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<sup>44</sup> Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice, Docket No. E-2, Sub 1219 (Apr. 16, 2021).

- 1           •       A sustained schedule of meetings with clear objectives, deliverables,  
2           responsible parties (including both Duke and stakeholders), and a shared  
3           understanding of the specific checkpoints and next steps that would  
4           ultimately lead to program application submission.
- 5           •       Throughout the process, stakeholders and the Duke staff who are  
6           responsible for program development worked side-by-side.
- 7           •       Rather than derailing the program development process, when issues  
8           were identified they were approached as priorities for joint problem  
9           solving with a shared commitment to find solutions.

10           This effort was defined by a shared commitment from the very beginning of  
11           the process between Duke and the participating stakeholders to achieve a  
12           mutually acceptable outcome. The other key distinguishing factor was that all  
13           parties involved were engaged as a team, working together with the project  
14           management approach described above. In my experience, both the commitment  
15           and management features have been absent in similar attempts at the  
16           Collaborative when recommendations were initiated by stakeholders.

17           Likewise, Duke has shown commitment and urgency when working with  
18           stakeholders in the Tariffed On-Bill (TOB) Working Group. The TOB program  
19           was also ordered by the Commission as part of the 2019 DEP/DEC rate cases and  
20           the working group has been active since May 2021. While there were differences  
21           in approach to the methodology and vision of a program at the beginning, over  
22           time Duke made a concerted effort to learn from the group, while soliciting and  
23           incorporating real-time feedback into the TOB program design process. As with  
24           the LI EE Pilot, the utility's early buy-in and efforts to consider the interests of  
25           all stakeholders involved in the working group appears to have led to  
26           development of a program that meets the core objectives of all involved.

1           A regulatory obligation established through a settlement agreement and  
2           subsequent Commission order in the last rate case appear to have been the driver  
3           for both the commitment and management approaches that defined the LI EE  
4           Pilot and TOB efforts. But the program development methods described above  
5           can and should also be recognized as a working blueprint for future program  
6           development efforts at the Collaborative. And using this approach should not be  
7           contingent on sporadic and unpredictable negotiated settlement agreements in  
8           other proceedings that have little or no direct relationship to DSM/EE. It is my  
9           sincere hope that all the parties involved in this successful collaborative program  
10          development experience will want to continue this approach in future program  
11          development simply because it works.

12          Duke has previously noted that developing new program concepts is time  
13          consuming, which was indeed true in this case. But working in this more  
14          genuinely collaborative way is more productive than past attempts and makes the  
15          time spent more justified.

16          Duke as well as the settling parties deserve real recognition for both the  
17          quality of this collaborative work process and completing a jointly developed  
18          program application that has the strong support of all contributing parties. We  
19          hope that the Commission, too, will recognize the enormous progress this  
20          represents and again express our support for the Residential Income Qualified  
21          High Energy Use Program.

22          **Q. SHOULD PROGRESS TOWARDS DEVELOPMENT OF NEW**  
23          **PROGRAM RECOMMENDATIONS BE TRACKED AT THE**  
24          **COLLABORATIVE AND REPORTED TO THE COMMISSION?**

1 A. Absolutely. In prior proceedings, Duke has emphasized that it takes time to  
2 modify and develop new programs. This is most certainly true. Fortunately,  
3 stakeholders at the Collaborative have clearly demonstrated a willingness to put  
4 in the time needed to develop program recommendations, and Duke publicly  
5 assures that it continues to evaluate program recommendations offered by the  
6 group. However, in the past, lack of clarity about the process has been a cause  
7 for concern among Collaborative stakeholders, and successful outcomes have  
8 been elusive.

9 Program management approaches like those used in the LI EE Pilot and TOB  
10 program would go a long way towards remedying such concerns and could  
11 increase the likelihood that recommended program modifications are eventually  
12 implemented and new program applications get filed at the Commission. The  
13 successful process employed in the LI EE Pilot and TOB program as detailed  
14 above can become a blueprint for future success, and progress through key  
15 checkpoints can be tracked and reported to the Collaborative and the  
16 Commission. Of course, the specific approaches to program development can  
17 still allowing for adaptation and evolution over time.

18 Every idea will not necessarily result in implementation. But working  
19 together in this new way should help to overcome surmountable challenges and  
20 improve the chance any given program recommendation will be implemented,  
21 while simultaneously building trust and transparency for stakeholders  
22 contributing their time and effort to the process.

1 **Q. SHOULD DEP REGULARLY TRACK AND REPORT ON THE**  
2 **ADDITIONAL EFFICIENCY SAVINGS ACHIEVED FROM PROGRAM**  
3 **RECOMMENDATIONS DEVELOPED THROUGH THE WORK OF**  
4 **THE COLLABORATIVE?**

5 A. Yes. In previous testimony I have recommended that Duke quantify and report  
6 the savings associated with program modifications and new programs developed  
7 through the Collaborative, and I continue to support that recommendation today.  
8 To be clear, this is not intended as a way for one party or another to take credit  
9 for the additional savings generated, but rather is a way to track and demonstrate  
10 that the work of the Collaborative as a whole has in fact been productive.  
11 Considerable amounts of time are contributed to the work at the Collaborative,  
12 including by representatives whose work is supported by ratepayer funds and  
13 others who must find outside resources to support their work. For all involved, it  
14 is important to be confident that the time is well spent and assessing the additional  
15 efficiency savings impact of our collective work is a logical indicator to track.

16 Following last year's DEP Rider proceeding, the Commission requested  
17 additional information from the Company, including "a summary of key DEP  
18 DSM and/or EE program modifications or additions introduced during and as a  
19 product of the DSM/EE collaborative during 2020 and 2021, and estimate the  
20 energy savings and economic impacts attributed to those actions."<sup>45</sup> This was  
21 both appreciated and informative. Not does quantification of additional  
22 efficiency savings validate past efforts, if done consistently over time it can also

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<sup>45</sup> Docket No. E-2, Sub 1294 Commission Order Requiring Filing of Additional Testimony,  
page 4.



1 help us to better understand what is working (and what is not) about our approach  
2 at the Collaborative.

3 **Q. WHAT ARE YOUR RECOMMENDATIONS TO THE COMMISSION?**

4 A. I recommend that the Commission direct the Company to report in its annual  
5 DEP Rider filings the progress it has made working with the Collaborative to  
6 advance stakeholder proposed recommendations to modify existing efficiency  
7 programs or create new programs. These reports should include:

- 8 • A narrative overview of the program recommendation;
- 9 • An indication of how many times Duke met with Collaborative  
10 stakeholders;
- 11 • Details on the status of (a) measure selection, (b) input assumptions, (c)  
12 cost effectiveness evaluation, (d) anticipated annual participation and  
13 kWh savings;
- 14 • An update on which program development milestones have been  
15 completed, which remain, and an anticipated timeline for conclusion of  
16 the process; and
- 17 • An indication on whether and approximately when the Company  
18 anticipates implementing program modification recommendations or  
19 submitting an application to the Commission for approval.

20 I also recommend the Commission make it an ongoing requirement for future  
21 DEP Rider filings that the Company provide a summary of key DEP DSM and/or  
22 EE program modifications or additions introduced during and as a product of the  
23 Collaborative and estimate the achieved and projected energy savings and  
24 economic impacts attributed to those actions. The Role of DSM/EE for  
25 Achieving North Carolina's Decarbonization Targets

26 **Q. HOW CAN DEP'S DSM/EE PROGRAMS CONTRIBUTE TO MEETING**  
27 **NORTH CAROLINA'S DECARBONIZATION OBJECTIVES?**

1 A. Increasing the scale of demand-side resources accelerates the transition to clean  
2 energy, while offsetting the cost of more expensive supply-side investments.  
3 Energy saved through Duke's DSM/EE programs reduce total energy waste and  
4 immediately lessen reliance on the Company's fossil fuel generators. By  
5 reducing the amount of supply side additions required to power the grid, demand-  
6 side resources also reduce the logistical and financial challenge of transitioning  
7 to a clean grid powered by renewable energy. For instance, comments filed by  
8 the Southern Environmental Law Center on behalf of the Southern Alliance for  
9 Clean Energy, Sierra Club, and Natural Resource Defense Council and in  
10 partnership with the North Carolina Sustainable Energy Association show how  
11 increasing annual efficiency savings to 1.5% of retail load could accelerate  
12 decarbonization in North Carolina at less cost than lower levels of DSM/EE  
13 investment. In short, the more energy efficiency programs can cost effectively  
14 reduce consumer demand, the cheaper and easier it will be to eliminate carbon  
15 from the grid. On this there is general agreement among parties to the Carbon  
16 Plan proceeding, along with a recognition that higher levels of energy efficiency  
17 savings levels will need to meet the states carbon reduction goals at least cost.  
18 Attaining higher levels of efficiency savings will require new tactics, data  
19 analysis, as well as effective problem solving and collaboration. It will also  
20 require quantifying and tracking the carbon emissions reduction impact of the  
21 DSM/EE savings that Duke already reports in its annual rider filings.

22 **Q. HOW CAN TRACKING THE CARBON REDCUTION EFFECTS OF**  
23 **DUKE'S DSM/EE PROGRAMS ACCELERATE ATTAINMENT OF THE**  
24 **STATE'S CARBON REDUCTION TARGETS?**

1 A. To ensure DSM/EE resources contribute their relative share of carbon emissions  
2 reductions, they must be measured and tracked. But doing so is not a mere  
3 accounting exercise. This data can also be a tool used to tailor and strengthen  
4 programs to deliver more carbon reduction impact when and where it is most  
5 needed. Energy efficiency and demand-side management are terms that together  
6 encompass a vast array of technologies and program strategies that reduce energy  
7 waste and lower customer demand. Accordingly, each measure and program has  
8 a different potential carbon reduction impact resulting from their scale of  
9 deployment, their location, the time of day or season in which the savings occur,  
10 and their relative persistence over time. Understanding the unique carbon  
11 reduction effects of Duke’s portfolio of DSM/EE programs is the critical first  
12 step towards designing DSM/EE strategies that maximize impacts where they are  
13 most needed. Over time, this information will inform new approaches to  
14 delivering DSM/EE programs that both save customers money and accelerate  
15 decarbonization of the electric grid. Following last year’s DEP Rider proceeding,  
16 the Commission ordered the Company to “Describe any implications that any of  
17 the new components of S.L. 2021-165 will have or is expected to have on DEP’s  
18 EE and/or DSM programs and the rider application.” The Company’s annual  
19 DSM/EE Recovery Rider would be a logical place to report on carbon emissions  
20 reductions from DEP’s DSM/EE portfolio.

21 **Q. HOW CAN EFFORTS TO PURSUE HIGHER LEVELS OF DSM/EE**  
22 **SAVINGS AT THE COLLABORATIVE EXPAND THE ROLE AND**  
23 **IMPACT OF DEMAND SIDE RESOURCES IN THE CARBON PLAN?**

1 A. Through participation in numerous Carbon Plan stakeholder workshops, many  
2 stakeholders at the Collaborative have clearly demonstrated their commitment to  
3 decarbonization as well. There appears to be general agreement amongst all  
4 concerned that the success of the Carbon Plan rests in significant part on the  
5 utility's ability to capture higher levels of DSM/EE savings. But clearly there is  
6 significant work that must be done to increase the savings impact of Duke's  
7 current program offerings and to expand the scope of the Company's portfolio to  
8 capture new savings opportunities. For instance, Duke has identified numerous  
9 Grid Edge resource options that warrant discussion, vetting, and potentially  
10 support that members of the Collaborative can provide. Likewise, stakeholders  
11 at the Collaborative have offered recommendations for increasing DSM/EE  
12 program participation, measure expansion, and new delivery channels that  
13 warrant additional development and will ultimately need buy-in from the utility  
14 and may require authorization by the Commission. Both the utility and  
15 Collaborative stakeholders have unique contributions to offer that could make  
16 the difference between mere business as usual efficiency savings, or  
17 implementation of new cost-effective DSM/EE strategies that accelerate the  
18 retirement of fossil fuel generators, reduce the need and cost for new supply  
19 additions, and substantially accelerate carbon reduction in the state.

20 Ultimately, the general effort to increase efficiency savings at the  
21 Collaborative should shift towards work on a more intentional planning approach  
22 to capture the energy savings needed to satisfy the requirements of the Carbon  
23 Plan. Commission direction on this point will help to ensure that the time and

1 engagement needed to successfully achieve these savings goals will occur with  
2 the contributions and support of the Collaborative. Furthermore, in its Carbon  
3 Plan filing Duke identified a number of proposals it wants considered as potential  
4 enablers for increased savings from Grid Edge resources. The Commission  
5 should clearly indicate in which proceedings those matters will be considered and  
6 provide interested parties with adequate opportunity to provide their perspectives  
7 on the implications of Duke's proposals.

8 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

9 A. I offer the following recommendations to facilitate a more impactful role for  
10 DSM/EE in the State's Carbon Plan:

- 11 • Direct DEP to work with the Collaborative to develop a concrete,  
12 multiyear implementation plan to achieve the efficiency savings levels  
13 established in the Carbon Plan, as directed by the Commission's final  
14 order in Docket E-100, Sub 179. The implementation plan should include  
15 a theory of change, what the Company expects to achieve, how it plans  
16 to achieve it, identification of anticipated obstacles to overcome, an  
17 explanation of the expected outcome, and the data the company will use  
18 to track performance against the plan.
- 19 • Direct DEP to annually report the carbon reduction impacts of its  
20 DSM/EE portfolio in future rider proceedings, following a stakeholder  
21 process to inform how the carbon reduction impacts of Duke's DSM/EE  
22 portfolio are to be quantified and tracked.
- 23 • The Commission should clearly indicate in which proceedings Duke's  
24 proposals regarding Grid Edge resources will be considered, while  
25 providing interested parties with adequate opportunity to offer their  
26 perspectives on these proposals.

## VII. Conclusion

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**Q. DO YOU HAVE ANY CONCLUDING STATEMENT?**

A. Yes, I want to thank the Commission for its continued interest in energy efficiency savings performance through these recovery riders, as well as its attention to the intersection between Duke's efficiency portfolio and low-income customer affordability issues, long-term resource planning, and decarbonization of the state's electric grid. I also want to highlight the crucial intersection between themes raised in related regulatory proceedings and the impact of clear and concrete Commission guidance for the work of Collaborative working groups. The outcomes of these litigated proceedings have a real and tangible impact on which issues get addressed in Collaborative meetings, and whether Collaborative work ultimately translates into meaningful positive impact for customers, the utility system, and the states' evolving policy goals. As I have noted in previous testimony, Duke, the Commission, and the state of North Carolina have much to be proud of from their efficiency accomplishments to date. As we work together to meet new challenges with efficiency, the state's efficiency accomplishments serve as a strong foundation for North Carolina's transition to a clean energy future.

This concludes my testimony.

CERTIFICATE OF SERVICE

I certify that the parties of record on the service list have been served with the Direct Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center, North Carolina Housing Coalition, and Southern Alliance for Clean Energy either by electronic mail or by deposit in the U.S. Mail, postage prepaid.

This the 24th day of August, 2022.

/s/ David L. Neal

## **PROFESSIONAL EXPERIENCE**

**Energy Efficiency Director:** Southern Alliance for Clean Energy, Knoxville, TN **April 2018 – Present**

- Regulatory filings, testimony, strategy, and stakeholder management on integrated resource planning, energy efficiency program design, cost recovery and related matters throughout the Southeast.

**Senior Policy Director:** Alliance for Affordable Energy, New Orleans, LA **February 2017 – April 2018**

- Regulatory filings, strategy, and stakeholder management on integrated resource planning and energy efficiency rulemaking, power plant proposals and related matters at the city and state level.

**Consultant:** Utility Regulation and Energy Policy **December 2014 – February 2017**

- Technical and strategic guidance on clean energy policy and utility regulation for Opower, Gulf States Renewable Energy Industries Association, the Alliance, and Mississippi PSC candidate Brent Bailey.

**Candidate:** Louisiana Public Service Commission **July - December 2014**

- Won the open primary and secured 49.15% of the vote in the general election against a highly favored, well-funded incumbent.
- Raised nearly \$500,000 in campaign contributions while publicly pledging not to accept money from monopoly companies regulated by the PSC.
- Campaign focused on ethical leadership, reducing bills, energy efficiency, the rights of customers to generate solar energy, and government transparency.

**Utility Policy Director:** Alliance for Affordable Energy, New Orleans, LA **October 2005 – June 2014**

- Directed successful policy efforts for energy efficiency, renewable energy, and integrated resource planning at the Louisiana PSC and New Orleans City Council, spurring every major Louisiana utility investment in clean energy over the past decade.
- Reviewed and filed intervenor comments, met with commissioners, utilities, and technical consultants, assembled and managed relationships with a broad coalition of stakeholders, worked with media, and served as the organization's public face.
- Launched and managed energy efficiency and solar workforce training programs, public education campaigns, and direct service projects to improve energy performance in over 100 homes following the city's rebuild post-Katrina.

**Owner and Director:** EcoPark LLC (d.b.a. The Building Block), New Orleans, LA **February 2008 – Present**

Created an innovative co-location business center to serve as a catalyst for moving green commerce and social entrepreneurship to the mainstream.

- Developed the business concept and plan, brought initial funding to the project, hired staff, established brand identity, and secured tenants.

**Sustainable Development Team Facilitator:** Shell International, New Orleans, LA **May 2001 – June 2004**

- Worked to facilitate a paradigm shift within corporate management's core business practices toward social and environmental issue management.
- Engaged a diverse team of professionals across the company to identify energy and resource inefficiencies and methods to reduce carbon emissions from venting and flaring in oil and natural gas exploration and production.
- Analyzed ways to incorporate sustainability accounting into each stage of new venture development for major drilling projects.

## **EDUCATION**

**Tulane University**

- **Master of Arts in Latin American Studies, 2011**  
Concentration in environmental law, business, and international development
- **Bachelor of Arts with Honors in Latin American Studies, 2001**



### **EXPERT WITNESS TESTIMONY**

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. 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; Docket No. E-2, Sub 1273. September 9<sup>th</sup>, 2021.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. Application of Duke Energy Carolinas, 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; Docket No. E-7, Sub 1249. May 10<sup>th</sup>, 2021.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. 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; Docket No. E-2, Sub 1252. August 26<sup>th</sup>, 2020.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. Application of Duke Energy Carolinas, 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; Docket No. E-7, Sub 1230. May 22<sup>nd</sup>, 2020.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. 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; Docket No. E-2, Sub 1206. August 19<sup>th</sup>, 2019.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy and League of United Latin American Citizens. Docket Nos. 20190015-EG, 20190016-EG, 20190018-EG, 20190019-EG, 20190020-EG, 20190021-EG- Commission Review of Numeric Conservation Goals for Florida Power & Light, Gulf Power Company, Duke Energy Florida, Orlando Utilities Commission, Jacksonville Electric Authority, Tampa Electric Company. June 10<sup>th</sup>, 2019.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy and North Carolina Justice Center, Application of Duke Energy Carolinas, 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; Docket No. E-7, Sub 1192. May 20<sup>th</sup>, 2019.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, Georgia Power Company's Application for the Certification, Decertification, and Amended Demand Side Management Plan, Docket No. 42311. April 25<sup>th</sup>, 2019.

### **OTHER REGULATORY FILINGS**

Forest Bradley-Wright, Comments on Behalf of Southern Alliance for Clean Energy, Re: Mississippi Power Company's Notice of IRP Cycle Pursuant to Commission Rule 29 – MPSC Docket 2019-UA-231. March 22<sup>nd</sup>, 2021

Forest Bradley-Wright, Comments on Behalf of Southern Alliance for Clean Energy, Re: Proposed amendment of Rule 25-17.0021 F.A.C., Goals for Electric Utilities – FPSC Docket No. 20200181. February 15<sup>th</sup>, 2021

Forest Bradley-Wright and George Cavros, Comments on Behalf of Southern Alliance for Clean Energy, Re: Entergy Mississippi, LLC Notice of IRP Cycle Pursuant to Commission Rule 29 – MPSC Docket 2019-UA-232. July 17<sup>th</sup>, 2020

Forest Bradley-Wright, Comments on Behalf of Southern Alliance for Clean Energy, Re: Mississippi Power Company's Notice of IRP Cycle Pursuant to Commission Rule 29 – MPSC Docket 2019-UA-231. March 24<sup>th</sup>, 2020

Forest Bradley-Wright, Comments on Behalf of Southern Alliance for Clean Energy, Order Establishing Docket to Investigate the Development and Implementation of an Integrated Resource Planning Rule – MPSC Docket 2018-AD-64. February 15<sup>th</sup>, 2019

Forest Bradley-Wright and Daniel Brookeshire, Comments on Behalf of North Carolina Sustainable Energy Association and Southern Alliance for Clean Energy, Duke Energy Progress, LLC's Proposed Non-Profit Low-Income Weatherization Pay for Performance Pilot, Docket No. E-2, Sub 1187. November 9<sup>th</sup>, 2018

Forest Bradley-Wright, Comments on Behalf of Southern Alliance for Clean Energy, Order Establishing Docket to Investigate the Development and Implementation of an Integrated Resource Planning Rule – MPSC Docket 2018-AD-64. August 1<sup>st</sup>, 2018

Forest Bradley-Wright and Logan Burke, Comments on Behalf of Alliance for Affordable Energy, Rulemaking to Study the Possible Development of Financial Incentives for the Promotion of Energy Efficiency by Jurisdictional Electric and Natural Gas Utilities, Louisiana Public Service Commission Docket R-31106. June 20<sup>th</sup>, 2017

Forest Bradley-Wright and Logan Burke, Comments on Behalf of Alliance for Affordable Energy, Rulemaking to Establish Integrated Resource Planning Components and Reporting Requirements for Entergy New Orleans, Docket No. UD-17-01. May 25<sup>th</sup>, 2017

Forest Bradley-Wright and Logan Burke, Comments on Behalf of Alliance for Affordable Energy, Rulemaking to Study the Possible Development of Financial Incentives for the Promotion of Energy Efficiency by Jurisdictional Electric and Natural Gas Utilities, Louisiana Public Service Commission Docket R-31106. March 7<sup>th</sup>, 2017

Forest Bradley-Wright and Jeff Cantin, Post Hearing Brief on Behalf of Gulf States Renewable Energy Industries Association, Petition for a Certificate of Convenience and Necessity for Alabama Power, Docket No. 32382. August 19<sup>th</sup>, 2015

### **PUBLICATIONS**

Forest Bradley-Wright and Heather Pohnan, Fourths Annual Energy Efficiency in the Southeast Report, Southern Alliance for Clean Energy. February 14<sup>th</sup>, 2022

Forest Bradley-Wright and Heather Pohnan, Third Annual Energy Efficiency in the Southeast Report, Southern Alliance for Clean Energy. January 26<sup>th</sup>, 2021

Forest Bradley-Wright and Heather Pohnan, Energy Efficiency in the Southeast 2019 Annual Report, Southern Alliance for Clean Energy. January 21<sup>st</sup>, 2020

Forest Bradley-Wright and Heather Pohnan, Energy Efficiency in the Southeast 2018 Annual Report, Southern Alliance for Clean Energy. December 12<sup>th</sup>, 2018

**DUKE ENERGY PROGRESS, LLC**

**Request:**

Please provide:

- a. total DSM/EE portfolio kWh savings at the generator for 2020, 2021, and forecast for 2022 and 2023;
- b. total DSM/EE portfolio kWh savings at the meter for 2020, 2021, and forecast for 2022 and 2023; and
- c. total retail sales for 2020 and 2021 and projected total retail sales for 2022 and 2023.

**Response:**

Please see 'SACE DR1-8 Parts A and B.xlsx' for total DSM/EE portfolio kWh savings at the a. generator and b. meter for 2020, 2021, and forecast for 2022 and 2023.

Please see 'SACE DR 1-8 Part C.xlsx' for total retail sales for 2020 and 2021 and projected total retail sales for 2022 and 2023.

Responder: Steven A. LoConte, Senior Program Performance Analyst

Duke Energy Progress

1-8. Please provide:

- a. total DSM/EE portfolio kWh savings at the generator for 2020, 2021, and forecast for 2022 and 2023;
- b. total DSM/EE portfolio kWh savings at the meter for 2020, 2021, and forecast for 2022 and 2023; and
- c. total retail sales for 2020 and 2021 and projected total retail sales for 2022 and 2023.

SACE DR 1-8

a. and b.

a. At Generator

b. At Meter

2020 total DSM/EE portfolio kWh savings	320,872,506	305,302,099
2021 total DSM/EE portfolio kWh savings	342,957,220	326,315,148
2022 total DSM/EE portfolio kWh savings (projected)	418,032,163	397,747,063
2023 total DSM/EE portfolio kWh savings (projected)	365,924,531	353,481,489

2020-2022 Line Loss	5.10%
2023 Line Loss	3.52%

kWh	Docket E-2 Sub 1294, Holbrook Exhibit 1 pg. 9 line 27 (Total All Programs)
kWh	Docket E-2 Sub 1294, Holbrook Exhibit 1 pg. 11 line 27 (Total All Programs)
kWh	Docket E-2 Sub 1273, Evans Exhibit 1 pg. 7 line 28 (Total All Programs)
kWh	Docket E-2 Sub 1294, Holbrook Exhibit 1 pg. 13 line 28 (Total All Programs)

### EE Sales Summary (Actual kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-20	1,438,353,488	1,681,085,464	(950,271,618)	730,813,846	28,842,393	(1,309,624)	27,532,769	3,148,281,345	(951,581,242)	2,196,700,103
Feb-20	1,391,776,495	1,649,077,445	(928,054,688)	721,022,757	28,682,555	(1,287,507)	27,395,048	3,069,536,495	(929,342,195)	2,140,194,300
Mar-20	1,235,463,083	1,614,266,639	(950,124,070)	664,142,569	28,834,155	(1,311,050)	27,523,105	2,878,563,877	(951,435,120)	1,927,128,757
Apr-20	1,035,555,841	1,481,169,636	(891,739,667)	589,429,969	28,635,187	(1,271,571)	27,363,616	2,545,360,664	(893,011,238)	1,652,349,426
May-20	973,662,766	1,431,399,997	(868,720,599)	562,679,398	28,546,316	(1,264,999)	27,281,317	2,433,609,079	(869,985,598)	1,563,623,481
Jun-20	1,229,086,826	1,656,546,258	(965,951,023)	690,595,235	28,571,513	(1,283,084)	27,288,429	2,914,204,597	(967,234,107)	1,946,970,490
Jul-20	1,591,426,182	1,895,454,191	(1,063,975,865)	831,478,326	28,506,005	(1,238,986)	27,267,019	3,515,386,378	(1,065,214,851)	2,450,171,527
Aug-20	1,731,091,047	2,035,903,748	(1,140,238,983)	895,664,765	28,413,238	(1,233,350)	27,179,888	3,795,408,033	(1,141,472,333)	2,653,935,700
Sep-20	1,477,145,176	1,925,333,830	(1,077,937,924)	847,395,906	28,396,380	(1,216,139)	27,180,241	3,430,875,386	(1,079,154,063)	2,351,721,323
Oct-20	999,659,545	1,796,312,590	(1,114,303,748)	682,008,842	28,468,937	(1,230,122)	27,238,815	2,824,441,072	(1,115,533,870)	1,708,907,202
Nov-20	974,857,736	1,711,592,431	(1,087,574,641)	624,017,790	27,254,380	(1,167,540)	26,086,840	2,713,704,547	(1,088,742,181)	1,624,962,366
Dec-20	1,449,086,714	1,420,823,294	(707,959,341)	712,863,953	29,405,716	(1,306,416)	28,099,300	2,899,315,724	(709,265,757)	2,190,049,967
Totals	15,527,164,899	20,298,965,523	(11,746,852,167)	8,552,113,356	342,556,775	(15,120,388)	327,436,387	36,168,687,197	(11,761,972,555)	24,406,714,642

### DSM Sales Summary (Actual kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-20	1,438,353,488	1,681,085,464	(953,672,160)	727,413,304	28,842,393	(1,368,992)	27,473,401	3,148,281,345	(955,041,152)	2,193,240,193
Feb-20	1,391,776,495	1,649,077,445	(931,372,268)	717,705,177	28,682,555	(1,346,799)	27,335,756	3,069,536,495	(932,719,067)	2,136,817,428
Mar-20	1,235,463,083	1,614,266,639	(952,747,847)	661,518,792	28,834,155	(1,370,298)	27,463,857	2,878,563,877	(954,118,145)	1,924,445,732
Apr-20	1,035,555,841	1,481,169,636	(892,654,983)	588,514,653	28,635,187	(1,330,754)	27,304,433	2,545,360,664	(893,985,737)	1,651,374,927
May-20	973,662,766	1,431,399,997	(869,688,785)	561,711,212	28,546,316	(1,324,182)	27,222,134	2,433,609,079	(871,012,967)	1,562,596,112
Jun-20	1,229,086,826	1,656,546,258	(967,884,252)	688,662,006	28,571,513	(1,342,198)	27,229,315	2,914,204,597	(969,226,450)	1,944,978,147
Jul-20	1,591,426,182	1,895,454,191	(1,066,970,146)	828,484,045	28,506,005	(1,290,503)	27,215,502	3,515,386,378	(1,068,260,649)	2,447,125,729
Aug-20	1,731,091,047	2,035,903,748	(1,142,829,190)	893,074,558	28,413,238	(1,284,082)	27,129,156	3,795,408,033	(1,144,113,272)	2,651,294,761
Sep-20	1,477,145,176	1,925,333,830	(1,079,144,368)	846,189,462	28,396,380	(1,266,871)	27,129,509	3,430,875,386	(1,080,411,239)	2,350,464,147
Oct-20	999,659,545	1,796,312,590	(1,115,968,090)	680,344,500	28,468,937	(1,279,589)	27,189,348	2,824,441,072	(1,117,247,679)	1,707,193,393
Nov-20	974,857,736	1,711,592,431	(1,087,851,385)	623,741,046	27,254,380	(1,207,515)	26,046,865	2,713,704,547	(1,089,058,900)	1,624,645,647
Dec-20	1,449,086,714	1,420,823,294	(712,202,016)	708,621,278	29,405,716	(1,343,528)	28,062,188	2,899,315,724	(713,545,544)	2,185,770,180
Totals	15,527,164,899	20,298,965,523	(11,772,985,490)	8,525,980,033	342,556,775	(15,755,311)	326,801,464	36,168,687,197	(11,788,740,801)	24,379,946,396

### EE Sales Summary (Forecasted kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-22	1,692,182,545	1,697,193,113	(950,271,618)	746,921,495	30,293,511	(1,309,624)	28,983,887	3,419,669,169	(951,581,242)	2,468,087,927

Feb-22	1,496,459,965	1,680,044,160	(928,054,688)	751,989,472	29,891,319	(1,287,507)	28,603,812	3,206,395,444	(929,342,195)	2,277,053,249
Mar-22	1,256,581,823	1,642,182,814	(950,124,070)	692,058,744	29,448,533	(1,311,050)	28,137,483	2,928,213,169	(951,435,120)	1,976,778,049
Apr-22	1,061,032,286	1,671,011,632	(891,739,667)	779,271,965	29,823,700	(1,271,571)	28,552,129	2,761,867,617	(893,011,238)	1,868,856,379
May-22	1,052,330,757	1,701,119,266	(868,720,599)	832,398,667	30,378,988	(1,264,999)	29,113,989	2,783,829,012	(869,985,598)	1,913,843,414
Jun-22	1,275,736,568	1,863,250,244	(965,951,023)	897,299,221	32,644,589	(1,283,084)	31,361,505	3,171,631,401	(967,234,107)	2,204,397,294
Jul-22	1,627,250,940	2,038,387,193	(1,063,975,865)	974,411,328	35,271,923	(1,238,986)	34,032,937	3,700,910,055	(1,065,214,851)	2,635,695,204
Aug-22	1,576,490,094	2,014,514,926	(1,140,238,983)	874,275,943	34,736,702	(1,233,350)	33,503,352	3,625,741,723	(1,141,472,333)	2,484,269,390
Sep-22	1,277,456,078	1,829,739,432	(1,077,937,924)	751,801,508	31,757,438	(1,216,139)	30,541,299	3,138,952,948	(1,079,154,063)	2,059,798,885
Oct-22	1,049,285,701	1,710,466,245	(1,114,303,748)	596,162,497	30,083,794	(1,230,122)	28,853,672	2,789,835,741	(1,115,533,870)	1,674,301,871
Nov-22	1,107,161,908	1,654,472,344	(1,087,574,641)	566,897,703	29,369,241	(1,167,540)	28,201,701	2,791,003,492	(1,088,742,181)	1,702,261,311
Dec-22	1,421,359,398	1,666,744,138	(707,959,341)	958,784,797	29,682,929	(1,306,416)	28,376,513	3,117,786,465	(709,265,757)	2,408,520,708
Totals	15,893,328,062	21,169,125,507	(11,746,852,167)	9,422,273,340	373,382,667	(15,120,388)	358,262,279	37,435,836,236	(11,761,972,555)	25,673,863,681

### DSM Sales Summary (Forecasted kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-22	1,692,182,545	1,697,193,113	(953,672,160)	743,520,953	30,293,511	(1,368,992)	28,924,519	3,419,669,169	(955,041,152)	2,464,628,017
Feb-22	1,496,459,965	1,680,044,160	(931,372,268)	748,671,892	29,891,319	(1,346,799)	28,544,520	3,206,395,444	(932,719,067)	2,273,676,377
Mar-22	1,256,581,823	1,642,182,814	(952,747,847)	689,434,967	29,448,533	(1,370,298)	28,078,235	2,928,213,169	(954,118,145)	1,974,095,024
Apr-22	1,061,032,286	1,671,011,632	(892,654,983)	778,356,649	29,823,700	(1,330,754)	28,492,946	2,761,867,617	(893,985,737)	1,867,881,880
May-22	1,052,330,757	1,701,119,266	(869,688,785)	831,430,481	30,378,988	(1,324,182)	29,054,806	2,783,829,012	(871,012,967)	1,912,816,045
Jun-22	1,275,736,568	1,863,250,244	(967,884,252)	895,365,992	32,644,589	(1,342,198)	31,302,391	3,171,631,401	(969,226,450)	2,202,404,951
Jul-22	1,627,250,940	2,038,387,193	(1,066,970,146)	971,417,047	35,271,923	(1,290,503)	33,981,420	3,700,910,055	(1,068,260,649)	2,632,649,406
Aug-22	1,576,490,094	2,014,514,926	(1,142,829,190)	871,685,736	34,736,702	(1,284,082)	33,452,620	3,625,741,723	(1,144,113,272)	2,481,628,451
Sep-22	1,277,456,078	1,829,739,432	(1,079,144,368)	750,595,064	31,757,438	(1,266,871)	30,490,567	3,138,952,948	(1,080,411,239)	2,058,541,709
Oct-22	1,049,285,701	1,710,466,245	(1,115,968,090)	594,498,155	30,083,794	(1,279,589)	28,804,205	2,789,835,741	(1,117,247,679)	1,672,588,062
Nov-22	1,107,161,908	1,654,472,344	(1,087,851,385)	566,620,959	29,369,241	(1,207,515)	28,161,726	2,791,003,492	(1,089,058,900)	1,701,944,592
Dec-22	1,421,359,398	1,666,744,138	(712,202,016)	954,542,122	29,682,929	(1,343,528)	28,339,401	3,117,786,465	(713,545,544)	2,404,240,921
Totals	15,893,328,062	21,169,125,507	(11,772,985,490)	9,396,140,017	373,382,667	(15,755,311)	357,627,356	37,435,836,236	(11,788,740,801)	25,647,095,435

### EE Sales Summary (Actual kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-21	1,710,978,890	1,626,703,346	(913,044,713)	713,658,633	27,134,144	(1,126,041)	26,008,103	3,364,816,380	(914,170,754)	2,450,645,626
Feb-21	1,721,620,606	1,632,510,088	(909,485,116)	723,024,972	28,254,570	(1,194,888)	27,059,682	3,382,385,264	(910,680,004)	2,471,705,260
Mar-21	1,402,837,404	1,633,243,878	(944,596,393)	688,647,485	29,436,338	(1,266,057)	28,170,281	3,065,517,620	(945,862,450)	2,119,655,170
Apr-21	1,133,166,714	1,632,702,512	(954,159,737)	678,542,775	28,293,829	(1,169,783)	27,124,046	2,794,163,055	(955,329,520)	1,838,833,535
May-21	985,317,322	1,575,101,469	(926,457,702)	648,643,767	28,215,969	(1,188,528)	27,027,441	2,588,634,760	(927,646,230)	1,660,988,530
Jun-21	1,243,074,469	1,702,694,119	(954,826,289)	747,867,830	28,218,474	(1,189,268)	27,029,206	2,973,987,062	(956,015,557)	2,017,971,505
Jul-21	1,554,529,416	2,057,450,949	(1,179,598,178)	877,852,771	28,198,467	(1,191,192)	27,007,275	3,640,178,832	(1,180,789,370)	2,459,389,462
Aug-21	1,595,891,286	2,008,699,711	(1,112,861,042)	895,838,669	28,166,564	(1,188,128)	26,978,436	3,632,757,561	(1,114,049,170)	2,518,708,391
Sep-21	1,566,328,969	2,071,591,121	(1,139,529,856)	932,061,265	28,163,952	(1,162,230)	27,001,722	3,666,084,042	(1,140,692,086)	2,525,391,956
Oct-21	1,090,091,616	1,782,322,793	(1,043,001,738)	739,321,055	28,265,926	(1,178,701)	27,087,225	2,900,680,335	(1,044,180,439)	1,856,499,896
Nov-21	1,024,289,550	734,847,542	(267,181,532)	467,666,009	18,308,911	(339,052)	17,969,859	1,777,446,003	(267,520,585)	1,509,925,418
Dec-21	1,448,892,160	1,314,744,327	(618,695,732)	696,048,594	27,860,764	(674,100)	27,186,663	2,791,497,250	(619,369,833)	2,172,127,418
Totals	16,477,018,402	19,772,611,854	(10,963,438,029)	8,809,173,826	328,517,908	(12,867,969)	315,649,939	36,578,148,164	(10,976,305,997)	25,601,842,167

### DSM Sales Summary (Actual kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-21	1,710,978,890	1,626,703,346	(914,881,312)	711,822,034	27,134,144	(1,162,302)	25,971,842	3,364,816,380	(916,043,614)	2,448,772,766
Feb-21	1,721,620,606	1,632,510,088	(912,714,819)	719,795,269	28,254,570	(1,227,496)	27,027,074	3,382,385,264	(913,942,315)	2,468,442,949
Mar-21	1,402,837,404	1,633,243,878	(947,945,977)	685,297,901	29,436,338	(1,298,613)	28,137,725	3,065,517,620	(949,244,590)	2,116,273,030
Apr-21	1,133,166,714	1,632,702,512	(955,829,337)	676,873,175	28,293,829	(1,202,337)	27,091,492	2,794,163,055	(957,031,674)	1,837,131,381
May-21	985,317,322	1,575,101,469	(929,070,114)	646,031,355	28,215,969	(1,221,201)	26,994,768	2,588,634,760	(930,291,315)	1,658,343,445
Jun-21	1,243,074,469	1,702,694,119	(957,075,578)	745,618,541	28,218,474	(1,222,034)	26,996,440	2,973,987,062	(958,297,612)	2,015,689,450
Jul-21	1,554,529,416	2,057,450,949	(1,182,508,874)	874,942,075	28,198,467	(1,223,832)	26,974,635	3,640,178,832	(1,183,732,706)	2,456,446,126
Aug-21	1,595,891,286	2,008,699,711	(1,116,833,109)	891,866,602	28,166,564	(1,220,939)	26,945,625	3,632,757,561	(1,118,054,048)	2,514,703,513
Sep-21	1,566,328,969	2,071,591,121	(1,142,814,618)	928,776,503	28,163,952	(1,195,088)	26,968,864	3,666,084,042	(1,144,009,706)	2,522,074,336
Oct-21	1,090,091,616	1,782,322,793	(1,045,170,458)	737,152,335	28,265,926	(1,211,559)	27,054,367	2,900,680,335	(1,046,382,017)	1,854,298,318
Nov-21	1,024,289,550	734,847,542	(272,180,881)	462,666,660	18,308,911	(334,974)	17,973,937	1,777,446,003	(272,515,856)	1,504,930,147
Dec-21	1,448,892,160	1,314,744,327	(582,847,704)	731,896,623	27,860,764	(684,701)	27,176,063	2,791,497,250	(583,532,404)	2,207,964,846
Totals	16,477,018,402	19,772,611,854	(10,959,872,781)	8,812,739,073	328,517,908	(13,205,076)	315,312,832	36,578,148,164	(10,973,077,857)	25,605,070,307

### EE Sales Summary (Forecasted kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-23	1,849,348,532	1,713,795,111	(913,044,713)	800,750,398	30,685,870	(1,126,041)	29,559,829	3,593,829,513	(914,170,754)	2,679,658,759

Feb-23	1,511,737,386	1,690,760,578	(909,485,116)	781,275,462	30,231,539	(1,194,888)	29,036,651	3,232,729,504	(910,680,004)	2,322,049,500
Mar-23	1,294,157,738	1,650,425,737	(944,596,393)	705,829,344	29,612,807	(1,266,057)	28,346,750	2,974,196,282	(945,862,450)	2,028,333,832
Apr-23	1,006,425,418	1,641,716,162	(954,159,737)	687,556,425	29,541,953	(1,169,783)	28,372,170	2,677,683,532	(955,329,520)	1,722,354,012
May-23	1,118,228,693	1,746,682,392	(926,457,702)	820,224,690	31,284,931	(1,188,528)	30,096,403	2,896,196,015	(927,646,230)	1,968,549,785
Jun-23	1,469,479,098	1,952,625,526	(954,826,289)	997,799,237	34,285,639	(1,189,268)	33,096,371	3,456,390,263	(956,015,557)	2,500,374,706
Jul-23	1,665,602,271	2,090,839,033	(1,179,598,178)	911,240,855	36,362,080	(1,191,192)	35,170,888	3,792,803,384	(1,180,789,370)	2,612,014,014
Aug-23	1,567,299,608	1,976,529,083	(1,112,861,042)	863,668,041	34,455,153	(1,188,128)	33,267,025	3,578,283,843	(1,114,049,170)	2,464,234,673
Sep-23	1,238,054,039	1,828,140,009	(1,139,529,856)	688,610,153	32,223,690	(1,162,230)	31,061,460	3,098,417,737	(1,140,692,086)	1,957,725,651
Oct-23	990,506,874	1,685,235,017	(1,043,001,738)	642,233,279	30,067,259	(1,178,701)	28,888,558	2,705,809,150	(1,044,180,439)	1,661,628,711
Nov-23	1,279,399,504	1,655,758,624	(267,181,532)	1,388,577,091	29,696,723	(339,052)	29,357,671	2,964,854,851	(267,520,585)	2,697,334,266
Dec-23	1,680,860,201	1,692,501,631	(618,695,732)	1,073,805,899	30,471,606	(674,100)	29,797,506	3,403,833,439	(619,369,833)	2,784,463,606
Totals	16,671,099,362	21,325,008,902	(10,963,438,029)	10,361,570,874	378,919,250	(12,867,969)	366,051,281	38,375,027,514	(10,976,305,997)	27,398,721,517

### DSM Sales Summary (Forecasted kWh)

	General Service				Lighting			Total		
	Residential	Total	Opt-Outs	Net	Total	Opt-Outs	Net	Total	Opt-Outs	Net
Jan-23	1,849,348,532	1,713,795,111	(914,881,312)	798,913,799	30,685,870	(1,162,302)	29,523,568	3,593,829,513	(916,043,614)	2,677,785,899
Feb-23	1,511,737,386	1,690,760,578	(912,714,819)	778,045,759	30,231,539	(1,227,496)	29,004,043	3,232,729,504	(913,942,315)	2,318,787,189
Mar-23	1,294,157,738	1,650,425,737	(947,945,977)	702,479,760	29,612,807	(1,298,613)	28,314,194	2,974,196,282	(949,244,590)	2,024,951,692
Apr-23	1,006,425,418	1,641,716,162	(955,829,337)	685,886,825	29,541,953	(1,202,337)	28,339,616	2,677,683,532	(957,031,674)	1,720,651,858
May-23	1,118,228,693	1,746,682,392	(929,070,114)	817,612,278	31,284,931	(1,221,201)	30,063,730	2,896,196,015	(930,291,315)	1,965,904,700
Jun-23	1,469,479,098	1,952,625,526	(957,075,578)	995,549,948	34,285,639	(1,222,034)	33,063,605	3,456,390,263	(958,297,612)	2,498,092,651
Jul-23	1,665,602,271	2,090,839,033	(1,182,508,874)	908,330,159	36,362,080	(1,223,832)	35,138,248	3,792,803,384	(1,183,732,706)	2,609,070,678
Aug-23	1,567,299,608	1,976,529,083	(1,116,833,109)	859,695,974	34,455,153	(1,220,939)	33,234,214	3,578,283,843	(1,118,054,048)	2,460,229,795
Sep-23	1,238,054,039	1,828,140,009	(1,142,814,618)	685,325,391	32,223,690	(1,195,088)	31,028,602	3,098,417,737	(1,144,009,706)	1,954,408,031
Oct-23	990,506,874	1,685,235,017	(1,045,170,458)	640,064,559	30,067,259	(1,211,559)	28,855,700	2,705,809,150	(1,046,382,017)	1,659,427,133
Nov-23	1,279,399,504	1,655,758,624	(272,180,881)	1,383,577,743	29,696,723	(334,974)	29,361,749	2,964,854,851	(272,515,856)	2,692,338,995
Dec-23	1,680,860,201	1,692,501,631	(582,847,704)	1,109,653,928	30,471,606	(684,701)	29,786,906	3,403,833,439	(583,532,404)	2,820,301,034
Totals	16,671,099,362	21,325,008,902	(10,959,872,781)	10,365,136,121	378,919,250	(13,205,076)	365,714,174	38,375,027,514	(10,973,077,857)	27,401,949,657



**DUKE ENERGY PROGRESS, LLC**

**Request:**

Please provide a calculation of DSM/EE portfolio savings with and without line loss (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers:

- a. For the year 2019 (as a percentage of 2018 retail sales); and
- b. Forecasted for the year 2021 (as a result of forecasted 2020 sales).

**Response:**

Please refer to "CCL-SACE DR1-16.xlsx."



CCL-SACE%20DR1-1  
6.xlsx

**Duke Energy Progress**

**CCL\_SACE DR 1-16**

	At Generator	At Meter	
2019 Incremental Energy Savings	371,219,630	353,206,118 kWh	Evans Exhibit 1 page 3 (2019) line 28 - adjusted for line
2019 Opt Out Electricity Sales - NC	12,028,707,060	11,445,011,475 kWh	E-2, Sub 1174 Miller Exh 6, Line 5
2019 Opt Out Electricity Sales - SC	2,863,405,551	2,724,458,184 kWh	Miller Exh 6, Line 5
2018 System Retail Billed Electricity Sales	47,498,781	45,193,892 MWh	2018 Revenue Support
2021 Incremental Energy Savings	398,000,553	378,687,491 kWh	Evans Exhibit 1 page 5 (2021) line 27 - adjusted for line
2021 Opt Out Electricity Sales - NC	12,650,321,060	12,036,461,522 kWh	Miller Exh 6, Line 5
2021 Opt Out Electricity Sales - SC	2,924,760,848	2,782,836,202 kWh	Listebarger Exh 6, Line 5
2020 System Retail Electricity Sales	46,771,544	44,501,945 MWh	2019 Spring Forecast, used for collections in 2020

**16a. Please provide a calculation of DSM/EE portfolio savings with and without line loss (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers:**

**a. for the year 2019 (as a percentage of 2018 retail sales);**

2019 Incremental Energy Savings	353,206.12 MWh
2018 System Retail Electricity Sales	45,193,892 MWh
Savings as % of 2018 Sales	0.78%

2019 Incremental Energy Savings	353,206.12 MWh
2018 System Retail Electricity Sales, net of 2019 Opt Out	31,024,423 MWh
Savings as % of 2018 Sales, net of 2019 Opt Out	1.14%

**16b. Please provide a calculation of DSM/EE portfolio savings with and without line loss (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers:**

**b. forecasted for the year 2021 (as a result of forecasted 2020 sales).**

2021 Incremental Energy Savings	378,687.49 MWh
2020 System Retail Electricity Sales	44,501,945 MWh
Savings as % of 2020 Sales	0.85%

**DUKE ENERGY PROGRESS, LLC**

**Request:**

For each program in DEP's DSM/EE portfolio, please provide:

- a. UCT and TRC cost-effectiveness test scores with corresponding total costs and benefits for 2017, 2018, 2019, 2020, and 2021 including:
  - i. A detailed explanation of the inputs and calculation methods used for UCT and TRC.
  - ii. An illustrative example showing how the calculations are done using a common efficient HVAC measure.
- b. The projected cost effectiveness scores for each program in the 2022 and 2023 forecasts;
- c. The measures and programs offered in 2018, 2019, 2020, and 2021 that were removed because they were deemed no longer cost effective for 2022 and 2023; and
- d. Measures and programs that have UCT and/or TRC cost effectiveness scores between 0.85 and 0.99 that were not included in DEP's 2021, 2022, and 2023 portfolios along with their respective cost effectiveness scores and projected kW and kWh savings impact that would have been expected if they had been included.

**Response:**

Please refer to "SACE DR1-4 a and b.xlsx" for response to parts a. and b. Refer to "SACE DR 1-4 c and d.doc" for response to parts c. and d.

Responder: Steven A. LoConte, Senior Program Performance Analyst

SACE DR1-4

1-4. For each program in DEP's DSM/EE portfolio, please provide:

a. UCT and TRC cost-effectiveness test scores with corresponding total costs and benefits for 2017, 2018, 2019, 2020, and 2021 including:

i. A detailed explanation of the inputs and calculation methods used for UCT and TRC

ii. An illustrative example showing how the calculations are done using a common efficient HVAC measure.

b. The projected cost effectiveness scores for each program in the 2022 and 2023 forecasts;

Note: Minor variances in Total Portfolio NPV of AC and Program Costs due to rounding

a/b	2017						2018					
	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC
Appliance Recycling Program	-	5,586	-	-	0.00	0.00	-	-	-	-	-	-
Appliances and Devices	-	-	-	-	-	-	-	-	-	-	-	-
Energy Education Program for Schools	1,376,442	835,991	216,906	-	1.65	2.22	1,261,453	676,815	191,202	-	1.86	2.60
EnergyWise Home	62,410,503	6,502,032	6,094,495	-	9.60	153.14	55,969,158	5,817,271	5,179,747	-	9.62	87.79
Home Energy Improvement	6,313,442	6,961,463	5,151,334	11,690,091	0.91	0.47	-	-	-	-	-	-
Neighborhood Energy Saver	1,117,743	1,781,211	1,177,799	-	0.63	1.85	1,682,539	1,845,739	1,264,146	-	0.91	2.89
Multi-Family Energy Efficiency Program	10,163,052	2,514,413	961,410	-	4.04	6.54	8,510,368	2,409,743	768,609	-	3.53	5.19
My Home Energy Report	6,838,444	6,753,153	-	-	1.01	1.01	9,647,930	7,687,891	-	-	1.25	1.25
Residential Energy Assessments	5,512,365	1,863,486	213,628	12,908	2.96	3.32	5,373,437	1,851,965	242,814	10,940	2.90	3.32
Residential New Construction	21,481,837	11,671,724	9,654,017	15,834,693	1.84	1.20	22,773,154	13,189,949	11,169,768	9,823,602	1.73	1.92
Energy Efficient Lighting	39,549,493	12,229,222	10,354,220	7,648,783	3.23	4.15	33,767,282	9,815,496	7,837,838	-	3.44	17.07
Save Energy and Water Kit	17,187,186	888,869	622,934	-	19.34	64.63	10,207,563	825,279	408,963	-	12.37	24.52
Residential Service - SmartSaver	-	-	-	-	-	-	6,300,422	7,168,833	5,595,885	9,077,791	0.88	0.59
Low Income Weatherization Pilot	-	-	-	-	-	-	-	-	-	-	-	-
Energy Efficiency for Business	77,891,372	21,749,807	18,402,384	51,782,736	3.58	1.41	-	-	-	-	-	-
Business Energy Report	737	20,330	-	-	0.04	0.04	-	-	-	-	-	-
Non-Res SmartSaver Performance	335,899	147,160	46,706	209,151	2.28	1.08	810,478	201,559	138,274	646,499	4.02	1.14
Commercial, Industrial, & Governmental Demand Response	3,551,967	1,393,650	1,269,200	-	2.55	28.54	1,412,804	1,154,642	1,187,855	-	1.22	(42.54)
EnergyWise for Business	858,655	1,390,549	-	-	0.62	0.62	151,825	2,108,030	629,260	-	0.07	0.10
Small Business Energy Saver	26,945,514	8,770,755	7,733,531	12,633,064	3.07	1.97	22,342,803	8,858,213	7,857,678	11,929,015	2.52	1.73
Non-Residential Smart Saver Prescriptive	-	-	-	-	-	-	65,391,512	11,515,913	9,131,886	23,055,883	5.68	2.57
Non-Residential Smart Saver Custom	-	-	-	-	-	-	8,907,633	2,174,163	1,111,868	4,935,057	4.10	1.49
<b>Total Portfolio</b>	<b>281,534,651</b>	<b>85,479,401</b>	<b>61,898,563</b>	<b>99,811,427</b>	<b>3.29</b>	<b>2.28</b>	<b>254,510,362</b>	<b>77,301,500</b>	<b>52,715,794</b>	<b>59,478,787</b>	<b>3.29</b>	<b>3.03</b>

i UCT is the sum of the net present value of avoided capacity, energy and T&D divided by total program costs  
 TRC is the sum of the net present value of avoided capacity, energy and T&D divided by the sum of total program costs and the participant costs less participant incentives

ii See the UCT and TRC columns for part a for the formulas used to calculate the UCT and TRC scores.

**Example of HVAC Measure:**

- NPV Avoided Energy = \$195
- NPV Avoided Capacity = \$38
- NPV Avoided T&D = \$100
- Total NPV Avoided Cost = \$333
- Program Cost = \$270
- Participant Incentive = \$250
- Participant Cost (net) = \$525
- UCT = \$333/\$270 = 1.23
- TRC = \$333/(\$270-\$250+\$525) = 0.61

2019						2020						2021		
NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,224,171	2,160,799	1,099,624	1,379,802	4.73	4.19	8,710,041	3,051,854	1,188,978	1,637,760	2.85	2.49	5,644,364	1,336,043	725,427
1,039,694	747,483	186,360	200,113	1.39	1.37	412,495	388,273	83,075	88,692	1.06	1.05	360,751	396,660	77,507
53,221,850	5,806,874	5,617,524	-	9.17	281.08	8,817,400	1,110,200	6,592,211	-	7.94	(1.61)	882,669	2,443,378	4,007,819
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,438,897	1,671,298	1,095,666	1,174,420	0.86	0.82	196,865	401,046	165,786	165,510	0.49	0.49	234,069	601,722	227,313
5,977,179	2,156,484	567,005	620,998	2.77	2.70	1,389,245	892,251	162,346	149,840	1.56	1.58	673,764	377,471	45,241
11,494,728	6,299,307	-	-	1.82	1.82	10,733,674	7,369,336	-	-	1.46	1.46	9,398,049	4,152,580	-
4,344,111	2,113,798	168,539	189,464	2.06	2.03	4,050,428	2,160,729	143,311	140,257	1.87	1.88	2,870,462	2,046,087	122,261
19,396,567	15,113,951	12,656,251	11,233,867	1.28	1.42	22,840,461	18,861,261	16,331,257	13,341,592	1.21	1.44	20,371,403	18,415,175	15,347,365
35,415,070	13,447,031	11,329,673	7,252,368	2.63	3.78	20,092,826	5,995,694	4,787,340	3,722,792	3.35	4.07	14,487,184	6,212,512	4,692,739
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,417,341	6,411,758	4,338,824	6,539,280	0.84	0.63	5,453,175	6,494,225	4,726,175	6,821,472	0.84	0.63	3,855,373	6,365,722	4,579,950
78,059	27,356	19,092	-	2.85	9.45	61,168	51,370	16,932	-	1.19	1.78	106,305	63,139	40,635
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
606,333	267,186	129,784	482,944	2.27	0.98	1,239,947	386,339	256,693	481,032	3.21	2.03	-	-	-
4,394,068	1,811,347	1,242,733	-	2.43	7.73	2,964,614	1,352,902	1,401,894	-	2.19	(60.51)	11,618,565	5,512,341	2,435,930
923,654	2,412,880	1,005,890	123,454	0.38	0.60	691,636	1,896,524	917,440	64,662	0.36	0.66	456,862	1,358,137	844,590
17,456,367	7,301,790	6,380,717	10,838,854	2.39	1.48	11,119,515	5,004,816	4,105,057	6,900,123	2.22	1.43	9,839,017	5,575,420	4,313,834
31,476,285	7,877,838	5,763,360	11,646,372	4.00	2.29	28,517,362	7,863,953	5,660,029	12,024,408	3.63	2.00	31,433,838	12,359,563	7,833,989
9,658,177	2,776,482	1,580,493	4,849,778	3.48	1.60	9,481,018	3,514,807	1,716,319	4,323,371	2.70	1.55	-	-	-
<b>212,562,552</b>	<b>78,403,665</b>	<b>53,181,535</b>	<b>56,531,713</b>	<b>2.71</b>	<b>2.60</b>	<b>136,771,870</b>	<b>66,795,579</b>	<b>48,254,845</b>	<b>49,861,511</b>	<b>2.05</b>	<b>2.00</b>	<b>112,232,676</b>	<b>67,215,950</b>	<b>45,294,602</b>

			2022						2023					
NPV Participant			NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC
Costs (net)	UCT	TRC												
-			-	-	-	-			-	-	-	-		
1,175,707	4.22	3.16	13,976,572	5,032,531	3,921,740	7,103,274	2.78	1.70	10,702,720	3,843,861	2,198,706	2,924,506	2.78	2.34
79,624	0.91	0.90	1,850,249	1,265,659	372,363	342,638	1.46	1.50	1,095,922	926,818	273,412	273,388	1.18	1.18
-	0.36	(0.56)	4,145,545	2,911,345	945,751	-	1.42	2.11	6,572,479	3,345,888	1,121,867	-	1.96	2.96
-			-	-	-	-			-	-	-	-		
239,190	0.39	0.38	2,590,613	3,063,705	2,453,001	2,279,880	0.85	0.90	3,403,931	3,152,564	2,316,040	2,316,040	1.08	1.08
131,077	1.78	1.45	4,982,779	1,924,548	1,250,294	1,075,574	2.59	2.85	5,389,538	1,924,548	1,250,294	1,203,289	2.80	2.87
-	2.26	2.26	10,729,556	6,543,763	-	-	1.64	1.64	11,064,476	4,107,489	-	-	2.69	2.69
177,929	1.40	1.37	7,838,136	3,422,188	344,880	476,184	2.29	2.21	8,383,117	3,703,848	319,470	449,711	2.26	2.19
13,111,390	1.11	1.26	20,458,026	15,144,537	13,937,691	12,814,919	1.35	1.46	34,357,388	18,935,040	17,296,823	15,159,950	1.81	2.05
2,439,349	2.33	3.66	12,414,397	5,700,439	4,664,172	2,340,979	2.18	3.68	7,759,316	5,473,256	4,421,913	2,496,641	1.42	2.19
-			-	-	-	-			-	-	-	-		
6,897,893	0.61	0.44	3,338,996	3,301,534	1,939,350	5,521,478	1.01	0.49	5,156,836	3,764,875	2,161,225	6,194,648	1.37	0.66
-	1.68	4.72	85,792	86,901	27,400	-	0.99	1.44	-	17,055	-	-	0.00	-
-			-	-	-	-			-	-	-	-		
-			-	-	-	-			-	-	-	-		
-			1,123,866	401,977	248,952	862,250	2.80	1.11	3,272,977	780,682	608,688	2,141,045	4.19	1.42
-	2.11	3.78	4,671,542	2,210,447	2,032,888	-	2.11	26.31	8,612,127	2,160,777	2,032,888	-	3.99	67.34
6,393	0.34	0.88	804,045	2,904,079	1,911,715	-	0.28	0.81	1,323,135	1,107,735	414,507	7,049	1.19	1.89
6,993,751	1.76	1.19	25,640,082	10,322,430	8,663,452	15,877,605	2.48	1.46	15,333,941	7,850,667	6,759,394	12,019,667	1.95	1.17
16,533,545	2.54	1.49	39,447,957	12,680,811	9,296,095	17,040,091	3.11	1.93	30,766,481	13,849,235	10,637,015	19,589,455	2.22	1.35
-			10,548,581	4,610,576	2,458,112	7,226,284	2.29	1.12	14,526,547	4,872,748	2,687,840	8,241,430	2.98	1.39
<b>47,785,847</b>	<b>1.67</b>	<b>1.61</b>	<b>164,646,734</b>	<b>81,527,471</b>	<b>54,467,856</b>	<b>72,961,155</b>	<b>2.02</b>	<b>1.65</b>	<b>167,720,931</b>	<b>79,817,086</b>	<b>54,500,081</b>	<b>73,016,820</b>	<b>2.10</b>	<b>1.71</b>

- c. The measures and programs offered in 2018, 2019, 2020, and 2021 that were removed because they were deemed no longer cost effective for 2022 and 2023?

Response: The following Non-Residential Prescriptive measures were removed from the 2022 projection due to being no longer cost effective.

Measure ID	Name
6210	Beverage Reach-in Controller
6211	Door Gaskets - Cooler and Freezer
5766	FHAC_No Variable Speed_1996-2003
5768	FHAC_Variable Speed_1975-1985
5769	FHAC_Variable Speed_1985-1996
5770	FHAC_Variable Speed_1996-2003
5771	FHAC_Variable Speed_less than 1975
5778	FHWC_Variable Speed_1996-2003
5785	Fryer (Standard Vat)
6233	Holding Cabinet Half Size Insulated
5787	HT ES PotPanUtl DW (Elec) New -replc on Burnout
5788	HT ES PotPanUtl DW (Gas) New -replc on Burnout
5789	HT ES PotPanUtl DW New -replc on Burnout
6043	Icemaker (100 to 500 lbs_day)
6044	Icemaker (501 to 1000 lbs_day)
6235	Night covers for displays
6237	Snack Machine Controller
11470	Vending Controls - Refrigerated Beverage COMM
6242	Vending Equipment Controller
11471	Water Cooler Timer COMM
5793	Zero Energy Doors_High-Temp Cooler

- d. Please provide a list of Measures and programs that have UCT and/or TRC cost effectiveness scores between 0.85 and 0.99 that were not included in DEP's 2021, 2022, and 2023 portfolios along with their respective cost effectiveness scores and projected kW and kWh savings impact that would have been expected if they had been included.

Response:

Measure	Description	Program	UCT	TRC	Expected KWH	Expected KW	Additional information
8,000BTU window AC unit	Replacement	NES	0.89	0.89	500,000	50	Not included due to risk of incurring replacement window costs during direct install