

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

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

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) **DOCKET NO. E-7, SUB 1249**
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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**

May 10, 2021

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- FBW-1 Forest Bradley-Wright Resume
- FBW-2 DEC Response to SACE Data Request, Item Number 2-2 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1192)
- FBW-3 Duke Energy Carolinas Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1230)
- FBW-4 DEC Response to SACE Data Request, Item Number 1-18 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249)
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- FBW-8 Entergy Arkansas Workbook 2020 Summary and 'Prior Year Portfolio' Tab
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I. Introduction and Qualifications

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Forest Bradley-Wright. I am the Energy Efficiency Director for Southern Alliance for Clean Energy (“SACE”), and my business address is 3804 Middlebrook Pike, Knoxville, Tennessee.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of SACE, the North Carolina Justice Center (“NC Justice Center”), and the North Carolina Housing Coalition (“NC Housing Coalition”).

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND WORK EXPERIENCE.

A. I graduated from Tulane University in 2001 and in 2013 received my Master of Arts degree from Tulane in Latin America Studies with an emphasis on international development, sustainability, and natural resource planning.

My work experience in the energy sector began in 2001 at Shell International Exploration and Production Company, where I served as Sustainable Development Team Facilitator.

From 2005 to 2018, I worked for the Alliance for Affordable Energy. As the Senior Policy Director, I represented the organization through formal intervenor filings and before regulators at both the Louisiana Public Service Commission and the New Orleans City Council on issues such as integrated resource planning, energy-efficiency rulemaking and program design, rate cases, utility acquisition, 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 on
5 issues related to energy efficiency in resource planning, program design, budgets,
6 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 Rider 11 in Docket No. E-7, Sub 1192, Duke Energy
15 Progress' ("DEP") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub 1206,
16 DEC's DSM/EE Recovery Rider 12 in Docket No. E-7, Sub 1230, and DEP's
17 DSM/EE Recovery Rider 12 in Docket No. E-7, Sub 1252.

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

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

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II. Summary of Recommendations

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Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR DEC?

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- Work in good faith with members of the Collaborative to produce a plan how best to exceed 1% annual savings in each of the next six years, to be periodically updated and presented to the Commission as an appendix to future DEC DSM/EE Rider applications.

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- Quantify and analyze the carbon savings associated with DEC's DSM/EE portfolio both to help inform the work of the Collaborative, and to enable the Commission and other interested parties to track the impact of DSM/EE resources towards achieving North Carolina's and Duke Energy's respective carbon reduction goals.

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- Quantify and analyze the energy savings associated with the Durham Pilot program and work with the Collaborative to take the lessons learned to evaluate opportunities to modify or design new programs to assist low-income customers achieve deep energy savings.

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- Expediently finalize the evaluation and development of program recommendations proposed by Collaborative members for direct implementation or submission of program applications to the Commission for approval.

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- Work towards a target that 100% of projects applying for Low-Income Housing Tax Credit (LIHTC) in its service territory are reviewed to identify relevant DSM/EE program offerings, then report on an annual basis the number of LIHTC applications reviewed, the conversion rate for participation by these projects, and through which program.

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- Continue to focus on capturing additional measures that are capable of achieving deeper and longer-lived savings to maintain a more balanced and robust program portfolio going forward.

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- Increase its low-income efficiency program budget and work with the Collaborative on setting new budget and savings targets for its income-qualified programs to be reported to the Commission in its next DSM/EE Recovery Rider filing.

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

- 3 • Direct DEC to develop and submit to the Commission a supplemental filing in
4 this docket indicating how the Company would achieve the 30.4 GWh¹ savings
5 required to close the gap between DEC's projected 0.96% annual savings in 2022
6 up to the 1% annual savings target.
- 7 • Direct DEC to work in good faith with members of the Collaborative to produce
8 a plan how best to exceed 1% annual savings in each of the next six years, to be
9 periodically updated and presented to the Commission as an appendix to future
10 DEC DSM/EE Rider applications.
- 11 • Direct DEC to quantify and analyze the carbon savings associated with DEC's
12 DSM/EE portfolio both to help inform the work of the Collaborative, and to
13 enable the Commission and other interested parties to track the impact of
14 DSM/EE resources towards achieving North Carolina's and Duke Energy's
15 respective carbon reduction goals.
- 16 • Authorize DEC to proceed with its proposed study to evaluate market penetration
17 of its non-income qualified programs with low- and moderate-income customers.
- 18 • Direct DEC to resume including a table comparing the past performance of its
19 DSM/EE portfolios' costs and savings (as ordered in 2019) and to add forecasted
20 versus actually achieved kWh savings in that table: "That DEC shall include in its
21 future DSM/EE applications a table that shows DEC's test period DSM/EE costs and
22 savings, and that same information for the previous five years."

23 **III. DEC's 2020 Energy Savings Performance**

24 **Q. HOW DID DEC'S DSM/EE PERFORMANCE IN 2020 COMPARE TO**
25 **PREVIOUS YEARS?**

¹ At the meter

1 A. DEC reported a marked decline in energy savings in 2020, resulting from social
 2 distancing restrictions due to the COVID-19 pandemic. Despite lower performance
 3 in 2020 compared to previous years, DEC is to be commended for proactively
 4 adjusting its approach in the face of unprecedented challenges.

5 In 2020, DEC delivered 612.2 GWh of efficiency savings at the meter, equal to
 6 0.76% of the previous year's retail sales. This reflects a nearly 25% decline in total
 7 savings from the previous year when the Company reported 0.98% annual
 8 efficiency savings. Despite the extraordinary backdrop of the COVID-19
 9 pandemic, 2020 marks a disappointing second year in a row where the Company's
 10 DSM/EE activities fell below the 1% savings mark, a threshold that the Company
 11 has agreed to work towards.

12 **Table 1. Duke Energy Carolinas DSM/EE Performance 2017-2020**

| Vintage Year | 2017 | 2018 | 2019 | 2020 |
|----------------------------|------------------|--------------------|--------------------|--------------------|
| At Meter Savings (GWh) | 880 ² | 811.2 ³ | 794.9 ⁴ | 612.2 ⁵ |
| Previous Year Variance (%) | - | (7.8%) | (2.0%) | (23.0%) |

13 **Q. HOW DID DEC'S DSM/EE PERFORMANCE COMPARE TO ITS**
 14 **PROJECTIONS FOR 2020?**

² DEC Response to SACE Data Request, Item Number 2-2 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1192) (Attached as Exhibit FBW-2)

³ *Id.*

⁴ DEC Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1230) (Attached as Exhibit FBW-3)

⁵ DEC Response to SACE Data Request, Item Number 1-18 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249) (Attached as Exhibit FBW-4)

1 A. In DEC's DSM/EE Rider 11 filing, the Company projected annual energy savings
 2 equal to 0.84% of the prior-year's retails sales, despite having reported higher
 3 actual savings in each of the preceding three years, including 1.11% in 2017 and
 4 1.05% in 2018. Because those projections preceded the COVID-19 pandemic and
 5 the lockdowns it precipitated, they understandably did not take those unanticipated
 6 circumstances into account. Ultimately, DEC's portfolio of programs achieved
 7 approximately 93.5% of its projections for 2020, only moderately lower than
 8 expected. The difference between the Company's DSM/EE performance and the
 9 Company's own projections is show below in Table 2.

10 **Table 2.** DEC Projected vs. Actual Savings⁶

| Year | Projected Savings (GWh) | Actual Savings (GWh) | Actual to Projected Variance (%) |
|-------------|--------------------------------|-----------------------------|---|
| 2017 | 608.0 ⁷ | 934.4 ⁸ | 53.7% |
| 2018 | 816.5 ⁹ | 886.7 ¹⁰ | 8.5% |
| 2019 | 781.4 ¹¹ | 858.0 ¹² | 9.8% |
| 2020 | 694.9 ¹³ | 650.2 ¹⁴ | (6.5%) |
| 2021 | 760.2 ¹⁵ | | |
| 2022 | 814.3 ¹⁶ | | |

⁶ DEC reports energy savings and projections as "Net at Plan" or at the generator level.

⁷ Supplemental Evans Exhibit 1, Page 8 filed in NCUC Docket No. E-7, Sub 1105

⁸ Evans Exhibit 1, Page 1 filed in NCUC Docket No. E-7, Sub 1249

⁹ Supplemental Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, SUB 1130

¹⁰ Evans Exhibit 1, Page 2 filed in NCUC Docket No. E-7, Sub 1249

¹¹ Evans Exhibit 1, Page 5 filed in NCUC Docket No. E-7, Sub 1164

¹² Evans Exhibit 1, Page 3 filed in NCUC Docket No. E-7, Sub 1249

¹³ Evans Exhibit 1, Page 5 filed in NCUC Docket No. E-7, Sub 1192

¹⁴ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1249

¹⁵ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1230

¹⁶ Evans Exhibit 1, Page 5 filed in NCUC Docket No. E-7, Sub 1249

1 Historically, DEC's projections have nearly always underestimated its actual
2 energy savings. Prior to 2018, it was common for DEC's projections to be 30-40%
3 or more below actual performance, though in recent years the difference has been
4 less than 10%. The comparison is still useful for highlighting that in 2020 the
5 Company's projections were conservative enough that they were nearly achievable
6 even during a global pandemic.

7 **Q. AT A HIGH LEVEL, WHAT IMPLICATIONS DID THE COVID-19**
8 **PANDEMIC HAVE FOR DEC'S DSM/EE PERFORMANCE IN 2020?**

9 A. DEC performed better than many other major utilities in the region, as discussed
10 in greater detail below. This was in part because DEC was among the first utilities
11 in the Southeast to implement new safety protocols enabling it to resume in-home
12 energy efficiency services. Again, DEC is to be commended for how it responded
13 to the pandemic, which indicates a level of commitment, flexibility, and initiative
14 that will serve the Company well if it accepts the challenge of again meeting and
15 surpassing the savings target of 1% of prior-year retail sales.

16 **Q. WAS THE COMPANY'S EE PORTFOLIO COST-EFFECTIVE IN 2020?**

17 A. Yes. The value of DSM/EE programs continued to be cost effective and delivered
18 impressive financial value to customers during the pandemic. In 2020, DEC's
19 DSM/EE portfolio had a Utility Cost Test ("UCT") score of 2.96 and a Total
20 Resource Cost ("TRC") score of 2.81, similar to cost effectiveness in 2019.¹⁷ The
21 total net present value ("NPV") of avoided costs in 2020 decreased at a level

¹⁷ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-4 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249) (Attached as Exhibit FBW-5)

1 roughly proportional to declines in total kWh saved, but still amounted to
2 approximately \$328 million of financial benefit for customers.¹⁸

3 **Q. HOW DID DEC'S RESIDENTIAL PROGRAM PERFORMANCE**
4 **COMPARE TO TOTAL SAVINGS IN 2020?**

5 A. Residential programs have made up the majority of savings in DEC's portfolio for
6 the past several years and in 2020 represented 72% of all savings.¹⁹ One residential
7 program, My Home Energy Report (MyHER), made up over half of DEC's total
8 savings in 2020 at 51% of reported system energy reductions. As we have
9 expressed numerous times in previous years, we are concerned by DEC's heavy
10 reliance on a program with such limited measure life persistence to make up the
11 bulk of its DSM/EE portfolio savings. This concern was further heightened by the
12 Market Potential Study DEC submitted to the Commission in its most recent IRP.
13 We urge the Company to continue to focus on capturing additional measures that
14 are capable of achieving deeper and longer-lived savings to maintain a more
15 balanced and robust program portfolio going forward.²⁰ These measures should
16 include adding to or modifying programs that target the largest residential end uses
17 of electricity – such as space heating & cooling and water heating.

18 **Q. HOW DID DEC'S NON-RESIDENTIAL PROGRAM PERFORMANCE**
19 **COMPARE TO TOTAL SAVINGS IN 2020?**

20 A. In 2020, DEC's non-residential programs made up just 28% of total energy
21 efficiency savings.²¹ Even pre-pandemic, DEC demonstrated a troubling trend of

¹⁸ *Id.*

¹⁹ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1249

²⁰ Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center and Southern Alliance for Clean Energy, N.C.U.C. Docket No. E-7, Sub 1192 (May 20, 2019).

²¹ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1249

1 being unable to meet projections for non-residential programs and falling savings
2 among commercial & industrial customers. DEC's non-residential efficiency
3 program savings declined 37% from the previous year, a substantially sharper drop
4 than was seen for residential programs most likely resulting from the economic
5 decline brought on by the COVID-19 pandemic.

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

8 A. Commercial and industrial opt outs continue to negatively impact DEC's ability to
9 reach higher savings benchmarks due to this group's large share of energy
10 consumption. In 2020, approximately 61.6% of DEC's commercial and industrial
11 energy consumption opted out of the utility's energy efficiency offerings (29,277
12 GWh out of 47,543 GWh of DEC's non-residential retail sales).²² Customers that
13 opt out withhold their proportionate share of funding for DEC's energy efficiency
14 programs, and do not contribute to the utility's energy efficiency savings. This is
15 unfortunate for many reasons, including that commercial and industrial energy
16 efficiency are frequently among the lowest cost source per kWh saved. Such
17 programs also tend to yield saving at a scale that leads to substantially reduced
18 costs for participating customers and the utility system as a whole. As noted in my
19 testimony for DEC's DSM/EE Rider 12 last year, "While I recognize that
20 commercial and industrial customers who opt-out also certify that they have
21 implemented their own energy-efficiency or demand-side management measures,

²² Duke Energy Carolinas Response to SACE Data Request, Item Number 1-19 in NCUC Docket E-7, Sub 1249 (Attached as Exhibit FBW-6)

1 there is no requirement to report any resulting savings to the Company or the
2 Commission and nothing in DEC's filing indicates the extent to which such savings
3 are occurring. As a result, actual savings among customers who opt out of DEC's
4 efficiency programs may be much lower than presumed." This gap in reporting
5 persists.

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

8 A. Yes. By calculating energy savings compared to all retail sales, the Commission
9 may observe the effect of the efficiency portfolio against actual customer energy
10 consumption in a year.

11 **Q. HOW DID DEC'S LOW-INCOME EFFICIENCY IMPACTS COMPARE TO**
12 **PREVIOUS YEARS?**

13 A. DEC's low-income efficiency programs were negatively impacted to a
14 considerable degree by the COVID-19 pandemic. In 2020, energy saved in the
15 DEC Low-Income Energy Efficiency and Weatherization Assistance program
16 decreased by 75%,²³ making it one of the hardest-hit programs. Unfortunately, this
17 reduction in energy saving services came at a time when the low-income customer
18 segment that DEC serves was facing the hardest economic circumstances in recent
19 history. Likewise, the Multi-Family Energy Efficiency program, which has some
20 degree of overlap with the low-income customer segment, was similarly impacted
21 with an 81% savings reduction in 2020. Both of these programs experienced about

²³ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-21 in NCUC Docket E-7, Sub 1249 (Attached as Exhibit FBW-7).

1 twice the level of negative impact as general residential programs, while short-
 2 lived measures in the MyHER program experienced a very slight uptick.

3 **Table 3. DEC Savings by Residential Customer / Program Type²⁴**

| Customer/Program Type | 2018 GWh | 2019 GWh | 2020 GWh | % Change 2019-2020 |
|---------------------------------|--------------|--------------|--------------|--------------------|
| Income-Qualified | 6.8 | 8.8 | 2.2 | -75% |
| Multi-Family | 21.0 | 21.3 | 4.0 | -81% |
| General Residential | 214.8 | 209.8 | 130.2 | -38% |
| My Home Energy Report | 344.8 | 328.4 | 332.1 | 1% |
| All Residential Programs | 587.4 | 568.4 | 468.5 | -18% |

4 **IV. Issues and Recommendations Regarding Duke's 2022 Savings Forecast**

5 **Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR 2022?**

6 A. DEC projects that it will achieve approximately 766.7 GWh of energy savings at
 7 the meter in 2022.²⁵

8 **Q. DOES THIS REFLECT A DECLINE FROM DEC'S PREVIOUS SAVINGS
 9 PERFORMANCE?**

10 A. Yes, it reflects a slight decline and would also fall short of the 1% savings
 11 benchmark. DEC's 2022 forecast of 766.7 GWh of energy savings would lead to
 12 an estimated 0.96% of prior-year retail sales,²⁶ compared to 0.98% in 2019,²⁷
 13 1.05% in 2018,²⁸ and for 2017 DEC reported 880 GWh of savings for 1.11% of

²⁴ *Id.*

²⁵ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1249

²⁶ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-18 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249) (Attached as Exhibit FBW-4)

²⁷ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1230) (Attached as Exhibit FBW-3)

²⁸ Duke Energy Carolinas Response to SACE Data Request, Item Number 2-2 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1192) (Attached as Exhibit FBW-2)

1 prior-year retail sales.²⁹ Taken from the recent peak in 2017, DEC is projecting a
2 13% decline in saving for 2022.

3 **Q. WHAT HAVE THE COMMISSION'S ORDERS IN PAST DEC DSM/EE**
4 **RIDERS SAID ON THE SUBJECT OF SAVINGS DECLINES?**

5 A. In both 2019 and 2020, the Commission indicated its concern with DEC's
6 projected savings declines. The Commission found in its October 18, 2019 Final
7 Order in DEC's DSM/EE Rider 11 proceeding in Docket No. E-7, Sub 1192 that:

8 In particular, the Commission notes the forecasted decline in DEC's
9 DSM/EE savings in 2020 and concludes that it would be helpful to have
10 the Collaborative examine the reasons for the forecasted decline, and
11 explore options for preventing or correcting a decline in future DSM/EE
12 savings.

13 The following year, the Commission reiterated its concern in its December 11,
14 2020 Final Order in DEC's DSM/EE Rider 11 proceeding in Docket No. E-7, Sub
15 1230, stating:

16 The forecasted decline in DEC's DSM/EE savings in 2021 is
17 a matter of concern. Consequently, the Collaborative should
18 examine the reasons for the forecasted decline and continue
19 exploring options for preventing or correcting a decline in
20 future DSM/EE savings.

21 **Q. HAS THE COLLABORATIVE WORKED TO EXAMINE THE REASONS**
22 **FOR THE FORECASTED DECLINE AND EXPLORED OPTIONS FOR**
23 **PREVENTING OR CORRECTING A DECLINE IN FUTURE DSM/EE**
24 **SAVINGS?**

25 A. Yes. Understanding and preventing savings declines continues to be one of the
26 most frequently raised issues for discussion at the Collaborative.

²⁹ *Id.*

1 In 2019, the Collaborative prioritized exploring portfolio level opportunities
2 and challenges and produced a summary report highlighting a range of program
3 and policy opportunities to increase savings. Reflecting the perspective of many
4 clean energy and customer advocacy organizations that participate in the
5 Collaborative, the report also affirmed a continued desire to see Duke sustain
6 annual savings in excess of 1% of retail sales. It also identified several other
7 complimentary performance targets.

8 In 2020, SACE, NCJC, and others efficiency advocates in the Collaborative
9 shifted focus towards development of specific program recommendations detailed
10 below that could help to prevent savings declines and return to sustained annual
11 savings levels in excess of 1% of retail sales.

12 In 2021, SACE, NCJC, and other stakeholders at the Collaborative are
13 seeking to build on this past work, but have shifted towards development of a more
14 specific and actionable plan. It is intended that this plan will quantifying the
15 number of kWh savings needed to close the 1% savings gap. This analysis will be
16 paired with a combination of program recommendations and potential changes to
17 policies and practices sufficient to overcome the savings gap. Accordingly, each of
18 these individual opportunities will be evaluated for their expected future savings
19 contributions, then added together and measured against the savings gap. The aim
20 is for the plan to include enough new savings opportunities to exceed 1% annual
21 savings for over the next six years, with sufficient redundancy and flexibility to
22 achieve the goal even if not every individual component is implemented. To be

1 successful, this work will require Duke representatives and Collaborative
2 stakeholders working diligently together in good faith to research, problem solve,
3 and propose a set of recommendations that will reflect our best thinking for how
4 higher levels of efficiency savings are to be achieved and sustained.

5 It would seem that such a plan would be particularly attainable for Duke
6 Energy Carolinas, which (notwithstanding the 2020 pandemic year) has already
7 delivered savings very near or above 1% for several years. Moreover, in this
8 proceeding it is projecting savings for 2022 that fall only 0.04% short of the goal.
9 It is reasonable to expect the Company to close this gap with a little focused effort
10 and collaboration with encouragement from the Commission.

11 **Q. HAS DEC PROVIDED AN EXPLANATION FOR ITS PROJECTED**
12 **EFFICIENCY SAVING DECLINES, AS REQUESTED IN DEC RIDER**
13 **DOCKET E-7, SUB 1230?**

14 A. Witness Evans' testimony touched on the subject, though the response was quite
15 brief and lacked detail. For instance, a general reference was made to note that
16 Collaborative stakeholders have provided program recommendations, but no
17 indication was given regarding the steps DEC is taking toward implementing those
18 recommendations. Even more notable was the lack of any statements indicating
19 whether or how DEC aims to reverse its declines and return to the higher savings
20 levels it achieved in 2017, 2018, and 2019.

21 DEC is forecasting savings for 2022 that are higher than it projected in Rider
22 12 for 2021 (0.96% of retail sales vs. 0.89%, respectively). This is directionally
23 encouraging, but still disappointing, because the 2022 forecast is so close to the

1 1% target that continues to be a highly emphasized priority (and has been for many
2 years) for many Collaborative participants.

3 **Q. IF DEC IS PRESENTING A CONSERVATIVE FORECAST IN ITS**
4 **ANNUAL RIDER FILINGS, IS THERE STILL VALUE IN SHOWING**
5 **HOW IT WOULD ACHIEVE HIGHER SAVINGS LEVELS?**

6 A. Yes, it would be better if DEC would acknowledge in its DSM/EE Rider filings
7 that the Commission, as well as NCJC, et. al. and member of the Collaborative,
8 will be comparing the Company's 2022 savings forecast with its performance in
9 past years, as well as the 1% annual savings target. Additionally, DEC could state
10 its intent to strive for these higher levels, while indicating what course of action it
11 believes would enable to successfully achieve those more ambitious goals.

12 **Q. SHOULD THE COMMISSION ASSESS DEC'S PERFORMANCE IN**
13 **COMPARISON TO A 1% ANNUAL SAVINGS TARGET?**

14 A. Yes. The 1% annual savings target continues to be relevant for public policy
15 purposes for several reasons. Notably, research suggests that energy efficiency
16 savings trend higher in jurisdictions that have enacted savings targets.³⁰ A 1%
17 annual savings target was also a key outcome of settlement negotiations in the
18 merger between Duke and Progress Energy.³¹ As noted above, in DEC's DSM/EE
19 Rider Docket proceeding both last year and the year before the Commission

³⁰ See Gold, *et.al.*, *Next-Generation Energy Efficiency Resource Standards*, American Council for an Energy-Efficient Economy (August 2019), available at: <https://www.aceee.org/sites/default/files/publications/researchreports/u1905.pdf>

³¹ 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 ("PSCSC") in Docket No. 2011-158-E ("Merger Settlement").

1 indicated its interest in DEC correcting declines from previous years savings,
2 which were in excess of 1% in 2017, 2018, and fell just short of 1% in 2019.

3 The Commission has also indicated its desire that Duke and stakeholders at the
4 Collaborative work towards reaching higher levels of savings. To this end, a large
5 number of clean energy and public interest advocates have contributed
6 considerable amounts of time to this work at the Collaborative, while making clear
7 that the 1% threshold is important to their participation in these efforts.

8 All of these factors speak to the continued relevance of the 1% annual savings
9 threshold.

10 **Q. HOW DOES THE COMMISSION'S 2020 ORDER CONCERNING DUKE'S**
11 **DSM/EE COST RECOVERY MECHANISM IN DOCKET NO. E-7, SUB**
12 **1032 RELATE TO THE 1% ANNUAL SAVINGS TARGET?**

13 A. The 1% target was also a key feature of the recently approved Settlement
14 Agreement negotiated between DEC, Duke Energy Progress, LLC ("DEP"), the
15 Natural Resources Defense Council ("NRDC"), SACE, Sierra Club, South
16 Carolina Coastal Conservation League ("SCCCL"), North Carolina Sustainable
17 Energy Association ("NCSEA"), and the North Carolina Attorney General's Office
18 ("AGO"), (collectively the "Joint Parties"). That agreement was approved by the
19 Commission in October 2020, and its provisions go into effect for the first time in
20 2022.

21 The Commission order modifies the mechanism by which Duke's energy
22 efficiency performance incentives are set, including establishing additional

1 incentives related to the Company’s ability to reach the 1% savings target.³² The
2 Company will receive an additional incentive of \$500,000 for any year during the
3 four-year period of 2022-2025 where it achieves 1% of prior-year retail sales from
4 efficiency. The Commission indicates that the purpose of the incentive is “to
5 motivate the Company to aggressively pursue savings from cost-effective EE and
6 DSM Program.” In addition to establishing the incentive, the Commission also
7 directed the Collaborative to “study ways to implement a step approach to this type
8 of incentive/penalty structure to potentially achieve even greater annual energy
9 savings.”

10 Another significant change to the Duke Mechanism was made by changing
11 the primary cost effectiveness test used in screening program offerings from the
12 Total Resource Cost test to the Utility Cost Test. This change will help to better
13 value efficiency benefits for inclusion in DEC’s DSM/EE portfolio and should
14 directly assist Duke to expand its overall efficiency savings. Though no longer the
15 primary cost test, the TRC will continue to be evaluated for informational purposes,
16 and DEC is now working with the Collaborative to undertake a study of non-energy
17 benefits (NEBs) that could result in more complete / and accurate accounting of
18 benefits for this test in the future.

19 Notably, however, between the time the Stipulating Parties submitted their
20 Settlement Agreement and the Commission issued its Final Order, DEC completed

³² Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, NCUC Docket No. E-7, Sub 1032 (October 20, 2020).

1 its Market Potential Study using the now outdated TRC test (without accounting
2 for NEBs), rather than using the UCT. For this, and other reasons DEC's IRP
3 appears to have significantly understated the amount of available cost-effective
4 DSM/EE. Ultimately, it is important that the DSM/EE Rider and the IRP both fully
5 reflect the full range of available cost-effective energy efficiency and demand
6 response resources so that goals like reaching and exceeding 1% annual efficiency
7 savings can be realized.

8 **Q. HAS DEC RECENTLY FILED ANY ENERGY DSM/EE PROGRAM**
9 **APPLICATIONS WITH THE COMMISSION?**

10 **A:** Yes. On February 25th, 2020, DEC submitted separate applications to add new
11 measures to its Neighborhood Energy Saver and Residential Home Assessment
12 programs. On August 25th, 2020 DEC submitted an application to modify its
13 Residential Power Manager Load Control Service program to add a "smart"
14 thermostat-based Winter-Focused load control option. Each of these programs was
15 subsequently approved by the Commission.

16 On August 4th, 2020, DEC submitted an application for approval of
17 modifications to its Small Business Energy Saver program to expand customer
18 eligibility criteria and implement a new program delivery channel called
19 SmartPath™, which was subsequently approved by the Commission.

20 On September 21st, 2020, DEC submitted an application for approval of a
21 proposed Residential New Construction program. My understanding is this
22 proposal is still awaiting a decision by the Commission.

1 On February 3rd, 2021, DEC submitted an application seeking approval to
2 include additional discounted measures in its Multi-Family Energy Efficiency
3 Program, which was subsequently approved by the Commission.

4 **Q. IS DEC CONSIDERING PROGRAM RECOMMENDATIONS**
5 **SUBMITTED BY COLLABORATIVE STAKEHOLDERS?**

6 A. Over the past two years, stakeholders at the Collaborative have submitted several
7 program proposals for Duke's consideration, including:

- 8 • Energy Star Retail Products Platform (January 2019)
- 9 • Program Savings from Building Codes and Standards (January 2019)
- 10 • Low-Income Housing Tax Credit (LIHTC) (March 2019)
- 11 • Residential Low-Income Single Family Heat Pump Water Heater Rental
12 Program (June 2020)
- 13 • Non-Residential Multifamily Heat Pump Water Heater Rebate Program (June
14 2020)
- 15 • Manufactured Homes Retrofit Program (August 2020)
- 16 • Manufactured Home New and Replacement Programs (August 2020)

17 For each of the above program recommendations, the sponsoring stakeholder
18 prepared supporting materials and presented them to the Collaborative, after which
19 Duke took them for internal review and consideration. But there has been little
20 visible action towards implementing these recommendations and Duke has yet to
21 submit a program application to the Commission for approval based on any of the
22 recommendations provided by members of the Collaborative.

23 Though it has not been developed into a discrete program offering, the
24 recommendation that Duke appears to have done the most to advance concerns

1 connecting projects receiving an allocation of Low-Income Housing Tax Credits
2 (LIHTC) with the Company's DSM/EE program offerings. DEC reports that there
3 are nine LIHTC projects currently in the pipeline with status listed as Contract
4 Approval. Combined these are expected to yield savings of 2.6 GWh. This is
5 constructive progress that points to even more savings potential. In 2020, the North
6 Carolina Housing Finance Agency awarded forty-two 9% LIHTC projects and an
7 additional twenty-four tax-exempt bond projects. South Carolina Housing awarded
8 seventeen 9% LIHTC projects in 2020.³³ The LIHTC program provides a reliable,
9 annual pipeline of projects available for energy efficiency investments. In the near
10 future, I encourage Duke to work towards a target that 100% of projects applying
11 for LIHTC in its service territory are reviewed to identify relevant DSM/EE
12 program offerings, then report on an annual basis the number of LIHTC
13 applications reviewed, the conversion rate for participation by these projects, and
14 through which program. To do so, DEC should work with the state housing finance
15 agencies to ensure all LIHTC projects move through its DSM/EE program
16 offerings, without it depending on individual project administrators having to
17 become aware of and initiate the process from their end.

18 As time goes on, I have observed increasing frustration among Collaborative
19 members at the slow progress and ambiguity surrounding Duke's decision-making
20 process. The lack of action on most of the recommendation above leaves

³³ available at: <https://www.schousing.com/Home/HousingTaxCredits>

1 stakeholders wondering what to expect between the time of program
2 recommendation submission and the Company either implementing program
3 modifications or submitting a program application for approval at the Commission
4 (or rejecting the recommendation, if that is their decision). I continue to believe
5 that the Collaborative provides a valuable vehicle for this type of program
6 development work, but to date there has been little to show for all the effort
7 Collaborative members have contributed towards developing program concepts for
8 inclusion in DEC's DSM/EE portfolio.

9 **Q. WHAT SUGGESTIONS DO YOU HAVE FOR DEC AND THE**
10 **COMMISSION CONCERNING PLANS FOR REACHING HIGHER**
11 **OVERALL LEVELS OF SAVINGS IN THE FUTURE?**

12 A. Building on its recent past performance and the narrow gap between its projected
13 2022 efficiency savings levels and the target of 1% annual savings, DEC is in a
14 unique position to identify and articulate how it could best close the gap. The
15 Company should do so now, while aiming to prioritize serving low-income
16 customers with a significant portion of the remaining 30.4 GWh of savings required
17 to close the gap between DEC's projected 0.96% annual savings on 2022 up to the
18 1% annual savings target.

19 I believe a request by the Commission to this effect, encouraging DEC to plan
20 for and pursue the 1% target in 2022, would likely make a significant difference in
21 the likelihood of this very attainable goal being achieved.

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

2 **Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR ITS LOW-**
3 **INCOME PROGRAMS IN 2022?**

4 A. Low-Income Energy Efficiency and Weatherization Assistance accounts for 9.8
5 GWh of system energy reductions in DEC’s estimated load impacts for 2022.³⁴
6 These programs are forecasted to account for approximately 2% of total residential
7 energy savings in 2022.If achieved, this would be an 11% increase in total energy
8 savings for DEC’s low-income programs compared to its pre-pandemic
9 performance.

10 **Q. HOW MIGHT LESSONS LEARNED FROM THE DURHAM PILOT**
11 **INFORM POTENTIAL CHANGES TO LOW-INCOME PROGRAM**
12 **OFFERINGS IN THE FUTURE?**

13 A. The Durham Pilot involved a modified delivery for the Income-Qualified
14 Weatherization Assistance program. This included providing a larger than typical
15 package of improvements and working with low-income customers with
16 comparatively high energy intensity. The program was also able to serve customers
17 who were unable to access the federal Weatherization Assistance Program dollars
18 due to overly long wait lists or health, safety, and incidental repair needs.
19 According to DEC:

20 “For participation in the Durham Pilot, previous Neighborhood Energy
21 Saver Program neighborhoods in Durham, NC were targeted via direct
22 mail. Income eligibility for the Pilot was 200% of federal income
23 poverty guidelines and their kWh usage per home square foot was 7 kWh
24 or greater. These income-eligible customers were offered Tier 2
25 Weatherization (insulation, air sealing, and duct sealing, baseload

³⁴ Evans Exhibit 1, Page 4 filed in NCUC Docket No. E-7, Sub 1249

1 lighting and domestic hot water measures), HVAC replacement and
2 some health and safety improvements.”³⁵

3 In total, 205 homes were served, including 59 whose participation was made
4 possible because they also received supplemental Helping Home Funds to address
5 required health, safety, and incidental repair needs prior to the efficiency
6 improvements. DEC noted that the cost per home served was higher than is typical
7 in its standard Income-Qualified Weatherization, though no EM&V has been
8 conducted to uniquely evaluate the pilot’s cost effectiveness. In response to a
9 question regarding lessons learned from the Durham Pilot and its future plans, DEC
10 indicated:

11 “Compared to other Weatherization Programs offered by Duke Energy,
12 the Durham Pilot method resulted in a higher percentage of more
13 comprehensive projects. The Pilot was successful in providing services
14 to customers that had been unable to receive similar services from
15 Weatherization providers. The method by which the Pilot was
16 implemented avoided some of the funding issues existing in South
17 Carolina and might allow Duke Energy to expand weatherization in DEP
18 and be successful in South Carolina. However, no decision has been
19 discussed or made to expand the Pilot Program at this time.”³⁶

20 I believe insights gained from this program could lead to important lessons
21 on how to deliver deeper savings to low-income customers with high energy
22 intensity, including for customers with high energy burdens.

³⁵ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249) (Attached as Exhibit FBW-9).

³⁶ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-15 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1249) (Attached as Exhibit FBW-10).

1 In response to a discovery request, DEC indicated that it has not quantified
2 the energy savings associated with the Durham Pilot program. This information is
3 key to understanding how well the pilot program strategy worked, and whether its
4 approach could lead to develop new programs or making improvements to DEC's
5 existing low-income program offerings.

6 **Q. ARE YOU AWARE OF ADDITIONAL HELPING HOME FUNDS BEING**
7 **ALLOCATED TO ASSIST WITH DELIVERING EFFICIENCY SAVINGS**
8 **TO LOW-INCOME CUSTOMERS?**

9 A. Yes, Intervenors NCJC, NCHC, and SACE were parties to a Settlement Agreement
10 with DEC and DEP during their most recent rate case proceedings in which both
11 companies committed to providing a combined \$3 million to the Helping Home
12 Fund (HHF) over the next two years, for a total of \$6 million. The Commission
13 approved the settlement terms reached by the Stipulating Parties.

14 Last year, I submitted testimony in DEC's DSM/EE Rider proceeding on
15 behalf of NCJC, et. al. that emphasized the valuable role these funds play in
16 augmenting traditional ratepayer funded low-income energy efficiency programs.
17 For instance, 59 of the 205 customers served through the Durham Pilot received
18 HHF for vital repairs, without which they would typically not have been able to
19 receive energy efficiency upgrades.

20 Now that these funds have been committed, it is crucially important that this
21 money be strategically spent in a strategic manner to leverage and extend the
22 impact of DEC's Income-Qualified Weatherization Program to the maximum
23 extent. One constructive approach would be to use the HHF dollars almost

1 exclusively to cover health, safety, and incidental repairs and / or fund additional
2 improvements beyond the individual house budgetary limits in the ratepayer
3 funded low-income programs for the households with the greatest need. Doing so
4 will not only extend the life of these HHF dollars, it will lead to deeper savings that
5 truly address energy burden while enabling many customers to participate who
6 otherwise would have been turned away.

7 **Q. ARE YOU AWARE OF DEC'S COMMITMENT TO WORK WITH THE**
8 **COLLABORATIVE TO DEVELOP AND SEEK APPROVAL FOR NEW**
9 **LOW-INCOME ENERGY EFFICIENCY PROGRAMS?**

10 A. Yes, in the same rate case settlement, DEC and DEP agreed to work with the
11 Stipulating Parties to develop additional low-income energy efficiency programs
12 that will be presented to the Collaborative and, if supported by a majority of the
13 group, will then be submitted to the Commission for approval.

14 Not only is this an important step in the right direction for advancing ongoing
15 efforts to expand low-income efficiency program impact, it is also significant that
16 this arrangement has a timeline with specific actions leading up to a filing to a
17 program application to the Commission. Experience over the past two years at the
18 Collaborative has shown that without such specific deliverables and deadlines, new
19 program concepts get bogged down in an indefinite process with no clear path to
20 implementation, or even a decision. I would again urge the Commission to order
21 the Company to make the Collaborative function more effectively by requiring
22 specific deliverables to be met on a defined time scale.

23 **Q. ARE YOU AWARE OF A PROPOSED STUDY FOR DUKE TO EXAMINE**
24 **THE EFFICIENCY SAVINGS IMPACTS OF NON-INCOME QUALIFIED**

1 **CUSTOMERS ON LOW-INCOME CUSTOMERS, AND DO YOU THINK**
2 **SUCH A STUDY COULD AID FUTURE EFFORTS TO INCREASE**
3 **EFFICIENCY PROGRAM SAVINGS FOR LOW-INCOME**
4 **CUSTOMERS?**

5 A. Yes, this was also a provision agreed to by the Stipulating Parties in the Duke
6 DSM/EE Mechanism proceeding that was approved by the Commission. The study
7 will seek to estimate the low- and moderate-income market penetration of Duke’s
8 non-income qualified programs and ultimately “be used by DEC and DEP to make
9 recommendations for program enhancements designed to cost effectively increase
10 market penetration in the targeted populations and neighborhoods.”³⁷ Duke worked
11 with the Collaborative in the development of a scope of work for this study and
12 provided input on the selection of a qualified contractor. DEC has presented the
13 Commission with a description of the study’s scope of work and budget and is
14 seeking Commission authorization to proceed. Intervenors NCJC, NCHC, and
15 SACE support the purpose and approach to this study as outlined by DEC and
16 encourages the Commission to give its approval.

17 Once the study is complete, we hope that it will in fact lead to program
18 enhancements that lead to increased savings impact for low- and moderate-income
19 households. Even when such improvements have been made to DEC’s non-income
20 qualified programs, I do not foresee there being reason to reduce the scope,
21 budgets, or energy savings being delivered to customers through the income-
22 qualified EE programs. In fact, I continue to specifically recommend expansion of

³⁷ Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, NCUC Docket No. E-7, Sub 1032 (October 20, 2020).

1 these programs. However, I do believe this study has the potential to contribute to
2 increased investment and effectiveness of the DEC's non-income qualified
3 programs for low-income customers.

4 **Q. HOW DOES DEC DETERMINE BUDGETS AND SAVINGS TARGETS**
5 **FOR ITS LOW-INCOME EFFICIENCY PROGRAMS?**

6 A. Despite frequent conversations about expanding low-income efficiency programs,
7 it is still very unclear how DEC determines its low-income efficiency program
8 budgets and savings targets. In response to the same question submitted through
9 discovery, DEC provided the following response:

10 “DEC determines the Low-Income program budget and savings targets
11 by considering the programs that regulators have approved. For each
12 approved program, DEC evaluates the throughput capability of the
13 program structure to deliver energy savings to targeted/qualified
14 customers, projected customer demand, and the cost to complete the
15 projected customer participation goals.

16 Energy savings are determined by using the most recent energy impact
17 estimates (EM&V) and multiplying by the related number of measures or
18 customers.”

19 **Q. WOULD YOU STILL RECOMMEND INCREASING DEC'S LOW-**
20 **INCOME EFFICIENCY PROGRAM SAVINGS AND BUDGETS?**

21 A. I would. Unlike most non-income qualified efficiency programs DEC offers that
22 are driven by individual customer demand, the Neighborhood Energy Saver and
23 Income Qualified Weatherization programs are delivered by third parties
24 (Honeywell and North Carolina Community Action Association, respectively)
25 with fixed budgets that are set by DEC. From the answer DEC provided above
26 regarding its low-income programs, it seems that the kWh savings are based on the
27 number of measures or customers that the program administrators are contracted
28 by DEC to serve. DEC has more than 2.2 million residential customers, nearly 30%

1 are at or below 200% of the Federal Poverty Level (FPL), the same level used by
2 DEC to determine eligibility for its income qualified programs. Notwithstanding
3 its far lower performance in 2020, DEC typically serves a little over 10,000
4 customers through its low-income programs each year. Most participants receive
5 the comparatively shallower savings provided by the Neighborhood Energy Saver
6 program and not all who are served technically meet the 200% of FPL criteria,
7 since eligibility is determined at the neighborhood level. If one only considers
8 deployment of the NES program (thus foregoing deeper savings needs), and also
9 assumes that every program participant is in fact low-income, it would take DEC
10 more than 60 years to reach everyone who qualifies. Addressing the deeper savings
11 needs at a level typical of participants in the Income-Qualified Weatherization
12 Assistance program, at DEC's existing program delivery rate the timeline to serve
13 eligible customers would be many factors longer. It would appear that the key
14 limiting factor in how many customers get served and at what level of savings is
15 DEC's internal budget setting, and not the scale of customer need.

16 **Q. WHAT DO YOU RECOMMEND?**

17 A. Increase its low-income efficiency program budget and work with the
18 Collaborative on setting new budget and savings targets for its income-qualified
19 programs to be reported to the Commission in its next DSM/EE Recovery Rider
20 filing.

21 **VI. Implications of the COVID-19 Pandemic**

1 **Q. HOW DID DEC'S APPROACH TO PROGRAM DELIVERY AND ITS**
 2 **OVERALL ENERGY EFFICIENCY PERFORMANCE DURING THE**
 3 **PANDEMIC COMPARE TO OTHER UTILITIES?**

4 A. In the early days of the pandemic, on-site efficiency services ground to a halt for
 5 DEC and all utilities across the country. This led to significant declines in
 6 efficiency program savings. Unfortunately, the steepest declines were often in
 7 programs that serve, low-income customers – the very people who needed them
 8 most. Duke Energy Carolinas (DEC) was among the first utilities in the Southeast
 9 to implement new safety protocols and resume in-home energy efficiency services
 10 after the pandemic. The exception, however, were DEC's low-income and multi-
 11 family programs, which saw steep savings declines of 75% and 81% respectively.
 12 DEC's overall energy efficiency performance was relatively high in comparison to
 13 several other utilities in the region, particularly those in Georgia and Florida.
 14 However, DEC's performance trailed far behind that of Entergy Arkansas, which
 15 was actually able to improve program performance in spite of the pandemic.
 16 Notably, the Arkansas Public Service Commission has established annual
 17 efficiency savings targets of 1.2%, which Entergy Arkansas was able to surpass
 18 even during the pandemic. Below is a table of selected utilities for comparison:

19 **Table 4. Energy Efficiency Performance of Selected Utilities 2019-2020**

| Utility Name | 2019 | 2020 |
|--------------------------------|-------|-------|
| Entergy Arkansas ³⁸ | 1.10% | 1.35% |
| Duke Energy Carolinas | 0.98% | 0.76% |

³⁸ Performance calculated using net savings and total retail sales from Entergy Arkansas Standardized Annual Reporting Workbook for 2020 Program Year filed in APSC Docket No. 07-085-TF. Net savings for 2020 found in "Table 1" tab; all other figures used are found in "Prior Year Portfolio". Both attached in FBW - Exhibit 8.

| | | |
|-----------------------------|-------|-------|
| Georgia Power ³⁹ | 0.46% | 0.28% |
|-----------------------------|-------|-------|

1 **Q. IN WHAT WAYS CAN ENERGY EFFICIENCY BE PART OF A**
 2 **STRATEGY TO ASSIST CUSTOMERS IMPACTED BY THE PANDEMIC**
 3 **WHILE REDUCING THE COST TO ALL CUSTOMERS FOR**
 4 **UNCOLLECTIBLE BILLS?**

5 A. For customers that struggled financially during the pandemic, energy efficiency
 6 improvements now could provide extra money to help them afford current and past
 7 due electric bills that are now in repayment. DEC knows exactly which customers
 8 have overdue balances and has the opportunity to target deployment of its
 9 efficiency program services directly to those customers.

10 Programs to serve low-income customers with past due bills could come in a
 11 number of different forms, ranging from customer self-install kits combined with
 12 a personalized virtual consultation, to deeper retrofit programs potentially
 13 patterned after those offered by DEC's Income Qualified Weatherization Program
 14 and its Durham Pilot Program. Participation in efficiency programs could even be
 15 matched with partial debt forgiveness.

16 Ultimately, these steps could make enough of a difference for customers to
 17 complete their repayment plans and prevent uncollectible bills from being passed
 18 on to the general body of ratepayers. Doing so could also prevent disconnections
 19 and the attendant consequences that can result, like damaged credit scores,
 20 additional financial challenges, health risks, and in some cases eviction.

³⁹ Calculated using EIA Form-861 for all figures except for 2020 savings, which were obtained from the 2020 Fourth Quarter DSM Report filed in Georgia PSC Docket No. 42311 (Feb. 15, 2021), available at: <https://psc.ga.gov/search/facts-document/?documentId=184364>

- 1 • **Recommendation 14:** Evaluate the Inclusion of New Criteria to EE Program
2 Approval Process at North Carolina Utility Commission
- 3 • **Recommendation 15:** Utilize Utility Demand-Side Management Savings for
4 Low-Income Energy Efficiency Programs
- 5 • **Recommendation 23:** Include Valuation of Non-Energy Benefits in Energy
6 Efficiency Investments

7 The Commission has also previously compelled Duke to submit quality modeling
8 of plans in the Company’s integrated resource planning (“IRP”) proceedings to
9 meet the goals set out by Governor Cooper and to describe their “most current
10 strategic plans to reduce carbon dioxide emissions.”⁴³ The Company’s latest IRP
11 did emphasize the relationship between its various resource portfolio options and
12 their associated carbon emissions.

13 The state recently engaged the Nicholas Institute at Duke University to study
14 carbon-reduction policies that could achieve the CEP emissions targets for the
15 electric power sector. Notably, the study uses Duke’s latest IRP for its “standard
16 assumptions” but uses savings levels of at least 1-1.2%% for the “medium
17 scenario” and 1-2% for the “high scenarios.” Notably, the Nicholas Institute study
18 also demonstrates that the strategies that include robust energy efficiency result in
19 the highest levels of new job creation and Gross State Product. Implicitly this
20 analysis suggests that DEC’s IRP does not represent the maximum savings

⁴³ Order Accepting Integrated Resource Plans and REPS Compliance Plans, Scheduling Oral Argument, and Requiring Additional Analyses, NCUC Docket No. E-100, Sub 157 (February 4, 2019).

1 potential for DSM/EE, while indicating that additional investment in energy
2 efficiency results in greater economic performance in the state.

3 Engagement from Commissioners is key to making strides in decarbonization
4 targets set out in the CEP. The Commission has also previously compelled Duke
5 to submit quality modeling of plans in the Company’s integrated resource planning
6 (“IRP”) proceedings to meet the goals set out by Governor Cooper and to describe
7 their “most current strategic plans to reduce carbon dioxide emissions”⁴⁴. While
8 the Company’s latest IRP did emphasize the relationship between its various
9 resource portfolio options and their associated carbon emissions, Commission
10 engagement on the CEP should not be limited to just one major proceedings.
11 Instead, the DSM/EE Recovery Rider dockets can be used as a place to ensure
12 DSM/EE efforts are aligned with the statewide CEP.

13 **Q. HAS DUKE ENERGY MADE COMMITMENTS TO REDUCE ITS**
14 **CARBON EMISSIONS?**

15 A. Yes. Duke Energy has made a commitment to its customers and shareholders to
16 reduce carbon dioxide emissions by 50% by the year 2030, and further to net zero
17 by 2050.⁴⁵

18 **Q. HOW DO DEC’S DSM/EE PROGRAMS CONTRIBUTE TO MEETING**
19 **THESE DECARBONIZATION OBJECTIVES?**

20 A. Energy saved through Duke’s DSM/EE programs reduce total energy waste and
21 lessen reliance on the Company’s most polluting power generators. As such,

⁴⁴ Order Accepting Integrated Resource Plans and REPS Compliance Plans, Scheduling Oral Argument, and Requiring Additional Analyses, NCUC Docket No. E-100, Sub 157 (February 4, 2019).

⁴⁵ Achieving a Net Zero Carbon Future, Duke Energy 2020 Climate Report. Link: https://desitecoreprod-cd.azureedge.net/_/media/pdfs/our-company/climate-report-2020.pdf?

1 DSM/EE is one of the most effective means by which the utility can lower carbon
2 emissions. Duke has highlighted the relationship between energy efficiency and
3 reaching its net zero goal, stating:

4 Some of the most effective carbon reductions we can make involve
5 helping customers avoid energy usage in the first place. Again, regulatory
6 or legislative policies related to climate change can prove to be a driver
7 for opportunities for increased deployment of energy efficiency.⁴⁶

8 **Q. HAS DEC REPORTED ON THE CARBON REDUCTION IMPACT OF ITS**
9 **DSM/EE PORTFOLIOS?**

10 A. No, to my knowledge DEC has not reported the carbon reduction impact of its
11 DSM/EE portfolios, either in its DSM/EE Rider filings, or anywhere else. While
12 general estimates can be made using per megawatt-hour emissions rates, it would
13 be instructive for the Company to conduct and provide its own analysis. This would
14 enable consideration of not only the emissions reductions resulting from total
15 energy savings, but also factor in the performance of its DSM/EE portfolio during
16 specific times of the year, including during peak vs. off-peak hours.

17 **Q. SHOULD DEC START REPORTING THE CARBON REDUCTION**
18 **IMPACTS OF ITS DSM/EE PORTFOLIOS IN FUTURE DSM/EE RIDER**
19 **PROCEEDINGS?**

20 A. Yes. The Commission should direct DEC to report carbon reductions from its
21 DSM/EE portfolios and discuss future strategies to decarbonize through its
22 portfolio in DSM/EE recovery rider dockets going forward. Doing so would
23 provide the Commission, and the public, with important insight into the
24 relationship between investments made in DEC's DSM/EE programs and the

⁴⁶ *Id.*

1 utility's progress towards achieving the Company and the State's decarbonization
2 goals. This information could also prove useful in aiding the Company to optimize
3 program delivery to increase carbon emissions reductions. To my knowledge, there
4 is no other proceeding where DEC reports the carbon emissions reductions
5 alongside its annual DSM/EE portfolio savings results. The annual DSM/EE Rider
6 docket would appear to be the best place for regular reporting of this data.

7 **VIII. Integrated Resource Plans**

- 8 **Q. WHAT IS THE RELATIONSHIP BETWEEN THE DSM/EE RECOVERY**
9 **RIDER AND THE INTEGRATED RESOURCE PLAN?**
- 10 A. The DSM/EE Recovery Rider and integrated resource planning both provide
11 perspectives into future energy savings. Lately there have been increasingly
12 important connections between the Integrated Resource Plan, the DSM/EE
13 Recovery Rider, and the work of the Collaborative that warrant additional
14 development and attention.

15 As I testified last year, integrated resource planning provides the utility, the
16 Commission, and the public with a roadmap for meeting future energy and capacity
17 needs. The DSM/EE Recovery Rider tracks DEC's energy savings performance
18 and sets expectations for energy savings in the subsequent year. If, however, the
19 DSM/EE assumptions used in the IRP underestimate⁴⁷ future potential, customer

⁴⁷ DEC indicated in multiple stakeholder meetings that IRP inputs will be based on internal forecasts for at least the next five years. While DEC DSM/EE Recovery Rider projections for 2018 and 2019 were far closer to actual performance, previous filings were off by a substantial degree, typically underestimating actual savings by about 40%.

1 could wind up paying for more expensive power supply rather than investing in
2 less expensive strategies to eliminate energy waste.

3 **Q. WHAT WERE SOME OBSERVATIONS AND INSIGHTS RELEVANT TO**
4 **THE DSM/EE RIDER FROM KEY TESTIMONY IN DUKE’S MOST**
5 **RECENT IRP PROCEEDING?**

6 A. IRPs form the basis for utility’s decisions to acquire new capacity or energy
7 resources and underpin avoided cost calculations used in cost-effectiveness testing,
8 therefore, any flaws have important implications for this proceeding. In the current
9 IRP proceedings SACE, Sierra Club, and NRDC filed comments analyzing Duke’s
10 IRPs, which introduced expert analysis on behalf of Jim Grevatt of the Energy
11 Futures Group.⁴⁸ In addition, NCSEA, CCEBA, SACE, Sierra Club, and NRDC
12 filed comments introducing the expert analysis of Rachel Wilson.⁴⁹ Both of those
13 analyses identified flaws in Duke’s IRPs.

14 Mr. Grevatt analysis reviewed Duke’s recent Market Potential Studies
15 (“MPS”). He found that those studies significantly underestimate the potential
16 DSM/EE savings in Duke’s territory due to a variety of flaws. First, the MPS
17 omitted emerging technologies and their potential savings and instead only
18 considered existing technology. Second, the MPS failed to evaluate nearly two
19 dozen measures used in other jurisdictions. Third, the MPS failed to consider
20 changes to customer engagement strategies or programs designs that may increase

⁴⁸ Partial Initial Comments of Southern Alliance for Clean Energy, Sierra Club, and Natural Resources Defense Council, NCUC Docket No. E-100, Sub 165 (Mar. 1, 2021).

⁴⁹ Partial Initial Comments of NCSEA, CCEBA, and SACE, et al. on Duke Energy Carolinas, LLC and Duke Energy Progress, LLC’s 2020 Integrated Resource Plans, NCUC Docket No. E-100, Sub 165 (Mar. 1, 2021).

1 customer participation. Fourth, prior to performing the potential analysis the MPS
2 eliminated all commercial and industrial customers who have opted out, thereby
3 eliminating the efficiency savings potential for approximately 60% of DEC's non-
4 residential load. Finally, the MPS relied on the Total Resource Cost (TRC) test,
5 which substantially undercounts savings benefits, rather than the Utility Cost Test,
6 which the Commission approved to replace the TRC test. All of these factors
7 suggest that the MPS, and the IRP that was based on it, substantially understand
8 efficiency potential that should be informing the supply and DSM/EE portfolio
9 resource mix and savings levels in these DSM/EE Rider dockets.

10 Ms. Wilson's report analyzed the capacity expansion and production cost
11 modeling of resource options that Duke used to develop their IRPs. The analysis
12 found that increased energy efficiency savings have the potential to produce
13 approximately 16,500 GWh of net annual savings for 2035, which is 9.6 percent
14 of the projected system load. Ms. Wilson concluded that "increased energy
15 efficiency will be an essential part in the decarbonization of Duke's system."

16 IX. Conclusion

17 Q. DO YOU HAVE ANY CONCLUDING STATEMENT?

18 A. Yes, I want to thank the Commission for the Orders it has issued in various
19 proceedings⁵⁰ over the past year that facilitate improvements and expansions of
20 DEC's DSM/EE portfolio, as well as policy changes that continue to evolve the

⁵⁰ Including the Duke DSM/EE Mechanism, DEC / DEP Rate Case, and various program application dockets discussed earlier.

1 underlying policy framework for DSM/EE in North Carolina, which is the
2 foundation of this work. I respectfully ask for the Commission’s consideration of
3 the actionable recommendations summarized at the beginning of this testimony
4 and discussed throughout. Even as there is much still to achieve, what has been
5 accomplished already should be a source of great pride, as it continues to keep
6 North Carolina ahead of its peers in the Southeast region.

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 10th day of May, 2021.

s/ David L. Neal

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 1252. August 26th, 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 22nd, 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 19th, 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 10th, 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 20th, 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 25th, 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 22nd, 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 15th, 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 17th, 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 24th, 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 15th, 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 9th, 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 1st, 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 20th, 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 25th, 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 7th, 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 19th, 2015

PUBLICATIONS

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

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

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

Docket E-7, Sub 1249
FBW Exhibit 2

Duke Energy Carolinas

CCL_SACE DR 2-2

| | | | |
|---|----------------|-----|--|
| 2014 Incremental Energy Savings | 508,689,316 | kWh | Year 2014 Exhibit 2 - line 31 adjusted for line loss |
| 2014 Opt Out Electricity Sales - NC | 17,153,650,420 | kWh | workpapers |
| 2014 Opt Out Electricity Sales - SC | 9,992,960,564 | kWh | workpapers |
| 2013 System Retail Billed Electricity Sales | 76,021,887 | MWh | 2013 RAC Report |
| | | | |
| 2015 Incremental Energy Savings | 614,743,741 | kWh | Year 2015 Exhibit 2 - line 32 adjusted for line loss |
| 2015 Opt Out Electricity Sales - NC | 17,296,168,323 | kWh | Miller Exhibit 6 |
| 2015 Opt Out Electricity Sales - SC | 9,824,240,223 | kWh | Exhibit 3 pg 1 of 2 |
| 2014 System Retail Billed Electricity Sales | 78,277,836 | MWh | 2014 RAC Report |
| | | | |
| 2016 Incremental Energy Savings | 754,838,256 | kWh | Year 2016 Exhibit 2 - line 33 adjusted for line loss |
| 2016 Opt Out Electricity Sales - NC | 17,541,642,770 | kWh | Miller Exhibit 6 |
| 2016 Opt Out Electricity Sales - SC | 10,115,080,343 | kWh | Exhibit 3 pg 1 of 2 |
| 2015 System Retail Billed Electricity Sales | 79,056,620 | MWh | 2015 RAC Report |
| | | | |
| 2017 Incremental Energy Savings | 879,954,382 | kWh | Year 2017 Exhibit 2 - line 33 adjusted for line loss |
| 2017 Opt Out Electricity Sales - NC | 17,749,899,702 | kWh | Miller Exhibit 6 |
| 2017 Opt Out Electricity Sales - SC | 10,211,024,604 | kWh | Exhibit 3 pg 1 of 2 |
| 2016 System Retail Billed Electricity Sales | 79,090,737 | MWh | 2016 RAC report |
| | | | |
| 2018 Incremental Energy Savings | 811,152,170 | kWh | Year 2018 Exhibit 2 - line 33 adjusted for line loss |
| 2018 Opt Out Electricity Sales - NC | 18,347,183,120 | kWh | Miller Exh 6, Line 10 |
| 2018 Opt Out Electricity Sales - SC | 10,257,713,985 | kWh | Exhibit 3 pg 1 of 2, Line 14 |
| 2017 System Retail Billed Electricity Sales | 77,059,079 | MWh | 2017 RAC Report |

2. Please provide a calculation of cumulative DSM/EE portfolio savings (1) as a percentage of total annual sales; and (2) as a percentage of annual sales to non-opt-out customers from 2014 through 2018, taking into account line loss.

| | | |
|---|------------|-----|
| 2014 Incremental Energy Savings | 508,689.32 | MWh |
| 2013 System Retail Electricity Sales | 76,021,887 | MWh |
| 2013 System Retail Electricity Sales, net of 2014 Opt Out | 48,875,276 | |
| Savings as % of 2013 Sales | 0.67% | |
| Savings as % of 2013 Sales, net of 2014 Opt Out | 1.04% | |
| | | |
| 2015 Incremental Energy Savings | 614,743.74 | MWh |
| 2014 System Retail Electricity Sales | 78,277,836 | MWh |
| 2014 System Retail Electricity Sales, net of 2015 Opt Out | 51,157,427 | |
| Savings as % of 2014 Sales | 0.79% | |
| Savings as % of 2014 Sales, net of 2015 Opt Out | 1.20% | |
| | | |
| 2016 Incremental Energy Savings | 754,838.26 | MWh |
| 2015 System Retail Electricity Sales | 79,056,620 | MWh |
| 2015 System Retail Electricity Sales, net of 2016 Opt Out | 51,399,896 | |
| Savings as % of 2015 Sales | 0.95% | |
| Savings as % of 2015 Sales, net of 2016 Opt Out | 1.47% | |

Duke Energy Carolinas

CCL_SACE DR 1-14

| | | |
|---|--------------------|--|
| 2019 Incremental Energy Savings | 794,856,771 kWh | Year 2019 Exhibit 2 line 28 - adjusted for line loss |
| 2019 Opt Out Electricity Sales - NC | 20,042,218,854 kWh | Miller Exh 6, Line 8 |
| 2019 Opt Out Electricity Sales - SC | 10,446,567,023 kWh | Exhibit 3 pg 1 of 2, Line 12 |
| 2018 System Retail Billed Electricity Sales | 81,399,234 MWh | 2018 RAC Report |

| | | |
|--------------------------------------|--------------------|--|
| 2021 Incremental Energy Savings | 715,710,984 kWh | Year 2021 Exhibit 2 line 27 - adjusted for line loss |
| 2021 Opt Out Electricity Sales - NC | 20,419,288,797 kWh | Miller Exh 6, Line 12 |
| 2021 Opt Out Electricity Sales - SC | 10,490,870,196 kWh | Exhibit 3 pg 1 of 2, Line 16 |
| 2020 System Retail Electricity Sales | 80,141,016 MWh | 2019 Fall Forecast, sales at meter |

1. 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 | 794,856.77 MWh |
| 2018 System Retail Electricity Sales | 81,399,234 MWh |
| Savings as % of 2018 Sales | 0.98% |

| | |
|---|----------------|
| 2019 Incremental Energy Savings | 794,856.77 MWh |
| 2018 System Retail Electricity Sales, net of 2019 Opt Out | 50,910,448 MWh |
| Savings as % of 2018 Sales, net of 2019 Opt Out | 1.56% |

1. 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 | 715,710.98 MWh |
| 2020 System Retail Electricity Sales | 80,141,016 MWh |
| Savings as % of 2020 Sales | 0.89% |

Docket E-7, Sub 1249
 FBW Exhibit 4

Duke Energy Carolinas

SACE DR 1-18



| | At Meter | | At Plant | |
|---|--------------------|--|--------------------|---------------------------------------|
| 2020 Incremental Energy Savings | 612,158,071 kWh | | 650,226,345 kWh | Evans Exhibit 1 page 4 (2020) line 28 |
| 2020 Opt Out Electricity Sales - NC | 19,684,483,883 kWh | | 20,908,602,882 kWh | Listebarger Exh 6, Line 10 |
| 2020 Opt Out Electricity Sales - SC | 9,593,238,585 kWh | | 10,189,813,313 kWh | Exhibit 3 pg 1 of 2, Line 12 |
| 2019 System Retail Billed Electricity Sales | 80,109,038 MWh | | 85,090,778 MWh | 2019 RAC Report |
| | | | | |
| 2022 Incremental Energy Savings | 766,625,571 kWh | | 814,299,715 kWh | Evans Exhibit 1 page 5 (2022) line 28 |
| 2022 Opt Out Electricity Sales - NC | 19,640,593,176 kWh | | 20,861,982,744 kWh | Listebarger Exh 6, Line 14 |
| 2022 Opt Out Electricity Sales - SC | 9,579,821,484 kWh | | 10,175,561,843 kWh | Exhibit 3 pg 1 of 2, Line 16 |
| 2021 System Retail Electricity Sales | 79,703,572 MWh | | 84,660,098 MWh | 2020 Fall Forecast, sales at meter |

**1. 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 2020 (as a percentage of 2019 retail sales);**

| | At Meter | | At Plant | |
|---|----------------|--|----------------|--|
| 2020 Incremental Energy Savings | 612,158.07 MWh | | 650,226.35 MWh | |
| 2019 System Retail Electricity Sales | 80,109,038 MWh | | 85,090,778 MWh | |
| Savings as % of 2019 Sales | 0.76% | | 0.76% | |
| | | | | |
| 2020 Incremental Energy Savings | 612,158.07 MWh | | 650,226.35 MWh | |
| 2019 System Retail Electricity Sales, net of 2019 Opt Out | 50,831,315 MWh | | 53,992,362 MWh | |
| Savings as % of 2019 Sales, net of 2019 Opt Out | 1.20% | | 1.20% | |

**1. 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 2022 (as a result of forecasted 2021 sales).**

| | At Meter | | At Plant | |
|--------------------------------------|----------------|--|----------------|--|
| 2022 Incremental Energy Savings | 766,625.57 MWh | | 814,299.72 MWh | |
| 2021 System Retail Electricity Sales | 79,703,572 MWh | | 84,660,098 MWh | |
| Savings as % of 2021 Sales | 0.96% | | 0.96% | |

SACE DR1-4

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

a. UCT and TRC cost-effectiveness test scores with corresponding total costs and benefits for 2016, 2017, 2018, 2019, and 2020, 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 2021 and 2022 forecasts;

Note: Due to the availability of actual participant costs, calculations of historical TRC prior to 2018 are unavailable.

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

Docket E-7, Sub 1249
FBW Exhibit 5

| | 2016 | | | 2017 | | | 2018 | | |
|---|--------------------|--------------------|-------------|--------------------|--------------------|-------------|--------------------|--------------------|------------------------|
| | NPV of AC | Program Cost | UCT | NPV of AC | Program Cost | UCT | NPV of AC | Program Cost | Participant Incentives |
| Appliance Recycling Program | 59,758 | (97,397) | -0.61 | - | 5,307 | 0.00 | - | - | - |
| Energy Efficiency Education | 3,695,507 | 2,126,509 | 1.74 | 3,597,724 | 2,077,611 | 1.73 | 2,863,153 | 1,992,260 | 480,232 |
| Energy Efficient Appliances and Devices | 82,262,218 | 24,069,774 | 3.42 | 105,352,687 | 30,340,728 | 3.47 | 135,840,645 | 42,687,244 | 36,512,751 |
| HVAC Energy Efficiency | 7,476,100 | 7,839,566 | 0.95 | 7,287,263 | 7,403,327 | 0.98 | 7,087,718 | 6,955,146 | 5,303,166 |
| Income Qualified Energy Efficiency and Weatherization Assistance | 2,984,760 | 4,792,436 | 0.62 | 3,185,867 | 5,505,992 | 0.58 | 4,253,631 | 6,490,735 | 4,835,515 |
| Multi-Family Energy Efficiency | 8,950,706 | 2,518,988 | 3.55 | 13,539,656 | 3,168,422 | 4.27 | 13,613,278 | 3,604,921 | 1,155,116 |
| Energy Assessments | 6,822,806 | 2,678,893 | 2.55 | 6,602,773 | 2,909,098 | 2.27 | 5,756,145 | 2,836,229 | 278,369 |
| My Home Energy Report | 20,423,954 | 10,822,444 | 1.89 | 21,728,369 | 13,812,250 | 1.57 | 22,682,074 | 12,765,286 | - |
| PowerManager | 54,179,776 | 13,644,970 | 3.97 | 61,074,105 | 14,021,500 | 4.36 | 61,920,744 | 14,423,610 | 7,213,282 |
| Non Residential Smart Saver Custom Technical Assessments | 9,572,687 | 2,034,308 | 4.71 | 10,272,302 | 2,139,875 | 4.80 | 67,297 | 407,293 | 7,794 |
| Non Residential Smart Saver Custom | 39,025,086 | 7,356,509 | 5.30 | 34,693,083 | 7,304,838 | 4.75 | 23,319,056 | 6,068,902 | 3,495,543 |
| Energy Management Information Services | - | - | - | - | - | - | - | - | - |
| Non Residential Smart Saver Energy Efficient Food Service Products | 2,474,312 | 324,117 | 7.63 | 959,251 | 306,488 | 3.13 | 431,621 | 235,605 | 172,207 |
| Non Residential Smart Saver Energy Efficient HVAC Products | 3,344,669 | 1,473,991 | 2.27 | 2,958,336 | 1,560,769 | 1.90 | 2,809,849 | 1,620,748 | 1,418,533 |
| Non Residential Smart Saver Energy Efficient Lighting Products | 120,392,639 | 39,622,944 | 3.04 | 240,054,511 | 66,689,770 | 3.60 | 146,516,321 | 25,872,380 | 22,136,715 |
| Non Residential Energy Efficient Pumps and Drives Products | 1,574,965 | 471,930 | 3.34 | 3,070,044 | 528,937 | 5.80 | 1,617,544 | 277,785 | 221,861 |
| Non Residential Energy Efficient ITEE | 777,601 | 285,430 | 2.72 | 523 | 61,215 | 0.01 | 3,025 | 36,875 | 3,528 |
| Non Residential Energy Efficient Process Equipment Products | 279,184 | 125,947 | 2.22 | 530,295 | 162,413 | 3.27 | 226,697 | 67,509 | 51,787 |
| Non Residential Smart Saver Performance Incentive | - | 35,670 | 0.00 | 8,958 | 320,559 | 0.03 | 1,671,568 | 479,610 | 279,680 |
| Small Business Energy Saver | 55,685,830 | 15,360,852 | 3.63 | 63,169,894 | 17,350,972 | 3.64 | 46,827,028 | 15,977,993 | 14,439,122 |
| Smart Energy in Offices | 1,843,559 | 1,061,729 | 1.74 | 1,067,480 | 891,010 | 1.20 | 143,266 | 219,748 | - |
| Business Energy Report | 302,497 | 263,169 | 1.15 | 696 | 126,680 | 0.01 | - | - | - |
| EnergyWise for Business | 574,590 | 470,304 | 1.22 | 2,530,761 | 2,484,618 | 1.02 | 2,279,619 | 3,062,816 | 595,564 |
| PowerShare | 43,889,394 | 14,291,024 | 3.07 | 41,482,644 | 13,316,535 | 3.12 | 36,008,770 | 12,922,977 | 12,213,583 |
| Disallowed Costs from 2015 Program Cost Audit (Order E-7 Sub 1105, dated 8/25/16) | | | | | | | | | |
| Total Portfolio | 466,592,598 | 151,574,107 | 3.08 | 623,167,221 | 192,488,915 | 3.24 | 515,939,051 | 159,005,671 | 110,814,347 |

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 | | | | | |
|--------------------|-------------|-------------|--------------------|--------------------|--------------------|--------------------|-------------|-------------|--------------------|--------------------|-------------------|-------------------|-------------|-------------|
| NPV Participant | | | NPV of AC | | Participant | NPV Participant | | NPV of AC | | Participant | | NPV Participant | | |
| Costs (net) | UCT | TRC | NPV of AC | Program Cost | Incentives | Costs (net) | UCT | TRC | NPV of AC | Program Cost | Incentives | Costs (net) | UCT | TRC |
| - | 1.44 | 1.89 | 2,519,645 | 1,644,077 | 457,087 | 512,554 | 1.53 | 1.48 | 1,312,408 | 1,113,485 | 236,103 | 258,066 | 1.18 | 1.16 |
| 18,585,822 | 3.18 | 5.49 | 101,640,687 | 40,433,533 | 33,722,488 | 26,603,606 | 2.51 | 3.05 | 60,871,143 | 22,124,101 | 16,886,727 | 15,167,158 | 2.75 | 2.98 |
| 8,572,619 | 1.02 | 0.69 | 7,079,940 | 7,402,907 | 5,311,650 | 7,107,099 | 0.96 | 0.77 | 7,811,427 | 7,563,287 | 5,801,975 | 7,609,171 | 1.03 | 0.83 |
| - | 0.66 | 2.57 | 3,570,760 | 7,344,325 | 5,590,035 | 5,662,865 | 0.49 | 0.48 | 1,094,864 | 2,787,490 | 2,033,569 | 1,958,074 | 0.39 | 0.40 |
| - | 3.78 | 5.56 | 10,815,659 | 3,681,262 | 1,008,869 | 1,126,658 | 2.94 | 2.85 | 2,156,883 | 1,613,839 | 337,362 | 232,051 | 1.34 | 1.43 |
| - | 2.03 | 2.25 | 4,413,585 | 3,153,757 | 160,084 | 286,787 | 1.40 | 1.35 | 4,582,748 | 3,358,880 | 164,844 | 226,437 | 1.36 | 1.34 |
| - | 1.78 | 1.78 | 23,361,954 | 10,558,344 | - | - | 2.21 | 2.21 | 23,927,899 | 12,749,651 | - | - | 1.88 | 1.88 |
| - | 4.29 | 8.59 | 69,783,157 | 13,386,942 | 7,654,406 | - | 5.21 | 12.17 | 74,785,083 | 14,303,277 | 9,209,212 | - | 5.23 | 14.68 |
| 24,493 | 0.17 | 0.16 | 691,285 | 296,006 | 165,648 | 750,359 | 2.34 | 0.78 | 518,862 | 330,629 | 94,787 | 204,660 | 1.57 | 1.18 |
| 13,128,691 | 3.84 | 1.49 | 35,884,367 | 8,873,872 | 5,987,025 | 17,933,319 | 4.04 | 1.72 | 15,898,503 | 5,771,790 | 2,481,286 | 6,512,064 | 2.75 | 1.62 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 332,863 | 1.83 | 1.09 | 412,886 | 339,996 | 251,163 | 660,970 | 1.21 | 0.55 | 230,241 | 533,411 | 389,347 | 382,034 | 0.43 | 0.44 |
| 1,481,662 | 1.73 | 1.67 | 5,516,665 | 2,208,364 | 1,950,484 | 2,962,253 | 2.50 | 1.71 | 7,423,034 | 2,450,713 | 2,120,437 | 3,638,965 | 3.03 | 1.87 |
| 53,989,440 | 5.66 | 2.54 | 105,608,459 | 20,834,766 | 16,543,407 | 39,082,405 | 5.07 | 2.43 | 71,994,024 | 13,098,851 | 9,721,810 | 27,201,346 | 5.50 | 2.35 |
| 360,094 | 5.82 | 3.89 | 720,816 | 189,172 | 102,810 | 228,894 | 3.81 | 2.29 | 757,993 | 167,464 | 95,170 | 268,706 | 4.53 | 2.22 |
| 2,491 | 0.08 | 0.08 | 1,385 | 44,335 | 19,591 | 1,615 | 0.03 | 0.05 | 1,734 | 15,179 | 549 | 1,149 | 0.11 | 0.11 |
| 49,376 | 3.36 | 3.48 | 416,343 | 119,843 | 99,668 | 173,953 | 3.47 | 2.14 | 236,299 | 29,681 | 18,834 | 32,431 | 7.96 | 5.46 |
| 1,420,247 | 3.49 | 1.03 | 2,238,186 | 785,165 | 402,997 | 1,711,020 | 2.85 | 1.07 | 2,035,780 | 751,724 | 414,798 | 1,072,733 | 2.71 | 1.44 |
| 22,510,536 | 2.93 | 1.95 | 25,661,729 | 11,421,399 | 10,040,202 | 15,796,578 | 2.25 | 1.49 | 15,315,818 | 6,933,130 | 5,852,828 | 8,879,847 | 2.21 | 1.54 |
| - | 0.65 | 0.65 | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | 0.74 | 0.92 | 2,728,428 | 3,687,462 | 884,345 | - | 0.74 | 0.97 | 2,131,933 | 2,941,282 | 864,460 | - | 0.72 | 1.03 |
| - | 2.79 | 50.76 | 42,072,382 | 13,022,816 | 12,288,629 | - | 3.23 | 57.30 | 34,867,428 | 12,082,697 | 11,083,075 | - | 2.89 | 34.88 |
| 120,458,335 | 3.24 | 3.06 | 445,138,318 | 149,428,343 | 102,640,586 | 120,600,935 | 2.98 | 2.66 | 327,954,102 | 110,720,562 | 67,807,173 | 73,644,891 | 2.96 | 2.81 |

| 2021 | | | | | |
|--------------------|--------------------|------------------------|-----------------------------|-------------|-------------|
| NPV of AC | Program Cost | Participant Incentives | NPV Participant Costs (net) | UCT | TRC |
| - | - | - | - | - | - |
| 3,022,045 | 2,158,411 | 628,362 | 607,050 | 1.40 | 1.41 |
| 26,094,584 | 9,897,967 | 7,978,934 | 9,950,260 | 2.64 | 2.20 |
| 4,513,202 | 5,542,288 | 3,071,400 | 4,242,261 | 0.81 | 0.67 |
| 5,297,222 | 7,525,216 | 6,178,677 | 5,972,345 | 0.70 | 0.72 |
| 14,210,714 | 4,521,600 | 1,235,752 | 1,207,811 | 3.14 | 3.16 |
| 7,542,872 | 5,688,276 | 485,352 | 674,748 | 1.33 | 1.28 |
| 22,825,595 | 12,064,044 | - | - | 1.89 | 1.89 |
| 82,948,182 | 19,166,071 | 10,700,422 | - | 4.33 | 9.80 |
| 2,779,419 | 1,030,840 | 494,160 | 2,941,228 | 2.70 | 0.80 |
| 29,177,559 | 9,501,528 | 5,940,475 | 21,237,506 | 3.07 | 1.18 |
| - | - | - | - | - | - |
| 1,428,585 | 985,505 | 781,365 | 1,612,105 | 1.45 | 0.79 |
| 2,369,564 | 1,614,541 | 1,393,367 | 1,899,905 | 1.47 | 1.12 |
| 94,718,674 | 22,630,821 | 16,903,125 | 38,488,210 | 4.19 | 2.14 |
| 1,234,566 | 396,467 | 251,070 | 367,232 | 3.11 | 2.41 |
| 28,640 | 44,284 | 21,616 | 38,461 | 0.65 | 0.47 |
| 382,954 | 109,491 | 77,544 | 137,296 | 3.50 | 2.26 |
| 7,088,559 | 2,204,158 | 1,460,345 | 5,958,176 | 3.22 | 1.06 |
| 23,817,495 | 10,276,621 | 9,340,151 | 15,705,926 | 2.32 | 1.43 |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| 3,489,310 | 5,580,274 | 2,813,992 | - | 0.63 | 1.26 |
| 43,471,361 | 12,886,651 | 12,569,384 | - | 3.37 | 137.02 |
| 376,441,104 | 133,825,056 | 82,325,493 | 111,040,520 | 2.81 | 2.32 |

| 2022 | | | | | |
|--------------------|--------------------|------------------------|-----------------------------|-------------|-------------|
| NPV of AC | Program Cost | Participant Incentives | NPV Participant Costs (net) | UCT | TRC |
| - | - | - | - | - | - |
| 3,145,767 | 2,264,641 | 654,001 | 631,821 | 1.39 | 1.40 |
| 34,272,497 | 15,072,228 | 11,819,651 | 16,953,447 | 2.27 | 1.70 |
| 5,299,434 | 5,219,878 | 3,791,800 | 5,212,782 | 1.02 | 0.80 |
| 6,175,591 | 8,220,067 | 6,832,601 | 6,849,158 | 0.75 | 0.75 |
| 9,487,870 | 3,049,816 | 1,968,943 | 711,165 | 3.11 | 5.29 |
| 7,619,294 | 5,247,884 | 479,185 | 668,724 | 1.45 | 1.40 |
| 21,443,834 | 11,379,147 | - | - | 1.88 | 1.88 |
| 76,782,152 | 18,025,787 | 9,488,763 | - | 4.26 | 8.99 |
| 2,749,737 | 1,378,847 | 554,376 | 2,870,477 | 1.99 | 0.74 |
| 25,673,184 | 8,883,313 | 5,143,170 | 18,553,262 | 2.89 | 1.15 |
| - | - | - | - | - | - |
| 661,380 | 271,042 | 164,136 | 985,343 | 2.44 | 0.61 |
| 9,554,016 | 3,143,794 | 2,611,680 | 4,395,437 | 3.04 | 1.94 |
| 104,317,008 | 27,455,462 | 20,275,377 | 42,216,273 | 3.80 | 2.11 |
| 1,118,710 | 370,116 | 253,320 | 402,195 | 3.02 | 2.16 |
| 17,576 | 25,950 | 12,856 | 10,309 | 0.68 | 0.75 |
| 556,380 | 234,358 | 189,635 | 255,761 | 2.37 | 1.85 |
| 3,385,427 | 1,948,037 | 1,510,921 | 2,819,011 | 1.74 | 1.04 |
| 55,375,251 | 18,189,200 | 15,319,498 | 29,148,203 | 3.04 | 1.73 |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| 2,190,679 | 4,726,799 | 3,136,831 | - | 0.46 | 1.38 |
| 41,017,747 | 12,058,258 | 11,670,152 | - | 3.40 | 105.69 |
| 410,843,534 | 147,164,622 | 95,876,895 | 132,683,368 | 2.79 | 2.23 |

Docket E-7, Sub 1249
 FBW Exhibit 6

SACE DR 1-19 First Data Request to Duke Energy Carolinas, LLC

| Source: | DSM | | EE | | Total Non-Residential Sales (kWh) | |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------------|-----------------------|
| | Actual | Forecasted | Actual | Forecasted | Actual | Forecasted |
| | 2020 | 2022 | 2020 | 2022 | 2020 | 2022 |
| NC Listebarger Exhibit 6 | 18,254,741,506 | 18,248,487,084 | 19,684,483,883 | 19,640,593,176 | 34,115,824,726 | 36,242,826,711 |
| SC R13 Exhibit 3 page 1 | 8,643,937,630 | 8,643,100,545 | 9,593,238,585 | 9,579,821,484 | 13,427,589,634 | 14,898,064,380 |
| Total | <u>26,898,679,136</u> | <u>26,891,587,629</u> | <u>29,277,722,468</u> | <u>29,220,414,660</u> | <u>47,543,414,360</u> | <u>51,140,891,091</u> |

SACE DR 1-21

1-21. Please provide a spreadsheet of total energy savings achieved by each of the Company's DSM/EE programs, in GWh, for 2018, 2019 and 2020.

| | 2018 System Energy Reduction (GWh) | 2019 System Energy Reduction (GWh) | 2020 System Energy Reduction (GWh) |
|--|---|---|---|
| Residential Programs | | | |
| EE Programs | | | |
| 1 Energy Efficiency Education | 5.53 | 6.71 | 3.38 |
| 2 Energy Efficient Appliances and Devices | 195.21 | 187.88 | 111.20 |
| 3 HVAC Energy Efficiency | 6.37 | 7.33 | 7.69 |
| 4 Low Income Energy Efficiency and Weatherization Assistance | 6.85 | 8.78 | 2.17 |
| 5 Multi-Family Energy Efficiency | 20.92 | 21.34 | 4.04 |
| 6 Residential Energy Assessments | 7.72 | 7.89 | 7.89 |
| 7 Total for Residential Conservation Programs | 242.60 | 239.93 | 136.37 |
| 8 My Home Energy Report | 344.76 | 328.44 | 332.11 |
| 9 Total Residential Conservation and Behavioral Programs | 587.36 | 568.37 | 468.48 |
| 10 Power Manager® | - | - | - |
| 11 Total Residential | 587.36 | 568.37 | 468.48 |
| Non-Residential Programs | | | |
| EE Programs | | | |
| 12 Non Residential Smart Saver Custom Technical Assessments | 0.08 | 1.93 | 1.41 |
| 13 Non Residential Smart Saver Custom | 30.33 | 52.52 | 21.16 |
| 14 Non Residential Smart Saver Energy Efficient Food Service Products | 0.74 | 1.00 | 0.50 |
| 15 Non Residential Smart Saver Energy Efficient HVAC Products | 2.91 | 7.53 | 9.27 |
| 16 Non Residential Smart Saver Energy Efficient Lighting Products | 178.17 | 163.56 | 109.55 |
| 17 Non Residential Smart Saver Energy Efficient Pumps and Drives Products | 2.67 | 1.46 | 1.40 |
| 18 Non Residential Energy Efficient ITEE | 0.02 | 0.01 | 0.01 |
| 19 Non Residential Smart Saver Energy Efficient Process Equipment Products | 0.33 | 0.73 | 0.57 |
| 20 Smart Saver(R) Non Residential Performance Incentive Program | 3.27 | 4.55 | 5.96 |
| 21 Small Business Energy Saver | 76.70 | 53.67 | 30.61 |
| 22 Smart Energy in Offices | 1.49 | - | - |
| 23 Total for Non-Residential Conservation Programs | 296.71 | 286.97 | 180.45 |
| 24 EnergyWise for Business | 2.60 | 2.70 | 1.30 |
| 25 PowerShare® | - | - | - |
| 26 Total for Non-Residential DSM Programs | 2.60 | 2.70 | 1.30 |
| 27 Total Non Residential | 299.31 | 289.67 | 181.75 |
| 28 Total All Programs | 886.67 | 858.05 | 650.23 |

(1) My Home Energy Report impacts reflect cumulative capability as of end of vintage year.

(2) Total System DSM programs allocated to Residential and Non-Residential based on contribution to retail system peak

[Main Menu](#)**Table 1**[Next >>](#)**2020 Portfolio Summary**

| Net Energy Savings | | Costs | | | Cost-Effectiveness | | | Goal Achievement | | |
|--------------------|---------------|------------------------|------|---------------------------|------------------------------|--------------|--------------|--|--|-----------------------------------|
| Demand MW | Energy MWh | Actual Expenditures | LCFC | Performance Incentives | TRC Net Benefits (NPV) | TRC Ratio | PAC Ratio | Commission Established Target % of Baseline | Actual Savings Achieved % of Baseline | % of Target Achieved (%) |
| 81 | 294,313 | \$ 58,833,546 | \$ - | \$ 5,652,621 | \$ 107,299,485 | 2.18 | 2.76 | 1.20% | 1.59% | 133% |

[Main Menu](#)

Historical Data (Portfolio Data - Prior Four Years)

[Back](#)

Instructions: Provide the information for the Years listed below. This information can be copied from the previous years workbook'Next Annual Report Load Data' section.

| Program Year | Company Statistics | | EE Portfolio | | | |
|--------------|--------------------|-------------|---------------|---------------|---------------|---------|
| | Revenue and Sales | | Costs | | Savings (MWh) | |
| | Revenue | Sales (MWh) | Budget | Actual | Plan | Actual |
| 2019 | \$ 1,861,403,000 | 21,818,158 | \$ 64,015,712 | \$ 56,918,813 | 239,488 | 248,663 |
| 2018 | \$ 1,667,424,000 | 22,524,809 | \$ 62,812,116 | \$ 57,743,947 | 239,878 | 255,997 |
| 2017 | \$ 1,739,545,000 | 20,888,455 | \$ 62,034,767 | \$ 57,141,646 | 238,130 | 264,992 |
| 2016 | \$ 1,733,733,000 | 20,639,386 | \$ 65,963,717 | \$ 60,270,107 | 194,165 | 253,201 |

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DSM-EE Rider
SACE Data Request No. 1
Item No. 1-14
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DUKE ENERGY CAROLINAS, LLC

Request:

Please provide the following information on participation within the Durham Pilot associated with the Income-Qualified Energy Efficiency and Weatherization Assistance Program broken down by year:

- a. Number of participants
- b. MWh Savings
- c. MW Demand Reduction
- d. Associated program delivery costs (incentives and program implementation)
- e. What customer characteristics were prioritized for participation in this program (eg. income, level of energy use),
- f. Number of houses requiring health and safety improvements and / or incidental repairs
- g. Portion of total budget spent on health and safety improvements and incidental repairs

Response:

Please note that the Durham Pilot is not a part of this proceeding, and, therefore, the Company objects to this question on the ground that it seeks information not relevant to, and beyond the scope of, this proceeding. However, without waiving said objection, the following is being made available for your information.

a. Number of participants – 205 Total Homes by Year
2018 39
2019 166
Total 205

b. MWh Savings - data not available

c. MW Demand Reduction - data not available

d. Associated program delivery costs (incentives and program implementation)

| | Project Costs | Program Delivery | Total |
|--------|---------------|------------------|---------------|
| 2018 | \$ 145,251.05 | \$ 23,240.24 | \$ 168,491.29 |
| 2019 | \$ 689,607.97 | \$ 110,337.47 | \$ 799,945.44 |
| 2020 | \$ 20,530.00 | \$ 3,284.80 | \$ 23,814.80 |
| Total* | \$ 855,389.02 | \$ 136,862.51 | \$ 992,251.53 |

*Although no new homes started in 2020, some were finished, paid and close-out in early 2020.

e. For participation in the Durham Pilot, previous Neighborhood Energy Saver Program neighborhoods in Durham, NC were targeted via direct mail. Income eligibility for the Pilot was 200% of federal income poverty guidelines and their kWh usage per home square foot was 7 kWh or greater. These income-eligible customers were offered Tier 2 Weatherization (insulation, air sealing, and duct sealing, baseload lighting and domestic hot water measures), HVAC replacement and some health and safety improvements.

f. 59 Homes

g. There was 0% of the DEC Weatherization Budget on H&S improvements or incidental repairs.

Helping Home Funds (HHF) were available to address health and safety and incidental repairs in the amount of \$83,231.

HHF measures included: Attic/Crawl Space repair, bath ventilation, CO2 smoke detectors, debris removal, electrical repair, floor repair, hot water heater replacement, mold/mildew remediation, plumbing repair, sewer/septic repair, and wall/ceiling repair.

SACE et al.
Docket No. E-7, Sub 1249
DSM-EE Rider
SACE Data Request No. 1
Item No. 1-15
Page 1 of 1

DUKE ENERGY CAROLINAS, LLC

Request:

Please provide any analysis, reports, and documentation of any lessons learned prepared by or on behalf of DEC from the Durham Pilot associated with the Income-Qualified Energy Efficiency and Weatherization Assistance Program, to include (but not limited to) the following:

- a. TRC and UCT cost effectiveness evaluation methods and scores (eg. use of deemed savings vs. measured bill savings, consideration of non-energy benefits, etc.)
- b. An indication of DEC's intentions regarding any planned future programmatic activities related to the specific approaches used in this pilot program.

Response:

Please note that the Durham Pilot is not a part of this proceeding; therefore, the Company objects to this request on the ground that it is not relevant and beyond the scope of this proceeding. However, without waiving the objections, the following is being made available for your information.

a. Because of the small participation size of the Durham Pilot, no cost effectiveness evaluation or savings determination was performed in the most recent EM&V evaluation. In the Durham Pilot, Duke Energy paid the full cost of each measure which made the program cost per house higher for the Pilot than for the DEC Weatherization. Because the annual kWh usage of the houses in the Pilot was close to the annual savings of the DEC Weatherization the cost effectiveness of the Pilot program was deemed lower than the DEC Weatherization program. The method of implementation allowed focus and direct services to customers higher energy consumption that needed the services the most. The Program received high participant satisfaction. Less issues arose doing implementation and roadblocks incurred were easier to resolve.

b. Compared to other Weatherization Programs offered by Duke Energy, the Durham Pilot method resulted in a higher percentage of more comprehensive projects. The Pilot was successful in providing services to customers that had been unable to receive similar services from Weatherization providers. The method by which the Pilot was implemented avoided some of the funding issues existing in South Carolina and might allow Duke Energy to expand weatherization in DEP and be successful in South Carolina. However, no decision has been discussed or made to expand the Pilot Program at this time.