

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 1265**
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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 17, 2022

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EXHIBITS

FBW-1	Forest Bradley-Wright Resume
FBW-2	DEC Response to SACE <i>et al.</i> Data Request 1-5, NCUC Docket No. E-7, Sub 1265
FBW-3	DEC Response to SACE <i>et al.</i> Data Request 1-12, NCUC Docket No. E-7, Sub 1265
FBW-4	DEC Response to SACE <i>et al.</i> Data Request 1-14, NCUC Docket No. E-7, Sub 1230
FBW-5	DEC Response to SACE <i>et al.</i> Data Request 1-13, NCUC Docket No. E-7, Sub 1265
FBW-6	DEC Response to SACE <i>et al.</i> Data Request 1-15, NCUC Docket No. E-7, Sub 1265
FBW-7	DEC Response to SACE <i>et al.</i> Data Request 1-19, NCUC Docket No. E-7, Sub 1265
FBW-8	DEC Response to SACE <i>et al.</i> Data Request 2-2, SCPSC Docket No. 2019-89-E
FBW-9	DEC Response to SACE <i>et al.</i> Data Request 1-20, NCUC Docket No. E-7, Sub 1265

Introduction and Qualifications

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

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

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

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

9 **Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND WORK**
10 **EXPERIENCE.**

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

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

17 From 2005 to 2018, I worked for the Alliance for Affordable Energy. As
18 the Senior Policy Director, I represented the organization through formal
19 intervenor filings and before regulators at both the Louisiana Public Service
20 Commission and the New Orleans City Council on issues such as integrated
21 resource planning, energy-efficiency rulemaking and program design, rate cases,
22 utility acquisition, power plant certifications, net metering, and utility-scale
23 renewables. As a consultant, I also prepared and filed intervenor comments in

1 renewable energy dockets before the Mississippi and Alabama Public Service
2 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, and Mississippi, along with jurisdictions under the
9 Tennessee 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" or "the Company") DSM/EE Recovery Rider 11 in Docket No. E-7, Sub
15 1192, Duke Energy Progress' ("DEP") DSM/EE Recovery Rider 11 in Docket No.
16 E-7, Sub 1206, DEC's DSM/EE Recovery Rider 12 in Docket No. E-7, Sub 1230,
17 DEP's DSM/EE Recovery Rider 12 in Docket No. E-2, Sub 1252, DEC's DSM/EE
18 Recovery Rider 13 in Docket No. E-7, Sub 1249, and DEP's DSM/EE Recovery
19 Rider 13 in Docket No. E-7, Sub 1273.

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

22 A. Yes, I have filed expert witness testimony in Georgia related to Georgia Power
23 Company's 2019 and 2022 Demand Side Management applications and in the five-
24 year energy efficiency goal setting proceeding before the Florida Public Service

- 1 Commission in 2019 for Florida Power & Light, Gulf Power, Duke Energy Florida,
- 2 Jacksonville Electric Authority, and Orlando Utilities Commission.

Summary of Recommendations

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Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR DEC AND THE COMMISSION?

- Quantify and analyze the full lifetime carbon savings associated with Duke's DSM/EE portfolio in future Recovery Rider proceedings to enable the Commission and other interested parties to track the impact of DSM/EE resources towards achieving carbon reduction goals. In addition, Duke should work with the Energy Efficiency Collaborative ("Collaborative") to identify and expand the carbon reduction impact of the Company's energy efficiency portfolio.
- In support of its least-cost carbon reduction and integrated resource planning, DEC should work with the Collaborative to establish an action plan to reverse savings declines and identify steps that will allow DEC to meet and exceed 1% savings of total retail electric sales in each program year. The plan should be periodically updated and presented to the Commission as an appendix to future DEC DSM/EE Rider applications. As part of the action plan to increase overall savings, Duke should work with the Collaborative to increase the average measure life for DEC's EE portfolio through a shift towards measures with deeper and longer-lived savings.
- Increase the scale and reach of Duke's income qualified low-income efficiency programs, with corresponding new plans for investments that will allow for the achievement of those savings targets. Status and outputs of this work should be reported to the Commission in DEC's next DSM/EE Recovery Rider filing. The Commission should endorse the energy efficiency-related recommendations of the Low-Income Affordability Collaborative and direct Duke to develop corresponding applications for approval by the Commission.
- DEC should establish a default process and timeline for the development of Collaborative stakeholder program recommendations - from initial proposal submission to filing with the Commission - that indicates key milestones and expected timeframes in between.

- Direct DEC to continue providing information related to the energy savings and economic impacts of DSM/EE programs that were introduced during and/or are a product of the Collaborative in future DSM/EE Recovery Riders. In addition, DEC should be required to indicate which program modifications or additions were initiated by participating stakeholders, as well as stakeholder-initiated recommendations upon which the Commission has not acted.

DEC's 2021 Energy Savings Performance

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

A. Yes, it was. The value of DEC's DSM/EE programs continued to be cost effective and delivered significant financial value to customers, even during the pandemic. In 2021, DEC's DSM/EE portfolio had a Utility Cost Test ("UCT") score of 2.68 and a Total Resource Cost ("TRC") score of 2.46.¹ The total net present value ("NPV") of avoided costs in 2021 decreased, but still amounted to approximately \$292 million of financial benefit for customers.²

Q. HOW DID DEC'S DSM/EE PERFORMANCE IN 2021 COMPARE TO PREVIOUS YEARS?

A. DEC once again reported a marked decline in energy savings in 2021, falling even further below its performance in 2020, which was defined by the onset of the COVID-19 pandemic. In 2021, DEC delivered 600 GWh of efficiency savings at the meter, equal to 0.79%³ of the previous year's retail sales. Prior to the pandemic, DEC had reported savings hovering near or above 1% for three consecutive years.

¹ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-5 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1265) (Attached as Exhibit FBW-2).

² *Id.*

³ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-12 in Duke Energy Carolinas DSM/EE Rider Docket (E-7, Sub 1265) (Attached as Exhibit FBW-3).

1 **Q. HOW DID DEC'S DSM/EE PERFORMANCE COMPARE TO ITS**
2 **PROJECTIONS FOR 2021?**

3 A. In DEC's DSM/EE Rider 12 filing, the Company projected 715.7 GWh of annual
4 energy savings, equal to 0.89% of the prior-year's retail sales.⁴ Actual reported
5 savings were 600 GWh, down 16% from the original forecast.

6 **Q. HOW DID DEC'S RESIDENTIAL PROGRAM PERFORMANCE**
7 **COMPARE TO TOTAL SAVINGS IN 2021?**

8 A. Residential programs have made up the majority of savings in DEC's portfolio for
9 the past several years and 2021 was no exception to this trend. In 2021, 65% of all
10 savings came from residential programs, though this reflected a relative decline
11 from the previous year.⁵ One residential program, My Home Energy Report
12 (MyHER), made up over half of DEC's total savings in 2021 at 53% of reported
13 system energy reductions for the entire DEC EE portfolio, a slight increase from
14 2020. As we have expressed numerous times in previous years, we are concerned
15 by DEC's heavy reliance on a behavioral program with such limited persistence of
16 savings making up the bulk of DEC's DSM/EE portfolio savings. Not counting
17 MyHER, total energy savings in DEC's residential portfolio in 2021 were down to
18 just 33% of their pre-pandemic levels in 2019. The biggest declines were in the
19 Energy Efficiency Appliances and Devices (i.e. lighting) program and Duke's
20 Multi-Family efficiency program. We urge the Company to continue to focus on
21 capturing additional measures that are capable of achieving deeper and longer-
22 lived savings to maintain a more balanced and robust program portfolio going

⁴ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-14 in Duke Energy Carolinas DSM/EE Rider Docket No. E-7, Sub 1230 (Attached as Exhibit FBW-4).

⁵ Evans Exhibit 1, Page 4 filed in Docket No. E-7, Sub 1265.

1 forward.⁶ These measures should include adding to or modifying programs that
2 target the largest residential end uses of electricity – such as space heating &
3 cooling and water heating. Fortunately, the HVAC efficiency program has seen
4 steady growth in recent years, including during the pandemic, though this growth
5 has not made up for the declines in other programs.

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

8 A. In 2021, DEC's non-residential programs made up 35% of total energy efficiency
9 savings, reflecting both relative and total kWh savings increases over the previous
10 year (184 GWh in 2020 compared to 221 GWh in 2021).⁷ The increase was driven
11 primarily by growth in three programs: the Smart Saver Custom, HVAC Products,
12 and Small Business Energy Saver programs, though savings were still down overall
13 compared to pre-pandemic levels.

14 **Q. WHAT EFFECT DO COMMERCIAL AND INDUSTRIAL OPT OUTS**
15 **HAVE ON THE PERCENTAGE OF ENERGY SAVINGS?**

16 A. Commercial and industrial opt outs continue to negatively impact DEC's ability to
17 reach higher savings benchmarks due to this group's large share of energy
18 consumption. In 2021, approximately 61% of DEC's commercial and industrial
19 energy consumption opted out of the utility's energy efficiency offerings (30,083
20 GWh out of 49,305 GWh of DEC's non-residential retail sales).⁸ Customers that
21 opt out withhold their proportionate share of funding for DEC's energy efficiency

⁶ Testimony of Forest Bradley-Wright on Behalf of the North Carolina Justice Center and Southern Alliance for Clean Energy, Docket No. E-7, Sub 1192 (May 20, 2019).

⁷ Evans Exhibit 1, Pages 3-4 filed in Docket No. E-7, Sub 1265.

⁸ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-13 in Docket No. E-7, Sub 1265 (Attached as Exhibit FBW-5).

1 programs, and do not contribute to the utility's energy efficiency savings. This is
2 unfortunate for many reasons, including that commercial and industrial energy
3 efficiency are frequently among the lowest cost source per kWh saved. Such
4 programs also tend to yield saving at a scale that leads to substantially reduced
5 costs for participating customers and the utility system as a whole. As noted in my
6 testimony for DEC's DSM/EE Rider 12, "While I recognize that commercial and
7 industrial customers who opt-out also certify that they have implemented their own
8 energy-efficiency or demand-side management measures, there is no requirement
9 to report any resulting savings to the Company or the Commission and nothing in
10 DEC's filing indicates the extent to which such savings are occurring. As a result,
11 actual savings among customers who opt out of DEC's efficiency programs may
12 be much lower than presumed." This gap in reporting persists.

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

15 A. Yes. By calculating energy savings compared to all retail sales, the Commission
16 may observe the effect of the DSM/EE portfolio against actual customer energy
17 consumption in a year. Not only is this in line with performance benchmarking in
18 past proceedings, it is also consistent with understanding how much Duke's
19 DSM/EE portfolio offsets power supply in the Company's IRPs and Carbon Plans.
20 It is also consistent with the calculation methodology for determining whether

DEC has met the requirements for earning the \$500,000 performance bonus for achieving 1% of total retail sales that was approved by the Commission in 2020.⁹

Q. HOW DID DEC'S LOW-INCOME EFFICIENCY PROGRAM PERFORMANCE COMPARE TO PREVIOUS YEARS?

A. The COVID-19 pandemic continues to negatively impact DEC's low-income efficiency programs to a considerable degree. In 2021, energy savings in DEC's Low-Income Energy Efficiency and Weatherization Assistance program increased slightly over 2020, but were still down 69% compared to 2019.¹⁰ As such, it continues to be one of the hardest hit programs since the start of the pandemic. Unfortunately, this reduction in energy savings corresponds with a time of economic hardship for many low-income customers. Likewise, savings in the Multi-Family Energy Efficiency program, which has some degree of overlap with the low-income customer segment, continued to slide, with savings down 90.5% from 2019 levels - by far the largest decline of any program in DEC's DSM/EE portfolio.¹¹

Table 3. DEC Savings by Residential Customer / Program Type¹²

Customer/Program Type	2018 GWh	2019 GWh	2020 GWh	2021 GWh	% Change 2019-2020
Income-Qualified	6.9	8.5	2.0	2.6	-69%
Multi-Family	20.9	21.3	4.0	2.0	-91%
General Residential	241.7	239.3	137.4	79.3	-67%
My Home Energy Report	344.8	328.4	332.1	336.3	2.4%
All Residential Programs	586.5	567.8	469.5	415.6	-27%

⁹ Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, Docket Nos. E-2, Sub 931 and E-7, Sub 1032 (Oct. 20, 2020).

¹⁰ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-15 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-6).

¹¹ *Id.*

¹² *Id.*

Observations and Recommendations
Regarding Duke's 2023 Savings Forecast

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3 **Q: IS DEC PROJECTING ITS DSM/EE PORTFOLIO WILL BE COST**
4 **EFFECTIVE IN 2023?**

5 A: Yes, DEC projects a UCT score of 3.25 for its DSM/EE portfolio in 2023, and a
6 TRC score of 2.67, indicating that DSM/EE continues to be a least-cost resource
7 option. Both of these scores are also substantially higher than DEC reported for its
8 program performance during the pandemic and higher than it reported for 2019 as
9 well. A UCT score of 3.25 indicates that for every dollar spent by the utility on
10 DSM/EE, it would have had to spend \$3.25 if that same power had been met with
11 supply resources. Accordingly, DSM/EE continues to be highly cost effective, with
12 DEC's 2023 DSM/EE portfolio expected to yield more than \$479 Million in net
13 benefits for customers.

14 **Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR 2023?**

15 A. DEC projects that it will achieve approximately 736.8 GWh of energy savings at
16 the meter in 2023.¹³

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

19 A. While this would be an increase from DEC's 2020 and 2021 pandemic
20 performance, it reflects a decline from previous performance and would also fall
21 short of the 1% savings benchmark. DEC's 2023 forecast of 736.8 GWh of energy
22 savings would lead to an estimated 0.92% of prior-year retail sales,¹⁴ compared to

¹³ Exhibit FBW-6.

¹⁴ Exhibit FBW-3.

1 0.98% in 2019,¹⁵ 1.05% in 2018,¹⁶ and 1.11% in 2017 (when DEC reported 880
2 GWh of savings) of prior-year retail sales.¹⁷ Taken from the recent peak in 2017,
3 DEC is projecting a 21% decline in overall savings for 2023.

4 **Q. WHAT HAS THE COMMISSION SAID IN PAST DEC DSM/EE RIDER**
5 **ORDERS ON THE SUBJECT OF SAVINGS DECLINES?**

6 A. In 2019, 2020, and 2021, the Commission indicated its concern with DEC's
7 projected savings declines. The Commission found in its October 18, 2019 Final
8 Order in DEC's DSM/EE Rider 11 proceeding in Docket No. E-7, Sub 1192 that:

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

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

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

22 Last year, the Commission gave the same directive regarding forecasted
23 declines in DEC's DSM/EE savings for 2022.¹⁸

¹⁵ Exhibit FBW-4.

¹⁶ Duke Energy Carolinas Response to SACE Data Request, Item Number 2-2 in Duke Energy Carolinas DSM/EE Rider 11, South Carolina Public Service Commission Docket No. 2019-89-E (Attached as Exhibit FBW-8).

¹⁷ *Id.*

¹⁸ Order Approving DEC Application for Approval of DSM and EE Cost Recovery Rider, Docket No. E-7, Sub 1249 (Sep. 10, 2021).

1 **Q. HAS DEC PROVIDED AN EXPLANATION FOR ITS PROJECTED**
2 **EFFICIENCY SAVINGS DECLINES, AS REQUESTED IN DEC RIDER**
3 **DOCKETS E-7, SUB 1230 AND E-7, SUB 1249**

4 A. Company witness Robert P. Evans' testimony briefly touched on the subject,
5 though the responses over the last two years were essentially the same, lacking any
6 real substance or detail. For instance, he alluded to the program recommendations
7 of Collaborative stakeholders, but gave no indication regarding the steps DEC has
8 taken toward implementing those recommendations. Even more notable was the
9 lack of any statements indicating whether or how DEC aims to reverse its declines
10 and return to the higher savings levels it achieved in 2017, 2018, and 2019.

11 **Q. HAS THE COLLABORATIVE WORKED TO EXAMINE THE**
12 **REASONS FOR THE FORECASTED DECLINE AND EXPLORED**
13 **OPTIONS FOR PREVENTING OR CORRECTING A DECLINE IN**
14 **FUTURE DSM/EE SAVINGS?**

15 A. To a limited degree, yes, though Duke has yet to commit to working with the
16 Collaborative to develop a clear plan to make up for forecasted savings declines.
17 As a result, discussions about new potential savings opportunities are fragmented
18 and disconnected from any clear concept for how much of the savings gap would
19 be met if the changes are successful. Since 2019, many Collaborative stakeholders
20 have sought a portfolio level focus on reaching and exceeding 1% annual savings.
21 DEC's recent past performance has exceeded this mark, and it is therefore the basis
22 against which savings declines are measured. In 2020, stakeholders presented an
23 array of program recommendations that could help to close the gap between DEC's
24 past performance and lower projected future savings forecasts. However, Duke has
25 not yet committed to proactively work with the Collaborative to develop a plan to

1 reach past savings levels. Nor has Duke committed to tracking its DSM/EE
2 portfolio performance against this savings benchmark.

3 **Q: IN ADDITION TO PAST PERFORMANCE AND THE 1% SAVINGS**
4 **TARGET, ARE THERE OTHER OVERARCHING GOALS THAT THE**
5 **COLLABORATIVE OUGHT TO PURSUE?**

6 A: The goal of exceeding 1% annual efficiency savings is not the only target worth
7 aiming for, though it continues to be a useful and important metric. The other key
8 priorities relate to DSM/EE-driven carbon reductions and efficiency savings for
9 low-income customers. I continue to recommend that Duke and the Collaborative
10 work intentionally towards overarching goals with clearly defined individual
11 targets, while focusing on developing concrete strategies and program changes
12 capable of reaching the goals and regularly tracking progress against the targets.

13 **Q. HAS DEC REPORTED TO THE COLLABORATIVE ON PROGRESS**
14 **TOWARDS DEVELOPING AND IMPLEMENTING CHANGES AND**
15 **ADDITIONS TO ITS PORTFOLIO OF DSM/EE PROGRAMS?**

16 A: In 2021, Duke provided fairly detailed regular updates on its own proposed
17 program changes and additions. It also regularly included time on the Collaborative
18 meeting agenda for information updates on program recommendations submitted
19 by stakeholders. This was a small step in the right direction, though it is notable
20 that Duke-initiated program recommendations regularly move towards submission
21 as formal applications for approval by the Commission, while stakeholder-initiated
22 recommendations continue to languish.

23 Stakeholder-initiated program proposals include:

- 24 • Energy Star Retail Products Platform
- 25 • Program Savings from Building Codes and Standards
- 26 • Low-Income Housing Tax Credit (LIHTC) Program

- 1 • Residential Low-Income Single Family Heat Pump Water Heater
- 2 Rental Program
- 3 • Non-Residential Multifamily Heat Pump Water Heater Rebate
- 4 Program
- 5 • Manufactured Homes Retrofit Program
- 6 • Manufactured Home New and Replacement Programs

7 As noted in my testimony last year, for each of the above program
8 recommendations, the sponsoring stakeholder prepared supporting materials and
9 presented them to the Collaborative, after which Duke took them for internal
10 review and consideration. But there has been little visible action towards either
11 implementing these recommendations or the Company explaining why it has
12 decided not to move forward with implementing them. DEC has yet to submit a
13 program application to the Commission for approval based on any of these
14 recommendations the Collaborative members have provided, including some
15 dating back more than two years.

16 **Q: HAVE THERE BEEN ANY LESSONS LEARNED ABOUT HOW TO**
17 **STRENGTHEN COLLABORATION BETWEEN DUKE AND**
18 **COLLABORATIVE STAKEHOLDERS AROUND PROGRAM**
19 **DEVELOPMENT?**

20 A: Yes, two significant developments, namely the High Energy Use Low-Income
21 Energy Efficiency Pilot (“High Energy Use Pilot”) and the Tariffed On-Bill Pilot
22 (“TOB Pilot”), demonstrate how Duke and stakeholders can collaboratively
23 develop program concepts. Notably, neither of these examples of robust
24 collaboration on EE program design originated in the Collaborative, with both

1 arising out of the settlement¹⁹ of contested issues in DEC's 2019 general rate case.
2 Despite originating out of a contested, litigated proceeding, the collaboration on
3 these new programs has been more productive in process and substance than
4 similar efforts on initiatives originating in the Collaborative.

5 The success of the High Energy Use and TOB Pilots creates an important
6 opportunity for stakeholders to glean and incorporate lessons on how to make the
7 Collaborative more productive and truly cooperative. These lessons are that:

- 8 1. Collaboration is more effective if there is basic agreement and buy-
9 in from stakeholders and Duke that the expected outcome is to
10 successfully complete development of a workable and cost-
11 effective program to be filed with the Commission for approval.
12 Duke has not expressed such intent with any of the Collaborative
13 stakeholder-initiated program recommendations to date.²⁰
- 14 2. Direct involvement of staff from Duke's New Product
15 Development group leads to better shared understanding of
16 program design options, challenges, and opportunities.
- 17 3. Successful program development involves problem solving and
18 adaptability, which is less effective without ongoing, hands-on
19 engagement between stakeholders and all relevant Duke
20 representatives.

¹⁹ See, e.g., Duke Energy Carolinas, LLC's Agreement and Stipulation of Settlement with Stipulating Parties, Docket No. E-7, Sub 1214 (July 23, 2020).

²⁰ Though the Company has at times indicated that some elements of stakeholder recommendations have been incorporated into existing programs, there has typically been no subsequent performance tracking to validate that additional savings were achieved as a result of those changes.

1 4. The work proceeds more effectively if there is a shared
2 understanding of key program design milestones and timelines.

3 While there are other valuable lessons that can be drawn from these
4 experiences, including some that are discussed below, the most important is that
5 program design collaboration can be productive if stakeholders work together as a
6 team towards a common goal.

7 **Q: WHAT STEPS CAN BE TAKEN TO IMPROVE FUTURE EFFORTS**
8 **AROUND PROGRAM DEVELOPMENT IN THE COLLABORATIVE?**

9 A: As a first step, greater clarity is needed for Collaborative members regarding the
10 status of their proposed program recommendations. We all should have a better
11 understanding of the process under which Duke will consider and decide upon
12 recommendations.

13 To this end, I propose that Duke establish a default process and timeline for
14 the development of Collaborative stakeholder program recommendations - from
15 initial proposal submission to filing with the Commission - that indicates key
16 milestones and expected timeframes in between. This recommendation follows the
17 positive experience that a subset of Collaborative members have had developing
18 the High Energy Use Pilot. The experience of working with Duke staff, including
19 frequent and direct engagement with Duke's New Product Development group,
20 represents a marked improvement over past attempts to advance Collaborative
21 stakeholder program recommendations and should serve as a model for future
22 efforts. Some of the features of this effort that have helped make it more successful
23 have included:

- 1 • A clear upfront commitment by all parties to work cooperatively
2 towards a specific program goal, with an expressed intent to arrive
3 at a successful outcome.
- 4 • Regular structured meetings with clear interim targets.
- 5 • Clearly identified roles and responsibilities for individual
6 members of the group (for both Duke and stakeholder
7 participants).
- 8 • A willingness by all parties to contribute needed information and
9 review it together for accuracy, adequacy, and completeness - and
10 to identify issues that require additional attention.
- 11 • A readiness to problem solve issues and arrive at a solution that
12 satisfies both Duke and stakeholder participants.
- 13 • A target completion date around which work tasks could be
14 organized and progress measured.

Efficiency Savings Impact for Low-Income Customers

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2 **Q. WHAT LEVEL OF SAVINGS DOES DEC PROJECT FOR ITS LOW-**
3 **INCOME PROGRAMS IN 2023?**

4 A. Low-Income Energy Efficiency and Weatherization Assistance accounts for 9.1
5 GWh of system energy reductions in DEC's estimated load impacts for 2023.²¹
6 These programs are forecasted to account for approximately 2% of total residential
7 energy savings in 2022. If achieved, this would be an 7% increase in total energy
8 savings for DEC's low-income programs compared to its pre-pandemic
9 performance.

10 **Q. WHAT PROGRESS HAS BEEN MADE TO DEVELOP AND SEEK**
11 **APPROVAL FOR NEW LOW-INCOME ENERGY EFFICIENCY PILOT**
12 **PROGRAMS?**

13 A. As part of a settlement and stipulation²² between NC Justice Center, NC Housing
14 Coalition, SACE, NRDC, and the North Carolina Sustainable Energy Association
15 in their most recent general rate cases, DEC and DEP agreed to work with the
16 Stipulating Parties to develop new low-income energy efficiency pilot programs
17 ("LI EE Pilots") to be presented to the Collaborative and submitted to the
18 Commission for approval.

19 Not only is this an important step in the right direction for advancing
20 ongoing efforts to expand low-income efficiency program impact, but it is also
21 significant that Duke has committed to a timeline to filing a program application
22 with the Commission. As noted above, our experience over the past two years with

²¹ Evans Exhibit 1, Page 5 filed in Docket No. E-7, Sub 1265.

²² See, e.g., Duke Energy Carolinas, LLC's Agreement and Stipulation of Settlement with Stipulating Parties, Docket No. E-7, Sub 1214 (July 23, 2020).

1 the Collaborative has shown that without specific deliverables and deadlines, new
2 program concepts get bogged down in an indefinite process with no clear path to
3 implementation or even a decision.

4 **Q. WHAT IS THE STATUS OF DUKE'S STUDY TO EXAMINE THE**
5 **RELATIONSHIP BETWEEN ITS NON-INCOME QUALIFIED**
6 **EFFICIENCY PROGRAMS AND PARTICIPATION BY LOW-INCOME**
7 **CUSTOMERS?**

8 A. This was also a provision agreed to by the Stipulating Parties in the Duke DSM/EE
9 Mechanism proceeding that the Commission approved in 2020. The Low- and
10 Moderate-Income Energy Efficiency Study ("LMI EE Study") seeks to estimate
11 market penetration of Duke's non-income qualified programs among Duke's low-
12 and moderate-income customers ("LMI"). Ultimately, the study will "be used by
13 DEC and DEP to make recommendations for program enhancements designed to
14 cost effectively increase market penetration in the targeted populations and
15 neighborhoods."²³ The Collaborative worked with Duke to develop the scope of
16 work for this study and also provided input on the selection of Opinion Dynamics
17 to conduct the study. The study is now underway with results expected this fall.

18 The scope of work assigned to Opinion Dynamics for the LMI EE Study
19 does not include direct investigation of Duke's income qualified Low Income
20 Energy Efficiency and Weatherization Assistance program ("LI EE"). But
21 understanding the same market penetration issues and participation drivers and
22 barriers is equally important for these programs. Duke has indicated that these

²³ Order Approving Revisions to Demand-Side Management and Energy Efficiency Cost Recovery Mechanisms, Docket No. E-7, Sub 1032 (October 20, 2020).

1 same themes can be better examined for its LI EE programs as part of its regularly
2 scheduled EM&V. Ultimately, the LMI study and LI EE program EM&V finding
3 should be considered in tandem in order to understand what is currently working,
4 and how best to expand and improve upon Duke's energy efficiency offerings for
5 low- and moderate-income customers going forward.

6 **Q. HOW DOES DEC DETERMINE SPENDING LEVELS AND SAVINGS**
7 **TARGETS FOR ITS LOW-INCOME EFFICIENCY PROGRAMS?**

8 A. Despite frequent conversations about expanding low-income efficiency programs,
9 it is still very unclear how DEC determines its low-income efficiency program
10 spending levels and savings targets. In response to questions submitted through
11 discovery, DEC provided the following answers:

12 DEC determines the Low-Income program budget and
13 savings targets by considering the current Commission-
14 approved programs targeting low income customers. For
15 each approved program, DEC evaluates the throughput
16 capability of the program structure to deliver energy savings
17 to targeted/qualified customers, projected customer demand,
18 and the cost to complete the projected customer participation
19 goals. It is important to note budgets and targeted
20 participation are in no way a cap on the amount of program
21 spend or participation, but rather an informed way to inform
22 requested cost recovery.²⁴

23
24 Energy savings are determined by using the most recent
25 energy impact estimates (EM&V) and multiplying by the
26 related number of measures or customers.²⁵

27 **Q. DO YOU STILL RECOMMEND INCREASING DEC'S LOW-INCOME**
28 **EFFICIENCY PROGRAM SAVINGS AND SPENDING LEVELS?**

²⁴ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-19 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-7).

²⁵ Duke Energy Carolinas Response to SACE Data Request, Item Number 1-20 in Docket E-7, Sub 1265 (Attached as Exhibit FBW-9).

1 A. I do. Unlike most non-income qualified efficiency programs DEC offers that are
2 driven by individual customer demand, participation in the Neighborhood Energy
3 Saver (“NES”) and Income Qualified Weatherization programs are limited by
4 geographic location or conditional participation in the Weatherization Assistance
5 Program. DEC has more than 2.2 million residential customers, with nearly 30%
6 at or below 200% of the Federal Poverty Level (“FPL”), which is the same metric
7 DEC uses to determine eligibility for its income qualified programs.
8 Notwithstanding its far lower performance in 2020 and 2021, DEC typically serves
9 roughly 10,000 customers through its low-income programs each year.²⁶ Most
10 participants receive the comparatively shallower savings that the NES program
11 provides. Importantly, not all who are served meet the 200% of FPL criteria
12 because eligibility is determined at the neighborhood level. If one only considers
13 deployment of the standard NES program (thus foregoing deeper savings needs),
14 and also assumes that every program participant is in fact low-income, it would
15 take DEC more than sixty years to reach everyone who qualifies. Addressing the
16 deeper savings needs at a level typical of participants in the Income-Qualified
17 Weatherization Assistance program and NES 2.0 at DEC’s existing program
18 delivery rate would be many factors longer.

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

20 A. I recommend the following:

²⁶ Evans Ex. 6 page 5 - Docket No. E-7, Sub 1230

- 1 • Duke should increase its anticipated spending levels on low-income
2 efficiency programs and work with the Collaborative on setting new
3 spending levels and savings targets for its income-qualified programs.
- 4 • Commission approval of the soon-to-be filed High Energy Use Low-Pilot
5 program that DEC, DEP, and the Stipulating Parties developed, which will
6 ultimately provide DEC and DEP with valuable insights.
- 7 • Commission endorsement of the energy efficiency-related
8 recommendations of the Low-Income Affordability Collaborative,
9 including the development of corresponding program applications for the
10 Commission's consideration.

11 **DSM/EE Rider Intersection with Decarbonization and Integrated**
12 **Resource Planning**

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 its carbon dioxide emissions by 50% by the year 2030, and achieve net zero
17 emissions by 2050.²⁷

18 **Q. HAS THE STATE OF NORTH CAROLINA MADE COMMITMENTS TO**
19 **REDUCE ITS CARBON EMISSIONS?**

20 A. In 2018, North Carolina Governor Roy Cooper committed the State to reducing its
21 greenhouse gas emissions by 40% in all sectors by 2025,²⁸ and, through the

²⁷ DUKE ENERGY, ACHIEVING A NET ZERO CARBON FUTURE, DUKE ENERGY 2020 CLIMATE REPORT (2020), https://desitecoreprod-cd.azureedge.net/_/media/pdfs/our-company/climate-report-2020.pdf?

²⁸ Exec. Order No. 80, North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy, 33 N.C. Reg. 1103-06 (2018), available at

1 statewide Clean Energy Plan (“CEP”), established an overall goal of reducing
2 *power sector* emissions by 70% from 2005 levels by 2030.²⁹ As the largest utility
3 in the state, Duke Energy Carolinas is the largest contributor to power sector
4 greenhouse gas emissions in North Carolina and will shoulder the greatest
5 responsibility for meeting the state’s carbon reduction goals. In 2021, the North
6 Carolina legislature passed HB 951, directing the Commission to establish Carbon
7 Reduction Plans, the first of which is currently under development.

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

10 A. Energy saved through Duke’s DSM/EE programs reduces total energy waste and
11 lessens reliance on the Company’s most polluting power generators. As such,
12 DSM/EE is one of the most effective means by which Duke can lower its carbon
13 emissions. Duke has highlighted the relationship between energy efficiency and
14 reaching its net zero goal, stating:

15 Some of the most effective carbon reductions we can make
16 involve helping customers avoid energy usage in the first
17 place. Again, regulatory or legislative policies related to
18 climate change can prove to be a driver for opportunities for
19 increased deployment of energy efficiency.³⁰

20 **Q. SHOULD DEC START REPORTING THE CARBON REDUCTION**
21 **IMPACTS OF ITS DSM/EE PORTFOLIOS IN FUTURE DSM/EE RIDER**
22 **PROCEEDINGS?**

<https://governor.nc.gov/documents/executive-order-no-80-north-carolinas-commitment-address-climate-change-and-transition>.

²⁹ North Carolina Department of Environmental Quality (NCDEQ). North Carolina Clean Energy Plan (CEP) (2019), https://files.nc.gov/governor/documents/files/NC_Clean_Energy_Plan_OCT_2019_.pdf.

³⁰ *Id.*

1 A. Yes, building on its December 17, 2021 Order Requiring Filing of Additional
2 Testimony, the Commission should ensure DEC follows through on reporting
3 carbon reductions from its DSM/EE portfolios in future DSM/EE recovery riders.
4 DEC should also describe how its DSM/EE portfolio is being deployed to meet its
5 decarbonization targets. Doing so will provide the Commission and the public with
6 important insight into the relationship between investments made in DEC's
7 DSM/EE programs and the utility's progress towards achieving its goals and the
8 State's decarbonization goals. This information could also prove useful in aiding
9 the Company to optimize program delivery to increase carbon emissions
10 reductions. To my knowledge, there is no other proceeding where DEC reports its
11 carbon emissions reductions alongside its annual DSM/EE portfolio savings
12 results. The annual DSM/EE Rider docket would appear to be the best place for
13 regular reporting of this data.

14 In response to the Commission's recent Order Requiring Filing of
15 Additional Information, DEC witness Evans testified that the Company is
16 developing carbon intensity impact estimates for its DSM/EE portfolio, which it
17 will file in future DSM/EE Rider filings. I whole heartedly support this and
18 commend the Commission for recognizing the interconnection between these rider
19 proceedings and the state's carbon planning.

20 This will enable consideration of DEC's emissions reductions resulting
21 from total energy savings and help factor in the performance of its DSM/EE
22 portfolio during specific times of the year, including during peak and off-peak
23 hours. Optimizing the carbon reduction potential of DSM/EE will require new

1 approaches to cost effectiveness analysis and resource optimization, as well as
2 quality data, and careful consideration of new opportunities – potentially including
3 new policy considerations.

4 **Q. WHAT IS THE RELATIONSHIP BETWEEN THE DSM/EE RECOVERY**
5 **RIDER AND THE INTEGRATED RESOURCE PLAN?**

6 A. The DSM/EE Recovery Rider and integrated resource planning both provide
7 perspectives into future energy savings. Lately there have been increasingly
8 important connections between the Integrated Resource Plan, the DSM/EE
9 Recovery Rider, the work of the Collaborative, and now the Carbon Plan that
10 warrant additional development and attention.

11 As I testified last year, integrated resource planning provides the utility, the
12 Commission, and the public with a roadmap for meeting future energy and capacity
13 needs. The DSM/EE Recovery Rider tracks DEC's energy savings performance
14 and sets expectations for energy savings in the subsequent year. If, however, the
15 DSM/EE assumptions used in the IRP underestimate future potential, customers
16 could end up paying for more expensive power supply rather than investing in less
17 expensive strategies to eliminate energy waste.

18 **Conclusion**

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

20 A. Yes.

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 17th day of May, 2022.

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 1273. September 9th, 2021.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. Application of Duke Energy Carolinas, LLC for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. §62-133.9 and Commission Rule R8-69; Docket No. E-7, Sub 1249. May 10th, 2021.

Forest Bradley-Wright, Direct Testimony on Behalf of Southern Alliance for Clean Energy, North Carolina Justice Center, and North Carolina Housing Coalition. Application of Duke Energy Progress, LLC for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to N.C.G.S. §62-133.9 and Commission Rule R8-69; Docket No. E-2, Sub 1252. August 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, Fourths Annual Energy Efficiency in the Southeast Report, Southern Alliance for Clean Energy. February 14th, 2022

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

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DUKE ENERGY CAROLINAS, LLC

Request:

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 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;
- c. The measures and programs offered in 2018, 2019, and 2020 that were removed because there were deemed no longer cost effective for 2021 and 2022;
- d. Measures and programs that have UCT and/or TRC cost effectiveness score between 0.85 and 0.99 that were not included in DEC's 2021 and 2022 portfolios along with their respective cost effectiveness scores and projected kW and kWh savings impact that would have been expected if they had been included.

Follow-up Response (May 12, 2022):

Yes, 2021 data provided in response to data request 1-5 was for actuals, not forecasts.

Please refer to file "SACE DR1-5 a, b follow-up.xlsx" for response to parts a and b. File includes projected cost-effectiveness scores for 2023.



SACE%20DR%201-5
%20a,%20b%20follow

Initial Response:

Please refer to "SACE DR1-5 a, b.xlsx" for response to parts a and b. Refer to "SACE DR 1-5 c, d.doc" for response to parts c and d.

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Person responding: Steven A. LoConte, Senior Program Performance Analyst

SACE DR15

1.6. For each program in DEC's DSM/ES portfolio, please provide:

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

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

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

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

Note: 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

	2017				2018				2019				2020				2021				2022				2023									
	NPV of AC	Program Cost	UCT		NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC
Appliance Recycling Program			5,307	0.00																														
Energy Efficiency Education	3,597,724	2,077,611	1.73	2,863,856	1,992,260	480,232	-	1.44	1.89				1,234,203	1,113,485	236,103	265,776	1.11	1.08			3,145,767	2,264,641	654,001	631,821	1.39	1.40	2,757,352	2,109,368	613,332	577,005	1.31	1.35		
Energy Efficient Appliances and Devices	105,352,687	30,340,728	3.47	137,713,128	42,687,244	36,312,751	18,375,327	3.23	5.61				102,716,605	46,404,037	43,722,488	26,495,135	2.54	3.09			25,474,094	10,824,171	7,842,793	6,438,448	2.35	2.40	27,337,512	11,855,061	16,993,447	2,27	1.70	29,915,269	2,09	2.64
HVAC Energy Efficiency	7,287,263	7,403,327	0.98	7,085,332	6,955,146	5,303,146	8,572,619	1.02	0.69				7,079,940	7,402,207	5,311,600	7,307,099	0.96	0.77			8,402,753	6,154,008	5,939,311	8,181,414	1.03	0.81	5,299,434	5,219,978	3,791,800	5,212,782	1.02	0.80		
Income Qualified Energy Efficiency and Weatherization Assistance	3,185,867	5,505,992	0.58	4,253,631	6,490,735	4,835,515		0.66	2.57				1,024,203	2,787,490	2,031,569	1,958,074	0.37	0.38			6,175,591	8,220,067	6,832,401	6,849,158	0.75	0.75	6,733,294	8,330,637	6,049,131	6,049,131	0.81	0.81		
Multi-Family Energy Efficiency	13,539,656	3,168,422	4.27	13,616,696	3,604,921	1,155,116	-	3.78	3.56				2,156,883	1,613,839	337,362	232,051	1.34	1.43			99,983	517,454	73,154	180,846	1.92	1.57	9,487,870	3,049,616	1,968,943	711,165	3.11	5.29		
Energy Assessments	6,602,773	2,900,098	2.27	5,797,648	2,836,229	278,369	-	2.03	2.25				4,413,185	3,513,757	160,084	286,787	1.40	1.35			4,582,748	3,388,880	166,644	226,637	1.36	1.34	7,633,294	5,247,884	479,185	668,724	1.45	1.40		
My Home Energy Report	21,728,369	13,812,250	1.57	22,687,264	12,765,286		-	1.78	1.78				23,927,899	12,740,651	-	-	1.88	1.88			21,443,834	11,379,147	-	-	1.88	1.88	25,502,532	7,094,738	-	-	1.88	1.88		
Residential New Construction			0.00	-	-	-	0.00	-	-																									
PowerManager	61,074,105	14,021,500	4.36	61,927,510	14,423,610	7,213,382	-	4.29	8.59				69,783,157	13,386,942	7,654,406	-	5.21	11.27			74,785,083	18,025,058	9,338,938	-	4.26	8.99	22,757,696	10,868,140	93,999,834	45	8.28	22,757,696	10,868,140	
Non Residential Smart Saver Custom Technical Assessments	10,272,302	2,139,875	4.80	67,315	407,293	7,794	24,493	0.17	0.16				518,862	330,629	94,787	204,660	1.57	1.18			2,749,737	1,378,847	354,376	2,870,477	1.99	0.74	1,566,844	704,137	-	-	1,475,658	667		
Non Residential Smart Saver Custom	34,693,083	7,304,838	4.75	23,324,992	6,066,902	3,495,543	13,128,691	3.84	1.49				15,898,503	5,771,790	2,481,286	6,512,064	2.75	1.62			25,673,184	8,893,313	5,143,170	18,555,262	2.89	1.15	20,105,301	9,761,490	12,740,738	2,06	1.21	20,105,301	9,761,490	
Energy Management Information Services																																		
Non Residential Smart Saver Energy Efficient Food Service Products	959,251	306,488	3.13	433,251	235,605	172,207	337,845	1.84	1.08				412,886	339,996	251,163	660,970	1.21	0.55			879,963	203,130	139,743	539,197	2.36	0.80	661,380	271,042	196,677	1,072,448	2.91	0.66		
Non Residential Smart Saver Energy Efficient HVAC Products	2,958,336	1,560,769	1.90	2,810,482	1,620,748	1,418,533	1,481,662	1.73	1.67				5,516,665	2,206,364	1,950,484	2,662,253	2.50	1.77			14,900,228	4,899,800	4,051,494	6,702,725	3.04	1.97	9,554,016	3,143,794	2,611,680	4,395,437	3.04	1.94		
Non Residential Smart Saver Energy Efficient Lighting Products	240,054,511	66,689,770	3.60	146,397,190	25,872,380	22,136,715	53,765,902	5.66	2.55				105,608,459	20,834,766	16,543,407	39,082,405	5.07	2.43			68,949,662	17,924,291	13,750,494	30,035,268	3.85	2.02	127,358,689	27,998,468	21,478,301	45,246,609	4.55	2.46		
Non Residential Energy Efficient Pumps and Drives Products	3,070,044	528,937	5.80	1,617,351	277,785	221,861	360,094	5.82	3.89				757,993	167,464	95,170	268,706	4.53	2.22			666,628	202,615	129,889	210,087	3.29	2.51	1,188,170	370,110	-	-	1,188,170	370,110		
Non Residential Energy Efficient TIE	61,215	0.01	0.02	36,875	3,328	2,481	0.08	0.08					1,735	15,179	549	1,140	0.11	0.11			17,578	25,550	12,856	30,309	0.68	0.75	2,325	6,626	0.96	1,456	0.38	0.36		
Non Residential Energy Efficient Equipment Products	530,295	162,413	3.27	226,753	67,509	57,187	49,376	3.36	3.48				236,299	29,681	18,834	32,431	7.96	5.46			567,010	87,540	54,963	71,321	2.42	2.42	566,380	234,538	189,635	255,761	2.37	1.85		
Non Residential Smart Saver Performance Incentive	8,968	320,559	0.03	1,673,015	479,610	279,680	1,420,247	3.49	1.03				2,035,780	751,724	414,798	1,072,713	2.71	1.44			3,385,427	1,948,937	1,550,921	2,810,011	1.74	1.04	6,782,212	1,495,716	-	-	6,782,212	1,495,716		
Small Business Energy Saver	63,169,894	17,350,972	3.64	46,838,707	15,977,993	14,439,122	22,510,536	2.93	1.95				16,483,207	6,933,130	5,852,828	9,368,664	2.38	1.58			18,680,538	8,935,952	6,815,900	11,321,049	2.09	1.39	55,375,251	18,189,200	15,319,498	25,203	3.04	1.73		
Smart Energy in Office	1,067,480	89,210	1.20	143,303	219,748	-	-	0.65	0.65				-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-		
Business Energy Report	124,680	0.01		-	-	-	-	-	-				-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-		
EnergyWise for Business	2,530,761	2,484,618	1.02	2,280,310	3,062,816	195,564	-	0.74	0.92				3,400,854	3,687,462	884,345	117,062	0.92	1.16			1,964,689	2,463,194	839,335	34,532	0.80	1.38	2,420,180	1,701,921	805,195	18,106	1.42	2.79		
PowerShare	41,482,644	13,116,539	3.12	36,016,809	12,922,977	12,313,383	-	2.79	50.77				34,867,438	12,082,697	11,083,075	-	2.89	34.88			42,254,098	13,583,912	12,165,835	-	3.11	105.69	56,892,292	12,334,386	12,001,278	461	170.67	56,892,292	12,334,386	
Disallowed Costs for 2015 Program Cost Audit (Order 67 E-105, dated 8/20/14)																																		
Total Portfolio	623,167,221	192,488,915	3.24	517,741,229	159,005,671	110,814,347	120,029,284	3.26	3.08				446,736,672	149,428,343	102,640,586	120,609,526	2.99	2.67			292,157,811	109,023,491	68,527,466	76,449,595	2.68	2.46	410,843,534	147,164,622	98,976,995	123,683,368	2.79	2.23		

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

SACE DR1-5

1-5. 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 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

	2017				2018				2019				2020				2021				2022							
	NPV of AC	Program Cost	UCT		NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC
Appliance Recycling Program	-	5,307	0.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy Efficiency Education	3,597,724	2,077,611	1.73		2,863,856	1,992,260	480,232	-	1.44	1.89	2,519,645	1,644,077	457,087	512,554	1.53	1.48	1,234,203	1,113,485	236,103	265,776	1.11	1.08	1,513,478	1,147,501	287,993	297,471	1.32	1.31
Energy Efficient Appliances and Devices	105,352,687	30,340,738	3.47		137,713,118	42,687,244	36,512,751	18,375,327	3.23	5.61	102,716,013	40,433,751	33,722,488	26,495,135	2.54	3.09	62,028,986	22,124,033	16,886,727	15,061,064	2.80	3.06	25,474,094	10,824,171	7,464,271	6,438,408	2.35	2.60
HVAC Energy Efficiency	7,287,263	7,403,327	0.98		7,089,332	6,955,146	5,303,166	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	7,538,303	5,801,975	7,609,171	1.04	0.84	8,402,753	8,156,036	5,939,331	8,181,414	1.03	0.81
Income Qualified Energy Efficiency and Weatherization Assistance	3,185,867	5,505,992	0.58		4,253,631	6,490,735	4,835,515	-	0.66	2.57	3,421,362	7,344,325	5,590,035	5,662,865	0.47	0.46	1,024,203	2,787,490	2,033,569	1,958,074	0.37	0.38	1,452,358	4,634,161	3,253,356	3,485,104	0.31	0.30
Multi-Family Energy Efficiency	13,539,656	3,168,422	4.27		13,616,696	3,604,921	1,155,116	-	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	993,893	517,454	73,354	189,634	1.92	1.57
Energy Assessments	6,602,773	2,909,098	2.27		5,757,648	2,836,229	278,369	-	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	3,278,822	3,326,179	193,573	303,360	0.99	0.95
My Home Energy Report	21,728,369	13,812,250	1.57		22,687,264	12,765,286	-	-	1.78	1.78	23,361,954	10,558,344	-	-	2.21	2.21	23,927,899	12,749,651	-	-	1.88	1.88	21,313,709	7,072,233	-	-	3.01	3.01
Residential New Construction	-	-	0.00		-	-	0.00	-	-	-	-	-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PowerManager	61,074,105	14,021,500	4.36		61,927,510	14,423,610	7,215,282	-	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	57,384,854	16,829,058	9,334,838	-	3.42	7.68
Non Residential Smart Saver Custom Technical Assessments	10,272,302	2,139,875	4.80		67,315	407,293	7,794	24,493	0.17	0.16	691,285	296,006	165,648	750,359	2.34	0.78	518,862	339,629	94,787	204,660	1.57	1.18	432,158	293,539	104,303	448,174	1.47	0.68
Non Residential Smart Saver Custom	34,693,083	7,304,838	4.75		23,324,992	6,068,902	3,495,543	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	19,324,372	7,505,201	3,819,487	8,317,293	2.57	1.61
Energy Management Information Services	959,251	306,488	3.13		433,251	235,605	172,207	337,845	1.84	1.08	413,886	339,296	251,163	660,970	1.21	0.55	230,241	533,411	389,347	382,034	0.43	0.44	479,963	203,130	139,743	539,197	2.36	0.80
Non Residential Smart Saver Energy Efficient Food Service Products	2,958,336	1,560,769	1.90		2,810,482	1,620,748	1,418,533	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	14,900,228	4,899,800	4,051,494	6,702,725	3.04	1.97
Non Residential Smart Saver Energy Efficient HVAC Products	240,054,511	66,689,770	3.60		146,397,190	25,872,380	22,136,715	53,765,902	5.66	2.55	105,608,459	20,834,766	16,543,407	39,082,405	5.07	2.43	71,995,510	13,098,851	9,721,810	27,201,471	5.50	2.35	68,949,662	17,924,291	13,750,494	30,035,268	3.85	2.02
Non Residential Smart Saver Energy Efficient Lighting Products	240,054,511	66,689,770	3.60		146,397,190	25,872,380	22,136,715	53,765,902	5.66	2.55	105,608,459	20,834,766	16,543,407	39,082,405	5.07	2.43	71,995,510	13,098,851	9,721,810	27,201,471	5.50	2.35	68,949,662	17,924,291	13,750,494	30,035,268	3.85	2.02
Non Residential Energy Efficient Pumps and Drives Products	3,070,044	528,937	5.80		1,617,951	277,785	221,861	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	666,628	202,615	129,869	213,087	3.29	2.33
Non Residential Energy Efficient ITE	523	61,215	0.01		3,025	36,875	3,528	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	416	74,699	293	225	0.01	0.01
Non Residential Energy Efficient Process Equipment Products	530,295	162,413	3.27		226,753	67,500	51,787	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	257,010	87,540	54,963	73,732	2.94	1.242
Non Residential Smart Saver Performance Incentive	8,958	320,559	0.03		1,672,015	479,610	279,680	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	4,234,077	342,826	109,464	1,868,882	12.35	2.01
Small Business Energy Saver	63,169,894	17,350,972	3.64		46,838,770	15,977,993	14,439,122	22,510,536	2.93	1.95	25,661,729	11,421,399	10,040,202	15,796,578	2.25	1.49	16,483,207	6,933,130	5,852,828	9,368,664	2.38	1.58	18,680,538	8,935,952	6,815,950	11,321,049	2.09	1.39
Smart Energy in Offices	1,067,480	891,010	1.20		143,303	219,748	-	-	0.65	0.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Energy Report	696	126,680	0.01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EnergyWise for Business	2,530,761	2,484,618	1.02		2,280,310	3,062,816	595,564	-	0.74	0.92	3,400,854	3,687,462	884,345	117,062	0.92	1.16	2,505,142	2,941,282	864,460	62,618	0.85	1.17	1,964,689	2,463,194	839,335	34,532	0.80	1.18
PowerShare	41,482,644	13,316,535	3.12		36,016,805	12,922,977	12,213,583	-	2.79	50.77	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	42,254,098	13,583,912	12,165,835	-	3.11	29.80
Disallowed Costs from 2015 Program Cost Audit (Order E-7 Sub 1105, dated 8/25/16)	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Portfolio	623,167,221	192,488,915	3.24		517,741,229	159,005,671	110,814,347	120,029,284	3.26	3.08	446,736,672	149,428,343	102,640,586	120,609,526	2.99	2.67	330,505,163	110,695,578	67,807,173	74,098,067	2.99	2.83	292,157,811	109,023,491	68,527,466	78,449,595	2.68	2.46

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 incentive:

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

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

The EnergyWise for Business EE Thermostat measure has been removed for 2022.

d. Measures and programs that have UCT and/or TRC cost effectiveness score between 0.85 and 0.99 that were not included in DEC's 2021 and 2022 portfolios along with their respective cost effectiveness scores and projected kW and kWh savings impact that would have been expected if they had been included.

<i>Measure</i>	<i>Description</i>	<i>Program</i>	<i>UCT</i>	<i>TRC</i>	<i>Expected KWH</i>	<i>Expected KW</i>	<i>Additional information</i>
<i>8,000BTU window AC unit</i>	<i>Replacement</i>	<i>NES</i>	<i>0.91</i>	<i>0.91</i>	<i>500,000</i>	<i>50</i>	<i>Not included due to risk of incurring replacement window costs during direct install</i>

SACE DR15

1.6. For each program in DEC's DSM/ES portfolio, please provide:

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

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

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

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

Note: 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

	2017					2018					2019					2020					2021					2022					2023								
	NPV of AC	Program Cost	UCT	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC	NPV of AC	Program Cost	Participant Incentives	NPV Participant Costs (net)	UCT	TRC						
Appliance Recycling Program			5,307																																				
Energy Efficiency Education	3,597,724	2,077,611	0.44	2,863,856	1,992,260	480,232	-	1.44	1.89																														
Energy Efficient Appliances and Devices	105,352,687	30,340,728	3.47	137,713,128	42,687,244	36,312,751	18,375,327	3.23	5.61																														
HVAC Energy Efficiency	7,287,263	7,403,327	0.98	7,085,332	6,955,146	5,303,146	8,572,619	1.02	0.69																														
Income Qualified Energy Efficiency and Weatherization Assistance	1,185,867	5,505,992	0.58	4,253,631	6,490,735	4,835,515	-	0.66	2.57																														
Multi-Family Energy Efficiency	13,539,656	3,168,422	4.27	13,616,696	3,604,921	1,155,116	-	3.78	5.56																														
Energy Assessments	6,602,773	2,900,098	2.27	5,797,648	2,836,229	278,369	-	2.03	2.25																														
My Home Energy Report	21,728,369	13,812,250	1.57	22,687,264	12,765,286	-	-	1.78	1.78																														
Residential New Construction			0.00																																				
PowerManager	61,074,105	14,021,500	4.36	61,927,510	14,423,610	7,213,282	-	4.29	8.59																														
Non Residential Smart Saver Custom Technical Assessments	10,272,302	2,139,875	4.80	67,315	407,293	7,794	24,493	0.17	0.16																														
Non Residential Smart Saver Custom	34,693,083	7,304,838	4.75	23,324,992	6,066,902	3,495,543	13,128,091	3.84	1.49																														
Energy Management Information Services																																							
Non Residential Smart Saver Energy Efficient Food Service Products	959,251	306,488	3.13	433,251	235,605	172,207	337,845	1.84	1.08																														
Non Residential Smart Saver Energy Efficient HVAC Products	2,958,336	1,560,769	1.90	2,810,482	1,620,748	1,418,533	1,481,662	1.73	1.67																														
Non Residential Smart Saver Energy Efficient Lighting Products	240,054,511	66,689,770	3.60	146,397,190	25,872,380	22,136,715	53,765,902	5.66	2.55																														
Non Residential Energy Efficient Pumps and Drives Products	3,070,044	528,937	5.80	1,617,351	277,785	22,785	360,094	5.82	3.89																														
Non Residential Energy Efficient TIE	61,215	0.01	0.02	36,875	3,528	2,481	0.08	0.08	0.08																														
Non Residential Smart Saver Equipment Products	530,295	162,413	3.27	226,753	67,509	57,187	49,376	3.36	3.48																														
Non Residential Smart Saver Performance Incentive	8,868	320,559	0.03	1,673,015	479,610	279,680	1,420,247	3.49	1.03																														
Small Business Energy Saver	63,169,894	17,350,972	3.64	46,838,707	15,977,993	14,439,122	22,510,536	2.93	1.95																														
Smart Energy in Office	1,067,480	89,210	1.20	143,303	219,748	-	-	0.65	0.65																														
Business Energy Report	124,680	0.01	-	-	-	-	-	-	-																														
EnergyWise for Business	2,530,761	2,484,618	1.02	2,280,310	3,062,816	195,564	-	0.74	0.92																														
PowerShare	41,482,644	13,116,539	3.12	36,016,809	12,922,977	12,213,383	-	2.79	50.77																														
Disallowed Costs for 2015 Program Cost Audit (Order 6-7 Sub 1105, dated 8/25/16)																																							
Total Portfolio	623,167,221	192,488,915	3.24	517,741,229	159,005,671	110,814,347	120,029,284	3.26	3.08	446,736,672	149,428,343	102,640,586	120,609,526	2.99	2.67	330,505,163	110,695,978	67,807,173	74,098,067	2.99	2.83	292,157,811	109,023,491	68,527,466	76,449,595	2.68	2.46	410,843,534	147,164,622	95,876,895	132,683,368	2.79	2.23	479,402,228	147,872,330	98,966,466	131,415,449	3.25	2.67

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

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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

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NPV Avoided T&D = \$100

Total NPV Avoided Cost = \$333

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Participant Incentive = \$250

Participant Cost (net) = \$525

UCT = \$333/\$270 = 1.23

TRC = (\$333/(\$270-\$250-\$525)) = 0.61

SACE et al.
Docket No. E-7, Sub 1265
2022 DSM/EE Rider
SACE Data Request No. 1
Item No. 1-12
Page 1 of 1

DUKE ENERGY CAROLINAS, LLC

Request:

Please provide:

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

Response:

Please see attached file SACE DR 1-12 for response.



SACE%20DR1-12.xlsx

Person responding: Steven A. LoConte, Senior Program Performance Analyst

Duke Energy Carolinas

SACE DR 1-12

- 1-12. Please provide:
- a. total DSM/EE portfolio kWh savings at the generator for 2020, 2021, and forecast for 2022 and 2023;
 - b. total DSM/EE portfolio kWh savings at the meter for 2020, 2021, and forecast for 2022 and 2023; and
 - c. total retail sales for 2020 and 2021 and projected total retail sales for 2022 and 2023.

Total DSM/EE portfolio kWh savings	b. Meter kWh	a. Generator kWh	
2020 Incremental Energy Savings	615,668,305 kWh	653,954,870 kWh	Evans Exhibit 1 page 3 (2020) line 28
2021 Incremental Energy Savings	599,650,652 kWh	636,941,127 kWh	Evans Exhibit 1 page 4 (2021) line 28
2022 Incremental Energy Savings	766,625,571 kWh	814,299,715 kWh	Evans Exhibit 1 page 5 (2022) line 28, E-7, Sub -1249
2023 Incremental Energy Savings	736,787,509 kWh	786,416,822 kWh	Evans Exhibit 1 page 5 (2023) line 28

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DUKE ENERGY CAROLINAS

Request:

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

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

Response:

Please refer to "CCL-SACE DR1-14.xlsx."



CCL-SACE%20DR1-1
4.xlsx

Duke Energy Carolinas

CCL_SACE DR 1-14

2019 Incremental Energy Savings	794,856,771 kWh	Evans Exhibit 1 page 3 (2019) 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	Evans Exhibit 1 page 4 (2021) 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%

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DUKE ENERGY CAROLINAS, LLC

Request:

For the years 2021, 2022(forecasted), and 2023 (forecasted), please identify the following at the total system level and broken out by North Carolina and South Carolina:

- a. Total DSM non-residential opt-outs;
- b. Total EE non-residential opt outs; and
- c. Total non-residential sales.

Follow-up Response (May 12, 2022):

The 2022 data was included in the original request. The columns just need to be unhidden within the excel attachment, columns D, H and L.

Person responding: Shannon Listebarger, Rates & Regulatory Strategy Manager

Initial Response:

Please see attached file labeled SACE DR 1-13.xlsx for the requested data.



SACE%20DR%201-1
3.xlsx

Person responding: Shannon Listebarger, Rates & Regulatory Strategy Manager

SACE DR 1-13 First Data Request to Duke Energy Carolinas, LLC

Source:		DSM		
		Actual 2021	Forecasted 2022	Forecasted 2023
NC	Listebarger Exhibit 6	18,648,145,239	18,248,487,084	18,386,911,672
SC	R14 Exhibit 3 page 1 of 2	8,925,008,018	8,643,100,545	8,862,400,408
Total		27,573,153,257	26,891,587,629	27,249,312,080

EE		
Actual	Forecasted	Forecasted
2021	2022	2023
20,390,666,139	19,640,593,176	20,085,420,707
9,693,186,294	9,579,821,484	9,555,989,829
<u>30,083,852,433</u>	<u>29,220,414,660</u>	<u>29,641,410,536</u>

Total Non-Residential Sales (kWh)		
Actual	Forecasted	Forecasted
2021	2022	2023
35,643,438,235	36,242,826,711	36,242,826,711
13,661,787,145	14,898,064,380	14,723,254,836
<u>49,305,225,380</u>	<u>51,140,891,091</u>	<u>50,966,081,547</u>

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DUKE ENERGY CAROLINAS, LLC

Request:

Please provide a spreadsheet of total energy savings achieved by each of the Company's DSM/EE programs, in GWh, for 2018, 2019, 2020 and 2021.

Response:

Please see attached spreadsheet, SACE DR 1-15, for total energy savings achieved by each of the Company's DSM/EE programs, in GWh, for 2018, 2019, 2020 and 2021.



SACE%20DR%201-1
5.xlsx

Person responding: Steven A. LoConte, Senior Program Performance Analyst

1-15. Please provide a spreadsheet of total energy savings achieved by each of the Company’s DSM/EE programs, in GWh, for 2018, 2019, 2020 and 2021.

Residential Programs				
EE Programs	2018 System Energy Reduction (GWh)	2019 System Energy Reduction (GWh)	2020 System Energy Reduction (GWh)	2021 System Energy Reduction (GWh)
1 Energy Efficiency Education	5.53	6.71	4.75	7.01
2 Energy Efficient Appliances and Devices	194.36	187.57	110.99	51.70
3 HVAC Energy Efficiency	6.37	7.33	7.69	9.43
4 Low Income Energy Efficiency and Weatherization Assistance	6.85	8.50	2.04	2.55
5 Multi-Family Energy Efficiency	20.92	21.34	4.04	2.02
6 Residential Energy Assessments	7.72	7.89	7.89	6.59
7 Total for Residential Conservation Programs	241.74	239.34	137.40	79.30
8 My Home Energy Report	344.76	328.44	332.11	336.29
9 Total Residential Conservation and Behavioral Programs	586.50	567.78	469.50	415.59
10 Power Manager®	-	-	-	-
11 Total Residential	586.50	567.78	469.50	415.59
Non-Residential Programs				
EE Programs	2018 System Energy Reduction (GWh)	2019 System Energy Reduction (GWh)	2020 System Energy Reduction (GWh)	2021 System Energy Reduction (GWh)
12 Non Residential Smart Saver Custom Technical Assessments	0.08	1.93	1.41	0.92
13 Non Residential Smart Saver Custom	30.33	52.52	21.16	30.80
14 Non Residential Smart Saver Energy Efficient Food Service Products	0.74	1.00	0.50	1.20
15 Non Residential Smart Saver Energy Efficient HVAC Products	2.91	7.53	9.27	21.05
16 Non Residential Smart Saver Energy Efficient Lighting Products	177.85	163.56	109.56	116.78
17 Non Residential Smart Saver Energy Efficient Pumps and Drives Products	2.67	1.46	1.40	1.52

18 Non Residential Energy Efficient ITEE	0.02	0.01	0.01	0.00
19 Non Residential Smart Saver Energy Efficient Process Equipment Products	0.33	0.73	0.57	0.82
20 Smart Saver(R) Non Residential Performance Incentive Program	3.27	4.55	5.96	8.25
21 Small Business Energy Saver	76.70	53.67	32.01	38.56
22 Smart Energy in Offices	1.49	-	-	-
23 Total for Non-Residential Conservation Programs	296.39	286.97	181.85	219.92
24 EnergyWise for Business	2.60	5.15	2.60	1.44
25 PowerShare®	-	-	-	0.00
26 Total for Non-Residential DSM Programs	2.60	5.15	2.60	1.44
27 Total Non Residential	298.99	292.12	184.45	221.35
28 Total All Programs	885.49	859.90	653.95	636.94

(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

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DUKE ENERGY CAROLINAS, LLC

Request:

How does DEC determine the amount that will be spent on its low-income energy efficiency programs?

Response:

DEC determines the Low-Income program budget and savings targets by considering the current Commission-approved programs targeting low income customers. For each approved program, DEC evaluates the throughput capability of the program structure to deliver energy savings to targeted/qualified customers, projected customer demand, and the cost to complete the projected customer participation goals. It is important to note budgets and targeted participation are in no way a cap on the amount of program spend or participation, but rather an informed way to inform requested cost recovery.

Person responding: Rick Mifflin, Director, Products & Services

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%	

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DUKE ENERGY CAROLINAS, LLC

Request:

How does DEC determine the projected savings targets for low-income energy efficiency programs?

Response:

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

Response provided by: Rick Mifflin, Director, Products & Services